

Environmental Impact Report

Comments and Responses Volume 4

San Francisco Public Utilities Commission CALAVERAS DAM REPLACEMENT PROJECT



San Francisco Planning Department File No. 2005.0161E
State Clearinghouse No. 2005102102

Draft EIR Publication Date: October 6, 2009

Draft EIR Public Hearing Date:
November 10, 2009 in Fremont, CA
November 12, 2009 in San Francisco, CA
December 14, 2009 in Sunol, CA

Draft EIR Public Comment Period: October 6, 2009 through December 21, 2009

Comments and Responses Publication Date: January 5, 2011

Final EIR Certification Date: January 27, 2011

City and County of San Francisco
San Francisco Planning Department

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City and County of San Francisco
San Francisco Planning Department



SAN FRANCISCO PLANNING DEPARTMENT

MEMO

DATE: January 5, 2011
TO: Members of the Planning Commission and Interested Parties
FROM: Bill Wycko, Environmental Review Officer
RE: Comments and Responses on Draft Environmental Impact Report for Case No. 2005.0161E, Calaveras Dam Replacement Project

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

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

Attached for your review please find a copy of the Comments and Responses document for the Draft Environmental Impact Report (EIR) for the above-referenced project. **This document, along with the Draft EIR, will be before the Planning Commission for Final EIR certification on January 27, 2011.** Please note that the public review period ended on December 21, 2009.

The Planning Commission does not conduct a hearing to receive comments on the Comments and Responses document, and no such hearing is required by the California Environmental Quality Act. Interested parties, however, may always write to Commission members or to the President of the Commission at 1650 Mission Street and express an opinion on the Comments and Responses document, or the Commission's decision to certify the completion of the Final EIR for this project.

Please note that if you receive the Comments and Responses document in addition to the Draft EIR, these two documents constitute the Final EIR. If you have any questions concerning the Comments and Responses document or the environmental review process, please contact **Chris Kern** at (415) 575-9037.

Thank you for your interest in this project and your consideration of this matter.

Attachment: Comments and Responses Document

**CALAVERAS DAM REPLACEMENT PROJECT
ENVIRONMENTAL IMPACT REPORT –
COMMENTS AND RESPONSES**

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8. INTRODUCTION TO COMMENTS AND RESPONSES

8.1 PURPOSE OF THE COMMENTS AND RESPONSES DOCUMENT

This Comments and Responses document consists of the following: (1) copies of comments received on the Draft Environmental Impact Report (EIR) for the San Francisco Public Utilities Commission's (SFPUC) proposed Calaveras Dam Replacement Project (CDRP) (State Clearinghouse No. 2005102102); (2) responses to those comments; (3) revisions to the Draft EIR to clarify or correct information in the Draft EIR; and (4) description and analysis of a new project variant that was developed after the publication of the Draft EIR. The Draft EIR together with this Comments and Responses document constitute the Final EIR for the CDRP in fulfillment of the requirements of the California Environmental Quality Act (CEQA). In this Comments and Responses document, the combination of the Draft EIR and the Comments and Responses document are referred to as the "EIR;" the term "Draft EIR" is used when specifically referencing the Draft EIR document published on October 6, 2009.

The EIR was prepared to review and inform the public of the environmental effects of the CDRP. In 2001, the California Department of Water Resources, Division of Safety of Dams (DSOD) restricted the water level of Calaveras Reservoir until such time that the dam's seismic safety could be demonstrated. The SFPUC determined that the best way to address safety concerns would be to replace Calaveras Dam. The proposed replacement dam would be a 2.77-million-cubic-yard earth and rockfill structure located immediately downstream of and at the foot of the existing dam. The replacement dam would be constructed over a 4-year period, beginning in 2011. The replacement dam would allow the SFPUC to restore operations of the reservoir water level from the DSOD-restricted level of 705 feet to its normal maximum reservoir surface elevation of 756 feet.¹ The CDRP is one of the facility improvement projects under the SFPUC's Water System Improvement Program (WSIP).

The Draft EIR describes the proposed CDRP as envisioned at that time (referred to as the "Draft EIR project"), identifies the environmental consequences of its implementation, specifies mitigation measures to reduce significant impacts, and analyzes and compares the environmental effects of alternatives to the proposed project as required by CEQA. The EIR analyzes six alternatives to the Draft EIR project and also discusses other alternatives that were considered and rejected.

Since publication of the Draft EIR on October 6, 2009, the SFPUC has proposed to include additional fishery enhancements and other project refinements to the CDRP. These project

¹ All elevations of the reservoir for this report are identified in feet above the National Geodetic Vertical Datum (NGVD) of 1929.

8. Introduction to Comments and Responses

8.1 Purpose of the Comments and Responses Document

enhancements and refinements have been incorporated into the CDRP project description and resulted in the development of a minor variation of the proposed project, which is referred to as the CDRP Variant. The CDRP Variant is the SFPUC's preferred project. By including the description and analysis of the CDRP Variant in this Comments and Responses document, the EIR also provides CEQA environmental review of the variant.

The Final EIR is an informational document that the SFPUC must consider prior to approving the CDRP or CDRP Variant. The *CEQA Guidelines* (Section 15132) specify that the Final EIR shall consist of:

- The Draft EIR or a revision of the draft;
- Comments and recommendations received on the Draft EIR either verbatim or in summary;
- A list of persons, organizations, and public agencies commenting on the Draft EIR;
- The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the Lead Agency.

This Comments and Responses document was prepared pursuant to the *CEQA Guidelines*.

8.2 ENVIRONMENTAL REVIEW PROCESS

On October 6, 2009, the San Francisco Planning Department published the Draft EIR for the SFPUC's CDRP and distributed it for public review and comment. The original public review and comment period of October 6, 2009 to November 20, 2009 was later extended until December 21, 2009. During the 77-day public review period, the San Francisco Planning Department received 36 written comment documents² by mail, hand delivery, facsimile, or email (see Appendix L for copies of all written comments received). Fifty-five oral comments were received at the three public hearings on the Draft EIR. Public hearings were held on the following dates and at the following locations:

- November 10, 2009 – Fremont Main Library, Fremont, CA
- November 12, 2009 – San Francisco City Hall, San Francisco, CA
- December 14, 2009 – Sunol Glen Elementary School, Sunol, CA

A court reporter was present at each of the public hearings, transcribed the oral comments verbatim, and prepared written transcripts (see Appendix M of this Comments and Responses document for copies of the public hearing transcripts).

² This total includes letters received after the public review and comment period.

This Comments and Responses document was distributed for review to the San Francisco Planning Commission; the SFPUC; and agencies, organizations, and persons who commented on the Draft EIR. The San Francisco Planning Commission will certify the Final EIR – consisting of the Draft EIR and the Comments and Responses document – once it has been determined to fulfill CEQA requirements. Upon certification, the SFPUC will review and consider the certified Final EIR and the associated Mitigation Monitoring and Reporting Program (MMRP), prior to its decision on the CDRP Variant which is the preferred project. Consistent with the *CEQA Guidelines* (Section 15097), the MMRP is a program designed to ensure that the mitigation measures identified in the Final EIR and adopted by decision-makers to mitigate or avoid the project’s significant environmental effects are implemented. The SFPUC will adopt CEQA findings and the MMRP at the project decision hearing if it decides to approve the CDRP Variant.

8.3 DOCUMENT ORGANIZATION

The Comments and Responses document is organized into Chapters 8 through 12, plus supporting Appendices L through O. Following the sequential chapter numbering from the Draft EIR (Chapters 1 through 7), Chapter 8 is this introduction and includes a list of all agencies, organizations, and individuals submitting written or oral comments on the Draft EIR. It also provides explanation of the document organization and the system of comment coding.

Chapter 9 presents a description and environmental analysis of the CDRP Variant. It includes a detailed description of the Variant – how it is similar to and differs from the Draft EIR project – as well as a complete analysis of its environmental impacts at an equal level of detail to the analysis of the Draft EIR project. Because the Variant is substantially the same as the Draft EIR project (with only the addition of fishery enhancements and project refinements), the impact analysis of the Variant refers extensively to the information presented in Chapters 4, 5, 6, and 7 of the EIR where the impact analysis of the Variant would be substantially the same as that of the Draft EIR project. Chapter 9 also describes mitigation measures applicable to the Variant, again drawing extensively on mitigation measures identified for the Draft EIR project, with only minor modifications of a few measures needed to address site-specific details of the Variant. It should be noted, as discussed below under Chapter 12, that there are a number of revisions to the EIR to clarify or correct information in the Draft EIR. These revisions, insofar as they relate to common elements of the Draft EIR project and the CDRP Variant, also apply to the Variant and are incorporated in Chapter 9.

Chapter 10 contains five “master responses” that provide a comprehensive discussion of the issues and themes that were raised repeatedly in the comments received on the Draft EIR. The issues covered in the master responses include: the future expansion of Calaveras Reservoir; the baseline for environmental analysis; hydrology; fisheries; and greenhouse gas emissions.

Chapter 11 presents the individual responses to each of the written and oral comments received on the Draft EIR, although in some cases the reader is referred to a master response in Chapter 10 or to another individual response. Responses to all comments (whether written or spoken at the public hearings listed above) are presented in either Chapter 10 or Chapter 11. Unless specifically noted otherwise, the responses to comments in Chapter 10 and Chapter 11 are structured to apply to both the Draft EIR project and the CDRP Variant. In Chapter 11, the responses to written and oral comments are organized into three sections: responses to agencies' comments; responses to organizations' comments; and responses to individuals' comments. Each of these sections begins with a listing of the commenters in that category. Each set of responses is numbered in the order of comments in the commenter's letter or public hearing comments, and each response is prefaced by a comment code that corresponds to the bracketed comment shown in Appendix L, Comment Letters, or Appendix M, Transcripts of Draft EIR Public Hearings. The introduction to Chapter 11 further describes the organization of that chapter.

Chapter 12 presents all changes and revisions to the Draft EIR. Changes and revisions have been made in response to comments received on the Draft EIR or were initiated by Planning Department staff. Staff-initiated changes are provided to clarify content, add additional information received after the release of the Draft EIR, or to correct content in the Draft EIR. The text changes indicate the page and paragraph to be revised, and show the proposed change using underline and strike-out, as follows:

For example: Edits to this text are ~~inserted~~provided for clarity.

A description of the text changes is provided where necessary. None of the changes and revisions in Chapter 12 substantially affects the analysis or conclusions presented in the Draft EIR. As noted above, the information presented in Chapter 12 specifically addresses the Draft EIR project, rather than the CDRP Variant, although the changes and revisions are applicable to the Variant for all common elements, as reflected in the discussion of the Variant in Chapter 9.

Following the sequential appendix numbering from the Draft EIR (Appendices A through K), Appendix L to this Comments and Responses document contains all written comments received during the comment period, whether by email, postal mail, facsimile, or hand delivery. Comment cards with written comments handed in at the public hearings are considered written comments and are also included in this appendix. All of the written comments in Appendix L are bracketed and coded as described below in Section 8.4, Organization of Comments and List of Commenters. Appendix M contains the transcripts from the public hearings, which are similarly bracketed and coded. Subsequent appendices, Appendix N and Appendix O, provide supporting technical information used in the analysis of the CDRP Variant or in responses to comments.

In some cases, written comments received on the Draft EIR incorporate by reference other documents related to the proposed project and the EIR. These incorporated documents are reproduced and included along with the comment letters in Appendix L; these documents are

treated the same as all comments received on the Draft EIR and have been bracketed with comment numbers and responded to when issues relevant to the CDRP are raised.

8.4 ORGANIZATION OF COMMENTS AND LIST OF COMMENTERS

To facilitate the preparation of responses, each comment set (i.e., each letter, email, comment card, or public hearing transcript) received on the Draft EIR was coded to identify the commenter, and then divided into individual comments, which were then numbered. The individual comments are referenced by an alphanumeric code assigned to each comment set and the comment's individual number; comments are numbered sequentially within each comment set. The alphanumeric code begins with a prefix indicating whether the commenter is from a public agency (A), a non-government organization (O), or an individual (I), and is followed by the acronym of the agency or organization or the individual's last name. For example, the comment letter from the National Marine Fisheries Service is coded A-NMFS. The first comment in the letter is coded A-NMFS-01.

Comments submitted by mail, email, facsimile, comment card, or hand delivery were all coded and numbered the same way. If a single agency, organization, or individual submitted comments more than once, a number was inserted at the end of the identifying initials. For example, if the National Marine Fisheries Service had submitted additional comments, the first comment set would be A-NMFS1, and the second set would be A-NMFS2, with an additional sequential number provided for the comments within each communication (e.g., A-NMFS1-01).

Agencies, organizations, and individuals that submitted written or oral comments on the Draft EIR during the public comment period are listed in Tables 8.1, 8.2, and 8.3, respectively. The agencies are listed in the following order: federal agencies, state agencies, then regional and local agencies.

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.1: Governmental Agencies Commenting on the Draft EIR for the CDRP

Comment Format	Commenter Code	Commenter	Comment Date
Federal			
Letter	A-NMFS	National Marine Fisheries Service Dick Butler, Santa Rosa Area Office Supervisor, Protected Resources Division	December 17, 2009
State			
Letter	A-Cal EMA	California Emergency Management Agency Ken Worman, State Hazard Mitigation Officer	November 24, 2009
Letter	A-CDFG	California Department of Fish and Game Scott Wilson for Charles Armor, Regional Manager, Delta Region	December 21, 2009
Letter	A-DWR	Department of Water Resources Michael Waggoner for David A. Gutierrez, Chief, Division of Safety of Dams	November 18, 2009
Letter	A-RWQCB	California Regional Water Quality Control Board, San Francisco Bay Region William B. Hurley, Senior Engineer	November 5, 2009
Regional/Local			
Letter	A-Zone 7	Alameda County Flood Control and Water Conservation District, Zone 7 Ken Arends for G.F. Duerig, General Manager, Zone 7 Water Agency	December 21, 2009
Letter	A-ACPWA	Alameda County Public Works Agency Kwablah Attiogbe, Environmental Services Manager	December 18, 2009
Letter	A-ACWD	Alameda County Water District Walter L. Wadlow, General Manager	December 17, 2009
Letter	A-ABAG	Association of Bay Area Governments Kenneth Kirkey, Planning Director	November 12, 2009
Public Hearing	A-BAWSCA1	Bay Area Water Supply and Conservation Agency Nicole Sandkulla	November 10, 2009
Written Comment at Public Hearing	A-BAWSCA2	Bay Area Water Supply and Conservation Agency Arthur Jensen, CEO	November 10, 2009

(continued)

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.1 (Continued)

Comment Format	Commenter Code	Commenter	Comment Date
Public Hearing	A-BAWSCA3	Bay Area Water Supply and Conservation Agency Arthur Jensen	November 12, 2009
Letter	A-BAWSCA4	Bay Area Water Supply and Conservation Agency Nicole M. Sandkulla, P.E., Senior Water Resources Engineer	December 18, 2009
Letter	A-Milpitas	City of Milpitas James Lindsay, Planning & Neighborhood Services Director	November 24, 2009
Letter	A-EBRPD	East Bay Regional Park District Nancy H. Wenninger for Robert E. Doyle, Assistant General Manager	December 11, 2009
Public Hearing	A-GCRCD	Guadalupe/Coyote Resource Conservation District Roger Castillo	November 10, 2009
Letter	A-SCCPRD	Santa Clara County Parks and Recreation Department Antoinette Romeo, Park Planner	December 19, 2009
Letter	A-SCCRAD	Santa Clara County Roads and Airports Department Felix Lopez, Project Engineer	November 10, 2009
Letter	A-SFBOS-Daly	San Francisco Board of Supervisors Supervisor Chris Daly	January 12, 2010
Public Hearing	A-SFPC1	San Francisco Planning Commission Commissioner Michael J. Antonini	November 12, 2009
Public Hearing	A-SFPC2	San Francisco Planning Commission Commissioner Gwyneth Borden	November 12, 2009
Public Hearing	A-SFPC3	San Francisco Planning Commission Commissioner Christina R. Olague	November 12, 2009
Public Hearing	A-SFPC4	San Francisco Planning Commission Commissioner William L. Lee	November 12, 2009
Public Hearing	A-SFPC5	San Francisco Planning Commission Commissioner Kathrin Moore	November 12, 2009

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.2: Organizations Commenting on the Draft EIR for the CDRP

Comment Format	Commenter Code	Commenter	Comment Date
Public Hearing	O-ACA1	Alameda Creek Alliance Jeff Miller	November 10, 2009
Public Hearing	O-ACA2	Alameda Creek Alliance Jeff Miller	November 12, 2009
Public Hearing	O-ACA3	Alameda Creek Alliance Jeff Miller	December 14, 2009
Letter	O-ACA&CBD1	Alameda Creek Alliance Jeff Miller, Director The Center for Biological Diversity Peter Galvin, Conservation Director	December 18, 2009
Letter	O-ACA&CBD2	Lippe Gaffney Wagner LLP, representing the Alameda Creek Alliance and the Center for Biological Diversity Brian Gaffney	December 21, 2009
Letter	O-Acterra et al.	46 Bay Area conservation organizations	December 14, 2009
Letter	O-AFS	American Fisheries Society, California-Nevada Chapter Michelle Workman, President	December 18, 2009
Letter	O-AudOh1	Ohlone Audubon Society, Inc. Evelyn M. Cormier, President	December 5, 2009
Letter	O-AudOh2	Ohlone Audubon Society, Inc. Rich Cimino	November 10, 2009
Public Hearing	O-BAC	The Bay Area Council George Broder	November 12, 2009
Public Hearing	O-CL22	Carpenters Local 22 Manny Florez	November 12, 2009
Letter	O-CL713	Weinberg, Roger & Rosenfeld, representing Carpenters Union Local 713 Richard Drury	December 21, 2009
Email	O-CNPS1	California Native Plant Society, Santa Clara Valley Chapter Kevin Bryant	December 21, 2009

(continued)

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.2 (Continued)

Comment Format	Commenter Code	Commenter	Comment Date
Letter	O-CNPS2	California Native Plant Society, East Bay and Santa Clara Valley Chapters Lech Naumovich Libby Lucas	December 21, 2009
Public Hearing	O-CWA	Clean Water Action Jennifer Clary	November 12, 2009
Public Hearing	O-EBBC	East Bay Bicycle Coalition Robert Raburn, Executive Director	November 10, 2009
Letter	O-FFBC1	Fremont Freewheelers Bicycle Club Jan Green, the Primavera Organizing Committee	December 11, 2009
Public Hearing	O-FFBC2	Fremont Freewheelers Bicycle Club Gary Smith and Jan Green	December 14, 2009
Public Hearing	O-FFBC3	Fremont Freewheelers Bicycle Club Jan Green	December 14, 2009
Public Hearing	O-GPFF	Grizzly Peak Fly Fishers Jim Scherrer, Conservation Chair	December 14, 2009
Letter	O-GWWF1	Golden West Women Flyfishers Cindy Charles, President and Conservation Chair	November 11, 2009
Public Hearing	O-GWWF2	Golden West Women Flyfishers Cindy Charles, President and Conservation Chair	December 14, 2009
Letter	O-LWVBA	League of Women Voters of the Bay Area Marion Taylor, Vice President, Program and Advocacy	November 18, 2009
Public Hearing	O-NCCFFF1	Northern California Council of Federation of Fly Fishers Anne-Marie Bakker, President	December 14, 2009
Letter	O-NCCFFF2	Northern California Council of Federation of Fly Fishers Bobbie Armor, Director and Conservation Peninsula Fly Fishers	December 14, 2009
Public Hearing	O-NCDCCL	Northern California District Council of Laborers Anthony Dimas	November 12, 2009

(continued)

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.2 (Continued)

Comment Format	Commenter Code	Commenter	Comment Date
Public Hearing	O-OpEng1	Operating Engineers Local 3 Ken Edgecombe, Business Representative	November 10, 2009
Public Hearing	O-OpEng2	Operating Engineers Union Charlie Lavery	November 12, 2009
Public Hearing	O-OpEng3	Operating Engineers Local 3 Mike Croll, Business Representative	December 14, 2009
Public Hearing	O-SFBCTC	San Francisco Building and Construction Trades Council Michael Theriault	November 12, 2009
Letter	O-SFBOMA1	San Francisco Building Owners and Managers Association Ken Cleaveland, Director, Government and Public Affairs	November 12, 2009
Public Hearing	O-SFBOMA2	San Francisco Building Owners and Managers Association Ken Cleaveland, Director, Government and Public Affairs	November 12, 2009
Letter	O-SFCofC	San Francisco Chamber of Commerce Rob Black, Vice President/Public Policy	November 12, 2009
Letter	O-SierraC	Sierra Club, San Francisco Bay Chapter Janis Turner	December 14, 2009
Public Hearing	O-TRT1	Tuolumne River Trust Jessie Raeder	November 10, 2009
Public Hearing	O-TRT2	Tuolumne River Trust, Bay Area Water Stewards, Salmon Aid Foundation Jessie Raeder	November 12, 2009
Public Hearing	O-TRT3	Tuolumne River Trust, Bay Area Water Stewards, Salmon Egg Coalition Jessie Raeder	December 14, 2009

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

Table 8.3: Individuals Commenting on the Draft EIR for the CDRP

Comment Format	Commenter Code	Commenter	Comment Date
Public Hearing	I-Atkinson	Rebecca Atkinson	November 12, 2009
Public Hearing	I-Blickenstaff	Jim Blickenstaff, Member, Mount Diablo Sierra Club	December 14, 2009
Public Hearing	I-Bridgman	Derrell Bridgman, Member, Northern California Council of Federation of Fly Fishers	December 14, 2009
Public Hearing	I-Cate	Corey Cate, Member, California Sport Fishing Protection Alliance, Tracy Fly Fishers, Tri Valley Fly Fishers, and the Northern California Council of Federation of Fly Fishers	December 14, 2009
Public Hearing	I-Cant	John Cant	November 10, 2009
Public Hearing	I-Carroll	John Carroll, Member, Alameda Creek Alliance	December 14, 2009
Public Hearing	I-Colen	Tim Colen	November 12, 2009
Public Hearing	I-Edgecombe	Ken Edgecombe	December 14, 2009
Email	I-Epp	Walter Epp	December 21, 2009
Public Hearing	I-Gargas	Dave Gargas, Member, Alameda Creek Alliance	November 10, 2009
Public Hearing	I-Graber	Douglas Graber	December 14, 2009
Public Hearing	I-Hansen	Richard Hansen	November 12, 2009
Public Hearing	I-Kirby	Glenn Kirby	November 10, 2009
Email	I-LaCommare	Bill LaCommare, President, MediaWorks Software	November 2, 2009
Email	I-Lawrence	Steve Lawrence	October 5, 2009
Email	I-Lucas1	Libby Lucas	December 21, 2009
Email	I-Lucas2	Libby Lucas, Member, California Native Plant Society	December 21, 2009
Public Hearing	I-Lynn	Mark Lynn	December 14, 2009
Public Hearing	I-Means	Robert Means	December 14, 2009
Public Hearing	I-Meghrouni	Sara Meghrouni	November 12, 2009
Public Hearing	I-Reazer	Dan Reazer	December 14, 2009
Public Hearing	I-Richardson	Matt Richardson	November 12, 2009
Public Hearing	I-Robertson	Mary Jean Robertson, Ohlone Profiles Project	December 14, 2009

(continued)

8. Introduction to Comments and Responses
8.4 Organization of Comments and List of Commenters

8.3 (Continued)

Comment Format	Commenter Code	Commenter	Comment Date
Public Hearing	I-Roy	Jeff Roy	December 14, 2009
Email	I-Salkow	Robert Salkow	November 3, 2009
Public Hearing	I-Sanderell	Richard Sanderell, Visions of the Future Environment	December 14, 2009
Public Hearing	I-Sargent	Gary Sargent	December 14, 2009
Public Hearing	I-Starbird	Tim Starbird	November 10, 2009
Letter	I-Urquhart	Kevan Urquhart, Certified Fisheries Professional – American Fisheries Society, and Member of the American Institute of Fishery Research Biologists, supporting Alameda Creek Alliance and the Center for Biological Diversity	December 21, 2009
Public Hearing	I-Workman	Jamie Workman	November 12, 2009
Letter	I-Werning	Karla and Curtis Werning, Members, Alameda Creek Alliance	December 14, 2009

9. PROJECT VARIANT

9.1 INTRODUCTION TO THE CDRP VARIANT

On July 16, 2010, subsequent to publication of the Draft EIR, the San Francisco Public Utilities Commission (SFPUC) submitted proposed refinements to the Calaveras Dam Replacement project (CDRP) to the U.S. Army Corps of Engineers as part of the Endangered Species Act consultation process with the National Marine Fisheries Service (NMFS) and in coordination with the California Department of Fish and Game (CDFG) as part of the California Lake and Streambed Alteration Agreement process (SFPUC 2010a). This coordination with the resource agencies resulted in additional fishery enhancements that would maintain and enhance fisheries and other aquatic resources in the southern Alameda Creek watershed, including Central California Coast steelhead once they have been restored to the watershed. The July 16, 2010 submittal to the U.S. Army Corps of Engineers is included as **Appendix N** to this document, which supersedes and replaces the approach for supporting aquatic resources previously presented in Appendix H of the EIR. The additional fishery enhancements proposed to be included in the CDRP consist of the following:

- Instream Flow Schedules below Calaveras Dam and the Alameda Creek Diversion Dam (ACDD)
- Fish Screen at the Alameda Creek Diversion Tunnel
- Fish Ladder around the ACDD
- Fish Screens at Calaveras Dam Adits #1 and #2
- Adaptive Management Implementation Plan (AMIP) for Central California Coast Steelhead

In addition, since publication of the Draft EIR, the SFPUC has updated and refined select elements of the CDRP as it was described and analyzed in the Draft EIR as part of its project development and design process. These project refinements to the CDRP consist of the following:

- Spillway Discharge Channel Grade Control Structures Modification
- Intake Tower Modifications
- Additional Instrumentation
- Right Dam Abutment Excavation Modification
- Electrical Distribution Line Upgrade
- Borrow Area E Modifications
- West Haul Road Work Area Modification

The SFPUC has incorporated the above-listed additional fishery enhancements and project refinements into the proposed project as described in the Draft EIR (referred to as the “Draft EIR

project”) to develop a variation on the project referred to as the CDRP Variant (or “Variant”). The CDRP Variant is the SFPUC’s preferred project.

This chapter provides a detailed description of the CDRP Variant and an evaluation of its environmental effects. The CDRP Variant, as described in Section 9.2 below, would be substantially the same as the Draft EIR project with the addition of fishery enhancements and project refinements to various facility and construction components of the Draft EIR project and the associated modification in operations. The analysis of the Variant, presented in Section 9.3 of this chapter, specifically addresses the environmental effects of the new project elements that differ from the Draft EIR project, but it also considers the impacts of the Variant as a whole project that incorporates the new elements. However, to avoid unnecessary repetition, the impact analysis of the Variant refers extensively to the information presented in Chapters 4, 5, 6, and 7 of the EIR where the environmental impact analysis of the Variant would be substantially the same as that of the Draft EIR project.

As described in this chapter, the description and environmental analysis of the CDRP Variant indicates that no significant new information has been added to the EIR and it does not change the conclusions reached in the EIR. The California Environmental Quality Act (CEQA) Guidelines Section 15088.5 states that a lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review. Under these guidelines, “significant new information” requiring recirculation include a disclosure that:

- “(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project’s proponents decline to adopt it.”

The environmental analysis of the CDRP Variant presented in this chapter concludes that none of the above conditions apply due to the inclusion of the Variant in the EIR. New information added to the EIR in this Comments and Responses document only serves to clarify or amplify information on the Draft EIR project and to provide appropriate information in the context of the Variant. The analysis indicates that: (1) no new significant effects or substantially more severe significant effects would result from the Variant beyond those identified for the Draft EIR project; (2) no new mitigation measures are identified for the Variant that would be required to mitigate new or more severe significant impacts; (3) with implementation of mitigation measures identified in the EIR as applicable to the Variant, there would be no substantial increase in the severity of an environmental impact under the Variant compared to the Draft EIR project; and (4) the Variant raises no additional alternatives or mitigation measures considerably different from

those analyzed for the Draft EIR project. All necessary environmental analysis of the CDRP Variant, based largely on the analysis of the Draft EIR project, is described in this Comment and Responses document.

9.2 DESCRIPTION OF THE CDRP VARIANT

9.2.1 PROJECT OBJECTIVES

The CDRP Variant would have the identical project purpose and objectives as that of the Draft EIR project (EIR, Vol. 1, Chapter 3, Section 3.2, pages 3-2 to 3-10). The CDRP Variant would achieve all the project goals and objectives as the Draft EIR project, although the ability to help meet the SFPUC's dry year delivery needs could be slightly affected (see further discussion below, Section 9.3.1, Environmental Effects of the CDRP Variant, Relationship to the WSIP).

9.2.2 ELEMENTS OF THE VARIANT

The main project elements of the Variant would be substantially the same as those of the Draft EIR project (EIR, Vol. 1, Chapter 3, Sections 3.4, 3.5, and 3.6, pages 3-23 to 3-70), with the addition of proposed fishery enhancements and select project refinements. **Table 9.1** presents a comparison of the Draft EIR project and CDRP Variant with respect to the proposed facilities and associated construction and operational scenarios. Under the CDRP Variant as under the Draft EIR project, the SFPUC would build a new dam to replace the existing Calaveras Dam and replace or modify related facilities such as the spillway, inlet shaft, and outlet pipe; would build fishery enhancements at Calaveras Dam and at the ACDD; and would require construction activities east, west, and south of the reservoir. All discretionary approvals and agencies involved with the Variant would be identical to those for the Draft EIR project (EIR, Vol. 1, Chapter 3, Section 3.7, pages 3-70 to 3-74).

For the aspects of the Variant that are unchanged and therefore identical to the Draft EIR project, refer to the Draft EIR pages indicated in Table 9.1 for a full description. The following subsections describe the CDRP Variant project elements that differ from the Draft EIR project: the fishery enhancements and select project refinements. **Table 9.2** summarizes the elements of Variant that differ from the Draft EIR project and the associated construction and operational modifications, and **Figure 9.1: Location of CDRP Variant Project Elements Differing from the Draft EIR Project**, shows the location of each of these elements. Below is a general description of each element followed by a discussion of associated construction activities, construction schedule, and operations associated with each element in subsequent subsections.

Table 9.1: Comparison of the Draft EIR Project and CDRP Variant

Draft EIR Project	CDRP Variant
Facilities	
Replacement dam: design criteria, design and composition of the replacement dam (Draft EIR, pages 3-24 to 3-286)	Same, no changes
Spillway (Draft EIR, pages 3-28 to 3-30)	Same, with minor modifications to the downstream end of the spillway discharge channel (see “Description of Other Project Refinements in the Dam Vicinity,” below)
Intake shafts and adits (Draft EIR, pages 3-30 to 3-31)	Same, with minor modifications to design of the intake tower and addition of fish screens on Adits #1 and #2 (see “Description of Other Project Refinements in the Dam Vicinity,” below)
Outlet pipe, stream discharge valves, supporting facilities (Draft EIR, pages 3-31)	Same, no changes
Instrumentation (Draft EIR, pages 3-31 to 3-32)	Same, with the addition of an accelerograph (see “Description of Other Project Refinements in the Dam Vicinity,” below)
ACDD bypass facility (Draft EIR, pages 3-32)	Same, with the addition of a fish screen at the Alameda Creek Diversion Tunnel, and a fish ladder skirting the ACDD (see “Description of Fishery Enhancements,” below)
(Not included in Draft EIR project)	Addition of a new element, Electrical Distribution Line Upgrade to the west and south of the reservoir (see “Description of Project Refinements in the Vicinity West and South of the Reservoir,” below)
Construction	
Use of the existing dam as the cofferdam (Draft EIR, page 3-33)	Same, no changes
Excavation and construction of the dam foundation and embankment (Draft EIR, pages 3-35 to 3-37)	Same, but slightly expanded excavated area for the right dam abutment (see “Description of Other Project Refinements in the Dam Vicinity,” below)
Excavation and construction of the spillway (Draft EIR, pages 3-37)	Same, no changes
Source of materials for construction (Draft EIR, pages 3-37 to 3-42)	Same, with minor exception of modifications to Borrow Area E (see “Description of Project Refinements in the Vicinity West and South of the Reservoir,” below)
Construction staging areas (Draft EIR, page 3-43)	Same, no changes
Disposal sites (Draft EIR, pages 3-43 to 3-49)	Same, no changes
Access and roads (Draft EIR, pages 3-50 to 3-55)	Same, with minor modifications to West Haul Road work area (see “Description of Project Refinements in the Vicinity West and South of the Reservoir,” below)
Demolition and construction of support buildings (Draft EIR, page 3-55)	Same, no changes

(continued)

Table 9-1 (Continued)

Draft EIR Project	CDRP Variant
Blasting (Draft EIR, pages 3-55 to 3-56)	Same, no changes
Construction of ACDD bypass facility (Draft EIR, pages 3-56 to 3-59)	Same, but to be built in conjunction with construction of new elements at the ACDD: fish screen and fish ladder (see Section 9.2.3, Construction of the Variant, below)
SFPUC standard construction measures and greenhouse gas reduction actions (Draft EIR, pages 3-59 to 3-60)	Same, no changes
Operation of Calaveras Reservoir during construction (Draft EIR page 3-62)	Same, no changes
Operations	
Calaveras Reservoir operations (Draft EIR, pages 3-64 to 3-65)	Same, except for implementation of instream flow schedule below Calaveras Dam (see Section 9.2.5, Variant Operations, below)
Cone valve operations (Draft EIR, pages 3-65 to 3-66)	Same, no changes
ACDD Operations (Draft EIR, page 3-66)	Replaced by proposed minimum bypasses and diversion schedule at the ACDD (see Section 9.2.5, Variant Operations, below)
Resident rainbow trout flow releases (Draft EIR, pages 3-66 to 3-69)	Replaced by proposed minimum instream flow schedules below Calaveras Dam and ACDD (see Section 9.2.5, Variant Operations, below)
Steelhead flow releases (Draft EIR, pages 3-69 to 3-70), including footnotes to Table 3.7 (page 3-70)	Replaced by proposed minimum instream flow schedules below Calaveras Dam and ACDD (see Section 9.2.5, Variant Operations, below)
(Not included as an element of the Draft EIR project, but similar activities would be implemented under Mitigation Measures 5.5.5a, Rainbow Trout Monitoring, and 5.5.5b, Resident Rainbow Trout Adaptive Management (Draft EIR, pages 5-16 to 5-17)	Adaptive Management Implementation Plan for Central Coast Steelhead (see Section 9.2.5, Variant Operations, below)

Description of Fishery Enhancements

The fishery enhancement components of the CDRP Variant are: (1) Instream Flow Schedules; (2) Fish Screen at the Alameda Creek Diversion Tunnel; (3) Fish Ladder around the ACDD; (4) Fish Screens at Calaveras Dam Adits #1 and #2; and (5) AMIP for Central California Coast Steelhead. These fishery enhancement components would be located within the same study area analyzed in the Draft EIR and would involve similar construction activities and effects.

Table 9.2: Summary of CDRP Variant Elements that Differ from the Draft EIR Project

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
Additional Fishery Enhancements			
<p>Proposed Instream Flow Schedules. The SFPUC, in agreement with NMFS and CDFG, would implement two minimum flow schedules: one below the ACDD and one below Calaveras Dam. The flow schedules are designed to maintain and enhance fish habitats for resident trout and other native species, including Central California Coast steelhead.</p>	<p>The proposed instream flow schedules would replace the flow schedules for resident rainbow trout and steelhead described for the Draft EIR project (EIR Sections 3.6.5 and 3.6.6, pp. 3-66 to 3-70, including Table 3.7 and Appendix H). The proposed flow schedules for the Variant would increase the annual average flows in Alameda and Calaveras Creeks downstream of the ACDD and Calaveras Dam compared to those under the Draft EIR project and would institute two points of compliance (below the ACDD and Calaveras Dam) rather than just one (just downstream of the confluence of Alameda and Calaveras Creeks).</p>	<ul style="list-style-type: none"> • Two low-flow valves included as part of Draft EIR project; no additional construction required. 	<ul style="list-style-type: none"> • Releases to be implemented upon completion of CDRP construction, estimated to be by 2015.
<p>Fish Screen at the Alameda Creek Diversion Tunnel. A fish screen and associated power system would be constructed at the Alameda Creek Diversion Tunnel, immediately upstream of the ACDD, to prevent fish from being transported from upper Alameda Creek to Calaveras Reservoir through the Alameda Creek Diversion Tunnel.</p>	<p>This fish screen was not included as part of the Draft EIR project, but would be located directly adjacent to the proposed ACDD bypass facility, described in EIR Section 3.5.2, pp. 3-56 to 3-59.</p> <p>Although the EIR does not identify a significant impact on fish due to entrainment in the Diversion Tunnel (EIR pp. 4.5-66 to 4.5-69), the SFPUC is proposing the fish screen as the result of regulatory permitting activities with the CDFG and NMFS.</p>	<ul style="list-style-type: none"> • Construction during the dry season coordinated with the concurrent construction of the ACDD bypass facility. • Same staging area and similar work area containment as analyzed for the proposed ACDD bypass facility. • Temporary instream grading for access ramp. • Permanent footings in creek to anchor facility within the same footprint as the existing trash rack and concrete footings that support the trash rack. 	<ul style="list-style-type: none"> • Diversion capacity of the diversion tunnel would be reduced from approximately 650 to 370 cubic feet per second (cfs). • With the fish screen at the Alameda Creek Diversion Tunnel, sluicing frequency to manage sediment buildup would increase from annually to approximately every 4 to 8 weeks during the wet season. • Every 3 to 5 years, the SFPUC would conduct instream repositioning of sediment adjacent to the screen, as necessary.

(continued)

Table 9.2 (Continued)

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
		<ul style="list-style-type: none"> • New temporary work containment area upstream of the work containment area for the ACDD bypass facility. • Increase in construction equipment, construction duration at the ACDD, and number of workers and vehicles from the Draft EIR project estimates for the bypass facility alone. See Table 9.3. 	
<p>Fish Ladder around the ACDD. A 650-foot-long fish ladder would be constructed along the north bank of Alameda Creek, skirting the ACDD, to provide access for future restored populations of steelhead to spawning and rearing habitat upstream of the ACDD.</p>	<p>A fish ladder at the ACDD was not included as part of the Draft EIR project, but the ladder would be located in the same study areas as the proposed ACDD bypass facility, described in EIR Section 3.5.2, pp. 3-56 to 3-59.</p> <p>Although the EIR does not identify a significant impact related to creating barriers to fish movement and migration (EIR pp. 4.5-56 and 4.5-57), the SFPUC is proposing the fish ladder as the result of regulatory permitting discussions with the CDFG and NMFS.</p>	<ul style="list-style-type: none"> • Clear vegetation and topsoil, excavate soil and rock along north bank of Alameda Creek along a 30-foot-wide, 650-foot-long corridor. Erect formwork and pour concrete to form a concrete channel (fish ladder) skirting the ACDD. Install hydraulic controls. • To lead fish to the ladder, install barriers across the creek at the ends of the fish ladder (downstream of the existing concrete apron at the ACDD and about 400 feet upstream of the ACDD) using small, temporary cofferdams if needed during construction. • Construction to be completed by 2015, and construction period is 6 months, with all or most construction occurring during the dry season. • Increase in construction equipment and construction duration at ACDD, and number of workers and vehicles from the Draft EIR project estimates for the bypass facility alone. See Table 9.3 	<ul style="list-style-type: none"> • Operational flows in the fish ladder would contribute to the 30 cfs minimum bypass between December and April, as described in the proposed instream flow schedule. Flows in the fish ladder would range from 5 to 30 cfs, depending on final design of the ladder. • Annual inspection and clearing of debris and sediment from fish ladder before December, and additional inspection and clearing as needed from December to April.

(continued)

Table 9.2 (Continued)

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
<p>Fish Screens at Calaveras Dam. Adits #1 and #2. Existing screens would be replaced with new screens installed on the lowest adits (Adits #1 and #2) to improve protection for fish against entrainment/ impingement.</p>	<p>The Draft EIR project would reuse the existing Adits #1 and #2 as is (Section 3.3.1.2, pp. 3-13 and Section 3.4.2.2, pp. 3-30), but the Variant would include new fish screens at these adits.</p> <p>Although the EIR does not identify a significant impact on fish due to entrainment in Adits #1 and #2 (EIR pp. 4.5-76 to 4.5-78), the SFPUC is proposing the fish screens on these adits as the result of regulatory permitting discussions with the CDFG and NMFS.</p>	<ul style="list-style-type: none"> The existing adit fish screens would be replaced during the already planned reservoir shutdown phases (mid-April to mid-November). Construction equipment would work within the reservoir, and no new area would be affected. 	<ul style="list-style-type: none"> No changes.
<p>Adaptive Management Implementation Plan (AMIP) for Central California Coast Steelhead. The SFPUC would implement this management strategy as part of its commitment to restore and monitor steelhead in the southern Alameda Creek watershed. In addition to the physical facilities and flows described above as part of the additional fishery enhancements, the AMIP includes monitoring programs, studies, reporting, and other management actions.</p>	<p>The Draft EIR project did not include adaptive management or monitoring as part of the project description. However, Mitigation Measures 5.5.5a and 5.5.5b identified for the Draft EIR project (EIR pp. 5-16 to 5-17) provided for monitoring and adaptive management for resident rainbow trout. Under the Variant, the AMIP would supersede these two mitigation measures.</p>	<ul style="list-style-type: none"> No construction component beyond additional fishery enhancements described above. 	<ul style="list-style-type: none"> Supplemental studies, data collection and analyses targeted for completion in 2012 through 2018. Monitoring of streamflow, temperature, biological response, and habitat upon completion of CDRP construction, by 2015. Annual reporting of monitoring activities.

(continued)

Table 9.2 (Continued)

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
Project Refinements			
<p>Spillway Discharge Channel Grade Control Structures. At the downstream end of the proposed new spillway, the bottom of the discharge channel would be stabilized by three subsurface grade-control structures if the quality of the rock is poor.</p>	<p>The Variant would include refinements to the project design of the Spillway Discharge Channel identified for the Draft EIR project (EIR Section 3.4.2.1, pp. 3-28 to 3-30), consisting of additional grade-control structures.</p>	<ul style="list-style-type: none"> • Minor refinement to work previously proposed for the discharge channel. 	<ul style="list-style-type: none"> • No changes.
<p>Intake Tower Modifications. The intake tower would be about 25 feet taller than described for the Draft EIR project in order to accommodate additional architectural design features.</p>	<p>The Variant would include modifications to the design of the Intake Tower identified for the Draft EIR project (EIR Section 3.4.2.2, p. 3-30).</p>	<ul style="list-style-type: none"> • No changes. 	<ul style="list-style-type: none"> • No changes.
<p>Electrical Distribution Line Upgrade. Pacific Gas and Electric Company (PG&E) would upgrade approximately 7 miles of an existing power line between Calaveras Dam and a location in eastern Milpitas, west and south of the reservoir, to provide additional power necessary for CDRP construction. The SFPUC would coordinate with PG&E during the design and construction of the upgrade.</p>	<p>This upgrade of an existing power line was not included in the Draft EIR project. Part of the power line is located within the CDRP project area, and the remaining portion is within an existing PG&E right-of-way west of the project area.</p>	<ul style="list-style-type: none"> • Construction would take 2–3 months prior to the first CDRP construction season. • Confine construction within existing PG&E 30-foot easement along the alignment to the extent feasible, but some vegetation removal might be required. • Staging areas and pulling and tensioning sites to be located in previously disturbed areas to the extent feasible, but could require area outside the easement. Limited vegetation removal might be required at these sites, but no grading expected. • Some of the existing 85 poles along the alignment could require replacement, and some new poles (approximately 8 to 10) would be installed. New poles would be inserted into holes up to 10 feet in depth. 	<ul style="list-style-type: none"> • No changes.

(continued)

Table 9.2 (Continued)

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
		<ul style="list-style-type: none"> • If limited work is required in environmentally sensitive areas, workers to employ special precautions, including hand tools and walking into sites to avoid effects on sensitive resources. • Increase in construction workers and vehicles compared to Draft EIR project. See Table 9.3 	<ul style="list-style-type: none"> •
<p>Additional Instrumentation. To support seismic research in the region, a free-field accelerograph would be installed north of the dam within Staging Area 7 to provide strong motion data to the State of California Strong Motion Instrumentation Program.</p>	<p>This project element is in addition to the instrumentation requirements at the dam embankment and foundation downstream of the dam and in the abutments, identified for the Draft EIR project (EIR Section 3.4.2.5, pp. 3-31 and 3-32).</p>	<ul style="list-style-type: none"> • Construct a 3-foot-high fiberglass enclosure on a small concrete pad (approximately 4-foot square) within Staging Area 7. A photovoltaic cell to be mounted on a 4-foot-high pole adjacent to the pad. • The accelerograph enclosed within a 10-foot by 10-foot fenced area. • Construction disturbance confined entirely within Staging Area 7. • No substantial changes to construction equipment, workers, vehicles, or schedule. 	<ul style="list-style-type: none"> • No changes.
<p>Right Dam Abutment Excavation. At the right dam abutment, the construction area would be widened by about 50 feet for a length of about 200 feet.</p>	<p>This is the area identified in the EIR (EIR Figure 3.8, Section 3.5.1.2, pp. 3-35 to 3-37) where several landslides have occurred, and would require stabilization. Compared to the Draft EIR project, the associated dam site limit of work would be expanded to include an additional temporary work area necessary for this excavation.</p>	<ul style="list-style-type: none"> • Construction work area expanded by 50 feet at the right dam abutment for about 200 feet. • No changes in construction equipment, workers, or schedule. 	<ul style="list-style-type: none"> • No changes.

(continued)

Table 9.2 (Continued)

Description of Project Update	Relationship to Draft EIR Project	Construction	Operations
<p>Borrow Area E Modifications. The Borrow Area E boundary would be modified to improve conditions for the long-term reestablishment of seasonal wetlands in a portion of this area. Rather than holding part of Borrow Area E in reserve, all of the borrow area is anticipated for use for dam construction materials. The excavation would be shallower.</p>	<p>The Variant would modify the design of Borrow Area E identified for the Draft EIR project (EIR Figure 3-8, pp. 3-33 to 3-42).</p>	<ul style="list-style-type: none"> • The excavation at Borrow Area E is expected to encompass the entire site and would be shallower than described for the Draft EIR project. • No changes in construction equipment or truck trips. 	<ul style="list-style-type: none"> • No changes.
<p>West Haul Road Work Area. The limits of work for the West Haul Road would be relocated slightly down-slope, but would remain within the former inundation area to provide a construction buffer.</p>	<p>The Variant would expand the design of the West Haul Road work area identified for the Draft EIR project (EIR Figure 3-13, Section 3.5.1.7, pp. 3-50 to 3-55) to provide a construction buffer.</p>	<ul style="list-style-type: none"> • Disturbed acres below the 756-foot elevation to increase from 32 to about 37 acres. • All work associated with the revised construction area remains within areas previously identified and analyzed for the Draft EIR project as permanent impact areas within the inundation zone. 	<ul style="list-style-type: none"> • No changes.

Instream Flow Schedules

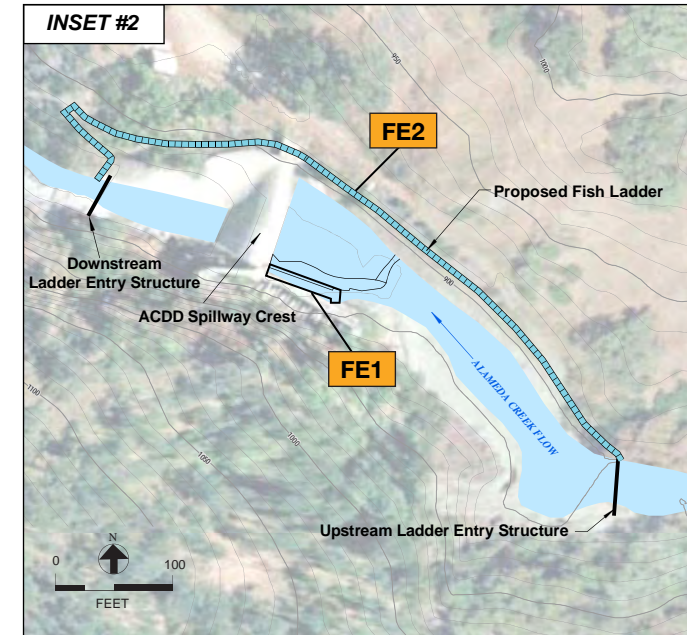
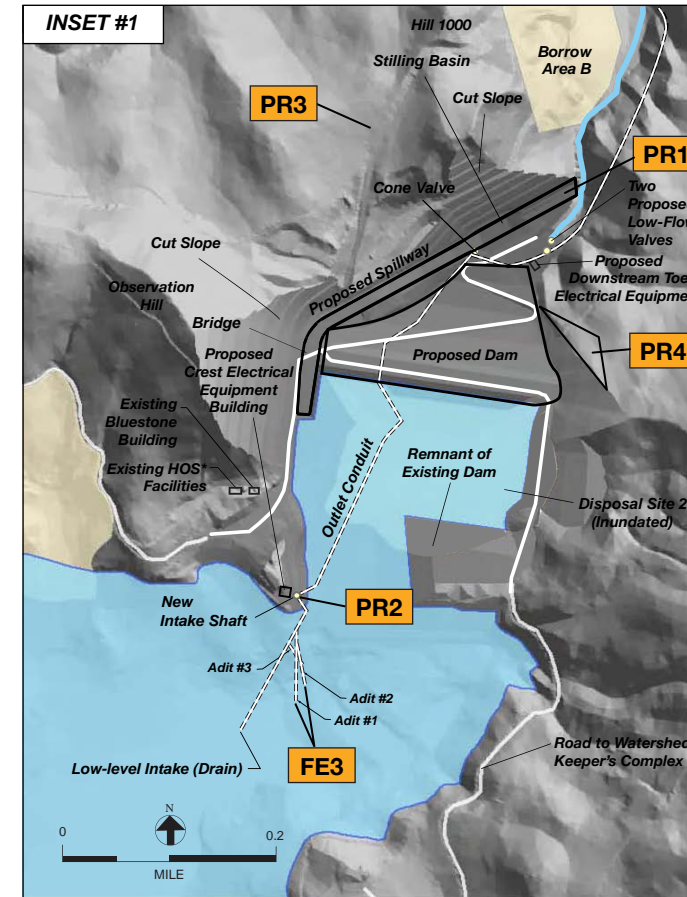
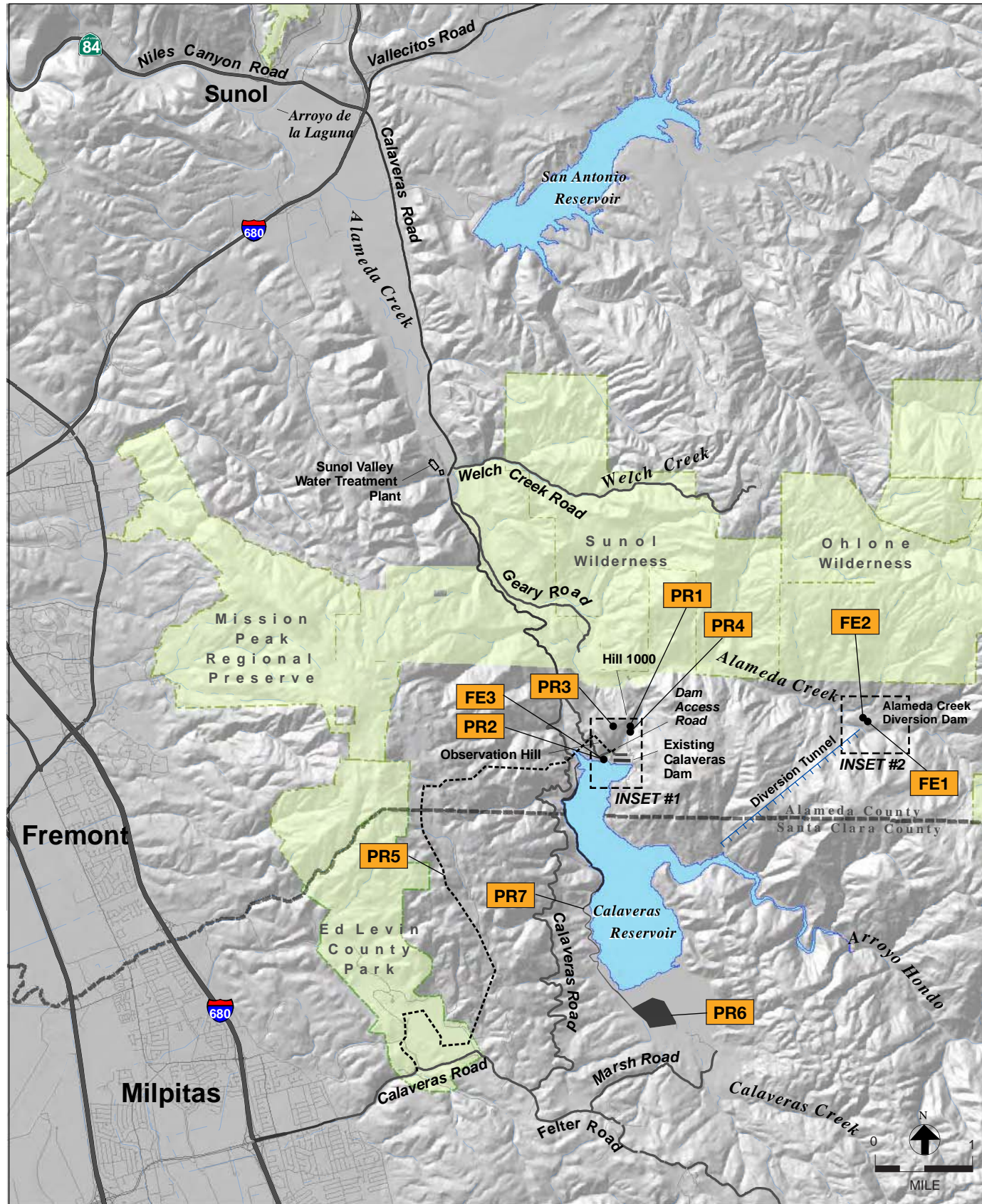
The SFPUC, in coordination with and as agreed to by NMFS and CDFG, would implement instream flow schedules below Calaveras Dam and ACDD that under the Variant would revise and supersede the flow schedules described for the Draft EIR project (Vol. 1, Chapter 3, Sections 3.6.5 and 3.6.6, pages 3-66 to 3-70, and Appendix H). The proposed flow schedules for the Variant would increase the annual average flows in Alameda and Calaveras Creeks downstream of the ACDD and Calaveras Dam compared to those under the Draft EIR project and would institute two points of compliance (below the ACDD and Calaveras Dam) rather than just one (just downstream of the confluence of the Alameda and Calaveras Creeks). The specific details of the proposed instream flow schedules and their implementation in conjunction with the AMIP are described below in **Section 9.2.5, Variant Operations**.

Fish Screen at the Alameda Creek Diversion Tunnel

In conjunction with the ACDD bypass facility described in the EIR (Vol. 1, Chapter 3, Section 3.4.3, page 3-32, and Section 3.5.2, pages 3-56 to 3-59), the SFPUC would install a fish screen at the upstream end of the Alameda Creek Diversion Tunnel, immediately upstream of the ACDD. The fish screen would be designed to prevent fish from being transported from Alameda Creek to Calaveras Reservoir through the tunnel during the December 1 to March 31 period when the gates are open. The new screen facility would require retrofit and modification of the existing trash-rack structure and would be located directly upstream of the proposed ACDD bypass facility, as shown in **Figure 9.2: Proposed Fish Screen at Alameda Creek Diversion Tunnel – CDRP Variant**. The design and configuration of the screen facility would be integrated with the stream channel where Alameda Creek flow is directed toward the Alameda Creek Diversion Tunnel. The proposed screen would reduce the diversion capacity from approximately 650 cubic feet per second (cfs) to 370 cfs (URS and HDR 2009). It is expected that construction of the fish screen would be completed by 2015.

The screen at the ACDD would be designed and constructed consistent with the guidelines and criteria established by the CDFG (2010) and NMFS (1997), and would be designed in consultation with both agencies. At their request, these agencies would review and approve the design of the fish screen at the 60 percent design phase. In general, the design criteria would include requirements for a combination of appropriate factors including: (1) approach velocity, (2) sweeping velocity, and (3) screen slot size, in accordance with applicable CDFG and NMFS fish screen criteria and guidelines.¹

¹ Approach velocity is defined as the velocity of water that passes through a screen perpendicular to the screen openings. Sweeping velocity is the velocity of water that runs parallel to the screen openings. At the Alameda Creek Diversion Tunnel, the sweeping velocity requirement would be determined by flows entering the ACDD bypass facility at the downstream end of the screen.



CDRP VARIANT SUMMARY OF UPDATES

Additional Fishery Enhancements

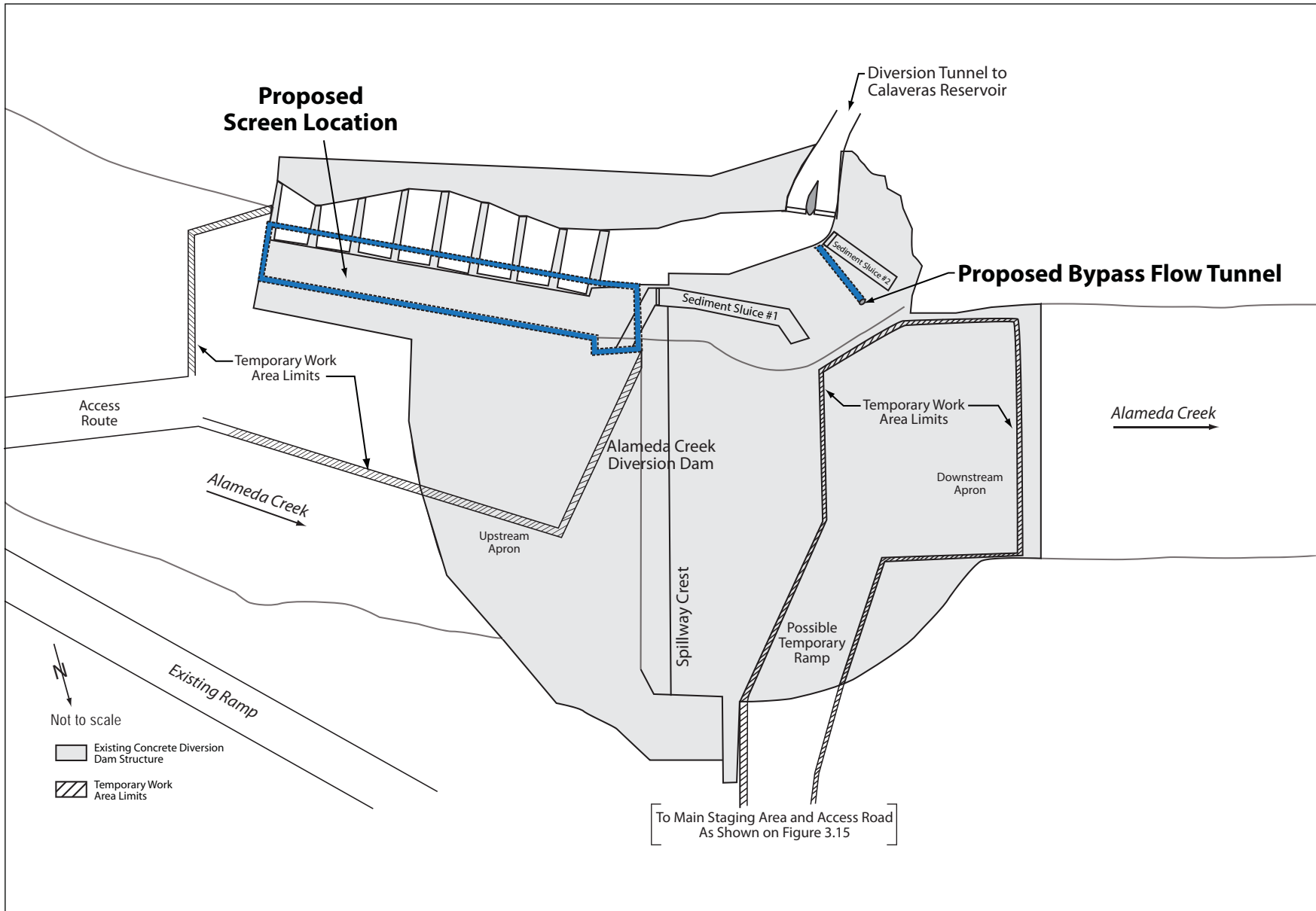
- FE1** Fish Screen at the Alameda Creek Diversion Tunnel
- FE2** Fish Ladder around the Alameda Creek Diversion Dam
- FE3** Fish Screens at Calaveras Dam Adits #1 and #2

Project Refinements

- PR1** Spillway Discharge Channel Grade Control Structures Modification
- PR2** Intake Tower Modifications
- PR3** Additional Instrumentation
- PR4** Right Dam Abutment Excavation Modification
- PR5** Electrical Distribution Line Upgrade
- PR6** Borrow Area E Modifications
- PR7** West Haul Road Work Area Modification

FIGURE 9.1: LOCATION OF CDRP VARIANT PROJECT ELEMENTS DIFFERING FROM THE DRAFT EIR PROJECT

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SOURCE: URS

CALAVERAS DAM REPLACEMENT PROJECT

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FIGURE 9.2: PROPOSED FISH SCREEN AT ALAMEDA CREEK DIVERSION TUNNEL - CDRP VARIANT

The fish screen would include permanent footings located within the stream and diversion channel. As indicated in Figure 9.2, the screen would be located within the same footprint as the existing trash rack and concrete footings that support the trash rack. There would be no change in the area occupied by permanent structures in the channel, and no additional fill is expected to be needed to support the screen. The existing ramp to the stream channel would be utilized as needed for access and maintenance activities associated with the proposed screen. Temporary grading (such as placement of gravel within the channel), if needed for construction access, would be removed upon completion of construction.

A power system would operate the screen-cleaning mechanism and associated monitoring equipment. This power system would consist of a combination of renewable and conventional power equipment, such as solar photovoltaics, micro-hydroelectric, and propane engine generator systems. The main components of the power system are expected to be located near the existing utility shed and parking area adjacent to the ACDD. The generator would be approximately 10 kilowatts or smaller. The generator would be used to recharge batteries and would serve as a backup power supply rather than as the primary power supply, which would be provided by solar photovoltaics. The generator would run for at least 1 hour, when needed, and as frequently as several times per week under peak usage. However, the power system would be designed so that the generator would typically run once per week or less. Typical noise levels for the generator would be approximately 68 A-weighted decibels (dBA)² at 23 feet.

Fish Ladder around the Alameda Creek Diversion Dam

In conjunction with the ACDD bypass facility described in the EIR (Vol. 1, Chapter 3, Section 3.4.3, page 3-32, and Section 3.5.2, pages 3-56 to 3-59) and the fish screen at the Alameda Creek Diversion Tunnel described above, the SFPUC would construct a fish ladder to provide passage to additional upstream spawning and rearing habitat above the ACDD for future restored populations of steelhead. It is expected that construction of the fish ladder would be completed by 2015 at the same time that the dam replacement is completed.

The SFPUC examined preliminary approaches for upstream fish passage at the ACDD (URS and HDR 2009) and, in coordination with NMFS and CDFG, identified a fish ladder as the preferred approach. Fish ladders are structures that enable fish to pass around or over a dam through their own volition. Ladders typically consist of a channel through which water flows over weirs to create a series of pools. The elevation difference between each pool, often about 1 foot, is small enough for fish to ascend by leaping from pool to pool.

² Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called “A-weighting,” expressed as “dBA.” The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies.

The SFPUC will complete the ladder design in coordination with NMFS and CDFG, and the SFPUC will submit design details for the fishway to NMFS and CDFG for review and approval.

It is expected that the fish ladder at the ACDD would be constructed on the north bank of Alameda Creek, skirting the ACDD, as shown in **Figure 9.3: Proposed Fish Ladder at the Alameda Creek Diversion Dam – CDRP Variant**. The entrance to the diversion tunnel at the ACDD, where the fish screen would be constructed, is located on the opposite bank. The proposed fish ladder would consist of a concrete channel extending along the bank of Alameda Creek and would be about 650 feet long.

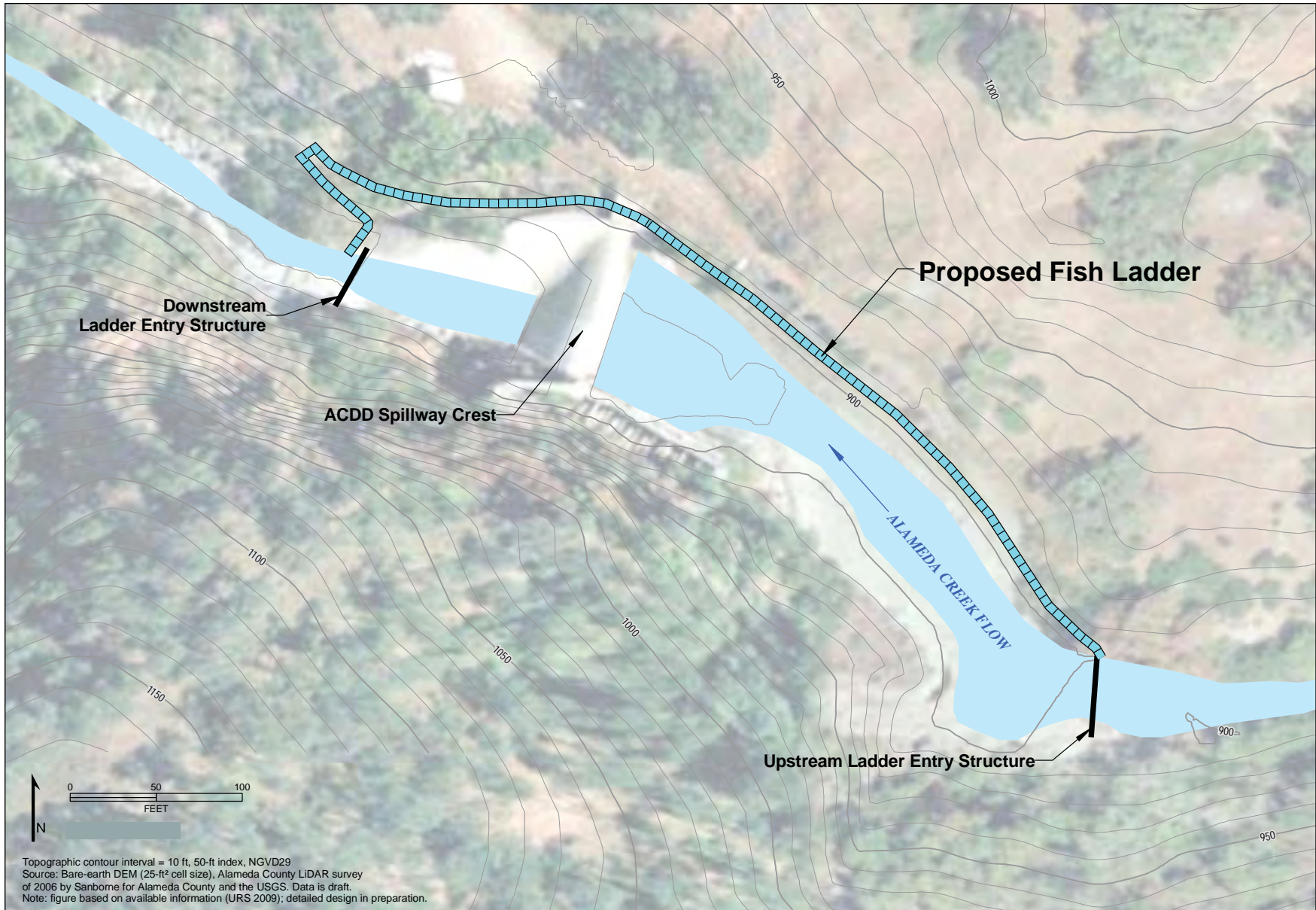
The downstream entrance to the fish ladder would be located about 150 feet downstream of the crest of the ACDD. To encourage immigrating fish to move toward the entrance to the fish ladder, a drop structure or other feature would be installed in the creek adjacent to the ladder entrance. The upstream exit to the fish ladder would be located about 400 feet upstream of the ACDD. A low concrete structure would divert flows from Alameda Creek into the ladder at the upstream end, and hydraulic controls would be installed at the upstream end of the fish ladder. The hydraulic controls would consist of a sliding gate or similar device that would control the amount of water entering the fish ladder but would not impede fish passage. The hydraulic controls would also enable the SFPUC to limit or cut off flows through the fish ladder at times outside of the anticipated fish immigration period and during maintenance.

Fish Screens at Calaveras Dam Adits #1 and #2

Under the Draft EIR project (Section 3.4.2.2, page 3-30), the three existing adits at Calaveras Dam would be retained as part of the CDRP and connected to the new intake shaft. These adits currently have screens, but the screens on the lower two adits do not conform to NMFS and CDFG guidelines. As part of the CDRP Variant, the SFPUC would install new replacement screens on the two lower adits on the Calaveras Reservoir intake shaft to protect the existing resident population of rainbow trout from entrainment. The new screens would be designed in accordance with applicable NMFS and CDFG guidelines for fish screens (CDFG 2010, NMFS 1997) and would be installed on the lowest adits (Adits #1 and #2) in Calaveras Reservoir. The new screens would prevent entrainment/impingement of fish during transmission of water from the reservoir through the adits to Calaveras Pipeline or Calaveras Creek. The uppermost adit (Adit #3) has a screen that conforms to the CDFG guidelines and would not be replaced.

Adaptive Management Implementation Plan for Central California Coast Steelhead

The SFPUC developed the AMIP for Central California Coast steelhead in coordination with NMFS and CDFG. It is part of an overall management strategy to support and monitor steelhead in the southern Alameda Creek watershed. Refer to Section 9.2.5, below for more information on the AMIP, which would be implemented as part of Variant operations.



SOURCE: URS

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FIGURE 9.3: PROPOSED FISH LADDER AT ALAMEDA CREEK DIVERSION DAM - CDRP VARIANT

Description of Other Project Refinements in the Dam Vicinity

Spillway Discharge Channel Grade Control Structures Modification

The Draft EIR project (Chapter 3, Section 3.4.2.1, page 3-28) included a new, enlarged spillway located on the western end of the dam. As described in the EIR, at the downstream end of the proposed new spillway below the new stilling basin there would be a discharge channel approximately 50 feet wide by 400 feet long to provide the connection between the stilling basin and Calaveras Creek for discharge into the creek approximately 1,200 feet downstream of the current discharge location. The discharge channel would be excavated in rock.

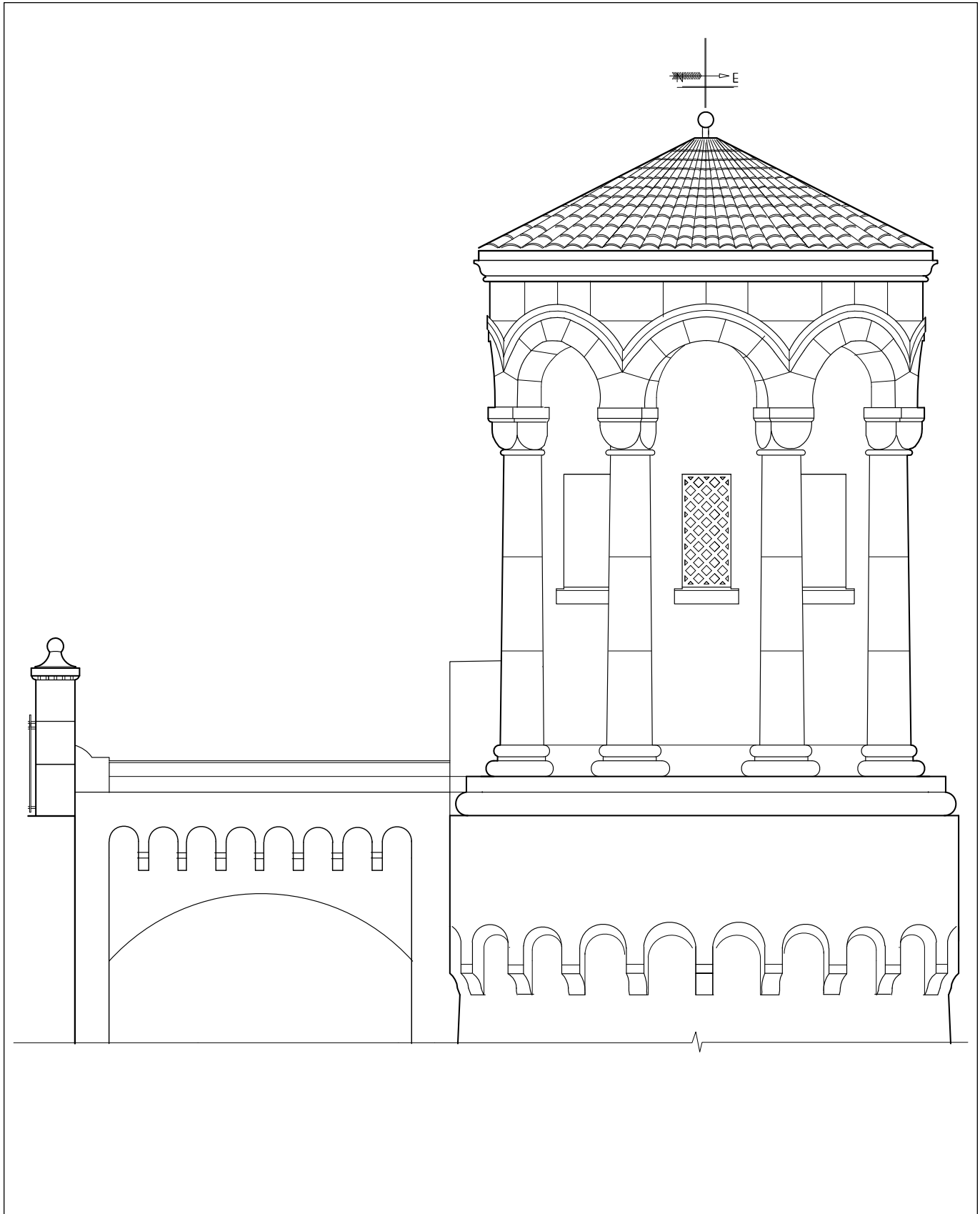
Under the Variant, this design refinement calls for the construction of three grade control structures, approximately 3 to 5 feet wide and 5 to 10 feet deep, at the bottom of the discharge channel for the dam spillway (Figure 9.1 shows the location of this design refinement). These structures would be required only if the quality of the rock is poor. The grade control structures would result in a small increase in construction area of approximately 100 square feet. The top of each would be flush with the channel. If the rock in the discharge channel is competent, then the channel would not require any reinforcements and the grade-control structures would not be needed. If it is required, this design refinement would not result in changes to the operations described for the Draft EIR project.

Intake Tower Modifications

Under the Variant, the intake tower would be about 25 feet taller than described for the Draft EIR project (Chapter 3, Section 3.4, p. 3-30), and would reach to an elevation of about 810 feet (about 55 feet above maximum reservoir surface level) in order to accommodate additional architectural elements in the design. The tower would include decorative arches and a sloped roof and would reuse the weather vane and ornamental gate from the existing tower. This design refinement, shown in **Figure 9.4: Proposed Intake Tower Modifications – CDRP Variant**, would result in no changes in project construction and operations from that of the Draft EIR project.

Additional Instrumentation

To support seismic research in the region, the Variant would include installation of a free-field accelerograph north of the dam within Staging Area 7 to provide strong motion data to the State of California Strong Motion Instrumentation Program. The accelerograph would be housed in an approximately 3-foot-high fiberglass enclosure mounted to a 4-square-foot concrete pad and would be powered by a photovoltaic cell mounted on a 4-foot-high, 6-inch-diameter steel post located adjacent to the accelerograph pad. The accelerograph would be enclosed by an approximately 10-foot-by-10-foot fence.



SOURCE: SFPUC

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

**FIGURE 9.4: PROPOSED INTAKE TOWER MODIFICATIONS -
CDRP VARIANT**

Right Dam Abutment Excavation Modification

The EIR (Section 3.5.1.2, page 3-36) identified areas where several landslides have occurred and would require stabilization. Under the Variant, the SFPUC would slightly expand (0.37 acre) the limit of excavation for the right dam abutment compared to the Draft EIR project to allow for deeper excavation of a portion of the right abutment foundation for the dam. The construction area would be widened by about 50 feet at the right dam abutment foundation for a length of about 200 feet. The associated dam site limit of work would also be expanded to include additional temporary work area necessary for this excavation. The additional volume of excavated material from the right abutment is estimated to be on the order of 10,000 cubic yards, a small additional amount when compared to the over 2.7 million cubic yards of material estimated to be excavated for the dam foundation for either the Draft EIR project or the Variant. There would be a nominal number of additional truck trips associated with this small increase in volume of excavated material.

Electrical Distribution Line Upgrade

Electrical power is currently provided to the Calaveras Dam facilities via an existing above-ground Pacific Gas and Electric Company (PG&E) 12-kilovolt (kV), 56-amp electrical distribution line, supported on poles along its route. The existing line does not have sufficient capacity to support all construction-related electrical supply needs, including compliance with stormwater management regulations for construction sites adopted at the same time the Draft EIR was published. These regulations currently require a more energy-intensive treatment process for stormwater runoff during construction than was assumed for the Draft EIR project. In addition, construction activities would also require supplemental on-site electrical power. Consequently, subsequent to the Draft EIR publication, the SFPUC determined that the existing electrical distribution line would require an upgrade to support implementation of the Variant. The increased power demand would be temporary—required only during the construction process—and project operations would not increase power demand compared to existing conditions.

Approximately seven miles of the existing PG&E distribution line would be upgraded to provide additional power necessary during construction at the Calaveras Dam site. PG&E would upgrade existing service with a larger capacity 12 kV line (120 amp service, in addition to the existing 56 amp service) between the dam site and the corner of Downing and Calaveras Roads in the City of Milpitas (Figure 9.1). The upgrade may include replacing existing poles and some new intermediate poles along the existing alignment would be installed. Although PG&E would determine the final upgrade design, it is estimated that about 8 to 10 new poles could be required. In addition, booster or capacitor banks and a meter box at the drop off location near the existing Bluestone Building at the Calaveras Dam site would be constructed (shown on Figure 3.7, EIR page 3-29).

Construction activities for the upgrade to the electrical distribution line that serves the project site would occur along existing easements and rights-of-way.³ The work for the electrical distribution line upgrade would be confined to the approximately 30-foot-wide easement within the project area and along the PG&E right-of-way outside of the project area.

Figure 9.5: PG&E Power Line Upgrade Alignment – CDRP Variant shows the section of the existing distribution line that would be upgraded. From the Calaveras Dam area, the existing line passes southwest over a small portion of the reservoir, west across Calaveras Road and open terrain to Weller Road, then turns south generally following (and crossing several times) Weller Road for approximately two miles. The line then turns west, north, and west again around and over parts of the Spring Valley Golf Club. The line then extends south along Downing Road, to a PG&E switch at the corner of Downing Road and Calaveras Road. The existing line past this point has sufficient capacity to accommodate the electrical demand for project construction. The SFPUC would coordinate with PG&E during the design and construction of the proposed electrical line upgrade, including implementation of mitigation measures identified in this EIR, as appropriate.

Borrow Area E Modifications

The purpose of this change is to improve conditions for long term re-establishment of seasonal wetlands in a portion of this area. Rather than holding a portion of Borrow Area E in reserve as indicated for the Draft EIR project (shown on Figure 3.10, EIR page 3-39, and described in Table 3.3, page 3-40), all of this borrow area would be used for dam construction materials under the Variant. The same amount of material would be removed from the borrow area as for the Draft EIR project; however, with the use of the entire site, the excavation would be shallower than described for the Draft EIR project. It should be noted that the analysis for the Draft EIR project assumed that construction of Borrow Area E would include vegetation removal and grading of the entire Borrow Area E site including the reserve portion; therefore, these assumptions are the same for the Variant. There would be no change in the number of truck trips. Following construction, the SFPUC would restore the site to facilitate re-establishment of seasonal wetlands on portions of the site.

West Haul Road Work Area Modification

Under the Variant, the limits of work for the West Haul Road described for the Draft EIR project (Vol. 1, Chapter 3, Section 3.5.1.7, on EIR page 3-54) would be relocated slightly down-slope but would remain within the former inundation area, to provide a construction buffer. The expanded haul route work area would accommodate construction access along the margins of the road

³ Construction on electric distribution line facilities (under 50 kV) does not require the issuance of a Certificate of Public Convenience and Necessity or a Permit to Construct by the California Public Utilities Commission, nor does it require discretionary permits or approvals by local governments.



SOURCE: URS; EDAW&Turnstone JV

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 9.5: PG&E POWER LINE UPGRADE ALIGNMENT - CDRP VARIANT

embankment. The buffer would be 10 feet wide on both sides of the road for approximately 2,700 linear feet from the south, and 20 feet wide on the east (reservoir) side for an approximately 6,000 additional linear feet. The number of disturbed acres for this project element would increase by 5, from 32 to about 37 acres, all below the 756-foot elevation (the elevation of the proposed restored reservoir lake level).

9.2.3 CONSTRUCTION OF THE VARIANT

As indicated in Table 9.1 above, construction of the Variant would require substantially the same activities as those for the Draft EIR project (Chapter 3, Section 3.5, pages 3-33 to 3-62). In general, the fishery enhancements and project refinements associated with the Variant would involve the same sources, types, and quantities of construction materials as the Draft EIR project (EIR, Table 3.3, page 3-40); the same disposal sites in terms of locations, area of disturbance, capacity, haul distance, and post-construction, as the Draft EIR project (EIR, Table 3.4, page 3-47); and with the exception of the changes to the West Haul Road described above, the same improvements to project area roads in terms of route length and total disturbed area as the Draft EIR project (EIR, Table 3.5, pages 3-52 to 3-53). The differences in the construction scenario for the Variant compared to that for the Draft EIR project are shown in **Table 9.3**.

Details on construction requirements for the fishery enhancement and project refinement elements of the Variant substantially different from elements of the Draft EIR project are presented below.

Construction of the Fish Screen at the Alameda Creek Diversion Tunnel

Construction activities for the fish screen would be confined to the area immediately adjacent to the existing trash-rack structure, as shown in Figure 9.2. Similar work area containment techniques and staging would be employed, as described in the EIR for construction of the ACDD bypass facility (Vol. 1, Chapter 3, EIR page 3-56) and shown in EIR Figure 3.15 (page 3-58). This includes the temporary containment berm to retain any spills of fuels or other construction materials. The proposed work areas for the proposed fishery enhancements at the ACDD are shown in **Figure 9.6: Work Areas for Proposed Fisheries Improvements at Alameda Creek Diversion Dam – CDRP Variant**.

Construction would require vehicular access into the Alameda Creek channel via an existing gravel ramp adjacent to the staging area. This ramp could require minor grading. If necessary, the access ramp into the stream channel above the dam would be improved to facilitate demolition and construction activities. It is not expected that permanent fill would be necessary for access ramp improvements. Native gravels would be used to the extent feasible for temporary access and to provide a working surface.

Table 9.3: Construction Scenario Difference between the CDRP Variant and the Draft EIR Project

	Draft EIR Project	Increase Associated with CDRP Variant	CDRP Variant, Total
ACDD Vicinity			
Facilities and construction elements	ACDD bypass facility	Fish screen and ladder	Bypass facility, fish screen, and ladder
Disturbance Area	Temporary impact area: 0.25 acre (all upland habitat) Permanent impact area: None	Temporary impact area: 0.50 acre ¹ Permanent impact area: 0.21 acre ²	Temporary impact area: 0.75 acre Permanent impact area: 0.21 acre
Materials Handling	Drilling waste	Approximately 900 cubic yards of concrete, approximately 900 cubic yards of excavated material, negligible amounts of other materials	Approximately 900 cubic yards of concrete, approximately 900 cubic yards of excavated material, negligible amounts of other materials including drilling waste
Construction Equipment	Concrete core-drilling equipment, scaffolding, generator, water truck	Concrete pumping truck, crane (20 tons or less), water pumps	Concrete core-drilling equipment, scaffolding, generator, water truck, concrete pumping truck, crane (20 tons or less), water pumps
Workers	Up to 8 workers per day in 2014 (included in overall estimate for Calaveras Dam vicinity below)	Up to 22 additional workers per day at ACDD vicinity in 2014	Up to 30 workers per day at ACDD vicinity in 2014
Worker and Truck Trips	Up to 8 vehicles per day	Up to 25 additional trips per day (total worker and truck trips)	Up to 33 trips per day (total worker and truck trips)
Construction Duration	2–3 weeks (in 2014)	Up to 6 months (in 2014)	Up to 6 months (in 2014)
Calaveras Dam Vicinity			
Facilities and construction elements	Replacement dam, spillway, intake shaft, adits, outlet pipes, instrumentation	Modifications to spillway discharge channel and intake tower; installation of fish screens on Adits #1 and #2 and free-field accelerograph; and expanded right dam abutment excavation	Replacement dam, spillway, intake shaft as modified, adits with screens on #1 and #2, outlet pipes, instrumentation with accelerograph

(continued)

Table 9-3 (Continued)

	Draft EIR Project	Increase Associated with CDRP Variant	CDRP Variant, Total
Calaveras Dam Vicinity, continued			
Disturbance Area	Approximately 343 acres	Temporary impact area: trace Permanent impact area: 0.4 acre	Approximately 343 acres
Materials Handling	Approximately 7.3 million cubic yards ³	Approximately 10,000 cubic yards	Approximately 7.3 million cubic yards
Construction Equipment	Compactor, dozer, excavator, loaders, off-highway trucks, scraper.	No change	Compactor, dozer, excavator, loaders, off-highway trucks, scraper.
Workers	Approximately 140 during peak work period ⁴ (spring, summer, and fall 2014), including workers at ACDD vicinity	No change at Calaveras Dam vicinity	Approximately 162 during peak work period (spring, summer, and fall 2014), including 22 workers at ACDD vicinity identified above
Worker and Truck Trips (during peak trip period, spring, summer, and fall 2013)	180 worker trips per day ⁵ 86 truck trips per day ⁵	No change at Calaveras Dam vicinity	180 worker trips per day ⁶ 86 truck trips per day ⁶
Construction Duration	4 years	No change	4 years
West and South of Calaveras Reservoir Vicinity			
Construction Elements	West Haul Road, Borrow Area E, Borrow Area E access road	PG&E line upgrade; modifications to Borrow Area E, and West Haul Road	West Haul Road and Borrow Area E as modified; PG&E line upgrade; Borrow Area E access road
Disturbance Area	Included in estimate for Calaveras Dam vicinity above (approximately 343 acres)	Approximately 11 acres ⁷	Approximately 354 acres (includes acreage for Calaveras Dam vicinity)
Materials Handling	Included in estimate for Calaveras Dam vicinity above (approximately 7.3 million cubic yards)	Less than 50 cubic yards	Approximately 7.3 million cubic yards including dam vicinity
Construction Equipment	Compactor, dozer, excavator, loaders, off-highway trucks, scraper	Puller/tensioner	Compactor, dozer, excavator, loaders, off-highway trucks, scraper, trucks, puller/tensioner

(continued)

Table 9-3 (Continued)

	Draft EIR Project	Increase Associated with CDRP Variant	CDRP Variant, Total
West and South of Calaveras Reservoir Vicinity. continued			
Workers	Included in estimate for Calaveras Dam vicinity above (approximately 140 during peak work period in 2014)	Approximately 10 additional workers (in 2011 only)	Included in estimate for Calaveras Dam vicinity above (approximately 162 during peak work period in 2014) ⁸
Worker and Truck Trips (during peak trip period, spring, summer, and fall 2013)	Included in estimate for Calaveras Dam vicinity above (180 worker trips per day and 86 truck trips per day in peak trip period in 2013)	Approximately 5 additional worker or truck trips per day in 2011	180 worker trips per day including dam vicinity ⁹ 86 truck trips per day including dam vicinity ⁹
Construction Duration	4 years	2-3 months in 2011 for the PG&E line upgrade. No change in construction duration for other modifications. All other activities would occur within the overall construction schedule.	4 years

Notes:

¹ Additional temporary impact area of 0.50 acre in the ACDD vicinity under the Variant is estimated to consist of 0.30 acre aquatic habitat, 0.01 acre upland habitat, and 0.19 acre developed land.

² Permanent impact area of 0.21 acre in the ACDD vicinity under the Variant is estimated to consist of 0.03 acre aquatic habitat, 0.10 acre riparian habitat, 0.05 acre upland habitat, and 0.03 acre developed land.

³ Based on EIR, Figure 3.9, page 3-38.

⁴ Based on EIR, Table 3.6, page 3-62.

⁵ Based on EIR, Table 4.12.2, page 4.12-11. The peak period for worker trips would occur in spring/summer/fall 2014. The peak period for truck trips would be from winter 2012 to winter 2013.

⁶ The number of total daily trips (worker and truck trips) during the peak trip period would not increase under the Variant. As shown in EIR Table 4.12.2, page 4.12.11, the maximum of 180 worker trips and 86 truck trips (266 total daily trips, or 532 total round trips) would occur in spring/summer/fall 2013 under the Draft EIR project, and this would be the same with construction of the Variant elements. Under the Variant, the 25 additional worker and truck trips that would be added in the ACDD vicinity would occur in the summer of 2014, for a total of 221 daily trips (442 round trips) during that period.

⁷ Includes West Haul Road (5 acres) and electrical line upgrade (6 acres). The increase in disturbed area for the West Haul Road Modification is for construction footprint only; the area of disturbance would be within the inundation area of the restored reservoir. As such, long-term habitat impacts were included in the Draft EIR project as part of the permanent impacts from refilling the reservoir.

⁸ Construction of these Variant elements in this vicinity would not increase the number of workers during the peak work period. The peak work period for the Variant as a whole would occur in spring/summer/fall 2014 (140 workers for construction of the Draft EIR project, or 162 workers for construction of the CDRP Variant). The 10 additional workers (and 5 trips) required for construction of these elements in the area west and south of the reservoir would occur in the summer of 2011, for a total of 110 workers during that work period.

⁹ The number of total daily trips (worker and truck trips) during the peak trip period would not increase under the Variant. As shown in EIR Table 4.12.2, page 4.12.11, the maximum of 180 worker trips and 86 truck trips (266 total daily trips, or 532 total round trips) would occur in spring/summer/fall 2013 under the Draft EIR project, and this would be the same with construction of the Variant elements. Under the Variant, the 5 additional trips that would be added in this vicinity would occur in the summer of 2011, for a total of 174 daily trips (348 round trips) during that period.

Source: SFPUC 2010f (for information on the Variant)



SOURCE: URS

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 9.6: WORK AREAS FOR PROPOSED FISHERIES IMPROVEMENTS AT ALAMEDA CREEK DIVERSION DAM - CDRP VARIANT

The majority of construction activities would consist of modifications to the existing trash rack and adjoining gravity wall structure. Prior to construction, the SFPUC would conduct geotechnical investigations at the site to evaluate the levels of naturally occurring asbestos (NOA) and metals present in the areas requiring excavation; depending on the identified levels of these materials, the SFPUC would implement appropriate measures to protect public health (see EIR, Vol. 2, Chapter 4, Section 4.9, Hazards and Hazardous Materials).

The existing concrete and steel trash-rack structure would be partially demolished and modified to accommodate the proposed fish screen. If it is necessary to excavate sediment prior to installing the foundation for the screen, the excavated sediment (including gravels) would be used to stabilize the identified staging area and access ramp; dewatering could be required if excavations in the channel encounter water. New concrete and steel structural elements would be constructed to support the proposed fish screen. New concrete footings and walls would be built as required. Installation of the screen would involve saw-cutting, drilling, and partial demolition of existing concrete along with placement of new concrete and steel retrofit elements. Depending on the final design of the screening facility, excavation for new footings could be required on either side of the existing trash rack.

The major equipment expected for the type of construction described above could consist of a backhoe/loader (with a variety of demolition and digging accessories), a concrete pumping/conveyance, a crane (20 tons or less), drills, saws, pneumatic equipment (such as jackhammers), portable diesel generators, welding equipment, and water pumps (both for supply and dewatering). A water truck would provide construction water imported from Calaveras Reservoir or another offsite source within the Sunol Valley. Temporary power would be provided by a diesel generator (100 kilowatts or less) staged on the upper landing and routed to the construction area, which would be operated continuously during work hours for up to 8 hours per day. Fuel would be stored on site due to the remote location of this work area. Construction would require up to 2 additional workers per day and would contribute an average of 2 vehicle trips per day, up to a maximum of 10 vehicle (worker and truck) trips per day. Fish screen construction would last for approximately 3 months and would occur concurrently with construction of the ACDD bypass facility (estimated to take approximately 2 to 3 weeks) during the fourth year of construction (2014). Following the completion of construction activities, all demolition and construction waste would be contained and transported off site for recycling and/or disposal, as appropriate. Temporary work areas within the creek channel as well as the staging area would be restored.

Construction of the Fish Ladder

As shown in Figure 9.6 (Work Areas for Proposed Fisheries Improvements at Alameda Creek Diversion Dam), construction of the proposed fish ladder would be limited to a corridor about 30 feet wide along the alignment of the fish ladder. Prior to construction, the SFPUC would conduct geotechnical investigations at the site to evaluate the levels of NOA and metals present in the

areas requiring excavation; depending on the identified levels of these materials, the SFPUC would implement appropriate measures to protect public health (see EIR, Chapter 4, Section 4.9, Hazards and Hazardous Materials).

The footprint encompassing the construction corridor would be cleared of vegetation and topsoil and would be graded as necessary to provide construction equipment and personnel access to the fish ladder alignment. Soil and rock would be excavated along the fish ladder alignment. Formwork would then be erected and concrete poured to form the fish ladder. Most construction work would occur on the north bank of Alameda Creek a few feet away from the streambed, but some work in the streambed would be necessary at the entrance and exit to the fish ladder, including installation of the hydraulic controls at the upstream exit. Construction of the cross-stream features at each end of the fish ladder would also take place within the streambed. Temporary cofferdams would be constructed at the upstream and downstream limits of the construction area to isolate the sites of the cross-stream barriers, and any potential creek flow would be pumped or diverted around the barrier construction sites. All construction activities requiring work in the creek bed would occur during the dry season. The construction contract would require that the contractor implement the SFPUC's standard construction measures.

Equipment likely to be needed to construct the fish ladder would include backhoes, cranes, dump trucks, concrete trucks, concrete pumps, generators, power tools, and hand tools. A temporary construction office and a staging area for equipment and materials would be set up in the vicinity of the fish ladder. No improvements to the existing access road to the ACDD would be required for construction of the fish ladder. Construction would require an average of 2 to 5 workers per day, up to a maximum of 20 workers per day, and would contribute an average of 2 to 5 vehicle trips per day, up to a maximum of 15 construction vehicle (worker and truck) trips per day. Fish ladder construction would require up to 6 months and would occur during the fourth year of construction (2014).

Construction of the Fish Screens at Adits #1 and #2

Replacement of the screen at Adit #1 would be performed by divers, as this is the lowest adit and is normally submerged. Adit #2 is located within the range of reservoir operating levels, and as such can either be submerged or exposed. Replacement of the screen at Adit #2 would occur from land if it is exposed or by divers if it is submerged.

If the screen at Adit #2 is constructed under dry conditions, construction access would be from the shoreline on the left abutment where there is a gentle slope. Adit #1 (and Adit #2 if constructed by divers) would be installed from a diving barge. Construction is expected to take up to 8 weeks for each adit. Similar to other diving work for the project, water quality control measures would be implemented in accordance with standard SFPUC contract requirements for Stormwater Pollution Prevention Program, Erosion/Sediment Control; Sanitary Work Practices and Disinfection; and Decontamination for Work in Reservoirs.

Construction of Electrical Distribution Line Upgrade

The construction process for the electrical distribution line upgrade would involve replacing select poles or, where needed, adding poles, and replacing the power line. Access would be needed along the entire extent of the right-of-way. If PG&E has not recently conducted vegetation removal within the right-of-way, it may need to do so at the time of construction.

There are approximately 85 existing poles along the alignment. Wherever possible these existing poles would be used to support the upgraded wire. Replacement poles, if needed, based on the condition of existing poles, would be set as near as possible to existing poles, which would be removed at ground level. Additional poles might be set in-between existing poles if the line requires more support. It is expected that 10 or fewer new poles could be required. This would be determined as part of detailed design to be completed by PG&E. Poles are typically set by mechanically digging a hole up to 10 feet deep, mechanically placing the pole into the hole and backfilling while holding the pole in the desired alignment. There are no towers along this alignment and it is assumed that no towers would be installed as part of this work.

PG&E would use standard rubber-tired line trucks to access the alignment and to install and tension the new distribution line. The puller/tensioner would be mounted on a utility truck or on a double-axle trailer. Some vegetation trimming and removal would likely be required along the alignment to meet PG&E standards for vegetation clearance from distribution lines, and to access the poles for safe climbing.

PG&E's standard practices include compliance with all applicable environmental regulations, and exceed standards for species and habitat protection (PG&E 2010). As follow-up to the completed biological resources surveys of the alignment (URS 2010a) and as part of the line upgrade, seasonal surveys for special-status plants⁴ would be completed in order to ensure impact avoidance in final design and line upgrade activities. Given the very small size of the disturbance area needed to install each pole, the flexibility in adjusting the spacing distance between poles, and the information on site conditions derived from surveys conducted to date, sensitive resources could be avoided through proper pole placement. Biological monitors would be present during line upgrade work to confirm that impacts on sensitive resources are avoided. In addition, the SFPUC would enter into an agreement with PG&E requiring that all pertinent elements of mitigation measures identified in the EIR that apply to the electrical line upgrade be implemented during the design and construction of the distribution line upgrade.

For the purposes of the environmental review of the Variant in this EIR, the following assumptions are made at this phase in the preliminary design. It is assumed that to the extent

⁴ The field survey for rare plants within the area of the right-of-way would also include field reconnaissance for the potential presence of the host plant for Callippe silverspot butterfly, as was completed for the Draft EIR project.

feasible, all construction activities would be confined within PG&E's 30-foot right-of-way along its existing alignment. However, in addition to the construction activities that would occur directly along the alignment, project construction would require staging area(s) to stockpile equipment and for employee vehicle parking; typically the staging area is 1 to 5 acres and would be located at a previously disturbed site. Also, the upgrade work would need pulling and tensioning sites at each sharp turn in the distribution line and possibly splicing sites as well; each of these sites is typically 50 feet by 50 feet, and there could be up to 20 of these temporary sites. For each new pole to be installed, an area about 50 feet by 50 feet would be needed for laydown and assembly. The required site area for both pulling and tensioning lines, and lay-down and assembly will be confirmed by PG&E. At each of these sites, a limited amount of existing vegetation might need to be removed, but no grading would be required. As stated above, based on the limited areas of disturbance, flexibility in determining the areas to be disturbed, and surveys conducted to date, it is expected that PG&E could avoid impacts on environmentally sensitive resources located on City and County of San Francisco (CCSF)-owned lands as well as on non-CCSF owned lands. The SFPUC would assist PG&E in locating appropriate construction work sites to avoid impacts on sensitive environmental resources.

Construction would occur for 2 to 3 months during the first year of construction, in 2011. During intermittent periods, the existing distribution line serving the dam site would have to be de-energized. However, power shutdowns would be kept to a minimum and would occur mostly during weekends. Construction would require up to 10 workers per day and would contribute up to 5 worker or truck trips per day. It is assumed that following completion of construction, PG&E would restore areas along the alignment, all staging areas, and the pulling and tensioning, and splicing sites.

Construction of Other Project Refinements

Construction of the modifications to the spillway discharge channel grade control structures, intake tower, right dam abutment excavation, Borrow Area E, and West Haul Road work area would be similar to the work for the Draft EIR project and would require the same equipment, vehicles, and workforce. Similarly, construction of the additional instrumentation would not require additional workers, equipment, or vehicles beyond that required for the Draft EIR project.

9.2.4 VARIANT CONSTRUCTION SCHEDULE

The overall duration of construction for the Variant would be the same as for the Draft EIR project (Chapter 3, Section 3.5.5, pages 3-60 to 3-62): approximately 4 years for completion of all project construction. The only substantial difference in construction duration for the Variant is that construction activities in the vicinity of the ACDD would be extended from 2 to 3 weeks for the Draft EIR project to up to 6 months for the Variant to accommodate the additional construction of the fish screen and fish ladder during the fourth year of construction (2014).

All elements of the Variant that are the same as the Draft EIR project would be constructed according to the schedule described in the EIR, and construction of the project refinements and fishery enhancement elements of the Variant would be interspersed throughout the overall construction period as appropriate. During the first year of construction, targeted for 2011, the electrical distribution line upgrade would be constructed along with the modifications to the West Haul Road and right dam abutment excavation. The intake tower modifications would occur during the second construction season as part of the planned construction of the intake shaft and tower. All remaining project refinements and fishery enhancements, including the additional instrumentation, fish screens at Adits #1 and #2, and fish screen and ladder at the ACDD, would occur during the fourth and final construction season.

Construction activities for fishery enhancements involving work in Alameda Creek would be scheduled during the dry season when flowing water is not present in the work area. Fish screen construction would last for approximately 3 months and would occur concurrently with construction of the ACDD bypass facility (estimated to take approximately 2 to 3 weeks). Construction of the fish ladder would take up to 6 months and would also be coordinated with construction of the ACDD bypass facility. Construction of the portions of the fish ladder in proximity to the creek would occur during the dry season to the extent feasible. Construction work on Adits #1 and #2 would be performed during the summer outage periods (between April 15 and November 15) allowed in the construction contract. It is estimated that construction of the distribution line upgrade work would be completed in 2 to 3 months, with substantially less time in any one location along the right-of-way.

Operation of the reservoir during construction would be identical for the Variant as that described for the Draft EIR project (Chapter 3, Section 3.5.6, page 3-62). This includes the commitment from the SFPUC to make releases from Calaveras Reservoir if steelhead are present in Alameda Creek during the construction period if feasible, depending on the construction phase, as stated for the Draft EIR project (Chapter 6, Section 6.2.3.3, page 6-27).

9.2.5 VARIANT OPERATIONS

Filling of the reservoir, operations of local reservoirs, Calaveras Reservoir operations, and cone valve operations under the Variant would be identical to the process described for the Draft EIR project (Chapter 3, Section 3.6, page 3-63 to 3.66), with the exception of operations of Calaveras Dam and the ACDD associated with implementation of the fishery enhancements, as described below.

Operation of Calaveras Dam

Similar to operations under the Draft EIR project, long-term operations for Calaveras Reservoir would be to maximize storage within the reservoir to meet potential drought and water supply needs. The reservoir would be filled during the rainy season, and water levels would be

maintained at or near the spillway elevation and drawn down as needed to meet water supply or system maintenance needs. The only difference in operations would be the implementation of the proposed instream flow schedule for Calaveras Creek below Calaveras Dam, as shown in **Table 9.4**.

Table 9.4: Summary of the Proposed Instream Flow Schedules Below Calaveras Dam

Flow Schedule Decision Date	Flow Schedule Application Period	Dry (Schedule B) ¹		Normal/Wet (Schedule A) ¹	
		Cumulative Arroyo Hondo Flows for Water-Year Classification (MG)	Flow Release (cfs)	Cumulative Arroyo Hondo Flows for Water Year Classification (MG)	Flow Release (cfs)
N/A	October	N/A	7	N/A	7 ²
N/A	Nov 1 – Dec 31	N/A	5	N/A	5
Dec 29	Jan 1 – Apr 30	<= 360	10 ²	> 360	12 ²
Apr 30	May 1 – Sept 30	<= 7,246	7	> 7,246	12

Notes:
MG = million gallons; cfs = cubic feet per second; N/A = not applicable; <= means less than or equal to; > = greater than

¹ The water-year classification is based on monthly cumulative flows over 26 years of record at the USGS gage on Arroyo Hondo, an unregulated tributary upstream of Calaveras Reservoir. Cumulative monthly streamflows at the Arroyo Hondo gage were ranked as exceedance probabilities and divided into two water-year types. “Dry” years have a >60% exceedance probability, and “Normal/Wet” years have a 0 to 60% exceedance probability.

² Flows would be ramped as shown in Table 9.5.

Source: SFPUC 2010a

Under the proposed instream flow schedule, the measuring point for compliance would be located in Calaveras Creek immediately below the dam at the existing U.S. Geological Survey (USGS) gage. Currently, there are no regularly scheduled releases to Calaveras Creek, with the exception of periodic testing of the cone valve, and there is some seepage to Calaveras Creek through the dam and geologic formations under and around the dam. Under the proposed flow schedule, the SFPUC would provide year-round releases from Calaveras Dam ranging from 5 to 12 cfs, depending on the time of year and the water-year type. Flows below the replacement Calaveras Dam would be released from the proposed low-flow valves that would be installed for this purpose; these valves are described in the EIR (Vol. 1, Chapter 3, Section 3.4.2.3, page 3-31). The releases from Calaveras Dam would be ramped, as shown in **Table 9.5**.

Using the water-year classification developed for this flow schedule, it is expected that any month would be classified as a “dry” month four times out of every 10 years, and “normal/wet” six times during the same 10-year period. Thus, based on the historic hydrology, the normal/wet flow schedule is expected to be in effect approximately 60 percent of the time.

Table 9.5: Ramping of Proposed Instream Flows Below Calaveras Dam

Dates	Dry (Schedule B) ¹ (cfs)	Normal/Wet (Schedule A) ² (cfs)
Oct 1 – Oct 2	7	9 (ramping down)
Oct 3 – Oct 31	7	7
Nov 1 – Dec 29	5	5
Dec 30	5	7 (ramping up)
Dec 31	7 (ramping up)	10 (ramping up)
Jan 1 – Mar 31	10	12
Apr 1 – Apr 30	10	12
May 1 – Sep 30	7	12

Notes: cfs = cubic feet per second
¹ The threshold value for dry (Schedule B) and normal/wet years (Schedule A) is 60% exceedance probability; that is, 60% of the time cumulative flows in Arroyo Hondo would be higher than the dry-year thresholds identified in Table 9.4. The “dry” schedule would apply to 40% of all months.
² The “normal/wet” schedule would apply to 60% of all months.

Source: SFPUC 2010a

Natural flows in Alameda Creek downstream of its confluence with Calaveras Creek are relatively low during summer and early fall, with reaches often drying up entirely. The available water is often not cold enough to meet salmonid minimum temperature requirements. Under the proposed flow schedule, summer flows would be provided through releases from Calaveras Dam, and it is expected that the water releases during this period would be approximately 59 degrees Fahrenheit or less. The objective of the low-temperature releases would be to enhance rearing habitat in Alameda Creek below the confluence, as described in the AMIP below.

Operation of the Alameda Creek Diversion Dam

Under the Variant, operations of the ACDD would generally be the same as that under the Draft EIR project: namely, the diversion gates would be opened at the beginning of the wet season and closed at the beginning of the dry season. However, under the Variant, there would be specified time periods each year when the diversion gates are opened or closed, as dictated by the proposed instream flow schedule for Alameda Creek below the ACDD and shown in **Table 9.6**.

Under the proposed instream flow schedule, the measuring point for compliance would be located in Alameda Creek immediately below the ACDD at a new stream gage.⁵ The flow schedule would require the SFPUC to close the gates to the Alameda Creek Diversion Tunnel between

⁵ As part of ongoing monitoring of creek hydrology in the southern Alameda Creek watershed, SFPUC has requested that the USGS install a new gage below the ACDD, and expects this to be completed prior to the end of 2011.

Table 9.6: Proposed Instream Flow Schedule in Alameda Creek Below the ACDD

Flow Schedule Application Period	Flow Requirements	Comment
Apr 1 – Nov 30	All unimpaired flow upstream of the ACDD	No diversions from Alameda Creek to Calaveras Reservoir (ACDD gates closed)
Dec 1 – Mar 31	Up to 30 cfs, dependent upon unimpaired flows in Alameda Creek above the ACDD. Downstream flow requirements can be met through a combination of flows released through the fish ladder, ACDD bypass tunnel, and/or over the dam crest.	Diversion of up to 370 cfs from Alameda Creek to Calaveras Reservoir (ACDD gates open).

Source: SFPUC 2010a

April 1 and November 30 of each year to allow the unimpaired flow naturally present in Alameda Creek to continue downstream past the ACDD, either through the bypass tunnel, the fish ladder, and/or over the dam crest. For the remaining months of the year, between December 1 and March 31, the SFPUC would open the gates to the diversion tunnel, but when water is present in Alameda Creek above the diversion dam, the SFPUC would ensure that a minimum flow of 30 cfs would continue down Alameda Creek, either through the bypass tunnel, the fish ladder, and/or over the dam crest.

All flows in upper Alameda Creek upstream of the ACDD are natural, because there is no storage facility above the ACDD and the ACDD provides no storage of note. Thus, the proposed bypass flows would only be provided when water is naturally available in upper Alameda Creek. Implementation of the proposed bypass flows at the ACDD is intended to improve spawning habitat for resident trout and future steelhead and would provide a more natural base-flow hydrology within approximately 16,000 linear feet of habitat in Alameda Creek above the confluence with Calaveras Creek.

Under the Variant, the proposed instream flow schedules for Alameda and Calaveras Creeks would replace the ACDD operational criteria proposed for the Draft EIR project (Chapter 3, Section 3.6.4, page 3-66), under which the diversion dam and tunnel would be operated to pass flows down Alameda Creek when diversion of these flows was not required to maintain desired levels in Calaveras Reservoir. However, as part of overall ACDD operations, an SFPUC operating goal for managing Calaveras Reservoir is to minimize spills at Calaveras Dam to the extent feasible, and one of the management practices used to minimize spills at Calaveras Dam when the reservoir is full is to close the gates at the ACDD.

Implementation of the proposed instream flow schedules for Alameda and Calaveras Creeks would also replace flow releases for resident rainbow trout proposed for the Draft EIR project

(Chapter 3, Section 3.6.5, pages 3-66 to 3-69) and steelhead flow releases (Chapter 3, Section 3.6.6, pages 3-69 to 3-70).

Specifically, under the Variant, the proposed instream flow schedules replace the following operational elements of the Draft EIR project:

- ACDD operational criteria that direct that the diversion dam and tunnel be operated to pass flows down Alameda Creek when diversion of those flows is not required to maintain desired levels in Calaveras Reservoir
- Flows previously described in the 1997 Memorandum of Understanding (MOU) between the SFPUC and CDFG, which was included as Appendix H of the EIR
- Proposed instream flow schedule for steelhead shown in EIR Table 3.7, page 3-70
- Bypass flow of 10 cfs at the ACDD described in footnote 1 of EIR Table 3.7, page 3-70, which is the same as the Water System Improvement Program (WSIP) Program Environmental Impact Report (PEIR) Mitigation Measure 5.4.5-3a regarding minimum flows for resident trout on Alameda Creek
- Release of a minimum of 2 cfs from Calaveras Dam described in footnote 2 of EIR Table 3.7, page 3-70

Under the proposed instream flow schedules, there would be two compliance points. One is located below the ACDD, and the other is below Calaveras Dam. For the Draft EIR project, compliance with minimum instream flows would be determined at one point only—the USGS gage immediately downstream of the confluence of Alameda and Calaveras Creeks.

Operation and Maintenance of the Fish Screen at the Alameda Creek Diversion Tunnel

As described in Table 9.6 above, diversions from Alameda Creek to Calaveras Reservoir would occur between December 1 and March 31. The maximum rate of diversion to Calaveras Reservoir through the diversion tunnel would be reduced from the current 650 cfs to approximately 370 cfs due to the addition of the proposed fish screen. With the proposed fish screen in place, the SFPUC would need to increase the frequency of sluicing at the ACDD to minimize the potential for sediment to be retained during operation of the proposed fish screen. The SFPUC currently flushes sediments from the upstream side of the ACDD once per year (see EIR, Chapter 3, Section 3.3.4.3, page 3-21). Under the Variant operations, the frequency of sluicing would be increased. With the proposed fish screen in place, the SFPUC would conduct this procedure approximately every 4 to 8 weeks during the wet season.

Depending on final screen design and implementation, periodic instream repositioning of sediment might also be required at a location adjacent to the screen. This maintenance would occur in the dry season, approximately every 3 to 5 years. The maintenance would involve the use of a Bobcat to reposition sediment away from the screen face to facilitate operation of the screen and to allow effective future sluicing to support sediment functions and geomorphic

processes downstream. In the event that sluicing alone is found to be inadequate to remove the estimated annual buildup of sediment at the screen of approximately 80 cubic yards, the sediment would be mechanically moved and redeposited at a location below the ACDD.

The existing ramp to the stream channel would continue to be utilized for infrequent access and maintenance activities, including those associated with the ACDD screen. The ramp would continue to be maintained, as needed, to provide vehicle access for maintenance activities.

Operation and Maintenance of the Fish Ladder at the ACDD

The fish ladder would be designed to operate in conjunction with the proposed bypass tunnel and fish screen at the ACDD and to minimize maintenance requirements. It is anticipated that the SFPUC would begin directing water into the fish ladder in December and would cease directing water into the fish ladder at the end of April, dependent upon final design and NMFS and CDFG concurrence. The rate of flow through the ladder would depend on the final design of the ladder as well as the rate of natural flow in Alameda Creek. When flow in the creek at the upstream end of the ladder is less than 5 cfs, little or no water would pass through the ladder. When flow is in the range of 5 to 30 cfs, much of the water in the creek would likely be diverted into the ladder. Flows in excess of the fish ladder capacity would flow downstream to the ACDD.

The fish ladder at the ACDD would be operated from December through April as needed to accommodate adult immigration, whenever flows sufficient for its operations are present in the creek. It is anticipated that the ladder would be designed to be passable under a range of flows (potentially from 5 to 30 cfs, dependent on final design and CDFG and NMFS review). Operation of the fish ladder would be coordinated with implementation of the proposed instream flow schedule in Alameda Creek below the ACDD shown in Table 9.6.

Operation and maintenance of the fish ladder would be conducted through periodic on-site facility inspections, and adjustments would be made as needed. During the first years of operation, it is likely that adjustments to the hydraulic control structure at the upstream end of the fish ladder (ladder exit) would be needed to ensure that the amount of water entering the ladder provides appropriate velocities and depths for fish passage. As experience is gained with the system, it is expected that less frequent adjustments would be needed.

Maintenance activities would be limited to clearing of debris and any accumulated sediment that interferes with the fish ladder's effective functioning. The ladder would be inspected and cleared of any accumulated debris annually before steelhead immigration season begins, and inspected and cleared as needed at intervals during the immigration season.

Operation of Calaveras Dam Adits #1 and #2

With the addition of fish screens on Calaveras Dam Adits #1 and #2, the operations of Calaveras Dam and Reservoir would be the same as described for the Draft EIR project (Vol. 1, Chapter 3, Section 3.6.2, pages 3-64 and 3-65), with incorporation of releases consistent with the instream flow schedule for Calaveras Dam shown in Table 9.4 above.

Adaptive Management Implementation Plan (AMIP)

The SFPUC would implement an AMIP for Central California Coast steelhead as part of an overall management strategy to support and monitor steelhead in the southern Alameda Creek watershed (SFPUC 2010a). Actions taken under this management strategy would include minimum water releases from Calaveras Dam (described above in Tables 9.4 and 9.5); restricted diversions and minimum bypasses at the ACDD (described above in Table 9.6) to support aquatic ecosystems and native species; installation of fish protection screens (described above) and low-flow release valves (described in the EIR page 3-31) at Calaveras Dam; installation of fish protection screens (described above) and a flow bypass facility at the ACDD (described in the EIR, page 3-32); and construction of a fish ladder around the ACDD (described above).

The AMIP has short-term and long-term goals. The short-term goals include:

- Improve habitat conditions in the southern Alameda Creek watershed for steelhead
- Improve fish passage upstream to additional spawning and rearing habitat above the ACDD
- Implement a research and monitoring program that informs long-term management of steelhead and steelhead habitat in the southern Alameda Creek watershed

Long-term goals include:

- Establish sufficient habitat conditions so that the southern Alameda Creek watershed supports a significant and productive component of a self-sustaining steelhead population in the entire Alameda Creek watershed

Adaptive management is an approach and process that incorporates monitoring, research, and evaluation to allow projects and activities, including projects designed to produce environmental benefits, to go forward despite some uncertainty regarding consequences. It is an iterative process of evaluating and refining management based on the results of actions and the status of the managed resource. The components of adaptive management are designed to narrow and/or resolve uncertainties, increase scientific understanding, and evaluate restoration techniques, and the results can be used to inform ongoing and future actions. Key components of the AMIP include:

- A conceptual model that identifies relevant hydrology, habitat, and biological performance measures

- A research and monitoring program to measure performance and narrow and/or resolve uncertainties; the monitoring program includes streamflow, water temperature, biological response, and habitat conditions
- A process for reporting and incorporating new scientific knowledge into management activities

One action listed in the AMIP to protect and enhance steelhead and resident trout populations is the possible modification of natural barriers in the Alameda Creek watershed. This action includes the development of additional information necessary to assess the need and required actions for improving adult steelhead passage conditions through the Little Yosemite reach of upper Alameda Creek below the ACDD. Because the feasibility, design, and funding of this project have not yet been finalized, this action is not included as part of the CDRP Variant. However, this action is considered a reasonably foreseeable future project and is included in Section 9.5 of this chapter, Cumulative Impacts.

Further details on the AMIP are included in Chapter 10, Master Responses, Section 10.4, Fisheries. The physical, facilities, and flow components of the AMIP are described separately (i.e., the instream flow schedules, fish screens, fish ladder, and ACDD bypass facility are described either in the Draft EIR or above), and the remaining components of the AMIP consist primarily of monitoring, further studies, and other management actions/guidelines, which generally would have no physical environmental effects. Appropriately, then, the environmental analysis of the Variant, including the AMIP, focuses on the construction and operation of the proposed facilities.

Operation of Other Project Refinements

None of the other project refinements included in the Variant would result in changes to operations, as described for the Draft EIR project. Upon completion of the CDRP construction activities, the upgraded distribution lines would remain in place, and there would be no changes to the existing operations of this distribution line. The additional instrumentation component would result in a new permanent free-field accelerograph north of Calaveras Dam; the existing SFPUC staff would operate this facility as needed to provide strong motion data to the State of California Strong Motion Instrumentation Program.

9.3 ENVIRONMENTAL EFFECTS OF THE CDRP VARIANT

9.3.1 OVERVIEW AND RELATIONSHIP TO THE WSIP PEIR

Overview

The scope of and approach to analysis of the CDRP Variant is identical to that of the Draft EIR project. This section presents results of the analysis of the CDRP Variant, which is based on the same significance criteria and, in nearly all cases, the same setting information presented in

Chapter 4 of the EIR. This section presents a discussion of the same 15 environmental resource areas as presented in EIR Chapter 4 for the Draft EIR project. It reiterates the same impact statements from Chapter 4 (using the same impact numbering system), discusses the applicability of each impact and mitigation measure to the Variant (using the same mitigation measure numbering system), and provides an impact conclusion and significance determination for the Variant. This section also explains why the impact analysis of the Variant does not add significant new information or change the conclusions of the EIR.

As shown below, in all cases, the CDRP Variant would result in determinations of the same or reduced potential impacts in comparison to the Draft EIR project. The Variant would not result in any new significant effects beyond those identified for the Draft EIR project or substantially increase the severity of a significant impact, and no new mitigation measures would be required. In a few cases, the Variant would result in a beneficial impact where the Draft EIR project resulted in a less-than-significant impact. Similar to the Draft EIR project and for the same reasons (Vol. 1, Chapter 4, Section 4.1.3, pages 4-4 to 4-5), the Variant would not cause impacts related to Wind and Shadow, or Population and Housing, and these topics are not discussed further.

WSIP Water Supply and Operations Strategy Impacts

The CDRP Variant would be one component of the SFPUC's WSIP. Therefore, as described in EIR Section 4.1.3.3 (Vol. 1, Chapter 4, pages 4-5 to 4-31), the Variant would contribute to the WSIP's water supply, system operations, and growth-inducement impacts, which were analyzed in the PEIR on the WSIP (San Francisco Planning Department 2008). The PEIR included a detailed analysis of potential water supply and system operations impacts on the SFPUC watersheds, including the Tuolumne River, Alameda Creek, and Peninsula watersheds and the Westside Groundwater Basin; these impacts are summarized in CDRP EIR Tables 4.1.1 through 4.1.5 (Vol. 1, Chapter 4, pages 4-8 to 4-31). The CDRP EIR tiers from the WSIP PEIR and incorporates by reference the relevant analyses of the PEIR with respect to the WSIP's impacts and mitigation measures (Vol. 1, Chapter 2, page 2-8). Therefore, this analysis of the CDRP Variant also incorporates by reference the WSIP PEIR's analysis of the impacts associated with the WSIP water supply strategy, including the WSIP PEIR analysis and conclusions regarding impacts on the SFPUC watersheds and growth-inducement impacts. As stated in EIR Chapter 4, the project-specific impacts on the Alameda Creek watershed that were evaluated at a program level in the PEIR were re-evaluated at a project level in this EIR, and the impact conclusions were revised as appropriate.

Instream Flows for Alameda, Calaveras, and San Mateo Creeks

Implementation of the proposed enhancements for fisheries and other aquatic resources under the CDRP Variant would reduce the amount of supply captured by the SFPUC regional water system

from the local watersheds for delivery to customers compared to the amount assumed in the WSIP PEIR, as discussed in more detail below. In particular, two of the enhancements proposed under the CDRP Variant would reduce the amount of supply captured by the regional water system: the proposed instream flow schedules and the fish screen at the ACDD.

The proposed instream flow schedules, as described above and presented in Tables 9.4 and 9.6, would result in the bypass or release of more water from the regional system downstream in Alameda and Calaveras Creeks (for the benefit of fisheries and other aquatic resources) than originally anticipated in the WSIP or originally proposed as part of the CDRP. In Alameda Creek below the ACDD (as shown in Table 9.6), the SFPUC would bypass all naturally-occurring flows up to 30 cfs past the ACDD before diverting any water to Calaveras Reservoir between December 1 and March 31 and would no longer divert any water between April 1 and November 30. Under this condition, the amount of water the SFPUC would be able to divert would vary from year to year, depending on the level and pattern of rainfall that occurs, but these requirements would constrain the amount of diversion compared to the originally proposed flow schedule for this segment of the creek. As summarized in Table 9.4 in the proposed instream flow schedule, the SFPUC would also make year-round releases from Calaveras Reservoir to Calaveras Creek immediately below the dam; releases would range from 5 to 12 cfs and vary by season and year type. Furthermore, installation of the fish screen at the ACDD would reduce the capacity of the Alameda Creek Diversion Tunnel from approximately 650 cfs to 370 cfs during the permitted diversion period from December 1 to March 31. This would reduce the amount of water that could be diverted from Alameda Creek into Calaveras Reservoir.

In addition to the proposed enhancements under the CDRP Variant, the SFPUC also proposes to implement new flow releases from Lower Crystal Springs Dam to San Mateo Creek to benefit fisheries and other native aquatic resources, as shown in **Table 9.7** (SFPUC 2010b). Similar to the additional enhancements for the CDRP Variant, these flow releases to San Mateo Creek were developed during the formal consultation process for Endangered Species Act compliance for the Lower Crystal Springs Dam Improvements Project (LCSDI) and Crystal Springs/San Andreas Transmission Upgrade Project (CSSA). These flow releases would be initiated once construction of both the LCSDI and CSSA projects are completed, estimated to be in fall of 2013.

Water Supply Effects of Instream Flows

The adopted WSIP water supply objectives include: (1) meeting a target delivery of an annual average of 265 mgd from the watersheds through 2018 and (2) rationing at no greater than 20 percent systemwide in any one year of a drought. With these objectives in mind, the SFPUC has evaluated the water supply effects of the proposed enhancements associated with the CDRP,

Table 9.7: Summary of San Mateo Creek Minimum Water Release Schedule below Lower Crystal Springs Dam¹

Flow Schedule Decision Date	Flow Schedule Application Period	Dry (Schedule B)			Normal/Wet (Schedule A)		
		Cumulated Precipitation Index for Water-Year Classification (in) ²	Flow Ramping Schedule (cfs)	Flow Requirement (cfs)	Cumulated Precipitation Index for Water-Year Classification (in)	Flow Ramping Schedule (cfs)	Flow Requirement (cfs)
N/A	Oct 1 – Dec 14	N/A	N/A	3	N/A	N/A	3
N/A	Dec 15 – Jan 12	N/A	N/A	5	N/A	N/A	5
Jan 12 ³	Jan. 15 – Mar 15	<= 10.3	Jan 13: 5 Jan 14: 7	10	> 10.3	Jan 13: 7 Jan 14: 12	17
N/A	Mar 16 – Mar 30	N/A	N/A	8	N/A	Mar 16-17: 15 Mar 18-19: 12	10
N/A	Mar 31 – Apr 30	N/A	N/A	5	N/A	Mar 31-Apr 1: 7	5
N/A	May 1 – Sep 30	N/A	N/A	3	N/A	N/A	3

Notes: in = inches; cfs = cubic feet per second; N/A = Not Applicable; <= means less than or equal to; > = greater than
¹ If runoff from the watershed below Lower Crystal Springs Dam is creating unacceptable flooding conditions during precipitation events, the SFPUC may vary from the minimum flow requirements to not exacerbate this flood risk. In these rare situations, varying from this schedule will not result in anything less than the minimum flow conditions in the reach between Lower Crystal Springs Dam and the USGS gage on lower San Mateo Creek, which is the compliance location for the minimum flow requirements.
² San Mateo Creek precipitation index is the average of daily rainfall measured at four SFPUC gages: Davis Tunnel, San Andreas Dam, Lower Crystal Springs Dam, and Upper Crystal Springs Dam.
³ The decision on January 12 is based on the cumulated precipitation index to January 11.

Source: SFPUC 2010b

LCSDI, and CSSA projects; the analysis is presented in an August 10, 2010 memorandum entitled *Water Supply Effects of Alameda Creek and San Mateo Creek Fishery Flows* (SFPUC 2010c). In combination, the proposed fishery enhancements for the CDRP and the proposed fishery flow releases from Lower Crystal Springs Dam would result in a potential average annual decrease in available water supply for the regional water system of 7.4 million gallons per day (mgd) from the supply assumed under the adopted WSIP. This potential decrease is attributable to average annual releases/bypasses of 3.9 mgd to Alameda and Calaveras Creeks and releases of 3.5 mgd to San Mateo Creek, for a total annual average of 7.4 mgd.

The estimated potential decrease in available water supply assumes the adopted WSIP (referred to as the “Phased WSIP Variant” in the WSIP PEIR and “adopted WSIP” in this section) average annual target water delivery objective of 265 mgd from the SFPUC watersheds for the regional water system. The assessment of the water supply effects also assumes that all of the water supply components of the adopted WSIP and all WSIP facility improvement projects are

implemented, including the proposed water recapture facility on Alameda Creek.⁶ Fishery flow releases to San Mateo Creek would begin upon completion of the LCSDI and CSSA projects, scheduled for 2013, resulting in an initial water supply reduction for the regional water system of 3.5 mgd. Upon completion of the CDRP, scheduled for 2015, the additional supply reduction of 3.9 mgd for the regional water system would result, for a total potential supply reduction of 7.4 mgd by 2015.

As a result of the proposed fishery flows to Alameda, Calaveras, and San Mateo Creeks, the SFPUC might not be able to meet the adopted WSIP water supply objectives between 2013 and 2018 without a reduction in demand, demand management, an increase in rationing, and/or a supplemental water supply.

The WSIP PEIR analyzed many water supply options and their associated impacts. It also described the water supply actions that the SFPUC and/or wholesale customers could take in the event that the SFPUC was not able to meet demand through 2030, as well as the possibility of short-term water supply actions that the SFPUC and/or wholesale customers might need to take to meet customer demand through 2018. If the demand for water supply meets the projections before 2018, it is likely that the SFPUC and wholesale customers could take similar actions to make up for the potential gap in supply caused by the reduction in water supply associated with the proposed fishery flow releases between 2013 and 2018. When the SFPUC approved the WSIP, however, it did not approve specific projects to provide supplemental water supply. Any decision to implement a specific water supply project would require SFPUC approval and environmental review of that decision, pursuant to CEQA. No specific water supply projects outside of the WSIP are proposed at this time.

The following analysis describes potential water supply scenarios that could occur during the period of 2013 to 2018, following implementation of the proposed fishery flows. However, the actual effects would depend on numerous factors, including but not limited to, customer demand

⁶ The adopted WSIP includes the Alameda Creek Fishery Enhancement Project—since renamed the Upper Alameda Creek Filter Gallery (Filter Gallery) project—which had the stated purpose of recapturing downstream flows released for fishery benefits, assumed at the time to be consistent with the 1997 Memorandum of Understanding (MOU) between the CDFG and SFPUC. Implementation of the Filter Gallery project was intended to provide for “no net loss” of water supply as a result of the fishery flows bypassed from the ACDD and/or released from Calaveras Dam. At the time the WSIP PEIR was certified, the Filter Gallery project was described as having a capacity of 6,300 acre-feet per year (afy) to match the peak flow release requirements of the MOU. This analysis of the water supply effects for the proposed additional fishery enhancements continues to assume that the recapture facility capacity is 6,300 afy, consistent with the PEIR analysis, even though the proposed flow schedules for the CDRP, if adopted, would supersede the flow capacity of the recapture facility stated in the 1997 MOU. However, the Filter Gallery project will undergo separate, project-level CEQA analysis, and the SFPUC will re-evaluate the appropriate capacity for this proposed facility as part of environmental review for this project.

(purchase request) levels, the need for rationing due to drought conditions, and the availability of supplemental water supply sources.

Reduction in Demand

The WSIP had initially envisioned meeting the SFPUC service area demand through 2030. Projected demand for 2030 was estimated at 300 mgd. The PEIR analyzed the effects of meeting future demand through 2030 using the following water supply portfolio:

Supply in All Year Types

- Water from the Tuolumne River watershed
- Water from the Alameda Creek watershed
- Water from the San Mateo County watersheds (i.e., San Mateo and Pilarcitos Creeks watersheds)

Supply in Dry-Year Types (with no greater than 20 percent systemwide rationing in any one year)

- Restoration of Calaveras Reservoir capacity
- Restoration of Crystal Springs Reservoir capacity
- Westside Groundwater Basin conjunctive use (i.e., in-lieu recharge)
- Water transfers with Modesto Irrigation District / Turlock Irrigation District

In developing the adopted WSIP, the SFPUC restricted deliveries from the watersheds to an annual average of 265 mgd through 2018. Although the current projections for water deliveries from the watersheds through 2018 remain at 265 mgd, in the last few years, SFPUC deliveries have been below the projected levels, as illustrated in **Table 9.8**, below. If this trend continues, the SFPUC might not need an annual average of 265 mgd from its watersheds to meet purchase requests through 2018. As a result, the need for supplemental water supplies or other actions (such as increased rationing) to offset the water supply loss of 3.5 mgd beginning in 2013 and increasing to 7.4 mgd in 2015 associated with the proposed fishery flow releases could be less than anticipated. If this lower-than-projected demand level persists, then the proposed fishery flow releases to Alameda, Calaveras, and San Mateo Creeks might not affect the SFPUC's ability to meet the adopted WSIP water supply objectives through 2018.

The SFPUC monitors its water supply and demand data on an on-going basis as part of its operation as a water supply agency. The SFPUC also continuously monitors factors affecting both the delivery demand and the ability of the regional water system to meet the demand, consistent with the adopted WSIP goals. The SFPUC, thus, anticipates any changes from its supply and demand projections, and plans for shortfalls before they occur. Under the adopted

WSIP, the SFPUC will update demand projections for its wholesale and retail customers and reevaluate customer water delivery needs in the years approaching 2018.

Table 9.8: Water Deliveries in SFPUC Service Area¹

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Total Deliveries (mgd)	247.5	257	254.1	243.4	227.1 ²
<i>Notes:</i> ¹ “Total System Usage” plus 0.7 mgd for Lawrence Livermore National Laboratory and 0.4 mgd for Groveland. No groundwater use is included in this number, but unaccounted-for-water is included (SFPUC 2010c). ² Provisional data based on (1) FY 2009/2010 sales data for wholesale customers and suburban retail customers and (2) provisional FY 2009/2010 J-Table data for San Francisco County line deliveries less 0.2 mgd for Daly City use.					

Source: SFPUC 2010c

Demand Management

If purchase requests begin to approach 265 mgd from the watersheds by 2018, then the SFPUC might be able to manage the water supply loss associated with the fishery flow releases between 2013 and 2018 by implementing additional conservation, recycling, and/or groundwater conjunctive-use programs before 2018. Such actions were analyzed in the WSIP PEIR, Section 9.2.4 – Aggressive Conservation/Water Recycling and Local Groundwater Alternative (WSIP PEIR, Vol. 4, Chapter 9, pages 9-47 to 9-59).

Increase in Rationing

The adopted WSIP provides a dry-year water supply program that limits systemwide rationing to 20 percent. The adopted WSIP was based on the following drought shortages during the design drought:⁷ 3.5 out of 8.5 years at 10 percent systemwide rationing and 3 out of 8.5 years at 20 percent. If water deliveries reach 265 mgd between 2013 and 2018 and the SFPUC did not develop a supplemental water supply in dry years to offset the effects of the proposed fishery flow releases on water supply, rationing could increase during dry years, depending on the severity of the drought. Under this scenario, rationing during the design drought would increase by approximately 1 percent in rationing years due to the proposed fishery flow releases. If the SFPUC experienced a drought between 2013 and 2018 in which rationing needed to be imposed

⁷ The design drought is a planning and operation tool that water supply agencies use to define a reasonable worst-case drought scenario based on local hydrology to establish design and operating parameters for their water systems. For the purposes of regional water system planning, the SFPUC uses a design drought that anticipates and plans for a drought that is more severe than recorded drought events since the early 1900s. The WSIP uses a design drought based on the hydrology of the 6 years of the worst historical drought (1987–1992) plus the 2.5 years of the 1976–1977 drought, for a combined total of an 8.5-year design drought sequence.

(i.e., water deliveries reached 265 mgd), rationing would increase by approximately 1 percent in shortage years, potentially exceeding the adopted WSIP level of service goals for dry-year deliveries (SFPUC 2010d).

In the WSIP PEIR, the alternatives analysis included the No Project Alternative as well as an Aggressive Conservation/Water Recycling and Local Groundwater Alternative. These alternatives assumed that in order to meet customer demand by 2030, rationing during dry years could be increased up to 25 percent systemwide, and the effects of the increased level of rationing is discussed in the PEIR (WSIP PEIR, Vol. 4, Chapter 9, pages 9-28 to 9-31 and 9-47 to 9-59). These effects include the combined effects of droughts and rationing on customers, such as “demand hardening” (i.e., the increasing difficulty and expense of achieving short-term water conservation levels during shortages as more long-term conservation measures are implemented and water-use efficiency is maximized), socioeconomic effects on landscaping/nursery and other water-based industries, and potential lifestyle effects. Thus, the PEIR addressed the potential effects of increased rationing beyond the 21 percent level that could occur with implementation of the proposed fishery flow releases.

Supplemental Water Supply

As discussed above, although current water demand is below projections, if delivery demands did begin to approach 265 mgd from the watersheds by 2018, then the SFPUC might be able to manage the water supply loss associated with the fishery flow releases between 2013 and 2018 through the following actions and considerations:

- Water transfers from the Modesto Irrigation District and/or the Turlock Irrigation District
- Increase in Tuolumne River supply
- Revising the Filter Gallery project capacity
- Development of a desalination project

As stated above, if any of the above additional water supply sources are determined to be required between 2013 and 2018 as a result of the fishery flow releases, the SFPUC would conduct the necessary planning studies, and the San Francisco Planning Department would complete the CEQA environmental review requirements, as appropriate, prior to implementation.

In addition to potential SFPUC actions, the WSIP PEIR identified and evaluated actions that the SFPUC’s customers might take in response to a potential water supply shortfall (WSIP PEIR, Section 9.2.2 – No Program Alternative, page 9-25, Wholesale Customer Actions, and Section 9.2.4 – Aggressive Conservation/Water Recycling and Local Groundwater Alternative, page 9-52, Wholesale Customer Actions). The potential shortfall of 3.5 mgd beginning in 2013 and increasing to 7.4 mgd in 2015 as a result of the proposed fishery flow releases—assuming purchase requests through 2018 remain as projected in the PEIR—would be less than the

potential water supply shortfalls of up to 25 mgd that were assessed in the WSIP PEIR in Chapter 9, CEQA Alternatives. Thus, the WSIP PEIR analysis of water supply shortfalls encompasses the smaller potential shortfall that the SFPUC has identified with respect to the proposed fishery flow releases. Potential actions include developing additional recycled water projects, implementing aggressive conservation, developing a desalination project(s), and/or pursuing a water supply transfer.

The potential environmental effects associated with actions that the SFPUC and/or the wholesale customers might take in response to a water supply shortfall from the regional water system are discussed in PEIR Chapter 9, CEQA Alternatives, and also in Chapter 13, Section 13.4, Phased WSIP Variant. The PEIR evaluation of the potential actions that the SFPUC and/or the wholesale customers might implement to address a supply shortfall (WSIP PEIR, Chapter 13, Section 13.4, Phased WSIP Variant, Tables 13.6 and 13.8, page 13-24 and pages 13-27 to 13-28, respectively) remains valid and adequately addresses the potential environmental impacts on water supply and system operations that might occur due to implementation of the proposed fishery flow releases (WSIP PEIR, Chapter 13, Section 13.4, pages 13-29 to 13-45, Environmental Impacts of the Phased WSIP Variant Compared to those of the WSIP).

Conclusion

The SFPUC has identified a potential water supply shortfall that could occur between 2013 and 2018 as a result of the proposed fishery flow releases. The SFPUC has already committed to reevaluating 2030 demand and water supply options before 2018 under the adopted WSIP. In the event that water supply and demand data suggest that a shortfall will occur before that time, the SFPUC would evaluate the options and consider how it will address any shortfall. Under this scenario, implementation of the fishery flow releases would not result in any different effects on water supply and system operations from those analyzed in the PEIR for the WSIP alternatives and variants. If the SFPUC completed the study by 2018 (but not before) and took no other actions, the SFPUC might not be able to fully implement its adopted level of service goal of no more than 20 percent rationing during a drought. If a severe drought were to occur in the years before 2018 and water deliveries from the watersheds reached 265 mgd, the SFPUC might have to increase rationing by approximately 1 percent over the adopted WSIP's 20 percent rationing goal. In light of the proposed fishery flow schedules, the SFPUC could choose to undertake this additional water supply analysis and reevaluate customer demand before 2018, or alternatively, consider marginally increasing the rationing beyond 20 percent if needed. While the range of possible actions and impacts on water supply and system operations were analyzed in the WSIP PEIR, any changes from the approved WSIP would require the SFPUC to reconsider its decision on the adopted WSIP. Another possibility is that the SFPUC's wholesale customers could choose to undertake actions identified in the WSIP PEIR to address a shortfall, including more aggressive water recycling, conservation, local groundwater, or desalination projects or water

transfers. The general types of effects associated with these actions were also assessed in the WSIP PEIR for greater water supply shortfalls than those identified for the fishery flow releases. Consequently, no further analysis of impacts on water supply and system operations is required at this time.

9.3.2 PLANS AND POLICIES

EIR Section 4.2 discusses plans and policies relevant to the proposed project. Plans and policies relevant to the CDRP Variant are identical to those for the Draft EIR project, and the consistency of the Variant with those plans and policies is also identical to that described in EIR Chapter 4.

Section 4.2.5 of the EIR (Vol. 1, Chapter 4, Section 4.2, pages 4.2-15 to 4.2-18) provides an evaluation of the project's consistency with various CCSF and applicable local plans and policies, as identified in **Table 9.9**. The analysis concludes that, with mitigation, the Draft EIR project would not conflict with these plans and policies.

Table 9.9: Regional and Local Land Use Plans and Policies Relevant to CDRP and Variant

CCSF Plans and Policies

San Francisco General Plan
Accountable Planning Initiative
San Francisco Sustainability Plan
San Francisco Municipal Green Building Program

SFPUC Plans and Policies

Alameda Watershed Management Plan
Watershed Enterprise Environmental Stewardship Policy

Other Jurisdictions' Land Use Plans and Policies

Alameda County General Plan
Santa Clara County General Plan
East Bay Regional Park District Master Plan
City of Milpitas General Plan
City of Fremont General Plan

The CDRP Variant includes enhancements to project features that would improve conditions for biological resources (fish screen for Alameda Creek Diversion Tunnel, fish screens at Calaveras Dam Adits #1 and #2, fish ladder at the ACDD, instream flow schedules, AMIP, modification of Borrow Area E boundary to improve conditions for long-term reestablishment of seasonal wetlands, and relocation of West Haul Road work area to buffer sensitive species habitat); design modification to address site conditions (spillway discharge channel grade control structures if rock quality is poor, widening of right dam abutment excavation for slope stabilization) and

aesthetics (intake tower modifications); additional instrumentation for seismic research; and the electrical distribution line upgrade to supply power for active treatment of stormwater runoff during project construction in compliance with water quality regulations. Therefore, the intent of the fishery enhancements and project refinements under the Variant would be consistent with applicable plans and policies.

With the exception of portions of the electrical distribution line upgrade, the project refinements included in the Variant would occur within the same areas as the Draft EIR project. The EIR (page 4.2-1) indicated that the CDRP would be located entirely on property owned by the CCSF and, consistent with California Government Code Section 53090, would not be subject to the planning and building laws of other cities and counties. The electrical distribution line upgrade, which would occur within existing PG&E easements and rights-of-way and extend from the Calaveras Dam area in a southwesterly direction to the intersection of Downing Road and Calaveras Road in Milpitas, would be partially within and partially outside of CCSF property (see **Figures 9.1 and 9.5**). This same state law also exempts public utilities and special-purpose local agencies (such as water districts) from complying with local building and zoning ordinances when locating facilities like the Calaveras Reservoir (i.e., facilities for the production, storage, treatment or transmission of water). Consequently, the electrical distribution line upgrade included under the Variant does not materially alter the application of other jurisdictions' land use plans and policies as presented in the EIR (Chapter 4, pages 4.2-9 and 4.2-17).

Because the Variant does not change the basic characteristics of the Draft EIR project, and in some cases would enhance the integrity of natural resources affected by the CDRP, the project refinements included in the Variant do not alter the consistency determinations presented for the Draft EIR project (Chapter 4, Section 4.2.5). In particular, the inclusion of the fishery enhancements in the Variant supports the *Alameda Watershed Management Plan* (Alameda WMP) and the Water Enterprise Environmental Stewardship Policy. The fishery enhancements would preserve and enhance the ecological resources of the watershed, which is a secondary goal of the Alameda WMP. The instream flow schedules, fish screens, fish ladder, and AMIP proposed under the Variant would enable the SFPUC to operate the ACDD, Calaveras Dam, and Calaveras Reservoir in a manner that protects and restores native fish and wildlife downstream of the dam, and the releases and bypasses under the proposed flow schedules would generally mimic the natural variation of the seasonal hydrology. Therefore, the Variant would be consistent with goals of the Water Enterprise Environmental Stewardship Policy.

9.3.3 LAND USE, AGRICULTURAL RESOURCES, AND RECREATION

EIR Chapter 4, Section 4.3 evaluates potential impacts of the proposed project on land use, agricultural resources, and recreation. **Table 9.10** summarizes the impacts of the CDRP Variant on land use, agricultural resources, and recreation compared to those of the Draft EIR project.

Table 9.10: Summary of Land Use, Agricultural Resources, and Recreation Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Land Use		
4.3.1: Impact of construction activities on the existing character of the vicinity of the proposed project.	LS	LS
4.3.2: Impact of project operations on existing and/or planned land uses in the vicinity of proposed facilities.	LS	LS
4.3.3: Consistency of proposed project with applicable land use plans, policies, and regulations adopted to avoid environmental impacts.	LS	LS
Agricultural Resources		
4.3.4: Impact of construction activities on grazing land.	LS	LS
4.3.5: Impact of project operations on agricultural uses in the project vicinity.	LS	LS
Recreation		
4.3.6: Impact of construction activities on established recreational uses in the vicinity of the proposed project site.	LSM	LSM
<i>Notes:</i> LS – Less than significant LSM – Less than significant with mitigation		

Existing land uses, agricultural uses, and recreational uses in the vicinity of the CDRP Variant are the same as described for the Draft EIR project and shown in EIR Figures 4.3.1, 4.3.2, and 4.3.3 (Vol. 1, Chapter 4, Section 4.3, pages 4.3-2 to 4.3.10). As described below, implementation of the CDRP Variant would not result in any new significant effects on land use, agricultural resources, or recreation beyond those identified for the Draft EIR project 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 activities on the existing character of the vicinity of the proposed project.

As described for the Draft EIR project (pages 4.3-15 to 4.3-16), construction of the CDRP Variant 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 construction activities and neighboring land uses. Construction activities and associated traffic, while greater in magnitude than under existing conditions, would be similar to the current activities associated with operation of the quarries, water system facilities, and nurseries in the vicinity, and the overall nature of the

project area would remain essentially unchanged. Thus, temporary construction impacts 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 Draft EIR project. With the exception of the electrical distribution line upgrade, the proposed work sites for the Variant are within areas that would already experience some level of disruption described for the Draft EIR project. Upgrading of the electrical distribution line would occur along existing PG&E easements and rights-of-way, and construction within the Spring Valley Golf Course would be noticeable to those using the golf course, disrupting use for short periods of time. However, the activities involved with the upgrade would be similar to maintenance activities that already occur along that right-of-way and would not permanently alter the existing character of the area. The power line upgrade work would add approximately 10 workers and 5 vehicle trips per day for 2 to 3 months in the vicinity of the upgrade work compared to the Draft EIR project. These increases would occur in 2011 and would not be noticeable compared to: (1) the 140 workers during the peak work period in 2014, and (2) the 180 worker trips per day and 86 truck trips per day during the peak period in 2013 that would be associated with the overall work activities occurring in the dam and reservoir vicinity.

In addition, construction activities for the fish screen and fish ladder would occur in the same general work area identified for the construction of the ACDD bypass tunnel for the Draft EIR project, although the fish ladder would occur in about a 0.5-acre corridor along the north bank of Alameda Creek opposite the creek from the work area for the ACDD bypass tunnel. This work area is not open to public access. Construction would last about 5 months longer than the work identified for the ACDD bypass facility and would require up to 22 more workers and more construction equipment, resulting in up to 25 more worker and truck trips. Thus, as described for the Draft EIR project, there would be a potential for impacts 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, 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, the work area for the ACDD bypass tunnel, fish screen, and fish ladder is far enough removed from Calaveras Road that there would be no 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 CDRP Variant, and would further reduce the less-than-significant impacts associated with construction and installation of the fish screen and fish ladder. Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR

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

Impact 4.3.2: Impact of project operations on existing and/or planned land uses in the vicinity of proposed facilities.

As described for the Draft EIR project (page 4.3-16), the operation of the Variant would be consistent with existing and planned land uses, and impacts associated with long-term land use compatibility would be less than significant. The Variant would not substantially alter existing water facilities operations with respect to land use compatibility, and existing and planned land uses in the vicinity would continue.

Under the Variant, operation of the fish screen and ladder at the ACDD would be consistent with existing land uses; similar to the Draft EIR project, land uses surrounding the ACDD are primarily dedicated to water utility infrastructure, and no new land uses would be introduced. Operation of the fish screen and fish ladder would not substantially change the land use character in the vicinity of the ACDD. Compared to the Draft EIR project, no additional area would be disturbed to install the fish screen, and about 0.2 acre would be permanently disturbed after installation of the fish screen and fish ladder.

Operation of the upgraded electrical distribution line would be consistent with existing land uses, and no new land uses would be introduced or made feasible as a result of the increased transmission capacity. With the proposed electrical distribution upgrade, existing service would be replaced with a larger capacity 12-kV line (120-amp service, in addition to the existing 56-amp service); however, the line would extend through the PG&E right-of-way in the same location as the existing power line, an area that is either permanent open space (e.g., Ed R. Levin County Park), protected SFPUC watershed lands, or land zoned for low-intensity uses in Santa Clara or Alameda Counties. Therefore, the upgraded electrical distribution line would not result in substantially new, different, or more intense land use development. Additionally, the electrical distribution line is being planned and constructed solely to provide capacity to support construction-related electrical supply needs, primarily due to more energy-intensive stormwater treatment process requirements that were adopted since publication of the Draft EIR. Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project or increase the severity of a significant impact, and no new mitigation measures would be required.

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

For the identical reason described for the Draft EIR project (pages 4.3-16 to 4.3-17), the Variant would not introduce any project elements that would be inconsistent with adopted plans and policies, and no relevant plans beyond those identified in the EIR have been identified in

association with the project updates. Construction and operation of the Variant would not result in any permanent conflicts with the strategies, goals, or policies applicable to the SFPUC or adjacent county lands. Therefore, this impact would be less than significant.

Impact 4.3.4: Impact of construction activities on grazing land.

For the same reasons described for the Draft EIR project (pages 4.3-18 to 4.13-19), most of the SFPUC land associated with the Variant would remain available for grazing under existing leases, and impacts related to the temporary loss of leased grazing land would be less than significant.

With the exception of the electrical distribution line upgrade, the construction impacts of the Variant on grazing land would not alter the EIR analysis because either: (a) additional areas that would be disturbed overlap with areas that would be disturbed under the Draft EIR project (i.e., fish screen at the ACDD, additional instrumentation, Borrow Area E modifications, and spillway discharge channel); or (b) additional areas that would be disturbed are not within areas where grazing occurs (i.e., fish ladder at the ACDD, fish screens at Adits #1 and #2, intake tower modifications, right dam abutment modification, and West Haul Road work areas). The area of temporary disturbance associated with the electrical distribution line upgrade includes land leased for grazing within CCSF property; none of the areas of potential disturbance outside of CCSF property are used for agriculture. Implementation of the electrical distribution system upgrade could incrementally increase the acreage that would be temporarily removed from grazing during construction; however, construction of this project update would only last up to 3 months and would affect no more than 6 acres, an increase of less than 5 percent in the total acreage of disturbed grazing land from the amount under the Draft EIR project. Other than grazing, there are no agricultural uses along the right-of-way outside of the SFPUC property. Therefore, similar to the Draft EIR project, the upgrade to the electrical distribution line would have a less-than-significant impact on grazing lands.

Impact 4.3.5: Impact of project operations on agricultural uses in the project vicinity.

Identical to the Draft EIR project (pages 4.3-19 to 4.3-20), operations-phase impacts associated with implementation of the Variant would be limited to a temporary restriction of livestock grazing in grassland, riparian forest, and woodland restoration areas. Implementation of the Variant would result in a less-than-significant impact on agricultural uses in the project vicinity.

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

Similar to the analysis presented in the Draft EIR (pages 4.3-20 to 4.3-23), the Variant could temporarily affect recreational uses through potential damage to and closure of Calaveras Road and off-site emissions of dust; however, this impact could be mitigated to a less-than-significant level through implementation of Mitigation Measures 5.12.4a and 5.3.6 (for roadway repair and

potential schedule conflict with AMGEN Tour) and Mitigation Measures 5.9.2a and 5.13.1a (for dust control).

As with the Draft EIR project, construction impacts of the Variant on recreationists due to construction noise and changes in visual character would be less than significant. Construction activities for the Variant that would be located near established recreational uses (i.e., in the northern portion of the project work area near the dam and along Calaveras Road or in the western portion of the PG&E electrical distribution line within Ed R. Levin Park). The locations of fishery enhancements and project refinements under the Variant would be far enough removed from Calaveras Road that there would be no additional effects on access to recreational facilities or on bicyclists using Calaveras Road beyond those described for the Draft EIR project.

Under the Variant, the upgrade to the electrical distribution line, including the replacement or addition of about 10 utility poles along the PG&E right-of-way outside of the project site, would require more workers and more construction equipment resulting in more truck trips than for the Draft EIR project. A number of power line poles are located in Ed R. Levin County Park, and upgrade work would occur within the public 18-hole Spring Valley Golf Course and near the Sandy Wool Lake area of the park just north of the golf course. Thus, there would be a potential for temporary construction-related impacts (e.g., noise and dust) on golfers and other recreationists who use the southern portion of Ed R. Levin County Park during the 2- to 3-month construction period. However, as with the Draft EIR project, access to the park would not be restricted during this period, and construction work would be limited to utility pole sites within the PG&E right-of-way. The proximity of the work to recreational activities would result in temporary increases in the levels of dust due to site preparation (i.e., removal of vegetation or excavation for new utility poles). Similar to the Draft EIR project, the nature of the work would result in temporary impacts on recreational uses that would be reduced to less-than-significant levels with implementation of Mitigation Measure 5.9.2a to control dust levels. Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project or substantially increase the severity of a significant impact, and no new mitigation measures would be required.

9.3.4 VEGETATION AND WILDLIFE

EIR Chapter 4, Section 4.4 evaluates potential impacts of the proposed project on vegetation and wildlife. **Table 9.11** summarizes the impacts of the CDRP Variant on vegetation and wildlife compared to those of the Draft EIR project.

The vegetation and wildlife setting for the CDRP Variant is the same as the study area described in EIR Section 4.4 and shown in Figure 4.4.1 (Vol. 1, Chapter 4, Section 4.4, pages 4.4-1 to 4.4-60), with the exception of the electrical distribution line; much of this line is located to the west of the study area shown in Figure 4.4.1 (page 4.4-2), in the upland area west of Calaveras Reservoir and extending into the golf course at Ed Levin County Park.

Table 9.11: Summary of Vegetation and Wildlife Impacts

Impact	Draft EIR Project Level of Significance			CDRP Variant Level of Significance		
	Construction	Filling	Operation	Construction	Filling	Operation
4.4.1: Effect of CDRP on wetlands and other aquatic habitats.	LSM	LSM	LS	LSM	LSM	LS
4.4.2: Effect of CDRP on California red-legged frog.	LSM	LSM	LSM	LSM	LSM	LSM
4.4.3: Effect of CDRP on California tiger salamander.	LSM	LSM	LS	LSM	LSM	LS
4.4.4: Effect of CDRP on Alameda whipsnake.	LSM	LSM	LS	LSM	LSM	LS
4.4.5: Effect of CDRP on callippe silverspot butterfly.	LSM	NI	NI	LSM	NI	NI
4.4.6: Effect of CDRP on bald eagle.	LSM	LS	LS	LSM	LS	LS
4.4.7: Effect of CDRP on foothill yellow-legged frog.	LSM	LSM	LSM	LSM	LSM	LSM
4.4.8: Effect of CDRP on Heermann’s kangaroo rat.	NI	NI	NI	NI	NI	NI
4.4.9: Effect of CDRP on other special-status species.	see 4.4.9 a, b, c below					
4.4.9a: Effect of CDRP on western pond turtle.	LSM	LS	LS	LSM	LS	LS
4.4.9b: Effect of CDRP on nesting raptors.	LSM	LSM	LS	LSM	LSM	LS
4.4.9c: Effect of CDRP on upland Species of Special Concern, bats, and migratory birds.	LSM	LSM	LS	LSM	LSM	LS
4.4.10: Effect of CDRP on special-status plant species.	LSM	LS	LS	LSM	LS	LS
4.4.11: Effect of CDRP on sensitive vegetation communities.	LSM	LS	LS	LSM	LS	LS
4.4.12: Effect of CDRP on local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LSM	NI	NI	LSM	NI	NI
<i>Notes:</i> NI – No Impact LS – Less than significant LSM – Less than significant with mitigation						

To augment the vegetation and wildlife setting for the Variant study area, URS conducted a biological resource survey of PG&E's Power Line Upgrade (URS 2010a). This study included a review of records from the CDFG's Natural Diversity Database (CNDDDB), review of recent aerial photos, and reconnaissance-level field surveys.⁸ Terrestrial vegetation communities noted within the power line study area include non-native grasslands, mixed evergreen forest/oak woodland, coyote brush scrub, Diablan sage scrub, and coast live oak riparian forest. No serpentine or other native grasslands, as described for the Draft EIR project area, were observed within the power line right-of-way or vicinity. In addition, no other woodlands or riparian vegetation types were observed within the power line right-of-way. In addition to the terrestrial habitats listed above, wetlands and other waters were identified within the power line right-of-way. These features include ephemeral drainages, seasonal wetlands, and ponds, all of which may provide habitat for special-status wildlife species. Rock outcrop areas—unvegetated or sparsely vegetated areas with rocks and little to no soil that may provide wildlife refugia—were also noted in the power line study area. Habitats in the power line right-of-way are potentially suitable to support five special-status plant species: Congdon's tarplant, robust monardella, Diablo helianthella, Santa Clara red ribbons, and fragrant fritillary. Habitats within the power line right-of-way are potentially utilized by four listed wildlife species based on observed habitat characteristics and the proximity to known species occurrences: California tiger salamander, California red-legged frog, callippe silverspot butterfly, and Alameda whipsnake. In addition, the following non-listed special-status species have the potential to occur in the power line upgrade area: golden eagle, burrowing owl, northern harrier, white-tailed kite, prairie falcon, American peregrine falcon, bald eagle, loggerhead shrike, pallid bat, Townsend bat, western mastiff pat, American badger, and western pond turtle. Also, there is habitat in and near the power line route for migratory birds that are protected under the Migratory Bird Treaty Act. All of these species are described in EIR Subsection 4.4.1.2.

As described below, implementation of the CDRP Variant would not result in any new significant effects on vegetation and wildlife beyond those identified for the Draft EIR 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 Variant would result in an incremental change in the affected acreage for predicted impacts on special-status species and sensitive habitats, and the mitigation measures for the Variant have been adjusted accordingly.

⁸ As described in Section 9.2.3, Construction of the Variant, seasonal surveys for special-status plants would be completed as part of the power line upgrade to ensure impact avoidance in final design and line upgrade activities.

Impact 4.4.1: Effect of CDRP on wetlands and other aquatic habitats

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-75 to 4.4-84), construction of the Variant would result in temporary and permanent loss of wetlands, but with 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 (Stormwater Pollution Prevention Plan), these impacts would be reduced to a less-than-significant level. As with the Draft EIR project, implementation of Mitigation Measures 5.4.1 and 5.7.1 would minimize and avoid these impacts of the Variant to the extent feasible and would prevent water quality degradation. Specifically, Mitigation Measure 5.4.1a specifies that a minimum 100-foot buffer be established around wetlands, ponds, streams, drainages, and other aquatic habitats located on or within 100 feet of the project site, and Mitigation Measure 5.4.1b specifies that construction activities be avoided in saturated or ponded wetlands and streams (typically during the spring and winter) to the maximum extent practicable; this measure also stipulates that where wetlands or other water features must be disturbed, the minimum area of disturbance necessary for construction should be identified and the area outside of that minimum area avoided. Areas that are temporarily disturbed during construction would be restored through implementation of Mitigation Measure 5.4.2, and implementation of Mitigation Measure 5.4.3 would provide compensation for temporal, long-term, and permanent loss of habitat functions and services.

The nature and general magnitude of these impacts would be essentially the same under the Variant as for the Draft EIR project, with the exception of a minor increase in the area of disturbance in the ACDD vicinity due to the construction of the fish ladder, including some instream construction at both ends of the fish ladder. Design changes for the other fishery enhancements and project refinements under the Variant would occur within the same footprint evaluated for the Draft EIR project and would not result in any new significant effects on wetlands and aquatic habitats beyond those identified for the Draft EIR project. In the ACDD vicinity, construction of the fish ladder would result in a temporary impact of 0.30 acre and a permanent impact of 0.03 acre on aquatic habitat in Alameda Creek. As shown in Table 9.3 above, under the Draft EIR project the temporary impact area is estimated to be 0.25 acre, all of which would be upland habitat, and under the Variant there would be an additional 0.50 acre of temporary impact area, consisting of 0.30 acre aquatic habitat, 0.01 acre of upland habitat, and 0.19 acre of developed land. Similarly, as shown in Table 9.3, the Draft EIR project would have no permanent impacts on habitat in the ACDD vicinity, while the Variant would permanently affect 0.21 acre, consisting of 0.03 acre aquatic habitat, 0.10 acre riparian habitat, 0.05 acre upland habitat, and 0.03 acre developed land. The additional temporary impact of 0.30 acre and permanent impact of 0.03 acre on aquatic habitat in Alameda Creek associated with the Variant would constitute an incremental increase over the impacts identified for the Draft EIR project.

However, this incremental increase would not cause impacts on aquatic habitats along Alameda Creek that are substantially more severe than those associated with construction of the ACDD bypass facility under the Draft EIR project.

As described above, mitigation measures presented in the EIR would reduce potential impacts of the Variant to a less-than-significant level. Stream habitat temporarily disturbed during construction, including the additional 0.30 acre in temporary impacts, would be restored with implementation of Mitigation Measure 5.4.2 (Habitat Restoration Measures), which would restore the habitat functions and services of areas that are subject to temporary disturbance during project construction. Mitigation Measure 5.4.3 (Compensation Measures) would provide compensation for the permanent loss of habitat functions and services; however, under the Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the 0.03-acre increase in permanent impacts:

- **Wetlands and Other Waters.** Fully compensate for impacts on ~~4.61~~ 4.64 acres of wetlands and open waters, and...

There are seasonal wetlands, ephemeral drainages, and ponds within the electrical distribution line right-of-way. However, none of the existing power poles are located in wetlands or other aquatic habitats, and any replacement poles would be placed outside of such areas. As described in Section 9.2.3, above, based on surveys conducted to date, the limited work areas, and proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed), significant impacts on wetlands and other aquatic habitats would be avoided for the power line upgrade, as required by resource agency permits.

Therefore, construction of the CDRP Variant would not result in any new significant effects on wetlands, streams, or other aquatic habitats beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the Variant and discussed above, would reduce the impacts of the CDRP Variant to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore its capacity to storage levels that existed prior to California Department of Water Resources, Division of Safety of Dams (DSOD) levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on wetlands and other aquatic habitats from reservoir filling applies to the CDRP Variant. As described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation.

During operations of the fish ladder under the Variant, flow in Alameda Creek between December and April would enter the fish ladder about 400 feet upstream of the ACDD and would be returned to Alameda Creek about 150 feet downstream of the ACDD. During the 5-month period, it is expected that between 5 and 30 cfs (when present in Alameda Creek) would flow through the fish ladder, with the remainder passing through the bypass facility at the ACDD. As a result, the CDRP Variant would reduce flow in about 400 feet of Alameda Creek above the ACDD during this period by between 5 to 30 cfs compared to the existing condition and to the Draft EIR project. However, with implementation of the instream flow schedule at the ACDD and the reduced diversion capacity of the tunnel due to the fish screen, flows downstream of the ACDD would be greater than under the current condition (see Section 9.3.6, Hydrology, below), even with the flows diverted to the fish ladder, and there would be no net impact on aquatic habitats along the reach 150 feet downstream of the ACDD. With regard to the approximately 400-foot reach between the upstream end of the fish ladder and the ACDD, this reach currently experiences a wide range of flows, including periods when there is little or no flow, and because the diversions to the fish ladder would occur during the rainy season, this minor flow reduction would not be expected to have a noticeable effect on aquatic habitats along this reach.

Other than implementation of the instream flow schedules and the AMIP, the Variant would not substantially alter CDRP operations from those described for the Draft EIR project. The impact of operations on wetlands and other aquatic habitats under the Variant would be as described for the Draft EIR project, although, in general, the Variant would likely result in beneficial, long-term effects on wetlands and aquatic habitats in Alameda Creek below the ACDD and in Calaveras Creek below Calaveras Dam due to the increased flows and monitoring requirements of the instream flow schedules and AMIP.

Impact 4.4.2: Effect of CDRP on California red-legged frog.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-84 to 4.4-92), the CDRP Variant would result in direct and indirect adverse impacts on California red-legged frog. The majority of the impacts are associated with construction activities in Calaveras Creek and at Disposal Site 7, which would be identical for the Variant and the Draft EIR project. Impacts in the extended study area would also be identical to those of the Draft EIR project; the only difference in impacts between the Variant and the Draft EIR project would occur in Alameda Creek in the vicinity of the ACDD, as described below. Implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures), 5.4.2 (Habitat Restoration Measures), and 5.7.1 (Storm Water Pollution Prevention Plan) identified in the EIR would reduce these impacts to a less-than-significant level by requiring preconstruction avoidance and minimization measures, restoring habitat, and preventing water quality degradation, and Mitigation Measure 5.4.3 (Compensation Measures) would compensate for any impacts of the CDRP Variant on California red-legged frog. Specifically,

Mitigation Measure 5.4.1a would require that a qualified biologist perform preconstruction surveys of suitable California red-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/or the CDFG if red-legged frogs in any life stages are found. Under Mitigation Measure 5.4.3a, the SFPUC would fully compensate for temporary and permanent habitat loss by improving aquatic breeding habitat at a resource agency-approved mitigation area and enhancing and/or protecting and maintaining aquatic non-breeding habitat (shallow perennial and intermittent channels), upland habitat, and dispersal habitat at several mitigation areas, with resource agency concurrence.

California red-legged frog inhabits Alameda Creek and adjacent uplands, and under the Variant could be injured or killed during construction of the fish screen and ladder at the ACDD. Approximately 0.03 acre of aquatic breeding habitat would be permanently affected—a slight increase in impact area compared to the Draft EIR project (see Impact 4.4.1 above). California red-legged frog aquatic and upland habitat is located within the PG&E right-of-way. However, as described in Section 9.2.3 above, the limited work areas, scheduling of work during the dry season, construction duration, and proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) would avoid significant impacts on special-status species, including California red-legged frogs, as required by resource agency permits. No poles are currently located in aquatic habitat, and the line upgrade would not require the use of heavy equipment or placement of fill in aquatic habitat. A minor amount of upland habitat would be lost to install poles in new locations. California red-legged frog habitat is located in the area where additional excavation is proposed near the right dam abutment, but less than 0.1 acre of additional upland refuge and dispersal habitat compared to the Draft EIR project would be temporarily affected (indicated on Table 9.3 as “trace”). Overall, the loss of upland habitat due to the fishery enhancements and project refinements included in the Variant represents a negligible increase in the loss of upland refuge and dispersal habitat identified for the Draft EIR project (656 acres, shown on Table 4.4.11, page 4.4-84).

As described above, mitigation measures described in the EIR would reduce potential impacts of the Variant to a less-than-significant level. Compensation for the permanent loss of habitat functions and services would be provided by Mitigation Measure 5.4.3 (Compensation Measures); however, under the Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the 0.03-acre increase in permanent impacts:

- **California Red-legged Frog Habitat.** Fully compensate for impacts on ~~0.14~~ 0.14 acres and 10,366 linear feet of California red-legged frog aquatic breeding habitat, and...

Therefore, construction of the CDRP Variant would not result in any new significant effects on California red-legged frog beyond those identified for the Draft EIR project or a substantial

increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the Variant and discussed above, would reduce the impacts of the CDRP Variant to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on California red-legged frog from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation.

During operation of the Variant, implementation of the proposed instream flow schedules would increase average annual flow conditions compared to existing conditions, improving habitat for California red-legged frog, and the AMIP would require monitoring of the riparian conditions; these elements of the Variant would generally result in a beneficial impact on California red-legged frog habitat compared to existing conditions. Other than implementation of the instream flow schedules and AMIP, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on California red-legged frog would be as described for the Draft EIR project.

Impact 4.4.3: Effect of CDRP on California tiger salamander.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-93 to 4.4-95), the CDRP Variant would result in direct and indirect adverse impacts on California tiger salamander. Impacts associated with Disposal Site 7 and effects on upland refuge, forage, and dispersal habitat would be essentially the same as for the Draft EIR project. Implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.4.3 (Compensation Measures) identified in the EIR would reduce these impacts to a less-than-significant level through preconstruction surveys, salamander relocation, and construction monitoring, as well as enhancement of aquatic habitat and preservation and management of upland refuge, forage, and dispersal habitat at designated mitigation sites. Specifically, Mitigation Measure 5.4.1a requires that a qualified biologist perform preconstruction surveys of suitable California tiger salamander 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/or the CDFG if California tiger salamanders in any life stages are found. Mitigation Measure 5.4.1a also requires that a California tiger salamander preconstruction survey be conducted at each work site where ground-

disturbing activities would occur to identify suitable California tiger salamander burrow aestivation areas. As feasible within the context of the work area, aestivation areas will be temporarily fenced and avoided, and a California tiger salamander salvage and relocation plan will be prepared in coordination with USFWS and CDFG. Mitigation Measure 5.4.1b requires that exclusion fencing (described in Mitigation Measure 5.4.2, Construction Measures) be regularly maintained and monitored until the start of and throughout construction. Mitigation Measure 5.4.3 (Compensation Measures) would compensate for temporal, long-term, and permanent impacts by enhancing aquatic habitat at the South Calaveras Mitigation Area or other mitigation areas if so directed by resource agency permits and by preserving and managing upland refuge, forage, and dispersal habitat at several mitigation areas.

California tiger salamander does not inhabit Alameda Creek, and under the Variant this species would not be affected by construction activities in the creek near the ACDD. California tiger salamander upland refuge and foraging habitat is located within the electrical distribution line right-of-way; conducting preconstruction surveys in aestivation habitat, and salvaging and relocating California tiger salamanders (if necessary), as proposed for the line upgrade, is expected to minimize adverse impacts. As described in Section 9.2.3, the limited work areas, timing of work during the dry season, construction duration, and proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) would avoid significant impacts on special-status species, including California tiger salamanders, as required by resource agency permits. Construction activities for the Variant in the vicinity of Calaveras Dam, including the right dam abutment excavation, would result in the loss of up to an additional 0.4 acre of upland refuge, foraging, and dispersal habitat, including 0.3 acre of woodland and 0.1 acre of other upland (see Table 9.3); this would be considered an increase in permanent habitat loss. However, this fraction, compared to the 971.6 acres of permanent impacts on upland habitat that would occur with the Draft EIR project, would not substantially increase the severity of the impact on California tiger salamander from that identified for the Draft EIR project.

As described above, mitigation measures described in the Draft EIR would reduce potential impacts of the Variant to a less-than-significant level. Compensation for the permanent loss of habitat functions and services would be provided by Mitigation Measure 5.4.3 (Compensation Measures); however, under the Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the 0.4-acre increase of permanent impacts:

- **California Tiger Salamander Habitat.** ...fully compensate for permanent impacts on ~~971.6~~ 972.0 acres of upland habitat....

Therefore, construction of the CDRP Variant would not result in any new significant effects on California tiger salamander beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact; implementation of the mitigation measures

identified in the EIR, as adjusted for the Variant and discussed above, would reduce the impacts of the CDRP Variant to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on California tiger salamander from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on California tiger salamander would be less than significant, as described for the Draft EIR project.

Impact 4.4.4: Effect of CDRP on Alameda whipsnake.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-95 to 4.4-98), construction of the CDRP Variant could result in injury or death of Alameda whipsnakes if they are present in the construction area, and could result in permanent and temporary loss of foraging, dispersal, and breeding habitat. 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 5.4.3 (Compensation Measures). Specifically, Alameda whipsnake avoidance requirements under Mitigation Measure 5.4.1b specify that a qualified biologist monitor vegetation clearing and initial ground-disturbing activities in stands of scrub habitat that are potentially occupied by Alameda whipsnake and cannot be avoided. The biologist would conduct surveys and relocate any whipsnakes immediately prior to equipment clearing; in addition, prior to clearing, escape routes that include natural vegetative cover will be provided to allow Alameda whipsnakes to move from the scrub habitat to other habitat outside of the construction area, among other provisions. Mitigation Measure 5.4.1b requires that exclusion fencing (described in Mitigation Measure 5.4.2, Construction Measures) be regularly maintained and monitored until the start of and throughout construction. Mitigation Measure 5.4.3 (Compensation Measures) would establish scrub/shrub vegetation in grasslands, preserve rocky outcrop habitat, and preserve and manage grassland and woodland habitat adjacent to scrub habitat at designated mitigation sites.

Although the Variant would involve a minor increase in the construction area where this species could be present, the Variant would not substantially increase the severity of this impact compared to that described for the Draft EIR project. Alameda whipsnake habitat is located

within the PG&E right-of-way; however, as described in Section 9.2.3, the limited work areas, construction duration, and proposed construction methods for implementing the power line upgrade (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) would avoid significant impacts on special-status species, including Alameda whipsnakes, as required by resource agency permits. Alameda whipsnake habitat is also present in the vicinity of the ACDD and adjacent to the access road, and Alameda whipsnakes could be injured or killed during construction of the fish screen and ladder at the ACDD; the Variant would increase the permanent impact area by 0.1 acre of woodland/grassland habitat at the ACDD. The right dam abutment excavation would result in the permanent loss of an additional 0.4 acre of woodlands/grassland habitat. These minor increases in potentially affected areas would not substantially increase the impact of the CDRP Variant over that identified for the Draft EIR project, which would have a temporary construction impact area of over 30 acres and a permanent impact area of over 200 acres.

As described above, mitigation measures presented in the Draft EIR would reduce potential impacts of the Variant to a less-than-significant level. Mitigation Measure 5.4.3 (Compensation Measures) would provide compensation for the permanent loss of upland habitat; however, under the Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the 0.5-acre increase in permanent impact area:

- **Alameda Whipsnake Habitat.** ...fully compensate for permanent impacts to ~~606.9~~ 607.4 acres of woodland and grassland habitat...

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

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on Alameda whipsnake from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on Alameda whipsnake would be as described for the Draft EIR project.

Impact 4.4.5: Effect of CDRP on callippe silverspot butterfly.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-98 to 4.4-99), construction of the CDRP Variant could result in destruction of eggs or larvae of callippe silverspot butterfly. This significant impact would be reduced to a less-than-significant level through implementation of Mitigation Measures 5.13.1a and 5.13.1b (Air Quality) and 5.9.2a (Hazards and Hazardous Materials), which would require measures to control dust and avoid direct impacts. In addition, Mitigation Measure 5.4.3 (Compensation Measures) would compensate for the direct and indirect loss of larval habitat by protecting and enhancing existing grasslands containing the larval host plant at the South Calaveras and Sage Canyon mitigation areas or other mitigation areas if so directed by resource agency permits.

The impact analysis for the Variant is essentially the same as presented for the Draft EIR project because: (1) habitat for callippe silverspot butterfly is not present in the ACDD work area, and this butterfly species would not be affected by construction of the fish screen or ladder at the ACDD; (2) callippe silverspot butterfly habitat could be present within portions of the electrical distribution line right-of-way, although (as described in Section 9.2.3) the limited work areas, construction duration, and proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) would avoid significant impacts on special-status species, including callippe silverspot butterflies, as required by resource agency permits; (3) the additional area for the right dam abutment excavation under the Variant would not affect callippe silverspot butterfly habitat; and (4) impacts associated with construction of the other fishery enhancements or project refinements under the Variant would be identical to those for the Draft EIR project. As stated above, the same mitigation measures provided for the Draft EIR project would mitigate construction impacts on this species to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on callippe silverspot butterfly from reservoir filling applies to the CDRP Variant. As described for the Draft EIR project, operations under the Variant would have no impact on this species. Other than implementation of the instream flow schedules and AMIP, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on callippe silverspot butterfly would be as described for the Draft EIR project.

Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project 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 CDRP on bald eagle.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-99 to 4.4-102), construction of the CDRP Variant could adversely affect bald eagles if they were nesting near project activities during the construction period. This significant impact would be reduced to a less-than-significant level through implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures). Specifically, Mitigation Measure 5.4.1a 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. Mitigation Measure 5.4.1 would reduce the potential impact of the CDRP Variant to a less-than-significant level.

The impact analysis for the Variant is essentially the same as presented for the Draft EIR project because: (1) bald eagles do not nest in the vicinity of the ACDD and would not be affected by construction of the screen or ladder at the ACDD; (2) a bald eagle nest is located approximately 1 mile east of the electrical distribution line right-of-way, and while construction activities have the potential to disturb nesting birds, implementation of the mitigation measures specified for the Draft EIR project, described above, would reduce this impact to a less-than-significant level; (3) the right dam abutment excavation would not affect bald eagle habitat, and there would be no change in the impact as evaluated for the Draft EIR project; and (4) impacts associated with construction of the other fishery enhancements or project refinements under the Variant would be identical to those for the Draft EIR project. As stated above, the same mitigation measures provided for the Draft EIR project would mitigate construction impacts on this species to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on bald eagles from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant. Other than implementation of the instream flow schedules and AMIP,

the Variant would not substantially alter CDRP operations, and the impact of Variant operations on bald eagles would be as described for the Draft EIR project.

Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project 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 CDRP on foothill yellow-legged frog.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-102 to 4.4-106), construction of the CDRP Variant could result in the direct loss of and indirect effects on foothill yellow-legged frog. This significant impact would 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. Together, these measures would reduce the impact of the CDRP Variant to a less-than-significant level.

Foothill yellow-legged frog inhabits Alameda Creek, and, under the Variant, this species could be injured or killed during construction of the fish screen and ladder at the ACDD. Approximately 0.30 acre of aquatic habitat would be temporarily disturbed and 0.03 acre of aquatic habitat would be permanently affected; this amount would constitute a slight increase in impact areas compared to the total affected areas along over 9,000 linear feet of Arroyo Hondo and Alameda Creek identified for the Draft EIR project. However, the fish screen would be installed when the work area is dry (i.e., when there is no flow in the creek), which would minimize potential impacts on foothill yellow-legged frog. None of the other fishery enhancements or project refinements under the Variant, including the electrical distribution line upgrade and right dam abutment excavation, would affect foothill yellow-legged frog habitat.

As described above, mitigation measures presented in the EIR would reduce potential impacts of the Variant to a less-than-significant level. Mitigation Measure 5.4.3 (Compensation Measures) would provide compensation for the permanent loss of breeding habitat; however, under the

Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the 0.03-acre increase in permanent impacts.

- **Foothill Yellow-Legged Frog Habitat.** Document that project benefits to foothill yellow-legged frog habitat in Alameda Creek from the ACDD to the Calaveras Creek confluence fully compensate for the loss of 9,421 linear feet of habitat in Arroyo Hondo, ~~and~~ fully compensate for 0.03 acre of aquatic habitat at the ACDD, and for any loss of breeding habitat ...

Therefore, construction of the CDRP Variant would not result in any new significant effects on foothill yellow-legged frog beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR, as adjusted for the Variant and discussed above, would reduce the impacts of the CDRP Variant to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on foothill yellow-legged frog from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on foothill yellow-legged frog would be as described for the Draft EIR project. Implementation of the proposed instream flow schedules and AMIP would generally result in a beneficial impact on foothill yellow-legged frog habitat due to the increase in flows in Alameda and Calaveras Creeks and associated monitoring compared to existing conditions.

Impact 4.4.8: Effect of CDRP on Heermann's kangaroo rat

As with the Draft EIR project (pages 4.4-106 to 4.4-107), the CDRP Variant is not expected to result in the loss of potential Heermann's kangaroo rat habitat or direct mortality of this species. For the same reasons provided for the Draft EIR project, reservoir construction, filling, and operational activities under the Variant would have no impact on this species.

Heermann's kangaroo rat is usually found on knolls and ridges where there is minimal vegetation and bare soil that is shallow and well drained. This species is not expected to occur in the ACDD fish screen or ladder work area and so would not be affected by construction. In addition, this species is not present at the sites of any of the fishery enhancements and project refinements under the Variant, including the area of the electrical distribution line upgrade or the right dam

abutment excavation; thus, there would be no change in the impact as evaluated for the Draft EIR project.

Impact 4.4.9a: Effect of CDRP on western pond turtle.

Impacts of Construction

Similar to the Draft EIR project (pages 4.4-107 to 4.4-108), construction of the CDRP Variant could result in death or injury of western pond turtles. This significant impact would be reduced to a less-than-significant level with 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.

Construction impacts of the Variant on western pond turtle would not be substantially different from those described for the Draft EIR project. Western pond turtle inhabits Alameda Creek, and under the Variant this species could be injured or killed during construction of the fish screen and ladder at the ACDD. Approximately 0.30 acre of aquatic habitat would be temporarily disturbed and 0.03 acre of habitat would be permanently affected in the ACDD vicinity—a slight increase in impact areas compared to the Draft EIR project. However, as stated below, this acreage would be more than offset by the increase in shoreline habitat when the reservoir is refilled. Western pond turtle habitat is also located within the electrical distribution line right-of-way; however, as described in Section 9.2.3, this upgrade work would require limited work areas, would be brief in duration, would occur during the dry season, and would incorporate specialized construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) to avoid significant impacts on special-status species, including western pond turtles, as required by resource agency permits. The right dam abutment excavation area does not contain western pond turtle habitat, and therefore would not change the impacts of the Draft EIR project.

Implementation of the Draft EIR mitigation measures described above would reduce the impacts of the Variant to a less-than-significant level, including the impact associated with the incremental increase in disturbed habitat, which would be more than offset by the substantial increase in shoreline habitat (by 11 miles) when the reservoir is refilled.

Therefore, construction of the CDRP Variant would not result in any new significant effects on western pond turtle beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact; implementation of the mitigation measures identified in the EIR and discussed above would reduce the impacts of the CDRP Variant to a less-than-significant level.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on western pond turtle from reservoir filling applies to the CDRP Variant, including the beneficial impact of the increase in shoreline habitat (by 11 miles) when the reservoir is refilled; as described for the Draft EIR project, impacts of the Variant would be less than significant. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on western pond turtle would be as described for the Draft EIR project.

Implementation of the proposed instream flow schedules and AMIP would generally result in a beneficial effect on western pond turtle habitat due to the increase in flows in Alameda and Calaveras Creeks compared to existing conditions.

Impact 4.4.9b: Effect of CDRP on nesting raptors.

Impacts of Construction and Refilling

As with the Draft EIR project (pages 4.4-108 to 4.4-109), construction of the CDRP Variant and reservoir refilling could result in the direct mortality of raptors. 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 Variant, impacts on nesting raptors would be substantially the same as described for the Draft EIR project. Because tree- and ground-nesting raptors may use habitat in the vicinity of the ACDD and the electrical distribution line for nesting, construction of the fish screen and ladder and the distribution line during the nesting season could incrementally increase the potential for indirect mortality compared to the Draft EIR project. Similarly, the right dam abutment excavation would result in a minor increase in the impact on nesting species compared to the Draft EIR project. However, as described in Section 9.2.3, the limited work areas, timing of work outside of the nesting season, limited construction duration, proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed), and preconstruction nesting bird surveys would avoid significant impacts on special-status species, including ground- and tree-nesting raptors, as required by resource agency permits. In addition, implementation of Mitigation Measure 5.4.1 (Avoidance and Minimization Measures) would reduce the overall impact,

including the incremental increase in the disturbance area in the ACDD vicinity, to a less-than-significant level.

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on nesting raptors from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation.

Impacts of Operations

Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of operations under the Variant on nesting raptors would be as described for the Draft EIR project.

Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project 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 CDRP on upland Species of Special Concern, bats, and migratory birds.

Impacts of Construction and Refilling

As with the Draft EIR project (pages 4.4-109 to 4.4-112), construction of the CDRP Variant and refilling the reservoir could result in the loss of habitat for special-status species and protected migratory birds. Construction could also cause the disturbance or removal of active special-status bird nests or bat maternity sites. 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 minimize construction impacts by requiring preconstruction bird nest and bat roost surveys and ensuring avoidance of active nests and roosts, as well as 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.

Under the Variant, impacts on upland Species of Special Concern, bats, and migratory birds would be substantially the same as described for the Draft EIR project. Construction of the fish screen and ladder at the ACDD could incrementally increase the direct effect, or cause the loss of,

habitat for the upland Species of Special Concern, bats, and migratory birds identified in Table 4.4.14 of the EIR (Vol. 1, Chapter 4, Impact 4.4.9c, page 4.4-111) that use grassland, scrub, upland woodland, riparian forest, and rock outcrop habitats. The Variant would increase the permanent upland habitat impact area by 0.05 acre in the ACDD vicinity, and the right dam abutment excavation would result in the additional loss of up to 0.4 acre of grassland and upland woodland habitat. Construction of the electrical distribution line upgrade could require minor vegetation removal or trimming, but would not have a significant effect on habitat for these upland species.

As described above, mitigation measures presented in the EIR would reduce potential impacts of the Variant to a less-than-significant level. Implementation of Mitigation Measures 5.4.1 (Avoidance and Minimization Measures) and 5.4.3 (Compensation Measures) would reduce the overall impact, including the incremental increase in the disturbance area associated with the Variant compared to the Draft EIR project, through provisions included under preconstruction measures specified in Mitigation Measure 5.4.3a. Specifically, preconstruction surveys for bat maternity sites in the ACDD vicinity would mitigate for the increased area of disturbance under the Variant.

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on upland Species of Special Concern, bats, and migratory birds from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant with the identified mitigation.

Impacts of Operations

Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on upland Species of Special Concern, bats, and migratory birds would be as described for the Draft EIR project.

Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project 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 CDRP on special-status plant species.

Impacts of Construction

As with the Draft EIR project (page 4.4-113), construction of the CDRP Variant could result in the accidental loss of the special-status plant species most beautiful jewel-flower due to use of Disposal Area 7. 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 Variant, impacts on special-status plants would be substantially the same as described for the Draft EIR project. No special-status plants were identified during botanical surveys of the ACDD fish screen and fish ladder sites (ETJV 2009); however, the presence of one special-status plant, robust monardella, could not be ruled out because the surveys were not performed at the protocol level. Even if this plant were present, it would be located on the rocky slopes above the ACDD, outside of the construction areas, and impacts are unlikely. The expanded right dam abutment excavation work area was included in previous special-status plant surveys, and no special-status plants were found. No special-status plant species were observed during the biological resources reconnaissance survey of the electrical distribution line right-of-way, and there are no CNDDDB records of special-status plants within the right-of-way. However, due to the timing of the reconnaissance survey of the electrical distribution line right-of-way (conducted in the dry season), a protocol-level rare plant survey was not completed for the electrical distribution line right-of-way. Habitats within the power line right-of-way are potentially suitable to support five special-status plant species: Congdon's tarplant, robust monardella, Diablo helianthella, Santa Clara red ribbons, and fragrant fritillary. As described in Section 9.2.3, the limited work areas, preconstruction surveys and proposed construction methods (including use of hand tools when working around sensitive habitats, use of existing access routes, and accessing areas on foot as needed) would avoid significant impacts on special-status plants in this area, as required by the resource agencies. As part of final project design and prior to field mobilization for the power line upgrade, seasonal surveys for special-status plants will be conducted to provide the information necessary to ensure impact avoidance. Biological resource monitors will be present during line upgrade work to ensure impact avoidance. Therefore, with implementation of EIR mitigation measures, construction of the CDRP Variant would not increase the impact on special-status plant species from that identified for the Draft EIR project.

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the

impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on special-status plant species from reservoir filling applies to the CDRP Variant. As described for the Draft EIR project, impacts of the Variant would be less than significant. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on special-status plant species would be as described for the Draft EIR project.

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

Impact 4.4.11: Effect of CDRP on sensitive vegetation communities.

Impacts of Construction

As with the Draft EIR project (pages 4.4-113 to 4.4-116), construction of the CDRP Variant would cause the loss of oak woodlands and savannah, riparian forest, and serpentine grasslands. This significant 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 Variant, impacts on sensitive vegetation communities would be substantially the same as described for the Draft EIR project. Construction of the fish screen at the ACDD would not result in the conversion of sensitive vegetation communities to other habitat types. Construction of the fish ladder at the ACDD could cause the conversion of about 0.1 acre of riparian forest. Construction of the electrical distribution line upgrade is not expected to occur in sensitive communities, including upland woodlands, since any tree trimming or removal is part of current maintenance practices along the right-of-way and therefore not attributable to the Variant. The right dam abutment excavation would result in the additional permanent loss of about 0.3 acre of upland woodland habitat, which would not substantially increase the impact of the CDRP Variant beyond that identified for the Draft EIR project.

As described above, mitigation measures described in the Draft EIR would reduce potential impacts of the Variant to a less-than-significant level. Mitigation Measure 5.4.3 (Compensation Measures) would provide compensation for the permanent loss of sensitive vegetation communities; however, under the Variant, Mitigation Measure 5.4.3a is adjusted as follows to address the minor increase of permanent impact areas:

- **Riparian Habitat.** Fully compensate for impacts on ~~7.9~~ 8.0 acres of riparian habitat ...
- **Oak Woodlands and Savannah.** Fully compensate for impacts on ~~24.0~~ 24.3 acres of oak woodland and savannah habitat ...

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

Impacts of Filling the Reservoir and Operations

Filling the reservoir to restore it to pre-DSOD levels could take slightly longer under the Variant than under the Draft EIR project, since the maximum diversion at the Alameda Creek Diversion Tunnel would decrease from approximately 650 cfs to 370 cfs with the fish screen. However, the impact of filling the reservoir is based on the maximum elevation of reservoir inundation, not the rate of fill. Therefore, the EIR analysis of project impacts on sensitive vegetation communities from reservoir filling applies to the CDRP Variant; as described for the Draft EIR project, impacts of the Variant would be less than significant. Other than implementation of the instream flow schedules, the Variant would not substantially alter CDRP operations, and the impact of Variant operations on sensitive vegetation communities would be as described for the Draft EIR project.

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

Impact 4.4.12: Effect of CDRP on local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

As with the Draft EIR project (pages 4.4-116 to 4.4-117), the CDRP Variant would not conflict with applicable local policies or ordinances protecting biological resources; none of the fishery enhancements and project refinements included in the Variant would affect the analysis of this impact as presented for the Draft EIR project. The CDRP Variant would also be located on lands within Alameda and Santa Clara Counties, would use the same roadways as the Draft EIR project, and would not result in the removal of any trees protected under the tree ordinances of Santa Clara or Alameda Counties.

Construction of the CDRP Variant 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), potential impacts of the Variant regarding

conflicts with county policies and ordinances protecting biological resources would be less than significant.

As with the Draft EIR project, the Variant would not result in impacts associated with reservoir filling or operations; the only differences between the Draft EIR project and the Variant would be the rate of fill and the implementation of instream flow schedules, neither of which would affect local policies or ordinances.

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

9.3.5 FISHERIES AND AQUATIC HABITAT

EIR Chapter 4, Section 4.5 evaluates potential impacts of the proposed project on fisheries and aquatic habitat. **Table 9.12** summarizes the impacts of the CDRP Variant on fishery resources compared to those of the Draft EIR project.

EIR Section 4.5 (pages 4.5-1 to 4.5-82) describes the existing conditions (setting) and addresses potential impacts on fisheries and aquatic habitat as a result of implementation of the Draft EIR project; Section 5.5 (pages 5-16 to 5-17) presents measures to mitigate impacts on fisheries and aquatic habitat. The description of the environmental setting provided in Section 4.5 for the Draft EIR project also applies to the CDRP Variant. The only elements of the CDRP that would potentially affect fishery resources are: the fish screen and ladder at the ACDD; the fish screens on Adits #1 and #2; and the proposed instream flow schedules and AMIP. None of the other project refinements in the Variant are located in or near aquatic habitats and would have no impacts on fishery resources; therefore, these other elements of the Variant are not discussed in this section, as they would not affect the Variant impact analysis relative to the analysis for the Draft EIR project.

As described below, implementation of the CDRP Variant would not result in any new significant effects on fisheries and aquatic habitats beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required. In some cases, the Variant would lessen the severity of impacts and would be beneficial compared to the Draft EIR project.

Table 9.12: Summary of Fishery Resources Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.5.1: Construction-related effects on fish occupying habitat in Calaveras Creek downstream of the existing dam.	LSM	LSM
4.5.2: Construction-related permanent loss of fish habitat in Calaveras Creek downstream of the existing dam.	LS	LS
4.5.3: Effect of project on creating barriers to fish movement/migration upstream in Calaveras and Alameda Creeks.	NI	NI/B
4.5.4: Temporary effects on fisheries resources related to increases in sediments and turbidity and to release of and exposure to contaminants.	LSM	LSM
4.5.5: Effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek.	LSM	B
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.	LS	B
4.5.7: Effects of project operations on fish habitat in Calaveras Reservoir and in streams upstream of the replacement dam.	B	B
4.5.8: Effects of project operations on native fish in Alameda Creek in the extended study area.	LS	LS
4.5.9: Potential for conflict with local plans protecting fisheries and aquatic habitat.	LSM	LSM
<i>Notes:</i> B – Beneficial NI – No impact LS – Less than significant LSM – Less than significant with mitigation		

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

Similar to the Draft EIR project (page 4.5-55), construction of the CDRP Variant could affect rainbow trout in Calaveras Creek downstream of the existing dam. Fishery enhancements and project refinements included in the CDRP Variant would not change the extent or magnitude of construction-related effects on fish in Calaveras Creek downstream of the existing dam that were described for the Draft EIR project, because the Variant does not propose any changes to construction activities at this location. 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, potential impacts during construction of the replacement dam on native fish would be less than significant when compared to the existing condition and the same as those described and evaluated in EIR Section 4.5. Thus, the Variant would not result in any new significant effects beyond those identified for the Draft EIR project

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.

As with the Draft EIR project (pages 4.5-55 to 4.5-56), impacts related to a permanent loss of aquatic habitat in Calaveras Creek downstream of the existing dam would be less than significant under the Variant. Fishery enhancements and project refinements included in the CDRP Variant 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 Draft EIR project, because the Variant does not propose any changes to construction activities at this location. 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. Therefore, the impact would be less than significant when compared to the existing condition and the same as that already described and evaluated in EIR Section 4.5.

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

As with the Draft EIR project (pages 4.5-56 to 4.5-57), the fishery enhancements and project refinements included in the CDRP Variant would not affect fish passage on Calaveras Creek at Calaveras Dam as compared to the existing condition or the Draft EIR project. However, fishery enhancements in the CDRP Variant include a fish ladder at the ACDD. This element of the Variant would improve fish passage compared to the existing condition and to the Draft EIR project. This component of the Variant would be beneficial.

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

Similar to the Draft EIR project (pages 4.5-57 to 4.5-60), construction of the CDRP Variant could increase sediments and turbidity and temporarily degrade water quality, adversely affecting fish habitat in fish populations in localized areas. 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.

Construction of the fish screen and ladder elements of the CDRP Variant would result in additional disturbance adjacent to and within Alameda Creek near the ACDD compared to the Draft EIR project. The construction period at the ACDD would increase from 2 to 3 weeks for

the Draft EIR project to approximately 6 months for the Variant. Although construction activities in the creek would last longer, it would occur during the dry season, when flowing water is not present in the work area and fish are not present, and no impacts on fisheries would be expected. In the unlikely event that wet habitat and fish are present in the work area, then construction of the fish screen and ladder at the ACDD could result in adverse effects; however, this impact would be mitigated to a less-than-significant level with the implementation of Mitigation Measure 5.5.1 (Native Fish Capture and Relocation) and Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan). Construction effects on fisheries associated with the fish screens on Adits #1 and #2 in Calaveras Reservoir would be essentially the same as those that would occur for the barge-related and reservoir-based construction activities described for the Draft EIR project, and implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce impacts to a less-than-significant level.

Thus, construction impacts associated with the additional fishery enhancements and project refinements included in the Variant would be less than significant with mitigation when compared to the existing condition and the same or similar to those described and evaluated in EIR Section 4.5. The Variant would not result in any new significant effects beyond those identified for the Draft EIR 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.

As with the Draft EIR project (pages 4.5-60 to 4.5-70), the Variant would increase the frequency and duration of flows in Alameda Creek below the ACDD compared to existing conditions. However, unlike the Draft EIR project, the multiple fishery enhancement elements at the ACDD under the Variant would result in a beneficial impact, as described below, and no mitigation measures would be required.

Fishery enhancements included in the CDRP Variant (i.e., fish ladder at the ACDD, fish screen at the Alameda Creek Diversion Tunnel, refinements to the flow schedules, and the AMIP) would generally provide improved conditions for the native fish community in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek when compared to both the existing condition and the Draft EIR project.

The proposed fish ladder at the ACDD would create volitional upstream movement and migration opportunities for fish at the ACDD. A fish ladder at the ACDD does not currently exist and is not proposed under the Draft EIR project.

The fish screen at the diversion tunnel would reduce the potential for fish entrainment, increase the potential for fish to successfully move downstream over or through the ACDD (via the bypass

facility), and reduce the effective diversion capacity of the tunnel from approximately 650 cfs to 370 cfs. Reducing the diversion capacity of the tunnel would result in more frequent, higher, and longer duration flows passing over the ACDD during storm events. The more frequent, higher, and longer duration flows would generally result in increased geomorphic processes, which in turn would contribute to channel formation and habitat maintenance (also see Section 9.3.6 below for additional discussion on changes in hydrology). There is no fish screen under current conditions, and one is not proposed under the Draft EIR project.

The proposed flow schedules would provide increased minimum flow bypasses and a reduced period of diversion at the ACDD compared to the Draft EIR project. Minimum flow bypasses do not currently exist under the existing condition and would increase from 5–15 cfs (depending on time of year) to 30 cfs when compared to the Draft EIR project. The flow schedules proposed in the Variant include a limited period of diversion (from December 1 to March 31). Under the Variant, flows in Alameda Creek would be effectively unimpaired from April 1 through November 30.

Lastly, the AMIP, which includes comprehensive monitoring, performance criteria, and triggers for adaptive management, would ensure that suitable habitat conditions are being provided when flows are naturally present and the fish community is being protected. Monitoring does occur under the existing condition; however, there are no performance standards or triggers for adaptive management under the existing condition. Limited monitoring and adaptive management are proposed as mitigation under the Draft EIR project.

In summary, the fishery enhancements included in the CDRP Variant would represent an improvement or benefit when compared to the existing condition, and the Variant would have a beneficial impact on fishery resources. No mitigation measure would be required.

The Variant would also result in an improvement compared to the Draft EIR project. Additionally, because of the beneficial effects associated with the fish screen at the diversion tunnel, the reduced diversion capacity and period of diversion, and the AMIP, the Variant would not require implementation of Mitigation Measures 5.5.5a (Resident Rainbow Trout Monitoring) and 5.5.5b (Resident Rainbow Trout Adaptive Management) to reduce impacts to a less-than-significant level. Under the Draft EIR project, Mitigation Measure 5.5.5a requires the SFPUC to develop and implement a monitoring program to ensure that the proposed flow releases are sufficient to sustain the resident trout population in Alameda Creek downstream of the ACDD, and Mitigation Measure 5.5.5b requires the SFPUC to implement adaptive management measures including additional flow releases, seasonal restrictions on operation of the ACDD, or installation of a fish screen at the diversion tunnel; these measures were also identified in the WSIP PEIR as PEIR Mitigation Measures 5.4.5-3a (Minimum Flows for Resident Rainbow Trout on Alameda Creek) and 5.4.5-3b (Alameda Diversion Dam Diversion Restrictions or Fish Screens). Based on

this project-specific impact analysis of the additional fishery enhancements included in the Variant, these mitigation measures would not apply to the CDRP Variant.

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.

As with the Draft EIR project (pages 4.5-70 to 4.5-76), the CDRP Variant would increase flows in Calaveras Creek downstream of the dam and downstream of its confluence with Alameda Creek. However, unlike the Draft EIR project, the additional fishery enhancements included in the Variant would result in beneficial effects on fish in Calaveras Creek below Calaveras Dam and in Alameda Creek downstream of the confluence with Calaveras Creek in the primary study area, as described below.

Fishery enhancements included in the CDRP Variant would generally provide improved conditions for the native fish community in Calaveras Creek below Calaveras Dam and in Alameda Creek downstream of the confluence with Calaveras Creek in the primary study area when compared to the existing condition and the Draft EIR project.

Minimum flow releases at Calaveras Dam do not currently exist and would be generally similar to those proposed under the Draft EIR project (i.e., a range from 5 to 15 cfs under the Draft EIR project versus a range of 5 to 12 cfs under the Variant). An important difference between the Draft EIR project and the Variant, however, is that the Variant includes a compliance point immediately downstream of the dam, meaning that the flow target could not be met through flows that would be bypassed at the ACDD, as could be the case under the Draft EIR project. This could result in increased flows in the segment of Calaveras Creek below the dam (under the Variant) during periods when the flow target would otherwise be met through bypasses at the ACDD (under the Draft EIR project). The proposed flow schedule would require year-round water releases from Calaveras Dam, including coldwater releases during summer months.

As discussed above under Impact 4.5.5, the fishery enhancements in the CDRP Variant would also result in minimum bypasses and a reduced period of diversion at the ACDD, and the fish screen at the diversion tunnel would reduce the effective diversion capacity of the tunnel from approximately 650 cfs to 370 cfs. The minimum bypasses and periodic spills over the ACDD would combine with flow releases from Calaveras Dam downstream of the confluence with Calaveras Creek. As stated above, minimum flow bypasses at the ACDD do not currently exist and would increase from 5–15 cfs (depending on time of year) to 30 cfs when compared to the Draft EIR project. The flow schedules proposed in the Variant also include a limited period of diversion at the ACDD (from December 1 to March 31). Under the Variant, flows in Alameda Creek would be effectively unimpaired from April 1 through November 30. Reducing the diversion capacity of the tunnel would result in more frequent, higher, and longer duration flows

passing over the ACDD during storm events. The more frequent, higher, and longer duration flows would generally result in increased geomorphic processes, which in turn would contribute to channel formation and habitat maintenance (also see Section 9.3.6 below for additional discussion on changes in hydrology). There is no fish screen under current conditions, and one is not proposed under the Draft EIR project.

Lastly, the AMIP, which includes comprehensive monitoring, performance criteria, and triggers for adaptive management, would ensure that suitable habitat conditions are being provided and the fish community is being protected. Monitoring does occur under the existing condition; however there are no performance standards or triggers for adaptive management under the existing condition. Limited monitoring and adaptive management are proposed as mitigation under the Draft EIR project.

In summary, the fishery enhancements included in the CDRP Variant would result in year-round water releases from Calaveras Dam (including similar coldwater releases from Calaveras Dam during summer months), increased minimum bypass flows at the ACDD during the winter months when flow is naturally present in upper Alameda Creek, and more frequent, higher, and longer duration flows passing over the ACDD during storm events. All of these flows, combined with natural runoff and tributary inflows, would influence habitat conditions in Calaveras Creek below the dam and in Alameda Creek downstream of the Calaveras Creek confluence in the primary study area. The AMIP would ensure that suitable habitat conditions are being provided and that the fish community is being protected. Therefore, the CDRP Variant would represent an improvement or benefit when compared to the existing condition and would also be an improvement over the Draft EIR project.

Impact 4.5.7: Effects of project operations on fish habitat in Calaveras Reservoir and in streams upstream of the replacement dam.

As with the Draft EIR project (pages 4.5-76 to 4.5-78), the effects of proposed Calaveras Reservoir operations on fishery habitat within the reservoir and upstream in Calaveras Creek and Arroyo Hondo would be beneficial. However, unlike the Draft EIR project, fishery enhancements in the CDRP Variant would include fish screens on Adits #1 and #2 in Calaveras Reservoir. These fish screens would reduce the potential for fish entrainment into the adits compared to the existing condition and to the Draft EIR project, and would therefore constitute an improvement over existing conditions as well as the Draft EIR project. None of the other fishery enhancements or project refinements included under the Variant would change the potential 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.

As with the Draft EIR project (pages 4.5-78 to 4.5-80), operation of the CDRP Variant would have a limited influence on fishery habitat conditions in lower Alameda Creek in the extended study area. This impact would be less than significant.

As discussed above under Impacts 4.5.5 and 4.5.6, the fishery enhancements in the CDRP Variant would result in minimum bypasses and a reduced period of diversion at the ACDD; the fish screen at the diversion tunnel would reduce the effective diversion capacity of the tunnel from approximately 650 cfs to 370 cfs, and there would be year-round minimum flow releases at Calaveras Dam.

Minimum flow bypasses at the ACDD do not currently exist and would increase from 5–15 cfs (depending on time of year) to 30 cfs when compared to the Draft EIR project. The flow schedules proposed in the Variant also include a limited period of diversion at the ACDD (from December 1 to March 31). Under the Variant, flows in Alameda Creek would be effectively unimpaired from April 1 through November 30.

Reducing the diversion capacity of the tunnel would result in more frequent, higher, and longer duration flows passing over the ACDD during storm events. The more frequent, higher, and longer duration flows would generally result in increased geomorphic processes, which in turn would contribute to channel formation and habitat maintenance (also see Section 9.3.6 below for additional discussion on changes in hydrology). There is no fish screen under current conditions, and one is not proposed under the Draft EIR project.

Minimum flow releases at Calaveras Dam do not currently exist and would be similar to releases proposed under the Draft EIR project (i.e., a range from 5 to 15 cfs under the Draft EIR project versus a range of 5 to 12 cfs under the Variant).

In summary, when compared to the Draft EIR project, the fishery enhancements included in the CDRP Variant would result in increased minimum bypass flows during the winter months when flow is naturally present in upper Alameda Creek; more frequent, higher, and longer duration flows passing over the ACDD during storm events, and similar cold water releases from Calaveras Dam during summer months. All of these flows, combined with natural runoff, tributary inflows, and flows from the Arroyo de la Laguna watershed, would influence habitat conditions in the extended study area (also see Section 9.3.6 for additional discussion on hydrology).

As discussed in the EIR, habitat conditions in both reaches of the extended study area (Niles Canyon and lower Alameda Creek) have been heavily modified and altered as a result of past

human activities, which have included use of the creek as a conveyance facility for water supply; construction of levees and maintenance of the channel for flood control; aggregate mining; adjacent urbanization; and diking, channelization, and pond construction for commercial salt production. Water supply, erosion control, and flood control structures were constructed in the channel; these structures include the Bay Area Rapid Transit (BART) weir and PG&E gas pipeline drop structure, and a series of inflatable dams for water supply impoundment (including capture of flows imported from the Sacramento–San Joaquin Delta via the South Bay Aqueduct), local aquifer recharge, and diversion. This combination of features prevents fish migration under existing conditions and impairs other habitat functions. The BART weir currently presents a complete barrier to all migrating anadromous fish species, including steelhead, with the possible exception of Pacific lamprey (Gunther et al. 2000). However, as described in EIR Section 6.2, Cumulative Impacts, it is important to note that plans are being developed to restore and/or improve fish passage conditions at the BART weir and inflatable dams.

Under the Draft EIR project, predicted (simulated) changes in the flow regime and associated changes in habitat conditions in Niles Canyon and lower Alameda Creek were found to be relatively small and would be diminished by the operations of other water resource entities in the Arroyo de la Laguna watershed. As a result, operations under the Draft EIR project would not be expected to change habitat conditions in lower Alameda Creek for steelhead (downstream of the BART weir) or other fish species. Because the CDRP Variant would generally result in increased downstream flows during the winter; more frequent, higher, and longer duration flows passing over the ACDD during storm events; and similar cold-water releases from Calaveras Dam during summer months, the impact of project operations on native fish in Alameda Creek in the extended study area would be less than significant for the CDRP Variant compared to the existing condition, and beneficial compared to the Draft EIR project.

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

Similar to the Draft EIR project (pages 4.5-80 to 4.5-82), construction and operation of the CDRP Variant and the extraction and disposal of dam building materials would not result in a conflict with provision of local plans intended to protect biological diversity. Direct impacts 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).

As described above under Impacts 4.5.3, 4.5.5, and 4.5.6, the Variant would improve conditions for fisheries compared to the Draft EIR project, resulting in beneficial impacts compared to the existing condition. Fishery enhancements included in the CDRP Variant (i.e., fish ladder at the ACDD, fish screens at the Alameda Creek Diversion Tunnel and Adits #1 and #2, refinements to

the flow schedules, and the AMIP) would generally provide improved conditions for the fish community when compared to the existing condition and the Draft EIR project. These improved conditions would further reduce any potential conflicts with, and would further support local plans protecting fisheries and aquatic habitat.

Thus, impacts related to the potential for conflicts with local plans protecting fisheries and aquatic habitat would be less than significant under the Variant.

9.3.6 HYDROLOGY

EIR Chapter 4, Section 4.6 evaluates potential impacts of the proposed project on hydrology. **Table 9.13** summarizes the impacts of the CDRP Variant on hydrology compared to those of the Draft EIR project.

Existing hydrologic conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 1, pages 4.6-1 to 4.6.57) and shown in EIR Figures 4.6.1 to 4.6.10. The only elements of the CDRP Variant that would cause potential impacts on hydrology to be different from those of the Draft EIR project are: the fish screen and the fish ladder at the ACDD, and the proposed instream flow schedules. None of the other project refinements in the Variant would affect hydrology; therefore, these project refinements are not discussed in this section because they would not affect the hydrology impact analysis as described for the Draft EIR project. Additional modeling was performed for the CDRP Variant, similar to what was performed for the Draft EIR project and is included in Appendix P (Hydrology Modeling for the CDRP Variant).

As described below, implementation of the CDRP Variant would not result in any new significant effects on hydrology beyond those identified for the Draft EIR 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 with the Draft EIR project (pages 4.6-64 to 4.6-66), construction of the CDRP Variant might require an alteration of seasonal flow rates and water levels in Calaveras Reservoir, but these changes would be within the range of past operations. As with the Draft EIR project, the impact of the Variant on downstream flow rates would be less than significant, and no mitigation would be required.

Under the Variant, construction of the proposed fish screen and fish ladder at the ACDD would expand the extent of construction activities at the ACDD compared to the Draft EIR project and could temporarily affect flow rates in Alameda Creek. For construction of the fish ladder, it could be necessary to build cross-stream barriers in the streambed at the entrance and exit to the

Table 9.13: Summary of Impacts on Hydrology in Alameda Creek Watershed

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Construction Impacts		
4.6.1: Construction of the replacement dam would temporarily change flow rates in Calaveras and Alameda Creeks downstream of Calaveras Dam.	LS	LS
4.6.2: Construction of the replacement dam would temporarily increase downstream flooding risk.	LS	LS
4.6.3: Construction-related activities could affect local groundwater supplies in the vicinity of the dam.	LS	LS
Operational Impacts		
4.6.4: Operational effects on flows in Calaveras Creek downstream of Calaveras Dam.	LS	LS
4.6.5: Operational effects on flow in Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.	LS	LS
4.6.6: Operational effects on flow in Alameda Creek, Calaveras Creek confluence to Arroyo de la Laguna confluence.	LS	LS
4.6.7: Operational effects on flow in Alameda Creek downstream of the Arroyo de la Laguna confluence.	LS	LS
4.6.8: Downstream flooding and hazard in the event of dam failure.	LS	LS
4.6.9: Effects on channel formation and sediment transport along Calaveras Creek.	LS	LS
4.6.10: Effects on channel formation and sediment transport along Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.	LS	LS
4.6.11: Effects on channel formation and sediment transport along Alameda Creek downstream of the Calaveras Creek confluence.	LS	LS
4.6.12: Changes in groundwater levels, flows, quality, and supplies.	LS	LS
<i>Note:</i> LS – Less than significant		

fish ladder. During construction of the barriers, cofferdams would be built upstream and downstream of the construction area. If flow is present during the construction period, it would be diverted around the construction areas at the ACDD. Flow in the creek could be interrupted briefly, possibly for a few hours, while any needed diversion is put in place. However, because construction of the fish screen and fish ladder would occur during the dry season when the creek has very low to no flow, the Variant would have little to no effect on flow in Alameda Creek. The construction effects on hydrology would be essentially the same as those described in EIR

Section 4.6, and the impact would remain less than significant. Construction of all other project refinements under the Variant, including fish screens at Calaveras Dam Adits #1 and #2, would not cause impacts on hydrology because of their location away from streams or because construction would occur under dry conditions.

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

As with the Draft EIR project (page 4.6-66), construction of the CDRP Variant might increase the risk of downstream flooding due to the two shutdowns of the dam outlet works, but this impact would be less than significant because the shutdowns would take place in the dry season, and the SFPUC would maintain an operational outlet during the rainy season and would draw down the reservoir to minimal operating levels. This construction impact of the Variant would be the same as that described for the Draft EIR project because none of the fishery enhancements or project refinements would involve activities that could cause downstream flooding.

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

As with the Draft EIR project (page 4.6-67), construction of the CDRP Variant would have a less-than-significant impact on local groundwater supplies due to the temporary and localized nature of the construction activities. This construction impact of the Variant would be the same as that described for the Draft EIR project because none of the fishery enhancements or project refinements would involve activities that could affect groundwater supplies in the vicinity of the dam.

Impact 4.6.4: Operational effects on flows in Calaveras Creek downstream of Calaveras Dam.

As with the Draft EIR project (pages 4.6-68 to 4.6-76), operation of the CDRP Variant would alter the pattern of flow in Calaveras Creek downstream of Calaveras Dam, with an overall increase in average annual flow (as modeled over all year types) when compared to existing conditions. Because the increased flows would be within the range of pre-project conditions, this impact would be less than significant, as explained below.

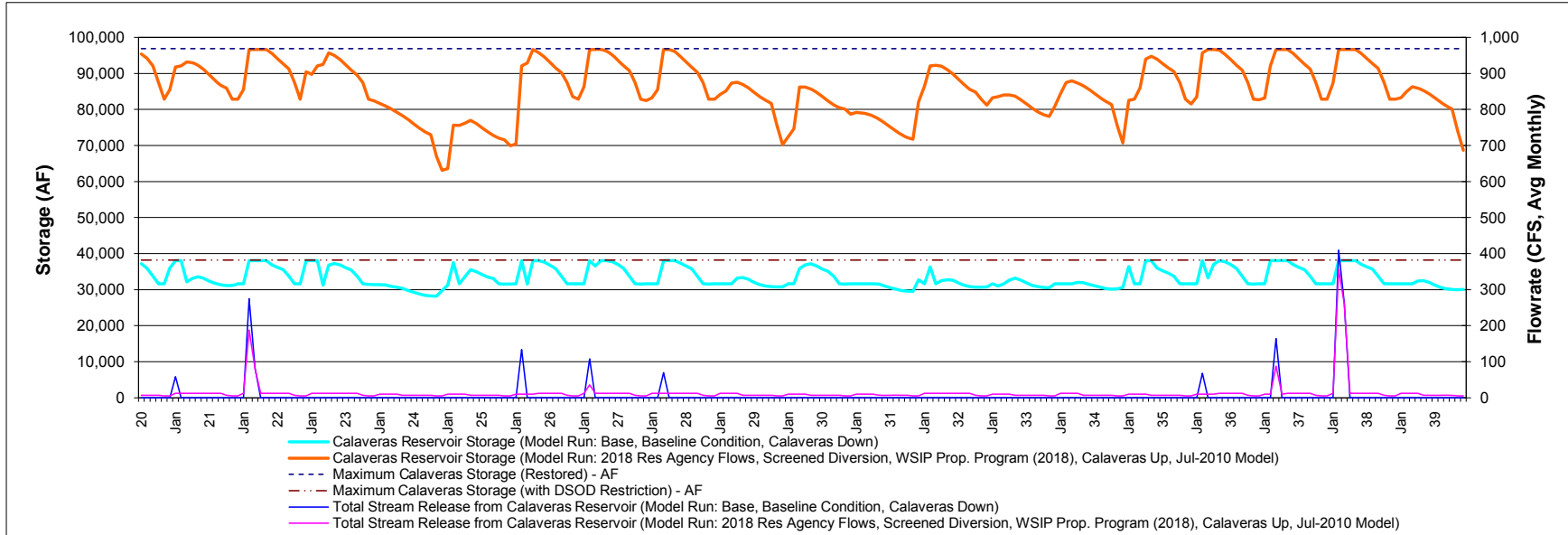
Operation of the CDRP Variant would alter storage and water surface elevations in Calaveras Reservoir, as well as flow, sediment transport, and channel formation in Calaveras Creek (see Impact 4.6.9 below). Compliance with the proposed instream flow schedule would require a continuous release of 5 to 12 cfs from Calaveras Reservoir to Calaveras Creek, depending on the water-year type and the time of year (see Table 9.4 above).

Consistent with the analytical methodology used for the Draft EIR project, the Hetch Hetchy/Local Simulation Model (HH/LSM) was run for the CDRP Variant to estimate average monthly reservoir water storage and releases. The results are shown in a series of figures and tables in this chapter that correspond to a similar series of figures and tables contained in EIR Chapter 4. In this section, **Figures 9.7a and 9.7b, Modeled Calaveras Reservoir Storage and Releases to Calaveras Creek, 1920 – 2002 – CDRP Variant**, and **9.8, Modeled Storage in Calaveras Reservoir, Annual Average and Range in Storage Volume**, correspond to Figures 4.6.11 (pages 4.6-70 to 4.6-71) and 4.6.12 (page 4.6-74) in EIR Chapter 4. **Tables 9.14 and 9.15** correspond to Tables 4.6.16 and 4.6.17 (pages 4.6-72 and 4.6-73). The differences between the new HH/LSM results for the CDRP Variant and those for the Draft EIR project are summarized below.

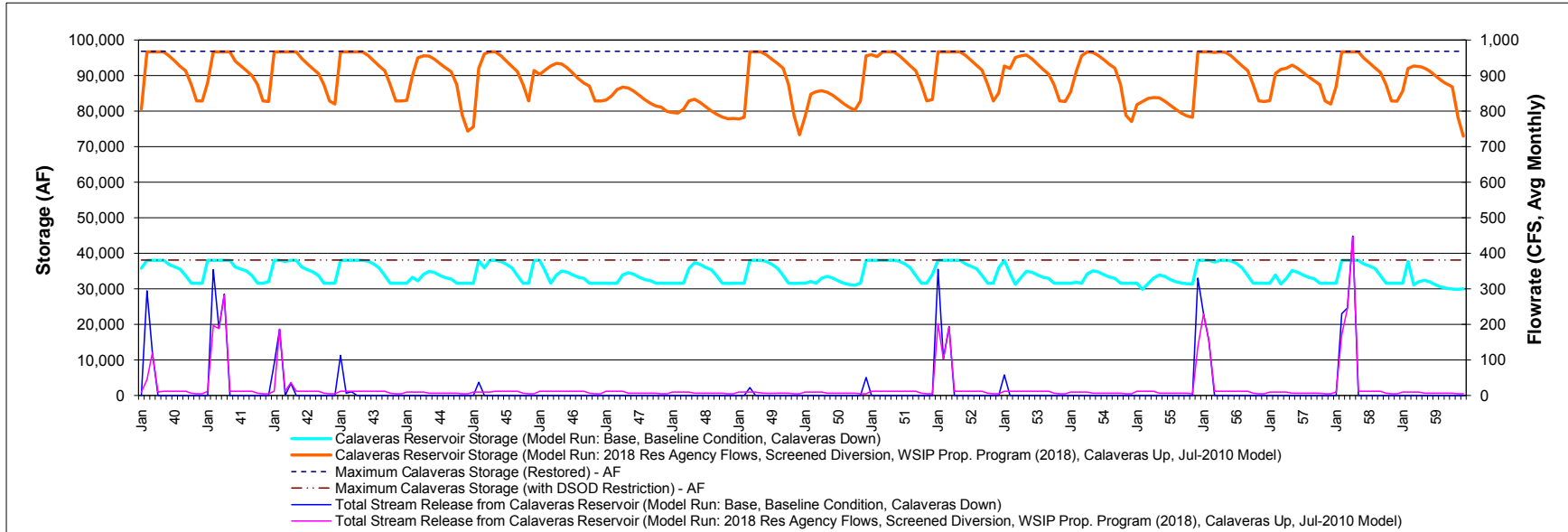
Storage and water surface elevations in Calaveras Reservoir with the CDRP Variant and the Draft EIR project would be similar. Figures 9.7a, 9.7b, and 9.8 and Tables 9.14 and 9.15 present information on flow in Calaveras Creek downstream of Calaveras Reservoir with the CDRP Variant. Average annual flow in Calaveras Creek downstream of Calaveras Reservoir with the CDRP Variant would be 22 percent greater than under the existing condition (Table 9.15 below); with the Draft EIR project, average annual flow would be the same as under the existing condition (Table 4.6.17 in EIR Chapter 4). Average annual flow in wet and above-normal years would decrease, and average annual flow in normal, below-normal and dry years would increase with both the CDRP Variant and the Draft EIR project compared to the existing condition. The increases in flow in normal, below-normal and dry years compared to the existing condition would be greater with the CDRP Variant (Table 9.15, below) than with the Draft EIR project (Table 4.6.17 in EIR Chapter 4).

Under the existing condition, flow in Calaveras Creek below Calaveras Dam, does not reflect a natural hydrograph. With exception of seepage through and around the dam, flow consists entirely of releases or spills from the reservoir. Releases and spills typically occur in the winter and spring of some wetter years, and when the cone valve is tested. With both the CDRP Variant and the Draft EIR project, releases for native fishes would be made in addition to the releases referred to above. With the CDRP Variant, 5 to 12 cfs of water would be released from Calaveras Reservoir to Calaveras Creek year-round for the benefit of native fishes, with the greatest releases being made in the winter of wet years. With the Draft EIR project, 2 cfs would be released continuously from Calaveras Reservoir to the creek. Both the CDRP Variant and the Draft EIR project would increase minimum flows in Calaveras Creek below the dam compared to the existing condition.

1920 - 1939



1940 - 1959



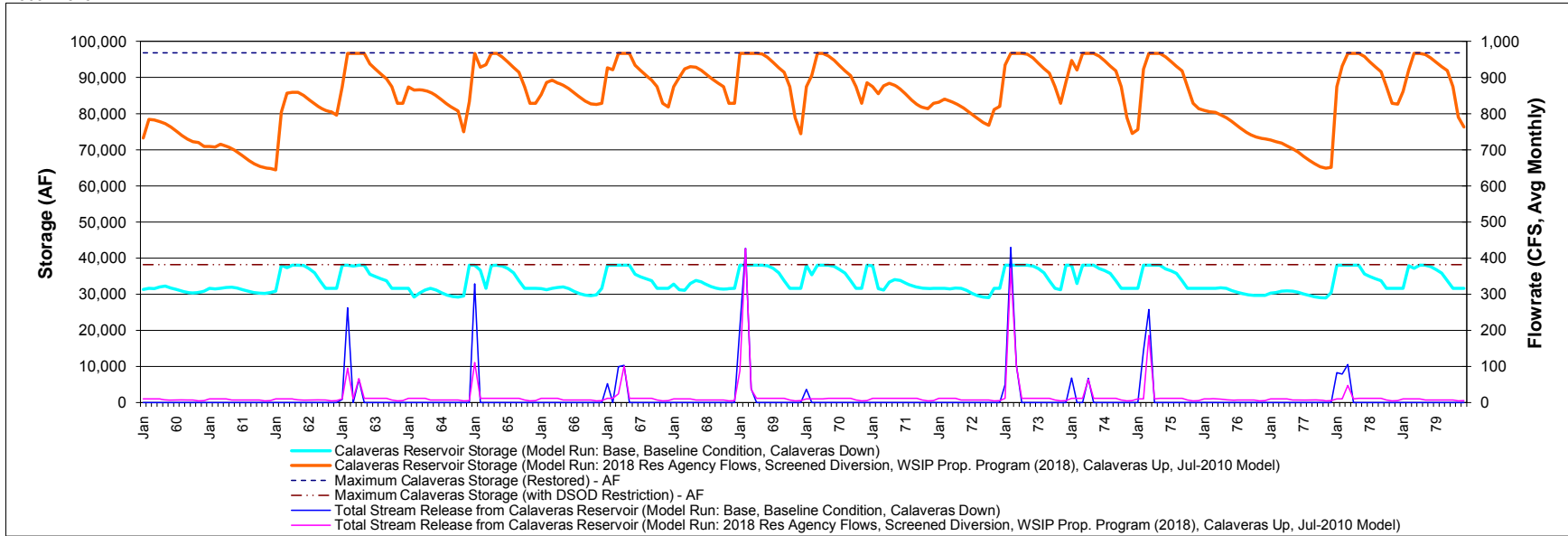
SOURCE: SFPUC 2010e

CALAVERAS DAM REPLACEMENT PROJECT

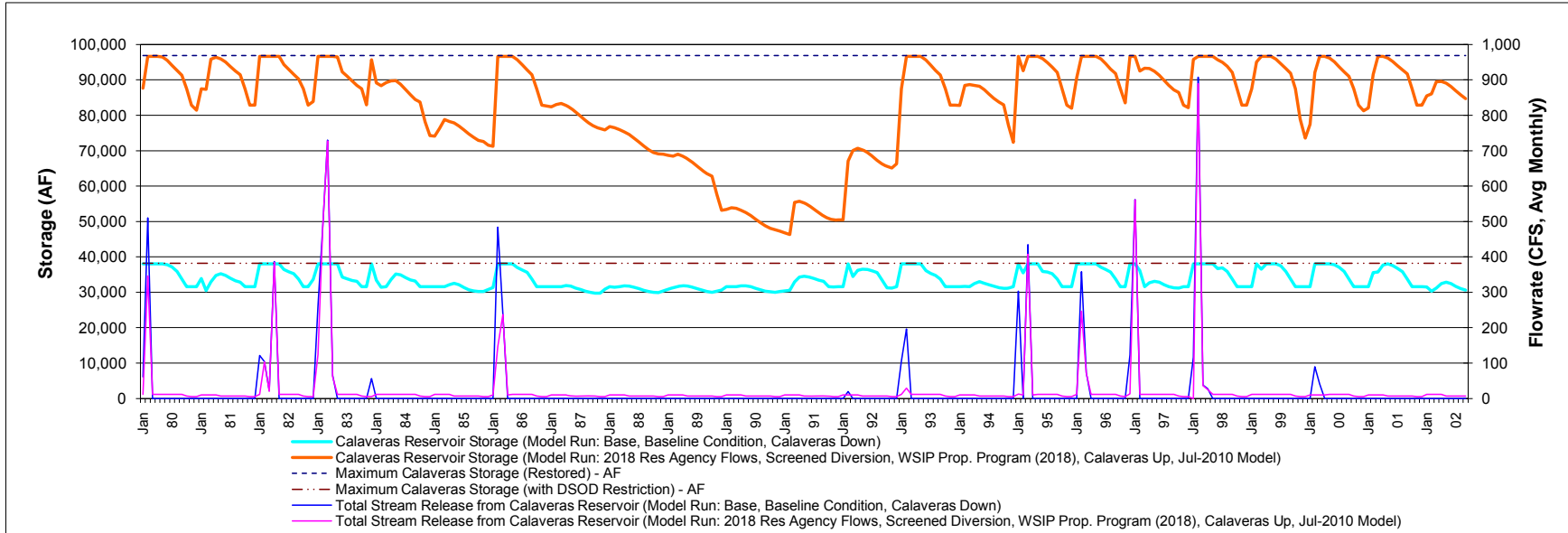
2005.0161E

FIGURE 9.7a (Similar to Figure 4.6.11a): MODELED CALAVERAS RESERVOIR STORAGE AND RELEASES TO CALAVERAS CREEK, 1920-2002 - CDRP VARIANT

1960 - 1979



1980 - 2002

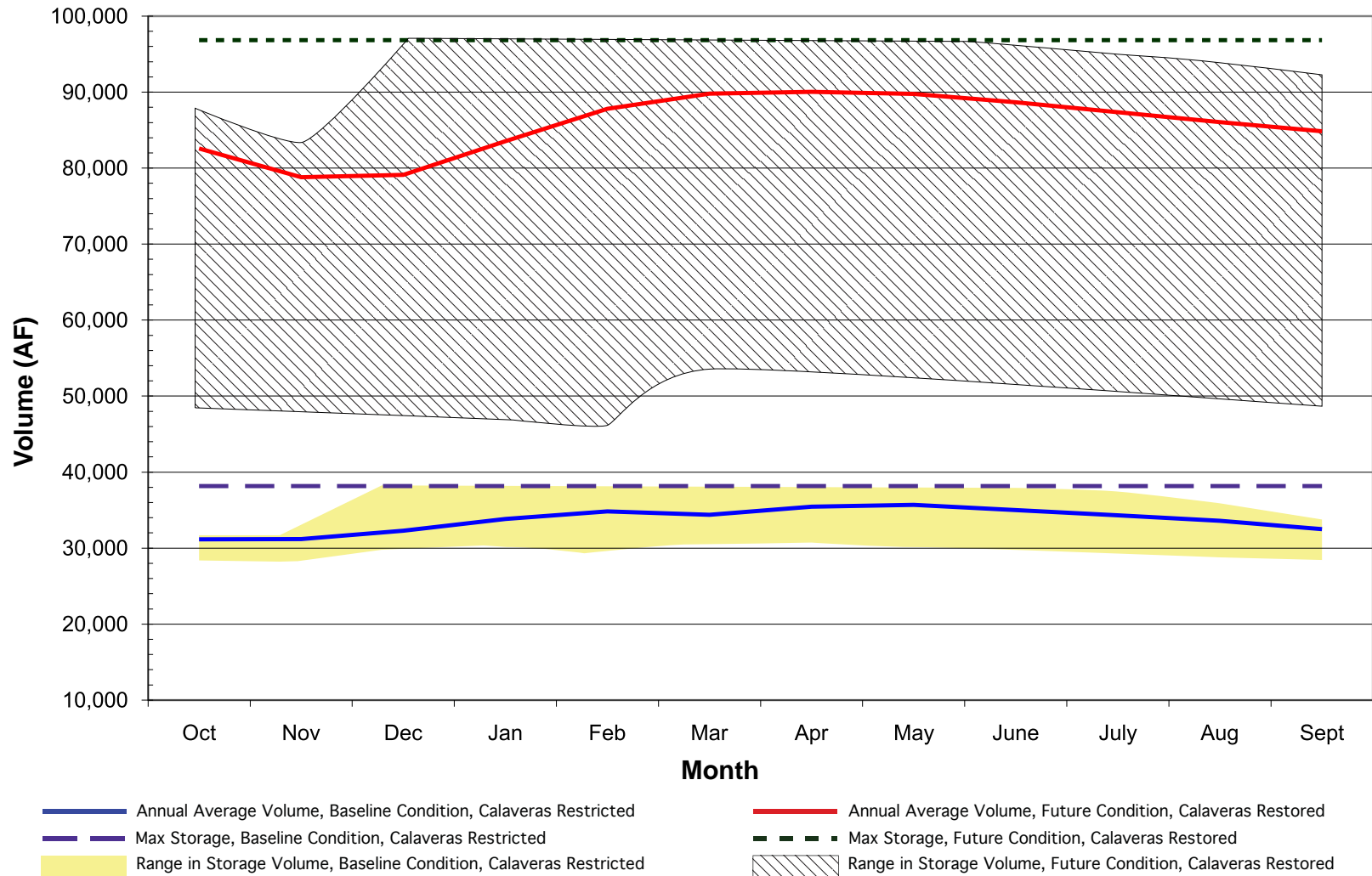


SOURCE: SFPUC 2010e

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FIGURE 9.7b (Similar to Figure 4.6.11b): MODELED CALAVERAS RESERVOIR STORAGE AND RELEASES TO CALAVERAS CREEK, 1920-2002 - CDRP VARIANT



SOURCE: SFPUC 2010f

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2005.0161E

FIGURE 9.8 (Similar to Figure 4.6.12): MODELED STORAGE IN CALAVERAS RESERVOIR, ANNUAL AVERAGE AND RANGE IN STORAGE VOLUME

Table 9.14 (similar to Table 4.6.16): Modeled Average Monthly Releases from Calaveras Reservoir to Calaveras Creek (cubic feet per second)

Existing Condition (2005)																		
Month	Wet		Above Normal		Normal		Below Normal		Dry		All							
Oct	0		0		0		0		0		0							
Nov	0		0		0		0		0		0							
Dec	28		3		4		0		0		7							
Jan	151		45		6		0		0		40							
Feb	297		106		16		0		0		83							
Mar	162		50		6		0		0		43							
Apr	84		8		0		0		0		18							
May	0		0		0		0		0		0							
June	0		0		0		0		0		0							
July	0		0		0		0		0		0							
Aug	0		0		0		0		0		0							
Sept	0		0		0		0		0		0							
With CDRP Variant (2018)																		
Oct	7		7		7		7		7		7							
Nov	5		5		5		5		5		5							
Dec	14		5		5		5		5		7							
Jan	83		17		11		11		10		26							
Feb	246		45		11		11		10		63							
Mar	158		42		11		11		10		46							
Apr	90		18		11		11		10		28							
May	12		12		10		7		7		10							
June	12		12		10		7		7		10							
July	12		12		10		7		7		10							
Aug	12		12		10		7		7		10							
Sept	12		12		10		7		7		10							
Difference and Percent Change, Existing Condition (2005) vs CDRP Variant (2018)																		
Oct	7	*	7	*	7	*	7	*	7	*	7	*						
Nov	5	*	5	*	5	*	5	*	5	*	5	*						
Dec	-14	[- 50%]	2	[67%]	1	[25%]	5	*	5	*	0	[0%]						
Jan	-68	[- 45%]	-28	[- 62%]	5	[83%]	11	*	10	*	-14	[- 35%]						
Feb	-51	[- 17%]	-61	[- 58%]	-5	[- 31%]	11	*	10	*	-20	[- 24%]						
Mar	-4	[- 2%]	-8	[- 16%]	5	[83%]	11	*	10	*	3	[7%]						
Apr	6	[7%]	10	[125%]	11	*	11	*	10	*	10	[56%]						
May	12	*	12	*	10	*	7	*	7	*	10	*						
June	12	*	12	*	10	*	7	*	7	*	10	*						
July	12	*	12	*	10	*	7	*	7	*	10	*						
Aug	12	*	12	*	10	*	7	*	7	*	10	*						
Sept	12	*	12	*	10	*	7	*	7	*	10	*						
<i>Note:</i> * Indicates an increase from zero release under current conditions. See tables above for actual increase. Key: <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="background-color: #e0ffff;"> </td><td>> 0%</td></tr> <tr><td style="background-color: #ffff00;"> </td><td>< 0 to -5%</td></tr> <tr><td style="background-color: #ffcc99;"> </td><td>< -5%</td></tr> </table>														> 0%		< 0 to -5%		< -5%
	> 0%																	
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	< -5%																	

Source: SFPUC 2010e

Table 9.15 (similar to Table 4.6.17): Existing and Estimated with-CDRP Variant Average Annual Flow in Calaveras Creek Downstream of Calaveras Dam

Year Type	Flow (AFY) ¹		Difference (CDRP Variant - Existing)	
	Existing	CDRP Variant		
Wet	42,623	39,135	-3,488	-8%
Above Normal	12,423	11,892	-530	-4%
Normal	1,831	6,676	4,845	265%
Below Normal	0	5,746	5,746	*
Dry	0	5,638	5,638	*
All Years	11,249	13,695	2,446	22%

Notes:
 AFY = acre-feet per year
¹ Modeling results do not account for base flows in Calaveras Creek that occur via seepage through and/or around the dam.
 * Indicates an increase from zero under current conditions. Detailed information on the HH/LSM and underlying assumptions is provided in Appendix D.1.

Source: SFPUC 2010e

With respect to flow in Calaveras Creek below Calaveras Dam, the operational impacts of the Draft EIR project on stream hydrology were determined to be less than significant. The operational impacts of the CDRP Variant on stream hydrology would be similar to but less than those of the Draft EIR project. Therefore, the impact of the CDRP Variant on stream hydrology would also be less than significant.

Impact 4.6.5: Operational effects on flows in Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.

As with the Draft EIR project (pages 4.6-76 to 4.6-87), operation of the CDRP Variant would alter the pattern of flow in Alameda Creek downstream of the ACDD to the Calaveras Creek confluence, with an overall increase in average annual flow (as modeled over all year types) when compared to existing conditions. With the implementation of the fish screen and the proposed instream flow schedule at the ACDD, the Variant would result in a substantial increase in flows in Alameda Creek downstream of the ACDD compared to both existing conditions and the Draft EIR project, as discussed below. Because the increased flows would be within the range of pre-project conditions, this impact would be less than significant as explained below. As for the Draft EIR project, this project-level, site-specific impact analysis supersedes the evaluation presented in the WSIP PEIR (PEIR Impact 5.4.1-2), which concluded that the hydrology impact for this reach of Alameda Creek would be significant and unavoidable.

Compliance with the proposed instream flow schedule that is part of the CDRP Variant would require the bypass of up to 30 cfs of streamflow at the ACDD from December 1 through March 31, whenever there was streamflow available for bypassing. This flow bypass would typically

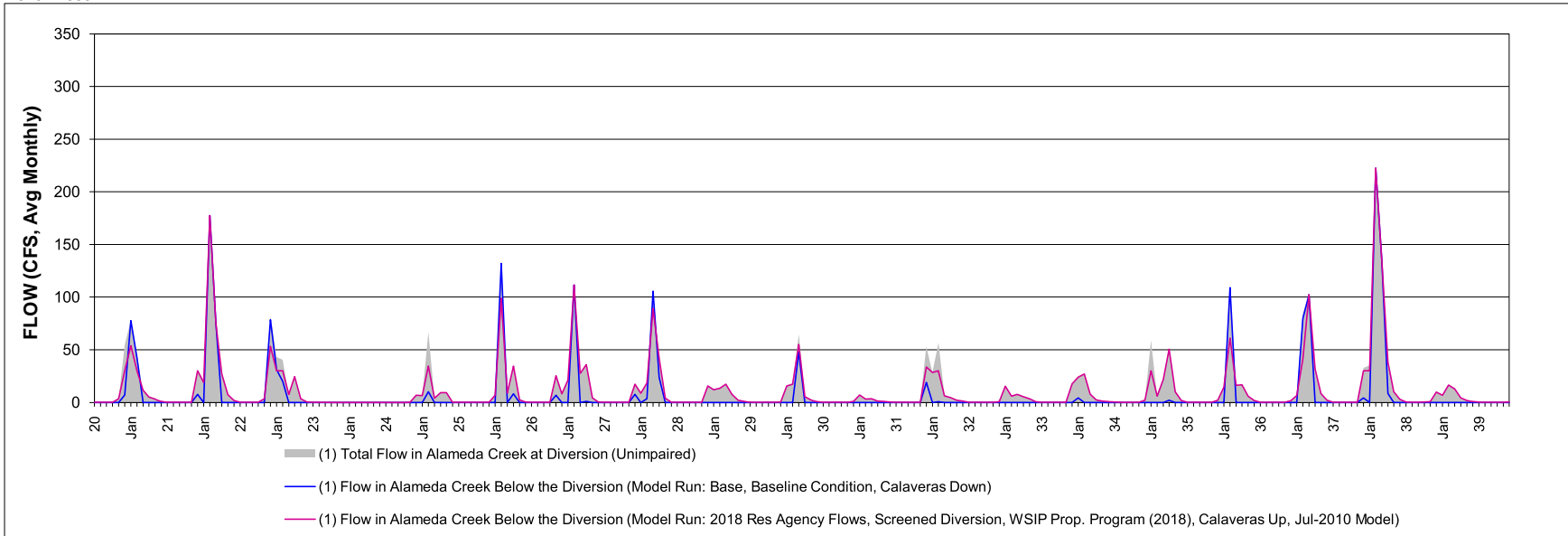
occur through the fish ladder or the bypass tunnel at the ACDD, as well as spills over the crest during peak flows. With the fish screen in place at the entrance to the diversion tunnel, the maximum capacity of the diversion tunnel would be 370 cfs. Thus, between December 1 and March 31 when the gates on the diversion tunnel are open, 30 cfs or less of streamflow would bypass the ACDD and flow down Alameda Creek; flows between 30 and 370 cfs would be diverted to Calaveras Reservoir; and flows above 370 cfs would spill over the ACDD to the creek below the diversion dam. At times when the gates are closed, all streamflow in Alameda Creek would bypass or spill over the ACDD. The gates could be closed before March 31 because one of the SFPUC's operating goals is to minimize spills from Calaveras Reservoir (see Section 9.2.5 above regarding operations of the ACDD).

Consistent with the analytical methodology used for the Draft EIR project, the HH/LSM and the 15-minute model of the ACDD were run for the CDRP Variant to estimate average monthly flows at the ACDD and to analyze effects on peak flows below the ACDD, respectively. The results are shown in a series of figures and tables in this chapter that correspond to a similar series of figures and tables in EIR Chapter 4. **Figures 9.9a and 9.9b: Modeled Flow in Alameda Creek Downstream of the ACDD, 1920-2002 – CDRP Variant**, and **Figures 9.10a and 9.10b: Analysis of 15-Minute USGS Gage Data from Alameda Creek above the ACDD and Flow Past the Dam – CDRP Variant**, correspond to Figures 4.6.13 (pages 4.6-78 to 4.6-79), and to Figures 4.6.14a and 4.6.14b (pages 4.6-84 to 4.6-85) in Chapter 4 of the EIR. **Tables 9.16 and 9.17** correspond to Tables 4.6.18 and 4.6.19 (pages 4.6-81 to 4.6-82) in EIR Chapter 4. The differences between the new HH/LSM and 15-minute model results for the CDRP Variant and those for the Draft EIR project are summarized below.

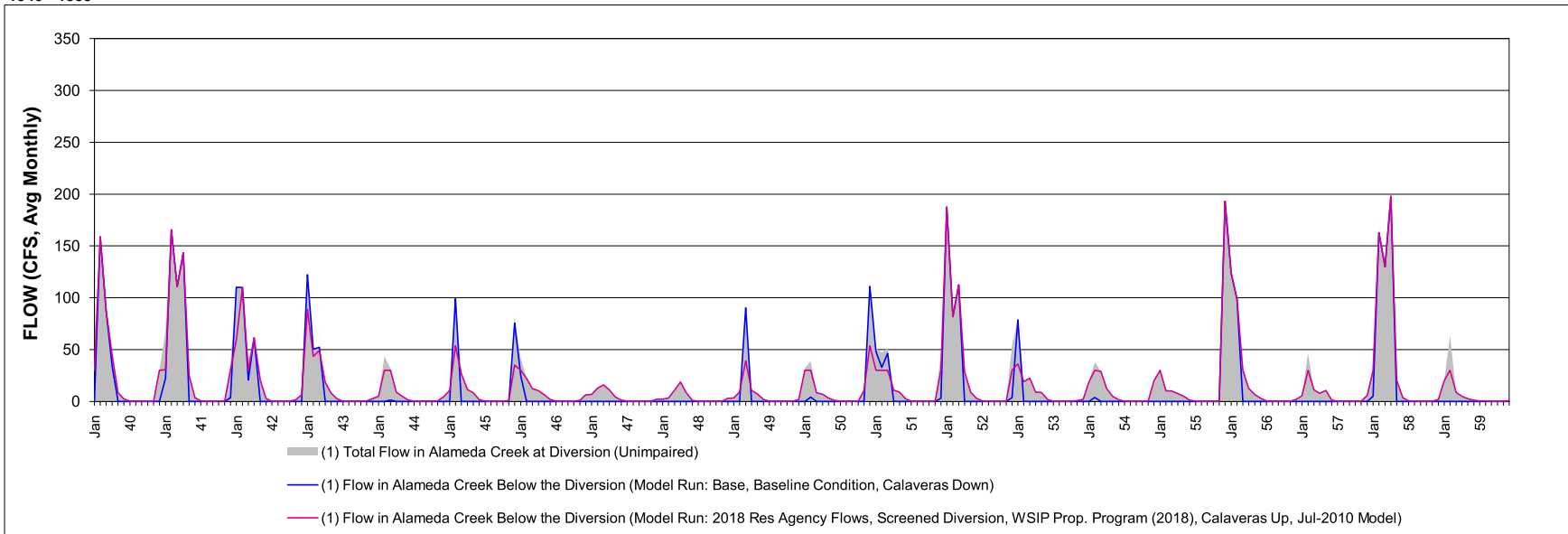
Flow in Alameda Creek downstream of the ACDD would be greater with the CDRP Variant than with the Draft EIR project. Average annual flow in Alameda Creek downstream of the ACDD with the CDRP Variant would be 29 percent greater than under the existing condition (Table 9.17); average annual flow with the Draft EIR project would be 7 percent greater than under the existing condition (Table 4.6.19 in Chapter 4). Average annual flow in all hydrologic year types (i.e., wet, above-normal, normal, below-normal, and dry years) would increase with the CDRP Variant compared to the existing condition. With the Draft EIR project, average annual flow would increase in wet, below-normal, and dry years, but would decrease in above-normal and normal years.

The effects of the Draft EIR project on peak flows in Alameda Creek below the ACDD were analyzed using the 15-minute model (Figures 4.6.14a and 4.6.14b in Chapter 4); the analysis was repeated for the CDRP Variant (Figures 9.10a and 9.10b). The analysis shows that substantial peak flows would pass the ACDD and continue down Alameda Creek with both the CDRP Variant and the Draft EIR project. High flows would occur more frequently in Alameda Creek

1920 - 1939



1940 - 1959



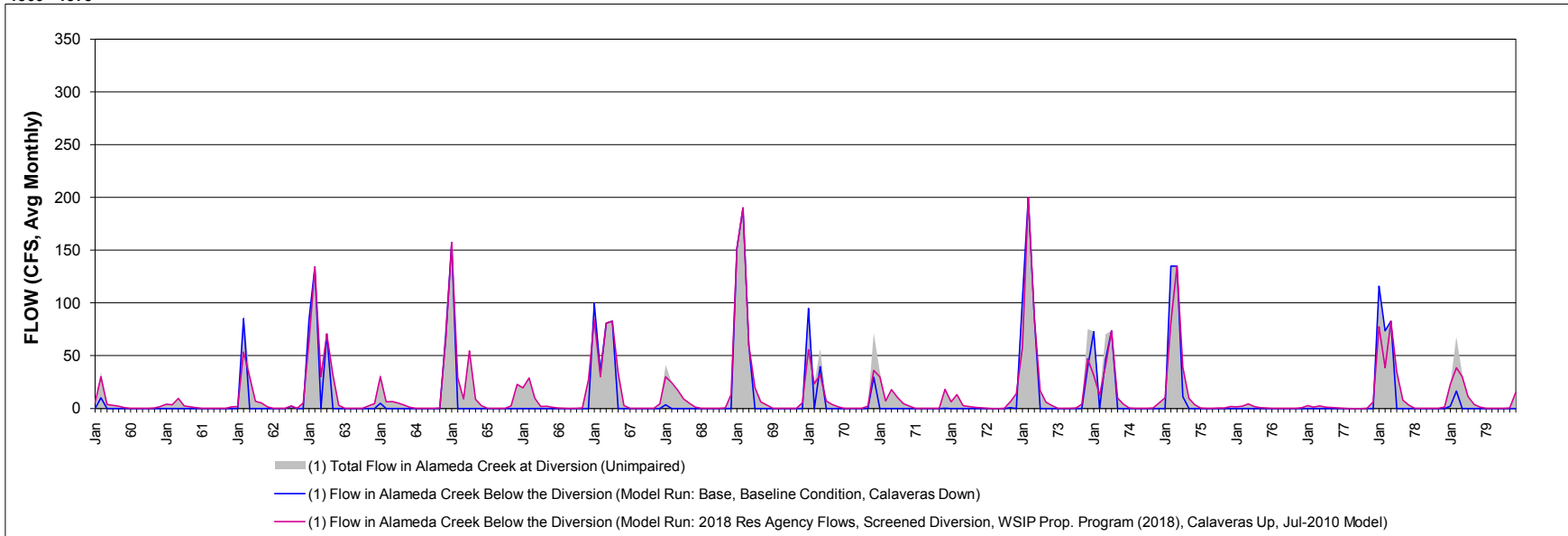
SOURCE: SFPUC 2010e

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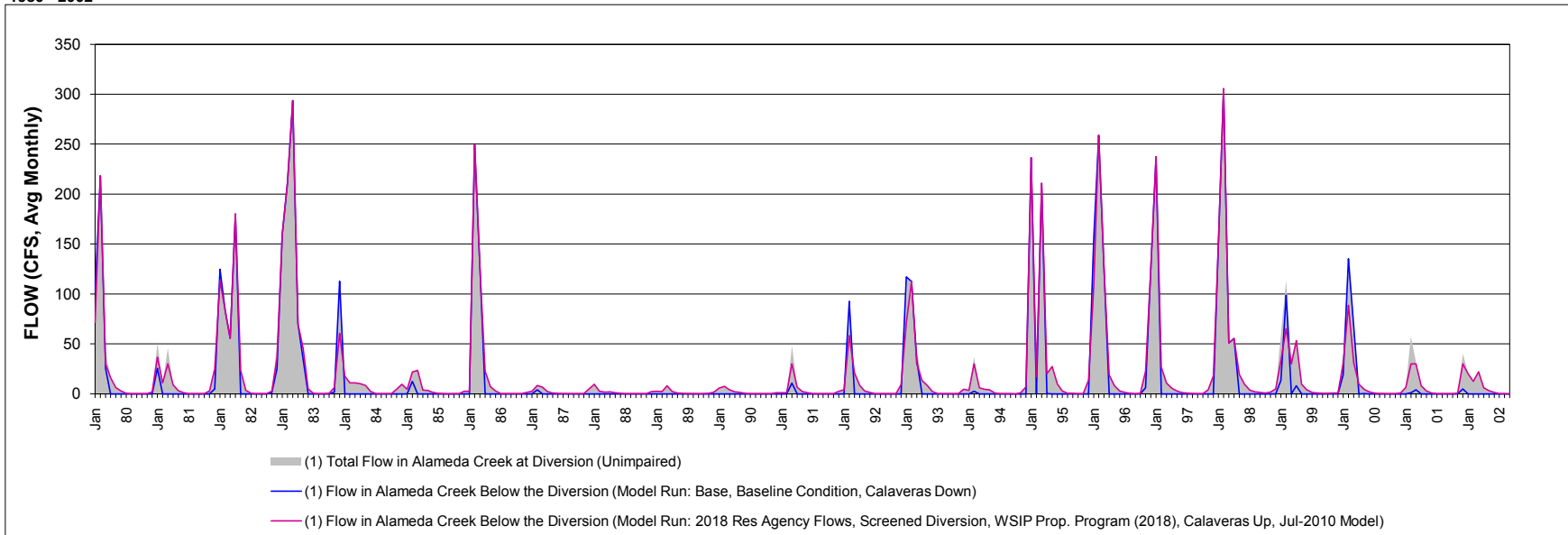
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FIGURE 9.9a (Similar to Figure 4.6.13a): MODELED FLOW IN ALAMEDA CREEK DOWNSTREAM OF THE ACDD, 1920-2002 - CDRP VARIANT

1960 - 1979



1980 - 2002

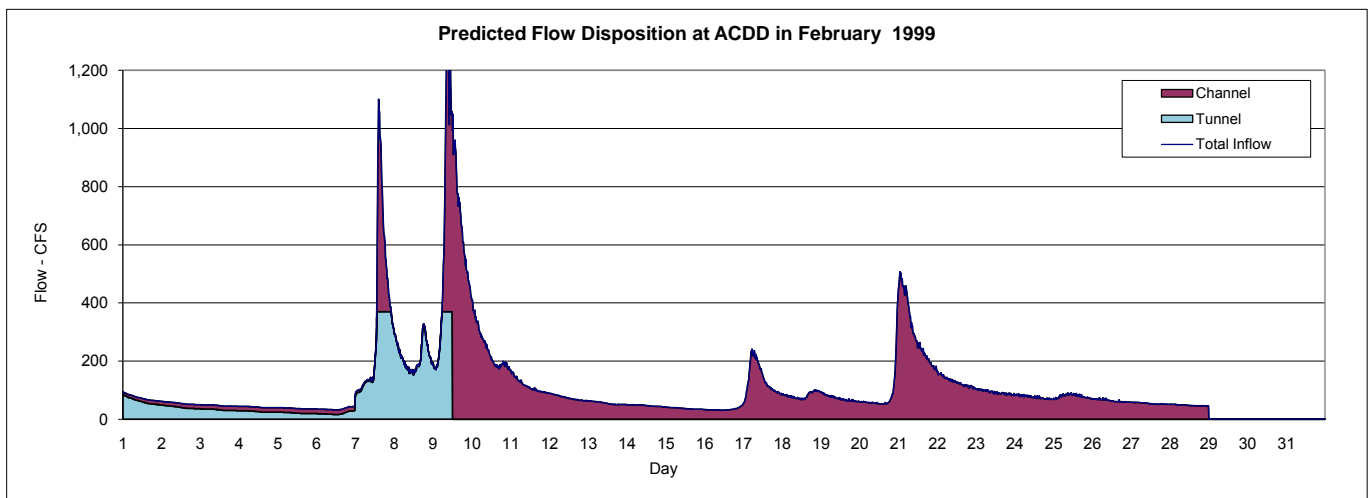
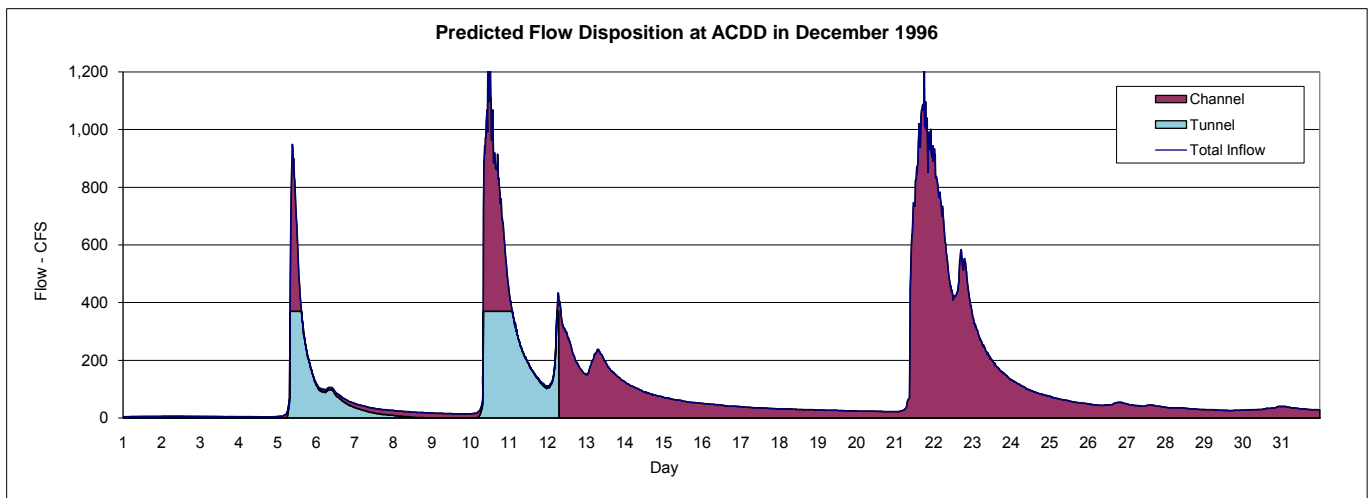
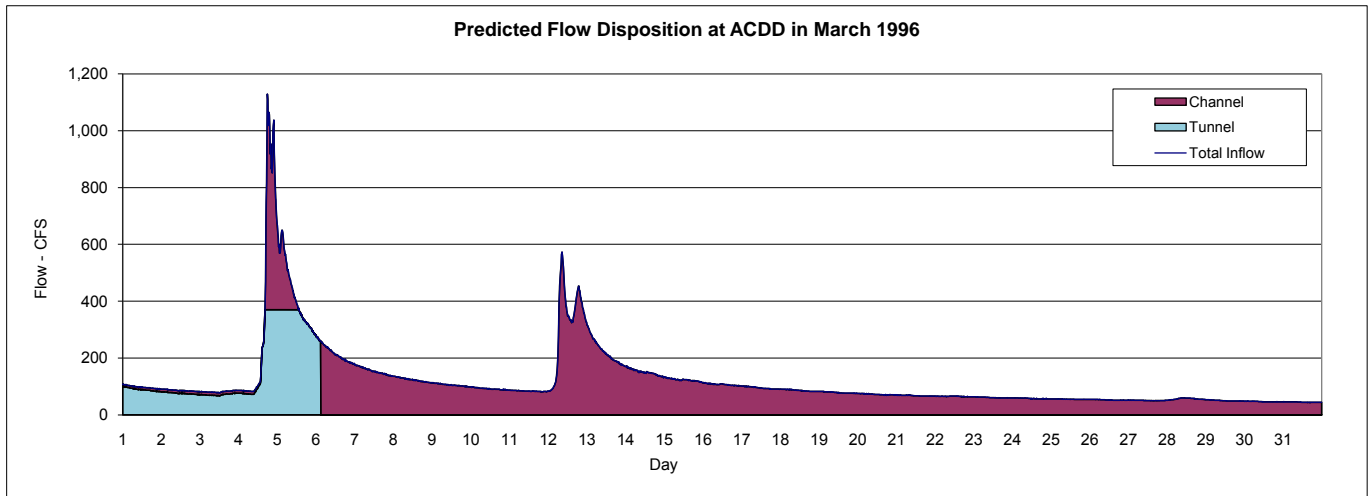


SOURCE: SFPUC 2010e

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FIGURE 9.9b (Similar to Figure 4.6.13b): MODELED FLOW IN ALAMEDA CREEK DOWNSTREAM OF THE ACDD, 1920-2002 - CDRP VARIANT



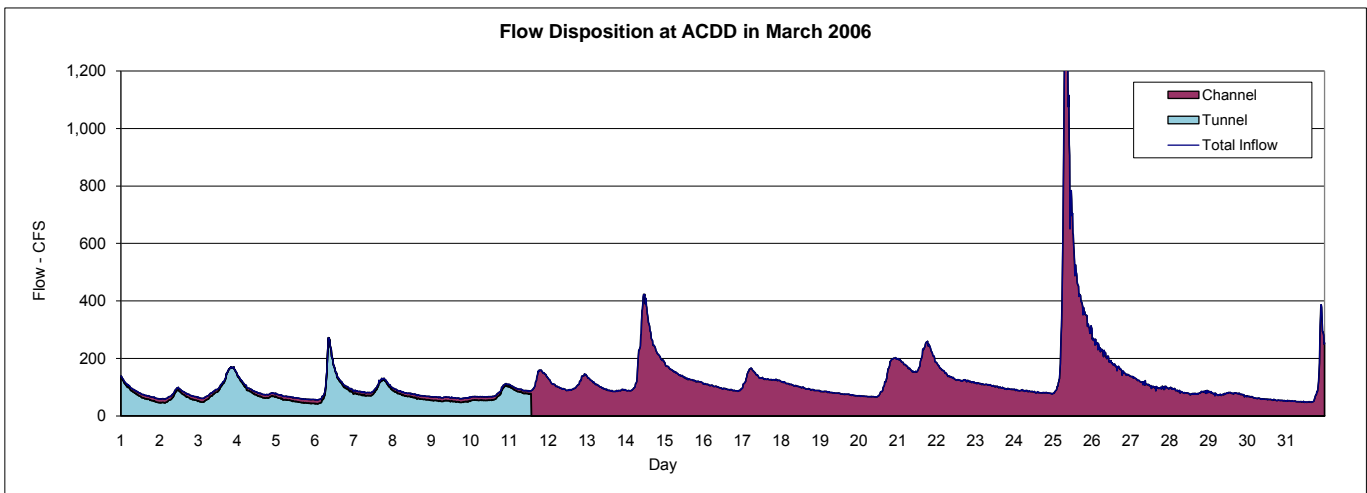
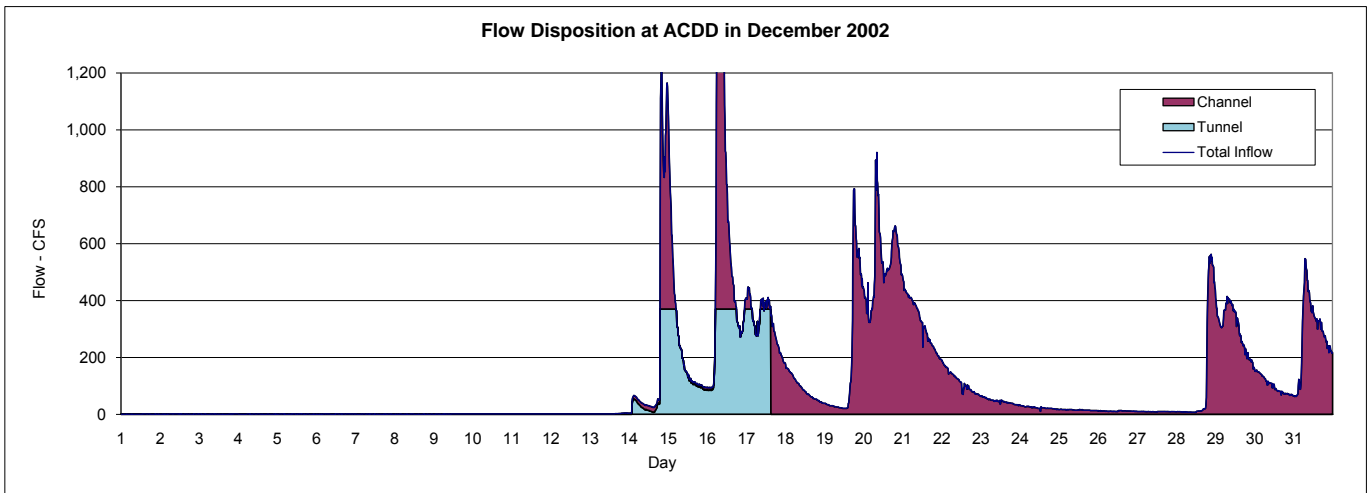
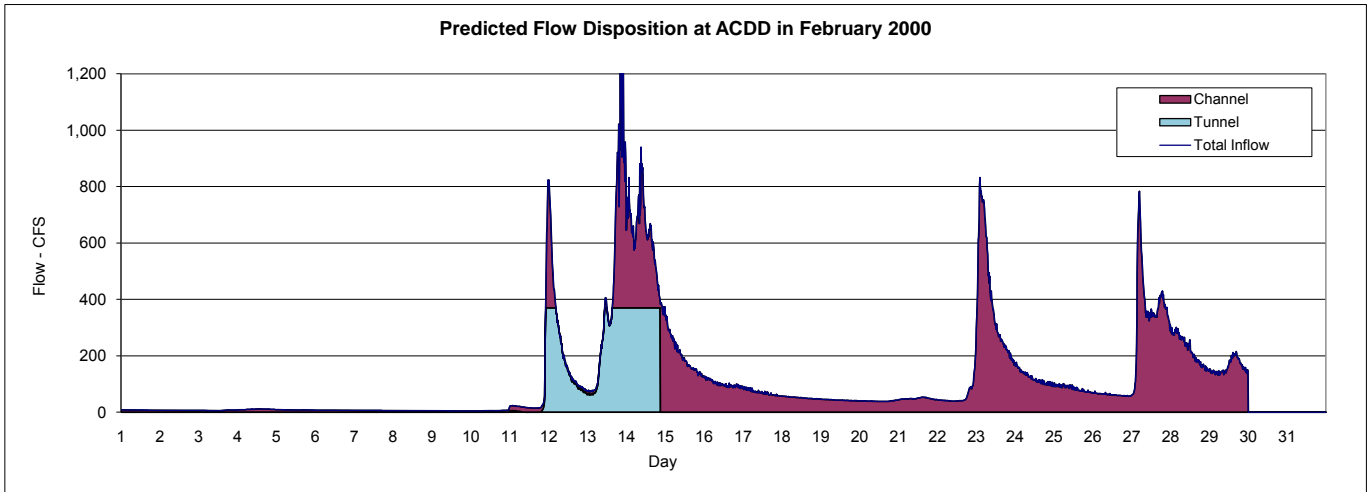
Note: Predicted flow disposition based on February 1926 modeled operations

SOURCE: SFPUC 2010e

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FIGURE 9.10a (Similar to Figure 4.6.14a): ANALYSIS OF 15-MINUTE USGS GAGE DATA FROM ALAMEDA CREEK ABOVE THE ACDD AND FLOW PAST THE DAM (MARCH 1996, DECEMBER 1996, AND FEBRUARY 1999) - CDRP VARIANT



Note: Predicted flow disposition based on February 1926 modeled operations

SOURCE: SFPUC 2010e

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FIGURE 9.10b (Similar to Figure 4.6.14b): ANALYSIS OF 15-MINUTE USGS GAGE DATA FROM ALAMEDA CREEK ABOVE THE ACDD AND FLOW PAST THE DAM (FEBRUARY 2000, DECEMBER 2002, AND MARCH 2006) - CDRP VARIANT

9. Project Variant
9.3 Environmental Effects of the CDRP Variant
9.3.6 Hydrology

Table 9.16 (similar to Table 4.6.18): Estimated Average Monthly Flow in Alameda Creek Downstream of the ACDD (cubic feet per second)

Existing Condition (2005)												
Month	Wet		Above Normal		Normal		Below Normal		Dry		All	
Oct	0		0		0		0		0		0	
Nov	0		0		0		0		0		0	
Dec	22		18		16		0		0		11	
Jan	113		60		14		1		0		37	
Feb	145		94		33		2		1		55	
Mar	94		50		15		4		0		32	
Apr	50		12		2		0		0		13	
May	2		0		0		0		0		0	
June	0		0		0		0		0		0	
July	0		0		0		0		0		0	
Aug	0		0		0		0		0		0	
Sept	0		0		0		0		0		0	
With CDRP Variant (2018)												
Oct	0		0		0		0		0		0	
Nov	3		3		1		1		0		1	
Dec	38		20		15		8		4		17	
Jan	108		51		21		16		5		40	
Feb	147		84		32		22		9		59	
Mar	97		53		26		19		6		40	
Apr	61		33		16		7		4		24	
May	17		9		5		4		2		7	
June	4		2		1		1		1		2	
July	1		0		0		0		0		0	
Aug	0		0		0		0		0		0	
Sept	0		0		0		0		0		0	
Difference and Percent Change, Existing Condition (2005) vs. CDRP Variant (2018)												
Oct	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]
Nov	3	*	3	*	1	*	1	*	0	[0%]	1	*
Dec	16	[73%]	2	[11%]	-1	[-6%]	8	*	4	*	6	[55%]
Jan	-5	[-4%]	-9	[-15%]	7	[50%]	15	[1500%]	5	*	3	[8%]
Feb	2	[1%]	-10	[-11%]	-1	[-3%]	20	[1000%]	8	[800%]	4	[7%]
Mar	3	[3%]	3	[6%]	11	[73%]	15	[375%]	6	*	8	[25%]
Apr	11	[22%]	21	[175%]	14	[700%]	7	*	4	*	11	[85%]
May	15	[750%]	9	*	5	*	4	*	2	*	7	*
June	4	*	2	*	1	*	1	*	1	*	2	*
July	1	*	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]
Aug	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]
Sept	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]	0	[0%]
Key:												

Source: SFPUC 2010e

Table 9.17 (similar to Table 4.6.19): Existing and Estimated with-CDRP Variant Average Annual Flow in Alameda Creek Downstream of the ACDD

Year Type	Flow (AFY) ¹		Difference (CDRP Variant - Existing)	
	Existing	CDRP Variant		
Wet	25,331	28,249	2,917	12%
Above Normal	13,911	15,240	1,329	10%
Normal	4,731	7,022	2,292	48%
Below Normal	394	4,684	4,290	1088%
Dry	58	1,843	1,785	3102%
All Years	8,843	11,372	2,530	29%
<i>Note:</i> AFY = acre-feet per year				

Source: SFPUC 2010e

downstream of the ACDD with the CDRP Variant than with the Draft EIR project because with the Variant, all flow over approximately 370 cfs would spill over the diversion dam and, with the Draft EIR project, all flow over 650 cfs would spill over the dam, as it does under the existing condition.

The operational impacts of the Draft EIR project on stream hydrology in Alameda Creek below the ACDD to the Calaveras Creek confluence were determined to be less than significant. As described above, the operational impacts of the CDRP Variant on stream hydrology from the downstream end of the fish ladder to the Calaveras Creek confluence would be similar to but less than those associated with the Draft EIR project. Therefore, the operational impacts of the CDRP Variant on stream hydrology on this stream reach would also be less than significant. The effects of the Draft EIR project and the CDRP Variant differ for a 350-foot section of Alameda Creek from the upstream end of the fish ladder to the ACDD and for a 200-foot section of Alameda Creek between the ACDD and the downstream end of the fish ladder. The effects of the CDRP Variant and the Draft EIR project on these two short creek reaches are described below.

With the CDRP Variant, up to 30 cfs would be bypassed at the ACDD during December, January, February and March when flow is present in Alameda Creek. Water would bypass the ACDD via the fish ladder or the bypass facility at the ACDD. Water would enter the fish ladder about 400 feet upstream of the crest of the ACDD and would be returned to Alameda Creek about 150 feet downstream of the ACDD. It is expected that during the 4-month period most of the 30 cfs would flow through the fish ladder with the remainder passing through the bypass facility at the ACDD. As a result, the CDRP Variant would reduce flow in about 400 feet of Alameda Creek above the ACDD during this period by up to 30 cfs compared to the existing condition and to the Draft EIR project; in addition, the fish ladder would also be operated through April, with flows diverted through the fish ladder, for a total of 5 months with reduced flows in this 400-foot reach.

The 400-foot reach of Alameda Creek upstream of the ACDD that would be subject to Variant-caused flow reductions currently experiences a wide range of flows. During large winter storms, flow can exceed 1,000 cfs for a few hours or days but during the summer is often less than 0.5 cfs. The CDRP Variant would have little effect on winter peak flows and no effect on summertime low flows. Except when storms pass over the upper Alameda Creek watershed, winter flows are typically in the range of 20 to 75 cfs. Under the CDRP Variant, 5 to 30 cfs would be diverted into the fish ladder during the winter and would bypass the 400-foot reach of Alameda Creek upstream of the ACDD. Consequently, the CDRP Variant would sometimes reduce flows in this reach to close to zero during the winter. Because the reach currently experiences a wide range of flows, the flow reductions attributable to the CDRP Variant would not represent a substantial hydrologic change, and thus the impact of the Variant on this reach would be less than significant.

The effects of the CDRP Variant on flow in the 150-foot creek reach between the ACDD and the downstream end of the fish ladder compared to the Draft EIR project would depend on the volume of flow in Alameda Creek above the ACDD. Except during and in the aftermath of storms, flow in Alameda Creek is modest even in the rainy season (see EIR Figure 4.6.10, page 4.6-36). Most of the time, flow in the creek in the rainy season is less than 50 cfs. During such periods, with the CDRP Variant, up to 30 cfs would be bypassed through the fish ladder with little or no flow bypassed through the bypass facility at the ACDD to the 150-foot creek reach immediately below the dam. During similar periods with the Draft EIR project, up to 10 cfs would be bypassed through the bypass facility at the ACDD. Thus, during relatively low flow periods of the rainy season, flow in the 150-foot reach with the CDRP Variant would be up to 10 cfs less than with the Draft EIR project.

With the CDRP Variant, during the brief periods when flow is high in Alameda Creek, all flow above the 370 cfs capacity of the screened diversion tunnel would spill over the ACDD and flow down the creek, including the 150-foot creek reach immediately below the ACDD. With the Draft EIR project, all flow above the existing unscreened 650 cfs capacity of the diversion tunnel would spill over the ACDD and flow down the creek. Thus, during high flows, flow in the 150-foot creek reach immediately below the ACDD with the CDRP Variant would be greater than with the Draft EIR project.

The 150-foot reach of Alameda Creek below the ACDD currently experiences a wide range of flows, including periods when there is little or no flow. The alterations in flow attributable to the CDRP Variant would not represent a substantial hydrologic change, and no noticeable change is expected; therefore, this impact would be less than significant.

Thus, overall, with respect to flow in upper Alameda Creek, past the ACDD to the Calaveras Creek confluence, the operational impacts of the CDRP Variant would be less than significant,

similar to the Draft EIR project, and no mitigation measures would be required. The Variant would not result in any new significant effects on hydrology or a substantial increase in the severity of a significant impact compared to those described for the Draft EIR project.

Impact 4.6.6: Operational effects on flows in Alameda Creek, Calaveras Creek confluence to Arroyo de la Laguna confluence.

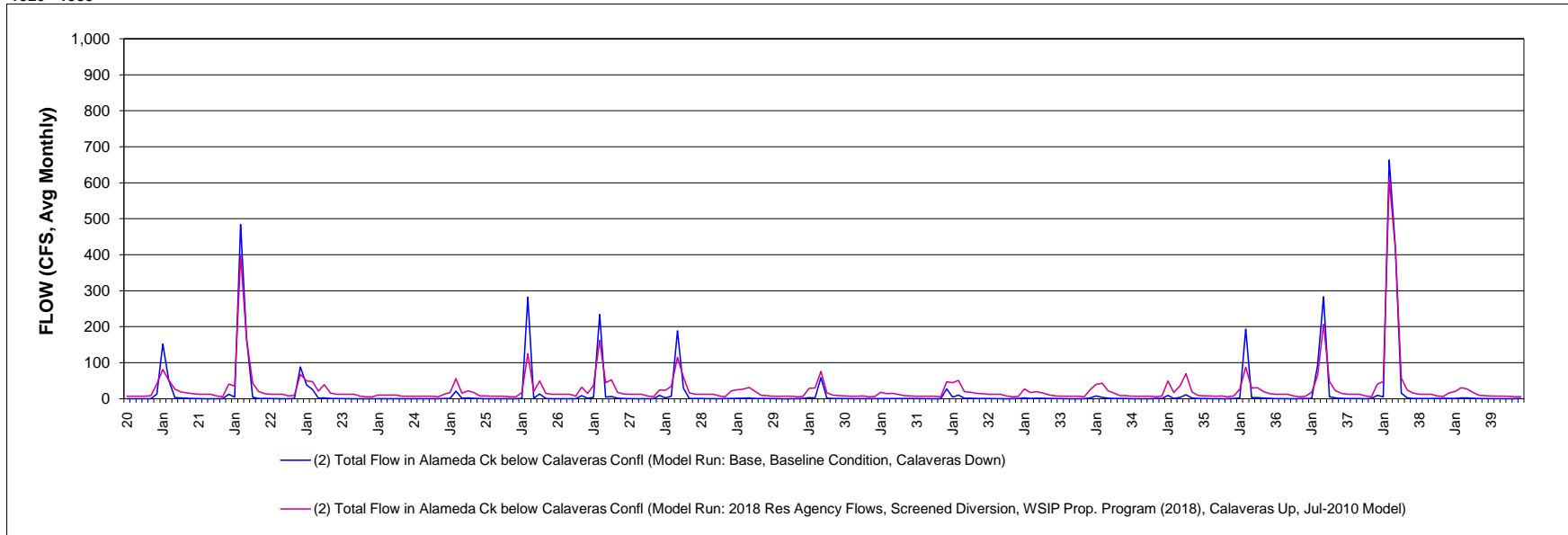
As with the Draft EIR project (pages 4.6-87 to 4.6-94), operation of the Variant would affect the pattern of flow in Alameda Creek between its confluences with Calaveras Creek and Arroyo de la Laguna, with changes reflecting the Variant's effects on flows at the ACDD and below Calaveras Dam. With implementation of the proposed instream flow schedules and the reduced diversion capacity due to the fish screen at the ACDD, average annual flows would be greater than under existing conditions, as discussed below. Because the increased flows would be within the range of pre-project conditions, this impact would be less than significant. As for the Draft EIR project, this project-level, site-specific impact analysis supersedes the evaluation presented in the WSIP PEIR (PEIR Impact 5.4.1-2), which concluded that the hydrology impact for this reach of Alameda Creek would be significant and unavoidable.

Consistent with the analytical methodology used for the Draft EIR project, the HH/LSM was run for the CDRP Variant to estimate monthly flows at the ACDD and below Calaveras Dam. The results are shown in a series of figures and tables that correspond to a similar series of figures and tables contained in EIR Chapter 4. **Figure 9.11a and 9.11b: Modeled Flow in Alameda Creek Downstream of the Calaveras Creek Confluence, 1920-2002 – CDRP Variant**, corresponds to Figure 4.6.15 (pages 4.6-88 to 4.6-89) in EIR Chapter 4. **Tables 9.18 and 9.19** correspond to Tables 4.6.20 and 4.6.21 (pages 4.6-91 to 4.6-92) in EIR Chapter 4. The differences between the new HH/LSM results for the CDRP Variant and those for the Draft EIR project are summarized below.

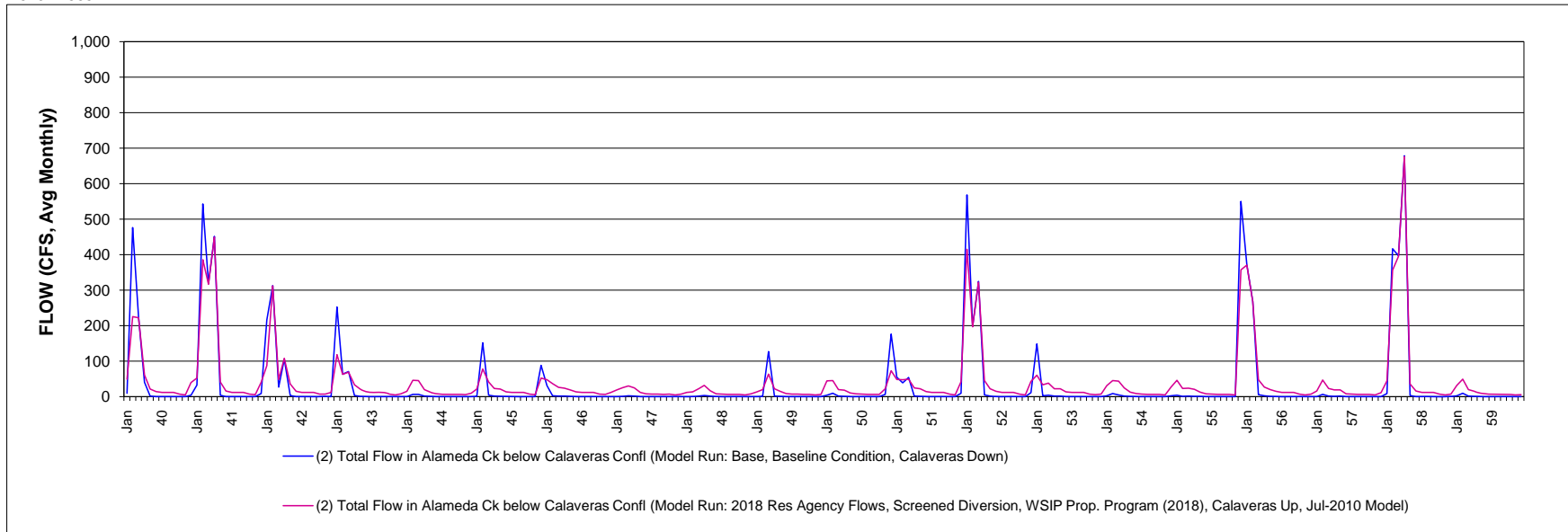
Average annual flow in Alameda Creek downstream of the Calaveras Creek confluence with the CDRP Variant would be 23 percent greater than under the existing condition (Table 9.19); with the Draft EIR project it would be 3 percent greater than under the existing condition (Table 4.6.21 in Chapter 4). Average annual flow would decrease in wet years and increase in all other year types with the Variant compared to the existing condition. With the Draft EIR project, average annual flow would decrease in wet and above-normal years and increase in all other year types compared to the existing condition. The differences in flow in Alameda Creek between the CDRP Variant and the Draft EIR project would diminish in a downstream direction as tributaries add flow.

The operational impacts of the Draft EIR project on stream hydrology in Alameda Creek between its confluences with Calaveras Creek and Arroyo de la Laguna were determined to be less than significant. The operational impacts of the CDRP Variant on stream hydrology would be similar to but less than those associated with the Draft EIR project. Therefore, the operational impacts of the CDRP Variant would also be less than significant.

1920 - 1939



1940 - 1959



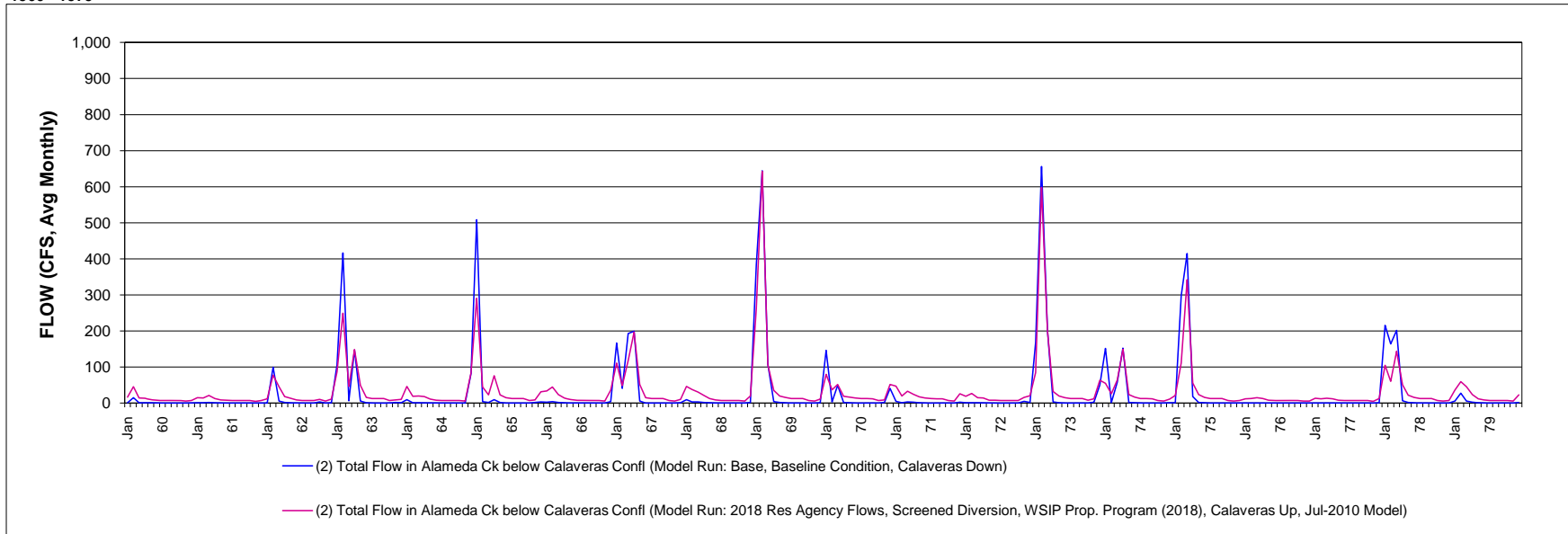
SOURCE: SFPUC 2010e

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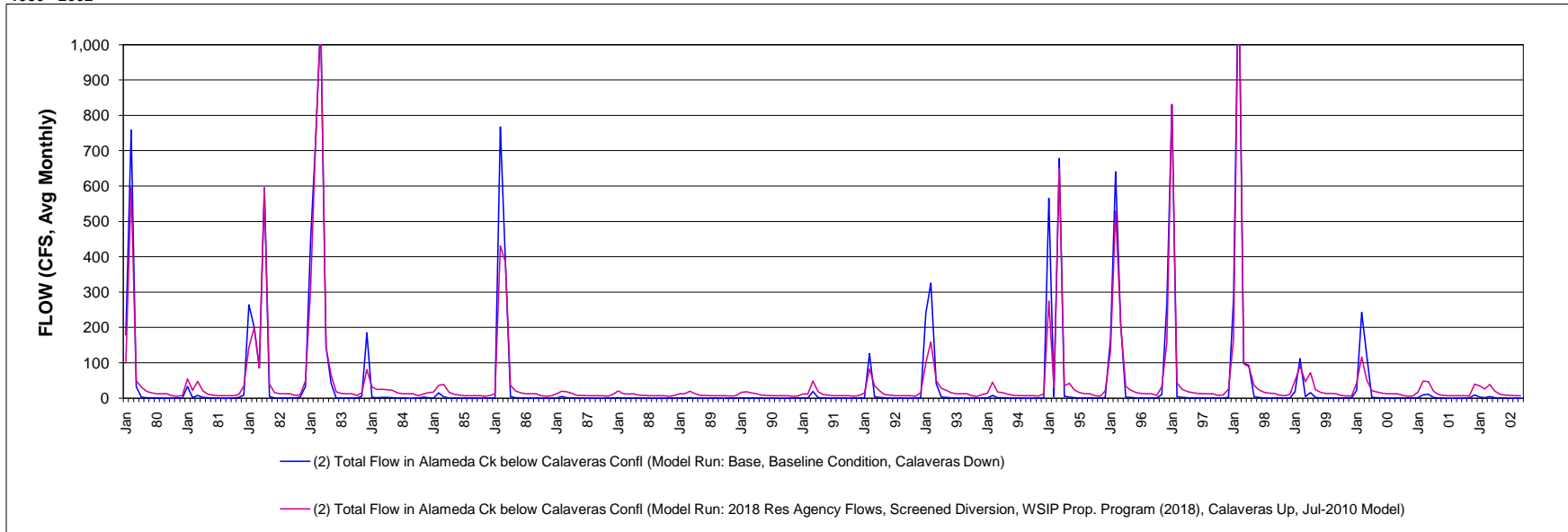
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FIGURE 9.11a (Similar to Figure 4.6.15a): MODELED FLOW IN ALAMEDA CREEK DOWNSTREAM OF THE CALAVERAS CREEK CONFLUENCE, 1920-2002 - CDRP VARIANT

1960 - 1979



1980 - 2002



SOURCE: SFPUC 2010e

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FIGURE 9.11b (Similar to Figure 4.6.15b): MODELED FLOW IN ALAMEDA CREEK DOWNSTREAM OF THE CALAVERAS CREEK CONFLUENCE, 1920-2002 - CDRP VARIANT

Table 9.18 (similar to Table 4.6.20): Estimated Average Monthly Flow in Alameda Creek Downstream of Calaveras Creek Confluence (cubic feet per second)

Existing Condition (2005)												
	Wet	Above Normal	Normal	Below Normal	Dry	All						
Oct	0	0	0	0	0	0						
Nov	1	1	0	0	0	1						
Dec	56	25	23	1	0	21						
Jan	280	114	24	3	1	84						
Feb	462	214	56	6	2	147						
Mar	272	110	26	7	1	83						
Apr	144	25	5	1	1	35						
May	5	2	1	1	0	2						
June	1	0	0	0	0	0						
July	0	0	0	0	0	0						
Aug	0	0	0	0	0	0						
Sept	0	0	0	0	0	0						
With CDRP Variant (2018)												
Oct	7	7	7	7	7	7						
Nov	9	9	6	6	5	7						
Dec	57	29	24	15	9	27						
Jan	207	78	36	30	16	73						
Feb	414	142	50	37	20	132						
Mar	271	105	42	33	18	93						
Apr	161	56	29	19	15	56						
May	32	22	17	12	9	18						
June	16	15	12	8	8	12						
July	13	12	10	7	7	10						
Aug	12	12	10	7	7	10						
Sept	12	12	10	7	7	10						
Difference and Percent Change, Existing Condition (2005) vs. CDRP Variant (2018)												
Oct	7	*	7	*	7	*	7	*	7	*	7	*
Nov	8	[800%]	8	[800%]	6	*	6	*	5	*	6	[600%]
Dec	1	[2%]	4	[16%]	1	[4%]	14	[1,400%]	9	*	6	[29%]
Jan	-73	[-26%]	-36	[-32%]	12	[50%]	27	[900%]	15	[1,500%]	-11	[-13%]
Feb	-48	[-10%]	-72	[-34%]	-6	[-11%]	31	[517%]	18	[900%]	-15	[-10%]
Mar	-1	[0%]	-5	[-5%]	16	[62%]	26	[371%]	17	[1,700%]	10	[12%]
Apr	17	[12%]	31	[124%]	24	[480%]	18	[1,800%]	14	[1,400%]	21	[60%]
May	27	[540%]	20	[1,000%]	16	[1,600%]	11	[1,100%]	9	*	16	[800%]
June	15	[1,500%]	15	*	12	*	8	*	8	*	12	*
July	13	*	12	*	10	*	7	*	7	*	10	*
Aug	12	*	12	*	10	*	7	*	7	*	10	*
Sept	12	*	12	*	10	*	7	*	7	*	10	*
Key:												
				> 0%								
				< 0 to -5%								
				< -5%								

Source: SFPUC 2010e

Table 9.19 (similar to Table 4.6.21): Existing and Estimated with-CDRP Variant Average Annual Flow in Alameda Creek Downstream of its Confluence with Calaveras Creek

Year Type	Flow (AFY) ¹		Difference (CDRP Variant - Existing)	
	Existing	CDRP Variant		
Wet	72,361	71,791	-570	-1%
Above Normal	29,007	29,806	799	3%
Normal	8,022	15,158	7,136	89%
Below Normal	1,195	11,230	10,036	840%
Dry	328	7,752	7,423	2261%
All Years	22,010	26,986	4,976	23%
<i>Note:</i> AFY = acre-feet per year				

Source: SFPUC 2010e

Impact 4.6.7: Operational effects on flows in Alameda Creek downstream of the Arroyo de la Laguna confluence.

As with the Draft EIR project (pages 4.6-94 to 4.6-98), operation of the Variant would alter the pattern of flow in Alameda Creek downstream of the Arroyo de la Laguna confluence, with changes reflecting the Variant’s effects on flows at the ACDD and below Calaveras Dam, although the effects would be substantially dampened by inflow from the Arroyo de la Laguna and other tributaries between the dams and Niles Canyon. With implementation of the proposed instream flow schedules and the reduced diversion capacity due to the fish screen at the ACDD, average annual flows in Alameda Creek below Arroyo de la Laguna would likely be greater than under existing conditions, as discussed below. Because the increased flows would be within the range of pre-project conditions, no impact is expected, and this impact would be less than significant.

The EIR contains an analysis of the effects of the Draft EIR project on the flow in Alameda Creek below its confluence with the Arroyo de la Laguna. As shown in Table 4.6.20 (page 4.6-91), the Draft EIR project would decrease flow in Alameda Creek below its confluence with Calaveras Creek in a few months of wet, above normal and normal years and increase it all other months. Although some of the water bypassed or released from the SFPUC’s dams would percolate into the ground between the Calaveras Creek confluence and the Arroyo de la Laguna confluence particularly in the dry summer months, it is expected that most of the upstream changes in flow in Alameda Creek due to project operations would be evident downstream in the creek below its confluence with Arroyo de la Laguna. The overall effect would likely be an increase in average annual flow in Alameda Creek below the Arroyo de la Laguna confluence compared to the existing condition.

The effects of the CDRP Variant on flow in Alameda Creek below the Arroyo de la Laguna confluence would be similar to those of the Draft EIR project. Table 9.18 shows monthly flows in Alameda Creek below the Calaveras Creek confluence with the CDRP Variant. As with the Draft EIR project, the CDRP Variant would decrease flow in Alameda Creek below its confluence with Calaveras Creek in a few months of wet, above normal and normal years but the decreases with the Variant would be generally less than the Draft EIR project. The CDRP Variant would increase flow in all other months but the increases in flow would be the same or greater than with the Draft EIR project. It is expected most of the upstream changes in flow in Alameda Creek resulting from operations of the ACDD and Calaveras Dam under the Variant would be evident downstream below the creek's confluence with Arroyo de la Laguna. The overall effect would likely be an increase in average annual flow in Alameda Creek below the Arroyo de la Laguna confluence compared to both the Draft EIR project and the existing condition.

The operational impacts of the Draft EIR project on stream hydrology in Alameda Creek below its confluence with Arroyo de la Laguna were determined to be less than significant. The operational impacts of the CDRP Variant on stream hydrology would be similar to but less than those associated with the Draft EIR project. Therefore, the operational impacts of the CDRP Variant would also be less than significant.

Impact 4.6.8: Downstream flooding and hazard in the event of dam failure.

The CDRP Variant would result in the identical impacts as the Draft EIR project (pages 4.6-98 to 4.6-102) because none of the fishery enhancements or project refinements would have an effect related to flooding in the event of dam failure.

Impact 4.6.9: Effect on channel formation and sediment transport along Calaveras Creek.

As with the Draft EIR project (pages 4.6-102 to 4.6-103), the replacement dam under the CDRP Variant would continue to be a sediment trap for all bedload (cobbles, gravel, and sand transported along the stream bottom) as well as for most suspended sediment derived from the watershed upstream of the reservoir. Under the existing condition, most sediment moving down Calaveras Creek and Arroyo Hondo is trapped in Calaveras Reservoir and does not continue downstream. Any sediment that accumulates in Calaveras Creek below Calaveras Dam moves downstream under the influence of occasional large releases from the cone valve at Calaveras Dam. These circumstances would not change with either the CDRP Variant or the Draft EIR project. Because a substantial change in creek morphology and sediment conditions is not likely, the operational impacts of the CDRP Variant and the Draft EIR project on sediment transport, channel formation, and stream geomorphology would be less than significant.

Impact 4.6.10: Effect on channel formation and sediment transport along Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.

Impact 4.6.11: Effect on channel formation and sediment transport along Alameda Creek downstream of the Calaveras Creek confluence.

As with the Draft EIR project (pages 4.6-103 to 4.6-105), proposed operations under the Variant could influence channel-forming flows and sediment transport along Alameda Creek downstream of the ACDD and beyond its confluence with Calaveras Creek. Even though the Variant would result in higher average annual flows in Alameda Creek and an increase in the frequency of sluicing at the ACDD, the potential channel-forming flows and sediment transport would be similar to conditions that occurred under the baseline and during historical operations. The overall suspended sediment load would be within the range of the existing sediment load for Alameda Creek. Because a substantial change in creek morphology and sediment conditions is not likely under either the Draft EIR project or the Variant, the operational impacts of the CDRP on sediment transport, channel formation, and stream geomorphology would be less than significant for both of these impacts.

The quantity of sediment passing the ACDD with the CDRP Variant and the Draft EIR project would be similar, but the timing of its passage would be different. Most sediment moving down Alameda Creek is trapped behind the ACDD, although some is carried through the diversion tunnel to Calaveras Reservoir and passes over the ACDD during high flows. Under the existing condition, the SFPUC sluices sediment through the ACDD annually and would continue to do so with the Draft EIR project. With the CDRP Variant, sediment would be sluiced through the ACDD every 4 to 6 weeks during the rainy season. This more frequent passage of sediment past the ACDD would create a somewhat more natural pattern of sediment movement in Alameda Creek below the ACDD than occurs at present or would occur with the Draft EIR project.

Peak flows play an important role in the downstream movement of sediment and channel formation in Alameda Creek below the ACDD. As noted above, substantial peak flows would pass the ACDD with both the CDRP Variant and the Draft EIR project, but high flows would be more frequent under the Variant. Consequently, sediment transport and channel-forming mechanisms would be somewhat closer to predevelopment conditions with the CDRP Variant than under the Draft EIR project or the existing condition. Therefore, as with the Draft EIR project, the operational impacts of the Variant on sediment transport, channel formation, and stream geomorphology would be less than significant.

Impact 4.6.12: Changes in groundwater levels, flows, quality, and supplies.

As with the Draft EIR project (pages 4.6-105 to 4.6-106), the CDRP Variant would have very similar impacts on groundwater as the Draft EIR project because none of the fishery enhancements or project refinements would create a noticeable effect on groundwater levels. The

CDRP Variant would not bring about a substantial change from historical groundwater conditions in the vicinity of the dam, in the Sunol Valley, or in the Niles Cone Aquifer. Impacts on groundwater levels, flows, quality, and supplies would be less than significant.

Most of the fishery enhancements and all of the project refinements that are a part of the CDRP Variant are located in the vicinity of Calaveras Dam and the ACDD, and like the Draft EIR project are too small in scale to have any effect on groundwater levels. Under the Variant, implementation of the instream flow schedules would include year-round releases from Calaveras Reservoir to Calaveras Creek below the dam. Similar to the Draft EIR project, proposed releases to Calaveras Creek would increase average annual flows compared to the existing condition, which would likely raise the local groundwater levels by a few feet in creek reaches that would be dry under the existing condition, but this change would be within the range of historical conditions. Similarly, impacts on groundwater in the Sunol Valley and downstream in the Niles Cone Aquifer would be less than significant because flows in Alameda Creek that recharge the groundwater would be maintained within historical ranges. The minor changes in groundwater levels would not affect groundwater quality. Therefore, the impact of the Variant on groundwater would be less than significant.

9.3.7 WATER QUALITY

EIR Chapter 4, Section 4.7 evaluates potential impacts of the proposed project on water quality. **Table 9.20** summarizes the impacts of the CDRP Variant on water quality compared to those of the Draft EIR project.

Existing water quality conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, pages 4.7-1 to 4.7-22). As described below, implementation of the CDRP Variant would not result in any new significant effects on water quality beyond those identified for the Draft EIR project 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.

Similar to the Draft EIR project (pages 4.7-25 to 4.7-44), construction of the CDRP Variant could result in water quality impacts on Calaveras and Alameda Creeks as well as Calaveras Reservoir due to erosion and sediment discharges. 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.

Table 9.20: Summary of Water Quality Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.7.1: Impact on water bodies as a result of soil erosion and sediment discharge during construction.	LSM	LSM
4.7.2: Impact on water bodies as a result of a hazardous materials release, NOA or metals release, or solid waste discharge during construction.	LSM	LSM
4.7.3: Impact on water bodies as a result of erosion and sediment discharge or a hazardous materials release associated with construction of barge docking facilities and during barging operation.	LSM	LSM
4.7.4: Impact on reservoir water quality during and following inundation due to contact with borrow materials containing NOA, metals, or contaminants.	LSM	LSM
4.7.5: Changes in water quality parameters in Calaveras Reservoir during future operation and restoration of pre-DSOD-restricted reservoir conditions.	B	B
4.7.6: Changes in water quality parameters in Calaveras and Alameda Creeks during future operation.	LS	LS
4.7.7: Changes in groundwater quality related to construction and operations.	LSM	LSM
<i>Notes:</i> B – Beneficial impact LS – Less than significant LSM – Less than significant with mitigation		

Under the Variant, construction of the fish screen and fish ladder in the ACDD vicinity would have additional potential for soil erosion and sediment discharge to Alameda Creek compared to the Draft EIR project due to the expanded work area in or adjacent to the creek and the sediment excavation that could be required. Prior to installing the fish screen, foundations and grading could be required at the existing gravel ramp for access into the Alameda Creek channel, and the fish ladder would require sediment excavation for the concrete channel as well as some work in the streambed at the ladder’s entrance and exit. However, as with the ACDD bypass facility, all construction activities involving work within the streambed would be scheduled during the dry season, when flowing water is typically not present in the work area, to minimize erosion potential. If streamflow is present during construction of the ladder, temporary cofferdams would be constructed at the upstream and downstream limits of the fish ladder construction area to isolate the sites of the ladder’s cross-stream barriers, and any streamflow would be pumped or diverted around the barrier construction sites. Similarly, any flow present during fish screen installation would be diverted around the work area. Construction of the fish ladder sections located within the creek would occur during the dry season, and the other portions of the fish

ladder would be constructed during the dry season to the extent possible. If any flow is present during construction, it would be diverted around the construction areas. This increase in potential water quality impacts on Alameda Creek due to the enlarged construction area and extended construction duration would be potentially significant; however, this impact in the ACDD vicinity would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) as described for the Draft EIR project.

Construction of the fish screens at Calaveras Dam Adits #1 and #2 would involve divers working within the water and/or work from the shoreline, and would include implementation of water quality control measures in accordance with standard SFPUC requirements. Construction of the spillway discharge channel, right dam abutment excavation, and West Haul Road work area would also result in minor increases in erosion and sedimentation potential. As described for the Draft EIR project, construction of the replacement dam would involve the excavation and transportation of large quantities of material. The Variant would result in a relatively minor increase in the amount of excavated material (see Table 9.3) and would result in a minor increase in erosion and sediment discharge potential compared to the Draft EIR project. The proposed intake tower modifications would not increase erosion or sediment discharge potential compared to that described for the Draft EIR project, nor would the proposed additional instrumentation, which would be confined entirely within Staging Area 7. As with the Draft EIR project, implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce the impact of the Variant construction elements in the dam vicinity.

Although one of the objectives of the electrical distribution line upgrade is to provide adequate power to meet stormwater management regulations for construction sites and to protect water quality, construction of the distribution line upgrade would increase the potential for soil erosion and sediment discharge related to pole replacement and limited vegetation removal; however, digging to install new poles or replacement poles would be limited in extent (see Section 9.2.3 above), and vegetation removal would likely be similar to existing maintenance activities along the distribution line right-of-way. Implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce the potential impact associated with this project update to a less-than-significant level. Borrow Area E Modifications would not involve an increase in the quantity of material excavated from the borrow area.

In summary, the Variant 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 Draft 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 (NOA) or metals release, or solid waste discharge during construction.

As with the Draft EIR project (pages 4.7-44 to 4.7-55), construction of the CDRP Variant could result in detrimental impacts on water quality due to releases of hazardous materials, NOA, or metals or discharges of other contaminants. 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) and 5.7.2 (Drilling Fluids).

CDRP construction would involve the use of major construction equipment and vehicles, which have the potential to leak oils or other hazardous materials and result in the discharge of such materials into water bodies; under the Variant, there would be an incremental increase in construction equipment and vehicles compared to the Draft EIR project (see Table 9.3). In the vicinity of the ACDD, construction of the fish screen and fish ladder would require the use of a diesel generator and concrete pumping truck, which would increase the potential for hazardous materials spills or leaks. Construction of the fish screen and fish ladder at the ACDD would require instream vehicular and equipment access and use, similar to the activities required for the ACDD bypass facility described for the Draft EIR project. Therefore, construction of the Variant would result in an incremental increase in the potential impact on water bodies related to a hazardous materials release compared to the Draft EIR project.

As described below in Section 9.3.9, Hazards and Hazardous Materials, the proposed fish ladder at the ACDD and spillway discharge channel grade-control structures could involve work within rock containing NOA and elevated levels of naturally-occurring metals, increasing somewhat the potential for a release of these constituents to adjacent water bodies during excavation. However, work on the Variant would be confined to identified work areas, and all instream work would occur during the dry season. The construction area would include containment provisions, and demolition and construction waste would be contained and properly disposed of. Mitigation Measures 5.7.1 (Storm Water Pollution Prevention Plan) and 5.7.2 (Drilling Fluids) include requirements for the proper management of hazardous materials and solid waste, equipment maintenance and use, and the use of equipment over water. These measures would reduce the impact to a less-than-significant level.

Construction activities related to the other project refinements proposed under the Variant, including the distribution line upgrade, would require the use of construction equipment that could leak oils or other hazardous materials into water bodies and groundwater. However, implementation of Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would ensure that construction water quality impacts would be less than significant.

Therefore, the Variant 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 Draft EIR or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.7.3: Impact on water bodies as a result of erosion and sediment discharge or a hazardous materials release associated with construction of barge docking facilities and during barging operation.

As with the Draft EIR project (pages 4.7-55 to 4.7-57), construction of the CDRP Variant could have significant impacts on the water quality of Calaveras Reservoir due to increased turbidity or a release of pollutants associated with dock construction and barge hauling operations. 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 addresses grading and erosion control, barge speeds, dredging techniques, solid waste management, hazardous materials handling and storage, and spill prevention and response.

Compared to the Draft EIR project, the Variant would not modify docking facilities and would involve only minimal changes to barging operations. The fish screens at Calaveras Dam Adit #1 (and Adit #2 if it is below water when construction occurs) would be installed by divers working from a diving barge. Similar to other diving work for the project, water quality control measures would be implemented in accordance with standard SFPUC requirements. None of the other fishery enhancements or project refinements in the Variant would modify barging operations compared to those described for the Draft EIR project. Therefore, the Variant would not result in any new significant effects on water quality as a result of erosion and sediment discharge or a hazardous materials release associated with construction of barge docking facilities and during barging operation beyond those identified for the Draft EIR project or an increase in 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.

As with the Draft EIR project (pages 4.7-57 to 4.7-60), implementation of the CDRP Variant would result in inundation of the existing and replacement dam, disposal sites, and haul routes. These activities could cause the release of materials potentially containing NOA, metals, or contaminants into the reservoir. 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), 5.8.3 (Geology Evaluation for Disposal Site Stabilization), and 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program). Mitigation Measure 5.7.1 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. Measure 5.8.3 requires the conduct of geotechnical investigations at all disposal sites where fill placement would result in a final slope greater than 20 feet in height. Measure 5.9.2a requires the SFPUC to 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.

Under the Variant and Draft EIR project, a portion of Borrow Area E/Disposal Area 5 would be submerged when the reservoir is refilled. As described for the Draft EIR project, materials that could potentially contain NOA would not be placed in this disposal site. Because the number of truck trips on the West Haul Road would not increase compared to the Draft EIR project, there would not be an increase in potential contaminant leakage or spills along the road; therefore, this element of the Variant would not increase the potential impacts on reservoir water quality during and following inundation due to road contaminants such as oil. None of the other fishery enhancements or project refinements in the Variant would affect water quality during or following inundation due to contact with borrow materials containing NOA, metals, or contaminants. Therefore, the Variant 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 for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.7.5: Changes in water quality parameters in Calaveras Reservoir during future operation and restoration of pre-DSOD-restricted reservoir conditions.

As with the Draft EIR project (pages 4.7-60 to 4.7-62), operation of the CDRP Variant would maintain or improve water quality parameters in Calaveras Reservoir due to the larger pool of cool water and increased dissolved oxygen levels that would result from the increased volume of stored water. This would be a beneficial impact.

In addition, operation of the Variant would not cause an adverse impact on water quality parameters in Calaveras Reservoir water quality during future operation and restoration of pre-DSOD-restricted reservoir conditions. Although the fish screen at the ACDD would reduce the rate of water diverted from Alameda Creek to Calaveras Reservoir, water surface elevations and water quality conditions in Calaveras Reservoir would be similar to conditions under the Draft EIR project. Therefore, the Variant would not result in any new significant effects related to changes in water quality parameters in Calaveras Reservoir during future operation and restoration of pre-DSOD-restricted reservoir conditions (which would remain beneficial) beyond

those impacts identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.7.6: Changes in water quality parameters in Calaveras and Alameda Creeks during future operation.

As with the Draft EIR project (pages 4.7-62 to 4.7-72), operation of the CDRP Variant would not substantially degrade water quality parameters in Alameda and Calaveras Creeks compared to existing conditions. Inclusion of the stilling basin and discharge channel downstream of the cone valve and spillway would reduce turbidity in Calaveras Creek, and implementation of fisheries enhancements under the Variant, including instream flow schedules for Alameda and Calaveras Creeks (see Tables 9.4 to 9.6), would have a beneficial effect on water quality in Calaveras Creek below Calaveras Dam and Alameda Creek downstream of the ACDD. Thus, the impact of the Variant on water quality parameters would also be less than significant, and no mitigation would be required.

Under the Variant, as described above in Section 9.3.6, Hydrology, implementation of the proposed instream flow schedule, combined with operation of the fish screen at the ACDD, the fish ladder, and the bypass structure, would result in overall increased flows in Alameda Creek below the ACDD compared to both existing conditions and the Draft EIR project. The proposed flow schedules include year-round releases from Calaveras Dam, which would increase flows in Calaveras Creek below the dam compared to both existing conditions and the Draft EIR project. With implementation of releases from Calaveras Dam along with bypass flows at the ACDD, flows in Calaveras Creek as well as flows in Alameda Creek (both downstream of the ACDD and downstream of the confluence with Calaveras Creek) would be higher than flows under the Draft EIR project. Low-flow bypasses (e.g., 10 cfs) made through the fish ladder would potentially be subject to warming due to the shallow depth of water; however, because bypasses through the fish ladder would only occur during the cooler period of the year (December through April), when substantial warming would not be expected, any temperature-related impact on Alameda Creek from use of the fish ladder would be less than significant. Overall, implementation of the additional fishery enhancements, including the AMIP, in Alameda and Calaveras Creeks would generally improve water quality conditions due to the increase in average annual flows; in addition, the inclusion of a fish ladder at the ACDD would further promote identified beneficial uses of Alameda Creek with respect to fish spawning and wildlife habitat. Therefore, these aspects of the Variant would be considered beneficial rather than less than significant, as was identified for the Draft EIR project.

With the addition of the fish screen at the ACDD as part of the Variant, sluicing activities would be more frequent during the rainy season compared to the Draft EIR project. As described in the Draft EIR (page 4.7-70), operation of the proposed bypass structure at the ACDD would maintain the transport of sediment during periods of low flow to some extent and would transport finer-

grained material; this would act to reduce the amount of the sediment passed during sluicing/flushing. Because the more frequent sluicing/flushing operations under the Variant would occur during high-flow events (when suspended material is typically naturally elevated), the more frequent sluicing operations would add minimally to the overall suspended sediment load and associated brief increases in turbidity in Alameda Creek flows. The overall suspended sediment load would be within the range of the existing sediment load for Alameda Creek, and the increased frequency of sluicing/flushing would result in a more dispersed, natural discharge of sediment to Alameda Creek. Therefore, this water quality impact would be less than significant. Instream repositioning of sediment, which could be required every 3 to 5 years under the updated project, would be done during the dry season, and in manner consistent with SFPUC's standard BMPs outlined in the Alameda WMP; these BMPs are designed to protect water quality in Alameda Creek from potential fuel leaks or other water quality impacts during operations and maintenance activities.

Operation of other elements of the Variant, including the electrical distribution line, intake tower modifications, fish screens at Calaveras Dam Adits #1 and #2, additional instrumentation, Borrow Area E modifications, and West Haul Road modifications, would not affect water quality in Calaveras and Alameda Creeks. Compared to the Draft EIR project, operation of the spillway with the proposed discharge channel grade-control structures would further protect water quality in Calaveras Creek from erosion during future operations.

Therefore, future operations under the CDRP Variant would not result in any new significant effects on water quality beyond those identified for the Draft EIR project or an increase in 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.

As with the Draft EIR project (pages 4.7-72 to 4.7-75), operations of the CDRP Variant would not substantially affect groundwater quality; however, construction-related runoff and associated sediment, contaminants, NOA, and metals could degrade groundwater quality if these constituents infiltrated into the groundwater. This potentially 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 contains BMPs to reduce potential effects on groundwater quality due to the release of hazardous materials, NOA, and metals during construction.

Under the Variant, construction and operation would result in a negligible change in the impact on groundwater quality compared to the Draft EIR project. Construction of the fish screen at the ACDD could result in a minor increase in the potential impact on groundwater quality related to the use and presence of hazardous materials at the construction site and the potential need for dewatering (if excavations in the channel encounter water); however, implementation of

Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce this impact to a less-than-significant level. With implementation of the proposed instream flow schedules, the Variant would increase the annual average volume of water flowing down Alameda Creek in all year types compared to conditions under the Draft EIR project; these changes, however, would not result in new or substantially greater impacts on groundwater quality.

Under the Variant, construction of the fish ladder at the ACDD, electrical distribution line upgrade, intake tower modifications, installation of fish screens at Calaveras Dam Adits #1 and #2, and additional instrumentation at Staging Area 7 would result in a negligible increase in potential impacts on groundwater quality associated with the use and presence of hazardous materials at the construction site. These construction activities would be temporary and local. Construction of the spillway discharge channel improvements, right dam abutment excavation, Borrow Area E modifications, and West Haul Road modifications would not change the impact on groundwater quality compared to the Draft EIR project. As with the Draft EIR project, implementation of BMPs specified in Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would reduce the potential construction impacts of the Variant on groundwater quality due to the release of hazardous materials to a less-than-significant level. Operation of the Variant would not result in any change in impacts on groundwater quality compared to the Draft EIR project.

Therefore, the CDRP Variant would not result in any new significant effects on groundwater quality beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

9.3.8 GEOLOGY, SOILS, AND SEISMICITY

EIR Chapter 4, Section 4.8 evaluates potential impacts of the proposed project on geology, soils, and seismicity. **Table 9.21** summarizes the impacts of the CDRP Variant on geology, soils, and seismicity compared to those of the Draft EIR project.

Existing geology, soils, and seismicity conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, pages 4.8-1 to 4.8-20). As described below, implementation of the CDRP Variant would not result in any new significant effects beyond those identified for the Draft EIR project or an increase in the severity of a significant impact on geology, soils, and seismicity, and no new mitigation measures would be required.

Table 9.21: Summary of Geology, Soils, and Seismicity Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.8.1: Landslide activation as a result of construction activities, resulting in structural damage and injuries.	LS	LS
4.8.2: Impacts of excavation, placement of fill, and other construction activities on soils with severe erosion and slope instability hazards.	LSM	LSM
4.8.3: Impacts on slopes at the disposal sites due to fill settlement, slippage, and failure under seismic loading.	LSM	LSM
4.8.4: Seismic hazards at the replacement dam.	LS	LS
4.8.5: Hazards of seismically induced ground failure, including liquefaction, lateral spreading, and settlement at disposal fill sites.	LSM	LSM
4.8.6: Impacts on project structures and buried utilities from expansive or corrosive soils.	LS	LS
4.8.7: Induced seismic activity from reservoir refilling.	LS	LS
4.8.8: Alteration of the existing topography and geologic features of the site.	LS	LS
<i>Notes:</i> LS – Less than significant LSM – Less than significant with mitigation		

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

As with the Draft EIR project (pages 4.8-22 to 4.8-25), construction of the CDRP Variant 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 final project design. As with the Draft EIR project, the impact of the Variant related to potential landslide hazards would be less than significant, and no mitigation would be required.

Under the Variant, there would be no change in the conclusion for Draft EIR project regarding potential structural damage or injuries due to the activation of existing landslides during construction. As discussed in EIR Chapter 4, Section 4.8, potential impacts related to slope instability from existing landslides would be significant only for the dam site and have been addressed through the design of the replacement dam. The same dam design elements would apply as appropriate to the project updates at the dam site, including the spillway discharge channel. The right dam abutment excavation would be completed in an area where several landslides have occurred in order to stabilize the dam foundation. In the long term, this project

refinement in the Variant would further decrease the potential for landslide activation and resulting structural damage and injuries.

As described in the EIR (page 4.8-23), because excavation of the dam foundation could cause movement of the right abutment landslide, the SFPUC has proposed a two-phased program to stabilize the landslide during the first stage of project construction; this two-phased program of landslide stabilization would reduce the risk of dam failure to a less-than-significant level and would also be implemented with this construction revision under the Variant. The upgrade of the electrical distribution line would not involve substantial excavation or grading and would not result in any change to the conclusion for the Draft EIR project regarding impacts due to slope instability or landslide activation. Similarly, none of the other fishery enhancements or project refinements under the Variant would affect the potential for landslide activation. Therefore, the Variant would not result in any new significant effects related to slope stability or landslides beyond those identified for the Draft EIR 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.

As with the Draft EIR project (pages 4.8-24 to 4.8-25), the CDRP Variant 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. 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 soil erosion protection measures.

Under the Variant, excavation and other construction activities would result in a very minor increase in impacts on soils with severe erosion and slope instability hazards compared to the Draft EIR project due to the incremental increase (less than 0.5 percent) in the disturbance area (see Table 9.3). Construction of the fish screen and fish ladder at the ACDD and the fish screens at Calaveras Dam Adits #1 and #2 would result in a minor increase in the potential for soil erosion and sediment discharge or sediment disturbance due to construction activities involved with fish screen installation; grading that may be required at the Alameda Creek access ramp; and vegetation clearing, excavation, and grading work needed to install the fish ladder. The effects of these fishery enhancements on soil erosion and sediment discharge would be substantially the same as those for the Draft EIR project because instream construction activities would be scheduled during the dry season when flowing water is not present in the Alameda Creek work area, no fill would be needed to support the screens, and the SFPUC's standard construction measures and Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would be implemented, thus reducing the impact to a less-than-significant level. Construction of the proposed electrical distribution line upgrade and spillway discharge channel grade-control structure and the West Haul Road would result in a minor increase in potential soil erosion and/or

slope instability impacts due to vegetation removal and excavation activities. However, the area of disturbance associated with digging new post holes, if needed, would be limited; in addition, the area affected by excavation activities associated with construction of the spillway discharge channel and the West Haul Road would also be minor. As noted, the SFPUC's standard construction measures and Mitigation Measure 5.7.1 (Storm Water Pollution Prevention Plan) would apply to the Variant and would minimize the potential for adverse effects. Therefore, the Variant would not result in any new significant effects associated with soil erosion and slope instability hazards beyond those identified for the Draft EIR project 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 CDRP Variant proposes the use of the same disposal sites and would result in the same slope stability impacts as identified for the Draft EIR project (pages 4.8-25 to 4.8-27), including the potential use of Disposal Site 5. The placement of fill at this site, unless properly engineered, could create a significant slope failure hazard because the original grade and gentle north-draining slope would be re-created, and a geotechnical investigation has not been undertaken for the reserve Disposal Site 5. 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), which requires a site-specific geotechnical evaluation to be conducted to ensure the stability of fill placed at this site.

Under the Variant, the proposed Borrow Area E modifications would result in shallower excavations at Borrow Area E/Disposal Site 5 and would provide for the establishment of seasonal wetlands in a portion of the area. However, this modification would not obviate the need to implement Mitigation Measure 5.8.3 (Geotechnical Evaluation for Disposal Site Stabilization) to reduce this impact to a less-than-significant level. No other elements of the Variant would affect slopes or factors related to seismic failure (including liquefaction, lateral spreading, and settlement) at the disposal sites. The modification at Borrow Area E would not result in new significant effects due to fill settlement, slippage, or seismically induced ground failure beyond those identified for the Draft EIR project 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 Draft EIR project (pages 4.8-27 to 4.8-30), the replacement dam under the CDRP Variant 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 right dam abutment excavation modifications would further decrease the potential for seismic hazards at the replacement dam through stabilization of the

right abutment dam foundation. No other aspects of the Variant would affect seismic hazards as described in EIR Chapter 4, Section 4.8. Therefore, the impact of the Variant related to seismic hazards would be less than significant, and no mitigation would be required.

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

As with the Draft EIR project (pages 4.8-31 to 4.8-32), potential hazards related to seismically induced ground failure under the Variant 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 fill sites. Since a geotechnical evaluation has not been undertaken for Disposal Site 5, settlement and seismically induced subsidence could occur. This potentially 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.

The proposed Borrow Area E modifications would result in shallower excavations at Borrow Area E/Disposal Site 5 and the re-establishment of seasonal wetlands in a portion of the area. However, this modification would not obviate the need to implement Mitigation Measure 5.8.3 (Geotechnical Evaluation for Disposal Site Stabilization) to reduce this impact to a less-than-significant level. No other elements of the Variant would affect slopes or factors related to seismic failure (including liquefaction, lateral spreading, and settlement) at the disposal sites. The modification at Borrow Area E would not result in new significant effects due to fill settlement, slippage, or seismically induced ground failure beyond those identified for the Draft EIR 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 Draft EIR project (pages 4.8-32 to 4.8-33), construction of the CDRP Variant 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. The intake tower modifications would be located above the soil surface, and the fish screens at Calaveras Dam Adits #1 and #2 would not be located on a soil surface. All other fishery enhancements and project refinements under the Variant would comply with standard design and construction practices related to determining and addressing the corrosive characteristics and expansion potential of soils. Therefore, as indicated

for the Draft EIR project, the impact of the Variant on expansive or corrosive impacts would be less than significant, and no mitigation would be required.

Impact 4.8.7: Induced seismic activity from reservoir refilling.

As with the Draft EIR project (page 4.8-33), filling Calaveras Reservoir and subsequent operation of the CDRP Variant at the pre-DSOD-restricted maximum reservoir water level (756 feet) is unlikely to trigger seismic activity because the local tectonic and hydrologic regime beneath the impoundment reached equilibrium following the original reservoir filling. None of the fishery enhancements and project refinements under the Variant would contribute to seismic activity due to reservoir filling. Therefore, as indicated for the Draft EIR project, the impact of the Variant related to potential seismic activity during reservoir filling would be less than significant, and no mitigation would be required.

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

As with the Draft EIR project (pages 4.8-33 to 4.8-34), the CDRP Variant would change the existing topography due to excavation and grading at the borrow areas and disposal sites, but no unique geologic or topographic feature would be altered or destroyed. As indicated for the Draft EIR project, the impact of the Variant related to altering the existing topography and geologic features of the site would be less than significant, and no mitigation would be required.

Under the Variant, the proposed fish ladder would include construction of a concrete channel along the north bank of Alameda Creek, but would not alter the existing topography or geologic features. The proposed modifications to the right dam abutment excavation would result in a minor alteration of existing topography and geologic features, but would be consistent with actions proposed for the Draft EIR project. The Borrow Area E modifications would result in a shallower excavation, and a portion of the area would be restored as seasonal wetlands following construction. The slopes at Borrow Area E would partly mimic existing slopes, as described in the EIR (page 4.8-34), and during high water levels most of Borrow Area E would be inundated. None of the other fishery enhancements and project refinements under the Variant would affect existing topography or geologic features at the site. Therefore, the Variant would not result in any new significant effects related to the alteration of existing topography or geologic features beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

9.3.9 HAZARDS AND HAZARDOUS MATERIALS

EIR Chapter 4, Section 4.9 evaluates potential impacts of the proposed project related to hazards and hazardous materials. **Table 9.22** summarizes the impacts of the CDRP Variant with respect to hazards and hazardous materials compared to those of the Draft EIR project.

Table 9.22: Summary of Hazards and Hazardous Materials Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.9.1: Release of hazardous materials in soil and groundwater during construction.	LSM	LSM
4.9.2: Release of airborne NOA and naturally occurring metals from excavation, hauling, blasting, tunneling, placement, and on-site disposal of Franciscan Complex serpentinite or mélange.	LSM	LSM
4.9.3: Potential for an explosion due to gassy conditions during excavation and tunneling.	LS	LS
4.9.4: Increased risk of fires in an area of high fire danger.	LS	LS
4.9.5: Release of hazardous building materials from demolition of existing structures.	LSM	LSM
4.9.6: Release of fuel and other hazardous materials to the environment, including Calaveras Reservoir.	LSM	LSM
4.9.7: Fire and safety hazards from use of explosives during construction.	LS	LS
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.	LS	LS
<i>Notes:</i> LS – Less than significant LSM – Less than significant with mitigation		

Existing hazards and hazardous materials conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, pages 4.9-1 to 4.9-17). As described below, implementation of the CDRP Variant would not result in any new significant effects related to hazards and hazardous materials beyond those identified for the Draft EIR 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.

As with the Draft EIR project (pages 4.9-20 to 4.9-22), the potential to encounter unknown hazardous materials in the soil and groundwater during construction of the CDRP Variant would be low, with the possible exception of excavation at Borrow Area E. Excavation within Borrow Area E could encounter groundwater and could potentially affect the movement of the identified groundwater plume at the former Calaveras Test Site. This potentially significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.9.1 (Groundwater at Former Calaveras Test Site), which would require the SFPUC to: (1) notify the

RWQCB of the planned excavation activities and implement any monitoring requirements specified by the RWQCB to demonstrate that excavation activities in Borrow Area E do not adversely affect the groundwater plume at the former Calaveras Test Site and to detect the presence of previously unidentified contamination, if encountered; and (2) prepare a contingency plan identifying measures that would be taken if monitoring identifies potential effects with respect to the groundwater plume or if unanticipated contamination is identified during construction.

Impacts related to the potential to release hazardous materials in the soil and groundwater during construction of the electrical distribution line upgrade would be less than significant because installation of new power line poles would require only limited soil excavation in a rural area. Further, PG&E would conduct the pole installation in accordance with its standard operating procedures, including PG&E's Environmental Screening and BMPs, which require an assessment of the potential for soil contamination, and based on the results of that assessment, proper health and safety and soil management procedures would be implemented. All other fishery enhancements and project refinements under the Variant would be located on watershed lands in areas with a low potential to encounter hazardous materials in the soil or groundwater. Therefore, the Variant would not result in any new significant effects related to the release of hazardous materials in soil or groundwater beyond those identified for the Draft EIR 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 serpentinite or mélange.

As with the Draft EIR project (pages 4.9-22 to 4.9-25), construction of the CDRP Variant could release NOA and naturally occurring metals into the air, potentially exposing on-site workers, recreational users in the project vicinity, and the watershed keeper's residence. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program), 5.9.2b (Construction Worker Protection), 5.9.2c (Watershed Keeper's Residence), and 5.9.2d (Excavation Materials Management Plan), which require enhanced monitoring and protective measures in addition to compliance with all applicable Bay Area Air Quality Management District (BAAQMD) and California Division of Occupational Safety and Health (Cal/OSHA) regulatory requirements.

Under the Variant, the proposed fish screen and ladder at the ACDD, spillway discharge channel grade-control structures, and right dam abutment excavation could involve work within rock containing NOA and elevated levels of naturally occurring metals, incrementally increasing the construction area with potential for airborne release of these constituents during excavation. However, the total area of disturbance would increase by less than 0.5 percent relative to the

Draft EIR project and the likelihood of encountering and releasing these constituents would remain essentially the same as for the Draft EIR project. Therefore, the Variant would not result in a substantial increase in the severity of impacts related to release of NOA and naturally occurring metals beyond that identified for the Draft EIR project. This impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.9-2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program) and 5.9-2b (Construction Worker Protection).

As described in Section 9.2.3 above, geotechnical investigations would be conducted as part of construction of the fish screen and fish ladder at the ACDD to evaluate the levels of NOA and metals in the Eylar Mountain terrane bedrock,⁹ the mapped geologic unit where the proposed fish screen and fish ladder at the ACDD would be constructed. If asbestos concentrations in excess of 0.25 percent are identified in the rock units sampled, then Mitigation Measures 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program) and 5.9.2b (Construction Worker Protection) would be applicable to these sites. Implementation of these measures would ensure that construction activities associated with the Variant do not cause unacceptable off-site exposure to asbestos and metals.

Thus, the Variant would not result in any new significant effects related to the potential release of airborne NOA or naturally occurring metals beyond those identified for the Draft EIR project 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.

As with the Draft EIR project (pages 4.25 to 4.9-26), construction of the CDRP Variant would entail excavation and tunneling activities that could result in gassy conditions. However, the SFPUC would comply 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 fishery enhancements or project refinements of the Variant would affect the excavation and tunneling activities with potential to result in gassy conditions. Therefore, identical to the Draft EIR project, the potential impact of the Variant related to an explosion due to gassy conditions would be less than significant, and no mitigation would be required.

⁹ The site is mapped in the Eylar Mtn terrane (KJfe), which is comprised of clastic sedimentary rocks with minor pillow basalt. This geologic unit includes more or less sheared and metamorphosed mudstone, siltstone, graywacke, conglomerate, chert, and minor pillow basalt. While this rock unit is not specifically identified as an asbestos-containing unit, there is a potential that NOA could be present because the unit is sheared and metamorphosed and is also found in close proximity to Franciscan mélangé bedrock and serpentinite, which are known to contain asbestos.

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

As with the Draft EIR project (pages 4.9-26 to 4.9-27), the CDRP Variant would require the use of construction equipment and temporary on-site storage of diesel fuel, which 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 Alameda WMP Action fir1. Therefore, as indicated for the Draft EIR project, the impact of the Variant on wildfires would be less than significant, and no mitigation would be required.

Under the Variant, all of the fishery enhancements and project refinements would be located in an area characterized as “Wildland Area that May Contain Substantial Forest Fire Risks and Hazards,” as would all elements of the Draft EIR project. The types of construction activities and equipment would be similar to those for the Draft EIR project, and scheduling would occur within the same timeframe. Consequently, the CDRP Variant would result in essentially the same risk of fires during construction as the Draft EIR project. As part of operations under the Variant, the power system for the fish screen would be maintained in accordance with California Public Resources Code requirements for fire safety (Sections 4291 to 4299). In accordance with these requirements, the SFPUC would maintain a defensible space around the power system and would maintain the facility free of dead or dying wood as well as leaves, needles, or other vegetative material that can act as fuel for a wildfire. Thus, the impact of the Variant during operations would be less than significant.

Therefore, the Variant would not result in any new significant effects related to the risk of fires in an area of high fire danger beyond those identified for the Draft EIR project or an 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.

As with the Draft EIR project (pages 4.9-27 to 4.9-28), construction of the CDRP Variant 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 potential 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 fishery enhancements or project refinements of the Variant would involve demolition of existing structures, so this impact would be identical to that described for the Draft EIR project.

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

As with the Draft EIR project (page 4.9-29), construction of the CDRP Variant 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). 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 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.

The Variant would involve an incremental increase in the extent of the construction area as well as in the level of construction activity in the project area (see Table 9.3). However, this incremental increase would have negligible effect on the potential release of fuel and other hazardous materials to the environment during construction, compared to the potential for release of fuel and other hazardous materials associated with the overall four-year construction associated with the Draft EIR project.

Under the Variant, the SFPUC would prepare a Hazardous Materials Business Plan (HMBP) for the power system at the fish screen for any hazardous materials used above threshold quantities (500 pounds for solids, 55 gallons for liquids, and 200 cubic feet for compressed gases). The HMBP would be filed with the Alameda County Department of Environmental Health and would include an emergency response/contingency plan specifying procedures to contain a release or threatened release of hazardous materials, as well as required training for employees involved in hazardous materials handling. The HMBP would also provide local agencies with the information they need to plan appropriately for a chemical release, fire, or other incident. In addition, the Variant would comply with the requirements of the SFPUC's adopted Alameda WMP, which requires the development of hazardous chemical management procedures addressing the type, use, storage, transport, and disposal of hazardous chemicals and pesticides used in watershed activities. Thus, the impact of the Variant during operations would be less than significant.

Therefore, the Variant would not result in any new significant effects related to a release of hazardous materials to the environment beyond those identified for the Draft EIR 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 with the Draft EIR project (pages 4.9-29 to 4.9-30), construction of the CDRP Variant could involve the use of explosives, but 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. None of the fishery enhancements or project refinements under the Variant would involve the use of explosives, so this impact would be identical to that described for the Draft EIR project. As indicated in EIR Chapter 4, Section 4.9, compliance with these regulatory requirements would ensure that impacts of the Variant related to fire and safety hazards are less than significant, and no mitigation 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 with the Draft EIR project (page 4.9-30), operation of the CDRP Variant would restore reservoir levels, which would contribute to a decrease in trichloroethene concentrations in the groundwater. In addition, 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 fishery enhancements or project refinements of the Variant would affect the raising of the reservoir level, so this impact would be identical to that described for the Draft EIR project. Therefore, as with the Draft EIR project, the impact of the Variant on the groundwater plume and on Calaveras Reservoir water quality would be less than significant, and no mitigation would be required.

9.3.10 CULTURAL RESOURCES

EIR Chapter 4, Section 4.10 evaluates potential impacts of the proposed project on cultural resources. **Table 9.23** summarizes the impacts of the CDRP Variant on cultural resources compared to those of the Draft EIR project.

Existing cultural resource conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.10.1, pages 4.10-1 to 4.10-48). In addition, in order to augment the setting information for the Draft EIR project to cover the expanded area for the right dam abutment excavation and the PG&E right-of-way for the electrical distribution line upgrade, the SFPUC retained URS to conduct surveys and complete addenda to the existing CDRP archaeological survey report and historic resources inventory and evaluation report. A review of existing records for the expanded right dam abutment excavation did not reveal

Table 9.23: Summary of Cultural Resources Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.10.1: Impact of construction activities on known archaeological resources.	LSM	LSM
4.10.2: Impact of construction activities on unknown archaeological resources.	LSM	LSM
4.10.3: Impact of restoration of reservoir water levels and project operations on known archaeological resources.	LSM	LSM
4.10.4: Construction impacts on historic architectural resources.	NI	NI
4.10.5: Construction impacts on unknown paleontological resources.	LSM	LSM
4.10.6: Impact of restoration of reservoir water levels and project operations on unknown paleontological resources.	LS	LS
<i>Notes:</i> NI – No impact LS – Less than significant LSM – Less than significant with mitigation		

previously recorded archaeological resources in the affected area, nor were cultural materials or evidence of archaeological deposition identified during an intensive pedestrian survey (URS 2010c). The record search failed to identify any previously recorded prehistoric or historic-era cultural resources along the PG&E right-of-way or any Native America cultural resources within the study area; the field survey identified two historic-era stone fence segments, but no artifacts or evidence of archaeological deposition (URS 2010b).

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

Impact 4.10.1: Impact of construction activities on known archaeological resources.

As with the Draft EIR project (pages 4.10-51 to 4.10-52), construction of the CDRP Variant could have an adverse impact on significant known archaeological resources, including the Historic-Era Habitation Site (CD 8) and Dam Construction Workers’ Site (CD 20). This significant 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 would be implemented when any known significant archaeological resources within the study area are subject to ground-disturbing construction activities.

Under the Variant, construction of the Borrow Area E and West Haul Road modifications could result in impacts on known archaeological resources (Sites CD 8 and CD 20). However, the impact of the Variant on known archaeological resources would be the same as that identified for the Draft EIR project, and no new mitigation measure would be required. None of the other fishery enhancements or project refinements under the Variant would affect known archaeological resources. Therefore, the Variant would not result in any new significant effects related to impacts on known archaeological resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.10.2: Impact of construction activities on unknown archaeological resources.

As with the Draft EIR project (pages 4.10-52 to 4.10-53), construction of the CDRP Variant could have an adverse impact on significant unknown archaeological resources. This significant impact would be reduced to a less-than-significant 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.

With the exception of the intake tower modifications and fish screens at Calaveras Dam Adits #1 and #2, all the fishery enhancements and project refinements under the Variant could involve excavation, and therefore would have the potential to affect unknown archaeological resources. However, all of these elements are within the same overall project area as the Draft EIR project, and the likelihood of encountering unknown archaeological resources would be the same as that described for the Draft EIR project. Therefore, the Variant would not result in any new significant effects related to impacts on unknown archaeological resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.10.3: Impact of restoration of reservoir water levels and project operations on known archaeological resources.

As with the Draft EIR project (pages 4.10-53 to 4.10-54), operation of the CDRP Variant could have an adverse impact on significant known archaeological surface features. This significant 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 requires identification and preservation of the information potential of known archaeological surface features that could be affected by restoration of reservoir water levels.

EIR Chapter 4, Section 4.10 indicates that known archaeological resources would be inundated during reservoir filling or would lie within the fluctuation range of water levels during operations

at the restored water levels (relative to operations during baseline, post-DSOD-restricted conditions), and that inundation and fluctuation of water levels could adversely affect these archaeological resources by impairing their potential to yield important historic or prehistoric information. None of the elements of the Variant would alter operational water levels in the restored reservoir, as described in Section 4.10. Therefore, restoring reservoir water levels under the Variant would not result in any new significant effects on known archaeological resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.10.4: Construction impacts on historic architectural resources.

As with the Draft EIR project (page 4.10-54), demolition or alteration of buildings and structures under the CDRP Variant would not affect any historic architectural resources that are considered historical resources under CEQA.

Surveys conducted for the EIR (page 4.10-54) concluded that none of the buildings or structures in the study area are considered historic architectural resources for CEQA purposes. Surveys conducted for the electrical distribution line upgrade (URS 2010b) identified two historic-era stone fence segments within the CEQA Area of Potential Effect, likely dating to late-19th-century homesteading and ranching activities. For this evaluation, the fences are considered potentially eligible for inclusion in the National Register of Historic Places or the California Register of Historical Resources and have been recorded on a California Department of Parks and Recreation Form 523. However, the fence sites are situated in areas that would not need to be accessed for construction, and the distribution line upgrade would not necessitate any disturbance of these features. Therefore, the Variant would not result in any new significant effects related to historic architectural resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.10.5: Construction impacts on unknown paleontological resources.

As with the Draft EIR project (pages 4.10-54 to 4.10-55), construction of the CDRP Variant could have an adverse impact on significant unknown paleontological resources. 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 potential impacts on unknown paleontological resources during ground-disturbing construction activities.

As described for the Draft EIR project, the Variant is located in an area identified as having a high probability to contain paleontological resources, and elements of the Variant that involve excavation have the potential to affect unknown paleontological resources. However, these elements are located in the same overall area as the Draft EIR project, and the likelihood of encountering unknown paleontological resources would be the same as that described for the

Draft EIR project. Therefore, the Variant would not result in any new significant effects related to discovering unknown paleontological resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.10.6: Impact of restoration of reservoir water levels and project operations on unknown paleontological resources.

As with the Draft EIR project (page 4.10-55), operation of the CDRP Variant would entail refilling Calaveras Reservoir, which would change the shoreline location and the associated area that would be subject to erosion. However, as with the Draft EIR project, this change in shoreline location would not substantially alter the nature or severity of shoreline erosion due to reservoir level fluctuations, wave action, or the probability that shoreline erosion could expose and destroy a unique paleontological resource or site if any exists. As with the Draft EIR project, the impact of the Variant on paleontological resources would be less than significant, and no mitigation would be required.

None of the elements of the Variant would alter the maximum water levels in the restored reservoir compared to the Draft EIR project, although the proposed fish screen at the ACDD would reduce the diversion rate and change the timing and frequency of inundation at various elevations relative to the reservoir operations described for the Draft EIR project. However, these changes would not affect the nature or severity of shoreline erosion caused by reservoir level fluctuations and wave action, or the probability that shoreline erosion could expose and destroy a unique paleontological resource or site if any exists. Therefore, the Variant would not result in any new significant effects related to restoring reservoir water levels on unknown paleontological resources beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

9.3.11 VISUAL RESOURCES

EIR Chapter 4, Section 4.11 evaluates potential impacts of the proposed project on visual resources. **Table 9.24** summarizes the impacts of the CDRP Variant on visual resources compared to those of the Draft EIR project.

Existing visual resources conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.11.1, pages 4.11-1 to 4.11-17). As described below, implementation of the CDRP Variant would not result in any new significant effects on visual resources beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

Table 9.24: Summary of Visual Resources Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.11.1: Impact of construction activities on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	SU (temporary)	SU (temporary)
4.11.2: Impact of site disturbance on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	SU	SU
4.11.3: Impact of project operations on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	LS	LS
4.11.4: Impact of construction activities and site disturbance on scenic views from county roads.	LS	LS
4.11.5: Impact of construction activities on nighttime light conditions.	LS	LS
4.11.6: Impact of project operations on scenic views from county roads.	LS	LS
<i>Notes:</i> LS – Less than significant SU – Significant unavoidable		

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

As with the Draft EIR project (pages 4.11-19 to 4.11-21), construction in the vicinity of the dam site under the CDRP Variant would be visible from some areas within the Sunol Regional Wilderness and, although temporary (about 4 years), this impact on scenic vistas, scenic resources, and the visual character of the reservoir would be significant. 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. Therefore, as determined for the Draft EIR project, construction of the Variant would result in a significant and unavoidable impact on visual resources.

Under the Variant, additional construction activities at the dam site associated with the right dam abutment excavation, spillway discharge channel, fish screens at Adits #1 and #2, intake tower modifications, and accelerograph would entail substantially the same type of construction equipment, number of workers, and construction schedule as the Draft EIR project, and would not exacerbate the significant impact. No new mitigation measures could be implemented to reduce the impact to a less-than-significant level; therefore, the impact of the Variant, like that of the Draft EIR project, would be significant and unavoidable.

Similarly, the other elements of the Variant would not contribute to the visual impact of construction activities at the dam site. As described for the proposed bypass facility at the ACDD under the Draft EIR project, construction activities related to the proposed fish screen and fish ladder at the ACDD would be minimally visible, if discernible at all, when viewed from East Bay Regional Park District lands (the immediate area around ACDD is closed to public access). The visual impact of these components of the Variant would be minimized by distance, by their lowered position in the landscape along the creek, and by intervening vegetation. Construction activities related to the proposed electrical distribution line upgrade would also be minimally visible, if discernible at all, from the Sunol Wilderness. To the extent that such activities could be seen, their visual impact would be minimized by distance and by intervening topography and vegetation. The West Haul Road and Borrow Area E would not be prominent, if visible at all, when viewed from the Sunol Wilderness; the analysis of Borrow Area E for the Draft EIR project assumed excavation of the entire site, so the impact of the Variant would be the same as described for the Draft EIR project. Therefore, the Variant would not result in any new significant effects on visual resources associated with construction activities beyond those identified for the Draft EIR project or an 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.

As with the Draft EIR project (pages 4.11-21 to 4.11-22), construction of the CDRP Variant would result in site disturbance due to the excavation and grading of Observation Hill and Hill 1000, and the excavation of Borrow Area B. Even with implementation of Alameda WMP policies (i.e., Action des 5A: contour to mimic surrounding landforms; and Action Veg 4: revegetate graded areas), full restoration would not be feasible, and these activities would have a significant impact on scenic vistas from the park and on scenic resources and the visual character of the dam site and its surroundings for decades after construction is complete. Therefore, as identified for the Draft EIR project, this site disturbance impact of the Variant on visual resources would be significant and unavoidable, even with implementation of Mitigation Measure 5.4.2 (Habitat Restoration Measures) which would restore habitats where feasible. Full restoration would not be feasible within the spillway excavation on Observation Hill and Hill 1000, since the benched slopes on exposed bedrock would not lend themselves to replanting with oak woodland and would not retain the same visual character.

Under the Variant, the accelerograph would be constructed in an area between Observation Hill and Hill 1000. However, site disturbance (approximately 10 square feet) associated with installation of the accelerograph at this location would be imperceptible to viewers within the Sunol Wilderness when compared to the magnitude of vegetation clearance and excavation at Observation Hill and Hill 1000 and other site disturbance that would occur under the Draft EIR

project. Similarly, construction modifications for the spillway discharge channel grade-control structures, if necessary, and the additional excavation at the right dam abutment would involve the same magnitude of site disturbance as assumed for the Draft EIR project, and site disturbance associated with Borrow Area E modifications would be essentially the same as that assumed for the Draft EIR project. Furthermore, the distance and intervening topography and vegetation obscure views of the site from the Sunol Wilderness, and these project refinements would not substantially affect the visual impact of site disturbance described for the Draft EIR project. Site disturbance along the PG&E line would consist of limited vegetation removal within the existing right-of-way, consistent with routine maintenance of the utility corridor, and site disturbance related to construction in the ACDD vicinity (including the fish screen and ladder) and along the West Haul Road would be minimally visible, if discernible at all, when viewed from East Bay Regional Park District lands. No new mitigation measures could be implemented to reduce the impact to a less-than-significant level; therefore, the impact of the Variant, like that of the Draft EIR project, would be significant and unavoidable.

Impact 4.11.3: Impact of project operations on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.

As with the Draft EIR project (pages 4.11-22 to 4.11-23), operation of the new replacement dam under the CDRP Variant would not substantially impair scenic vistas from the Sunol Wilderness or affect scenic resources or the visual character of the dam site and its surroundings. Therefore, as described for the Draft EIR project, the Variant's operational impacts on visual resources would be less than significant, and no mitigation measures would be required.

Under the Variant, as with the Draft EIR project, the proposed facilities in the ACDD vicinity (fish screen, fish ladder, and bypass facility) would be minimally visible, if discernible at all, from East Bay Regional Park District lands. The visual impact of these components of the Variant would be minimized by distance, by their lowered position in the landscape along the creek, and by intervening vegetation. The visual character of the upgraded electrical facilities would be substantially similar to the existing electrical facilities in material, location, and size. To the extent that the proposed electrical distribution line upgrade work could be seen from the Sunol Wilderness, its visual impact would be minimized by distance and by intervening topography and vegetation. Project operations under the proposed design refinements would have substantially the same impact on visual resources when viewed from the Sunol Wilderness as described for the Draft EIR project, although installation of the accelerograph in Staging Area 7 could be visible from the Sunol Wilderness. If visible at all, this feature would not be prominent when viewed in the context of the existing and proposed dam complex, given the dam's size and its distance from viewers in the park. The changes to the spillway discharge channel would be minimally visible, if discernible at all, when viewed from the Sunol Wilderness. The adit fish screens would be installed underwater and would not be visible. Under

the Variant, the increased height of the proposed intake tower and incorporation of architectural elements would improve the tower's aesthetic quality. The tower would only be visible to the public from a distance. As such, this project refinement represents a beneficial yet minor change with regard to the long-term effects of the Variant on visual resources. Thus, the Variant would not result in any new significant effects on visual resources associated with project operations beyond those identified for the Draft EIR project or an 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.

As with the Draft EIR project (pages 4.11-23 to 4.11-25), construction activities, site disturbance, and proposed modifications to the intake tower under the CDRP Variant would not substantially impair scenic resources or degrade the visual character of the reservoir as viewed from county roads. As described for the Draft EIR project, the impact of the Variant on scenic views from county roads would be less than significant, and no mitigation measures would be required.

Under the Variant, construction and operation of the proposed fishery enhancements at Alameda Creek would not be visible from county roads. The construction work area for the electrical distribution line upgrade would be visible from county roads that intersect with the PG&E utility corridor or run parallel to it, as well as from parts of the Spring Valley Golf Course; however, construction would progress along the alignment and, as such, would be temporary in any given location; as noted above, site disturbance would be similar to disturbance that occurs under routine maintenance activities. Once construction is completed (to the degree that the upgraded line would be visible at all from the Sunol Wilderness, county roads, or the golf course), the new PG&E line would be substantially similar to the existing 12-kV electrical line. Construction activities for all other elements of the Variant, if visible from county roads, would be essentially the same as for the Draft EIR project, involving the same types of equipment, construction schedule, and duration. Thus, the Variant would not result in any new significant effects on visual resources associated with construction activities as viewed from county roads beyond those identified for the Draft EIR project 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.

As with the Draft EIR project (pages 4.11-25 to 4.11-26), construction of the CDRP Variant would not generate intrusive amounts of light and glare that could affect residential or recreational receptors. None of the project refinements or fishery enhancements under the Variant would change the project assumptions used to analyze nighttime light conditions in the EIR Chapter 4, Section 4.11. Therefore, as indicated for the Draft EIR project, the Variant's

impact of nighttime construction lighting would be less than significant, and no mitigation would be required.

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

As with the Draft EIR project (pages 4.11-26 to 4.11-27), the CDRP Variant 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. Therefore, as with the Draft EIR project, the operations impact of the Variant on scenic views from county roads would be less than significant, and no mitigation would be required.

With the possible exception of the intake tower, views of the completed dam and reservoir and all associated fishery enhancements and project refinements as seen from county roads would be essentially identical to those described for the Draft EIR project. Under the Variant, increasing the height of the intake tower to incorporate architectural elements would improve the aesthetic quality of the proposed tower, and the intake tower would be somewhat more prominent due to its increased height under the proposed design refinements. As with the existing intake tower, the proposed intake tower modifications would not be prominent, where visible at all, from county roads. The tower would only be visible to the public from a distance. The closest public viewing location would be from Calaveras Road, approximately 0.4 mile away. Thus, operations under the Variant would not result in any new significant effects on visual resources as seen from county roads beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

9.3.12 TRANSPORTATION AND CIRCULATION

EIR Chapter 4, Section 4.12 evaluates potential impacts of the proposed project on transportation and circulation. **Table 9.25** summarizes the impacts of the CDRP Variant on transportation and circulation compared to those of the Draft EIR project.

The existing roadway network, traffic volumes, transit service, pedestrian and bicycle circulation, and regulatory framework described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.12.1, pages 4.12-1 to 4.12-5) also apply to the CDRP Variant. In addition to the roadway network described for the Draft EIR project, Downing Road and Weller Road east of Milpitas are local roads that, along with Calaveras Road, would provide access to the electrical distribution line upgrade component of the Variant. As described below, implementation of the CDRP Variant would not result in any new significant effects on transportation and circulation beyond those identified for the Draft EIR project or an increase in the severity of a significant impact, and no new mitigation measures would be required.

Table 9.25: Summary of Transportation and Circulation Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.12.1: Traffic delays due to temporary lane and road closures during construction.	LS	LS
4.12.2: Short-term traffic increases on area roadways due to construction-related traffic.	LS	LS
4.12.3: Impaired access to adjacent roadways and land uses for emergency service providers.	LS	LS
4.12.4: Increased potential for traffic safety hazards for vehicles and bicyclists on public roadways during construction.	SU	SU
4.12.5: Increased wear and tear on the designated haul routes used by construction vehicles.	LSM	LSM
4.12.6: Long-term traffic associated with operation and maintenance of the replacement dam.	LS	LS
<i>Notes:</i> LS – Less than significant LSM – Less than significant with mitigation SU – Significant and unavoidable		

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

As with the Draft EIR project (pages 4.12-7 to 4.12-9), construction of the CDRP Variant would require temporary lane and road closures but would not result in traffic increases that are substantial in relation to the existing traffic loads and capacities or that would exceed the established level of service (LOS) standards of the affected roadways. As with the Draft EIR project, the impact of the Variant related to lane and road closures during construction would be less than significant, and no mitigation measures would be required.

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

Impact 4.12.2: Short-term traffic increases on area roadways due to construction-related traffic.

As with the Draft EIR project (pages 4.12-9 to 4.12-14), construction traffic associated with the CDRP Variant would result in short-term increases in traffic volumes on roadways in the

immediate vicinity of the dam, along access routes north and south of the dam, and along the north haul route. However, the additional construction vehicles would not substantially affect the existing operating conditions on either Calaveras Road or Interstate 680 (I-680). Therefore, as described for the Draft EIR project, the impact of the Variant related to short-term increases in traffic on I-680 and Calaveras Road would be less than significant, and no mitigation measures would be required.

In general, the Variant would not change the magnitude of construction trucks or construction workers traveling to and from the work area. However, certain elements of the Variant would involve the need for additional vehicles beyond those required for the Draft EIR project. As shown in Table 9.3, there would be up to 25 additional trips per day at the ACDD vicinity for up to 6 months in 2014 and approximately 5 additional trips per day in the area south and west of the reservoir in 2011. However, because the various elements of the Variant would be constructed during different phases of overall project construction, the Variant would not change the estimated maximum of 180 worker trips and 86 truck trips that would occur during the peak trip period of spring, summer, and fall 2013. The incremental increase in the number of trucks would not be substantial enough to alter the operating conditions on Calaveras Road from those described for the Draft EIR project. Although traffic volumes on Geary Road would increase, and the increase could be noticeable, this roadway currently has low traffic volumes and would be able to accommodate the additional vehicles related to construction traffic. For the electrical distribution line upgrade, construction vehicles would travel on Downing Road, Weller Road, and Calaveras Road east of Milpitas for a 2- to 3-month period; however, construction traffic associated with the 10 additional construction workers and 5 construction trucks/vehicles per day over this period could be accommodated without substantially affecting the operating conditions of the roadways. Therefore, construction of the Variant would not result in any new significant effects related to short-term traffic increases on area roadways due to construction-related vehicle trips beyond those impacts identified for the Draft EIR project or an increase in the severity of an effect, 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 with the Draft EIR project (page 4.12-14), construction of the CDRP Variant would be conducted within an established work area and would not involve construction within public roadways outside of the work area. As with the Draft EIR project, the Variant's impacts related to inadequate access for emergency service providers would be less than significant, and no mitigation measures would be required.

Construction of the Variant would not require construction within public roadways or temporary lane or roadway closures during construction beyond levels described for the Draft EIR project. Therefore, construction of the Variant 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 Draft EIR project or an increase in the severity of an effect; the impact would be less than significant, and no mitigation measures would be required.

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

As with the Draft EIR project (pages 4.12-15 to 4.12-16), construction of the CDRP Variant would result in construction-related traffic on Calaveras Road, which would have a significant traffic safety impact on motorists, bicyclists, and pedestrians. This significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.12.4a (Traffic Control Plan) and 5.12.4b (Approval for Road Closures). However, as described for the Draft EIR project, 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 impact of the Variant on traffic safety hazards would be potentially significant and unavoidable.

Under the Variant, most of the fishery enhancements or project refinements would not change the number of construction trucks or construction workers traveling to and from the work area. However, as described in Table 9.3, the electrical distribution line upgrade would require approximately 5 additional trips per day during a 2- to 3-month period in 2011, and the fish screen and fish ladder at the ACDD would require up to 25 additional trips per day during a 6-month period in 2014, compared to the Draft EIR project. This incremental increase in the number of worker and trucks trips would not be substantial enough to alter the operating conditions on Calaveras Road from those described for the Draft EIR project. As noted above, although the increase in traffic volumes on Geary Road could be noticeable, this roadway currently has low traffic volumes and would be able to accommodate the additional vehicles related to construction traffic. For the electrical distribution line upgrade, construction vehicles would travel on Downing Road, Weller Road, and Calaveras Road east of Milpitas for a 2- to 3-month period; however, construction traffic associated with the 10 additional construction workers and 5 construction trucks/vehicles per day over this period would be accommodated without substantially affecting the operating conditions and roadway conditions. Therefore, construction of the Variant would not result in increased potential for traffic safety hazards for vehicles and bicyclists on public roadways beyond those identified for the Draft EIR project. The Variant would not result in any new significant effects or a substantial increase in the severity of an effect beyond those identified for the Draft EIR project, 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.

As with the Draft EIR project (pages 4.12-16 to 4.12-17), construction of the CDRP Variant would require the use of numerous large trucks to transport equipment and materials to the work area, which could affect road conditions on haul routes in the vicinity of the CDRP Variant, including Calaveras Road. This potentially 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.

Under the Variant, most of the fishery enhancements or project refinements would not change the number of construction trucks or construction workers traveling to and from the work area. However, certain elements of the Variant would involve the need for additional vehicles beyond those required for the Draft EIR project (e.g., electrical distribution line upgrade, and fish screen and fish ladder at the ACDD; refer to Table 9.3), but the incremental increase in the number of trucks would not be substantial enough to alter the operating conditions on Calaveras Road from those described for the Draft EIR project. As noted above, although the increase in traffic volumes on Geary Road could be noticeable, this roadway currently has low traffic volumes and would be able to accommodate the additional construction-related traffic. For the electrical distribution line upgrade, construction vehicles would travel on Downing Road, Weller Road, and Calaveras Road east of Milpitas for a 2- to 3-month period; however, construction traffic associated with the 10 additional construction workers and 5 construction trucks/vehicles per day over this period would be accommodated without substantially affecting roadway conditions. Therefore, construction of the Variant 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 Draft EIR project or an increase in the severity of an effect, and no new mitigation measures would be required.

Impact 4.12.6: Long-term traffic associated with operation and maintenance of the replacement dam.

As with the Draft EIR project (page 4.12-17), operation and maintenance of the replacement dam, as proposed under the CDRP Variant, would not generate a significant number of new vehicle trips compared to existing conditions. As with the Draft EIR project, long-term operational impacts of the Variant related to traffic would be less than significant, and no mitigation measures would be required.

Operation of the Variant would not substantially change the long-term traffic conditions described for the Draft EIR project, with the minor exception of maintenance activities associated

with the fish screen and ladder at the ACDD and monitoring activities under the AMIP. As described in Section 9.2.5 above, maintenance activities at the ACDD would include increased frequency of sluicing—from once per year to every 4 to 8 weeks during the wet season. In addition, periodic instream repositioning of sediment might also be required at a location adjacent to the screen every 3 to 5 years during the dry season. Similarly, operation and maintenance of the fish ladder would be conducted through periodic on-site facility inspections, and adjustments would be made as needed. However, these periodic operational and maintenance activities would involve nominal increases in traffic over existing conditions that are well within the capacity of the roadway system, which currently has low traffic volumes. Therefore, operation and maintenance of the replacement dam under the Variant would not result in any new significant effects related to long-term traffic beyond those identified for the Draft EIR project or an increase in the severity of an effect, and no new mitigation measures would be required.

9.3.13 AIR QUALITY

EIR Chapter 4, Section 4.13 evaluates potential impacts of the proposed project on air quality. As described in Chapter 12, Section 12.2 of this Comment and Responses document under staff-initiated text changes, the Air Quality section of Chapter 4 has been revised to replace the use of the 2009 proposed thresholds with the 2010 BAAQMD CEQA thresholds of significance (BAAQMD 2010), which were adopted subsequent to publication of the Draft EIR. The revisions presented in Chapter 12 for the Draft EIR project also apply to the CDRP Variant and are reflected in the discussion below. **Table 9.26** summarizes the impacts of the CDRP Variant on air quality compared to those of the Draft EIR project. Existing air quality conditions for the CDRP Variant are the same as described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.13.1, pages 4.13-1 to 4.13-30). Please refer to the EIR for descriptions of air pollutants, including carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and sulfur dioxide (SO₂). As described below, implementation of the CDRP Variant would not result in any new significant effects on air quality beyond those identified for the Draft EIR 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 with the Draft EIR project (pages 4.13-33 to 4.13-37), implementation of the CDRP Variant would result in short-term increases in construction-related emissions of criteria air pollutants and ozone precursors (e.g., ROG and NO_x) from motor vehicle travel, heavy truck travel, and heavy-duty construction equipment. Under the 1999 BAAQMD CEQA thresholds of significance, this significant impact would be reduced to a less-than-significant level with implementation of Mitigation Measures 5.13.1a (Fugitive dust mitigation measures recommended by the Bay Area Air Quality Management District), 5.13.1b (BAAQMD-recommended exhaust emissions

Table 9.26: Summary of Air Quality Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.13.1: Impact of short-term increases in emissions of criteria air pollutants and precursors.	LSM/SU*	LSM/SU*
4.13.2: Impact of long-term generation of regional and local criteria air pollutants and precursors.	LS	LS
4.13.3: Impact of exposing nearby populations to short-term project-generated emissions of diesel PM.	LSM	LSM
4.13.4: Impact of exposing sensitive receptors to long-term emissions of TACs.	NI	NI
4.13.5: Impact of exposing sensitive receptors to emissions of odors.	LS	LS
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.	LS	LS
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 <i>Climate Action Plan</i> such that emissions would impede implementation of the local GHG reduction goals established by San Francisco's 2008 Greenhouse Gas Reduction Ordinance.	LS	LS
<p><i>Notes:</i> NI – No impact LS – Less than significant LSM – Less than significant with mitigation SU – Significant and unavoidable * Significance determination under the 1999 BAAQMD CEQA thresholds of significance / Significance determination under the 2010 BAAQMD CEQA thresholds of significance</p>		

mitigation measures), and 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program). Under the 2010 BAAQMD CEQA thresholds of significance (adopted subsequent to publication of the Draft EIR), implementation of Mitigation Measures 5.13.1a, 5.13.1b, and 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 emissions of ROG and NO_x, but would not reduce the Variant's worst-case construction-related emissions below the 2010 BAAQMD thresholds. As with the Draft EIR project, the Variant's construction-related emissions of ROG and NO_x would have potentially significant and unavoidable impacts on air quality when evaluated using the 2010 BAAQMD CEQA thresholds of significance.

As shown in **Table 9.27**, similar to the Draft EIR project, the Variant’s construction-related emissions of ROG and NO_x would have potentially significant and unavoidable impacts on air quality when evaluated under the adopted 2010 BAAQMD CEQA thresholds of significance. The CDRP Variant would result in an incremental increase in construction-related emissions of all criteria pollutants and precursors compared to the Draft EIR project (see Appendix O of this Comments and Responses for the air quality modeling data conducted for the Variant, which corresponds to the Draft EIR project modeling data shown in Appendix G). Similar to the Draft EIR project, ROG and NO_x emissions associated with construction of the Variant would exceed the applicable 2010 BAAQMD thresholds of significance, but PM₁₀ and PM_{2.5} emissions would remain below the thresholds.

Table 9.27: Comparison of Draft EIR Project and CDRP Variant Construction-Related Air Quality Impacts

Pollutant	1999 BAAQMD Significance Threshold (lbs/day)	2010 BAAQMD Significance Threshold (lbs/day)	Draft EIR Project Mitigated Emissions ¹ (lbs/day)	CDRP Variant Mitigated Emissions ¹ (lbs/day)
ROG	Less than Significant with Implementation of Control Measures	54	81	87
NO _x ²		54	621	665
PM ₁₀ (exhaust only)		82	22	25
PM _{2.5} (exhaust only)		54	20	22
PM ₁₀ /PM _{2.5} (fugitive dust)		Best Management Practices	1,650	1,703
Local CO		None	399	427
<p><i>Notes:</i></p> <p>¹ Worst-case estimate based on the peak construction emissions from the Draft EIR project and CDRP Variant.</p> <p>² NO_x emissions shown are for Haul Route Option 2 (worst case) (use of barges to access Borrow Area E/Disposal Site 5). Under Haul Route Option 1 (use of trucks to access Borrow Area E/Disposal Site 5), NO_x emissions would be 394 lbs/day for the CDRP project and 439 lbs/day for the CDRP Variant. All other pollutant and precursor emissions shown are for Haul Route Option 1, which would have higher emissions than Option 2. The Haul Route Options are described in EIR Chapter 3, Subsection 3.5.1.7, pages 3-54 to 3-55.</p>				

Thus, the CDRP Variant would not affect the conclusions identified for the Draft EIR project. Implementation of Mitigation Measures 5.13.1a, 5.13.1b, and 5.9.2a would reduce the impacts of construction-related air quality emissions to a less than significant when evaluated under the 1999 BAAQMD CEQA thresholds of significance, and the ROG and NO_x emissions would remain significant and unavoidable when evaluated under the 2010 BAAQMD CEQA thresholds of significance. The incremental increase in construction-related air pollutant emissions associated with the Variant would not be considered a substantial increase compared to total emissions

calculated for the Draft EIR project because the magnitude of estimated emissions and the nature and duration of the construction activities would be very similar. Therefore, construction of the CDRP Variant would not result in any new significant effects on air quality beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required.

Impact 4.13.2: Impact of long-term generation of regional and local criteria air pollutants and precursors.

As with the Draft EIR project (pages 4.13-37 to 4.13-38), implementation of the CDRP Variant would not increase emissions of criteria air pollutants (e.g., CO, SO₂, PM₁₀, and PM_{2.5}) and ozone precursors (e.g., ROG and NO_x) because operation- and maintenance-related activities would remain essentially the same as those under existing conditions. Thus, as described for the Draft EIR project, the Variant's impact related to the long-term generation of regional and local criteria air pollutants and precursors would be less than significant, and no mitigation measures would be required.

As described above under Impact 4.12.6, operation of the Variant would not substantially change the long-term traffic conditions described for the Draft EIR project, with the minor exception of maintenance activities associated with the fish screen and ladder at the ACDD and monitoring activities under the AMIP. These periodic operational and maintenance activities would involve nominal increases in traffic over existing conditions, and would not result in a substantial increase in emissions of criteria air pollutants and precursors over existing conditions. Therefore, operation of the Variant would not result in increased potential for long term generation of regional and local criteria air pollutants and precursors beyond those identified for the Draft EIR project or an increase in the severity of an effect, 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 with the Draft EIR project (pages 4.13-38 to 4.13-40), diesel-fueled off-road and stationary equipment used during construction of the CDRP Variant would emit diesel PM, which could affect nearby populations. This significant impact would be reduced to a less-than-significant level with 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), 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 Draft EIR 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, and that the non-cancer risk would be less than the threshold of Hazard Index 1.

Under the Variant, the additional construction vehicles and equipment usage associated with the right dam abutment, electrical distribution line upgrade, and the fishery enhancements at the ACDD would incrementally increase the diesel PM emissions. Based on the modeling of construction emissions shown in Impact 4.13-1, above, the incremental increase in diesel PM was calculated, and the same degree of exhaust emissions mitigation was applied to these tasks used in the HRSA modeling performed for the Draft EIR project. The Variant would increase the total diesel PM burden by 0.4 percent. Within the limits of accuracy to the nearest 1/10 per million of individual cancer risk or the nearest 1/100 of chronic hazard index, the chronic hazard quotient calculated for the Draft EIR project (EIR Table 4.13.6, page 4.13-40) would be the same for the Variant.

Compared to the Draft EIR project, the modified cancer risk for the maximally exposed individual resident (child) under the Variant would increase from 9.96 in a million to 10.00 in a million, which does not exceed the BAAQMD threshold of significance, which in the current guidelines is stated as “>10.0 in a million.” Cancer risk is normally expressed to the nearest 0.1 in a million; mathematically, this means that 9.96 and 10.00 would both be expressed as 10.0 in a million, and thus, there would be no reportable change from the results for the Draft EIR project and those for the Variant. It should further be noted that the HRSA included the conservative assumption that there would be no improvement in diesel PM control between 2011 to 2014,¹⁰ unlike the URBEMIS¹¹ model, which anticipates an approximate 15 percent reduction over the project construction timeframe. The HRSA also conservatively assumed that the maximally exposed individual is a 40-pound child who would remain outside the watershed keeper’s residence near Calaveras Road at Sunol Valley for 24 hours per day for 350 days per year for the entire 4 years of construction, as required by modeling protocol. However, use of more realistic exposure assumptions (e.g., that the child would increase in weight over the 4-year period and would be outside of the residence for only a few hours per day, or that the resident could be an

¹⁰ There is a steady downward trend in diesel PM emissions over time in response to the retirement of older diesel engines and their replacement with either new engines or rebuilt with better emissions controls. Over the 4-year span from 2011 to 2014, inclusive, major pieces of equipment (dozers, loaders, scrapers, etc.) are expected to decrease diesel PM generation by 4 percent per year. If the average emissions over 4 years instead of emissions at the start of 2011 are used in the calculations, the average diesel PM would be approximately 8 percent less than that assumed in the HRSA. If this correction factor were applied to the HRSA results, the 10.0 in a million would become 9.2 in a million averaged over the construction life of the project, well below the cancer risk threshold of >10.0 in a million.

¹¹ URBEMIS, Urban Land Use Emissions Model, is the methodology recommended by the BAAQMD to calculate project-related emissions of criteria air pollutants and precursors.

adult rather than a child) would reduce the actual diesel PM exposure risk to far below the >10.0 in a million significance threshold. It should also be noted that as of December 2010, this residence was vacant.

With respect to risks and hazards associated with increases in ambient concentrations of PM_{2.5} from exhaust, as stated above, the Variant would be expected to increase the diesel PM burden compared to the Draft EIR by 0.4 percent, of which about 92 percent would be PM_{2.5}. This negligible increase in ambient PM_{2.5} would effectively result in the same annual average ambient PM_{2.5} concentration estimated for the Draft EIR of 0.26 µg/m³, which would be below the BAAQMD's significance threshold of >0.3 µg/m³. Therefore, similar to the Draft EIR project, with 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), this impact would be less than significant.

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

Impact 4.13.4: Impact of exposing sensitive receptors to long-term emissions of TACs.

As with the Draft EIR project (pages 4.13-40 to 4.13-41), the CDRP Variant would not result in an increase in long-term emissions of toxic air contaminants (TACs) because operation- and maintenance-related activities would be essentially unchanged compared with those under existing conditions. Further, sensitive receptors are sufficiently distant from the worksite to prevent exposures. As with the Draft EIR project, the Variant would not result in impacts related to the long-term exposure of sensitive receptors to TACs, and no mitigation measures would be required.

As described above under Impact 4.12.6, operation of the Variant would not substantially change the long-term traffic conditions described for the Draft EIR project, with the minor exception of maintenance activities associated with the fish screen and ladder at the ACDD and monitoring activities under the AMIP. These periodic operational and maintenance activities would involve nominal increases in traffic over existing conditions, and the nearest residences to the ACDD are located approximately 3 miles or more away. Therefore, operation of the Variant would not result in impacts related to increased exposure of sensitive receptors to long-term emissions of TACs beyond those impacts identified for the Draft EIR project or an increase in the severity of an effect, and no new mitigation measures would be required.

Impact 4.13.5: Impact of exposing sensitive receptors to emissions of odors.

As with the Draft EIR project (page 4.13-41), implementation of the CDRP Variant would not result in construction- or operations-related emissions of odors. None of the fishery enhancements or project refinements under the Variant would result in construction- or operations-related odor emissions. Thus, the Variant's impact related to exposing sensitive receptors to emissions of odors would be less than significant, and no 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.

As with the Draft EIR project (pages 4.13-41 to 4.13-42), implementation of the CDRP Variant would be consistent with the BAAQMD's Bay Area Ozone Strategy (BAOS) (BAAQMD 2006), the most recently adopted regional air quality plan that pertains to the project. The consistency of the Draft EIR project with the BAOS was determined by comparing the project's growth assumptions with BAOS growth assumptions, which are based on Association of Bay Area Government (ABAG) population projections.

Because Draft EIR project would not directly induce population growth, the project would be consistent with the BAOS (refer to EIR Vol. 2, Chapter 6, Section 6.1, Growth Inducement, pages 6-1 to 6-7, for more discussion on the comparison of project growth assumptions and the indirect contribution to WSIP growth inducement and ABAG projections). For the same reasons as described for the Draft EIR project, the CDRP Variant would not directly induce population growth. Therefore, similar to the Draft EIR project, emissions of criteria air pollutants and ozone precursors generated by the Variant would not conflict with any air quality planning efforts. This impact would be less than significant, and no 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 with the Draft EIR project (pages 4.13-42 to 4.13-44), construction of the CDRP Variant would result in small, short-term increases in emissions of greenhouse gases (GHG). Under the 1999 CEQA Guidelines, this impact would be less than significant. Under the 2010 CEQA thresholds of significance, a project is considered to have a significant operational impact if it does not comply with a Qualified Greenhouse Gas Reduction Strategy or if operational greenhouse gas emissions exceed 1,100 metric tons of carbon-dioxide-equivalent (CO₂e) per year.

As with the Draft EIR project, the CDRP Variant would be required to comply with CARB regulations, including Early Action Measures adopted pursuant to the California Global Warming Solutions Act of 2006. In addition, with continuing implementation of GHG reduction actions by the CCSF and SFPUC, and implementation of GHG reduction actions incorporated in the WSIP (see EIR Subsection 4.13.1.2, Regulatory Framework), the Variant 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.

The CDRP Variant would not result in a substantial increase in operational GHG emissions. Operational and maintenance activities associated with the fish screen and fish ladder at the ACDD and monitoring activities under the AMIP would not substantially increase existing operational and maintenance activities, and would not result in a substantial increase in GHG emissions over existing conditions. Operation of the CDRP Variant would result in emissions of approximately 23 metric tons of CO₂e per year (Appendix O) compared to the 2010 CEQA operational threshold of 1,100 MT of CO₂e per year. As a result the, the CDRP Variant would have a less than significant impact with regard to operational GHG emissions.

9.3.14 NOISE AND VIBRATION

EIR Chapter 4, Section 4.14 evaluates potential impacts of the proposed project on noise and vibration. **Table 9.28** summarizes the impacts of the CDRP Variant on noise and vibration compared to those of the Draft EIR project.

Table 9.28: Summary of Noise and Vibration Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.14.1: Disturbance from temporary construction-related noise increases.	SU	SU
4.14.2: Temporary noise disturbance along construction haul routes.	LSM	LSM
4.14.3: Disturbance due to construction-related controlled blasting.	LSM	LSM
4.14.4: Disturbance due to construction-related vibration.	LS	LS
4.14.5: Disturbance due to long-term noise increases associated with operation of project facilities.	LS	LS
<i>Notes:</i> SU – Significant and unavoidable LS – Less than significant LSM – Less than significant with mitigation		

The information presented in Chapter 4 of the EIR on noise descriptors, the existing noise environment, vibration, and the regulatory framework (Vol. 2, Chapter 4, Section 4.14.1,

pages 4.14-1 to 4.14-9) also applies to the CDRP Variant. In addition to the sensitive receptors identified for the Draft EIR project (page 4.14-6), several residences and the Spring Valley Golf Course are located in the vicinity of the proposed electrical distribution line upgrade. The proposed fish screen and fish ladder at the ACDD would be in the same location as the bypass facility described in Chapter 4 of the EIR. The nearest residences are located about 3 miles from the ACDD area. In addition, as described in EIR Chapter 4, some hiking trails in the nearby wilderness areas pass through the general vicinity of the ACDD.

As described below, implementation of the CDRP Variant would not result in any new significant effects on noise and vibration beyond those identified for the Draft EIR 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.

As with the Draft EIR project (pages 4.14-10 to 4.14-21), construction activities under the Variant would occur 20 hours per day, 6 days per week in the dam vicinity (including the dam site, Borrow Area B, and Disposal Sites 2 and 3), Disposal Site 7, and Borrow Area E for approximately 4 years. Since construction activities would occur during hours that fall outside of the time limits specified in the Alameda County and Santa Clara County Noise Ordinances, these activities would result in a significant noise impact. Nighttime construction noise levels would need to be reduced to applicable ordinance noise limits and the 50-dBA sleep interference criterion in order to reduce this impact to a less-than-significant level. Implementation of Mitigation Measure 5.14.1 (Noise Controls) would reduce construction noise to ordinance limits and to levels below the sleep interference criterion, but would not reduce noise to ambient noise levels. The closest residential receptors could still be subject to noise disturbance from peak noise events such as backup beepers. Therefore, as with the Draft EIR project, this impact would be significant and unavoidable under the Variant.

Noise levels under the Variant, including the addition of noise from fishery enhancements and project refinements discussed below, would be the same as those presented in Draft EIR Tables 4.14.5 and 4.14.6 (pages 4.14-14 to 4.14-17). Under the Variant, noise from construction of the electrical distribution line upgrade would affect approximately four or five residences located within 300 feet of the alignment, and construction activities would also traverse the Spring Valley Golf Course. Digging holes for new poles would require an auger mounted on a backhoe, an excavator, or a drill rig. As described in Section 9.2.2, above, it is estimated that about 8 to 10 new poles could be required. This type of equipment generates noise levels of 80 to 90 dBA at 50 feet (74 to 84 dBA at 100 feet). Thus, noise from this construction activity could exceed the 70-dBA speech interference criterion within approximately 100 feet of the alignment. With noise controls (use of best available noise control techniques, as specified in Mitigation Measure 5.14.1), noise levels generated by this type of equipment could be reduced to 75 dBA at 50 feet

and 69 dBA at 100 feet. Because construction activities would progress along the alignment, no one receptor would be exposed to construction equipment noise for longer than 2 weeks, and all receptors but one are located more than 100 feet from the alignment; one ranch residence east of the golf course is approximately 60 feet west of the alignment. Given the short duration of exposure and the distances between the noise source and receptors, with implementation of Mitigation Measure 5.14.1 the temporary noise increase from construction of the electrical distribution line upgrade would be less than significant.

The nearest residences to the ACDD are located approximately 3 miles or more away. Given the distance and intervening topography, daytime construction-related noise from the fishery enhancements at the ACDD would be less than significant. Hikers in the general vicinity could be subject to noise associated with construction of the fish screen and fish ladder, although it is more than 1 mile from the ACDD to the Ohlone Wilderness Trail. In addition, because the noise would be of limited duration (as the hikers move through the area), and hikers would have the option of using other trails (the SFPUC proposes to coordinate 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 noise analysis for the Draft EIR project indicates that construction activities in the vicinity of Calaveras Dam would not significantly affect the closest sensitive receptors, including hikers using trails in the Sunol and Ohlone Regional Wilderness preserves; this conclusion would apply as well to the project refinements near the dam, including the spillway discharge channel modification, intake tower modifications, fish screens at Adits #1 and #2, additional instrumentation at Staging Area 7, and right dam abutment excavation modifications. The proposed use of the entire Borrow Area E area under the Variant would result in the same noise effects as described for the Draft EIR project, because the noise analysis evaluated worst-case noise impacts based on the assumption that this area might be used for the Draft EIR project. As described for the Draft EIR project, nighttime construction-related noise levels under the Variant could be significant at Borrow Area E, and implementation of noise controls (Mitigation Measure 5.14.1) would be required as necessary. Noise associated with construction of the West Haul Road would be less than significant, as discussed for the Draft EIR project; the proposed relocation of this road slightly down-slope under the Variant would move this noise source farther from residential receptors to the west, which would slightly reduce potential noise increases associated with its construction.

Thus, in summary, the CDRP Variant would not result in any new significant effects due to construction-related noise beyond those identified for the Draft EIR project 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.

As with the Draft EIR project (pages 4.14-21 to 4.14-24), vehicular traffic generated by project workers on Calaveras Road under the Variant would not significantly increase noise levels along this road. Similar to the Draft EIR project, truck traffic on Calaveras Road under the Variant, as well as on proposed on-site roads, would generate noise increases compared to existing conditions, but these noise levels were determined to be less than significant at all sensitive receptors except the watershed keeper's residence on Calaveras Road¹² (Receptor H shown in EIR Figure 4.14.1, page 4.14-5). 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, which would be a potentially significant impact. While topographic characteristics between Calaveras Road and this residence likely provide sufficient noise reduction, implementation of Mitigation Measure 5.14.1 (Noise Controls) would ensure that nighttime truck traffic noise is reduced to ordinance limits and below the sleep interference criterion and would reduce impacts associated with noise disturbance along construction haul routes to a less-than-significant level.

Under the Variant, construction of the fish screen and fish ladder at the ACDD would generate up to 25 worker vehicles and trucks per day (refer to Table 9.3). The increase in traffic noise from these fishery enhancements could be noticeable but would be less than significant because it would be short term, would occur during the daytime, and would not exceed the speech interference threshold. The electrical distribution line upgrade would generate up to five worker vehicles and trucks per day on Calaveras, Weller, and Downing Roads, the primary access roads to the alignment. Rural residential and golf course uses would be subject to temporary increases in traffic noise along these access roads. However, since these noise increases would occur during the daytime over a maximum of 2 to 3 months and hourly traffic noise levels (Leq) would not exceed the 70-dBA speech interference threshold at these receptors, such traffic noise increases would be less than significant. The West Haul Road would be moved slightly down-slope, farther from residential receptors to the west, resulting in a slight reduction in construction traffic noise along this route. As shown in Table 9.3, the other elements of the Variant would not generate new truck trips. Therefore, the CDRP Variant would not result in any new significant effects due to noise disturbance along construction haul routes beyond those identified for the Draft EIR project or an increase in the severity of a significant impact; with implementation of Mitigation Measure 5.14.1 identified in the EIR, this impact under the Variant would be less than significant.

¹² As of December 2010, this residence was vacant.

Impact 4.14.3: Disturbance due to construction-related controlled blasting.

As described for the Draft EIR project (pages 4.14-24 to 4.14-25), construction of the CDRP Variant would include controlled blasting activities. None of the fishery enhancements or project refinements under the Variant would involve controlled blasting activities, so this impact would be identical to that described for the Draft EIR project. As with the Draft EIR project, the actual attenuation rate of blasting noise under the Variant is difficult to predict, since the rate would be affected by intervening terrain and the noise frequency. Nevertheless, blasting activities 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; this would be a significant impact. Implementation of Mitigation Measure 5.14.3 (Blasting Noise Control) would modify blast charges to reduce noise levels to 112 dBA at 50 feet or 106 dBA at 100 feet and would reduce this impact to a less-than-significant level. If reducing the size or number of charges to limit noise generation potential is infeasible, then reducing the frequency of blasting to once per day would be required to reduce the potential for noise disturbance to a less-than-significant level.

Impact 4.14.4: Disturbance due to construction-related vibration.

As with the Draft EIR project (page 4.14-25), construction of the Variant would involve controlled blasting in the dam vicinity, which could generate vibration. Pile driving for construction of the barge jetty at the south end of the reservoir (if the barge haul option is selected) could also generate vibration. If barging is selected, the closest residential receptors would be located approximately 6,700 feet from the proposed barge docks, and 10,400 feet from the dam vicinity. At these distances, vibration generated by proposed controlled blasting and pile-driving activities for the barge dock at the southern end of the reservoir would be well below the thresholds for cosmetic damage (0.2-inch-per-second peak particle velocity [in/sec PPV] for impact and vibratory pile drivers and 0.5 in/sec PPV for controlled detonations) and for annoyance (0.012 in/sec PPV). Because vibration from pile driving and blasting would not significantly affect the closest residential receptors, this impact would be less than significant.

Under the Variant, impact/vibratory equipment could be used to construct the fish ladder at ACDD. Because the closest residences to the ACDD are at least 3 miles away, and hikers using nearby trails would only be subject to vibration effects from construction of the fish ladder for a limited duration (as they pass along a trail more than 1 mile from the ACDD vicinity), the disturbance of sensitive receptors caused by impact or vibratory equipment would be less than significant. None of the other fishery enhancements or project refinements would require additional new blasting or use of impact or vibratory equipment during construction. Therefore, as under the Draft EIR project, the impacts of the CDRP Variant due to construction-related vibration would be less than significant, and no mitigation measures would be required.

Impact 4.14.5: Disturbance due to long-term noise increases associated with operation of project facilities.

As with the Draft EIR project (page 4.14-26), the CDRP Variant would not involve the addition or expansion of pumps, transformers, emergency generators, or any other facilities that generate permanent noise, except for a supply and exhaust fan to be added in the new intake tower at the dam and a small backup generator in conjunction with the fish screen at the ACDD. As discussed for the Draft EIR project, it is assumed that the intake tower fan would be located within the new tower with a vent opening for the exhaust fan, and that, given typical fan noise levels and the distance to the closest noise-sensitive receptor (the watershed keeper's residence), fan noise would not exceed ambient noise levels. Therefore, operational noise impacts would be less than significant.

Under the Variant, a primarily solar photovoltaic power system would be used to operate the screen-cleaning mechanism and associated monitoring equipment for the fish screen at the Alameda Creek Diversion Tunnel, with a 10-kilowatt or smaller diesel or propane generator to recharge batteries and provide backup power. Typical noise levels for the generator would be approximately 68 dBA at 23 feet. Use of a generator would not constitute a major noise source, especially considering the intermittent nature of the proposed use and the distance to the nearest sensitive receptors, and would not result in a significant long-term noise impact. Because no major sources of noise would be associated with operating the fishery enhancements at the ACDD or the upgraded electrical distribution line, and the other project refinements would not change CDRP operations, the Variant would not result in any new significant effects due to disturbance from long-term operational noise increases beyond those identified for the Draft EIR project or an increase in the severity of a significant impact. As described for the Draft EIR project, this impact would be less than significant, and no mitigation measures would be required.

9.3.15 UTILITIES, SERVICE SYSTEMS, AND PUBLIC SERVICES

EIR Chapter 4, Section 4.15 evaluates potential impacts of the proposed project on public services and utilities. **Table 9.29** summarizes the impacts of the CDRP Variant on utilities, service systems, and public services compared to those of the Draft EIR project.

The fire protection, law enforcement, solid waste disposal, and public utilities setting and regulatory framework described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.15.1, pages 4.15-1 to 4.15-15) also apply to the CDRP Variant. As described below, implementation of the CDRP Variant would not result in any new significant effects on utilities, service systems, and public services beyond those identified for the Draft EIR project or increase the severity of a significant impact, and no new mitigation measures would be required.

Table 9.29: Summary of Utilities, Service Systems, and Public Services Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.15.1: Impact of construction activities on the demand for fire protection services.	LS	LS
4.15.2: Impact of construction activities on the demand for law enforcement services.	LS	LS
4.15.3: Impact of construction activities on the demand for landfill capacity.	LS	LS
4.15.4: Impact of construction activities on electrical transmission lines to Calaveras Dam and related structures.	LS	LS
<i>Note:</i> LS – Less than significant		

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

As with the Draft EIR project (pages 4.15-17 to 4.15-19), construction of the Variant 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 Variant as described for the Draft EIR project. As with the Draft EIR project, compliance with applicable state laws and regulations and with Alameda WMP requirements for fire pre-suppression and fuel management actions would minimize the temporary, construction-related potential for wildfire ignition under the Variant, and this impact would be less than significant.

While the Variant would incrementally increase construction equipment, vehicles, and workers compared to the Draft EIR project (refer to Table 9.3), the overall risk of fire due to potential ignition sources associated with construction activities would be essentially the same as described for the Draft EIR 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, and the impact of the Variant on fire protection services would be less than significant.

Thus, the Variant would not result in any new significant effects related to demand for fire protection services beyond those identified for the Draft EIR project or 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 with the Draft EIR project (page 4.15-19), construction of the Variant 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, this impact under the Variant, as under the Draft EIR project, would be less than significant.

With the exception of portions of the electrical distribution line upgrade, the project refinements under the Variant would occur in the same locations as elements of the Draft EIR project and would not affect public access to these areas. To the extent feasible, construction activities for the electrical distribution line would be confined within the existing PG&E right-of-way, except for possible construction staging and construction worker vehicle parking areas. Except for the southernmost portion, which crosses or is near public roads, the PG&E right-of-way is not easily accessible to the general public due the absence of public roads and hilly topography; the lack of public access would reduce the potential for illegal activities at construction staging sites. In addition, construction of the distribution line upgrade would be similar to PG&E's routine maintenance activities currently conducted along the right-of-way and would not increase demand for law enforcement services. The proposed accelerograph, which is within SFPUC property that is protected by fencing, would also be enclosed by an approximately 10-square-foot fence, which would deter theft or vandalism. Therefore, the impact of the Variant on law enforcement services would be less than significant.

Thus, the Variant would not result in any new significant effects related to demand for law enforcement services beyond those identified for the Draft EIR project or 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.

As with the Draft EIR project (pages 4.15-19 to 4.15-21), construction of the Variant 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 largest amount of solid waste generated during construction—an estimated 3.8 million cubic yards of unused excavation and demolition materials—would be disposed of at four on-site disposal sites. It is expected that 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 waste stream would be temporary, occurring only during the 4-year construction period, and would not substantially affect the remaining capacity of these landfills. Therefore, this impact would be less than significant.

Under the Variant, construction would generate little if any additional solid waste requiring off-site disposal, and its impact would not materially differ from that of the Draft EIR project. The PG&E distribution line upgrade would generate small amounts of construction debris and refuse. Replacing existing poles and adding new poles along the existing alignment would not require grading or demolition and would not generate substantial volumes of waste materials. As with the Draft EIR project, the primary solid waste expected to require off-site disposal under the Variant would be construction worker refuse. The small increase in the number of workers under the Variant (refer to Table 9.3) would result in a negligible increase in the amount of refuse requiring off-site disposal. Therefore, the impact of the Variant on landfill capacity would be less than significant. The Variant would not result in any new significant effects related to solid waste disposal beyond those identified for the Draft EIR project or 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.

As with the Draft EIR project (page 4.15-21), the SFPUC would phase construction of the Variant to ensure that Calaveras Dam and Reservoir would continue to operate without interruption, and changes to electrical distribution lines would be phased to minimize disruption of service. Therefore, the impact of construction activities on electrical distribution lines would be less than significant.

Under the Variant, the electrical distribution line upgrade would occur during the first year of construction in order to provide electricity to support construction (primarily, the more energy-intensive stormwater treatment processes). The distribution line upgrade could result in brief disruptions of electrical services, but power shutdowns would be kept to a minimum and would occur mostly during weekends. However, these shutdowns would be brief, scheduled disruptions that are typical of transmission line maintenance. In the vicinity of Calaveras Dam, the planned relocation of existing electrical distribution lines described for the Draft EIR project would occur in conjunction with the proposed line upgrade under the Variant, to the extent feasible, while continuing to provide power for existing structures and operations. The SFPUC's contractor(s) would coordinate with PG&E regarding construction activities at the dam to minimize potential conflicts with the upgrade of the distribution line and avoid service disruption. None of the other elements of the Variant would affect the electrical lines providing power to Calaveras Dam, and the dam and reservoir would continue to operate during project construction. The impact of Variant construction on the electrical lines serving the dam and related structures would be less

than significant. Thus, the Variant would not result in any new significant effects related to impacts on electrical transmission lines serving the Calaveras Reservoir beyond those identified for the Draft EIR project or increase the severity of a significant impact, and no new mitigation measures would be required.

9.3.16 MINERALS AND ENERGY RESOURCES

EIR Chapter 4, Section 4.16 evaluates potential impacts of the proposed project on mineral and energy resources. **Table 9.30** summarizes the impacts of the CDRP Variant on mineral and energy resources compared to those of the Draft EIR project.

Table 9.30: Summary of Mineral and Energy Resources Impacts

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.16.1: Impact of using rock, clay, and sand to construct the replacement dam.	LS	LS
4.16.2: Impact of temporary increase in energy use to construct the replacement dam.	LSM	LSM
4.16.3: Impact of using electric power to operate the replacement dam and filled reservoir.	NI	NI
<i>Notes:</i> NI – No impact LS – Less than significant LSM – Less than significant with mitigation		

Existing mineral and energy resources and the regulatory framework described for the Draft EIR project (Vol. 2, Chapter 4, Section 4.16.1, pages 4.16-1 to 4.16-2) also apply to the CDRP Variant. Small sections of the electrical distribution line upgrade component of the Variant are located outside of SFPUC primary watershed lands; these areas, and the entire distribution line, is within the existing PG&E right-of-way. Any rock or aggregate deposits within this right-of-way would be unavailable for commercial use, similar to such deposits within the SFPUC’s primary watershed lands, as described in EIR Chapter 4.

As described below, implementation of the CDRP Variant would not result in any new significant effects on mineral and energy resources beyond those identified for the Draft EIR 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.

As with the Draft EIR project (pages 4.16-3 to 4.16-4), most of the materials needed for construction of the Variant would be obtained from on-site deposits. The Variant 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, as described for the Draft EIR project, this impact under the Variant would be less than significant.

Under the Variant, construction of several project updates—the footings for the fish screen at the Alameda Creek Diversion Tunnel, the fish ladder around the ACDD, the concrete pad for the accelerograph, and the replacement or installation of new poles for the electrical distribution line upgrade—could entail the use of limited quantities of mineral resources such as sand and gravel. However, most of the mineral resources used for the CDRP (rock, clay, sand, and gravel) would be for construction of the dam, and the quantity of these materials that could be needed for construction of the project updates under the Variant would be negligible relative to the overall CDRP. The impact of construction of the CDRP Variant on mineral resources, as described for the Draft EIR project, would be less than significant.

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

As with the Draft EIR project (page 4.16-4), construction of the Variant would involve substantial use of numerous diesel- and gasoline-powered vehicles and other construction equipment for a period of approximately 4 years. The potentially significant impact resulting from the wasteful use of fuels due to excessive idling and other inefficient site operations would be reduced to a less-than-significant level with implementation of Mitigation Measure 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures).

Under the Variant, impacts related to energy use to construct the replacement dam would be substantially the same as described for the Draft EIR project. The proposed electrical distribution line upgrade would provide electricity to support construction (primarily, the more energy-intensive stormwater treatment processes), and construction of some elements of the Variant, including the fishery enhancements in the vicinity of the ACDD and project refinements west and south of the reservoir, would entail short-term increases in the number of construction workers and the use of additional equipment. However, the increase in fuel use associated with the additional workers and associated vehicle and equipment usage for construction of the project updates under the Variant would be negligible compared to that required for the Draft EIR project; refer to Table 9.3 for a comparison of workers, equipment, worker and truck trips, and construction duration. 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 CDRP Variant does not use energy in a wasteful manner, thus reducing the impact of the CDRP Variant construction on energy use to a less-than-significant level. Therefore, the Variant would not result in any new significant impacts on energy resources beyond those identified for the Draft EIR

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

Impact 4.16.3: Impact of using electric power to operate the replacement dam and filled reservoir.

As with the Draft EIR project (pages 4.16-4 to 4.16-5), the proposed CDRP Variant and its appurtenant facilities would use energy for essentially the same purposes as at present (i.e., lighting and operation of valves, pumps, and gages). Power needed to operate the Variant would be similar to that needed to operate the existing dam (i.e., less than 20,000 kilowatt-hours per year). As described for the Draft EIR project, because electricity demand under the Variant would be small in the context of the overall demand in the San Francisco Bay Area and the state and would not require a major expansion of power facilities, there would be no impact.

Under the Variant, the screen-cleaning mechanism and associated monitoring equipment for the fish screen at the ACDD would not use grid electric power, but would instead be powered primarily by solar photovoltaics, with a 10-kilowatt or smaller diesel or propane generator used to recharge batteries and provide backup power. Use of the generator would result in a negligible change in fuel consumption compared to that of the Draft EIR project. A mounted photovoltaic cell would be used to operate the proposed accelerograph. The proposed electrical distribution line upgrade would provide capacity to support construction-related electricity needs, primarily due to the more energy-intensive stormwater treatment process requirements that were adopted since publication of the Draft EIR. Following construction, the upgraded distribution line would not introduce or make feasible greater energy use as a result of the increased transmission capacity, because the larger capacity is not needed for dam operations and the line would extend through areas that are: permanent open space (e.g., the Ed R. Levin County Park); protected SFPUC watershed lands; or land zoned for low-intensity uses in Santa Clara or Alameda Counties. Therefore, the upgraded electrical distribution line under the Variant would not result in new or more intensive energy use.

9.4 MITIGATION MEASURES APPLICABLE TO THE CDRP VARIANT

As described above, implementation of the CDRP Variant would not result in any new significant effects beyond those identified for the Draft EIR project or a substantial increase in the severity of a significant impact, and no new mitigation measures would be required. Mitigation measures applicable to the Draft EIR project are described in EIR Vol. 2, Chapter 5, and all measures—with the minor exceptions listed below—would also apply to the Variant. It should be noted that all revisions to the mitigation measures made either in response to comments or as part of staff-initiated text changes, as presented in Chapter 12 of this Comments and Responses document, apply to the Variant as well as the Draft EIR project; this is also the case for revisions to the

subsection of EIR Sections 5.4 and 5.7, Impacts of Implementing Proposed Mitigation (pages 5-14 to 5-16 and page 5-25 as revised).

The modifications/adjustments to the mitigation measures applicable to the CDRP Variant only are as follows:

- Mitigation Measure 5.4.3a (Compensation Goals and Objectives) is adjusted to account for the minor changes in impact areas, as shown in **Table 9.31** below.
- Mitigation Measures 5.5.5a (Resident Rainbow Trout Monitoring) and 5.5.5b (Resident Rainbow Trout Adaptive Management) are not required for the Variant due to the incorporation of the fishery enhancements.

Table 9.31: Comparison of Impact Acreages for the Draft EIR Project and the Variant

Resource	Impact Acreage	
	Draft EIR project	CDRP Variant
Wetland and other waters	4.61	4.64
Riparian habitat	7.9	8.0
Oak woodland and savannah	24.0	24.3
California red-legged frog aquatic breeding habitat	0.11	0.14
California tiger salamander upland habitat	971.6	972.0
Alameda whipsnake woodland and grassland habitat	606.9	607.4
Foothill yellow-legged frog aquatic habitat	Not specified ¹	0.03
<i>Note:</i> ¹ Compensation goals for foothill yellow-legged frog habitat for the Draft EIR project were quantified in terms of linear feet of habitat.		

9.5 CUMULATIVE IMPACTS OF THE CDRP VARIANT

9.5.1 LIST OF RELEVANT PROJECTS

EIR Section 6.2 (Vol. 2, Chapter 6, pages 6-9 to 6-18) describes past, present, and reasonably foreseeable projects and activities within the Sunol Valley, where the CDRP is located. These projects and activities are listed in EIR Table 6.1 (pages 6-11 to 6-17). The intent of this list is to identify and analyze other relevant projects with similar environmental impacts that could contribute to cumulative impacts in combination with the identified impacts of the project. The approach to the cumulative impact analysis for the Variant is identical to that for the Draft EIR project. The cumulative projects identified for the draft EIR project apply to the Variant, with two revisions identified by the Project Sponsor, as explained below.

Since publication of the Draft EIR, the SFPUC has conducted further studies in support of its numerous projects associated with the WSIP. As a result, two changes have occurred: the elimination of a second level of environmental review of the WSIP Habitat Reserve Program as a

separate project, and the addition of a specific sub-project under the AMIP for the CDRP. These changes are noted in EIR Table 6.1, as discussed below.

Habitat Reserve Program

The SFPUC had originally proposed this program to coordinate the development and provision of mitigation for biological resources that would be affected by WSIP facility improvement projects. Under the Habitat Reserve Program (HRP), the SFPUC planned habitat mitigation activities that would preserve, enhance, restore, and create a variety of habitats that would be affected by construction and operation of individual WSIP projects. Previously, environmental review of these mitigation actions was to be conducted as part of the review of the corresponding WSIP projects, as well as under a second review for the HRP as a whole. Due to the scheduling of the WSIP projects, the SFPUC has determined that it would be more efficient to complete the environmental review as part of the corresponding individual WSIP projects for which they would provide mitigation, and eliminate the unnecessary second review. Therefore, although the HRP is removed from the list of cumulative projects as a comprehensive program, the individual components of the HRP, as relevant to the cumulative impact analysis of the CDRP, are still considered in the cumulative analysis. Therefore, the cumulative analysis for the CDRP (and Variant) considers the impacts associated with implementing biological resources mitigation and compensation measures for the following WSIP projects: New Irvington Tunnel, Sunol Valley Water Treatment Plant Expansion and Treated Water Reservoir, Alameda Siphons Seismic Reliability Upgrade, San Antonio Backup Pipeline, and Upper Alameda Creek Filter Gallery. These WSIP projects are listed in Table 6.1, and the cumulative impact analysis is expanded to fully consider the associated mitigation for these actions that were formerly also associated with the HRP.

Modification of Natural Barriers in the Alameda Creek Watershed

As part of the ongoing coordination with regulatory agencies for the CDRP, the SFPUC has developed the AMIP, with the objective of supporting steelhead in the southern Alameda Creek watershed, and, as described above, the AMIP is included as one of the fishery enhancements under the CDRP Variant (see Section 9.2.5 for a description of the AMIP). One action listed in the AMIP to protect and enhance steelhead and resident trout populations is the possible modification of natural barriers in the Alameda Creek watershed. This action includes the development of additional information necessary to assess the potential need and actions for improving adult steelhead passage conditions through the natural barriers that occur in the Little Yosemite reach of Alameda Creek between the ACDD and the Alameda Creek/Calaveras Creek confluence. Conceptually, the project, referred to herein as the “Little Yosemite project,” is assumed to consist of either direct modification of instream rock features or the construction of a series of rock weirs that would create pools around rock features within the Little Yosemite reach of Alameda Creek, and the pools would facilitate upstream migration of native fishes.

Cumulative Project No.	Project Name/Description	Potential Cumulative Impact Topics	Estimated Construction Schedule
9	<p>Proposed SFPUC Water System Improvement Program (WSIP) Habitat Reserve Program</p> <p>This project would develop and enhance wetlands and other habitats to be applied toward mitigation of impacts on biological resources resulting from implementation of the WSIP. (Various locations; not shown on Figure 6.1)</p>	<p>Terrestrial habitat effects</p> <p>Impact on fisheries</p> <p>Water Quality</p> <p>Agricultural resources</p>	TBD
21	<p><u>Modification of Natural Barriers in the Alameda Creek Watershed</u></p> <p><u>This action includes the development of additional information necessary to assess the potential need and actions for improving adult steelhead passage conditions through the Little Yosemite reach of upper Alameda Creek below the ACDD. The SFPUC, working in conjunction with NMFS and CDFG, would:</u></p> <ul style="list-style-type: none"> • <u>Develop adult steelhead performance criteria that can be used to assess current and future passage conditions within Little Yosemite</u> • <u>Prepare conceptual physical modification design plans</u> • <u>Prepare draft design plans to physically modify appropriate features and/or other identified passage impediments</u> • <u>Prepare final design plans incorporating comments from NMFS and CDFG</u> • <u>Identify the lead agency and funding for implementation and construction of the physical modifications</u> • <u>Monitor all physically modified features within Little Yosemite following completion of the modifications</u> 	<p><u>Aesthetic effects</u></p> <p><u>Terrestrial habitat</u></p> <p><u>Water quality</u></p> <p><u>Geology</u></p> <p><u>Hydrology</u></p> <p><u>Fisheries and Aquatic Habitat</u></p>	<u>2014</u>

Because the feasibility, design, and funding of this project have not yet been finalized, this action is not included as part of the CDRP Variant, but instead is considered a cumulative project.

9.5.2 CUMULATIVE EFFECTS OF THE VARIANT

All of the probable future projects presented in EIR Table 6.1, as revised above, are included in the cumulative impact analysis for the CDRP Variant. The discussion below is based largely on EIR Vol. 2, Chapter 6, Section 6.2.3, Cumulative Effects by Environmental Topic (pages 6-10 to 6-52), which provides the cumulative analysis for the Draft EIR project. Most of that analysis applies to the CDRP Variant, since most elements of the Variant are identical or very similar to

those of the Draft EIR project. Therefore, the discussion below focuses on those aspects of the Draft EIR project's cumulative impact analysis that differ for the Variant due either to the differences between the Draft EIR project and the Variant or due to changes in Table 6.1, as revised above. As discussed below, the Variant would not make a substantial contribution to any new significant cumulative impacts beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Land Use, Agricultural Resources, and Recreation

As described for the Draft EIR project in Subsection 6.2.3.1, the geographic scope for cumulative impacts of the Variant on land use, agricultural resources, and recreational resources is identical to that of the Draft EIR project; namely, the Alameda Creek watershed, the Sunol Valley, and the regional recreation areas that surround the Calaveras Reservoir.

As described in Section 9.3.3 above, the Variant would not substantially change existing land uses, create impacts on agricultural resources, or degrade existing recreational resources. As described for the Draft EIR project, the Variant 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 Draft EIR project, the Variant would not change the demand for recreational resources. However, ongoing and future projects summarized in Table 6.1 could disrupt access to recreational resources if they resulted in substantial amounts of truck traffic or lane closures on Calaveras Road. The Variant would not result in temporary weekday closure of Calaveras Road beyond impacts analyzed for the Draft EIR project, and implementation of Mitigation Measure 5.12.4a (Traffic Control Plan) would reduce the Variant'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 Variant's potential contribution to cumulative impacts related to deterioration of roadway conditions that could affect recreationists in the area to a less-than-significant level.

Depending on the timing of construction, the addition of the Little Yosemite project as another reasonably foreseeable future project in the study area could exacerbate cumulative construction-related impacts on recreational resources in the area, including activities in the Sunol Regional Wilderness and on public hiking trails. However, as described above, implementation of Mitigation Measure 5.12.4a would reduce the Variant's contribution to these cumulative impacts to a less-than-significant level. In addition, assuming the Little Yosemite project would be designed to simulate and maintain natural, creek-like conditions within and along Alameda Creek, the Variant would contribute to beneficial effects on the recreational experience. As for the Draft EIR project, with implementation of Mitigation Measure 5.12.4a (Traffic Control Plan),

the CDRP Variant's contribution to cumulative impact on land use, agricultural resources, and recreation would be less-than-significant. Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts on these resources beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Vegetation and Wildlife

As described for the Draft EIR project in Subsection 6.2.3.2, the geographic scope for cumulative impacts of the Variant 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 with the Draft EIR project, the cumulative activities associated with projects listed in Table 6.1 (including the Little Yosemite project), together with construction and operation of the Variant, would on balance 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 resident rainbow trout, foothill yellow-legged frog, and California red-legged frog; and wetland habitats. As with the Draft EIR project, the Variant could contribute considerably to these significant cumulative impacts; however, as described in Section 9.3.4 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 Variant, would reduce the Variant'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 Table 6.1, the mitigation sites formerly included under the HRP, 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 CDRP Variant, as for the Draft EIR 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. Although implementation of compensation measures for the CDRP could contribute to cumulative, construction-related impacts on biological resources, the objective of mitigation sites is to create a net benefit on those resources, and temporary, construction impacts would be minimized through standard mitigation measures such as avoidance, BMPs, and other protective measures. Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts on vegetation and wildlife beyond those identified for the Draft

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

Fisheries and Aquatic Habitat

As described for the Draft EIR project in Subsection 6.2.3.3, the geographic scope of cumulative impacts on fisheries and aquatic habitat is the Alameda Creek watershed. Vol. 3, Appendix J of 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 Draft EIR project concluded that the combined effects of past and present projects (including other changes to the creek detailed in the environmental setting section of Section 4.5, Fisheries and Aquatic Habitat) 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 Variant. However, with implementation of Mitigation Measures 5.7.1 (Storm Water Pollution Prevention Program) and 5.7.2 (Drilling Fluids), the Variant's contribution to cumulative construction-related impacts on steelhead would be reduced to a less-than-significant level. Furthermore, as with the Draft EIR project, the Variant's operational impacts on fisheries and aquatic habitat would be an improvement over existing conditions and would not contribute to cumulative long-term impacts.

As described above in Sections 9.1.1 and 9.3.5, fishery enhancements included in the CDRP Variant (i.e., fish ladder at the ACDD, fish screens at the Alameda Creek diversion tunnel and in Calaveras Reservoir, refinements to the flow schedules, and the AMIP) would generally provide improved conditions for the native fish community in Calaveras Reservoir, Calaveras Creek downstream of the reservoir, and Alameda Creek in the primary and extended study areas.

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. With the inclusion of the proposed study and potential modification of Little Yosemite added to the list of reasonably foreseeable future projects, there would be further opportunities for upstream fish passage. Overall, the combined effect of this and other future projects is expected to improve habitat conditions for steelhead and other native fish species compared to current conditions. However, the environmental conditions in the Alameda Creek watershed for steelhead, even with these future projects, would remain limited due to past project effects on steelhead habitat.

With regard to construction-related impacts, the analysis for the Draft EIR project found that given the scale and duration of the construction activities, the CDRP'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 Variant. However, the CDRP Variant would be undertaken in accordance with Mitigation Measure 5.7.1 (Storm Water

Pollution Prevention Program), 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. In addition, Mitigation Measure 5.7.2 (Drilling Fluids) includes measures to prevent spills or accidental discharges of drilling fluids and requires the proper disposal of any drilling fluids used during construction. As a result, implementation of these measures would reduce the Variant's contribution to cumulative construction impacts to a less than cumulatively considerable level (less than significant). Construction of the fish screen and ladder elements of the CDRP Variant would result in additional, temporary disturbance adjacent to and within Alameda Creek near the ACDD; however, these construction activities would be located upstream of other fishery enhancement projects. As with the Draft EIR project, implementation EIR Mitigation Measures 5.7.1 and 5.7.2 would reduce the Variant's contribution to construction-related cumulative impacts to less than cumulatively considerable (less than significant).

With regard to operations-related impacts, the Variant would be expected to improve future habitat conditions for steelhead and other native fish in the Alameda Creek watershed compared to existing conditions. Although environmental conditions for such fish within the Alameda Creek watershed would remain limited under the Draft EIR project (similar to the baseline condition), the Draft EIR project would have a beneficial effect on steelhead and thus would not make a considerable contribution to the significant cumulative impact on steelhead in the Alameda Creek watershed (less than significant). This conclusion would also apply to the Variant, although the Variant would provide greater beneficial effects on steelhead than the Draft EIR project.

As described in Section 9.3.5 above, the operation of a fish ladder at the ACDD would create volitional upstream movement and migration opportunities for fish at the ACDD. The fish screen at the diversion tunnel would reduce the potential for fish entrainment, increase the potential for fish to successfully move downstream over or through the ACDD (via the bypass facility), and reduce the effective diversion capacity of the tunnel from 650 cfs to 370 cfs. Reducing the diversion capacity of the diversion tunnel would result in more frequent, higher, and longer duration flows passing over the ACDD during storm events. These more frequent, higher, and longer duration flows would generally result in increased geomorphic processes, which in turn would contribute to channel formation and habitat maintenance (see Section 9.3.6 above for additional discussion of changes in hydrology). Neither a fish screen nor a fish ladder currently exists, and neither is proposed under the Draft EIR project.

The proposed fishery flow schedules would provide increased minimum flow bypasses and a reduced period of diversion at the ACDD, with flows in Alameda Creek effectively unimpaired from April 1 through November 30, and would also increase average releases at Calaveras Dam. An additional difference between the Draft EIR project and the Variant, however, is that the Variant includes a compliance point immediately downstream of the dam, meaning that the flow

target could not be met through flows that would be bypassed at the ACDD, as could be the case under the Draft EIR project. This could result in increased flows in the segment of Calaveras Creek below the dam (under the Variant) during periods when the flow target would otherwise be met through bypasses at the ACDD (under the Draft EIR project).

Lastly, the AMIP, which includes comprehensive monitoring, performance criteria, and triggers for adaptive management, would ensure that suitable habitat conditions are being provided when flows are naturally present and the fish community is being protected. Monitoring does occur under the existing condition; however, there are no performance standards or triggers for adaptive management. Limited monitoring and adaptive management are proposed as mitigation under the Draft EIR project. Therefore, as stated above, operation of the Variant would have a beneficial impact on fishery resources, providing greater benefits than the Draft EIR project, and the contribution to cumulative impacts on fisheries would be less than significant.

In summary, construction impacts associated with the additional fishery enhancements and project refinements included in the Variant would be less than cumulatively considerable (less than significant) with implementation of Mitigation Measures 5.7.1 and 5.7.2 when compared to the existing condition, and would be the same or similar to those described and evaluated in Draft EIR. Additionally, although environmental conditions in the Alameda Creek watershed would remain limited (as under the baseline condition), the CDRP Variant would have a beneficial long-term effect on steelhead and other native fish species and thus would not make a considerable contribution to the significant cumulative impact (less than significant) on fisheries and aquatic habitat in the Alameda Creek watershed when compared to the existing condition. In addition, the CDRP Variant would have similar or beneficial effects on steelhead and other native fish species as those described and evaluated for the Draft EIR project. Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts on fisheries and aquatic habitat beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Hydrology

As described for the Draft EIR project in Subsection 6.2.3.4, the geographic scope for potential cumulative hydrology impacts consists of the CDRP Variant 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 Draft EIR project and the Variant.

As with the Draft EIR project, the CDRP Variant would affect the hydrology and geomorphology of the Alameda Creek watershed, as described above in Section 9.3.6. To summarize, the CDRP Variant would increase average annual flow in Alameda Creek downstream of the ACDD, in Calaveras Creek below Calaveras Dam, and in Alameda Creek downstream of the Alameda Creek/Calaveras Creek confluence by 29, 22, and 23 percent, respectively, compared to the existing condition. Average annual flow in Alameda Creek below the Calaveras Creek confluence would decrease in wet years and would increase in all other year types compared to the existing condition. High flows capable of moving sediment would continue to occur periodically with the CDRP Variant. With the CDRP Variant, an annual average of about 47 percent of the runoff from Alameda Creek above the ACDD and from the Calaveras Reservoir watershed would be captured by the SFPUC and used for water supply or lost to evaporation in Calaveras Reservoir.

EIR Subsection 6.2.3.4 describes how some of the future projects listed in revised Table 6.1 would have long-term effects on flow in the streams of the Alameda Creek watershed, including Upper Alameda Creek Filter Gallery Project, slurry cutoff walls as part of the SMP-30 Cemex Quarry Expansion, and various pipeline inspection projects. For the same reasons as described for the Draft EIR project, impacts of the Variant on streamflow would not contribute to cumulative impacts on Alameda Creek, because the cumulative projects in combination with the Variant, like the Draft EIR 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. Similarly, the Variant in conjunction with the projects listed in Table 6.1 would have no significant cumulative impact related to flooding along Calaveras or Alameda Creeks (because the Variant would not alter high flows that cause flooding), would not generate any substantial amounts of new runoff or channel the runoff in a way that would increase erosion or contribute to a significant cumulative increase in erosion (because there would be no substantial change in impervious areas), and would not contribute to a significant cumulative alteration of Alameda Creek geomorphology (because neither the Variant nor any of the cumulative projects would substantially alter the sediment transport processes in the watershed).

Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts on hydrology, channel geomorphology, or sediment transport beyond those identified for the Draft EIR project, and would not substantially increase the severity of a significant cumulative impact. No new mitigation measures would be required.

Water Quality

As described for the Draft EIR project in Subsection 6.2.3.5, the geographic scope for potential cumulative water quality impacts consists of the CDRP Variant site and the surrounding watershed lands.

The CDRP Variant would affect long-term water quality in the Alameda Creek watershed as described in Section 9.3.7 above. To summarize, the CDRP Variant would increase average annual flow in Alameda Creek downstream of the ACDD, in Calaveras Creek below Calaveras Dam, and in Alameda Creek downstream of the Alameda Creek/Calaveras Creek confluence, and would substantially increase flow in these stream segments during dry years and dry months of wetter years. The increases in flow, particularly those that occur in otherwise dry months, would benefit water quality by reducing water temperatures and increasing dissolved oxygen content. The CDRP Variant would also improve water quality in the reach of Alameda Creek immediately below the ACDD because the frequency of sluicing sediment through the ACDD would increase from annually (under the existing condition) to every 4 to 6 weeks during the rainy season. Although the total amount of sediment sluiced downstream annually would be about the same, its delivery in smaller quantities would likely benefit water quality because the water turbidity levels during the more frequent sluicing episodes would probably not rise as high as they do during annual sluicing. Because the CDRP Variant would have an overall beneficial impact on water quality, it would not contribute to long-term adverse cumulative impacts on water quality in the Alameda Creek watershed.

The Variant could cause discharges of construction-related substances, sediment, and dewatering effluent; operational discharges; submergence of former construction areas; barging operations-related turbidity or accidental spills; and discharges from blasting, pile driving, and drilling activities.

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

As discussed above, the Variant would be undertaken in accordance with a project-specific SWPPP as approved 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, and contact with NOA and metals from construction areas, haul roads, borrow areas, lay-down/staging areas, disposal sites, the ACDD Bypass Facility, and dewatering activities. 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.

As identified in Mitigation Measure 5.7.2, a Drilling Contingency Plan would be developed if drilling muds/fluids are used for drilling operations to ensure proper containment of drilling fluid;

minimize the potential for an accidental discharge of drilling fluid; and ensure an organized, timely response in the event of a release of drilling fluid. This response would include notification procedures to applicable regulatory agencies and the Alameda County Water District for reporting frac-outs.

Implementation of Mitigation Measures 5.7.1 and 5.7.2 would reduce the Variant's contribution to cumulative impacts on water quality to a less-than-significant level. Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts on water quality beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Geology, Soils, and Seismicity

As described for the Draft EIR project in Subsection 6.2.3.6, 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 Draft EIR project, none of the projects listed in Table 6.1 would contribute to any potential geohazards at the project site, including landslides, squeezing ground within the tunnel, fault rupture, ground shaking, liquefaction, or adverse soil conditions. This conclusion would remain valid with the inclusion of the Little Yosemite project on the list of cumulative projects, since it is assumed that this project would be designed to avoid or minimize geohazards to the extent feasible. Depending on the final design, the Little Yosemite project could result in a substantial change in the topography of unique geologic or physical features at its individual project site; however, neither the CDRP Variant nor any of the other projects listed on Table 6.1 would contribute to this site-specific impact; thus, there would be no cumulative impact.

The potential soil loss associated with the Variant and the cumulative projects would be cumulatively significant, and like the Draft EIR project, the Variant's contribution would be cumulatively considerable. As described in Section 9.3.8 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. Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts related to soil loss beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Hazards and Hazardous Materials

As described for the Draft EIR project in Subsection 6.2.3.7, the geographic scope for cumulative impacts on hazards and hazardous materials includes the lands surrounding the reservoir,

including the ACDD, the Calaveras Road corridor, and the Sunol Valley region. The geographic scope for the Variant also includes the electrical distribution line corridor between the reservoir and Milpitas.

Similar to the Draft EIR project, the Variant 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 Variant have not been identified as sites where contamination has occurred. In addition, due to the site-specific nature of this type of hazardous materials impact, only projects that would occur at or adjacent to the project site could cause releases of such contaminants to the surface and subsurface that would potentially result in a cumulative impact related to hazardous materials, including the release of hazardous building materials from the demolition of existing structures. None of the projects listed in Table 6.1 would be constructed at or directly adjacent to the Draft EIR project or Variant sites, so no cumulative impact associated with the release of contaminants would occur.

As with the Draft EIR project, the Variant could contribute to cumulative impacts associated with the release of NOA and metals during construction. With two possible exceptions, most projects listed in Table 6.1 are located at sufficient distances from the CDRP project sites and thus are not expected to present a concern regarding potential cumulative effects of airborne NOA. The two exceptions are the Geary Road Bridge and the Little Yosemite projects. The Geary Road Bridge project across Alameda Creek would be approximately 0.3 mile northeast of the CDRP construction area, and if the respective construction periods overlapped there could be a potential for cumulative effects; however, the Geary Road Bridge Project is not located in the Franciscan Formation (Franciscan bedrock is the primary formation of interest regarding the potential for NOA), and therefore would be unlikely to present a concern regarding airborne NOA. Although the nature and extent of construction is currently unknown for the Little Yosemite project, it is located on Franciscan mélange bedrock, so there would be a potential for airborne NOA to be released during construction. Assuming this work could overlap with CDRP construction, there would be a potential for cumulative impacts associated with the release of airborne NOA and metals. In addition, background (ambient) levels of airborne asbestos are known to be present in the vicinity of the proposed project. Background levels of airborne NOA and metals in combination with releases due to construction of the Variant as well as the Little Yosemite project would result in an adverse cumulative impact. The Variant's contribution to this cumulative impact would be considered significant. However, implementation of Mitigation Measures 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program) would reduce the Variant'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. For the same reasons as indicated for the Draft EIR

project, the Variant's contribution to increased wildfire hazard would be less than significant. This is because the CDRP and other SFPUC projects within the SFPUC's watershed are subject to requirements of the SFPUC's Alameda WMP that are designed to control activities that could increase fire risks, and SFPUC projects and all projects are required under California Public Resources Code provisions to control activities during construction that could ignite wildfires.

Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts related to hazards and hazardous materials beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Cultural Resources

As described for the Draft EIR project in Subsection 6.2.3.8, the geographic scope of cumulative impacts on cultural resources includes the CDRP Cultural Resources Study Area (see Figure 4.10.1 in Section 4.10, Cultural Resources) and the Sunol Valley region.

As described in Section 9.3.10 above, the Variant 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 Draft EIR project. Therefore, the Variant's contribution to cumulative cultural resources impacts would be the same as those identified for the Draft EIR project; that is, the Variant'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 (Archaeological Measure II: Accidental Discovery Measures), and 5.10.5 (Paleontological Resources), the Variant's contribution to these cumulative impacts would be less than significant.

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

Visual Resources

As described for the Draft EIR project in Subsection 6.2.3.9, the geographic scope for cumulative visual impacts 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.

Like the Draft EIR project, the Variant does not have the potential to contribute to cumulative visual impacts. Most of the anticipated projects identified in Table 6.1 (such as improvements to Highway 84 and the Little Yosemite project) are outside of the geographic scope of the CDRP's potential visual impacts. Although the Variant would have some significant and unavoidable visual impacts, as described above in Section 9.3.11, these impacts would not contribute to any cumulative impacts. The CDRP, which is at the south end of the Sunol Valley, is physically separated from the other projects. Views of the other projects from various locations in the Sunol Valley would minimally include the Variant, if it is visible at all, due to its physical separation from the other projects. Consequently, the Variant would not make a substantial contribution to any cumulative visual impacts. This impact conclusion remains valid even when the Variant is considered with the Little Yosemite project, which would be located along Alameda Creek between the ACDD and Calaveras Creek. Potential 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 Variant. As discussed on EIR page 4.11-12, 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 from which potential barrier removal work within Alameda Creek would not be minimally visible, if discernible at all, obscured by the lowered position and by a dense cover of riparian vegetation. The Little Yosemite project, although visible from a public hiking trail, would not be within the same viewshed as the fish screen and fish ladder at the ACDD, and, therefore, there would be no cumulative visual impact of the Variant. Thus, the Variant, like the Draft EIR project, is visually isolated and distinct from the Little Yosemite project 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 Variant would not make a substantial contribution to any new significant cumulative impacts on visual resources beyond those identified for the Draft EIR project 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

As described for the Draft EIR project in Subsection 6.2.3.10, 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.

Although the Variant would result in a nominal increase in construction and worker vehicles compared with the traffic volumes for the Draft EIR project, these increases would be associated with the electrical distribution line upgrade to be constructed in the first year of construction and the additional fishery enhancements at the ACDD to be constructed in the fourth year of construction. However, implementation of the Variant would not result in an increase of the peak

number of daily or hourly trips that would occur under the Draft EIR project. Construction of the CDRP Variant would add approximately 10 trips in 2011 (for a peak of 348 total daily trips in 2011), and 22 trips in 2014 (for a peak of 436 total daily trips in 2014). These increases would not affect peak traffic volumes used in the analysis of cumulative traffic impacts of the Draft EIR project (which would occur in spring/summer/fall 2013) with or without construction of the fishery enhancements and project refinement elements of the Variant. Therefore, the Variant's contribution to cumulative transportation and circulation impacts would be the same as those identified for the Draft EIR project, which with implementation of Mitigation Measure 5.12.4a (Traffic Control Plan) would be less than significant.

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

Air Quality

As described for the Draft EIR project in Subsection 6.2.3.11, the geographic scope is the San Francisco Bay Area Air Basin (Basin). For potential cumulative impacts on air quality, all of the projects in Table 6.1 are included in the analysis. For regional criteria pollutants, regional development now and in the next few years is also considered in the analysis.

As with the Draft EIR project, the Variant's contribution of construction-related emissions of criteria pollutants to cumulative impacts would be mitigated to less than significant with implementation of Mitigation Measures 5.13.1a (Fugitive dust mitigation measures recommended by the Bay Area Air Quality Management District), 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures), and 5.9.2a (Dust Mitigation Plan and Comprehensive Air Monitoring Plan) when evaluated relative to the 1999 BAAQMD thresholds of significance. However, as with the Draft EIR project, when evaluated relative to the 2010 adopted BAAQMD thresholds of significance, the Variant's construction emissions would result in levels of ozone precursors that would make a cumulatively considerable (significant) contribution to a significant cumulative impact even with implementation of the identified mitigation measures; no feasible additional mitigation exists that would reduce the construction-related emissions of ozone precursors to levels below the BAAQMD thresholds adopted in 2010.

The Variant, like the Draft EIR project, would not contribute to long-term emissions of regional and local criteria pollutants and precursors or toxic air contaminants, since project operations would be substantially the same as under existing conditions, with the exception of the fish screen at the ACDD. However, the fish screen cleaning mechanism would be powered primarily by solar photovoltaic power and therefore would not contribute to long-term emissions. Similarly,

neither construction nor operation of the Variant would contribute to exposure of sensitive receptors to odor emissions.

As described in Section 9.3.13, the results of the HRSA as modified for the Variant 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), the potential excess cancer risk from diesel PM emissions at the maximally exposed individual for the various populations evaluated would be less than the significance threshold of >10.0 in 1 million for cancer risk, and that the non-cancer risk would be less than the threshold of Hazard Index 1. The BAAQMD adopted cumulative thresholds for risks and hazards from new sources in June 2010; these include greater than 100 in 1 million excess cancer risk from TACs from all local sources, greater than 10.0 hazards index for non-cancer risk from all local sources, and greater than 0.8 $\mu\text{g}/\text{m}^3$ for ambient $\text{PM}_{2.5}$ annual average concentration from all local sources. These cumulative thresholds are about an order of magnitude higher than the thresholds for individual projects. However, as with the Draft EIR project, construction-related diesel PM emissions under the Variant would be reduced through implementation of identified diesel PM reduction measures such that the project-level contributions would be less than significant. Since other construction projects in the Sunol Valley listed in Table 6.1—all of which combined would be smaller in magnitude than the CDRP—would be subject to the same requirements of the BAAQMD for diesel PM reduction measures, the project impacts would be expected to be below the individual project thresholds and have a less than significant impact with implementation of those measures. In addition, Calaveras Road is the only source of diesel PM emissions located within 1,000 feet of any sensitive receptor that could be affected by the CDRP. Therefore, the combined, cumulative impact of the Variant and other smaller Sunol Valley projects on diesel PM emissions would be expected to be below the cumulative thresholds, and this cumulative impact would be less than significant. The Variant would not make a substantial contribution to any new significant cumulative impacts related to diesel PM emissions beyond those identified in the Draft 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 in Section 9.3.13, the Variant'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. Therefore, the Variant would not contribute considerably to cumulative greenhouse gas emissions.

Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts related to air quality or GHG emissions beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Noise and Vibration

As described for the Draft EIR project in Subsection 6.2.3.12, the geographic scope of cumulative impacts 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 in Section 9.3.14 above, none of the additional fishery enhancements or project refinements elements of the Variant would substantially change the assumptions or conclusions regarding noise impacts identified for the Draft EIR project, and the Variant's contribution to cumulative noise impacts would therefore be the same as for the Draft EIR project. The Variant would not contribute to significant cumulative noise impacts due to construction at project sites, nor would cumulative noise impact result from traffic along Calaveras Road during the daytime.

As with the Draft EIR 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 Variant's contribution to cumulative nighttime noise traffic impacts to a less-than-significant level.

Therefore, the Variant would not make a substantial contribution to any new significant cumulative impacts related to noise and vibration beyond those identified for the Draft EIR 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

As described for the Draft EIR project in Subsection 6.2.3.13, the geographic scope of cumulative impacts on public services and utilities encompasses the Alameda Creek watershed and the Sunol Valley region.

As described in Section 9.3.15 above, none of the additional fishery enhancements or project refinements elements of the Variant would substantially change the assumptions or conclusions regarding impacts on utilities and services identified for the Draft EIR project, and the Variant's contribution to cumulative utilities and services impacts would therefore be the same as for the Draft EIR project. Compliance with California Public Resources Code provisions governing the use of construction equipment in fire-prone areas and compliance with the fire suppression requirements of the Alameda WMP would ensure that the Variant'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 Variant's contribution to cumulative construction-related demand on regional landfill capacity would not be cumulatively

considerable, and the Variant's impact on cumulative landfill capacity would be less than significant. The Variant 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 Variant would not make a substantial contribution to any new significant cumulative impacts on utilities, service systems, and public services beyond those identified for the Draft EIR project or substantially increase the severity of a significant cumulative impact, and no new mitigation measures would be required.

Mineral and Energy Resources

As described for the Draft EIR project in Subsection 6.2.3.14, 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 in Section 9.3.16 above, none of the additional fishery enhancements or project refinements elements of the Variant would substantially change the assumptions or conclusions regarding impacts on minerals and energy resource identified for the Draft EIR project, and the Variant's contribution to cumulative minerals and energy impacts would therefore be the same as for the Draft EIR project. The Variant'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 Variant would not substantially increase energy use compared to existing operations (with the exception of the screen-cleaning mechanism at the ACDD which would be powered primarily by solar photovoltaics) 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.

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

9.6 CDRP VARIANT AND CONSIDERATION OF ALTERNATIVES

EIR Chapter 7, Alternatives (Vol. 2, pages 7-1 to 7-79) describes and analyzes alternatives to the proposed project, including a No Project Alternative and a set of "action" alternatives, and alternatives that were considered but rejected from further consideration. Chapter 7 also includes a discussion of the environmentally superior alternative (page 7-73). The action alternatives presented in Chapter 7 collectively provide a range of feasible alternatives that meet most of the basic objectives of the project, and avoid or substantially lessen one or more of the significant environmental effects of the project as proposed.

The range of action alternatives presented in the EIR Chapter 7 is intended to foster informed decision-making and public participation, consistent with the CEQA Guidelines. The Draft EIR environmental resource topic that received the most comments was fisheries; as indicated in this Comments and Responses document, numerous agencies, organizations, and individuals expressed concern regarding the re-establishment of a steelhead run in Alameda Creek based on the proposed project as described and analyzed in the EIR. The CDRP Variant incorporates fishery enhancements that the SFPUC developed in consultation with the NMFS and CDFG. In that sense, inclusion of the CDRP Variant advances the intent of the CEQA Guidelines with respect to alternatives; that is, development of the Variant was informed by direct input from decision-makers (including responsible and permitting agencies) and the modifications to the Draft EIR project incorporated in the Variant reflect the concerns of the public. As indicated in Section 9.3, the CDRP Variant does not substantially worsen the severity of any impacts or create new significant impacts relative to the Draft EIR project, nor does it change the proposed project's objectives; in some cases, it would provide beneficial impacts. For these reasons, inclusion of the Variant in this EIR does not trigger the need to modify the range of alternatives presented in the Draft EIR or to include any additional alternatives beyond those included in Chapter 7.

Furthermore, inclusion of the CDRP Variant does not alter the EIR's conclusions with respect to the environmentally superior alternative, Alternative 5. The EIR provides a comparative analysis of building the dam without the robust core under Alternative 5, New Downstream Dam Without Provision for Potential Future Enlargement (see EIR pages 7-57 to 7-64). In general, impacts associated with material borrow and disposal (including air quality, transportation, noise, water quality, fisheries, and cultural resources) would be reduced under Alternative 5 relative to the Draft EIR project because approximately 11 percent less material would be required to construct the dam. Similarly, impacts associated with material borrow and disposal would also be reduced under the identified environmentally superior alternative relative to the CDRP Variant. The EIR (page 7-74) identifies Alternative 5 as the environmentally superior alternative relative to the Draft EIR project; Alternative 5 would also be environmentally superior to the CDRP Variant, for the same reasons as described for the Draft EIR project (i.e., reduction in impacts associated with material borrow and disposal). Alternative 5 would not preclude implementation of the fisheries enhancements included under the Variant.

9.7 SUMMARY OF IMPACTS OF THE VARIANT COMPARED TO THE DRAFT EIR PROJECT

Table 9.32 summarizes the impacts and mitigation measures for the CDRP Variant and compares the significance determinations for the Draft EIR project with those of the Variant.

Table 9.32: Summary of Impacts and Mitigation Measures for the Draft EIR Project and the CDRP Variant

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
4.3 Land Use, Agricultural Resources, and Recreation		
Impact 4.3.1: Impact of construction activities on the existing character of the vicinity of the proposed project.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.3.2: Impact of project operations on existing and/or planned land uses in the vicinity of proposed facilities.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.3.3: Consistency of proposed project with applicable land use plans, policies, and regulations adopted to avoid environmental impacts.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.3.4: Impact of construction activities on grazing land.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.3.5: Impact of project operations on agricultural uses in the project vicinity.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.3.6: Impact of construction activities on established recreational uses in the vicinity of the proposed project site.	LSM	LSM
<i>Mitigation Measures</i>		
5.3.6: AMGEN Tour of California	X	X
5.9.2a: Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program	X	X
5.12.4a: Traffic Control Plan	X	X
5.13.1a: Fugitive dust mitigation recommended by the Bay Area Air Quality Management District	X	X
4.4 Vegetation and Wildlife (the level of significance shown is the most severe (worst-case) of the three determinations for impacts related to the construction, filling, and operations phases)		
Impact 4.4.1: Effect of CDRP on wetlands and other aquatic habitats.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.2: Habitat Restoration Measures	X	X
5.4.3: Compensation Measures	X	X
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.4.2: Effect of CDRP on California red-legged frog.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.2: Habitat Restoration Measures	X	X
5.4.3: Compensation Measures	X	X
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.4.3: Effect of CDRP on California tiger salamander.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.3: Compensation Measures	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.4.4: Effect of CDRP on Alameda whipsnake.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.3: Compensation Measures	X	X
Impact 4.4.5: Effect of CDRP on callippe silverspot butterfly.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.3: Compensation Measures	X	X
5.13.1a: Fugitive dust mitigation recommended by the Bay Area Air Quality Management District	X	X
5.13.1b: BAAQMD-recommended exhaust emissions mitigation measures	X	X
5.9.2a: Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program	X	X
Impact 4.4.6: Effect of CDRP on bald eagle.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
Impact 4.4.7: Effect of CDRP on foothill yellow-legged frog.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.3: Compensation Measures	X	X
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.4.8: Effect of CDRP on Heermann's kangaroo rat.	NI	NI
<i>Mitigation Measures</i>		
None required.	-	-
Impact 4.4.9: Effect of CDRP on other special-status species.		
Impact 4.4.9a: Effect of CDRP on western pond turtle.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.4.9b: Effect of CDRP on nesting raptors.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
Impact 4.4.9c: Effect of CDRP on upland Species of Special Concern, bats, and migratory birds.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.3: Compensation Measures	X	X
Impact 4.4.10: Effect of CDRP on special-status plant species.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
Impact 4.4.11: Effect of CDRP on sensitive vegetation communities.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.3: Compensation Measures	X	X
Impact 4.4.12: Effect of CDRP on local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LSM	LSM
<i>Mitigation Measures</i>		
5.4.1: Avoidance and Minimization Measures	X	X
5.4.2: Habitat Restoration Measures	X	X
5.4.3: Compensation Measures	X	X
5.7.1: Storm Water Pollution Prevention Plan	X	X
4.5 Fisheries and Aquatic Habitat		
Impact 4.5.1: Construction-related effects on fish occupying habitat in Calaveras Creek downstream of the existing dam.	LSM	LSM
<i>Mitigation Measures</i>		
5.5.1: Native Fish Capture and Relocation	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.5.2: Construction-related permanent loss of fish habitat in Calaveras Creek downstream of the existing dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.5.3: Effect of project on creating barriers to fish movement/migration upstream in Calaveras and Alameda Creeks.	NI	NI/B
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.5.4: Temporary effects on fisheries resources related to increases in sediments and turbidity and to release of and exposure to contaminants.	LSM	LSM
<i>Mitigation Measures</i>		
5.5.1: Native Fish Capture and Relocation	–	X
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.5.5: Effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek.	LSM	B
<i>Mitigation Measures</i>		
5.5.5a: Resident Rainbow Trout Monitoring	X	–
5.5.5b: Resident Rainbow Trout Adaptive Management	X	–
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.	LS	B
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.5.7: Effects of project operations on fish habitat in Calaveras Reservoir and in streams upstream of the replacement dam.	B	B
<i>Mitigation Measures</i>		
None required.	–	–

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.5.8: Effects of project operations on native fish in Alameda Creek in the extended study area.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.5.9: Potential for conflict with local plans protecting fisheries and aquatic habitat.	LSM	LSM
<i>Mitigation Measures</i>		
5.5.1: Native Fish Capture and Relocation	X	X
5.5.5a: Resident Rainbow Trout Monitoring	X	–
5.5.5b: Resident Rainbow Trout Adaptive Management	X	–
5.7.1: Storm Water Pollution Prevention Plan	X	X
4.6 Hydrology		
Impact 4.6.1: Construction of the replacement dam would temporarily change flow rates in Calaveras and Alameda Creeks downstream of Calaveras Dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.2: Construction of the replacement dam would temporarily increase downstream flooding risk.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.3: Construction-related activities could affect local groundwater supplies in the vicinity of the dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.4: Operational effects on flows in Calaveras Creek downstream of Calaveras Dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.6.5: Operational effects on flow in Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.6: Operational effects on flow in Alameda Creek, Calaveras Creek confluence to Arroyo de la Laguna confluence.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.7: Operational effects on flow in Alameda Creek downstream of the Arroyo de la Laguna confluence.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.8: Downstream flooding and hazard in the event of dam failure.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.9: Effects on channel formation and sediment transport along Calaveras Creek.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.10: Effects on channel formation and sediment transport along Alameda Creek downstream of the ACDD to the Calaveras Creek confluence.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.6.11: Effects on channel formation and sediment transport along Alameda Creek downstream of the Calaveras Creek confluence.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.6.12: Changes in groundwater levels, flows, quality, and supplies.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.7 Water Quality		
Impact 4.7.1: Impact on water bodies as a result of soil erosion and sediment discharge during construction.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.7.2: Impact on water bodies as a result of a hazardous materials release, NOA or metals release, or solid waste discharge during construction.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
5.7.2: Drilling Fluids	X	X
Impact 4.7.3: Impact on water bodies as a result of erosion and sediment discharge or a hazardous materials release associated with construction of barge docking facilities and during barging operation.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.7.4: Impact on reservoir water quality during and following inundation due to contact with borrow materials containing NOA, metals, or contaminants.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
5.8.3: Geology Evaluation for Disposal Site Stabilization	X	X
5.9.2a: Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.7.5: Changes in water quality parameters in Calaveras Reservoir during future operation and restoration of pre-DSOD-restricted reservoir conditions.	B	B
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.7.6: Changes in water quality parameters in Calaveras and Alameda Creeks during future operation.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.7.7: Changes in groundwater quality related to construction and operations.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
4.8 Geology, Soils, and Seismicity		
Impact 4.8.1: Landslide activation as a result of construction activities, resulting in structural damage and injuries.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.8.2: Impacts of excavation, placement of fill, and other construction activities on soils with severe erosion and slope instability hazards.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.8.3: Impacts of excavation, placement of fill, and other construction activities on soils with severe erosion and slope instability hazards.	LSM	LSM
<i>Mitigation Measures</i>		
5.8.3: Geotechnical Evaluation for Disposal Site Stabilization	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.8.4: Seismic hazards at the replacement dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.8.5: Hazards of seismically induced ground failure, including liquefaction, lateral spreading, and settlement at disposal fill sites.	LSM	LSM
<i>Mitigation Measures</i>		
5.8.3: Geotechnical Evaluation for Disposal Site Stabilization	X	X
Impact 4.8.6: Impacts on project structures and buried utilities from expansive or corrosive soils.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.8.7: Induced seismic activity from reservoir refilling.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.8.8: Alteration of the existing topography and geology features of the site.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.9 Hazards and Hazardous Materials		
Impact 4.9.1: Release of hazardous materials in soil and groundwater during construction.	LSM	LSM
<i>Mitigation Measures</i>		
5.9.1: Groundwater at Former Calaveras Test Site	X	X
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 serpentinite or mélange.	LSM	LSM
<i>Mitigation Measures</i>		
5.9.2a: Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program	X	X
5.9.2b: Construction Worker Protection	X	X
5.9.2c: Watershed Keeper’s Residence	X	X
5.9.2d: Excavation Materials Management Plan	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.9.3: Potential for an explosion due to gassy conditions during excavation and tunneling.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.9.4: Increased risk of fires in an area of high fire danger.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.9.5: Release of hazardous building materials from demolition of existing structures.	LSM	LSM
<i>Mitigation Measures</i>		
5.9.5: Hazardous Materials in Structures to Be Demolished	X	X
Impact 4.9.6: Release of fuel and other hazardous materials to the environment, including Calaveras Reservoir.	LSM	LSM
<i>Mitigation Measures</i>		
5.7.1: Storm Water Pollution Prevention Plan	X	X
Impact 4.9.7: Fire and safety hazards from use of explosives during construction.	LS	LS
<i>Mitigation Measures</i>		
None 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.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.10 Cultural Resources		
Impact 4.10.1: Impact of construction activities on known archaeological resources.	LSM	LSM
<i>Mitigation Measures</i>		
5.10.1: Archaeological Evaluation and Monitoring, and Treatment of Haman Remains	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.10.2: Impact of construction activities on unknown archaeological resources.	LSM	LSM
<i>Mitigation Measures</i>		
5.10.2: Accidental Discovery Measures	X	X
Impact 4.10.3: Impact of restoration of reservoir water levels and project operations on known archaeological resources.	LSM	LSM
<i>Mitigation Measures</i>		
5.10.1: Archaeological Evaluation and Monitoring, and Treatment of Haman Remains	X	X
Impact 4.10.4: Construction impacts on historic architectural resources.	NI	NI
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.10.5: Construction impacts on unknown paleontological resources.	LSM	LSM
<i>Mitigation Measures</i>		
5.10.5: Paleontological Resources	X	X
Impact 4.10.6: Impact of restoration of reservoir water levels and project operations on unknown paleontological resources.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.11 Visual Resources		
Impact 4.11.1: Impact of construction activities on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	SU (temporary)	SU (temporary)
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.11.2: Impact of site disturbance on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	SU	SU
<i>Mitigation Measures</i>		
5.4.2: Habitat Restoration Measures	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.11.3: Impact of project operations on scenic vistas, scenic resources, and visual character when viewed from the Sunol Wilderness.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.11.4: Impact of construction activities and site disturbance on scenic views from county roads.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.11.5: Impact of construction activities on nighttime light conditions.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.11.6: Impact of project operations on scenic views from county roads.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.12 Transportation and Circulation		
Impact 4.12.1: Traffic delays due to temporary land and road closures during construction.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.12.2: Short-term traffic increases on area roadways due to construction-related traffic.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.12.3: Impaired access to adjacent roadways and land uses for emergency service providers.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.12.4: Increased potential for traffic safety hazards for vehicles and bicyclists on public roadways during construction.	SU	SU
<i>Mitigation Measures</i>		
5.12.4a: Traffic Control Plan	X	X
5.12.4b: Approval for Road Closures	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.12.5: Increased wear and tear on the designated haul routes used by construction vehicles.	LSM	LSM
<i>Mitigation Measures</i>		
5.12.4a: Traffic Control Plan	X	X
Impact 4.12.6: Long-term traffic associated with operation and maintenance of the replacement dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	-	-
4.13 Air Quality		
Impact 4.13.1: Impact of short-term increases in emissions of criteria air pollutants and precursors.	LSM/SU*	LSM/SU*
<i>Mitigation Measures</i>		
5.13.1a: Fugitive dust mitigation recommended by the Bay Area Air Quality Management District	X	X
5.13.1b: BAAQMD-recommended exhaust emissions mitigation measures	X	X
5.13.3a: Diesel Particulate Matter Reduction- Off-road Equipment	X	X
5.13.3b: Diesel Particulate Matter Reduction- On-site Haul Trucks and Idling Limits	X	X
5.9.2a: Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program	X	X
Impact 4.13.2: Impact of long-term generation of regional and local criteria air pollutants and precursors.	LS	LS
<i>Mitigation Measures</i>		
None required.	-	-
Impact 4.13.3: Impact of exposing nearby populations to short-term project-generated emissions of diesel PM.	LSM	LSM
<i>Mitigation Measures</i>		
5.13.1b: BAAQMD-recommended exhaust emissions mitigation measures	X	X
5.13.3a: Diesel Particulate Matter Reduction- Off-road Equipment	X	X
5.13.3b: Diesel Particulate Matter Reduction- On-site Haul Trucks and Idling Limits	X	X

(continued)

9. Project Variant
9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.13.4: Impact of exposing sensitive receptors to long-term emissions of TACs.	NI	NI
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.13.5: Impact of exposing sensitive receptors to emissions of odors.	LS	LS
<i>Mitigation Measures</i>		
None 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.	LS	LS
<i>Mitigation Measures</i>		
None 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.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.14 Noise and Vibration		
Impact 4.14.1: Disturbance from temporary construction-related noise increases.	SU	SU
<i>Mitigation Measures</i>		
5.14.1: Noises Controls	X	X
Impact 4.14.2: Temporary noise disturbance along construction haul routes.	LSM	LSM
<i>Mitigation Measures</i>		
5.14.1: Noises Controls	X	X

(continued)

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.14.3: Disturbance due to construction-related controlled blasting.	LSM	LSM
<i>Mitigation Measures</i>		
5.14.3: Blasting Noise Control	X	X
Impact 4.14.4: Disturbance due to construction-related vibration.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.14.5: Disturbance due to long-term noise increases associated with operation of project facilities.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.15 Utilities, Service Systems, and Public Services		
Impact 4.15.1: Impact of construction activities on the demand for fire protection services.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.15.2: Impact of construction activities on the demand for law enforcement services.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.15.3: Impact of construction activities on the demand for landfill capacity.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
Impact 4.15.4: Impact of construction activities on electrical transmission lines to Calaveras Dam and related structures.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–
4.16 Mineral and Energy Resources		
Impact 4.16.1: Impact of using rock, clay, and sand to construct the replacement dam.	LS	LS
<i>Mitigation Measures</i>		
None required.	–	–

(continued)

9. Project Variant
 9.7 Summary of Impacts of the Variant Compared to the Draft EIR Project

Table 9.32 (Continued)

Impact	Draft EIR Project Level of Significance	CDRP Variant Level of Significance
Impact 4.16.2: Impact of temporary increase in energy use to construct the replacement dam.	LSM	LSM
<i>Mitigation Measures</i>		
5.13.1b: BAAQMD-recommended exhaust emissions mitigation measures	X	X
Impact 4.16.3: Impact of using electric power to operate the replacement dam and filled reservoir.	NI	NI
<i>Mitigation Measures</i>		
None required.	–	–
<p><i>Notes:</i> NI – No impact B – Beneficial LS – Less than significant LSM – Less than significant with mitigation SU – Significant and unavoidable X – Mitigation measure applies to this impact – Mitigation measure does not apply * Significance determination under the 1999 BAAQMD CEQA thresholds of significance / Significance determination under the 2010 BAAQMD CEQA thresholds of significance</p>		

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- San Francisco Public Utilities Commission (SFPUC). 2010e. Memorandum: Analysis of Refined 2018 WSIP Operation on Alameda Watershed Stream Flows. Prepared by Daniel B. Steiner. August 2, 2010. Included as Appendix P (revision of Appendix D4 in CDRP Draft EIR).
- URS and HDR. 2009. Final Technical Memorandum: Feasibility of Fish Passage at Alameda Creek Diversion Dam, prepared for the SFPUC, June 2009.
- URS Corporation. 2010a. Final Biological Resource Survey, PG&E Power Line Upgrade Calaveras Dam Replacement Project, CUW 37401. Prepared for the SFPUC. June 10, 2010.
- URS Corporation. 2010b. Final Archaeological Survey Report/Historic Resources Inventory and Evaluation Report Addendum, PG&E Power Line Upgrade Calaveras Dam Replacement Project, Alameda and Santa Clara Counties, CA. Prepared for the SFPUC. June 22, 2010.
- URS Corporation. 2010c. Cultural Resource Survey Results Calaveras Dam Replacement Project, Limits of Work Change, Right Abutment. Prepared for the SFPUC. April 29, 2010.

10. MASTER RESPONSES

10.1 POTENTIAL FUTURE ENLARGEMENT OF CALAVERAS RESERVOIR

10.1.1 INTRODUCTION

Overview

This master response addresses comments on the potential future enlargement of Calaveras Dam. The proposed dam has been designed with a robust core that would allow future generations the opportunity to expand the reservoir without extensive dam removal. Some commenters suggested that because the design allows for a future expansion, the Environmental Impact Report (EIR) must include an environmental impact analysis of the future expansion; others stated that because a reservoir expansion is not anticipated, there is no reason to build the dam as proposed. This master response addresses issues raised on this topic, describes what would be entailed in expanding the reservoir, and explains the requirements for analysis of a reservoir expansion.

Project Variant

After the Draft EIR was published, the San Francisco Public Utilities Commission (SFPUC) developed a variant of the proposed project that incorporates fishery enhancements and other project refinements in response to ongoing permit negotiations with regulatory agencies and as part of the continuing design process. The CDRP Variant and its environmental impacts are described in Chapter 9 of this Comments and Responses document. The CDRP Variant is similar to the project described in the EIR (referred to herein as the “Draft EIR project”), but it includes a number of additional features intended to improve conditions for native fish, including steelhead, which are targeted for restoration in Alameda Creek; these Variant features include proposed instream flow schedules for Alameda and Calaveras Creeks, installation of a fish screen on the diversion tunnel at the Alameda Creek Diversion Dam (ACDD), and addition of a fish ladder at the ACDD. The responses presented herein also apply to the CDRP Variant.

Commenters

Commenters¹ who addressed this topic include:

Agencies

- Alameda County Public Works Agency – A-ACPWA
- Bay Area Water Supply and Conservation Agency – A-BAWSCA

¹ As described in Section 8.4, Organization of Comments and List of Commenters, the code associated with a particular commenter reflects the type of commenter (whether an agency – A, organization – O, or individual – I) and the acronym or name assigned to the commenter (e.g., A-ACPWA is the commenter code for Alameda County Public Works Agency).

- California Department of Fish and Game – A-CDFG
- San Francisco Bay Regional Water Quality Control Board – A-RWQCB

Organizations

- Alameda Creek Alliance and Center for Biological Diversity – O-ACA&CBD2

Individuals

No individuals commented on this topic.

EIR Section Reference

The EIR addresses the potential future enlargement of Calaveras Dam in the following locations: Vol. 1, Chapter 1 (Executive Summary); Vol. 1, Chapter 3 (Project Description); Vol. 2, Chapter 4, Section 4.8 (Geology, Soils, and Seismicity); Vol. 2, Chapter 7 (Alternatives); and Vol. 3, Appendix A (Notice of Preparation).

10.1.2 POTENTIAL FUTURE ENLARGEMENT OF CALAVERAS DAM

Summary of Issues Raised by Commenters

This section of this master response addresses all or part of the following comments:

- | | | |
|--------------|--------------|---------------|
| A-ACPWA-29 | A-BAWSCA4-07 | A-RWQCB-01 |
| A-BAWSCA2-02 | A-CDFG-01 | O-ACA&CBD2-42 |
| A-BAWSCA3-01 | | |

- Due to increased environmental impacts associated with the robust design, and because the SFPUC does not currently foresee the need to enlarge the dam, there is no reason to build the dam as proposed. [A-RWQCB-01]
- The EIR should state additional reasons for this configuration, such as that the dam could be raised to accommodate a larger conservation pool with less cost and environmental impacts than a complete reconstruction. [A-BAWSCA4-07]
- The project takes a prudent approach in building the base of the replacement project so it can be expanded in the future to meet additional needs, if necessary. [A-BAWSCA2-02, A-BAWSCA3-01]
- The commenter does not support designing the dam to accommodate expansion in the future because enlargement of the dam would exacerbate impacts on beneficial uses of surface water and cause additional impacts in the watershed. [A-CDFG-01, A-RWQCB-01]
- The EIR should identify the size of the future enlargement enabled by the larger core design. [A-CDFG-01]
- Building the dam with a larger core to accommodate future enlargement is identified as a primary project objective; the EIR should evaluate impacts associated with the future enlargement of the dam. [A-ACPWA-29, A-CDFG-01, O-ACA&CBD2-42]

Response

The EIR's Project Description for the Calaveras Dam Replacement Project (CDRP) was prepared in accordance with California Environmental Quality Act (CEQA) requirements² and describes the whole of the proposed action and reasonably foreseeable future actions associated with its implementation. As described throughout the EIR, the project would restore the reservoir's capacity to its pre-2001 level of 96,850 acre-feet (AF), and the San Francisco Public Utilities Commission (SFPUC) would construct the new dam with a robust design (wide, centrally located clay core, wide filters, and internal drainage) that could accommodate potential enlargement by future generations if warranted by changes in future demand, or major changes in climate or other environmental conditions (see Vol. 1, Chapter 3, Section 3.2.2, EIR page 3-6). The SFPUC is not proposing to enlarge the reservoir and has not identified a need to do so at this time; consequently, analysis of Calaveras Reservoir enlargement is appropriately excluded from the scope of this EIR.

As part of developing the Water System Improvement Program (WSIP), the SFPUC adopted the Phased WSIP 2018 Variant, which provides for comprehensive improvement of the regional system facilities to meet long-term system goals (through 2030) along with supply actions to address customer delivery needs over approximately the next 10 years, to about 2018. Enlargement of the Calaveras Reservoir is not part of the SFPUC's adopted Phased WSIP Program. An enlargement of the reservoir is also not considered a future phase or consequence of the proposed project, nor does inclusion of the robust dam design commit the SFPUC to expanding Calaveras Reservoir. Rather, the SFPUC proposes to construct the project in a way that does not severely limit the option of enlarging the dam should the need to do so arise in the future. Given the time and expense needed to modify the current, inadequate dam structure so as to return its storage capacity to its pre-2001 level of 96,850 AF, the SFPUC considers the additional costs of preserving this future expansion option to be relatively modest compared with the additional costs of tearing down the new dam and replacing it with a larger dam. Any such future expansion – should it ever be proposed, for whatever reason – would be subject to the same environmental review requirements as the proposed project and would require compliance with all relevant environmental laws, including the Endangered Species Act and the Clean Water Act. These laws are designed to prevent environmental impacts that would cause jeopardy to an endangered or threatened species.

² The *CEQA Guidelines* define "project" as "the whole of an action, which has a potential for resulting in a physical change in the environment, directly or ultimately..." (Section 15378[a]). Project descriptions and related impact analyses must account for reasonably foreseeable future phases or other reasonably foreseeable consequences of projects. "An EIR must include analysis of the environmental effects of [a] future . . . action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future . . . action will . . . likely change the scope or nature of the initial project or its environmental effects" (*Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988), 47 Cal.3d.376, 393-399 [253 Cal. Rptr. 426]).

There are numerous considerations, some of which are identified below, that would influence a future decision to enlarge the reservoir. If the SFPUC decided to propose the enlargement of the reservoir, many factors would shape the specific characteristics of such a project. The remainder of this master response is organized as follows:

- Reason for the Proposed Dam Design
- Implementation of the CDRP without a Robust Design
- Factors Expected to Influence the Future Decision to Enlarge the Reservoir
- Characteristics of the Hypothetical Enlarged Reservoir
- Evaluation of Impacts Associated with the Hypothetical Enlarged Reservoir

Reason for the Proposed Dam Design

Two commenters suggested that since the SFPUC has no plans to enlarge the dam, it should not be built with a robust design, as doing so would result in a greater level of impacts.

While the SFPUC does not currently foresee the need to enlarge the reservoir dam, it has identified the need to provide flexibility for future decision-makers to respond to changing circumstances and determine whether the reservoir should be expanded to meet the SFPUC's obligations to maintain a reliable water supply for its customers. The SFPUC is proposing the robust dam design to address uncertainties in water resource planning in California. Since the original dam was constructed 85 years ago, the availability of water has changed in ways that could not possibly have been foreseen. The enactment of environmental legislation, such as the Endangered Species Act, has substantially reduced the amount of water that can be diverted from surface waters. Climate change is expected to reduce the Sierra snowpack, that supplies much of the state's water³, and potentially increase the need for water storage capacity. It is possible that additional factors, not known at present, might motivate future generations to consider the option of enlarging the reservoir. In recognition of the inability of planners today to reliably predict the distant future, the SFPUC concluded that it would be imprudent to constrain the options of future generations in such a fashion. Such a strategy, though, by no means makes a future enlargement a *consequence* of the proposed project.

Because of these factors, and because the proposed design would allow for the future reuse of dam components without requiring dam removal and rebuilding, the SFPUC developed the following as a primary objective of the project: "to construct a new dam . . . that could accommodate potential enlargement by future generations" (Section 3.2.2, EIR page 3-6). If the SFPUC were to implement the dam with a thinner core and narrower crest, as described under Alternative 5, New Downstream Dam Without Provision for Potential Future Enlargement (Vol. 2, Chapter 7, Section 7.7, EIR page 7-57), and subsequently decided to expand the

³ Refer to page 5.7-94 in Volume 3, Section 5.7.6 of the WSIP PEIR for a discussion of the impact of climate change on the Sierra snowpack and State water supplies.

reservoir, then the SFPUC would need to construct an entirely new dam, at much greater expense, effort and environmental impact than enlarging the dam in place.

Implementation of the CDRP without a Robust Dam

As noted by two commenters, construction of the robust design would result in a greater level of environmental impact. The EIR provides a comparative analysis of building the dam without the robust core under Alternative 5, New Downstream Dam Without Provision for Potential Future Enlargement (see EIR pages 7-57 – 7-64). In general, impacts associated with material borrow and disposal (including air quality, transportation, noise, water quality, fisheries, and cultural resources) would be reduced under this alternative relative to the proposed project because approximately 11 percent less material would be required to construct the dam. The EIR (page 7-74) identifies Alternative 5 as the environmentally superior alternative. The SFPUC will consider this alternative and could decide to implement it in lieu of the project as proposed.

One commenter (BAWSCA) requests that the Final EIR acknowledge the additional potential benefits of constructing an enlarged core, specifically that the dam could be raised to accommodate a larger “conservation pool” with less cost and fewer environmental impacts than a complete reconstruction. It is assumed that as used here, the term conservation pool refers to an amount of water saved through water conservation actions that could be contained within the reservoir and used for other-than-normal water supply purposes (e.g., for supply during an extended drought). As discussed in the EIR Project Description (Vol. 1, Chapter 3, Section 3.2.2.4, EIR page 3-9), potential future enlargement is neither proposed at this time nor included in this EIR. Absent an actual proposal to enlarge the reservoir or purpose for doing so, it would be speculative to say how an enlarged reservoir would be used or the degree to which it might be used as a conservation pool. Use of the additional capacity as a conservation pool could be one factor that the SFPUC would consider if it were to propose a dam enlargement at some point in the future.

Factors Expected to Influence the Future Decision to Enlarge the Reservoir

Factors that could influence a future decision to enlarge the reservoir include changes in demand characteristics (e.g., re-evaluation of future demand shows increased demand or conservation and recycling do not achieve the desired demand reduction objectives); facility performance (e.g., if regional water system supply reliability is reduced); and/or changes in water supply availability. As noted above, there may also be other factors that cannot be foreseen at present.

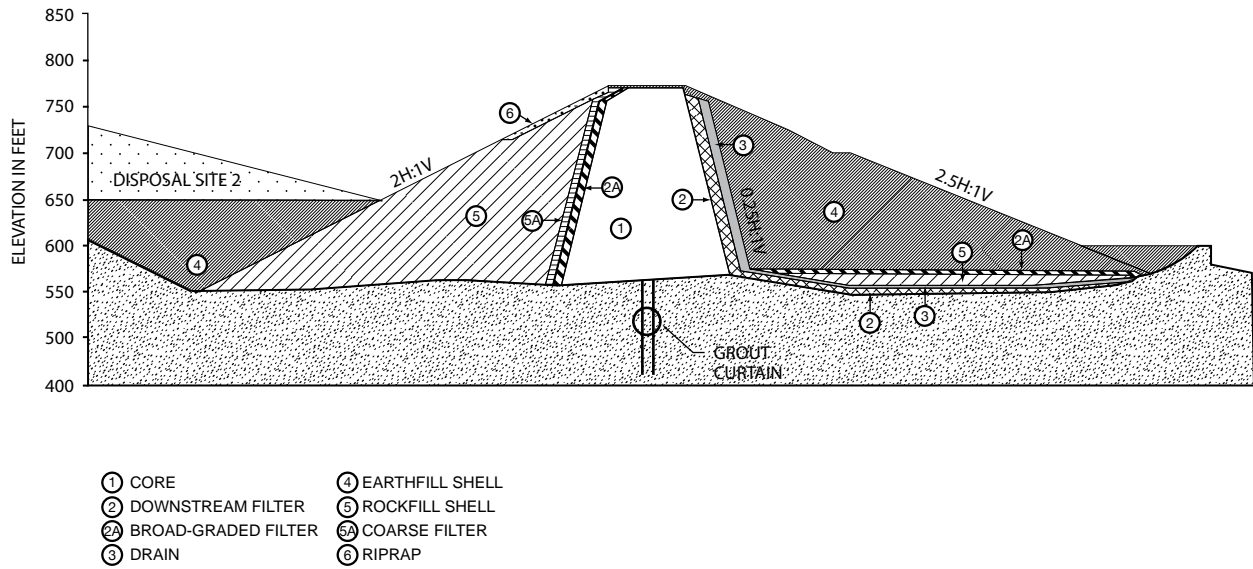
Expansion of the dam and reservoir would only occur if additional water supplies became available. The proposed reservoir under the CDRP would restore a nominal capacity of 96,850 AF. The SFPUC estimates that the proposed dam core design could theoretically accommodate up to 386,000 AF of reservoir storage (Vol. 1, Chapter 3, Section 3.2.2.4, EIR page 3-9); this estimate is based on the topographic limitations of the site and the parameters of the core rather

than on an actual proposal. The size of any future enlargement of the reservoir would be determined in part by the characteristics of the water supply to be acquired (e.g., quantity, timing of availability, means of conveyance). Currently, Calaveras Reservoir is supplied solely by the surrounding watershed. To supply the additional water, either the amount of water collected within the watershed would need to increase or the SFPUC would need to import additional water supplies. The ability of the local watershed to provide increased supplies is questionable. Importing water from another source may require acquisition of additional water rights or agreements as well as construction of pumping and conveyance facilities to transport the water up to Calaveras Reservoir. Development of additional water supplies would almost certainly constitute a new project under CEQA, require additional environmental review, and require discretionary approval by the numerous resource agencies with jurisdiction over water supplies in California. Any additional surface water rights would be subject to approval by the State Water Resources Control Board. The amount of water that could be obtained would be determined by future hydrologic conditions (including any influence related to climate change), the status of other diversions in the watershed, and the habitat needs of species present in the watershed from which the water was being exported.

Characteristics of the Hypothetical Enlarged Reservoir

Any future project to expand the reservoir would require that the dam be raised, which would involve major construction activities, including demolition of the spillway and intake tower, excavation and preparation for an expanded dam foundation, enlarged embankment shell zones (i.e., the earthfill shell and rockfill shell) and a higher dam crest, along with the construction of a new spillway, intake tower, outlet works, and other facilities. To aid the reader in understanding the nature and magnitude of construction that would be required for any future enlargement of the dam, **Figure 10.1.1: Dam Cross-Section**, showing the proposed dam replacement design cross-section, is reproduced below with added notations to show the types of changes that would be required in the future for any dam enlargement. Any future design would be based on future demand and supply characteristics, and the dam construction technology available at that time. The size of any potential expansion would need to be established based on an identified water supply source, but in any case would be limited by the elevation of the upstream end of the Alameda Creek Diversion Dam (ACDD) tunnel. (For the ACDD tunnel to operate, the reservoir elevation cannot exceed that of the upstream end of the tunnel.) The theoretical maximum reservoir volume based on the elevation of the ACDD tunnel has been estimated at 386,000 AF. The earthwork associated with this theoretical maximum reservoir would be considerably greater than that associated with the proposed project, requiring an additional 7.1 million cubic yards of material – for a total of 9.9 million cubic yards of material – as compared to the 2.8 million cubic yards required for the proposed project.

Note: This is a cross-section of the proposed CDRP replacement dam, including robust (wide) clay core and filters that could be reused if there is a future proposal to enlarge the dam and reservoir. A hypothetical enlarged future dam would require that the dam crest be raised further (elevated) and the dam shells enlarged (requiring up to an additional 7.1 million cubic yards of material).



SOURCE: URS; EDAW&Turnstone JV

CALAVERAS DAM REPLACEMENT PROJECT

FIGURE 10.1.1: DAM CROSS-SECTION

Assuming an imported water supply source (due to the limited supply provided by the watershed), the SFPUC would also need to design and construct a conveyance system through the Sunol Valley, requiring an additional or replacement pipeline along the existing Calaveras Pipeline route and a new pump station (the existing pump station in the Sunol Valley is not capable of pumping water to Calaveras Reservoir).

To expand the dam, the following general construction steps would be required:

- Lower the reservoir and establish a cofferdam upstream of the replacement Calaveras Dam (the dam currently proposed).
- Demolish the replacement dam spillway.
- In preparation for raising the dam and expanding the dam footprint, excavate the area around the replacement dam to create a foundation for a new shell and spillway. The excavation would include the left (west) abutment to accommodate the new spillway.
- Extend a grout curtain up both abutments for the expanded dam.
- Stabilize landslides present at and above the area of the expanded dam.
- Retain any reusable parts from the replacement dam (e.g., clay core, filters), and raise the dam using local or imported materials.
- Construct the new spillway, intake, and outlet works.

A future decision to pursue enlargement of the reservoir would constitute a new discretionary action and would be subject to review under CEQA and the National Environmental Policy Act, and all applicable federal, state, and local regulatory and permitting requirements.

Evaluation of Impacts Associated with the Hypothetical Enlarged Reservoir

Two commenters stated that the EIR should evaluate impacts associated with the future enlargement of the dam. Because enlargement of the reservoir is neither part of the project nor a foreseeable consequence of the project, CEQA does not require that the EIR evaluate the impacts associated with an enlarged reservoir. Moreover, given the numerous unknowns identified in the preceding text, attempting to define and analyze an enlarged reservoir in the absence of an actual proposal would be speculative and too generic to be meaningful.⁴ That said, any enlargement of the reservoir would likely exacerbate many of the impacts associated with the project as proposed because there would be a larger construction footprint, more disruption to resources within the watershed, and more earthwork relative to the project as proposed.

One comment suggests that the EIR should disclose the benefits of providing for an expanded core; namely, that the environmental and fiscal impacts of any future expansion would be minimized. Again, while attempting to define and analyze an enlarged reservoir in the absence of

⁴ See *CEQA Guidelines*, Section 15145 (lead agency may determine that impacts are “too speculative for evaluation”).

an actual proposal would be speculative, the magnitude and extent of impacts associated with removing and rebuilding the dam would be substantially greater than enlarging the proposed dam.

10.2 BASELINE USED IN THE ENVIRONMENTAL ANALYSIS

10.2.1 INTRODUCTION

Overview

This master response addresses comments on the Calaveras Dam Replacement Project (CDRP) Environmental Impact Report (EIR) related to the selection and use of a “baseline” or environmental setting. Many comments specifically addressed the selection of a baseline for evaluation of impacts related to hydrology and fisheries. This master response addresses compliance with the requirements of the California Environmental Quality Act (CEQA) regarding the environmental setting, and also addresses specific issues raised regarding establishment of baseline conditions for hydrology and fisheries. Please also refer to the master responses presented in Section 10.3, Hydrology, and Section 10.4, Fisheries, for detailed discussion of comments related to those topic areas.

This master response is organized by the following subtopics:

10.2.2 Use of Appropriate Baselines

10.2.3 Baseline Considerations Regarding California Department of Water Resources Division of Safety of Dams (DSOD) Restrictions, the 1997 Memorandum of Understanding (MOU) between the San Francisco Public Utilities Commission (SFPUC) and the California Department of Fish and Game (CDFG), and Unimpaired Flows

Project Variant

After the Draft EIR was published, the San Francisco Public Utilities Commission (SFPUC) developed a variant of the proposed project that incorporates fishery enhancements and other project refinements in response to ongoing permit negotiations with regulatory agencies and as part of the continuing design process. The CDRP Variant and its environmental impacts are described in Chapter 9 of this Comments and Responses document. The CDRP Variant is similar to the project described in the EIR (referred to herein as the “Draft EIR project”), but it includes a number of additional features intended to improve conditions for native fish, including steelhead, which are targeted for restoration in Alameda Creek; these Variant features include proposed instream flow schedules for Alameda and Calaveras Creeks, installation of a fish screen on the diversion tunnel at the Alameda Creek Diversion Dam (ACDD), and addition of a fish ladder at the ACDD. The potential impacts of the CDRP Variant have been evaluated against the same environmental baseline used for the Draft EIR project. Where appropriate, there is a specific discussion of the Variant with respect to the comment issues addressed in this master response.

Commenters

Commenters⁵ who addressed this topic include:

Agencies

- California Department of Fish and Game (A-CDFG)
- Alameda County Public Works Agency (A-ACPWA)
- San Francisco Planning Commission, Commissioner William L. Lee (A-SFPC4)

Organizations

- Alameda Creek Alliance and Center for Biological Diversity (O-ACA&CBD1)
- Ohlone Audubon Society (O-AudOh)
- 46 Bay Area Conservation Organizations (O-ACTERRA)

Individuals

- John Carroll (I-Carroll)

EIR Section Reference

Information in the following sections is relevant to comments addressing the environmental baseline: Vol. 1, Chapter 3 (Project Description); Vols. 1 and 2, Chapter 4 (Environmental Setting and Impacts): Section 4.3.1 – Land Use, Agricultural Resources, and Recreation; Section 4.4.1 – Vegetation and Wildlife; Section 4.5.1 – Fisheries and Aquatic Habitat; Section 4.6.1 – Hydrology; Section 4.7.1 – Water Quality; Section 4.8.1 – Geology, Soils and Seismicity; Section 4.9.1 – Cultural Resources; Section 4.10.1 – Cultural Resources; Section 4.11.1 – Visual Resources; Section 4.12.1 – Transportation and Circulation; Section 4.13.1 – Air Quality; Section 4.14.1 – Noise and Vibration; Section 4.15.1 – Utilities Service Systems, and Public Services; and Section 4.16 – Mineral Resources; Vol. 2, Chapter 6 (Other Topics Required by CEQA), Section 6.2 (Cumulative Impacts); and Vol. 3, Appendix J (Calaveras Dam Replacement Project: Future Cumulative Impacts on Steelhead).

10.2.2 USE OF APPROPRIATE BASELINES

Summary of Issues Raised by Commenters

This section of this master response addresses general comments made on the adequacy of baseline information presented in the EIR, and responds to all or part of the following comments:

⁵ As described in Section 8.4, Organization of Comments and List of Commenters, the code associated with a particular commenter reflects the type of commenter (whether an agency – A, organization – O, or individual – I) and the acronym or name assigned to the commenter (e.g., A-ACPWA is the commenter code for Alameda County Public Works Agency).

A-CDFG-20	O-Acterra et al.-08	O-ACA&CBD2-24
A-ACPWA-53	O-ACA&CBD2-08	I-Carroll-02

- It seems several baselines were used. Proper baseline information should be used to determine adequate post-project flows to support steelhead. [I-Carroll-02]
- The EIR avoids a clear comparison of before and after conditions in terms of streamflow, and distribution and quality of fish habitat. [O-ACA&CBD1-07]
- Project impacts on fisheries and aquatic habitat are consistently compared to the temporary DSOD-restricted conditions. The impact analysis should be made in relation to the general conditions during the 70-year period since the initial construction of both Calaveras Dam and the ACDD. [A-ACPWA-53]
- The baseline of post-DSOD-restricted conditions is not strictly used. [O-ACA&CBD2-08]
- With respect to channel-forming flows, the Draft EIR fails to compare the project to the stated environmental baseline (the period of DSOD-regulated operations). [O-ACA&CBD2-24]
- A historic baseline should not be applied to the impact assessment for changes in flow rates in Calaveras and Alameda Creeks downstream of Calaveras Dam without including the same level of analysis of effects on native fish in Calaveras Creek below Calaveras Dam and in Alameda Creek downstream of the confluence with Calaveras Creek, since the two sections address the same action. [A-CDFG-20]
- The environmental baseline covers years during which conditions for fish were poor and partially during a drought, leading the EIR to conclude that modest improvements in flow conditions are sufficient to determine that no significant adverse impacts would occur. [O -Acterra et al.-08]

Response

A primary purpose of an EIR is to inform decision-makers and the public about the potential environmental impacts of a project. The impacts of a project are evaluated based on the direct, and reasonably foreseeable indirect, physical changes in the environment that may be caused by the project (either on a project-specific basis or in a cumulative context), and the setting or environmental baseline provides the starting point for that analysis. Section 15126.2(a) of the *CEQA Guidelines* provides direction on describing the setting and determining a project's environmental impacts:

In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area [the setting or baseline] as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time the environmental analysis is commenced.

The environmental baseline normally consists of the environmental conditions present at the commencement of environmental review for the project, or, as the California Supreme Court has

recently stated, “real conditions on the ground.”⁶ While the Lead Agency has the discretion to use a different baseline methodology, it is not required to do so, and is in fact precluded from doing so absent substantial evidence to support a different set of environmental conditions for the environmental baseline. Part of CEQA’s intent in defining the appropriate parameters for the baseline is to prevent the Lead Agency from using a baseline that inappropriately increases or decreases the severity of impacts. If a baseline is set too high with respect to a particular resource (for example, if baseline traffic volumes are unusually high relative to normal traffic volumes for a given roadway) then the difference between baseline and future with-project conditions (the project’s impact) will seem small in comparison.

As described below, the environmental baseline used in the CDRP EIR is consistent with CEQA requirements for evaluation of project-specific impacts, as well as for evaluation of cumulative impacts.⁷

Baseline for Project-Specific Impacts

Each section in EIR Chapter 4 (Vols. 1 and 2) includes a setting section in which the existing physical environmental conditions in the project area with respect to a particular resource topic (e.g., recreation) are described. In all cases, the current “baseline” conditions are a reflection and culmination of historical as well as existing and ongoing activities that affect a specific resource, and the true baseline condition is often a dynamic range of conditions. For some resource areas, such as stream channel formation, the long-term processes of streamflow and related hydrogeologic and geomorphic forces are the predominant factors affecting the existing conditions; flow in a stream at a single point in time tells very little about its overall hydrology. For other resources, such as noise, the conditions are more variable and generally reflect more recent influences such as location of sensitive receptors and traffic volumes within the past 5 years. And for resources such as fisheries, a combination of long-term and short-term factors determines habitat suitability. In establishing the baseline for use in an EIR impact analysis, the Lead Agency considers not only the conditions at the time the Notice of Preparation (NOP) of the EIR is published but also the factors and periods of record that most influence the resource. As the California Supreme Court has explained, “[t]he date for establishing baseline cannot be a rigid one. Environmental conditions vary from year to year and in some cases it is necessary to consider conditions over a range of time periods.”⁸ Thus, the lead agency has discretion to decide how the existing physical conditions without the project can most realistically be measured, as supported by substantial evidence. The CDRP EIR uses a wide range of information to establish

⁶ See *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48Cal.App.4th 310

⁷ Refer to Vol. 2, Chapter 6, Section 6.2, EIR page 6-7 for a summary of CEQA requirements regarding analysis of cumulative impacts.

⁸ See *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48Cal.App.4th 310, quoting *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 125.

the setting information that describes the baseline conditions—including historical data, scientific literature, published maps and databases, site-specific surveys, and monitoring results—depending on the resource and the potential effects of the proposed project.

As the examples below indicate, the setting sections prepared for the EIR conform with the intent of CEQA to describe environmental conditions as they existed at the time of NOP publication. The City and County of San Francisco (CCSF) published the NOP for the CDRP in 2005, and the Draft EIR was published in 2009.⁹

Land Use, Agricultural Resources, and Recreation Setting (pages 4.3-1 to 4.3-13, Vol. 1, Chapter 4). The setting describes land uses, including agricultural and recreational uses, in the vicinity of the project site. The setting reflects conditions at the time the environmental analysis was conducted: between 2005 and 2009. Section authors used field reconnaissance, state maps and reports published in 2007, 2008, and 2009 in order to provide information on agricultural resources that was sufficiently current to adequately characterize agricultural resources.

Vegetation and Wildlife (pages 4.4-1 to 4.4-70). The setting describes terrestrial and aquatic habitats located in the primary and extended study areas, along with the potential for special-status plant and animal species to occur in these areas. The characterization of the existing setting is drawn from literature and database searches, analysis of aerial photographs, consultation with biological resource agencies, and field surveys conducted from 2006 to 2009. The setting also incorporates the results of earlier surveys that documented the occurrence of sensitive habitat and special-status species in the Alameda Creek watershed, both historically and in recent decades.

Transportation and Circulation (pages 4.12-1 to 4.12-20). The setting describes the roadway network, the amount of vehicle traffic on roadways, and the use of roadways by cyclists. The description of the existing setting was compiled based on reconnaissance surveys of roadways, traffic volume data obtained by state and county agencies, and traffic counts conducted in 2006 and 2007.

Fisheries and Aquatic Habitat (pages 4.5-1 to 4.5-52). The setting describes aquatic habitats, fish species, and aquatic communities in the primary and extended study areas, which includes Alameda Creek from upstream of the Alameda Creek Diversion Dam (ACDD) to downstream to San Francisco Bay. The setting section draws upon historical conditions reported in the literature, which include data collected during the past century. It also relies upon fish survey data from 1998 to 2004 and benthic macroinvertebrate data from 2001. The aquatic habitat is characterized by flow data reported on U.S. Geological Survey (USGS) gages from 1998 to 2009, temperature data from 1998, and dissolved oxygen measurements from 2004. The baseline for this topic, specifically with respect to (a) the baseline used in Section 4.6, Hydrology, (b)

⁹ Although EIRs prepared throughout the state are frequently published within a year of publication of the NOP, it is not unusual for preparation of draft EIRs on complex projects like the CDRP to take several years.

Division of Safety of Dams (DSOD) restrictions, and (c) the 1997 Memorandum of Understanding (MOU) is discussed in greater detail in Section 10.2.3 below.

Hydrology (pages 4.6-1 to 4.6-63). The setting section describes the climate and topography, watersheds, watercourses supplying Calaveras Reservoir, water bodies, geomorphology and sediment transport, and groundwater conditions in the study area. The setting synthesizes information based on numerous sources including: watershed maps published in 2004, climate literature from 1966 and 1994, soil maps from 2000, USGS stream gage data for 1994 to 2009, SFPUC operational records from 1938 to the present, contrasting baseline operations under DSOD restrictions with historical operations prior to 2001, and hydrologic rainfall and runoff data from 1920 to 2002. The baseline used in the hydrology section reflects the long-term, dynamic processes of streamflow and related hydrogeologic and geomorphic forces. The baseline for this topic, specifically with respect to (a) the baseline used in Section 4.5, Fisheries and Aquatic Habitat, (b) DSOD restrictions, and (c) the 1997 MOU, is discussed in greater detail in Section 10.2.3 below.

These examples illustrate the types of information that have been drawn on to characterize the environmental setting. Establishing a proper baseline is not limited to a snapshot in time, but relies on a wide range of resource information gathered over time (in many cases decades) to fully understand the environmental context. Here, for every topical section of the EIR, the current baseline conditions have been described to provide a clear context for understanding and evaluating project impacts. In each case, the appropriate context and assumptions are incorporated into the description of the baseline.

Regarding flows needed to support steelhead, refer to Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, which includes a discussion of Proposed Flow Schedules for Steelhead.

The impact evaluation of the CDRP Variant, presented in Section 9.3, uses the same environmental baseline information used to evaluate the project-specific impacts of the Draft EIR project.

Baseline for Cumulative Impacts

As required under CEQA, the cumulative impacts analysis includes consideration of other past, present, and probable future projects that could, in conjunction with the CDRP, either adversely affect environmental resources or that could change environmental conditions in the future, essentially creating a cumulative environmental setting, or “future baseline,” against which the project’s potential to contribute to cumulatively significant impacts is evaluated (see Vol. 2, Chapter 6, Section 6.2). A departure from “existing conditions” is typically unavoidable in this context, as the key question for lead agencies is whether a proposed project’s incremental contribution to significant cumulative effects is itself cumulatively considerable. In this context, lead agencies must compare reasonably foreseeable future conditions without a proposed project to those same conditions with a proposed project. The cumulative environmental setting for the

CDRP reflects (among other things) completion of planned projects to restore steelhead in Alameda Creek, and assumes that steelhead could gain access to the upper Alameda Creek watershed before the completion of CDRP construction (see EIR pages 6-24 – 6-26). Potential construction and operational impacts of the CDRP are thus evaluated in the context of the conditions existing at present and, for steelhead, in the context of reasonably foreseeable future conditions that would occur with implementation of planned projects identified in Section 6.2. Thus, the EIR analysis thoroughly addresses existing conditions in which steelhead are not present, as well as future conditions in which steelhead are present. The cumulative analysis also addressed potential changes in the hydrology of the watershed due to the combined influence of various planned projects, including the SFPUC's planned Upper Alameda Creek Filter Gallery Project.

The impact evaluation of the CDRP Variant, presented in Section 9.3, uses the same environmental baseline information used to evaluate the cumulative effects of the Draft EIR project.

Use of Baseline with Poor Conditions for Fisheries

One commenter asserts that the environmental baseline was restricted to years when conditions for fish were poor (e.g., partially during a drought), and that the fisheries analysis therefore minimizes the project's impacts on fisheries related to flow conditions. As indicated below, this is not the case: consideration of hydrologic conditions was not limited to years in which conditions for fish were poor. The EIR analysis of fishery impacts was supported by specific flow-habitat studies for resident rainbow trout and steelhead (ETJV 2008) and the hydrologic analysis of flows that would occur with and without the project. The hydrologic analysis employed a review of streamflow gage data, modeling of flows above and below the ACDD with proposed operational criteria, and the SFPUC's Hetch Hetchy/Local Simulation Model (HH/LSM), which estimated the existing (2005) conditions using an 82-year period of hydrologic record to capture the long-term variability of the watershed. The HH/LSM existing condition took into account the wide range of hydrologic conditions that occurred from 1920 to 2002 *and was thus not solely based on the more limited range of hydrologic conditions during the DSOD-restricted period (2001–present)*. For reference, the applicable analysis of impacts on native fish is presented in the EIR in Section 4.5 (Vol. 1, Chapter 4, in particular, pages 4.5-60 – 4.5-76). The fisheries analysis refers to specific flow-habitat studies for resident rainbow trout (ETJV 2008) and the analysis of hydrological impacts presented in Section 4.6 of the EIR, particularly Table 4.6.20 and Figure 4.6.14a: Analysis of 15-Minute USGS Gage Data from Alameda Creek above the ACDD and Flow Past the Dam (March 1996, December 1996, February 1999), Figure 4.6.14b: Analysis of 15-Minute USGS Gage Data from Alameda Creek above the ACDD and Flow Past the Dam (February 2000, December 2002, March 2006), Figure 4.6.15a: Modeled Flow in Alameda Creek Downstream of the Calaveras Creek Confluence (1920-1959), and Figure 4.6.15b: Modeled Flow in Alameda Creek Downstream of the Calaveras Creek Confluence (1960-2002) (EIR pages 4.6-88 – 4.6-91). For a detailed

description of the HH/LSM methodology for estimating the 2005 baseline, see EIR Appendix D1 (Vol. 3). For a detailed analysis of potential impacts of the Draft EIR project to steelhead, see EIR Appendix J. Please also refer to the master responses presented in Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for additional discussion of these issues. Regarding the baseline assumption of DSOD restrictions, refer to Section 10.2.3 of this Master Response.

10.2.3 BASELINE CONSIDERATIONS REGARDING CALIFORNIA DEPARTMENT OF WATER RESOURCES DIVISION OF SAFETY OF DAMS (DSOD) RESTRICTIONS, THE 1997 MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC) AND THE CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG), AND UNIMPAIRED FLOWS

Summary of Issues Raised by Commenters

This section of this master response responds to specific comments addressing the three issues listed in the section title, and responds to all or part of the following comments:

A-ACPWA-53	O-ACA&CBD1-12	O-ACA&CBD1-106
A-SFPC4-02	O-ACA&CBD1-17	O-ACA&CBD1-118
O-ACA&CBD1-02	O-ACA&CBD1-41	O-ACA&CBD1-125
O-ACA&CBD1-06	O-ACA&CBD1-70	O-ACA&CBD2-08
O-ACA&CBD1-11	O-ACA&CBD1-75	

- Since the project entails significant modification to the dam and reservoir, the impacts should be referenced to the pre-dam conditions of the watershed and adequately addressed in the EIR. [A-ACPWA-53]
- How can fisheries mitigation be proposed without data describing the fish populations that existed 100 years ago? [A-SFPC4-02]
- The Draft EIR claims to use the existing interim lowered (DSOD-restricted) water level as the baseline for analysis. However, the Draft EIR does not consistently use this baseline. In the context of channel-forming flows, the Draft EIR includes data from a 70-year, pre-DSOD period. The proper baseline should include pre-DSOD-restriction and pre-dam conditions, especially with regard to impacts on native fish. [O-ACA&CBD2-08]
- By choosing the period during which DSOD restrictions were in place and the water system was under somewhat constrained operations, the Draft EIR fails to provide a complete analysis of the impacts of normal operation of the SFPUC water system on hydrology and fisheries in Alameda Creek. The EIR should analyze and compare the impairment of streamflows under the proposed project operations with a baseline of unimpaired flows and pre-DSOD operations for full disclosure of the impacts of the project. [ACA&CBD1-2&17]

- The EIR must not shift the baseline from pre-DSOD restriction to DSOD as it does in Section 4.5, Fisheries and Aquatic Habitat. Flows (even with the minimal proposed bypass flows) would be substantially reduced by the project and the impacts of this reduction must be recognized, evaluated, and mitigated. [ACA&CBD1-118]
- The Draft EIR errs in assuming that flow provisions agreed to under the 1997 MOU are not part of the environmental baseline. Flows associated with the 1997 MOU cannot reasonably be evaluated as part of this project [ACA&CBD1-11, 41, 70, 75, 106]
- The fisheries and aquatic habitat and hydrology sections do not reflect a full analysis of the effects of the SFPUC water supply operations. Current habitat conditions have resulted from water management practices in place since the construction of SFPUC diversion and storage facilities, and not since the DSOD restricted their operation. [ACA&CBD1-06]
- An appropriate analysis of cumulative fisheries impacts would compare unimpaired and post-project flow regimes [ACA&CBD1-125]
- The baseline for the impact analysis should not be considered “water supply operations without fishery flows” [i.e., without flow releases pursuant to the 1997 MOU]. The three flow regimes affecting the CDRP environmental analysis (i.e., unimpaired flows, pre-project flows, and post-project flows) must be clearly defined, and flows should not be used in a “shell game” either to hide adverse impacts or try to show beneficial ones. [ACA&CBD1-12]

Response

As discussed in the subsections below, DSOD restrictions have been in place since 2001 and will continue to be enforced until the dam is replaced and are thus appropriately considered part of the environmental setting; flow releases pursuant to the terms of the 1997 MOU¹⁰ with the CDFG have not occurred, and therefore are appropriately not considered part of the environmental setting; and, finally, because the ACDD and Calaveras Reservoir have been in operation for decades, assuming flows in Alameda and Calaveras Creeks uninfluenced by ACDD and Calaveras Reservoir operations as the environmental setting for the proposed project would also be inappropriate. With respect to the CDRP Variant (SFPUC’s preferred project), the flow release schedule included as part of the Draft EIR project that was consistent with the 1997 MOU flow releases has been superseded by the proposed instream fishery flow schedules included in the Variant, which were developed by the SFPUC, in coordination with and as agreed to by NMFS and CDFG, after the Draft EIR was published (see Section 9.2.5, Variant Operations, in Chapter 9 for details).

Baseline Considerations with DSOD-Restrictions

The EIR (Chapter 3, Section 3.2.1, page 3-5) provides an overview of the project background as well as the basis for one critical baseline condition. As described in this section, the DSOD has

¹⁰ For more information on the terms and conditions of the 1997 MOU, refer to EIR pages 3-66 – 3-69 (Vol. 1, Chapter 3). Appendix H of the EIR (Vol. 3) presents the 1997 MOU in its entirety.

required the SFPUC to lower the water levels in Calaveras Reservoir since the winter of 2001 in response to seismic safety issues. Therefore, the DSOD-required lowered water level in Calaveras Reservoir (705 feet) is the assumed baseline condition against which this EIR compares the project. This lowered water level has been the operating condition since the winter of 2001, before preparation of this EIR began, and it will continue to be the operating condition until the CDRP is implemented. Thus, this condition has been in effect already for nine years and will have occurred for a total of approximately 14 years by the time the replacement dam is completed and operational in the target year of 2015.

The lowered water levels in Calaveras Reservoir and associated modifications to operations of the reservoir and the ACDD have resulted in direct implications for the baseline assumptions used in the impact analyses for several of the key resource areas, most notably hydrology and water quality, which in turn affect the analyses for fisheries and aquatic habitat, as well as for vegetation and wildlife. For the analysis of the hydrological effects of the proposed project on downstream water bodies, the EIR uses a mathematical model that simulates the regional water system operations taking into account a hydrologic record over an 82-year period (1920 to 2002). The model can simulate different operating scenarios and provides quantitative information on levels of diversions to and releases from reservoirs that would occur under different operating scenarios, taking into account the hydrologic record over this 82-year period (see the master response presented in Section 10.3, Hydrology, for additional description of the model). The model has been used to compare quantitative flow conditions that are predicted to occur (based on the 82 years of hydrologic data) under one scenario, the existing conditions, to those that are predicted to occur assuming the same hydrologic record under another scenario, the future with-project conditions. Under the baseline (existing) condition, the model assumes that Calaveras Reservoir operations conform with DSOD restrictions. Because reservoir operations are restricted to the lowered water levels, diversions from Alameda Creek to Calaveras Reservoir through the diversion tunnel have been more sporadic and at times lower than they were under non-DSOD-restricted conditions, resulting in greater flows in Alameda Creek downstream of the ACDD than generally occurred prior to the DSOD restrictions. Because the proposed project would restore the historical capacity of Calaveras Reservoir and thereby assure more predictable and at times greater diversions from Alameda Creek to the reservoir, the baseline condition with the DSOD restrictions *provides the most conservative basis for the environmental analysis*. Therefore, the SFPUC's use of the DSOD-restricted conditions is the appropriate baseline assumption for the CEQA analysis.

Baseline Considerations Regarding the 1997 MOU Flows

Several comments suggest that implementation of flow provisions consistent with the 1997 MOU between the SFPUC and the CDFG should be considered part of the baseline condition. As stated above, CEQA directs a Lead Agency to utilize a baseline condition that reflects the existing physical condition at the time the environmental analysis is initiated or conducted. Because flow

releases consistent with the MOU have not been implemented, it would not be appropriate to consider such flows as the baseline condition.

As described in the EIR (Vol. 1, Chapter 3, EIR page 3-20), under the terms of the 1997 MOU the SFPUC committed to release up to 6,300 AFY to enhance fisheries and other natural resources in conjunction with the construction of a downstream water recapture facility. However, due to the subsequent DSOD restrictions on the operations of the reservoir, the SFPUC has not implemented flow releases in accordance with the MOU and the recapture facility has not been constructed. The DSOD restrictions limit the pool elevation of the Calaveras Reservoir to 705 feet, except in drought conditions (EIR page 3-14), thereby substantially reducing the usable storage (to approximately one-third normal capacity) and limiting the available cold-water pool in the reservoir. The DSOD will not lift restrictions on the reservoir pool elevation until the dam is replaced. Currently, water inflow to the reservoir in excess of DSOD restrictions is periodically released from Calaveras Dam and the ACDD to Calaveras Creek and Alameda Creek, respectively. The remaining allowable storage has been used for water supply purposes only.

The terms of the 1997 MOU specify that flow releases hinge on implementation of the SFPUC's recapture facility (see Vol. 3, Appendix H, page 5). The proposed recapture facility, which has since been renamed the Upper Alameda Creek Filter Gallery Project (Filter Gallery Project), is one of the facilities improvement projects under the adopted WSIP and is evaluated in the WSIP PEIR. The Filter Gallery Project is not part of the CDRP and will undergo project-level CEQA analysis separate from the CDRP. See pages 10-61 through 10-63 of this Comments and Responses document for a more complete discussion of the relationship between the Filter Gallery Project and the CDRP. The proposed CDRP includes the facilities needed to provide bypass releases consistent with the 1997 MOU terms, including an ACDD bypass facility that would enable bypass flows to be released downstream to Alameda Creek, and two new low-flow valves at Calaveras Dam that would enable releases to Calaveras Creek (see Vol.1, Chapter 3, Section 3.6.5, EIR page 3-66).

In summary, because flows consistent with the 1997 MOU have not been released to date and will not be released while DSOD restrictions are in effect, and because the release of flows consistent with the 1997 MOU could only occur following CEQA/regulatory agency review and the construction of some facilities needed to implement such flow releases, the 1997 MOU flows are appropriately not considered part of the existing setting or baseline.

Flow Releases and the CDRP Variant

As part of the Draft EIR project, the SFPUC committed to implementing releases from the ACDD and Calaveras Reservoir, upon completion of the CDRP, at a level consistent with the releases identified in the 1997 MOU, regardless of whether the proposed Filter Gallery Project has been implemented (Vol. 1, Chapter 4, EIR page 4.6-97). As stated above, after the Draft EIR was published the SFPUC developed a variant of the project that includes features to enhance fishery

resources and other updates to the project. As part of the CDRP Variant the SFPUC, in coordination with and as agreed to by NMFS and CDFG, proposes to replace the flow schedule previously described in the Draft EIR (Vol. 1, Chapter 3, Sections 3.6.5 and 3.6.6, pages 3-66 to 3-70, and Appendix H). The proposed instream flow schedules included in the CDRP Variant would surpass the flows required under the 1997 MOU. Refer to Section 9.2.5, Variant Operations, for more detailed information on the proposed instream flow schedules.

Baseline Considerations Regarding Unimpaired Flows

Some comments assert that the fisheries and aquatic habitat and hydrology sections of the EIR do not reflect “a full analysis of the effects of the SFPUC water supply operations via Calaveras Dam and Reservoir and the ACDD on the affected environment.” One commenter states that the proper baseline “should include pre-DSOD and pre-dam conditions, especially with regard to impacts on native fish.”

The comment asserting that the Draft EIR does not reflect a full analysis of the effects of Calaveras Reservoir and the ACDD operations on the environment is correct: the EIR does not analyze the full environmental effects of operating the existing Calaveras Reservoir and the ACDD because those facilities have been in operation for decades and their operations are part of the baseline (existing) condition. It is acknowledged that construction of Calaveras Reservoir and the ACDD have considerably altered the natural flow regime of Alameda Creek and its tributaries; those facilities and the resultant changes in flow, fisheries, and other natural resources created the existing environment that persists today. The EIR, however, is not required under CEQA to evaluate the effects that existing facilities and operations have had on the environment. Rather, it is required to evaluate how a proposed project would change the existing environment. While it is beyond the scope of this EIR and the requirements of CEQA to evaluate the proposed CDRP against pre-dam conditions, historical conditions (including unimpaired flows and pre-DSOD operations) are considered in the analysis and used to provide the appropriate context for the hydrological conditions.

REFERENCES

EDAW & Turnstone Joint Venture (ETJV). 2008. *Calaveras Dam Replacement Project, Fisheries Technical Report 2008*. Prepared by Hagar Environmental Science and Thomas R. Payne and Associates for EDAW & Turnstone Joint Venture and SFPUC.

10.3 HYDROLOGY

10.3.1 INTRODUCTION

Overview

This master response addresses comments on the Calaveras Dam Replacement Project (CDRP) Environmental Impact Report (EIR) related to the CDRP's effects on hydrology and geomorphology. Comments concerning the environmental baseline are addressed in the master response presented in Section 10.2, Baselines Used in the Environmental Analysis, but additional related information is also presented in the following master response. Some comments address both streamflow and the effects of project-caused changes in flow on fisheries. See the master response presented in Section 10.4, Fisheries, for responses to the portions of the comments that discuss the effects of flow changes on fish and other aquatic resources.

Project Variant

After the Draft EIR was published, the San Francisco Public Utilities Commission (SFPUC) developed a variant of the project as described in the Draft EIR, that incorporates fishery enhancements and other project refinements in response to ongoing permit negotiations with regulatory agencies and as part of the continuing design process. The CDRP Variant (or "Variant") and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. The Variant is similar to the project described in the EIR (referred to herein as the "Draft EIR project"), but it includes a number of additional features intended to improve conditions for native fish, including steelhead, which are targeted for restoration in Alameda Creek; these Variant features include proposed instream flow schedules for Alameda and Calaveras Creeks, installation of a fish screen on the diversion tunnel at the Alameda Creek Diversion Dam (ACDD), and addition of a fish ladder at the ACDD. These features would affect stream hydrology and therefore would affect several hydrologic issues addressed in the EIR. Where appropriate, this master response addresses these hydrologic issues for both the Draft EIR project and the CDRP Variant; the term "proposed project" in this response is used when it refers to both the Draft EIR project and the CDRP Variant.

The proposed instream flow schedules (shown in Tables 9.4, 9.5, and 9.6 in Chapter 9 of this Comments and Responses document) would replace the resident trout and steelhead flow schedules that are part of the Draft EIR project (as described in Vol. 1, Chapter 3, Sections 3.6.5 and 3.6.6, pages 3-66 to 3-70). The fish screen would reduce the maximum capacity of the diversion tunnel at the ACDD from approximately 650 cubic feet per second (cfs) to approximately 370 cfs and, as a result, would reduce the maximum amount of water the SFPUC could divert during the brief periods of high flow that typically occur in Alameda Creek. The ladder would enable fish to migrate past the ACDD and would provide an additional pathway for the SFPUC to bypass water around the ACDD.

The hydrology analysis for the Draft EIR project was based on hydrologic modeling, which assumed that the SFPUC would release water from Calaveras Reservoir and bypass water at the ACDD to meet the flow schedule for resident trout at a compliance point downstream of Alameda Creek's confluence with Calaveras Creek. Furthermore, the modeling assumed that the future maximum capacity of the diversion tunnel at the ACDD would be the same as its existing maximum capacity, 650 cfs. In order to analyze the impacts of the CDRP Variant on hydrology, the modeling was repeated for the Variant assuming that the SFPUC would release water in accordance with the updated instream flow schedules and the revised maximum diversion capacity of approximately 370 cfs at ACDD. The modeling results for the CDRP Variant are discussed and shown in a series of figures and tables in Chapter 9 (Section 9.3.6 – Hydrology) and in Appendix P of this Comments and Responses document.

The impacts of the CDRP Variant on hydrology and water quality were assessed and conclusions reached with respect to their significance. The significance conclusions for the CDRP Variant are the same as those reached for the Draft EIR project. All impacts on hydrology and geomorphology were determined to be less than significant for both the Draft EIR project and the Variant.

Master Response Organization

This master response is organized by the following subtopics:

- 10.3.2 Hydrologic Modeling
- 10.3.3 Diversions and Streamflow
- 10.3.4 Geomorphology, Sediment Transport, and Channel Formation
- 10.3.5 Water Supply
- 10.3.6 Cumulative Impacts

Commenters

Commenters¹¹ that addressed this topic include:

Agencies

- California Department of Fish and Game (A-CDFG)
- California Regional Water Quality Control Board, San Francisco Bay Region (A-RWQCB)
- Alameda County Water District (A-ACWD)

¹¹ As described in Section 8.4, Organization of Comments and List of Commenters, the code associated with a particular commenter reflects the type of commenter (whether an agency – A, organization – O, or individual – I) and the acronym or name assigned to the commenter (e.g., A-ACPWA is the commenter code for Alameda County Public Works Agency).

- County of Alameda, Public Works Agency (A-ACPWA)
- East Bay Regional Park District (A-EBRPD)

Organizations

- Alameda Creek Alliance and Center for Biological Diversity (O-ACA&CBD1)
- Lippe Gaffney Wagner LLP (O-ACA&CBD2)
- Acterra et al. (O-Acterra et al.)

Individuals

- Urquhart (I-Urquhart)

EIR Section Reference

The EIR describes the Draft EIR project and evaluates its impacts on hydrology in the following sections: Vol. 1, Chapter 3 (Project Description), and Chapter 4, Section 4.6 (Hydrology); Vol. 2, Chapter 6, Section 6.2 (Cumulative Impacts); Vol. 3, Appendix D (Hydrology Modeling); and Comments and Responses document, Chapter 9 (Project Variant), Chapter 10, Section 10.3 (Hydrology), and Appendix P (Hydrology Modeling for the CDRP Variant).

10.3.2 HYDROLOGIC MODELING

Model Assumptions

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-21 O-ACA&CBD1-36

- The comments request clarification of the assumptions used in the hydrologic models. [A-CDFG-21, O-ACA&CBD1-36]

Response

Three mathematical models were used in the analysis of the effects of the Draft EIR project. One of the models is the Hetch Hetchy/Local Simulation Model (HH/LSM), developed and improved over many years by the SFPUC. The SFPUC uses this model to evaluate and test potential changes in the operations of its regional water system on water supply reliability. The second and third models, referred to as the 15-minute and the Lower Alameda Creek models, were developed for use in the EIR. A comment (A-CDFG-21) requested clarification regarding the assumptions used in the HH/LSM and the 15-minute model.

A summary description of the HH/LSM is contained in the EIR (pages 4.6-59 to 4.6-62). Appendix D.1 of the EIR contains a more detailed description of the HH/LSM and how it was used in the EIR analysis. The EIR also incorporates by reference a report prepared by the SFPUC

in 2007 (*Water Supply System Modeling Report, Hetch Hetchy/Local Simulation Model*), which contains an even more detailed description of the HH/LSM.

A summary description of the 15-minute model is contained in the EIR (pages 4.6-82 and 4.6-83). Appendix D.4 of the EIR contains a technical memorandum describing the development of the 15 minute model and its use in the EIR analysis.

A summary description of the Lower Alameda Creek model is contained in the EIR (page 4.6-95). Appendix D.3 of the EIR contains a technical memorandum describing the development of the Lower Alameda Creek model and its use in the EIR analysis.

HH/LSM

The HH/LSM incorporates information about key aspects of the SFPUC's regional water system, including facilities (reservoir and pipeline capacities) and operating procedures and rules. The model simulates system operations over an 82-year period of hydrologic record, from 1920 to 2002. Runoff forecasting routines in the HH/LSM use historical records of rainfall and snowmelt from 1920 to 2002 to estimate runoff into the regional system's reservoirs. The historical records are maintained primarily by the SFPUC, but information from other governmental sources is also used.

One model assumption is that the historical hydrology from 1920 to 2002 is representative of future hydrology in terms of the nature and variability of water-year types (e.g., the nature and magnitude of wet or dry water years and the extent of drought periods). The issue of climate change, which is projected to alter the climate and precipitation patterns reflected in the historical record, as well as its effects on the SFPUC's regional water system, was analyzed in the Water System Improvement Program (WSIP) Program Environmental Impact Report (PEIR) (San Francisco Planning Department 2008). The preponderance of information suggests that climate change is likely to cause a higher proportion of California's precipitation to occur in the form of rain and less as snow, but there is no clearly discernible trend in total annual precipitation levels over the next century. The change in proportions of rain and snow is not expected to have much effect on storage in San Francisco's reservoirs in the Sierra Nevada for the next 50 years, because these reservoirs are at a high elevation where most precipitation is predicted to continue to fall as snow, as it has under historical conditions. Runoff in the Alameda Creek watershed is already almost entirely the result of rain, which is not predicted to change with climate change.

As simulated by the HH/LSM, runoff enters the regional water system's reservoirs from the Tuolumne River and the Alameda Creek and Peninsula watersheds and moves through the system in response to customer demand, as allowed by facility capacities and in accordance with operating procedures and rules. The HH/LSM assumes that, over the long term, the volume of water entering the regional system must equal the volume of water leaving the system.

The model runs performed for the Draft EIR project using the HH/LSM assumed that the SFPUC would release water from Calaveras Reservoir and bypass water around the ACDD to meet the flow schedule for resident trout and other native aquatic species specified in the 1997 Memorandum of Understanding (MOU) between the SFPUC and the California Department of Fish and Game (CDFG) and described in the EIR (Chapter 3, Section 3.6.5, pages 3-66 to 3-69). The model runs for the Draft EIR project did not include releases to meet the flow schedule for steelhead (Section 3.6.6, Table 3.7, page 3-70) because these releases were contingent on steelhead accessing upper Alameda Creek, which at the time of Draft EIR publication was expected to occur past the completion date of the proposed replacement dam. The HH/LSM runs for the CDRP Variant assume that the SFPUC would provide flows for steelhead upon project completion by implementing the proposed instream flow schedules described in Chapter 9 of this Comments and Responses document. The HH/LSM runs for both the Draft EIR project and the CDRP Variant reflect the SFPUC's operating goal of avoiding spills from Calaveras Reservoir, and assume that the gates on the diversion tunnel at the ACCD would be closed when Calaveras Reservoir is full.

A commenter (A-CDFG-21) notes that the HH/LSM does not necessarily precisely predict the past historical operations of the SFPUC's regional water system. This comment is correct. The model operates in accordance with certain operating procedures and rules that may or may not have been followed in any given year for which historical records exist. Operators of the system respond to actual unfolding events on the ground, which often include equipment outages and emergency maintenance. The fact that the model does not precisely predict past historical operations does not reduce its usefulness to the SFPUC or to this EIR. The SFPUC employs the HH/LSM to test the effects of modifying operating procedures and/or making facility improvements on water deliveries over the long term using a common set of hydrologic circumstances that include very wet—and, most importantly—very dry periods. The EIR uses the HH/LSM to evaluate and compare how the water system would operate with and without the proposed project (refers to both the Draft EIR project and the CDRP Variant) under a reasonable range of hydrologic conditions.

A commenter (O-ACA&CBD1-36) states that the flow estimates for Alameda Creek contained in the Draft EIR are based on data obtained since 2001, and that data available from a longer period of record should be used in the analysis. The comment is incorrect; hydrologic data from an 82-year period of record was used in the analysis. Recent stream gage data was included in the EIR (Figures 4.6.6, 4.6.7, and 4.6.8) to show the range and pattern of flow in streams in the Alameda Creek watershed.

15-Minute Model

The 15-minute model was developed to examine the effect of the Draft EIR project on peak flows in Alameda Creek. The model uses U.S. Geological Survey (USGS) stream gage data and data

from the HH/LSM. The USGS gage data is 15-minute interval flow data from the gage on Alameda Creek upstream of the ACDD available for the period from October 1994 to the present; data from October 1994 to July 2009 were used in the model. The HH/LSM data were examined to find a representative year in which no diversions were made in the base case (existing condition) but in which diversions would occur with the Draft EIR project in place. February 1926 was chosen from the HH/LSM data as a representative month for analysis because it fulfilled this criterion. Monthly flow in February 1926 was about 7,300 acre-feet (AF). The USGS gage data for the entire 15-year period was examined and six months were identified in which average monthly flows were about 7,300 AF, similar to monthly flows in February 1926. Using HH/LSM data for this representative month (February 1926), the EIR analysts developed the 15-minute model, which routed flows either through the diversion tunnel to Calaveras Reservoir and down Alameda Creek via a bypass at the ACDD, or, during very high flows, down Alameda Creek via a spill over the ACDD. The 6 months of recent gage data with average monthly flows of about 7,300 AF were then analyzed using the 15-minute model to determine how the entire month of inflow, including the peak flows, would be routed with the Draft EIR project in place. The analysis was repeated for the CDRP Variant.

Lower Alameda Creek Model

The Lower Alameda Creek model was developed to examine the effect of the Draft EIR project on flows in Alameda Creek downstream of its confluence with Arroyo de la Laguna. The model uses data from three USGS gages. Data from a gage on Alameda Creek below its confluence with Welch Creek and a gage on Arroyo de la Laguna at Verona were used to determine the proportions of water that the upper Alameda Creek and Arroyo de la Laguna watersheds contribute to flow in lower Alameda Creek below the Arroyo de la Laguna confluence, as measured by a gage on Alameda Creek near Niles. The contribution of the upper Alameda Creek watershed to flow in Alameda Creek near Niles was then adjusted to take account of the effects of the proposed project using data from the HH/LSM.

Model Time-Step

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-15	O-ACA&CBD1-07	O-ACA&CBD1-36
A-ACWD-01	O-ACA&CBD1-33	

- Monthly average and annual average flow data are not adequate for identifying suitable minimum bypass flows and for making effects determinations for biological resources; flows should be evaluated using, at a minimum, a daily time scale. [A-CDFG-15]
- The monthly model time-step is not sufficient to capture day-to-day flow impacts. [A-ACWD-01]

- The model uses monthly average streamflows rather than daily streamflows, which is not adequate for evaluating fishery impacts of flow. [O-ACA&CBD1-36]

Response

Several commenters criticize the use of a monthly time-step model (HH/LSM) in the hydrologic analysis for the Draft EIR. As the commenters point out, a monthly time-step model has limitations when assessing the project's effects on flow in a stream like Alameda Creek, which is "flashy" (i.e., a stream in which flow increases and decreases rapidly in response to precipitation over its watershed). High flow events in flashy streams may only last a few hours. Figure 4.6.3a in the EIR (page 4.6-14), which is a plot of daily gaged flow in Arroyo Hondo above Calaveras Reservoir, shows a typical flashy stream within the Alameda Creek watershed.

In preparing the EIR, the San Francisco Planning Department understood the limitations of the monthly time-step model. The monthly time-step model was used to determine the volume of water that would flow down creek reaches affected by the Draft EIR project each month (with and without the project in place) over the 82-year period of historical rainfall record. A second model, referred to as the 15-minute model (described above), was developed to examine the effect of the Draft EIR project on peak flows. The two models used together provide a means of examining both the long-term effects of the Draft EIR project on streamflow and its effects on flashy, short-term flow events. Both of these models were rerun to analyze the CDRP Variant.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, *Flow-Related Effects on Fish and Habitat Conditions*, for responses to comments related to the appropriate time scales for hydrologic data needed to evaluate fishery impacts.

Daily Time-Step Model

This section of this master response responds to all or part of the following comments:

A-ACWD-01

Summary of Issues Raised by Commenters

- The analyses of downstream flow impacts should be conducted utilizing a hydrologic model with a daily time-step developed for the Alameda Creek watershed.
[A-ACWD-01]

Response

A comment (A-ACWD-01) states that the SFPUC should use an existing model that operates with a daily time-step to analyze the hydrologic impacts of the CDRP. The referenced model is being developed by the Alameda County Water District (ACWD) and is based on HEC-HMS, a public-domain model available from the U.S. Army Corps of Engineers. The SFPUC provided information to the ACWD during development of the daily time-step model and originally

thought that this model might be useful for its own water system. The SFPUC reviewed the completed model in January 2010 and concluded that it did not predict streamflow with sufficient accuracy in the reaches of Alameda Creek most affected by the CDRP.

The daily time-step model was still under development at the time the hydrologic impacts of the CDRP were being evaluated for the Draft EIR. During preparation of this Comments and Responses document, the SFPUC informed the San Francisco Planning Department that the daily time-step model was still under review and in development, and would not be ready for use at this time.

The three mathematical simulation models used in the analysis for the CDRP EIR adequately characterize the hydrologic impacts of the Draft EIR project. The HH/LSM and the Lower Alameda Creek model produced monthly data that provided an overall evaluation of Draft EIR project-caused monthly, seasonal, and annual flow changes, and the 15-minute model produced information on Draft EIR project-caused changes in peak flows that may last only a few hours or days. Had a daily time-step model been available at the time the analysis was conducted, it would have produced daily flow data that would have supplemented the monthly, seasonal, annual and instantaneous peak flow data produced by the three models used in the analysis. Daily flow data is not essential because the three models used in the analysis of the Draft EIR project enable estimation of hydrologic impacts over a wide temporal range, allowing for an adequate assessment of the nature and magnitude of project effects.

The HH/LSM and the 15-minute model were rerun to analyze the CDRP Variant. The models produced data that were similar to data used in the analysis of the Draft EIR project. The Lower Alameda Creek model was not rerun for the CDRP Variant. Rerunning the Lower Alameda Creek model was not essential to the analysis of the CDRP Variant because the effects of the Variant on flows in Alameda Creek downstream of Arroyo de la Laguna are less than those of the Draft EIR project and can be extrapolated from the model runs performed for the that project.

10.3.3 DIVERSIONS AND STREAMFLOW

SFPUC's Total Annual Diversions from the Alameda Creek Watershed

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACWD-03	A-ACPWA-40	O-ACA&CBD1-84
A-ACWD-05	O-ACA&CBD1-32	O-ACA&CBD1-109
A-ACPWA-19	O-ACA&CBD1-38	
A-ACPWA-39	O-ACA&CBD1-40	

- The Draft EIR does not recognize the significant impacts that the historical and projected future operations have on downstream flows that are needed for a restored steelhead fishery. [A-ACWD-05]

- The Draft EIR failed to address the flow diversions from the watershed. [A-ACPWA-19]
- The EIR must evaluate how the proposed operation and diversion of flows in upper Alameda Creek would alter the timing and quantity of instream flows. [O-ACA&CBD1-32]
- The statement that there will be a decrease in annual diversions at the ACDD with the proposed project in place is inaccurate. [O-ACA&CBD1-84]
- The CDRP would dramatically decrease flows in Alameda Creek downstream of the ACDD on an average annual basis compared to baseline conditions. [O-ACA&CBD1-109]

Response

Background

Since the 1930s, the SFPUC has captured and diverted a substantial proportion of runoff from the upper Alameda Creek watershed as allowed by its water rights. Water from Arroyo Hondo and upper Calaveras Creek flows into Calaveras Reservoir, and water from upper Alameda Creek is diverted through a tunnel at the ACDD into the reservoir. Water is withdrawn from Calaveras Reservoir and conveyed to the Sunol Valley Water Treatment Plant or San Antonio Reservoir through the Calaveras Pipeline. Sometimes water is released from the reservoir to lower Calaveras Creek via a pipe that passes through Calaveras Dam and is controlled by a cone valve. From time to time, uncontrolled spills occur over the spillway at Calaveras Dam, with spilled water flowing down Calaveras Creek. As shown in Table 4.6.11 (page 4.6-32), uncontrolled spills occurred in about one in every three years between 1941 and 2000. No spills have occurred since the California Division of Safety of Dams (DSOD) imposed restrictions on the capacity of Calaveras Reservoir.

Inflow and Outflow from Calaveras Reservoir

A commenter (O-ACA&CBD1-32) requests information on the timing of inflow to Calaveras Reservoir and the timing of releases from the reservoir. Table 4.6-9 (page 4.6-29) shows inflow to Calaveras Reservoir. As indicated in the table, about 82 percent of the inflow to the reservoir occurs from December through April (the rainy season), with the greatest inflow usually occurring in February. Neither the Draft EIR project nor the CDRP Variant would change the volume, timing, or seasonal pattern of inflow to Calaveras Reservoir.

Draft EIR Project. Apart from a small amount of seepage under and around Calaveras Dam, flow in Calaveras Creek immediately downstream of the dam consists entirely of releases from Calaveras Reservoir. Table 4.6-16 (page 4.6-72) shows modeled releases from Calaveras Reservoir to Calaveras Creek under the existing condition and with the Draft EIR project in place. Under the existing condition, releases from Calaveras Reservoir occur from December through April, but primarily in wet and above-normal years. There are no releases between May and December in wet and above-normal years, and no releases in all months of below-normal and dry

years. Small releases occur between December and March of normal years. With the Draft EIR project in place, the greatest releases would continue to occur from December through April in wet and above-normal years, but the total volume of releases in December through April would be reduced by 17 percent in wet years and 46 percent in above-normal years compared to the existing condition. The decrease in rainy-season releases in wet and above-normal years is attributable to the restoration of storage capacity in Calaveras Reservoir.

Although implementation of the Draft EIR project would reduce releases in some rainy-season months of wet and above-normal years, it would result in an increase in releases in all months of below-normal and dry years and in the drier months of wet, above-normal, and normal years. The increased releases in many months would occur because they would be necessary to meet the flow schedule for resident trout and other native aquatic species that is a part of the Draft EIR project. The net effects of Draft EIR project-caused changes on average annual releases from Calaveras Reservoir, and flow in Calaveras Creek below Calaveras Dam, are shown in Table 4.6.17 (page 4.6-73). As a result of the Draft EIR project, average annual releases from Calaveras Reservoir would decrease in wet and above-normal years and increase in normal, below-normal, and dry years.

CDRP Variant. Table 9.14 shows modeled releases from Calaveras Reservoir to Calaveras Creek under the existing condition and with the CDRP Variant in place. With the CDRP Variant, the greatest releases would continue to occur from December through April in wet and above-normal years, but the total volume of releases in December through April would be reduced by 18 percent in wet years and by 40 percent in above-normal years compared to the existing condition. The decrease in rainy season releases in wet and above-normal years with the CDRP Variant is attributable to the restoration of storage capacity in Calaveras Reservoir.

Although implementation of the CDRP Variant would reduce releases in some rainy season months of wet and above-normal years, it would result in an increase in releases in all months of below-normal and dry years and in the drier months of wet, above-normal, and normal years. The increased releases in many months would occur because they would be necessary to meet the proposed instream flow schedules that are a part of the CDRP Variant. The net effects of Variant-caused changes on average annual releases from Calaveras Reservoir, and flow in Calaveras Creek below Calaveras Dam, are shown in Table 9.15. As a result of the CDRP Variant, average annual releases from Calaveras Reservoir would decrease in wet and above-normal years and increase in normal, below-normal, and dry years.

Summary. To summarize, neither the Draft EIR project nor the CDRP Variant would have any effect on the volume, timing, or seasonal pattern of inflow to Calaveras Reservoir from Arroyo Hondo and upper Calaveras Creek, but they would have some effect on the volume, timing, and the seasonal pattern of releases from the reservoir to Calaveras Creek below Calaveras Reservoir. The greatest releases from the reservoir under the existing condition occur in the rainy season

months of wet and above-normal years; they would continue to do so with either the Draft EIR project or the CDRP Variant in place, although the total volume of releases in those months would be decreased. In addition, with both the Draft EIR project and the CDRP Variant, releases from Calaveras Reservoir would occur in many months when they do not occur under the existing condition. Thus, both the Draft EIR project and the CDRP Variant would reduce flow in Calaveras Creek below Calaveras Dam in a few high-flow months and increase it, often from very close to zero, in many other months.

Proportions of Water Diverted by the SFPUC from Alameda Creek Watersheds

Two comments (A-ACWD-05 and A-ACPWA-19) present information on the proportion of water the SFPUC diverted from the Calaveras Reservoir watershed between 2001 and 2009. The comments note that the SFPUC diverted and used most of the runoff from the watershed. The SFPUC acknowledges that it has historically diverted and will continue to divert a substantial proportion of the runoff to the Calaveras Reservoir watershed, but notes that this diversion is in accordance with the City and County of San Francisco's water rights.

Table 4.6.9 in the EIR shows that the annual average inflow to Calaveras Reservoir from its primary contributing streams, Calaveras Creek and Arroyo Hondo, is 37,957 AF. Table 4.6.17 (page 4.6-73) shows that average annual spills and releases from Calaveras Reservoir under the existing DSOD-restricted condition total 11,249 AF; with the Draft EIR project the average annual spills and releases would total 11,268 AF, essentially the same as under the existing condition. Under the existing condition, an average of about 70 percent of the average annual inflow to Calaveras Reservoir from Arroyo Hondo and upper Calaveras Creek is used by the SFPUC for water supply or evaporates from the surface of Calaveras Reservoir; the remainder is released or spilled from Calaveras Reservoir to Calaveras Creek below Calaveras Dam. The Draft EIR project would not change the proportion of average annual runoff used by the SFPUC or evaporated from the surface of Calaveras Reservoir.

Table 9.15 in Chapter 9 shows the average annual spill and release from Calaveras Reservoir under the existing condition and with the CDRP Variant. The average annual spill and release with the CDRP Variant would be 13,695 AF, 22 percent greater than under the existing condition. With the CDRP Variant, about 64 percent of the average annual inflow to Calaveras Reservoir would be used by the SFPUC for water supply or would evaporate from the surface of Calaveras Reservoir.

The proportion of average annual inflow to Calaveras Reservoir that is used for water supply or evaporated in the reservoir differs with water-year type. Under the existing condition, an average of 51 percent of inflow is used or evaporated in wet years, 76 percent in above-normal years, 94 percent in normal years, and 100 percent in below-normal and dry years. With the Draft EIR project, an average of 58 percent of inflow would be used or evaporated in wet years, 83 percent in above-normal years, 90 percent in normal years, 80 percent in below-normal years, and 15

percent in dry years. With the CDRP Variant, an average of 55 percent of inflow would be used or evaporated in wet years, 77 percent in above-normal and normal years, 64 percent in below-normal years, and 0 percent in dry years. Thus, with both the Draft EIR project and the CDRP Variant, the SFPUC would divert a higher proportion of inflow in wet and above-normal years than under the existing condition and a lesser proportion of inflow in normal, below-normal, and dry years than under the existing condition. Diversions in the drier year types would be reduced because of the releases made to meet either the flow schedules for resident trout and steelhead associated with the Draft EIR project or the proposed instream flow schedules associated with the CDRP Variant.

Although Comments A-ACWD-05 and A-ACPWA-19 appear to refer to the Calaveras Reservoir watershed, it is possible they refer to the entire watershed above the Alameda Creek/Calaveras Creek confluence. If the entire Alameda Creek watershed above the Calaveras Creek confluence is considered, then the proportion of water that the SFPUC uses or that evaporates in Calaveras Reservoir would decrease from an annual average of 57 percent under the existing condition to an annual average of 55 percent with the Draft EIR project. The corresponding value for the CDRP Variant would be 47 percent. The decrease in diversions with the Draft EIR project and the CDRP Variant is primarily attributable to releases to meet the flow schedules for native fish and other aquatic species, but in the case of the latter the reduction in maximum capacity of the diversion tunnel also contributes to the decrease.

Information in Tables 4.6.9, 4.6.17, and 4.6.19 (EIR Chapter 4) and in Tables 9.15 and 9.17 (Chapter 9 of this Comments and Responses document) were used to calculate the proportions of water currently diverted by the SFPUC from the Calaveras Reservoir watershed and the entire watershed above the Alameda/Calaveras Creek confluence under the existing condition, with the Draft EIR project, and with the CDRP Variant in different water-year types. The information on inflow to Calaveras Reservoir contained in Table 4.6.9 was developed using 30 years of gage data from Arroyo Hondo and data from nearby gages with a longer period of record. The runoff estimates in Table 4.6.9 served as input to the HH/LSM. The information contained in Tables 4.6.17, 4.6.19, 9.15, and 9.17 was developed using the HH/LSM.

The table provided by the commenter (A-ACWD-05) shows calculations of the proportion of inflow to Calaveras Reservoir used by the SFPUC each year between 2001 and 2008. The calculations show proportions of 74 to 92 percent. The San Francisco Planning Department has not attempted to reproduce the commenter's calculations. It is not clear whether the calculations include only inflow to Calaveras Reservoir from upper Calaveras Creek and Arroyo Hondo or also include diversions of water from Alameda Creek. If the former, the calculations appear reasonable. As noted above, under the existing condition an average of 70 percent of runoff to Calaveras Reservoir is used or evaporates, and a higher proportion in drier years. The period of 2001 through 2008 was somewhat drier than normal. If the ACWD's calculations include diversions of water from Alameda Creek, then the amount appears high. Under the existing

condition, an average of 57 percent of the sum of the runoff from Alameda Creek above the ACDD and runoff to Calaveras Reservoir is used by the SFPUC or evaporates from the reservoir.

Changes in Average Annual Flow

A commenter (O-ACA&CBD1-109) claims that the statement in the Draft EIR (page 4.5-62) that, “Over all years, flows would increase on an average annual basis” is inaccurate. The commenter makes a similar claim in Comment O-ACA&CBD1-84. The statement refers to the effects of the Draft EIR project on flow in Alameda Creek below the ACDD. The challenged statement in the EIR is accurate. The effects of the SFPUC’s diversions from the Alameda Creek watershed can be observed at points on Alameda Creek below the ACDD and below Alameda Creek’s confluence with Calaveras Creek. Table 4.6-19 (page 4.6-82) shows modeled flow in Alameda Creek downstream of the ACDD but upstream of the confluence with Calaveras Creek. Averaged over all year types, the Draft EIR project would increase flow in the creek by 652 AF, or 7 percent. Table 4.6-21 (page 4.6-92) shows modeled flow in Alameda Creek downstream of its confluence with Calaveras Creek. Averaged over all years, the Draft EIR project would increase flow in the creek by 671 AF, or 3 percent. Both above and below the Calaveras Creek confluence, there would be a net increase in flow in Alameda Creek because the increase in capture of water (attributable to the restoration of capacity in Calaveras Reservoir) would be more than offset by the proposed bypasses and releases for native fish and other aquatic species that are part of the Draft EIR project.

These average annual increases in flow in Alameda Creek below the ACDD would also occur with the CDRP Variant. Table 9.17 shows modeled flow in Alameda Creek downstream of the ACDD but upstream of the confluence with Calaveras Creek. Averaged over all years, the CDRP Variant would increase flow in the creek by 2,530 AF, or 29 percent. Table 9.19 shows modeled flow in Alameda Creek downstream of the confluence with Calaveras Creek. Averaged over all years, the CDRP Variant would increase flow in the creek by 4,976 AF, or 23 percent. As with the Draft EIR project, there would be a net increase in flow in Alameda Creek with the CDRP Variant because the increase in capture of water (attributable to the restoration of storage capacity in Calaveras Reservoir) would be more than offset by the proposed bypasses and flow releases for native fish that are part of the CDRP Variant. The increases in flow with the CDRP Variant would be greater than those with the Draft EIR project because the flow release and bypass requirements are more substantial under the Variant while the diversion capacity is less at the ACDD due to the installation of the fish screen.

Releases from Calaveras Dam and the ACDD

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-15	O-ACA&CBD1-40	O-ACA&CBD1-106
O-ACA&CBD1-03	O-ACA&CBD1-44	O-ACA&CBD2-5
O-ACA&CBD1-35		

- Sufficient flows should be provided to pass adult and juvenile fish over riffles. [A-CDFG-15]
- In wet and normal years, the SFPUC would not be required to contribute meaningful flows from the largest sub-watershed, Calaveras Creek, which they completely impound. [O-ACA&CBD1-40]
- The Draft EIR provides no analysis of how much flow would actually be released from Calaveras Reservoir or bypassed past the ACDD in a typical wet, normal, or dry year. [O-ACA&CBD1-44]
- The flow schedule for resident trout contained in the 1997 MOU should be treated as part of the baseline or existing condition against which the effects of the proposed project are compared, and only steelhead flow in excess of the resident trout flows should be considered a mitigation measure for the project. [O-ACA&CBD1-106]

Response

Flow Schedules and Release and Bypass Amounts

As described in Chapter 3 of the EIR, the Draft EIR project would include two schedules for minimum flows at the USGS gage on Alameda Creek below its confluence with Calaveras Creek. The flow schedules were designed to benefit resident trout and steelhead while also benefiting other native aquatic species, including amphibians and other native fish. The SFPUC would maintain the minimum flows by bypassing water at the ACDD and releasing water from Calaveras Reservoir. The flow schedule for resident trout was based in large part on an MOU executed by the SFPUC and the CDFG in 1997 (1997 MOU), as described in the EIR (Section 3.6.5, pages 3-66 to 3-69).

The flow schedules for resident trout and steelhead are shown diagrammatically in Figure 1.1 in Appendix J of the EIR. The flow schedule for resident trout is the same in all year types. The compliance point for the flow schedule would be the USGS gage on Alameda Creek below its confluence with Calaveras Creek. Flow would be maintained at 5 to 20 cfs at the compliance point depending on the time of year. The SFPUC would comply with the flow schedule for resident trout by bypassing water at the ACDD when there is sufficient natural flow in Alameda Creek above the diversion dam. The bypass would be made using the new bypass facility that is a part of the Draft EIR project. When natural flow in the creek above the ACDD is insufficient, the SFPUC would release water from Calaveras Reservoir to meet the flow schedule for resident trout.

Unlike the flow schedule for resident trout, the flow schedule for steelhead included in the Draft EIR project varies depending on whether the year type is dry, normal, or wet. The compliance point for the steelhead flow schedule would be the same as for the resident trout flow schedule: the USGS gage on Alameda Creek below the Calaveras Creek confluence. Flow would be maintained at 5 to 42 cfs at the compliance point depending on the time of year and the water-year type. The flow schedule for steelhead contains two other requirements (Table 3.7, footnotes 1 and 2). One requirement states that flow in Calaveras Creek would be maintained at a minimum of 2 cfs at all times. Compliance with the requirement would be measured at the USGS gage on Calaveras Creek below Calaveras Dam and would be maintained by making releases from the dam through the new low-flow valves that are part of the Draft EIR project. The second requirement states that the SFPUC would allow up to 10 cfs of water to bypass the ACDD from December 1 to April 30 whenever runoff produces sufficient water.

The SFPUC would comply with the flow schedule for resident trout as soon as the Draft EIR project was completed. It would also comply with the portion of the steelhead flow schedule that requires a minimum flow of 2 cfs in Calaveras Creek and bypass of up to 10 cfs of water at the ACDD as soon as the Draft EIR project was completed. The SFPUC would comply with the other provisions of the flow schedule for steelhead once steelhead have regained access to Alameda Creek above the BART weir. For more information on the scientific basis for the flow schedules for resident trout and steelhead, please see the master response in Section 10.4, Fisheries, and specifically Section 10.4.2, Flows as Part of the Draft EIR Project and CDRP Variant.

It should be noted that the hydrology model runs performed for the Draft EIR project assumed that bypasses and releases at the ACDD and Calaveras Reservoir would be made to meet the flow schedule for resident trout but not for the flow schedule for steelhead. The tables in the EIR that compare flows under the existing condition with flows under the Draft EIR project reflect that assumption. The reason for the assumption is explained in Section 10.3.2 of this master response.

The CDRP Variant and the Draft EIR project include different flow schedules for native fish. With the CDRP Variant, the proposed instream flow schedules (described in Chapter 9 and shown in Tables 9.4 and 9.6) replace the flow schedules for resident trout and steelhead that are part of the Draft EIR project. Under the CDRP Variant, the SFPUC would continuously release water from Calaveras Reservoir to Calaveras Creek at a rate of 5 to 12 cfs depending on the water-year type and the time of year. In addition, up to 30 cfs of natural flow in Alameda Creek would be allowed to bypass the ACDD from December 1 to March 31, and all natural flow would bypass or spill over the ACDD for the rest of the year. Between December 1 and March 31, water would bypass the ACDD through the fish ladder or the bypass tunnel, or spill over the crest of ACDD. Because one of the SFPUC's goals is to minimize spills from Calaveras Dam into Calaveras Creek, it is assumed that water would not be diverted from the ACDD to Calaveras

Reservoir when Calaveras Reservoir is full; in such circumstances, the gates on the diversion tunnel could be closed before March 31.

The compliance points for the proposed instream flow schedules associated with the CDRP Variant would be the USGS gage on Calaveras Creek below Calaveras Dam and a new gage on Alameda Creek below the ACDD. The SFPUC would implement the proposed instream flow schedules as soon as the CDRP Variant was completed. For information on the scientific basis for the proposed instream flow schedule, please see the master response in Section 10.4, Fisheries, and specifically Section 10.4.2, Flow as Part of the Draft EIR Project and CDRP Variant.

Loss of Water From Storage

Several comments (O-ACA&CBD1-03, O-ACA&CBD1-35, and O-ACA&CBD1-40) point out that only some of the water needed to maintain the flow schedules for resident trout and steelhead in Alameda Creek below its confluence with Calaveras Creek is water that the SFPUC would have otherwise diverted and used. The comments imply that the SFPUC would not have to give up much water to meet the flow schedules. The comment is correct in that some natural flow that would not have been captured by the SFPUC would contribute to meeting the native fish flow schedules that are part of the Draft EIR project. However, the bulk of the water needed to meet the flow schedules would be released water that would otherwise be captured and used by the SFPUC. The same is true for the water needed to meet the proposed instream flow schedules that are part of the CDRP Variant; the bulk of the water needed to meet these flow schedules would be water that the SFPUC would otherwise capture and use.

With the Draft EIR project, the 2-cfs release from Calaveras Reservoir that is part of the flow schedule for steelhead would result in a loss of water for the SFPUC almost all of the time because, under the existing condition, releases are not made from Calaveras Reservoir except for a few weeks in some winter months of wet and above-normal years. In addition, the proposed flow bypass of up to 10 cfs at the ACDD (whenever natural flow permits) that is part of the flow schedule for steelhead would result in a loss of water to the SFPUC water system in many rainy season months.

With the CDRP Variant, the 5- to 12-cfs release from Calaveras Reservoir that is part of the proposed instream flow schedules would result in a loss of water for the SFPUC almost all of the time because, under the existing condition, releases are not made from Calaveras Reservoir except for a few weeks in some winter months of wet and above-normal years. The requirement for flow bypasses of up to 30 cfs at the ACDD (whenever natural flow permits) that is part of the Variant's proposed instream flow schedules would result in a loss of water to the SFPUC in many rainy season months. Installation of the screens resulting in a decrease in diversion from 650 cfs to approximately 370 cfs also results in loss of water for the SFPUC.

SFPUC Releases versus Natural Flow to Meet Flow Schedules

A comment (O-ACA&CBD1-44) states that the analysis does not provide an estimate of how much of the water needed to meet the fish flow schedules would be released water and how much would be natural flow in different year types. The EIR indicated that the SFPUC would release up to 6,300 acre-feet per year (afy) (5.6 million gallons per day, or mgd) of water to meet the flow schedule for resident trout (Chapter 3, Section 3.6.5, page 3-66). This maximum release under the Draft EIR project is equivalent to the amount of water the SFPUC would have had to release in a very dry year when natural flow made no contribution toward meeting the proposed flow schedule for resident trout. The SFPUC would have to release less water in wet and above-normal years than in dry years because in the wetter year types more natural flow would be available to satisfy the flow schedules.

Since publication of the Draft EIR, the SFPUC has estimated the amount of water it would need to bypass at the ACDD and release from Calaveras Reservoir to meet both the flow schedule for resident trout and the requirement to bypass up to 10 cfs of flow at the ACDD whenever sufficient flow is available (SFPUC 2010). To meet the flow schedule for resident trout and the 10-cfs bypass at the ACDD, the SFPUC would have to bypass or release an average of about 12,000 afy (10.7 mgd). This calculation provides an indication of the amount of water that the SFPUC would have to release for native fish with the Draft EIR project, although it understates the quantity by an indeterminate amount because it does not include all elements of the flow schedule for steelhead.

The SFPUC also estimated the amount of water it would have to bypass and release to meet the proposed instream flow schedules that are part of the CDRP Variant. To meet the proposed instream flow schedules, the SFPUC would have to bypass or release an average of about 17,000 afy (15.2 mgd). Thus, with the CDRP Variant the SFPUC would bypass or release 17,000 afy of water to Alameda Creek that it would otherwise use for water supply (SFPUC 2010).

It should be noted that the SFPUC intends to recover some of the water released/bypassed to comply with the instream flow schedules at the proposed Upper Alameda Creek Filter Gallery Project (UACFGP or Filter Gallery Project) in the Sunol Valley. The Filter Gallery Project, one of the facility improvement projects under the WSIP, would recover downstream flows released for fishery benefits at the ACDD and Calaveras Dam and pump the water to the SFPUC's regional water system. The SFPUC estimates that it would recover an average of about 5,620 afy (5 mgd) and 6,300 afy (5.6 mgd), respectively, with the Draft EIR project and the CDRP Variant (SFPUC 2010). However, the Filter Gallery Project is currently in development, and its final capacity has yet to be determined; the final capacity will be based, in part, on the final flow schedules adopted as part of the CDRP approval. The Filter Gallery Project will be the subject of a separate CEQA analysis beginning in 2011.

A comment (O-ACA&CBD1-40) states that the SFPUC would have to release only minimal amounts of water below the dams in the summer of most years and a small amount in the winter and spring of dry years under the Draft EIR project. As noted above, the compliance point for the resident trout flow schedule would be the USGS gage on Alameda Creek below the Calaveras Creek confluence. Table 4.6-20 (page 4.6-91) shows estimated flow in the creek at this point under the existing condition and with the Draft EIR project. The table shows that in all months of dry and below-normal years, in most months of normal years, and in many months of above-normal and wet years, flows with the Draft EIR project would be greater than under the existing condition. With the Draft EIR project, the SFPUC would have to release water it would otherwise have used to meet the flow schedule for resident trout because little or no natural flow is available to meet the flow schedule in the drier months.

The comment (O-ACA&CBD1-40) goes on to state that in wet and normal years the SFPUC would not be required to make meaningful contributions of flow from the largest sub-watershed (Calaveras Creek), which it completely impounds. The comment is correct that all runoff from upper Calaveras Creek (and Arroyo Hondo, its major tributary) enters Calaveras Reservoir. While all of the water from these sources is impounded, only some of it is used for water supply. Under the existing condition, an annual average of about 70 percent of the runoff from the Calaveras Reservoir watershed is either used by the SFPUC or evaporates, and the rest is released or spills to Calaveras Creek downstream of Calaveras Dam; in wet and normal years, the proportions of inflow that is captured and used by the SFPUC or that evaporates averages 51 percent and 94 percent, respectively. With the Draft EIR project, the proportion of inflow captured on average would be about the same as it is under the existing condition, since the increased storage capacity would be offset by the fisheries releases; the proportions of inflow captured and used by the SFPUC or evaporated in wet and normal years average 58 percent and 90 percent, respectively. With the CDRP Variant, the proportion of inflow captured on average would be 64 percent, since the larger fisheries release would more than offset the increased storage capacity; the proportions of inflow captured and used by the SFPUC or evaporated in wet and normal years average 55 percent and 77 percent, respectively. Thus, in many years, releases from Calaveras Reservoir contribute substantially to flow in Calaveras Creek under the existing condition and would do so in greater amounts with the Draft EIR project and the CDRP Variant.

1997 MOU Flows

A comment (O-ACA&CBD1-106) states that the flow schedule for resident trout contained in the 1997 MOU should be treated as part of the baseline or existing condition against which the effects of the Draft EIR project are compared, and that only steelhead flows in excess of the resident trout flows should be considered a mitigation measure for the project. The flow schedule for resident trout was not included in the baseline or existing condition because it had not been implemented prior to preparation of the Draft EIR. Since the MOU flow schedule is not being implemented (and was not being implemented at the time of publication of the Notice of

Preparation), this flow schedule is not part of the existing conditions baseline. Please refer to the master response in Section 10.2, Baselines Used in the Environmental Analysis, for further discussion of this topic.

Neither the flow schedule for resident trout nor the flow schedule for steelhead is a mitigation measure for the Draft EIR project. Both flow schedules are a part of the Draft EIR project. Similarly, the proposed instream flow schedules are not a mitigation measure but are part of the CDRP Variant.

Modeled Flows and Releases

A commenter (A-CDFG-15) notes that monthly flows derived using the HH/LSM do not provide appropriate information for determining the effects of the Draft EIR project on resident trout and steelhead, nor do they enable the establishment of appropriate flows to support trout and steelhead. The San Francisco Planning Department recognized that the HH/LSM alone could not be used to determine the effects of the Draft EIR project on the hydrology of a flashy stream such as Alameda Creek and on the aquatic species that live in the stream and are adapted to its flow regime. The HH/LSM is a monthly time-step model that cannot simulate flow in streams that varies from hour-to-hour. Accordingly, the SFPUC developed a 15-minute model to examine the effects of the project on Alameda Creek's flashy flows. As noted in Chapter 9, with the CDRP Variant, a fish screen would be installed at the entrance to the diversion tunnel at the ACDD that would reduce the maximum capacity of the diversion tunnel from approximately 650 cfs to 370 cfs. The 15-minute model was rerun for the CDRP Variant with the reduced diversion tunnel capacity. Please see Section 10.3.2, Hydrologic Modeling, above, for more information on the 15-minute model and its use, and Section 10.4, Fisheries, and specifically Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for more information regarding flow-related effects on fisheries.

The flow schedule for steelhead included in the Draft EIR project (Table 3.7, page 3-70) was developed using Physical Habitat Simulation (PHABSIM), a model that takes account of flow, channel cross-section, substrate, riparian cover, and other factors that influence the quality of fish habitat), the HH/LSM, and stream gage records. PHABSIM data and other similar information were used to develop the proposed instream flow schedules that are part of the CDRP Variant. For more information on the scientific basis for the flow schedules, please see the master response in Section 10.4, Fisheries, and specifically Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant.

Flows Downstream of the ACDD

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACPWA-54	O-ACA&CBD1-77	O-ACA&CBD1-107
A-EBRPD-68	O-ACA&CBD1-90	O-ACA&CBD1-124

- The EIR should consider reducing the diversion of water from the ACDD to Calaveras Reservoir. [A-ACPWA-54]
- The EIR should identify downstream impacts to Alameda Creek and implement measures to mitigate the individual and cumulative effects of water diversion and storage projects on Alameda Creek. [A-EBRPD-68]
- The claim that high-magnitude channel maintenance flows would continue similar to existing conditions is inaccurate. [O-ACA&CBD1-77]
- The EIR does not re-evaluate as a project-specific impact the significant unavoidable impact on Alameda Creek downstream of the ACDD identified in the WSIP PEIR. [O-ACA&CBD1-90]
- The CDRP proposes to dramatically decrease the flows in Alameda Creek downstream of the ACDD compared to baseline conditions. [O-ACA&CBD1-107]
- The CDRP proposes substantially changing the hydrology of Alameda Creek downstream of the ACDD by resuming ACDD diversions. [O-ACA&CBD1-124]

Response

Annual Average Flow Effects

The effects of the Draft EIR project on flows in Alameda Creek below the ACDD were examined using two mathematical models, as described in the EIR (pages 4.6-76 to 4.6-87). The information in Table 4.6.18 (page 4.6-81) and Table 4.6.19 (page 4.6-82) was developed using the HH/LSM. Table 4.6.19 shows average annual flows in different year types and indicates that the Draft EIR project would result in a 2 percent increase in average annual flow in wet years; 8 percent and 3 percent decreases in average annual flow in above-normal and normal years, respectively; and very large-percentage increases in average annual flow in below-normal and dry years compared to the existing condition. Averaged over all year types, annual flows would increase by 7 percent. The increase in average annual flow in Alameda Creek below the ACDD compared to the existing condition is attributable to the bypasses made through the bypass tunnel at the ACDD to meet the flow schedule for resident trout that is part of the Draft EIR project. It should be noted that the values shown in Table 4.16.18 and 4.16.19 include the effects of bypasses necessary to meet the flow schedule for resident trout, but not the flow schedule for steelhead. Flows downstream of the ACDD would be even greater than the values shown in the tables when the bypasses necessary to meet the flow schedule for steelhead are made.

The effects of the CDRP Variant on flows in Alameda Creek below the ACDD were also examined using the same two mathematical models. The information in Tables 9.16 and 9.17 was developed using the HH/LSM. Table 9.17 shows average annual flows in different year types and indicates that the CDRP Variant would result in 12 percent, 10 percent, and 48 percent increases in average annual flow in wet, above-normal, and normal years, respectively, and very large-percentage increases in average annual flow in below-normal and dry years compared to the existing condition. Averaged over all year types, annual flows would increase by 29 percent. The increases in average annual flow in Alameda Creek below the ACDD in all year types compared to the existing condition are attributable to the reduction in capacity of the diversion tunnel along with the bypasses made through the fish ladder and bypass tunnel at the ACDD to meet the proposed instream flow schedules for native fish. Under the existing condition, the maximum capacity of the diversion tunnel is approximately 650 cfs; with the installation of a fish screen on the diversion tunnel, the diversion capacity would be approximately 370 cfs. The bypass tunnel, the fish screen and fish ladder at the ACDD, and the proposed instream flow schedules for native fish and other aquatic species are part of the CDRP Variant and are described in Chapter 9 of this Comments and Responses document.

Monthly Average Flow Effects

Table 4.6.18 in EIR Chapter 4 shows monthly average flows in different year types with and without the Draft EIR project. The greatest reductions in average monthly flow attributable to the Draft EIR project would occur in January of wet years (-8 percent); in December, January, and February of above-normal years (-11 percent, -30 percent, and -22 percent); and in December, January, and February of normal years (-31 percent, -21 percent, and -27 percent). Monthly flows in all other months of all year types would either increase as a result of the Draft EIR project or would remain the same as the existing condition. The increases in flow in some drier months are attributable to the bypassing of water in accordance with the flow schedule for resident trout.

Table 9.16 in Chapter 9 shows monthly average flows in different year types with and without the CDRP Variant. The greatest reductions in average monthly flow attributable to the proposed project would occur in January of wet years (-4 percent); in January and February of above-normal years (-9 percent and -10 percent); and in December and February of normal years (-1 percent). Monthly flows in all other months of all year types would either increase as a result of the CDRP Variant or would remain the same. The reductions in flow in Alameda Creek below the ACDD in the rainy season months of wet, above-normal, and normal years with the CDRP Variant would be smaller than those with the Draft EIR project. With both the Draft EIR project and the CDRP Variant, restoration of the storage capacity in Calaveras Reservoir would enable greater diversions of water at the ACDD in the rainy season, but the effects of the increased diversions would be offset by the required bypass of water at the ACDD for native fish. The amount of water bypassed under the CDRP Variant would be greater than with the Draft EIR

project. In addition, the CDRP Variant includes a fish screen that would reduce the maximum capacity of the diversion tunnel at the ACDD to approximately 370 cfs, which would limit the SFPUC's ability to divert brief, high flows in Alameda Creek compared to the Draft EIR project. The maximum capacity of the diversion tunnel with the Draft EIR project would be 650 cfs. As with the Draft EIR project, the increases in flow in many drier months with the CDRP Variant are attributable to the required flow bypass for native fish and other aquatic species.

Peak Flows

A commenter (O-ACA&CBD1-77) questions the accuracy of a statement in the Draft EIR that "...higher magnitude channel maintenance flows would continue similar to existing conditions." The commenter is referring to the peak flows that have an important role in shaping channel characteristics.

The effects of the proposed project on peak flows in Alameda Creek below the ACDD were examined using the 15-minute model. A summary description of the 15-minute model is contained in the EIR (pages 4.6-82 and 4.6-83). Appendix D.4 of the EIR contains a technical memorandum describing the development of the 15-minute model and its use in the EIR analysis. A summary description of the 15-minute model is contained in Section 10.3.2, above.

Alameda Creek is a very flashy stream that responds rapidly to precipitation over its watershed. Figures 4.6.3a and 4.6.3b (pages 4.6-14 to 4.6-15) show average daily flow in Arroyo Hondo upstream of Calaveras Reservoir and illustrate this phenomenon. Flow in Alameda Creek upstream of the ACDD follows a similar flashy pattern, as shown in Figure 4.6.10 (page 4.6-36). Table 4.6.5 (page 4.6-20) shows maximum and minimum daily average flows in Alameda Creek upstream of the ACDD for the period of 1995 to 2009. The maximum daily average is 1,200 cfs; the minimum daily average is zero. The diversion tunnel at the ACDD was built with a large capacity because Alameda Creek is flashy, including extended periods of low to no flow followed by short duration peak flows. The capacity of the tunnel enables the SFPUC to divert water from Alameda Creek during the brief periods when there is high flow in the creek. Flow in the creek above 200 cfs usually persists only for a day or two.

The 15-minute model was used to examine the effects of the Draft EIR project on flow in Alameda Creek below the ACDD during six typical wet months within the hydrologic record. The 15-minute model was developed using 15-minute-interval USGS gage records and is therefore able to simulate the flashiness of Alameda Creek. The results are shown in Figures 4.6.14a and 4.6.14b (pages 4.6-84 to 4.6-85). The simulations reflect the assumption that, as part of future operations under the Draft EIR project, diversions at the ACDD would cease and all creek flow would pass over the ACDD when water is not needed from Alameda Creek to maintain target storage in Calaveras Reservoir, as described in Section 3.6.4 (page 3-66). This operating protocol is not in effect under the existing condition.

Flow into the tunnel is controlled by gates. Until the DSOD imposed a limit on storage in Calaveras Reservoir in the winter of 2001, the gates were typically opened at the beginning of the rainy season and typically remained open until the end of the rainy season. Sometimes the gates were closed before the end of the rainy season when it was apparent that the target storage in Calaveras Reservoir was or could be achieved without further diversions from Alameda Creek. However, the gates were commonly left open even when more water was not needed from Alameda Creek because there is no electric power at the ACDD to shut the gates automatically. The gates are operated manually, and it can be difficult to access this part of the watershed during the winter. When more Alameda Creek water was diverted to Calaveras Reservoir than needed, any excess could be released to Calaveras Creek using the spillway and/or cone valve at Calaveras Dam.

Under the operating protocol proposed as part of the Draft EIR project, the SFPUC would close the gates on the diversion tunnel when it is apparent that additional water is not needed from Alameda Creek to reach target storage in Calaveras Reservoir. With the gates closed, the full flow in Alameda Creek would either spill over the ACDD or be released to the creek below the dam through the ACDD bypass tunnel that is part of the Draft EIR project. The SFPUC would open the gates on the diversion tunnel at the beginning of the rainy season, as it does under the existing condition, but would close the gates as soon as it became apparent that Calaveras Reservoir had or would reach its storage target.

Figures 4.6.14a and 4.6.14b (pages 4.6-84 to 4.6-85) show the portions of flow that would be diverted into the tunnel and spilled to Alameda Creek below the ACDD during six typical wet months within the hydrologic record. With the Draft EIR project in place, sufficient peak flows (undiminished by diversions) would spill over the ACDD to maintain channel form in the creek below the diversion dam.

The 15-minute model was also run to examine the effects of the CDRP Variant on flow in Alameda Creek below the ACDD. The CDRP Variant provides for stricter flow release and bypass requirements based on the calendar year, but it does not include the proposed operating protocol at the ACDD that is a part of the Draft EIR project. However, because the SFPUC's operating goals include minimizing spills at Calaveras Dam, one of the reservoir management tools is to close the gates at the ACDD when additional water is not needed from Alameda Creek to reach target storage in Calaveras Reservoir; implementation of this management tool is functionally equivalent to the proposed operating protocol at the ACDD that is part of the Draft EIR project. The results of the 15-minute model run for the CDRP Variant are shown in Figures 9.10a and 9.10b. The simulations reflect the fact that, with the proposed fish screen installed, the maximum capacity of the tunnel would be approximately 370 cfs, and the SFPUC would bypass and release water to meet the proposed instream flow schedules. Both the fish screens and the flow schedule are parts of the CDRP Variant (see Chapter 9 of this Comments and Responses document).

Impact Significance for Flow Effects on Alameda Creek Downstream of the ACDD

Two comments (O-ACA&CBD1-90 and O-ACA&CBD1-124) question the basis for the change in significance determination with respect to the impact on flow in Alameda Creek downstream of the ACDD between the WSIP PEIR and the CDRP EIR. The WSIP PEIR, certified in October 2008, concluded that the impact was significant and unavoidable, while the Draft CDRP EIR, published in October 2009, found the impact to be less than significant. One reason for the difference is that the proposed project evaluated in the Draft CDRP EIR included physical and operational features that were not part of the proposed CDRP project concept at the time of publication of the WSIP Draft PEIR. A second reason is that additional hydrologic analyses were conducted for the Draft CDRP EIR subsequent to the completion of the WSIP Draft PEIR, as discussed below.

The CDRP as described in the Draft EIR includes a bypass tunnel at the ACDD, which was not part of the proposed project analyzed in the WSIP Draft PEIR. The bypass tunnel at the ACDD would enable releases of water from the diversion dam for the benefit of native fish and other aquatic species. The Draft EIR project (pages 3-66 to 3-69) assumed that the SFPUC would meet the flow schedule for resident trout in Alameda Creek below its confluence with Calaveras Creek by bypassing water at the ACDD through the bypass tunnel whenever there was sufficient flow in Alameda Creek at the ACDD. If flow in Alameda Creek at the ACDD were insufficient to meet the flow schedule for resident trout at the compliance point below the Calaveras Creek confluence, then releases would be made from Calaveras Reservoir. In the WSIP Draft PEIR, it was assumed that releases to meet the flow schedule for resident trout in Alameda Creek at the compliance point below the confluence with Calaveras Creek would be made entirely from Calaveras Reservoir. The effect of including this different procedure for maintaining compliance with the flow schedule for resident trout in the CDRP was to increase the volume and frequency of flow in Alameda Creek below the ACDD.

A number of significance criteria were used to evaluate the hydrologic impacts of the proposed project in the WSIP PEIR and in the CDRP EIR. One criterion states that a hydrologic impact would be considered significant if the project substantially altered streamflows such that they would be outside the range of pre-project conditions and resulted in substantial hydrologic changes. The range of pre-project flows extends from the minimum recorded flow to the maximum recorded flow. The hydrologic impacts would be significant if the project resulted in minimum or maximum flows that fell outside the pre-project range.

When the WSIP PEIR was certified in October 2008, it was concluded that the WSIP would not cause flows in Alameda Creek below the ACDD to fall outside of the pre-project range, but that it could cause substantial hydrologic changes because, compared to the existing condition, average annual flows would be reduced and peak flows would be reduced in frequency and magnitude. Mitigation Measure 5.4.1-2 was included in the WSIP PEIR to lessen the proposed project's

effects on peak flows. Measure 5.4.1-2 is similar to the proposed ACDD operation plan that is part of Draft EIR project. Nonetheless, it was conservatively concluded in the WSIP PEIR that, even with the mitigation measure, the alteration of peak flows in Alameda Creek downstream of the ACDD, coupled with a reduction in average annual flow, would represent a substantial hydrologic change and that the impact would therefore be significant and unavoidable.

A more refined analysis of Draft EIR project effects on peak flows downstream of the ACDD was conducted for the CDRP EIR; in fact, the 15-minute model was developed for that specific purpose. The results of the analysis of the Draft EIR project's effects on peak flows are presented in the EIR (pages 4.6.82 to 4.6.83). This analysis demonstrated that with the gates to the diversion tunnel operated in accordance with the proposed ACDD operating plan, peak flows would be similar in magnitude to those that occur in Alameda Creek below the ACDD under the existing condition.

Furthermore, as noted above, with the Draft EIR project, the bypassing of water through a proposed bypass facility at the ACDD to benefit native fish would result in an increase in average annual flow in Alameda Creek below the ACDD. The releases and the new bypass were part of the analysis for the Draft EIR project, but were not part of the CDRP project concept analyzed in the WSIP Draft PEIR. In the WSIP PEIR, average annual flow in Alameda Creek below the ACDD with the WSIP was estimated to decrease by 14 percent compared to the existing condition; in the CDRP EIR, average annual flow in Alameda Creek below the ACDD with the Draft EIR project was estimated to increase by 7 percent compared to the existing condition. Because peak flows of similar magnitude would continue to flow down Alameda Creek below the ACDD, and because there would be an increase rather than a decrease in average annual flow, it was concluded that the hydrologic impact of the Draft EIR project on the reach of Alameda Creek below the ACDD would be less than significant.

A similar impact conclusion was reached for the CDRP Variant. As shown in Table 9.17, the CDRP Variant would increase the average annual amount of water that would flow down Alameda Creek below the ACDD in all year types by 29 percent compared to the existing condition. As indicated in Figures 9.10a and 9.10b, peak flows downstream of the ACDD with the CDRP Variant in place would be similar in magnitude to existing peak flows. Consequently, the CDRP Variant would have a less-than-significant impact on flows in Alameda Creek downstream of the ACDD.

Opening and Closing of Gates at the ACDD

A commenter (O-ACA&CBD1-107) questions the statement that, "The proposed bypass flows would ensure that the flows in Alameda Creek downstream of the ACDD would either be increased or remain unchanged for the purposes of supplying adequate fish spawning habitat for resident rainbow trout." The statement refers to the fact that under the existing condition, whenever the gates to the diversion tunnel at the ACDD are open, all creek flow between 0 cfs

and 650 cfs is routed to Calaveras Reservoir. Only rare flows above 650 cfs pass over the diversion dam and continue down Alameda Creek. The “open gates” condition prevailed during almost all resident trout spawning periods (December through April) prior to 2001 and intermittently between 2001 and 2009.

With the Draft EIR project, the gates on the diversion tunnel would be opened at the beginning of the rainy season and would be closed when target storage in Calaveras Reservoir had been achieved. During times when the gates on the diversion tunnel are open, water would be bypassed through the bypass tunnel at the ACDD, whenever there is sufficient flow in the creek to enable the bypass of water. Up to 10 cfs would be bypassed between December 1 and April 30 (Table 3.7, page 3-70).

When the gates on the diversion tunnel are open and more than 10 cfs is flowing down the creek, flows above 10 cfs and up to a maximum of 650 cfs would be routed to Calaveras Reservoir (with the Draft EIR project the maximum capacity of the diversion tunnel would be 650 cfs). Flows above 650 cfs would spill over the ACDD to Alameda Creek below the diversion dam. When the gates are open under the existing condition, no water (other than seepage through the ACDD) flows down the creek, except during brief periods when creek flow exceeds 650 cfs. Thus, in the “open gates” condition during the resident trout spawning periods, more water would pass down the creek below the ACDD with the Draft EIR project than does under the existing condition.

With the CDRP Variant in place, the gates on the diversion tunnel would be opened on December 1 and closed no later than March 30. During times when the gates on the diversion tunnel are open, water would be bypassed through the fish ladder and bypass tunnel at the ACDD, whenever there is sufficient flow in the creek to enable the bypass of water. Up to 30 cfs would be bypassed between December 1 and March 30.

When the gates on the diversion tunnel are open and more than 30 cfs is flowing down the creek, flows above 30 cfs and up to a maximum of 370 cfs would be routed to Calaveras Reservoir (with the CDRP Variant the maximum capacity of the diversion tunnel would be 370 cfs). Flows above 370 cfs would spill over the ACDD to Alameda Creek below the diversion dam. As noted above, when the gates are open under the existing condition, no water (other than seepage through the ACDD) flows down the creek, except during brief periods when creek flow exceeds 650 cfs. Thus, in the “open gates” condition during the resident trout spawning periods, more water would pass down the creek below the ACDD with the CDRP Variant than does under the existing condition.

Currently, when the gates on the diversion tunnel are closed, all flow in Alameda Creek passes over the ACDD and continues down the creek. With the Draft EIR project, when the gates on the diversion tunnel are closed, all flow in Alameda Creek would either pass over the ACDD or pass through the bypass tunnel and continue down the creek. With the CDRP Variant, when the gates on the diversion tunnel are closed, depending on the time of year, all flow in Alameda Creek

would pass through the fish ladder, through the bypass tunnel, and/or over the ACDD spillway and continue down the creek. Thus, with both the Draft EIR project and the CDRP Variant, in the “closed gate” condition, there would be no change in flow in Alameda Creek below the ACDD during the resident trout spawning period compared to the existing condition.

Flow in Alameda Creek Downstream of Arroyo de la Laguna

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-RWQCB-10	A-EBRPD-68	O-ACA&CBD1-92
A-ACWD-06	O-ACA&CBD1-18	O-ACA&CBD1-122
A-ACPWA-24	O-ACA&CBD1-55	I-Urquhart-05
A-ACPWA-70		

- The hydrology impact evaluation for Alameda Creek below the confluence of Arroyo de la Laguna is oversimplified and undervalues the importance of seasonal flows from the upper Alameda Creek watershed. [A-RWQCB-10]
- The Draft EIR does not account for the direct hydrologic connection between Calaveras Dam and the downstream reaches in Niles Canyon and the Alameda Creek flood control channel to San Francisco Bay. [A-ACWD-06]
- Further diversion of natural spring flows in the Alameda Creek watershed would render the entire lower reach of Alameda Creek waterless [A-ACPWA-24]
- The assumption that the effects of Calaveras Dam operations on Alameda Creek flows could not be distinguished from flows from Arroyo de la Laguna is unsupported. [O-ACA&CBD1-18]
- It is possible to characterize how operations of the SFPUC water supply facilities reduce flow into Alameda Creek downstream from the Alameda Creek/Arroyo de la Laguna confluence. [O-ACA&CBD1-92]

Response

Lower Alameda Creek Model

A number of commenters state that the EIR analysis of effects on flow in Alameda Creek should extend beyond the creek’s confluence with Arroyo de la Laguna to its terminus at San Francisco Bay. Several sections in the EIR describe the characteristics of Alameda Creek below its confluence with Arroyo de la Laguna (for example, Section 4.6, pages 4.6-51, 4.6-52, 4.6-55, and 4.6-56). The EIR describes the potential impacts of the Draft EIR project on the reach of Alameda Creek below its confluence with Arroyo de la Laguna (Impact 4.6.7: Operational effects on flow in Alameda Creek downstream of the Arroyo de la Laguna confluence, pages 4.6-94 to 4.6-98).

A mathematical model was developed to aid in examining the effects of the Draft EIR project on flow in Alameda Creek below its confluence with Arroyo de la Laguna. The model, referred to as the Lower Alameda Creek model, used USGS gage data and output from the HH/LSM to estimate monthly flow in Alameda Creek in Niles Canyon. Alameda Creek enters Niles Canyon just downstream of its confluence with Arroyo de la Laguna. The model uses data from USGS gages on Alameda Creek in Niles Canyon and in the Sunol Valley near the Welch Creek confluence, and a gage on Arroyo de la Laguna at Verona. The model is described in the EIR in Appendix D.3 and in Section 10.3.2, above.

A comment (A-ACWD-06) points out that measured flows at the Niles Canyon gage indicate that releases of water from Calaveras Dam flow through the Sunol Valley and reach Niles Canyon. Furthermore, the commenter requested that the EIR discuss the hydrologic connection between the CDRP and the lower reaches of Alameda Creek. The analysis in the EIR assumes a close connection between releases at the SFPUC's dams and flow in lower Alameda Creek. This close hydrologic connection is embedded in the Lower Alameda Creek model and is described in the EIR (pages 4.6-94 to 4.6-97 and Appendix D.3).

Filter Gallery Project

A comment (A-RWQCB-10) notes that the Draft EIR project does not include the Upper Alameda Creek Filter Gallery Project, but that the Draft EIR's estimates of flow in Alameda Creek downstream of the Arroyo de la Laguna confluence include recovery of water by the SFPUC at the Filter Gallery Project. The comment goes on to state that the inclusion of recovery in the flow estimates confuses the analysis, and recommends that the effects of recovery on flow in this reach of Alameda Creek be removed.

As noted in the comment, the estimates of flow in Alameda Creek downstream of the Arroyo de la Laguna confluence shown in Figure 4.6.16 (page 4.6-96) for the Draft EIR project assume that all water released by the SFPUC from its dams to meet the flow schedule for resident trout would be recovered downstream at the Filter Gallery Project, which would consist of an infiltration gallery within the bed of Alameda Creek in the Sunol Valley.

The Filter Gallery Project is one of the facility improvement projects under the adopted WSIP and thus is included in the HH/LSM as part of future conditions under the WSIP. The flow estimates in Figure 4.6.16 of the EIR were made using the Lower Alameda Creek model and HH/LSM and consequently include the effects of the Filter Gallery Project. The San Francisco Planning Department considered requiring that the Lower Alameda Creek model and HH/LSM be modified to eliminate the effects of the Filter Gallery Project, but opted not to do so because the flow estimates produced with the unmodified models were conservative (i.e., the estimates overstate the effects of the Draft EIR project on flow in Alameda Creek below the Arroyo de la Laguna confluence) and consistent with the assumptions used in the WSIP PEIR. Flow in Alameda Creek downstream of the Arroyo de la Laguna confluence with the Draft EIR project

but no Filter Gallery Project could be greater than shown in Figure 4.6.16. Without the Filter Gallery Project, the difference between flow under the existing condition and with the Draft EIR project would be less than that shown in Figure 4.6.16. Thus, the environmental impact analysis based on the values in the figure represents a worst-case condition.

The Lower Alameda Creek model was not rerun for the CDRP Variant. The effects of the CDRP Variant on monthly flow in Niles Canyon would be similar to those shown for the Draft EIR project in Figure 4.6.16, except that the difference between the rainy season flows under the existing condition and with the CDRP Variant would be smaller than the difference between the rainy season flows under the existing condition and the Draft EIR project. This is the case because, with the CDRP Variant, the maximum capacity of the diversion tunnel at the ACDD would be less than it would be with the Draft EIR project, and the bypasses and releases necessary to meet the CDRP Variant's proposed instream flow schedule would be greater than those needed to meet the flow schedule for resident trout that is part of the Draft EIR project.

It should be noted that the San Francisco Planning Department expects to begin preparation of a separate, project-level EIR on the Filter Gallery Project in 2011 (see Section 10.3.6 below for more information). A more detailed analysis of the effects of the Filter Gallery Project, including its effects on streamflow in Alameda Creek, will be undertaken when the separate EIR is prepared.

Without modifying the HH/LSM, it is still possible to characterize the effects of the Draft EIR project on flows in Alameda Creek in the absence of the Filter Gallery Project. If the Filter Gallery Project was not built, releases from the SFPUC's dams to meet the flow schedule for resident trout consistent with the 1997 MOU could, at least theoretically, increase average flow in Alameda Creek downstream of the Sunol Valley by up to 6,300 afy. Most of the releases would occur in drier years and in the drier months of other years, and some of the water released would be lost to evaporation and percolation into the ground between the release site and the Sunol Valley. Water losses would also likely be considerable in the Sunol Valley itself because surface water from Alameda Creek percolates into the ground in the valley, particularly in the downstream section, which is heavily influenced by gravel mining (page 4.6-22). Consequently, any increase in flow in Alameda Creek below the Arroyo de la Laguna confluence attributable to the SFPUC's releases would be less than the theoretical maximum.

With the CDRP Variant, the flow schedule for resident trout and the flow schedule for steelhead that are part of the Draft EIR project are replaced by the proposed instream flow schedules. The maximum amount of water that the SFPUC would need to bypass or release to meet the proposed instream flow schedules would be greater than with the Draft EIR project. Because the volume of the bypasses and releases with the CDRP Variant would be greater than with the Draft EIR project, there is an increased chance that the surface flows produced by the bypasses and releases would persist farther downstream than they would with the Draft EIR project.

Seasonal Effects

The same commenter (A-RWQCB-10) requests that the EIR include an analysis of the seasonal variation in effects of the CDRP on flow in Alameda Creek below the Arroyo de la Laguna confluence. The seasonal effects of the Draft EIR project on flow in Niles Canyon can be inferred from information contained in Tables 4.6.20 and 4.6.21 (pages 4.6-91 to 4.6-92). The changes in average annual flow in Niles Canyon in different year types attributable to the Draft EIR project, and assuming no recovery in the Sunol Valley, would be similar to the average annual changes in flow shown in Table 4.6.21 for Alameda Creek below its confluence with Calaveras Creek. Average annual flow would decrease by about 5,000 AF in wet years and by about 4,700 AF in above-normal years. Average annual flow would increase by about 1,000 AF, 5,800 AF, and 6,400 AF in normal, below-normal, and dry years, respectively. Averaged over all years, annual flow would increase by about 700 AF. The percentage changes in flow in different year types would be much smaller than those shown in Table 4.6.21 because total annual flow in Alameda Creek in Niles Canyon is about three times greater than flow below its confluence with Calaveras Creek.

The changes in average monthly flow in Niles Canyon in different year types attributable to the Draft EIR project, and assuming no recovery in the Sunol Valley, would be similar to the average monthly changes in flow shown in Table 4.6.20 for Alameda Creek below its confluence with Calaveras Creek. Average monthly flow would decrease in some winter months of wet, above-normal, and normal years; increase in the drier months of wet, above-normal, and normal years; and increase in all months of below-normal and dry years. Again, the percentage changes in flow in different months would be much smaller than those shown in Table 4.6.20 because total annual flow in Alameda Creek in Niles Canyon is about three times greater than flow below its confluence with Calaveras Creek.

The seasonal effects of the CDRP Variant on flow in Niles Canyon can be inferred from information contained in Tables 9.18 and 9.19 (see Chapter 9). The changes in average annual flow in Niles Canyon in different year types attributable to the CDRP Variant, and assuming no recovery in the Sunol Valley, would be similar to the average annual changes in flow shown in Table 9.19 for Alameda Creek below its confluence with Calaveras Creek. Average annual flow would decrease by 570 AF in wet years and increase by about 800 AF, 7,100 AF, 10,000 AF, and 7,400 AF in above-normal, normal, below-normal, and dry years, respectively. Averaged over all years, annual flow would increase by about 5,000 AF. The percentage changes in flow in different year types would be much smaller than those shown in Table 9.19 because total annual flow in Alameda Creek in Niles Canyon is about three times greater than flow below its confluence with Calaveras Creek.

The changes in average monthly flow in Niles Canyon in different year types attributable to the CDRP Variant, and assuming no recovery in the Sunol Valley, would be similar to the average

monthly changes in flow shown in Table 9.18 for Alameda Creek below its confluence with Calaveras Creek. Average monthly flows would decrease in some winter months of wet, above-normal, and normal years; increase in the drier months of wet, above-normal, and normal years; and increase in all months of below-normal and dry years. Again, the percentage changes in flow in different months would be much smaller than those shown in Table 9.18 because total annual flow in Alameda Creek in Niles Canyon is about three times greater than flow below its confluence with Calaveras Creek.

The figures quoted in the preceding paragraphs assume that the full effects of the changes in flow in Alameda Creek below its confluence with Calaveras Creek attributable to the Draft EIR project and the CDRP Variant would be felt in Alameda Creek below its confluence with Arroyo de la Laguna. In fact, the effects of the Draft EIR project and the CDRP Variant would be diminished between the Calaveras Creek confluence and Niles Canyon. As noted above, water from Alameda Creek percolates into the ground in the Sunol Valley, particularly in dry periods and in the reach of the creek in the lower valley where active gravel mining occurs. Some of the Draft EIR project- and CDRP Variant-caused increases in flow in the dry months of wetter years and in all months of drier years would probably percolate or partly percolate into the ground in the Sunol Valley. Percolation of water into the ground is less of a factor in the winter months. Consequently, downstream of the Sunol Valley, both the Draft EIR project and the CDRP Variant would likely reduce flow in a few winter months of wetter years, increase flow in other months of wetter years, and perhaps increase flow in some winter months of drier years.

Impact Study Area

Two comments (O-ACA&CBD1-18 and O-ACA&CBD1-92) request that the primary study area for the CDRP be extended so that the effects of the proposed project on flow in Alameda Creek from its confluence with Arroyo de la Laguna to San Francisco Bay would be included in the analysis. Although Alameda Creek below its confluence with Arroyo de la Laguna was not included in the primary study area, the effects of the Draft EIR project on flow in the creek in Niles Canyon below the Arroyo de la Laguna confluence were analyzed and described in the EIR (pages 4.6-94 to 4.6-98).

The following text supplements the information provided in the EIR. For Impact 4.6.7: Operational effects on flow in Alameda Creek downstream of the Arroyo de la Laguna confluence (under the subheading “Project Watershed Contribution”), the following paragraph is added on page 4.6-97 after the first full paragraph (new text is underlined):

The effects of the proposed project on flow in Alameda Creek at the Niles gage would persist as the creek emerges from the canyon and flows over the San Francisco Bay plain to its terminus at San Francisco Bay. Near its exit from Niles Canyon, the creek flows over alluvial material and loses flow naturally to the groundwater. Percolation of water into the ground is enhanced artificially as a result of ACWD operations. USGS gage data indicate that, during drier

periods, little flow continues down Alameda Creek towards San Francisco Bay. USGS stream gage data show that 10 cfs or more of flow occurs in Alameda Creek at the Niles gage 60 percent of the time, but 10 cfs of flow only occurs in the Alameda Creek flood control channel in Union City about 27 percent of the time (USGS Gages 11179000 and 1180700). Any effects of the proposed project on flow in the reach of Alameda Creek that passes over the Bay plain would be dampened by both inflow from tributaries and outflow to the groundwater basin.

The new text describes the impacts of the Draft EIR project on flow in Alameda Creek downstream of Niles Canyon. The impacts of the CDRP Variant would be similar to those of the Draft EIR project.

10.3.4 GEOMORPHOLOGY, SEDIMENT TRANSPORT, AND CHANNEL FORMATION

Baseline for Geomorphology Analysis

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-10 O-ACA&CBD1-111
O-ACA&CBD1-77 O-ACA&CBD2-24

- Geomorphology analysis uses an inconsistent baseline. [A-CDFG-10]
- Report switches “existing conditions” at its convenience for the sake of minimizing impacts. [O-ACA&CBD1-77]

Response

Several comments (A-CDFG-10, O-ACA&CBD1-77 and 111 and O-ACA&CBD2-24) state that the geomorphology analysis used an inconsistent baseline. The baseline for the analysis of the proposed project’s effects on geomorphology is the same as the baseline for the analysis of all other environmental elements—the condition of the affected environment at the time the Notice of Preparation for the CDRP EIR was made public (i.e., October 2005). However, data from an extended period of record were used to help establish the baseline for some environmental elements (e.g., data from an 82-year period of record was used to help establish the baseline for the hydrologic analysis). Because geomorphic change occurs slowly over long periods of time, the analysis of proposed project effects on sediment transport and channel form also considered historical data. For more information, please refer to the master response in Section 10.2, Baselines Used in the Environmental Analysis.

For millennia, flows in the Alameda Creek watershed were largely unaffected by human activities. Channel form was in dynamic balance with the flow regime. Construction of Calaveras Dam began in 1913, and the ACDD and the diversion tunnel extending to Calaveras Reservoir were built between 1925 and 1931. Operation of the water supply facilities altered the

flow regime, and channel form in Calaveras Creek and Alameda Creek has been adjusting to the changed circumstances for almost 100 years.

Operation of the ACDD and diversion tunnel substantially altered the flow regime in Alameda Creek. The gates to the tunnel remained open through the rainy months, and flows that did not exceed 650 cfs were diverted through the tunnel to Calaveras Reservoir. The ACDD also interrupted the natural movement of sediment down the creek, although annual sluicing was performed to ensure the downstream movement of sediment from behind the ACDD. For about 70 years (from the 1930s through 2001), until the DSOD limited the amount of water that could be stored in Calaveras Reservoir, operational practices remained fairly constant and the form of the channel adapted to the new flow and sediment movement regimes.

In most years from late 2001 until the present, more water spilled over the ACDD and flowed down Alameda Creek below the dam than it did before 2002. Peak flows were greater in magnitude and more frequent than before late 2001, because the gates on the tunnel were closed for longer periods of time. However, as shown in Table 4.6.14 (page 4.6-35), operation of the gates varied greatly from year to year between 2002 and 2009; Figure 4.6.10 (page 4.6-36) shows average daily flow at the ACDD based on gaging records for that same period and indicates the times that the gates were closed and flow was diverted to the tunnel. In the rainy season of 2001/2002, the gates were closed and all flow passed over the ACDD and down Alameda Creek. In the rainy season of 2002/2003, the gates were opened in mid-November, closed in mid-December, reopened in mid-February, and closed at the beginning of May. Some large flows spilled over the ACDD in that period and some were diverted to Calaveras Reservoir. In the 2003/2004 rainy season, the gates were opened at the end of September 2003 and not closed again for more than a year. All flows during that period, including a few large flows, were diverted into the tunnel. From October 2004 until March 2007, the gates remained closed. All the flows from the fairly wet rainy seasons of 2004/2005 and 2005/2006 and the fairly dry 2006/2007 rainy season passed over the diversion dam and flowed down the creek, including some large flows in the 2004/2005 and 2005/2006 rainy seasons. The gates remained open from March 2007 until February 2008. In the rainy season of 2007/2008, all flow up to 650 cfs was diverted to the tunnel during the winter months, but the largest peak in the season occurred after the gates had been closed. In the rainy season of 2008/2009, the gates were opened at the beginning of November and closed at the end of February, and again, the greatest peak of the season occurred after the gates had been closed.

As described above, no routine pattern of gate operation was in place between 2002 and 2009, and while more peak flows passed over the dam than had before that time, no new flow regime became established. Because the post-2002 period is short and the streamflow pattern irregular, it is unlikely that the geomorphic condition of the stream channel in 2009 was substantially different from its condition in 2002. The change in geomorphic condition between 2002 and October 2005, when the Notice of Preparation was issued and the baseline established, was

probably even less. Thus, although the baseline was established in October 2005, for the purpose of the geomorphic analysis it makes little difference whether the future with-proposed project condition is compared to the 2005 condition or to the pre-DSOD-restriction condition in 2002.

Effects of Intermediate Flows on Channel Formation

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-RWQCB-09 O-Acterra et al.-10

- The hydrology impact evaluation focused primarily on peak flows and undervalues the importance of intermediate flows. [A-RWQCB-09]
- The Draft EIR does not fully assess downstream changes in channel morphology. [O-Acterra et al.-10]

Response

A comment (A-RWQCB-09) points out that the Draft EIR discussion of the Draft EIR project's impacts on geomorphology and channel formation focuses on the effects of peak flows and does not discuss the effects of intermediate flows. The commenter notes that intermediate flows may be more influential in channel formation than peak flows and makes reference to Luna Leopold's effective work concept, reiterated in a recent report prepared for the Regional Water Quality Control Board, San Francisco Bay Region, by the consulting firm GeoSyntech. Leopold concluded that relatively frequent floods of moderate size move more sediment over time and have more effect on channel dimensions than infrequent, very large floods. The discharge or streamflow that has the greatest effect on sediment movement usually has a recurrence interval of 1.3 to 1.7 years and corresponds to "bankfull" flow. Bankfull discharge or flow is defined as the flow that fills the main channel to the point that water begins to spill out onto the floodplain. The concept holds true for alluvial streams with beds of silt, sand, or gravels. Infrequent large floods are probably more important than frequent, smaller floods in shaping the channel of bedrock or boulder-strewn streams.

A comment (O-Acterra et al.-10) states that the Draft EIR does not fully assess changes in channel morphology. To clarify the discussion of geomorphic processes and respond to Comments A-RWQCB-9 and O-Acterra et al.-10, the following changes are made to the EIR. Under the heading "Impact 4.6.9: Effects on channel formation and sediment transport along Calaveras Creek," the following text is inserted on EIR page 4.6-103 following the first full paragraph (new text is underlined):

Geomorphologists have concluded that discharges or streamflow with the greatest effect on sediment movement in an alluvial stream usually have a recurrence interval of 1.3 to 1.7 years and correspond to "bankfull" flow. Bankfull discharge or flow is defined as the flow that fills the main channel to the

point that water begins to spill out onto the floodplain. The flow regime in the short reach of Calaveras Creek downstream of Calaveras Dam and above Calaveras Creek's confluence with Alameda Creek was altered from its natural condition when construction of a dam at the current dam site began in 1913. The gates to the new dam were first closed in February 1916, and Spring Valley Water Company (the dam's former owner) was able to release stored water for diversion at the Sunol infiltration galleries and delivery to San Francisco. Since 1934, the flow regime has consisted of long periods with no flow in the creek other than seepage around the dam, short periods when precipitation over the reach of the creek below the dam produced runoff, and periods of a few weeks or months every few years when flows of 400 to 600 cfs were released to the creek from Calaveras Reservoir via the cone valve. Sometimes similar amounts of water flowed over the spillway at the same time as the cone valve was operating.

Flows occurring every 1 or 2 years in Calaveras Creek below Calaveras Dam are the result of precipitation over the watershed below Calaveras Dam. They are quite small and almost certainly move less sediment than the large and fairly frequent flows produced by the cone valve releases. The importance of intermediate-range flows in shaping this reach of creek is less than it would be in a creek reach with a more natural flow regime. Regardless of their importance, the intermediate-range flows that occur under the current condition would be altered very little by the proposed project.

Under the heading "Impact 4.6.10: Effects on channel formation and sediment transport along Alameda Creek downstream of the ACDD to the Calaveras Creek confluence," the following text is inserted on EIR page 4.6-104 following the second full paragraph (new text is underlined):

The flow regime in the reach of Alameda Creek downstream of the ACDD and above Alameda Creek's confluence with Calaveras Creek was altered from its natural condition when the diversion dam and tunnel were completed in 1931. Since 1931, the flow regime consisted of long periods with no flow in the creek other than seepage through and around the ACDD, short periods when precipitation over the reach of the creek below the diversion dam produced runoff, and short periods of high or moderate flow when water spilled over the diversion dam. The pattern of flow in the creek depends largely on whether the gates to the tunnel at the diversion dam are open or closed. Prior to the DSOD restriction on the capacity of Calaveras Reservoir, normal operating practice was to keep the gates open during the high flow season and, as a result, only flows in excess of 650 cfs passed over the diversion dam and flowed down Alameda Creek.

It is difficult to characterize the intermediate-range flows occurring every 1 or 2 years in Alameda Creek below the ACDD under the existing condition because no stable pattern of operation of the gates on the diversion tunnel at the ACDD was established between 2001, when the DSOD imposed restrictions on storage in Calaveras Reservoir, and the present. However, for the following reason, it is likely that intermediate-range flows with the proposed project would be similar to those that occur under the existing condition. Under the existing condition, the gates on the diversion tunnel were closed more frequently than they were before 2001 because there was less need to divert water to Calaveras Reservoir under

DSOD-restricted storage conditions. With the proposed project, the gates on the diversion tunnel would also be closed more frequently than they were before 2001 because of the ACDD operations plan that is part of the proposed project. Any difference between intermediate-range flows under the existing condition and with the proposed project is probably inconsequential because the importance of intermediate-range flows occurring every 1 or 2 years in shaping this reach of Alameda Creek is less than it would be in a creek reach with a more natural flow regime and a less-rocky substrate. Large, infrequent peak flows are probably the dominant influence on channel form in this reach of the creek.

Under the heading “Impact 4.6.11: Effects on channel formation and sediment transport along Alameda Creek downstream of the Calaveras Creek confluence,” the following text is inserted on page 4.6-105 following the first full paragraph (new text is underlined):

The flow regime in the reach of Alameda Creek downstream of the Calaveras Creek confluence was altered from its natural condition more than 90 years ago, when development of a regional water system in the Alameda watershed began. For many decades, the flow regime consisted of long periods with no flow in the creek other than seepage through and around the ACDD and Calaveras Dam, short periods when precipitation over the reaches of Calaveras Creek and Alameda Creek below the dams produced runoff, and short periods of high or moderate flow when water spilled over the dams or releases were made.

Intermediate-range flows occurring every 1 or 2 years in Alameda Creek between the Calaveras Creek and Arroyo de la Laguna confluences almost certainly move less sediment than the large and fairly frequent flows produced when water spills over or is released from the dams. As noted above, the proposed project would not substantially change the intermediate-range flows in Calaveras Creek below Calaveras Dam and in Alameda Creek below the ACDD from those that occur under the existing condition. Consequently, intermediate-range flows in Alameda Creek below the Calaveras Creek confluence would also not be substantially changed from the existing condition.

The CDRP Variant would affect intermediate range flows as follows. Intermediate range flows in Calaveras Creek below Calaveras Dam with the CDRP Variant would be the same as with the Draft EIR project and under the existing condition. Intermediate range flows in Alameda Creek below the ACDD would likely be somewhat greater than with the Draft EIR project, and therefore similar but somewhat greater than under the existing condition, because the maximum capacity of the diversion tunnel at the ACDD with the CDRP Variant would be 370 cfs, whereas with the Draft EIR project it would be 650 cfs. As a consequence, flows above 370 cfs would spill over the ACDD to Alameda Creek with the CDRP Variant, whereas flows would have to exceed 650 cfs before they spilled over the ACDD with the Draft EIR project. Thus, intermediate-range flows (those occurring every 1 or 2 years) would be greater with the CDRP Variant.

Effects of Peak Flows on Channel Formation

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-10	A-RWQCB-05	O-ACA&CBD1-111
A-CDFG-02	O-ACA&CBD1-77	

- The effect of high flow events on channel form can be dramatic. [A-CDFG-10]
- The proposed project would reduce peak flows and, as a result, would affect channel formation. [O-ACA&CBD1-77, O-ACA&CBD1-111]

Response

A comment (A-CDFG-10) points out the importance of peak flows in shaping channel characteristics, particularly in streams with a steep slope and a bedrock, partial bedrock, or boulder-strewn streambed. The EIR (page 4.6-44) addresses the importance of peak flows in shaping the stream channel downstream of the ACDD. The primary purpose of the 15-minute model, developed for use in the CDRP EIR, was to evaluate the effects of the proposed project on peak flows in Alameda Creek downstream of the ACDD. The results of the analysis are described in the EIR (pages 4.6-82 to 4.6-87) and shown in Figures 4.6.14a and 4.6.14b. The analysis was repeated for the CDRP Variant and the results are shown in Figures 9.10a and 9.10b.

Two comments (O-ACA&CBD1-77 and O-ACA&CBD1-111) state that the Draft EIR project would reduce peak flows and, as a result, would affect channel formation. See Section 10.3.3 above, under the heading “Flows Downstream of the ACDD,” for a description of how the Draft EIR project and the CDRP Variant would alter peak flows in Alameda Creek downstream of the ACDD. This subsection notes that, in the future, peak flows similar to those that occur under the existing condition would continue to pass the ACDD in many high flow months, and that these peaks would be sufficient to transport sediment downstream and maintain channel-forming processes.

Although total annual flow in Alameda Creek below the ACDD was greater in the years after the DSOD imposed the capacity restriction on Calaveras Dam in 2001, the effect on peak flows varied from year to year. Peak flows in the creek below the ACDD depend on the intensity of rainfall and on whether the gates to the diversion tunnel are open or closed. No regular pattern of gate opening and closing was established between 2001 and 2009, as shown in Table 4.6.14 (page 4.6-35) and discussed in Section 10.3.3 above. Once the Draft EIR project has been completed, peak flows in Alameda Creek below the ACDD would likely increase compared to pre-2001 conditions because the new operating protocol for the ACDD would result in an earlier seasonal closing of the gates on the diversion tunnel than typically occurred before 2001. The same would generally be true for the CDRP Variant. Although the CDRP Variant does not include the new operating protocol at the ACDD, with the CDRP Variant the SFPUC would seek

to minimize spills to Calaveras Creek, a goal that has a similar effect to the new operating protocol at the ACDD. Furthermore, because the maximum capacity of the diversion tunnel at the ACDD would be approximately 370 cfs, about 280 cfs less than its capacity under the Draft EIR project, a greater portion of the high flows descending Alameda Creek would spill over the ACDD and flow downstream with the CDRP Variant.

Sluicing Practices at the Alameda Creek Diversion Dam

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-RWQCB-08 A-CDFG-10

- The SFPUC's current sluicing practices at the ACDD could be harming biological resources and could cause exceedences of water quality objectives, resulting in adverse effects on beneficial uses. [A-RWQCB-08, A-CDFG-10]

Response

A description of the SFPUC's current sluicing practices at the ACDD is provided in the EIR (pages 4.6.33 and 4.6-34). There are two openings, or sluices, in the ACDD that are fitted with gates. When the gates are opened during a time of considerable flow in Alameda Creek, sediment that has accumulated behind the diversion dam is washed through the opening to the creek below the dam. The SFPUC sluices sediment through the diversion dam annually, typically in February.

An issue was raised with respect to the SFPUC's current practice of sluicing sediment from Alameda Creek. Two comments (A-RWQCB-08 and A-CDFG-10) state that current practices could be harming biological resources, causing exceedences of water quality objectives, and affecting beneficial uses. With the Draft EIR project, the current sluicing practices would continue unchanged. Consequently, consistent with CEQA, the Draft EIR did not analyze the environmental impacts of sluicing practices since under the Draft EIR project, there would be no change from the existing condition.

The CDRP Variant includes installation of a fish screen on the entrance to the diversion tunnel at the ACDD. To prevent blockage of the screen, the SFPUC would sluice sediment downstream every 4 to 8 weeks during the rainy season, rather than annually as it does under the existing condition. Because of this increase in the frequency of sluicing, sediment would be delivered to the reach of Alameda Creek below the ACDD in smaller quantities and at more frequent intervals than under the existing condition. The total volume of sediment sluiced annually would remain about the same, but the volume sluiced at any one time would be much smaller, which would likely improve water quality compared to existing conditions. Thus, the CDRP Variant would have a beneficial effect on water quality compared to existing conditions.

10.3.5 WATER SUPPLY IMPACTS

Effects on Other Water Purveyors

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACWD-03 O-ACA&CBD1-133a O-ACA&CBD2-29

- The Draft EIR does not provide an adequate analysis of downstream impacts on the ACWD's water supply. [A-ACWD-03]

Response

A comment (A-ACWD-03) requests a more thorough analysis of impacts on the ACWD's water supply, and disagrees with the conclusion that the effects of the Draft EIR project on downstream water supplies would be less than significant.

The effects of the Draft EIR project on water supplies are addressed in two locations in the EIR: in the fourth full paragraph beginning on page 4.6-97 and continuing on page 4.6-98; and in the section entitled "Impact 4.6.12: Changes in groundwater levels, flows, quality and supplies" on pages 4.6-105 and 4.6-106. The following revisions are made to the EIR to expand and improve the analysis.

The fourth full paragraph beginning on page 4.6-97 and continuing on page 4.6-98 is deleted (deletions are shown as ~~strike through~~):

~~The calculated flows for lower Alameda Creek with implementation of the project (both with and without the UACFGP) are within the range of current flows in this segment of the creek. Further, the flood control infrastructure and water supply facilities in lower Alameda Creek were constructed and operational well before the current DSOD restriction on Calaveras Reservoir required the SFPUC to reduce its diversion at the ACDD. Therefore, implementation of the project would not affect the operation of flood control infrastructure and water supply facilities in lower Alameda Creek.~~

In the section entitled "Impact 4.6.12: Changes in groundwater levels, flows, quality and supplies," the third paragraph on page 4.6-106 is deleted (deletions are shown as ~~strike through~~):

~~Downstream of the Sunol Valley, Alameda Creek recharges the Niles Cone Aquifer. As discussed under Impact 4.6.7, wet weather flows in lower Alameda Creek would be reduced compared to the current baseline and increased in comparison to historical conditions (pre DSOD restriction) in place at the time of the construction of the diversion facilities in lower Alameda Creek.~~

This deleted text is replaced with the following (new text is underlined):

The ACWD obtains about half of its water supplies from the Niles Cone Groundwater Basin. The groundwater basin is recharged by runoff from the Alameda Creek watershed that percolates into the ground from Alameda Creek

as the creek leaves Niles Canyon. The ACWD releases some of its State Water Project water to Arroyo de la Laguna to supplement natural runoff and increase recharge of the Niles Cone Groundwater Basin.

The proposed project would affect flow in Alameda Creek in Niles Canyon. The changes in flow from the existing condition that are attributable to the proposed project, and assuming no UACFGP in the Sunol Valley, would be similar to the average monthly and annual changes in flow shown in Tables 4.6.20 and 4.6.21 (pages 4.6-91 and 4.6-92) for Alameda Creek below its confluence with Calaveras Creek. This is because data from the series of USGS gages on Alameda Creek show that most of the water flowing down Alameda Creek immediately below its confluence with Calaveras Creek reaches Niles Canyon. Consequently, the proposed project would cause average annual flow in Alameda Creek at Niles Canyon to decrease by about 5,000 and 4,700 AF in wet and above-normal years and increase by about 1,000 AF, 5,800 AF, and 6,400 AF in normal, below-normal, and dry years, respectively. Averaged over all years, annual flow would increase by about 670 AF. The proposed project would decrease flow in Alameda Creek at Niles Canyon in some months of wetter years and increase it in most other months. The percentage changes in flow in Alameda Creek in Niles Canyon would be smaller than those shown in Tables 4.6.20 and 4.6.21 because, as a result of tributary inflow, total annual flow in Alameda Creek in Niles Canyon is about three times the average annual flow below its confluence with Calaveras Creek. Overall, the proposed project would have little effect on the availability of water for recharge to the Niles Cone Groundwater Basin and on ACWD's water supply.

The SFPUC plans to build the UACFGP in the Sunol Valley to recover some of the water that would be bypassed or released to Alameda Creek from the ACDD and Calaveras Reservoir. The effects of the UACFGP together with those of the proposed project are described in the cumulative impacts section of this EIR (Vol. 2, Chapter 6, Section 6.2.3.4, pages 6-32 through 6.35). The effects of the UACFGP on the environment, including effects on ACWD's water supply, will be examined in more detail in a separate EIR on that project. The CEQA environmental review of the UACFGP is expected to begin in 2011.

In Section 6.2.3.4, Hydrology, the second paragraph on page 6-33 is modified as follows. Deleted text is shown in strikethrough and new text is underlined.

Operation of the UACFGP, Cumulative Project No. 8 in Table 6.1, would affect flow in Alameda Creek downstream of the UACFGP. The UACFGP would withdraw up to 20 cfs of flow in Alameda Creek that would be bypassed or released upstream from the ACDD and/or Calaveras Dam to meet the MOU flow requirements. The impact on Alameda Creek would be moderated downstream of the confluence ~~once the creek joins with Arroyo de la Laguna (ADLL) by the additional of flow from that stream in the ADLL.~~ The segment of Alameda Creek that would experience the most substantial proportional reduction in flow as a result of the UACFGP ~~project~~ would be from the confluence with San Antonio Creek to the confluence with the ~~ADLL~~ Arroyo de la Laguna, approximately 1.7 miles of creek.

Comment A-ACWD-3 includes some calculations of potential reductions in flow in Alameda Creek below Niles Canyon based on HH/LSM results contained in Appendix D of the EIR. The San Francisco Planning Department has not attempted to repeat the calculations contained in the comment. The EIR contains an evaluation of the effects of the Draft EIR project on flows in Alameda Creek below Niles Canyon based on an 82-year period of hydrologic record.

After the Draft EIR was published, the SFPUC began considering a variant of the Draft EIR project. The CDRP Variant and its potential environmental impacts are described in Chapter 9, Sections 9.2 and 9.3 of this Comments and Responses document. The CDRP Variant includes proposed instream flow schedules that replace the flow schedules for resident trout and steelhead that are part of the Draft EIR project. The SFPUC would have to make greater bypasses and releases from its dams to meet the proposed instream flow schedules than it would with the flow schedules for the Draft EIR project. In addition, the CDRP Variant includes installation of a fish screen on the entrance to the diversion tunnel at the ACDD, which would limit diversions at the ACDD to a maximum of approximately 370 cfs, which is 280 cfs less than the current maximum diversion rate and the maximum diversion rate with the Draft EIR project of 650 cfs. As a result, the CDRP Variant would increase flow in Alameda Creek below its confluence with Calaveras Creek by an annual average of about 5,000 AF. Even if some of this increase in flow is lost to percolation between the Calaveras Creek confluence and Niles Canyon, as is expected, the CDRP Variant is likely to increase flow in the creek below Niles Canyon and increase the amount of water available for recharge to the Niles Cone.

10.3.6 CUMULATIVE IMPACTS

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACWD-02	O-ACA&CBD1-15	O-ACA&CBD1-103
A-ACPWA-28	O-ACA&CBD1-55	O-ACA&CBD1-133a

- The Filter Gallery Project should be included as part of the CDRP project description. [A-ACWD-02]
- The EIR should include a more thorough analysis of the cumulative impacts associated with the Filter Gallery Project. [O-ACA&CBD1-15]

Response

Two commenters disagree with the way the proposed Filter Gallery Project was treated in the Draft EIR. The San Francisco Planning Department determined that the most efficient way to comply with CEQA requirements for the WSIP was to prepare a program EIR on the overall plan and then a sequence of individual project-level EIRs on individual WSIP facility improvement projects. The WSIP PEIR was certified in October 2008, and the SFPUC adopted the Phased WSIP following certification of the PEIR. The PEIR addressed the overall effects of all WSIP

components, including the CDRP and the Filter Gallery Project, at a programmatic level; the PEIR also included a project-level analysis of the overall water supply and system-wide operations associated with the WSIP. The San Francisco Planning Department expects that project-level CEQA review of the Filter Gallery Project will begin in 2011.

The CDRP EIR includes the Filter Gallery Project as a cumulative project (see Vol. 2, Chapter 6, Section 6.1, page 6-14), and the cumulative effects of the Filter Gallery Project in combination with the CDRP on downstream flows in Alameda Creek are discussed in Section 6.2.3.4 (page 6-33). The level of detail in which the Filter Gallery Project is evaluated meets or exceeds CEQA requirements for cumulative impacts.¹² Nothing in CEQA requires that the San Francisco Planning Department conduct its project-level environmental review of the Filter Gallery Project as part of the project-level review of the CDRP. Although the two facility improvement projects of the WSIP are related, they are nevertheless distinct components of the SFPUC's regional water system, and the San Francisco Planning Department therefore has discretion under CEQA to prepare separate project-level environmental documents for the two projects. Because the planned improvements to the SFPUC's regional water system were the subject of a programmatic analysis (the WSIP PEIR, which addressed the relationship of proposed improvements to one another), the San Francisco Planning Department did not "piecemeal" the analyses by undertaking separate project-level environmental reviews of the CDRP and the Filter Gallery Project.

A commenter (A-ACWD-02) states that the Draft EIR does not contain an analysis of the effects of the CDRP on flow in Alameda Creek in the absence of the Filter Gallery Project. The EIR contains a quantitative analysis of the combined effects of the CDRP and Filter Gallery Project on flow in the creek, but it also contains a qualitative discussion of the differences in effects between the CDRP with the Filter Gallery Project and the CDRP alone. The discussion has been clarified and made more quantitative as shown above in Section 10.3.3, in the subsection entitled "Flow in Alameda Creek Downstream of Arroyo de la Laguna."

When the project-level EIR for the Filter Gallery Project is prepared, it is expected that additional modeling will be conducted to better quantify the Filter Gallery Project's effect on flow in Alameda Creek.

REFERENCES

San Francisco Planning Department. 2008. Final Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program, MEA File No. 2005.0159E, SCH# 2005092026, certified October 30, 2008.

¹² CEQA Guidelines Section 15130(b) et seq. sets forth requirements for the discussion of cumulative impacts.

San Francisco Public Utilities Commission (SFPUC). 2010. Memorandum for Ellen Levin from Amod Dhakal entitled *Assessment of Incremental Impact on SFPUC's Water Supply due to Proposed New Instream Flow Releases in Calaveras and Alameda Creeks in Comparison with Adopted WSIP Schedule*. August 2010.

10.4 FISHERIES

10.4.1 INTRODUCTION

Overview

This master response addresses comments on the Calaveras Dam Replacement Project (CDRP) Environmental Impact Report (EIR) related to the adequacy of the impact analysis and mitigations provided for the CDRP's effects on fisheries and aquatic habitat, including effects on Central California Coast steelhead (steelhead) in the context of a future cumulative scenario. Comments concerning fisheries as they related to hydrology and water resources modeling are partially addressed in this master response, but refer to the master response presented in Section 10.3, Hydrology, for detailed discussion. Comments concerning the environmental baseline are also partially addressed in this master response, but refer to the master response presented in Section 10.2, Baseline Used in the Environmental Analysis, for additional discussion.

Project Variant

After the Draft EIR was published, the San Francisco Public Utilities Commission (SFPUC) developed a variant of the proposed project that incorporates fishery enhancements and other project refinements in response to ongoing permit coordination with regulatory agencies and as part of the continuing design process. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. The CDRP Variant is similar to the project described in the Draft EIR (referred to herein as the "Draft EIR project"), but it includes a number of additional features intended to improve conditions for native fishes, and that would affect the fishery issues addressed in the EIR. Where appropriate, this master response addresses these fishery issues for both the Draft EIR project and the CDRP Variant.

The additional fishery enhancements that have been incorporated into the CDRP Variant are summarized below.

- **Instream Flow Schedules.** The SFPUC, in coordination with the National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG), would implement two minimum instream flow schedules, one below the Alameda Creek Diversion Dam (ACDD) and one below Calaveras Dam. The flow schedules are designed to maintain and enhance fish habitats for resident trout and other native species, including steelhead.
- **Fish Ladder at the Alameda Creek Diversion Dam.** A 650-foot-long fish ladder would be constructed along the north bank of Alameda Creek, skirting the ACDD, to

- provide future restored populations of steelhead with access to spawning and rearing habitat upstream of the ACDD.
- **Fish Screen for the Alameda Creek Diversion Tunnel.** A fish screen facility and associated power system would be constructed at the ACDD to prevent fish from being transported from upper Alameda Creek to Calaveras Reservoir through the Alameda Creek Diversion Tunnel.
 - **Fish Screens at Calaveras Dam.** The existing fish screens would be replaced with new screens on the lowest adits (Adits #1 and #2) to improve protection for fish against entrainment/impingement.
 - **Adaptive Management Implementation Plan for Central California Coast Steelhead.** The SFPUC would implement the Adaptive Management Implementation Plan (AMIP) as part of its commitment to restore steelhead in the southern Alameda Creek watershed. In addition to the physical facilities and flows described above as part of the additional fishery enhancements, the AMIP includes monitoring programs, studies, reporting, and other management actions.

Appendix N provides a more detailed description of the proposed instream flow schedule and the AMIP.

Master Response Organization

This master response is organized by the following subtopics:

- 10.4.2 Flows Proposed as Part of the Draft EIR Project and CDRP Variant
- 10.4.3 Native Fish Restoration as One of the Project Purposes and Goals
- 10.4.4 Construction-Related Effects on Calaveras Creek and Calaveras Reservoir
- 10.4.5 Current and Proposed Operations of the ACDD and Calaveras Dam
- 10.4.6 Other Anadromous Fish Species in Alameda Creek
- 10.4.7 Future Cumulative Analysis of Effects on Steelhead

Commenters

Commenters¹³ that addressed this topic include:

Agencies

- National Marine Fisheries Service (A-NMFS)
- California Department of Fish and Game (A-CDFG)
- California Regional Water Quality Control Board, San Francisco Bay Region (A-RWQCB)

¹³ As described in Section 8.4, Organization of Comments and List of Commenters, the code associated with a particular commenter reflects the type of commenter (whether an agency – A, organization – O, or individual – I) and the acronym or name assigned to the commenter (e.g., A-ACPWA is the commenter code for Alameda County Public Works Agency).

- Alameda County Public Works Agency (A-ACPWA)
- Alameda County Water District (A-ACWD)
- East Bay Regional Park District (A-EBRPD)
- Guadalupe/Coyote Resource Conservation District (A-GCRCD)
- San Francisco Board of Supervisors (A-SFBOS)
- San Francisco Planning Commission (A-SFPC)

Organizations

- Alameda Creek Alliance (O-ACA)
- Alameda Creek Alliance / Center for Biological Diversity (O-ACA&CBD1)
- Lippe Gaffney Wagner LLP (on behalf of Alameda Creek Alliance and Center for Biological Diversity) (O-ACA&CBD2)
- Bay Area Conservation Organizations (O-Acterra et al.)
- American Fisheries Society, California-Nevada Chapter (O-AFS)
- Ohlone Audubon Society (O-AudOh)
- Weinberg, Roger, and Rosenfeld (on behalf of Carpenters Union Local 713) (O-CL713)
- Golden West Women Flyfishers (O-GWWF)
- Guadalupe/Coyote Resource Conservation District (O-GCRCD)
- Grizzly Peak Fly Fishers (O-GPFF)
- League of Women Voters of the Bay Area (O-LWVBA)
- Northern California Council of Federation of Fly Fishers (O-NCCFFF)
- Operating Engineers Local 3 (O-OpEng3)
- Sierra Club, San Francisco Bay Chapter (O-SierraC)
- Tuolumne River Trust (O-TRT)

Individuals

- Atkinson, R.
- Bickenstaff, J.
- Cate, C.
- Cant, J.
- Carroll, J.
- Epp, W.
- Gargas, D.
- Graber, D.
- LaCommare, B.
- Lynn, M.
- Means, R.
- Meghrouni, S.
- Reazer, D.
- Richardson, M.
- Roy, J.
- Sargent, G.
- Urquhart, K.
- Werning, K. and C.
- Workman, J.

EIR Section Reference

The EIR describes the Draft EIR project, evaluates impacts on fisheries and aquatic habitat, presents mitigation measures to reduce or eliminate impacts, and discusses future fishery habitat enhancement projects in the following locations: Vol. 1, Chapter 3 (Project Description); Vol. 1, Chapter 4, Section 4.5 (Fisheries and Aquatic Habitat), Section 4.6 (Hydrology), and Section 4.7 (Water Quality); Vol. 2, Chapter 5, Section 5.5 (Fisheries and Aquatic Habitat), Section 5.6 (Hydrology), and Section 5.7 (Water Quality); Vol. 2, Chapter 6, Section 6.2 (Cumulative Impacts); Vol. 3, Appendix J (Calaveras Dam Replacement Project: Future Cumulative Impacts on Steelhead); and Comments and Responses document, Chapter 9 (Project Variant) and Chapter 10, Section 10.4 (Fisheries).

10.4.2 FLOWS PROPOSED AS PART OF THE DRAFT EIR PROJECT AND CDRP VARIANT

Summary of Issues Raised by Commenters

The following are representative comments that address this issue:

A-NMFS-04	O-ACA&CBD1-16	O-AFS-4
A-NMFS-05	O-ACA&CBD1-22	O-AudOh2-3
A-CDFG-02	O-ACA&CBD1-33	O-AudOh2-4
A-CDFG-04	O-ACA&CBD1-34	O-AudOh2-6
A-CDFG-11	O-ACA&CBD1-42	O-CL713-01
A-RWQCB-05	O-ACA&CBD1-43	O-CL713-04
A-RWQCB-06	O-ACA&CBD1-47	O-CL713-05
A-ACPWA-12	O-ACA&CBD1-48	O-CL713-16
A-ACPWA-19	O-ACA&CBD1-49	O-CL713-17
A-ACPWA-21	O-ACA&CBD1-50	O-CL713-19
A-ACPWA-38	O-ACA&CBD1-69	O-GPFF-1
A-EBRPD-25	O-ACA&CBD1-73	O-GWWF1-1
A-GCRCD-01	O-ACA&CBD1-75	O-GWWF2-2
A-GCRCD-02	O-ACA&CBD1-85	O-GWWF2-3
A-GCRCD-03	O-ACA&CBD1-87	O-LWVBA-3
A-SFBOS-Daly-01	O-ACA&CBD1-91	O-NCCFFF1-1
A-SFBOS-Daly-02	O-ACA&CBD1-102	O-SierraC-2
A-SFBOS-Daly-03	O-ACA&CBD1-113	O-TRT1-1
A-SFBOS-Daly-04	O-ACA&CBD2-04	O-TRT2-1
O-ACA1-01	O-ACA&CBD2-20	I-EPP-1

O-ACA1-04	O-Acterra et al. -02	I-Gargas-1
O-ACA2-02	O-Acterra et al. -05	I-Graber-2
O-ACA3-03	O-Acterra et al. -11	I-Reazer-3
O-ACA&CBD1-03	O-Acterra et al. -15	I-Roy-1
O-ACA&CBD1-11	O-AFS-2	I-Urquhart-3
O-ACA&CBD1-12		

- The project should not rely on the 1997 CDFG Memorandum of Understanding (MOU) flows as the basis of mitigations for fishery and hydrology impacts. [O-ACA&CBD1-03]
- Flows should be based on recommendations from federal regulatory agencies, like the National Marine Fisheries Service. [O-LWVBA-3]
- The proposed flow schedules are inadequate for steelhead; adequate flows for migratory fish are needed. [A-ACPWA-38, A-GCRCD-1, A-SFBOS-Daly-1, O-TRT1-1, O-TRT2-1, O-GWWF2-2, O-GWWF2-03, O-ACA&CBD1-03, O-ACA&CBD1-42, O-ACA&CBD1-47, O-ACA1-1, O-ACA1-04, O-AFS-4, O-ACA2-2, O-ACA3-3, O-Acterra et al. -11, O-AFS-2, O-CL713-19, O-AudOh2-6, O-SierraC-2, I-Epp-1, I-Gargas-1]
- Develop and provide bypass flows based on special studies and put a plan in place to monitor compliance, effectiveness, and procedures for making modifications. [A-CDFG-2, A-CDFG-4]
- Conservation measures to benefit fish must be informed by an understanding of system impairment at biologically meaningful time scales (e.g. daily, hourly, and in relation to storm events). [O-ACA&CBD1-33]
- The EIR claim that “the more regular diversions and consistent bypass flows whenever flows are naturally present would be expected to contribute to improved reproductive success of those fish spawning within the reach” is false and unsupported; the CDRP proposes reducing flows for spawning compared to the baseline. [O-ACA&CBD1-113]
- The monitoring and adaptive management mitigation measure related to operation of the ACDD defers mitigation for up to 10 years. The impact on steelhead related to the 10-year monitoring period could be avoided by implementing suitable bypass flows. [A-CDFG-11, O-ACA&CBD1-43, O-ACA&CBD1-50]
- Operation of the rebuilt dam should allow for the restoration of steelhead trout to Alameda Creek. [A-SFBOS-Daly-2]
- The Final EIR needs to include mitigation such as minimum stream flows downstream of SFPUC dams that are consistent with those proposed by NMFS, that are adequate for upstream passage and out-migration of steelhead trout and Chinook salmon, and that mimic the natural hydrograph of the stream. The project should fully mitigate for the impacts of the operation of Calaveras and Alameda Diversion dams in blocking spawning and rearing habitat for steelhead, impairing flows in Alameda Creek, and changing downstream habitat. [A-SFBOS-Daly-4]
- Project flow releases should address the full range of steelhead habitat requirements. Revise the project and EIR such that flows are adequate to provide for adult attraction, upstream passage and smolt out-migration. The project proposes reducing flows for

spawning compared to the baseline and will not improve the reproductive success of spawning fish. [A-EBRPD-25, O-ACA&CBD1-16, O-ACA&CBD1-73, O-ACA&CBD1-87, O-ACA&CBD1-113, O-ACA2-2, O-Acterra et al.-05, O-Acterra et al.-15, O-CL713-16, I-Urquhart-3]

- Additional study is needed on flow needs of various stages of steelhead development to evaluate impacts of the proposed project and to determine thermal requirements for salmonids and other fish. [O-CL713-04, O-CL713-05]
- CDRP flow releases should support both adult and juvenile anadromous fish and flows should represent a natural hydrograph. [O-NCCFF1-1]
- The proposed flow schedules do not account for some of the primary constituent elements (PCEs) for steelhead habitat (specifically, adult attraction, upstream passage, periodic channel-forming flows, or flows for smolt outmigration). [O-ACA&CBD1-34, O-ACA&CBD1-42]

Response

Flow Schedules Proposed as Part of the Draft EIR Project

As stated in the EIR (Chapter 3, pages 3-63 to 3-70), the Draft EIR project includes a minimum flow release schedule for the current fish community and multiple water-year flow schedules to support steelhead. Section 3.6.5 (page 3-66 to 3-69) describes proposed flow releases for resident rainbow trout, and Figure 3.16 (page 3-68) graphically depicts this flow regime, which would be consistent with that prescribed in the 1997 MOU between the SFPUC and CDFG, included as Appendix H of the EIR. Section 3.6.6 (pages 3-69 to 3-70) describes proposed flow releases for steelhead; Table 3.7 (page 3-70) presents a summary of proposed instream flow schedules for steelhead. With the Draft EIR project, compliance with minimum instream flows would be determined at one point: immediately downstream of the confluence of Alameda and Calaveras Creeks. The flow schedules proposed for the Draft EIR project are summarized as follows:

- Flows previously described in the 1997 MOU between the SFPUC and CDFG (included as Appendix H of the EIR);
- Proposed instream flow schedule for steelhead shown in EIR Table 3.7 (page 3-70);
- Bypass flow of 10 cubic feet per second (cfs) at the ACDD described in footnote 1 of Table 3.7, which is the same as the Water System Improvement Program (WSIP) Program Environmental Impact Report (PEIR) Mitigation Measure 5.4.5-3a regarding minimum flows for resident trout in Alameda Creek; and
- Release of a minimum of 2 cfs from Calaveras Dam described in footnote 2 of Table 3.7 in the EIR.

Basis for Development of Draft EIR Project Flow Schedules

The Draft EIR project flow schedules were developed to meet the habitat requirements of the native fish community and were based on detailed flow and water temperature modeling and analysis (see *Alameda Creek Water Resources Study* [Bookman-Edmonston Engineering, Inc.

1995]), PHABSIM modeling studies (ETJV 2008, Appendix A), and review of several other studies, including:

- *Alameda Creek Aquatic Resources Monitoring Reports (1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007)* (SFPUC 1999, 2001, 2002a, 2002b, 2004, 2005, 2006, 2007, 2008, 2009)
- *An Assessment of the Potential for Restoration of a Viable Steelhead Population in the Alameda Creek Watershed* (Gunther et al. 2000)
- *Air and Water Temperature Monitoring within Alameda Creek: 2001–2002* (Hanson Environmental, Inc. 2002)
- *Alameda Creek Streamflow Study* (ENTRIX 2006)
- *Alameda Creek Population Recovery Strategies and Instream Flows Assessment for Steelhead* (McBain and Trush 2008)
- *CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead* (ETJV 2009)
- *Technical Memorandum: Assessment of Fish Upstream Migration at Natural Barriers in the Upper Alameda Creek Sub-watershed* (URS Corporation & HDR 2010a)
- *Technical Memorandum: Assessment of Fish Migration at Riffles in Sunol Valley Quarry Reach of Alameda Creek* (URS Corporation & HDR 2010b)
- *Final Technical Memorandum: Feasibility of Fish Passage at Calaveras Dam* (URS Corporation & HDR 2009a)
- *Final Technical Memorandum: Feasibility of Fish Passage at Alameda Creek Diversion Dam* (URS Corporation & HDR 2009b)

The purpose of the modeling and analysis described in the *Alameda Creek Water Resources Study* was to determine appropriate instream flows that could provide improved habitat conditions for native cold- and warm-water fish in Alameda Creek. The PHABSIM model was used to assess flow requirements for rainbow trout and steelhead spawning. Additional detail on the basis for developing flow schedules is provided below.

As discussed in Section 3.5 of the EIR, the proposed minimum flow schedules for the current fish community would be implemented immediately upon completion of construction of the Draft EIR project, and the multiple water-year flow schedules to support steelhead would be implemented when steelhead have regained access above the BART weir.

Contrary to assertions made in several comments (e.g., O-ACA&CBD1-03), the proposed flow schedules are not intended to serve as mitigation for fishery and hydrology impacts. Rather, the proposed flow schedules are part of the proposed operations of the Draft EIR project, and the impact analyses for fisheries and hydrology (Sections 4.5, 4.6, and 6.2.3.3) evaluate the implementation of the proposed flow schedules against the environmental baseline using the EIR's significance criteria.

As discussed above in Section 10.4.1, the CDRP Variant (described in Chapter 9) includes new flow schedules, a detailed description of which is provided below.

Proposed Instream Flow Schedules – CDRP Variant

Under the Variant, the SFPUC proposes to implement the proposed instream flow schedules shown in **Tables 10.4.1** and **10.4.2** and depicted in **Figure 10.4.1a** and **10.4.1b**. These flow schedules have been developed in consultation with NMFS and CDFG and would replace the flows proposed under the Draft EIR project (and summarized above).

Table 10.4.1: Proposed CDRP Variant Instream Flow Schedule in Alameda Creek Below the ACDD

Flow Schedule Application Period	Flow Requirements	Comment
Apr 1 – Nov 30	All unimpaired flow upstream of the ACDD.	No diversions from Alameda Creek to Calaveras Reservoir (ACDD gates closed).
Dec 1 – Mar 31	Up to 30 cfs, dependent upon unimpaired flows in Alameda Creek above the ACDD. Downstream flow requirements can be met through a combination of flows released through the fish ladder, ACDD bypass tunnel, and/or over the dam crest.	Diversion of up to 370 cfs from Alameda Creek to Calaveras Reservoir (ACDD gates open).

Source: SFPUC 2010.

Table 10.4.2: Summary of the Proposed CDRP Variant Instream Flow Schedules Below Calaveras Dam

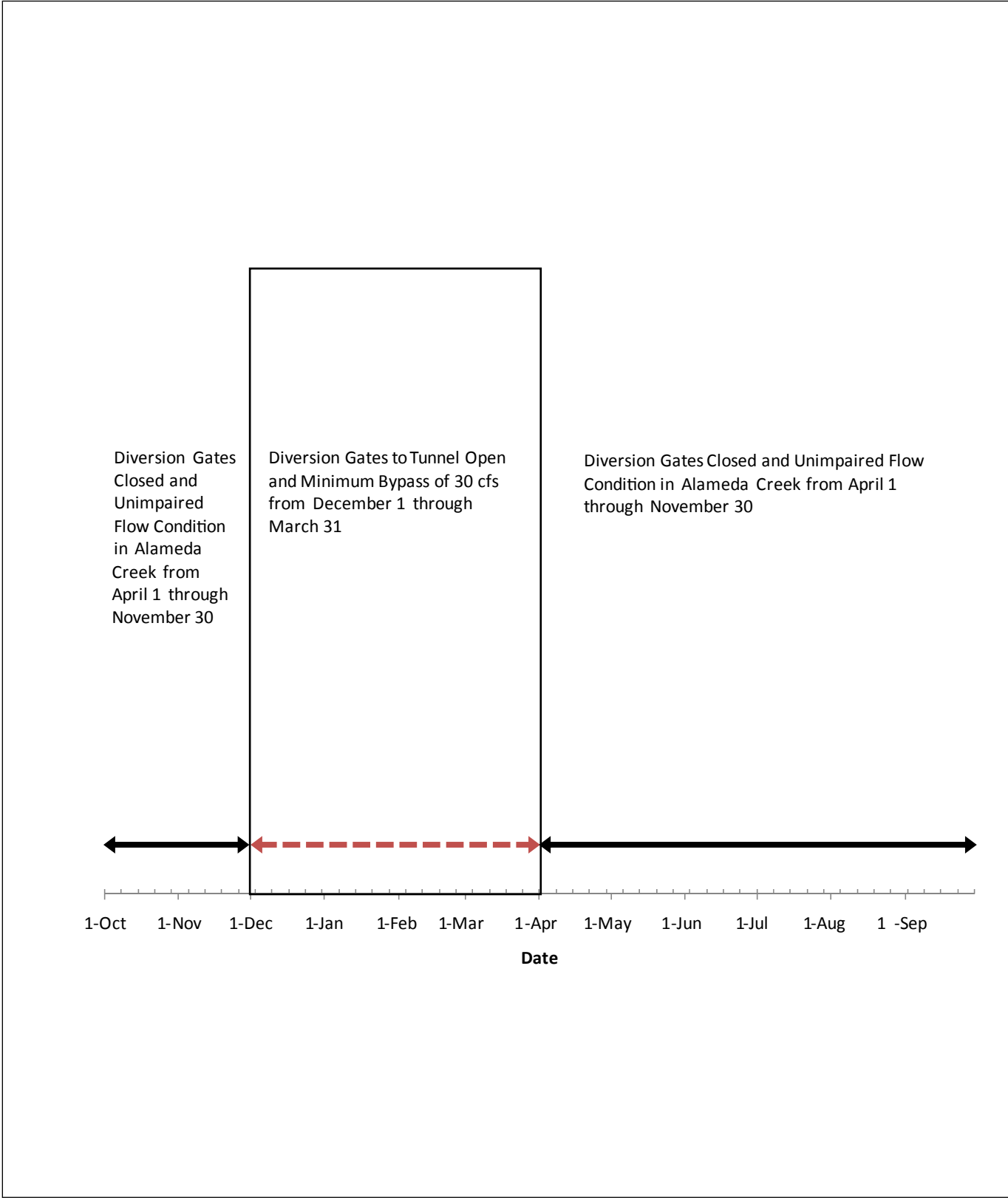
Flow Schedule Decision Date	Flow Schedule Application Period	Dry (Schedule B)¹		Normal/Wet (Schedule A)¹	
		Cumulative Arroyo Hondo Flows for Water-Year Classification (MG)	Flow Release (cfs)	Cumulative Arroyo Hondo Flows for Water-Year Classification (MG)	Flow Release (cfs)
N/A	October	N/A	7	N/A	7 ²
N/A	Nov 1 – Dec 31	N/A	5	N/A	5
Dec 29	Jan 1 – Apr 30	≤ 360	10 ²	> 360	12 ²
Apr 30	May 1 – Sept 30	≤ 7,246	7	> 7,246	12

Notes: MG = million gallons; cfs = cubic feet per second; N/A = not applicable; ≤ = less than or equal to.

¹ The water-year classification is based on monthly cumulative flows over 26 years of record at the U.S. Geological Survey gage on Arroyo Hondo, an unregulated tributary upstream of Calaveras Reservoir. Cumulative monthly streamflows at the Arroyo Hondo gage were ranked as exceedance probabilities and divided into two water-year types. “Dry” years have a >60% exceedance probability, and “normal/wet” years have a 0 to 60% exceedance probability.

² Flows would be ramped as shown in Table 10.4.3.

Source: SFPUC 2010.

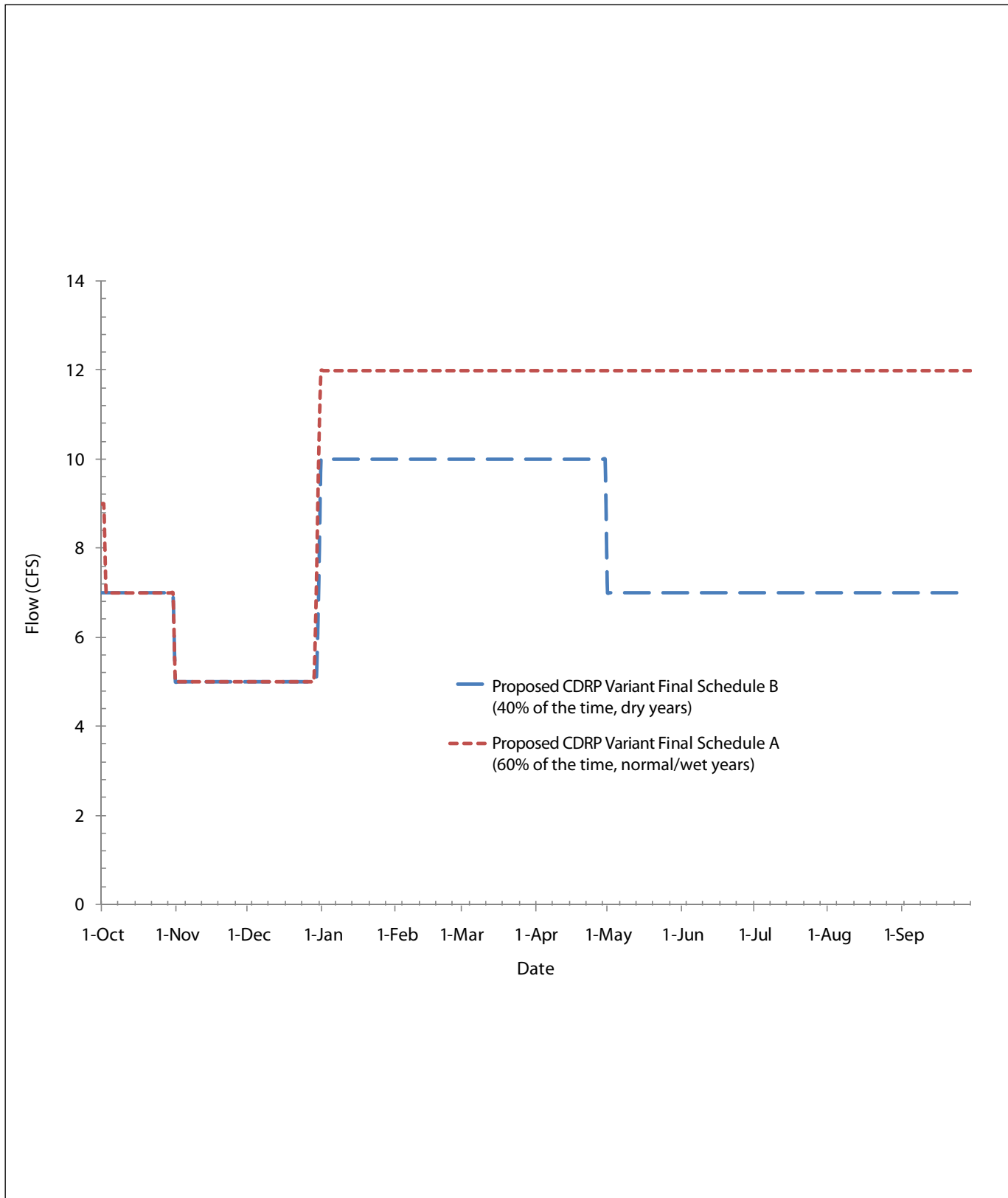


SOURCE: SFPUC, 2010

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 10.4.1a: PROPOSED CDRP VARIANT FLOW SCHEDULES IN ALAMEDA CREEK BELOW ACDD



SOURCE: SFPUC, 2010

In addition, in conjunction with the proposed AMIP described in Section 9.2.5 and in Section 10.4.7 below, the proposed instream flow schedules, combined with the fish screen at the Alameda Creek Diversion Tunnel, would supersede CDRP Mitigation Measures 5.5.5a and 5.5.5b regarding resident rainbow trout monitoring and resident rainbow trout adaptive management, respectively.

With the proposed instream flow schedule proposed under the Variant, there would be two compliance points. One is located below the ACDD (new streamflow gage to be installed by the USGS), and the other is at the existing U.S. Geological Survey (USGS) gage located below Calaveras Dam. Formerly, compliance with minimum instream flows was determined at one point only—at the USGS gage immediately downstream of the confluence of Alameda and Calaveras Creeks.

Instream Flows Below the Alameda Creek Diversion Dam under the CDRP Variant

Table 10.4.1 shows the proposed instream flow schedule below the ACDD. Under the proposed instream flow schedule, the measuring point for compliance would be located in Alameda Creek immediately below the ACDD. The flow schedule would require the SFPUC to close the gates to the Alameda Creek Diversion Tunnel between April 1 and November 30 of each year to allow the unimpaired flow naturally present in Alameda Creek to continue downstream past the ACDD, either through the bypass tunnel, the fish ladder, and/or over the dam crest. For the remaining months of the year, between December 1 and March 31, the SFPUC would open the gates to the diversion tunnel, but when water is present in Alameda Creek above the diversion dam, the SFPUC would ensure that a minimum flow of 30 cfs would continue down Alameda Creek, either through the bypass tunnel, the fish ladder, and/or the dam crest. The maximum rate of diversion to Calaveras Reservoir through the diversion tunnel would be reduced from the current 650 cfs to approximately 370 cfs due to the addition of a fish screen (described below). All flows in upper Alameda Creek upstream of the ACDD are natural, because there is no storage facility above the ACDD and the ACDD provides no storage of note. Thus, the proposed bypass flows would only be provided when water is naturally present in upper Alameda Creek. Implementation of the proposed bypass flows at the ACDD would improve spawning habitat for resident trout and future steelhead and would provide a more natural base-flow hydrology within approximately 16,000 linear feet of habitat in Alameda Creek above the confluence with Calaveras Creek.

Instream Flows Below Calaveras Dam under the CDRP Variant

Table 10.4.2 shows the instream flow schedule below Calaveras Dam. Under the proposed instream flow schedule, the measuring point for compliance would be located in Calaveras Creek immediately below the dam. Currently, there are no regularly scheduled releases to Calaveras Creek, with the exception of periodic testing of the cone valve, and there is some seepage to Calaveras Creek through the dam and geologic formations under and around the dam. Under the proposed flow schedule, the SFPUC would provide year-round releases from Calaveras Dam

ranging from 5 to 12 cfs, depending on the time of year and the water-year type. Flows below the replacement Calaveras Dam would be released from the proposed low-flow valves that would be installed for this purpose; these valves are described in the EIR (Section 3.4.2.3, page 3-31). The releases from Calaveras Dam would be ramped, as shown in **Table 10.4.3**.

Table 10.4.3: Ramping of Proposed Instream Flows Below Calaveras Dam

Dates	Dry (Schedule B) ¹ (cfs)	Normal/Wet (Schedule A) ² (cfs)
Oct 1 – Oct 2	7	9 (ramping down)
Oct 3 – Oct 31	7	7
Nov 1 – Dec 29	5	5
Dec 30	5	7 (ramping up)
Dec 31	7 (ramping up)	10 (ramping up)
Jan 1 – Mar 31	10	12
Apr 1 – Apr 30	10	12
May 1 – Sep 30	7	12

Notes: cfs = cubic feet per second.
¹ The threshold value for dry (Schedule B) and normal/wet years (Schedule A) is 60% exceedance probability; that is, 60% of the time cumulative flows in Arroyo Hondo would be higher than the dry-year thresholds identified in Table 10.4.2. The “dry” schedule would apply to 40% of all months.
² The “normal/wet” schedule would apply to 60% of all months.

Source: SFPUC 2010.

Using the water-year classification developed for this flow schedule, it is expected that any month would be classified as a “dry” month four times out of every 10 years, and “normal/wet” six times during the same 10-year period. Thus, based on the historical hydrology, the normal/wet flow schedule is expected to be in effect approximately 60 percent of the time.

Natural flows in Alameda Creek downstream of its confluence with Calaveras Creek are relatively low during summer and early fall, with reaches often drying up entirely. The available water is often not cold enough to meet salmonid minimum temperature requirements. Under the proposed flow schedule, summer flows would be provided through releases from Calaveras Dam, and it is expected that the water releases during this period would be approximately 15 degrees Celsius or less. The objective of the low-temperature releases would be to maintain rearing habitat in Alameda Creek below the confluence, as described in the AMIP below.

Basis for Development of CDRP Variant Flow Schedules

The proposed CDRP Variant flow schedules were developed to meet the habitat requirements of steelhead and the native fish community and were based on the same detailed flow and water temperature modeling and analysis (see *Alameda Creek Water Resources Study* [Bookman-Edmonston Engineering, Inc. 1995]), PHABSIM modeling studies (ETJV 2008, Appendix A),

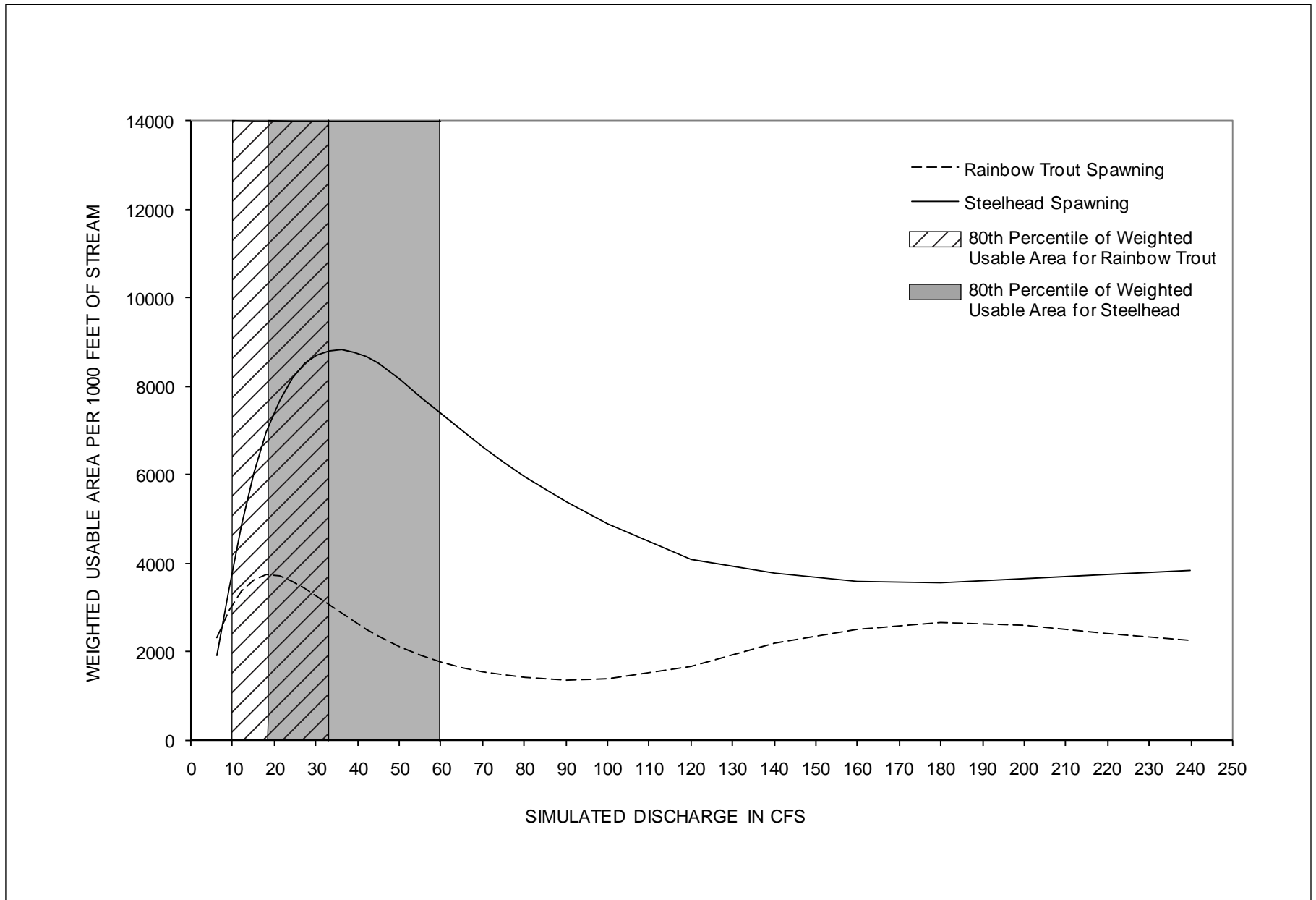
and review of other studies, described above for the Draft EIR project flow schedules. In addition, the CDRP Variant flow schedules also included extensive review of hydrologic data in coordination with NMFS and CDFG as part of the permitting process and an additional study was completed after the publication of the Draft EIR, Flow-habitat curves for steelhead, amphibians, and benthic macroinvertebrates on upper Alameda Creek, prepared for the Alameda Creek Fisheries Subcommittee (McBain and Trush 2010, SFPUC, and EBRPD 2010).

As described above, the purpose of the modeling and analysis described in the *Alameda Creek Water Resources Study* (Bookman-Edmonston Engineering, Inc. 1995) was to determine appropriate flow schedules that could provide improved habitat conditions for native cold- and warm-water fish in Alameda Creek. The PHABSIM model was used to assess flow requirements for rainbow trout and steelhead spawning.

The PHABSIM model results indicate that flows in the range of 18 to 60 cfs in Alameda Creek between the ACDD and the Calaveras Creek confluence and 21 to 80 cfs in Alameda Creek downstream of the Calaveras Creek confluence provide the most suitable habitat conditions (i.e., 80 percent or greater of weighted usable area) based on the relationship between streamflow and spawning habitat requirements (i.e., water depth, flow velocity, and substrate type and size) and quantity and quality of steelhead spawning habitat (see **Figure 10.4.2a: Relationship of Spawning Habitat to Flow for Rainbow Trout and Steelhead in Alameda Creek Upstream of the Calaveras Creek Confluence** and **Figure 10.4.2b: Relationship of Spawning Habitat to Flow for Rainbow Trout and Steelhead in Alameda Creek Downstream of the Calaveras Creek Confluence**). Based on the PHABSIM modeling, spawning flows of 20 to 42 cfs (depending on water-year type) would achieve 80 percent of greater weighted usable area for spawning. Analysis of this range of flows is presented in Section 4.5, Chapter 6, and Appendix J. A more detailed description of the flow assessments conducted for fisheries and aquatic habitats is provided in the *Calaveras Dam Replacement Project, Fisheries Technical Report* (ETJV 2008).

A map depicting anticipated rearing habitat functions associated with the proposed flow schedules under the CDRP Variant is provided in **Figure 10.4.3a: Map Depicting Rearing Habitat Functions Associated with Proposed Instream Flow Schedules**, and a map depicting anticipated spawning habitat functions associated with the Variant's proposed flow schedules is provided in **Figure 10.4.3b: Map Depicting Spawning Habitat Functions Associated with Proposed Instream Flow Schedules**.

As stated above and in the EIR, steelhead do not currently have access to the watershed above the BART weir. As a result, the cumulative impact analysis for steelhead examines the potential effects of the CDRP under a "future cumulative scenario" in which it is assumed that steelhead access to the watershed has been restored upstream of the BART weir. Detailed analysis of the proposed flow schedules under the Draft EIR project is provided in Chapter 6, page 6-23, and Appendix J. The EIR evaluates all functional life-stage habitat requirements for steelhead in the

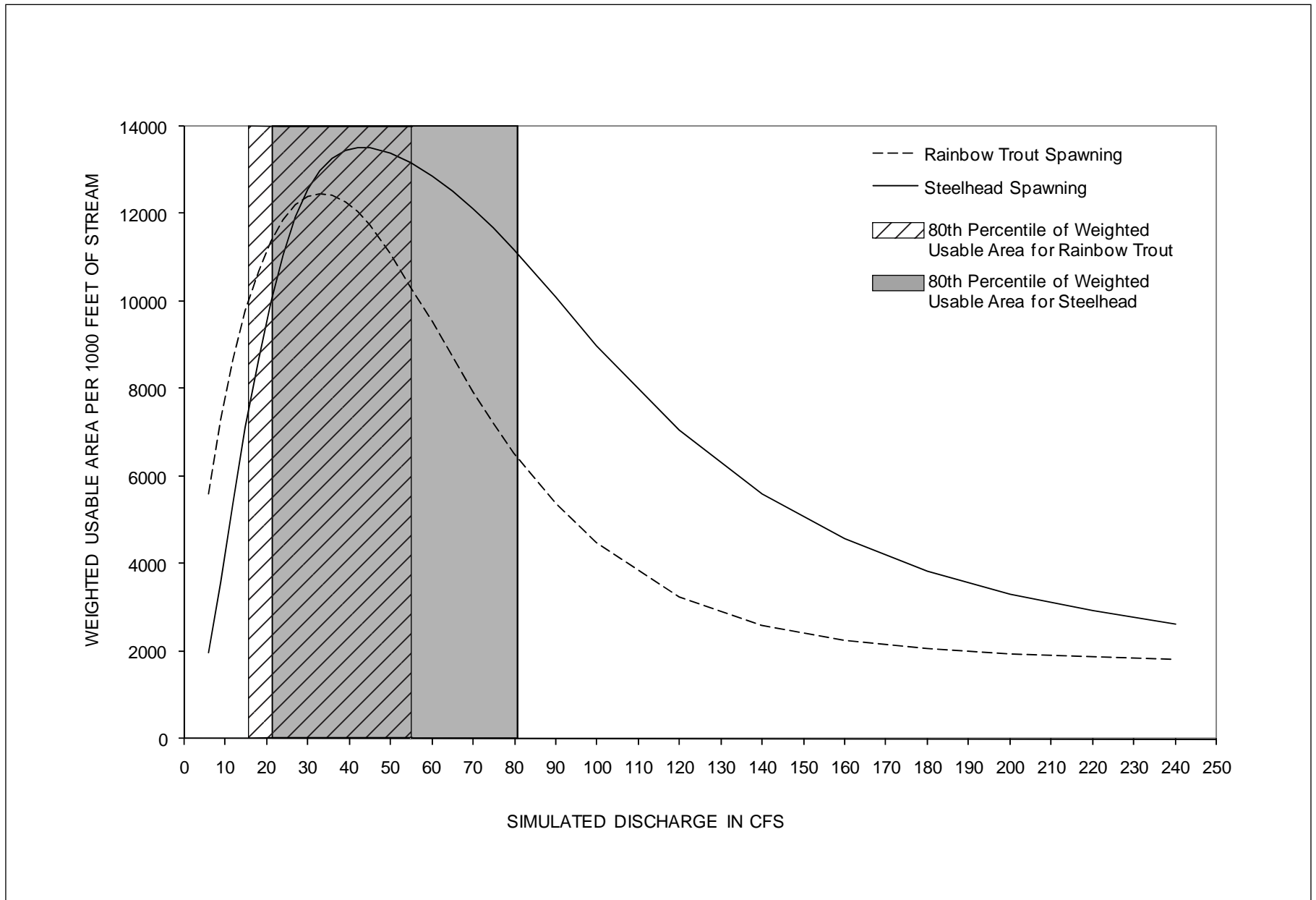


SOURCE: Adapted from ETJV 2008.

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 10.4.2a: RELATIONSHIP OF SPAWNING HABITAT TO FLOW FOR RAINBOW TROUT AND STEELHEAD IN ALAMEDA CREEK UPSTREAM OF THE CALAVERAS CREEK CONFLUENCE

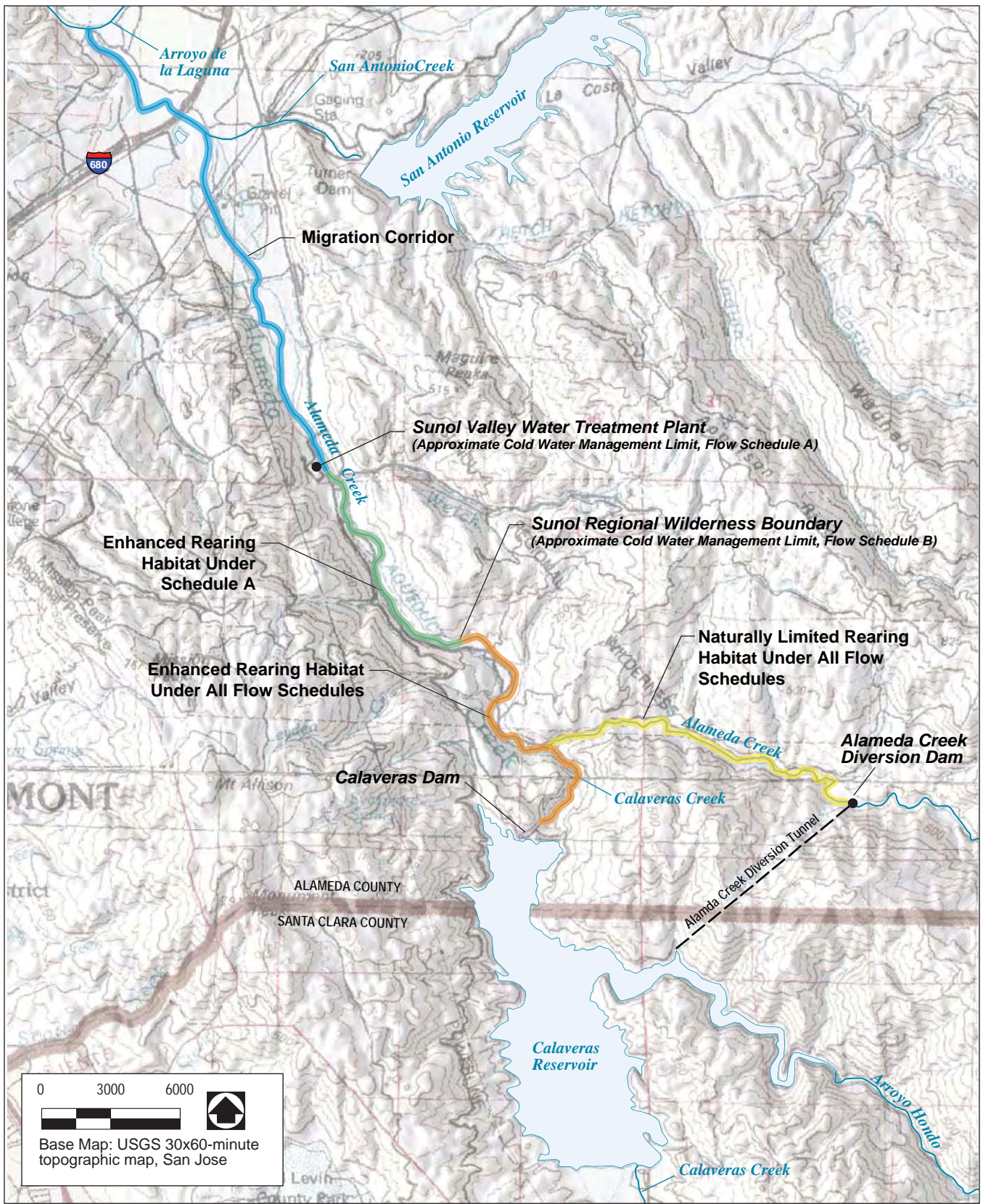


SOURCE: Adapted from ETJV 2008.

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 10.4.2b: RELATIONSHIP OF SPAWNING HABITAT TO FLOW FOR RAINBOW TROUT AND STEELHEAD IN ALAMEDA CREEK DOWNSTREAM OF THE CALAVERAS CREEK CONFLUENCE

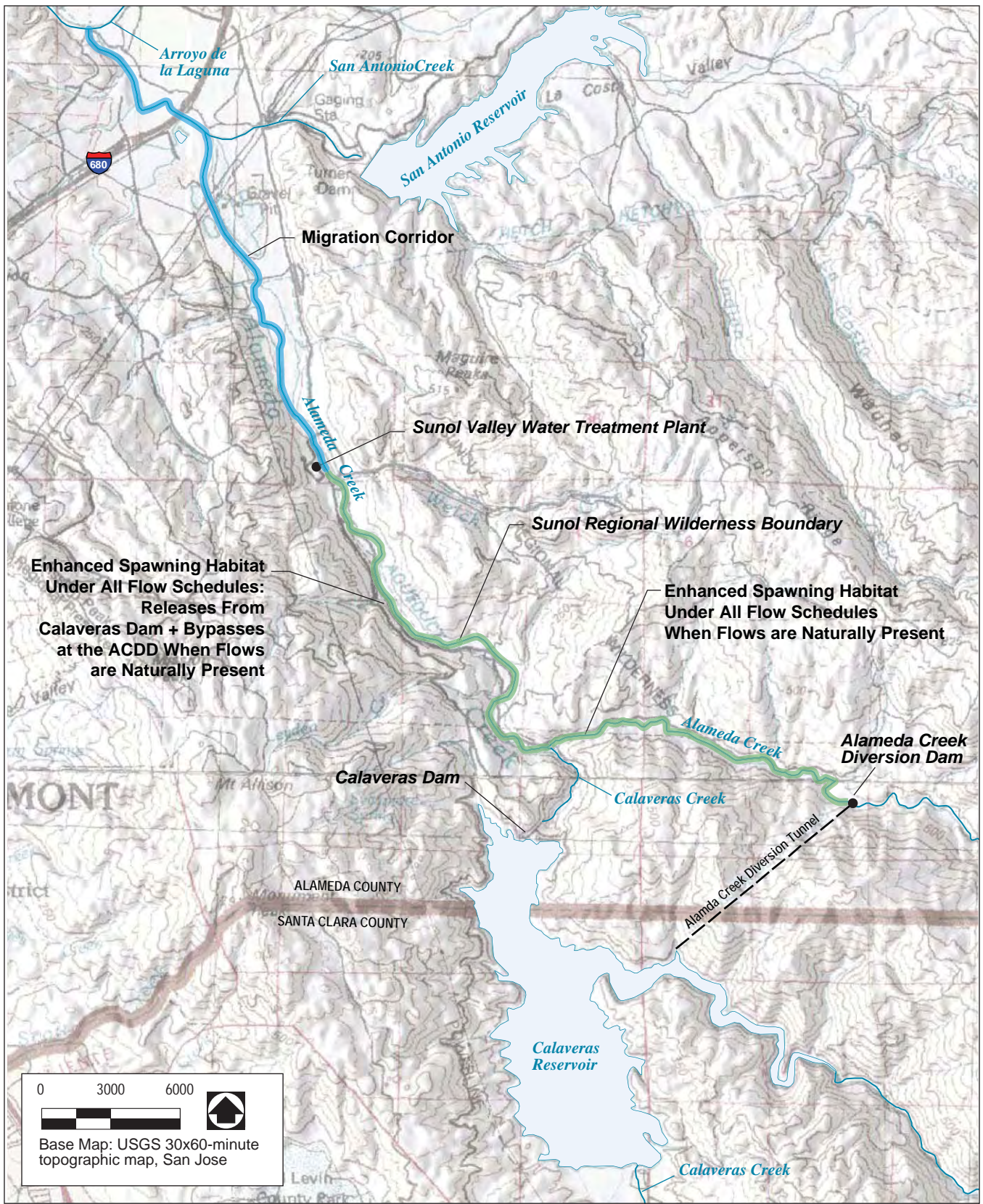


SOURCE: Adapted by AECOM 2010

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 10.4.3a: MAP DEPICTING REARING HABITAT FUNCTIONS ASSOCIATED WITH PROPOSED INSTREAM FLOW SCHEDULES



SOURCE: Adapted by AECOM 2010

CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 10.4.3b: MAP DEPICTING SPAWNING HABITAT FUNCTIONS ASSOCIATED WITH PROPOSED INSTREAM FLOW SCHEDULES

Alameda Creek watershed (i.e., spawning and egg incubation, rearing, and migration) and assesses potential effects throughout both the primary and extended study areas using detailed flow and water temperature modeling and analysis, PHABSIM modeling studies, review of other studies, and extensive review of hydrologic data in coordination with NMFS and CDFG that represents the best available science. The analysis of the proposed flow schedules under the CDRP Variant is presented in Chapter 9. These analyses demonstrate that both the Draft EIR project and CDRP Variant would improve steelhead habitat in the watershed by providing suitable hydrologic and temperature conditions to support steelhead spawning, egg incubation, and rearing throughout the primary study area. The improvements to steelhead habitat would occur by:

- Providing suitable water velocities and water depths during spawning and egg incubation periods through bypasses at the ACDD and/or releases from Calaveras Reservoir; and
- Reducing water temperatures, maintaining pool depths, and improving water quality during critical summer rearing periods through cold-water releases from Calaveras Reservoir.

The analyses necessarily rely on several assumptions; most notably that steelhead will have access to the watershed above the BART weir. This assumption, along with several others regarding reasonably foreseeable cumulative projects, creates a level of uncertainty regarding the prediction of future conditions. These uncertainties are described in Chapter 6, page 6-23, and Appendices J and N. While the proposed steelhead flow release schedules are expected to provide suitable habitat conditions to support steelhead migration, spawning, egg incubation, and rearing, the specific streamflow conditions needed to support future steelhead migration in upper

Alameda Creek are less certain at this time. For example, analysis of hydrologic patterns and processes presented in Chapter 6 and Appendix J indicate that precipitation regularly generates substantial flows that exceed the capacity of the Alameda Creek Diversion Tunnel, bypass the ACDD, and accumulate below the ACDD and Calaveras Dam. These flows are believed to provide suitable attraction and passage conditions for future adult and juvenile steelhead to successfully move throughout the watershed. However, there are uncertainties as to whether or not these events occur in the appropriate duration and timing necessary to allow sufficient numbers of steelhead to successfully migrate through the watershed. Further, as stated on page 6-30, there are several uncertainties regarding reasonably foreseeable projects that could affect future migration conditions. These uncertainties include:

- The effectiveness of the future slurry cutoff wall in reducing mining pit capture of surface water flows at the Sunol Quarry (SMP 30);
- The effectiveness of future habitat enhancements in addressing passage at the existing critical riffles along the segment of Alameda Creek adjacent to the Sunol Quarry (SMP 30);

- The amount of flow required to allow for steelhead passage in the area of the creek to be modified at the Pacific Gas and Electric Company (PG&E) gas pipeline concrete apron drop structure;
- The amount of flow required to allow for steelhead passage in the area of the BART weir and Alameda County Water District (ACWD) middle rubber dam;
- The amount of flow required to allow for steelhead passage in the area of the ACWD upper rubber dam; and
- The specific location and operational aspects of the Upper Alameda Creek Filter Gallery Project.

To address these uncertainties, the SFPUC, as part of its ongoing watershed management and operations, will continue to coordinate with the other project proponents, resource agencies, water resource management entities, and stakeholders during the development and implementation of these future projects to better understand how the proposed project would affect streamflow and other habitat conditions for steelhead. In addition, because steelhead are not currently present in the upper Alameda Creek watershed, important information about steelhead migration behavior in the watershed is limited. Additional monitoring will be required after steelhead have regained access to the upper watershed to fully understand the specific migration requirements for steelhead in Alameda Creek, such as the timing and specific triggers for migration under varying water-year conditions. To address these uncertainties, the SFPUC has proposed a monitoring and adaptive management plan as part of the ongoing Federal Endangered Species Act (FESA) Section 7 consultation. Under the Draft EIR project, monitoring and adaptive management would occur through implementation of Mitigation Measures 5.5.5a (Resident Rainbow Trout Monitoring) and 5.5.5b (Resident Rainbow Trout Adaptive Management), and under the CDRP Variant, a more comprehensive program would be implemented through the AMIP. The AMIP will address all other functional life-stage habitat requirements, in addition to migration, and provide clear performance metrics for each. The AMIP can be found in Appendix N.

Timing of Implementation of the Proposed Flow Schedules for Steelhead

Several comments express concern regarding the timing of implementation of the proposed multiple water-year flow schedules developed to support steelhead. The intent of the proposed flow schedules under the Draft EIR project was to implement the releases as soon as steelhead have access to the watershed (i.e., as soon as passage is provided at the BART weir).

As described in Chapter 9, under the Variant, the proposed flow schedules would be implemented immediately upon completion of construction activities. However, in the event that steelhead regain access to Alameda Creek above the BART weir during the construction period for either the Draft EIR project or the CDRP Variant, the SFPUC would attempt to meet the flow schedule for steelhead during the construction period. See also Section 10.4.4, Construction-related Effects on Calaveras Creek and Calaveras Reservoir, below for additional discussion on flow releases from Calaveras Dam during the construction period.

10.4.3 NATIVE FISH RESTORATION AS ONE OF THE PROJECT PURPOSES AND GOALS

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

O-ACA1-5	O-ACA&CBD1-16	I-Cate-1
O-ACA3-4	O-ACA&CBD1-67	I-Meghrouni-1
O-ACA&CBD1-1	O-AFS-6	

- The project should include steelhead/native fish restoration as one of its purposes and goals. [O-ACA1-5,O-ACA3-4, O-ACA&CBD1-1, O-ACA&CBD1-16, O-ACA&CBD1-67, O-AFS-6, I-Cate-1, I-Meghrouni-1]

Response

Comments on the Draft EIR requested that native fish restoration be included as one of the project purposes and goals. Project purposes and goals are within the purview of the project sponsor. *CEQA Guidelines* Section 15124(b) states that an EIR project description shall contain:

A statement of objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project.

The EIR presents the objectives and purpose of the project (see pages 3-2 to 3-8) and uses this information in the development of alternatives (see Chapter 7), consistent with the *CEQA Guidelines*. Although the specific project objectives of the CDRP do not address fish restoration, the CDRP is part of the SFPUC's WSIP, and the overall goals of the WSIP include "Enhance Sustainability," as noted on EIR page 3-2. This goal is described further in the WSIP PEIR to include the following system performance objectives:

- Manage natural resources and physical systems to protect watershed ecosystems;
- Meet, at a minimum, all current and anticipated legal requirements for protection of fish and other wildlife habitat; and
- Manage natural resources and physical systems to protect public health and safety (San Francisco Planning Department 2008).

Thus, as part of the overall WSIP, the SFPUC includes protection of fish habitat as one of its objectives. In addition, the SFPUC is currently engaged in numerous activities related to fishery protection and restoration, including activities being conducted as part of its watershed monitoring programs, participation in the Alameda Creek Fisheries Restoration Workgroup, and actions under the Watershed Enterprise Environmental Stewardship Policy (see EIR page 4.2-7).

10.4.4 CONSTRUCTION-RELATED EFFECTS ON CALAVERAS CREEK AND CALAVERAS RESERVOIR

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-CDFG-2	O-ACA&CBD1-13	O-ACA&CBD2-18
A-CDFG-6	O-ACA&CBD1-14	O-ACA&CBD2-21
A-CDFG-14	O-ACA&CBD1-54	O-ACA&CBD2-27
A-CDFG-18	O-ACA&CBD1-99	O-ACA&CBD2-30
A-CDFG-32	O-ACA&CBD1-104	O-ACA&CBD2-43
A-ACPWA-38	O-ACA&CBD1-105	O-ACA&CBD2-49
A-EBRPD-A-67	O-ACA&CBD1-121	I-Cant-4
A-SFPC2-2	O-ACA&CBD2-16	
O-ACA&CBD1-05	O-ACA&CBD2-17	

- The EIR does not adequately analyze or mitigate construction-related impacts on fish and aquatic habitats below Calaveras Dam and/or within Calaveras Reservoir (including the Haul Route Option 2). [A-SFPC2-02, O-ACA&CBD1-05, O-ACA&CBD1-13, O-ACA&CBD1-104, O-ACA&CBD2-21, O-ACA&CBD2-49, I-Cant-04]
- Minimum bypass flows need to be maintained below the dam in Alameda and Calaveras Creeks during construction. Water could be provided to Calaveras Creek below the dam by use of a large screened hose or pipe from the reservoir into the creek and creating a siphon. [A-CDFG-14, A-CDFG-32]
- The loss of habitat in Calaveras Creek within the footprint of the replacement dam should be considered significant, and mitigation should be provided. [O-ACA&CBD1-99]
- It is speculative to make the determination that trout are not present in the section of Calaveras Creek within the replacement dam footprint. If adequate flow were present CDFG would likely consider this high quality aquatic habitat. [A-CDFG-06]
- The Draft EIR does not accurately describe or analyze the issue of hydrologic connectivity between Calaveras Reservoir and Arroyo Hondo or mitigate associated project effects. [A-CDFG-18]
- The EIR fails to analyze the impacts on native fish below Calaveras Dam during the two shutdowns planned to occur during construction; the conclusion that seepage would provide hydrologic conditions that sustain the fish community during periods when there would be no releases lacks sufficient explanation. [O-ACA&CBD2-27]

Response

Temporary Construction-Related Effects on Aquatic Habitats Below Calaveras Dam

Comments on the Draft EIR raised concern that temporary, construction-related effects in aquatic habitats below Calaveras Dam were not adequately analyzed and that potentially significant

impacts were not mitigated to a less-than-significant level. Analysis of temporary, construction-related effects on fish and aquatic habitats below Calaveras Dam is provided in the EIR (Impact 4.5-4, starting on page 4.5-57). As stated in the EIR, significant effects on fish, aquatic habitats, and forage (e.g., aquatic macroinvertebrates) could result from increases in sedimentation and turbidity and/or through the release of and exposure to construction-related contaminants.

Because construction-related sediment discharges and increased turbidity or other contamination could temporarily degrade water quality and reduce or adversely affect fish habitat and fish populations in localized areas, the impact was found to be significant but mitigable. The impact would be reduced to a less-than-significant level with the development and implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP) that contains a comprehensive suite of Best Management Practices (BMPs) and other measures to avoid and minimize potential impacts (see Chapter 5, starting on page 5-18). As stated in the EIR, the SWPPP would be consistent with the requirements of the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction Activity. The San Francisco Bay Regional Water Quality Control Board (RWQCB), the primary agency involved in protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. The recommended BMPs, subject to review and approval by the RWQCB, are listed in the EIR. However, the EIR acknowledges that the measures themselves may be altered, supplemented, or deleted during the RWQCB's review.

As stated in the EIR, the outlet works at Calaveras Dam would be operational during construction, except during two consecutive summer construction seasons when the outlet works would be rebuilt and relocated. Potential measures to bypass, siphon, and/or pump water from the reservoir over or through the dam during the two periods when the outlet works would be non-operational are being explored; however, there are some obstacles to successful implementation. For example, pumping or siphoning water over the dam would be complicated by construction logistics and by the height of the dam relative to the reduced water level in the reservoir. Further, adequate cold water may not be present in the reduced pool and/or it may be infeasible to access. However, because the Calaveras Reservoir would need to be maintained at an operational elevation of between 690 and 705 feet during construction (EIR page 3-62), the ACDD gates would likely have to be closed for longer periods to keep the reservoir levels down during construction, thereby allowing more water to flow naturally down Alameda Creek. Also, the existing seepage flows (approximately 0.5 cfs) would continue to provide base flows to the creek during the two shutdown periods, similar to existing conditions. These base flows currently support the fish community downstream of the dam during summer periods. Conditions during the construction period would be very similar to those that currently exist.

Temporary Construction-Related Effects on Aquatic Habitats within Calaveras Reservoir

Comments on the Draft EIR raised concern that temporary, construction-related effects on aquatic habitats within Calaveras Reservoir were not adequately analyzed and that potentially significant impacts were not mitigated to a less-than-significant level. Analysis of temporary, construction-related effects on aquatic habitats within Calaveras Reservoir is provided in the EIR (pages 4.5-58 and 4.5-76). The analysis describes the potential effects on reservoir fishery resources that could result from construction activities, including in-water construction activities that would create disturbance (construction and operation of the Haul Route Option 2 – Barge Option) and operation of the reservoir during this period. Additional detailed analysis of effects associated with the construction of barge docking facilities and during barging operations is also provided in the EIR on page 4.7-55.

Disturbance from barge-option-related activities could affect and/or displace fish present during construction and alter habitat where the facilities are to be located. Disturbance to fish could result from pile driving, rock placement, dredging, turbidity, sedimentation, or contaminant release and exposure during construction and removal of barge facilities. Operation of the barges could also result in ongoing disturbance to fish during the project construction period.

Fish present in the immediate work area could be exposed and affected by sound pressure levels generated by timber and/or sheet pile driving. Timber (impact) and/or sheet (vibratory) pile-driving activities have been documented to generate peak pressures up to about 177 decibels (dB) and sound exposure levels (SEL)¹⁴ of 157 dB (California Department of Transportation 2009), which are well below peak thresholds of 206 dB and accumulated SEL levels of 187 db for lethal effects on fish (Fisheries Hydroacoustic Working Group 2008). Fish commonly respond to disturbance and any associated adverse habitat conditions by avoiding areas unless they have no other option. Additionally, Mitigation Measure 5.14.1, Noise Controls (see EIR Vol. 2, Section 5.14), would further reduce any potential effects associated with pile driving activities.

All of the disturbance effects are expected to be localized to the construction area and the reservoir would provide substantial areas of unaffected habitat to which fish could relocate, and the fish would not encounter any obstacles to escaping the barge docking sites; therefore, the temporary and localized loss or alteration of habitat would not likely result in a substantial loss of important fish species or a substantial change in the fish community.

Because construction-related disturbance could temporarily degrade water quality and reduce or adversely affect fish habitat and fish populations in localized areas, the impact was found to be

¹⁴ Sound exposure level (SEL) is defined as the constant sound level acting for one second, which has the same amount of acoustic energy as the original sound. Expressed another way, the sound exposure level is a measure of the sound energy in a single pile driver strike. Accumulated SEL is the cumulative SEL resulting from successive pile strikes.

significant but mitigable in the EIR. The impact would be reduced to a less-than-significant level with the implementation of proposed construction BMPs and SWPPP measures to minimize sediment and contaminant release and mobilization (see the discussion under Impact 4.7.1 in Section 4.7, and Mitigation Measure 5.7.1 in Section 5.7). Comments were raised concerning the need for additional avoidance and minimization measures beyond those described under Mitigation Measure 5.7.1. In response to these comments, the first paragraph of Mitigation Measure 5.7.1, Storm Water Pollution Prevention Plan (page 5-18) is revised as follows (deleted text is shown as ~~strike-through~~; added text is shown as underline):

Hazardous Materials Handling Near Water (includes measures for barges, if selected)

- In the SWPPP, specify appropriate construction and material transportation and stockpiling practices to reduce the potential for discharging sediment and other construction materials into Calaveras Reservoir or for ~~in~~ decreasing turbidity related to barging and the construction of temporary docking facilities (if used):
 - When not in use, store pile-driving equipment away from concentrated flows of stormwater, drainage courses, and inlets. Protect hammers and other hydraulic attachments from runoff and runoff by placing them on plywood and covering them with plastic or a comparable material prior to the onset of rain.
 - Place drip pans under all vehicles and equipment on docks, barges, or other structures over water bodies when the vehicle or equipment is expected to be idle for more than 1 hour.
 - Identify types of spill control measures to be employed, including the storage of materials and equipment. Ensure that staff is trained regarding the use of the materials, deployment and access of control measures, and reporting measures.
 - Use suction dredging, if feasible, to construct barge access channels.
 - Install a turbidity barrier around the work area during lane dredging and during the installation of jetties or docks and anchors.
 - Place dredged material directly into haul trucks that will dispose of the materials. Use lined haul trucks to prevent leaks or spills of sediment-laden water from dredged material. Do not allow temporary storage or dewatering of dredged spoils on site.
 - Test dredged materials during construction, and dispose of contaminated materials only at approved disposal facilities.
 - Establish and enforce barge and tugboat speeds and no-wake zones to decrease disturbance, erosional energy, and turbidity.
 - Maintain equipment that is stored or used in streambeds or on docks, barges, or other structures over water bodies to prevent leaks of oil, grease, fuel, coolants, and hydraulic fluids.
 - Secure all materials on the barge to prevent discharges to receiving waters via wind.

- Install steel decking over the barge pontoons to minimize the potential for clay materials to fall into the reservoir during transport and loading.
- Use sideboards to confine the clay materials on the barge and prevent the material from falling off the edge of the barge.
- Perform loading and unloading of the barges within designated areas that are isolated from the rest of the reservoir by turbidity barriers.
- Use barges / tug boats with dry exhaust systems and/or four-stroke engines to minimize combustion byproducts from entering the reservoir.

Additionally, as stated in the EIR (page 3-62), during construction of the replacement dam the reservoir would continue to operate in a manner similar to the current restricted operations, with the water level maintained between 690 and 705 feet in elevation. It would be operated to beneficially use the natural inflow whenever possible and to release water as necessary to the Sunol Valley Water Treatment Plant or Calaveras Creek to maintain the reservoir within these limits. As stated in the EIR, during construction the hydrologic connectivity and fish passage between the reservoir and Arroyo Hondo would continue to be limited by the low water elevation, the presence of a sediment wedge, and the lack of a defined channel in the drawdown zone.

In response to comments regarding the hydrologic connectivity condition, the first paragraph of page 4.5-77 is revised as follows (deleted text is shown as ~~strike through~~):

During construction, hydrologic connectivity and fish passage between the reservoir and Arroyo Hondo would still be limited due to low water elevation, sediment wedge, and lack of a defined channel in the drawdown zone. ~~While the adverse impacts on the fish passage created by this disconnection of Arroyo Hondo and the reservoir can be inferred, there are no data that confirm that the lack of hydraulic connectivity has affected or would significantly adversely affect trout or other fish populations in either the reservoir or Arroyo Hondo.~~

Nevertheless, no substantial change from the existing condition would occur during project construction (i.e., project-related operational reservoir surface elevations would not change the extent to which the drawdown condition creates fish passage limitations), and thus construction of the proposed project would have no impact on hydrologic connectivity and fish passage between the reservoir and Arroyo Hondo. The revised text shown above does not change the impact analysis or conclusion.

Lastly, during the construction period, the hypolimnetic oxygenation system would continue to be operated to maintain dissolved oxygen concentrations and other water quality parameters in the reservoir. Therefore, operation of the reservoir during construction would result in similar reservoir habitat conditions to those present under the existing condition.

Loss of Habitat in Calaveras Creek within the Footprint of the Replacement Dam

Comments on the Draft EIR raised questions that a loss of habitat in Calaveras Creek within the footprint of the replacement dam should have been identified as a significant impact. A

discussion of this potential impact is provided in the EIR (page 4.5-55). The impact analysis found that this segment of Calaveras Creek exhibits marginal habitat quality and has been heavily altered by construction of the original dam, and that the creek’s natural character has been changed by decades of dam operation by the SFPUC. Further, the only fish species documented as utilizing this segment of the creek are common to the watershed, including California roach, Sacramento sucker, prickly sculpin, pikeminnow, and bluegill (see Table 4.5.3 on page 4.5-31).

As a result, the analysis concluded that the permanent loss of marginal-quality aquatic habitat in a 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; therefore, based on CEQA significance criteria, the impact would not be considered significant. CEQA does not require mitigation for effects found not to be significant (CEQA Guidelines Section 15126(a)(3)).

10.4.5 CURRENT AND PROPOSED OPERATIONS OF THE ACDD AND CALAVERAS DAM

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-NMFS-05	O-ACA&CBD1-10	O-Acterra et al.-09
A-CDFG-02	O-ACA&CBD1-15	O-Acterra et al.-15
A-CDFG-04	O-ACA&CBD1-16	O-Acterra et al.-17
A-CDFG-06	O-ACA&CBD1-19	O-AFS-03
A-CDFG-07	O-ACA&CBD1-20	O-AFS-04
A-CDFG-08	O-ACA&CBD1-22	O-AFS-05
A-CDFG-10	O-ACA&CBD1-23	O-AudOh1-2
A-CDFG-11	O-ACA&CBD1-28	O-AudOh2-3
A-CDFG-12	O-ACA&CBD1-31	O-CL713-3
A-CDFG-15	O-ACA&CBD1-33	O-CL713-4
A-CDFG-18	O-ACA&CBD1-34	O-CL713-6
A-CDFG-33	O-ACA&CBD1-42	O-CL713-7
A-RWQCB-7	O-ACA&CBD1-43	O-CL713-8
A-ACWD-06	O-ACA&CBD1-45	O-CL713-9
A-ACPWA-18	O-ACA&CBD1-47	O-CL713-11
A-ACPWA-19	O-ACA&CBD1-48	O-CL713-12
A-ACPWA-21	O-ACA&CBD1-49	O-CL713-13
A-ACPWA-25	O-ACA&CBD1-50	O-CL713-14

A-ACPWA-38	O-ACA&CBD1-51	O-CL713-16
A-ACPWA-39	O-ACA&CBD1-53	O-CL713-17
A-ACPWA-40	O-ACA&CBD1-54	O-CL713-18
A-ACPWA-41	O-ACA&CBD1-68	O-GPFF-1
A-ACPWA-42	O-ACA&CBD1-73	O-GWWF1-2
A-ACPWA-45	O-ACA&CBD1-75	O-GWWF2-3
A-ACPWA-64	O-ACA&CBD1-79	O-LWVBA-3
A-ACPWA-69	O-ACA&CBD1-87	O-NCCFFF2-2
A-ACPWA-70	O-ACA&CBD1-100	O-SierraC-2
A-EBRPD-23	O-ACA&CBD1-102	O-TRT1-1
A-EBRPD-25	O-ACA&CBD1-113	O-TRT2-3
A-EBRPD-30	O-ACA&CBD1-114	O-TRT3-5
A-GCRCD-01	O-ACA&CBD1-115	I-Atkinson-02
A-GCRCD-02	O-ACA&CBD1-120	I-Blickenstaff-02
A-GCRCD-03	O-ACA&CBD2-4	I-Blickenstaff-03
A-SFBOS-Daly-01	O-ACA&CBD2-10	I-Cate-01
A-SFBOS-Daly-02	O-ACA&CBD2-13	I-Cant-02
A-SFBOS-Daly-03	O-ACA&CBD2-15	I-Cant-03
A-SFBOS-Daly-04	O-ACA&CBD2-16	I-Graber-02
A-SFBOS-Daly-05	O-ACA&CBD2-20	I-Epp-02
A-SFBOS-Daly-07	O-ACA&CBD2-21	I-Meghrouni-01
O-ACA1-01	O-ACA&CBD2-43	I-Reazer-02
O-ACA2-02	O-ACA&CBD2-44	I-Reazer-03
O-ACA3-03	O-Acterra et al.-02	I-Urquhart-02
O-ACA&CBD1-04	O-Acterra et al.-04	I-Werning-01
O-ACA&CBD1-09	O-Acterra et al.-05	

- The EIR provides no rationale for limiting analysis to the primary study area, downplays impacts in the extended study area, and does not disclose the extent of downstream water quality impacts on fisheries. [O-ACA&CBD2-16]
- The impact analysis should address the entire length of Alameda Creek to San Francisco Bay. [A-ACPWA-70]
- The EIR should include a baseline of unimpaired flows and pre-DSOD operations for full disclosure of the impacts of the project. [Numerous]
- The flow releases to Alameda Creek have not been in compliance with the 1997 MOU. [A-EBRPD-23]

- The EIR should discuss how the project would comply with the California Fish and Game Code. The proposed operation of Calaveras Dam and/or the ACDD would be in conflict with the Fish and Game Code. [A-CDFG-08, O-ACA&CBD1-04, O-ACA&CBD1-19, O-ACA&CBD1-20, O-ACA&CBD1-23, O-ACA&CBD1-28, O-ACA&CBD1-31, O-ACA&CBD1-51, O-ACA&CBD1-68, O-ACA&CBD2-10, O-ACA&CBD2-13, O-ACA&CBD2-15, O-Acterra et al.-04, O-AFS-03]
- Flow-related effects on fish and habitat conditions are not adequately addressed, specifically in terms of the following:
 - Entrainment at the Alameda Creek Diversion Tunnel
 - Use of hydrologic modeling that employs a monthly time-step for analysis of flows in relation to fish and aquatic habitat
 - Project effects on channel-forming flows
 - Effects from sediment sluicing. [A-CDFG-10, A-CDFG-12, A-CDFG-15, A-ACPWA-39, A-EBRPD-30, O-ACA&CBD1-33, O-ACA&CBD1-48, O-ACA&CBD1-49, O-ACA&CBD1-73, O-ACA&CBD1-114, O-Acterra et al.-17]
- Trout and aquatic resources below the ACDD are dependent on the flows that have been bypassed since 2002. [O-ACA&CBD1-47]
- The project would result in a larger diversion of flows beyond the existing conditions. The additional diversion of flows would permanently prevent steelhead in Calaveras Creek downstream of the existing dam. [A-ACPWA-39, A-ACPWA-40]
- Future operations may adversely affect water flow, habitat suitability, and fish passage downstream of SFPUC dams. [A-SFBOS-Daly-03]
- The project could have adverse impacts related to downstream rearing habitat, and the source population upstream of the ACDD. [A-CDFG-12]
- Cutting the frequency of peak flows during December through May will affect downstream fish passage. [O-ACA&CBD1-47]
- Operations should allow for the restoration of steelhead and salmon and be consistent with steelhead habitat needs. [O-ACA&CBD1-16, O-Acterra et al.-02]
- Operational impacts on the existing population of land-locked steelhead that utilize Calaveras Reservoir and Arroyo Hondo are not adequately analyzed. [A-CDFG-02]
- Project-related effects on fish passage at the ACDD and Calaveras Dam are not adequately addressed. The project should provide fish passage [A-CDFG-02, A-ACPWA-41, A-EBRPD-25, A-EBRPD-30, A-SFBOS-Daly-05, O-Acterra et al.-09, O-ACA&CBD1-54, O-Acterra et al.-17, O-AFS-05, O-AudOh2-03, I-Graber-02]
- The EIR fails to evaluate fish screens at the ACDD. [A-RWQCB-07]

Response

Primary and Extended Study Areas

Some comments on the Draft EIR stated that the basis for the delineation of the primary and extended study areas is unsupported. A discussion on the study areas used in the fisheries analysis, including the basis for delineation, is provided in the EIR (page 4.5-2; also see

Figure 4.5.1 on page 4.5-3). As stated in the EIR, the study areas consist of all aquatic habitats that could be directly or indirectly affected by the construction and operation of the proposed dam and associated facilities. The primary study area includes all aquatic habitats that could be affected by operation of the proposed project, but not by other water resources management facilities. The extended study area includes the segment of the Alameda Creek main stem from the Arroyo de la Laguna confluence downstream to San Francisco Bay. Streamflows and the related fishery habitat conditions in the extended study area are strongly influenced by operation of other water projects in the watershed, including Del Valle Reservoir and water deliveries to the ACWD from the South Bay Aqueduct via Vallecitos Creek, which enters Arroyo de la Laguna just upstream of the Alameda Creek confluence. While operation of Calaveras Reservoir and the ACDD influences flow conditions in Alameda Creek within the extended study area, it is important that the analysis also consider influences from other water project operations in the Arroyo de la Laguna watershed and locally in lower Alameda Creek. The analysis of impacts on native fish presented in the EIR is not limited to the primary study area. The EIR identifies that construction-related water quality impacts would be localized and would be minimized with the implementation of proposed BMPs and SWPPP measures that would minimize sediment and contamination release and mobilization; as a result, impacts in the extended study area are expected to be less than significant (see Impact 4.5.4, starting on page 4.5-57). The EIR also includes analysis of the project's operational effects within the extended study area (Impact 4.5.8, starting on page 4.5-78).

Issues Regarding the Environmental Baseline

Some comments stated that the EIR should include a baseline of unimpaired flows and pre-DSOD operations for full disclosure of the impacts of the project. The commenter is referred to the master response presented in Section 10.2, and specifically Section 10.2.3, Baseline Considerations Regarding California Department of Water Resources Division of Safety of Dams (DSOD) Restrictions, the 1997 Memorandum of Understanding (MOU) between the San Francisco Public Utilities Commission (SFPUC) and the California Department of Fish and Game (CDFG), and Unimpaired Flows. for response to these comments.

Compliance with the 1997 CDFG MOU

Comments expressed concern that the historical and current operation of Calaveras Dam and the ACDD are not in compliance with the 1997 MOU between the CDFG and SFPUC. The purpose of the EIR is to describe the consequences of the proposed project relative to the existing condition. CEQA requires that an EIR contain a description of the existing "without project" condition, but does not require that an EIR determine whether the existing condition complies with current agreements, including the 1997 CDFG MOU. Please refer to the master response presented in 10.2, Baselines Used in the Environmental Analysis, and specifically to Section 10.2.3 of this Comments and Responses Document for additional discussion on this topic.

Please also refer to the master response presented in 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for additional discussion of the 1997 MOU.

Compliance with the Fish and Game Code

Some comments expressed concern that the historical and current operation of Calaveras Dam and the ACDD are not in compliance with various sections of the California Fish and Game Code (namely, Sections 5901, 5931, 5933, 5937, and 6020-6028), and requested that the EIR describe how the CDRP will bring operations of Calaveras Dam and the ACDD into compliance with these code sections.

The EIR presents descriptions of Fish and Game Code requirements relevant to the proposed project and identifies approvals related to compliance with referenced Fish and Game Code sections. EIR Section 4.5 presents a summary of most of the referenced Fish and Game Code sections (beginning on page 4.5-49). In brief, Fish and Game Code Section 5901 prohibits the maintenance of any structure that impedes the passage of fish up and downstream; Section 5931 allows the Fish and Game Commission to order installation of a fishway over an existing dam if, “in the opinion of the [Fish and Game] Commission, there is not free passage for fish over or around the dam”; Sections 5933 (diversion greater than 250 cfs) and 6020-6028 (diversion less than 250 cfs) allows the Fish and Game Commission to order the installation of a fish ladder on a new dam following receipt of plans from the DSOD if “necessary and practicable,” and Section 5937 requires sufficient flows to be released through a fishway or over, through, or around a dam to keep in good condition any fish that may be planted or exist downstream of the dam. As stated in the EIR (page 3-74), as part of its approval process the DSOD would refer the project to the Fish and Game Commission pursuant to Water Code Section 6500. Water Code Section 6500 requires the DSOD to refer applications for a “new” dam to the Fish and Game Commission for a determination as to whether a ladder is necessary and practicable under Fish and Game Code Section 5933 (for diversion greater than 250 cfs) and Section 6020-6028 (for diversions less than 250 cfs). The DSOD would make such a referral for the proposed Calaveras Dam. The CDFG (in Comment O-CDFG-08) indicates that “Without including provisions for fish passage at the ACDD and Calaveras Dam, the proposed Project will continue to be out of compliance with Fish and Game Code Section 5901.” The Fish and Game Commission itself has not provided an opinion that ladders (or other passage methods) are necessary or practicable for the CDRP. The SFPUC has prepared a study that concludes that a ladder is not practicable or necessary given the height of the dam, the quantity of water required for ladder operation, the cost, and the limited benefit to spawning habitat in Arroyo Hondo (because an old landslide currently blocks the stream). Fish passage at ACDD and Calaveras Dam is discussed further below.

Whether or not the SFPUC is currently operating the regional water system in compliance with the California Fish and Game Code, including Section 5937, is not a CEQA issue. The purpose

of the EIR is to disclose the physical effects of the CDRP on the environment relative to the existing condition. As stated in the EIR, the Draft EIR project would have no effect on fish passage at the ACDD or Calaveras Dam, because passage is not available at these dams under the existing condition. However, under the CDRP Variant, the SFPUC proposes to provide passage at the ACDD. Whether the SFPUC is operating Calaveras Dam and the ACDD in compliance with the above Fish and Game Code sections is a separate regulatory issue that is beyond the scope of the EIR.

The CDRP Variant includes fishery enhancements salient to the Fish and Game Commission's future consideration of CDRP consistency with Fish and Game Code requirements, including revised flow schedules, construction of a fish ladder at the ACDD, installation of fish screens at the ACDD and Calaveras Reservoir, and the AMIP. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant

Other comments expressed concern that the future proposed operation of Calaveras Dam and the ACDD would not be in compliance with the California Fish and Game Code. As indicated above, compliance with the referenced Fish and Game Code sections is not a CEQA issue, but would be the subject of separate permit approval actions for the CDRP. Proposed operations of the Draft EIR project, including releases/bypasses for fisheries, are described in Chapter 3, page 3-26. Project-related operational effects on fisheries are analyzed in detail in Chapter 4, page 4.5-52 and Chapter 5, page 5-16. Additional discussion of these operational effects in the context of a future cumulative scenario is provided in Chapter 6, page 6-23, and Appendix J. The impact analyses concluded that all impacts would be less than significant or less than significant with mitigation. The commenters are also referred to other responses provided below in this section and in Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

Fish Passage at the ACDD and Calaveras Dam

Several comments suggested that project effects related to fish passage at the ACDD and Calaveras Dam are not adequately addressed. Fish passage at the ACDD and Calaveras Dam is analyzed in the EIR (page 4.5-56). Additional discussion on fish passage at each of these facilities is provided below.

Fish Passage at ACDD

As discussed for the Draft EIR project (Impact 4.5.3, EIR pages 4.5-56 – 4.5-57), proposed construction at the ACDD but would not alter the height of the dam and would not alter the existing fish passage conditions at the ACDD. Thus, the analysis for the Draft EIR project found that there would be no change from the existing condition regarding the existing impassable barrier to fish passage at the ACDD.

As described in Chapter 9, Section 9.3.5, the CDRP Variant includes a fish ladder at the ACDD. This element of the Variant would improve fish passage (URS Corporation & HDR 2009b)

compared to the existing condition and to the Draft EIR project. This component of the Variant would be beneficial.

Fish Passage at Calaveras Dam

The SFPUC evaluated the feasibility of providing fish passage at Calaveras Dam and found there would be several substantial challenges to such an endeavor (URS Corporation & HDR 2009a). A fish ladder at Calaveras Dam would likely be over 2,000 feet long and have a height of more than 290 feet, making it taller than any fish ladder in the United States. The total order-of-magnitude capital cost of a fish ladder at Calaveras Dam was estimated to be over \$40 million, and the cost of providing fish passage via a combination of a fish ladder for immigrating adult steelhead and trap-and-haul for emigrating juvenile steelhead, annualized over 30 years, and including annual water costs, was estimated at approximately \$7 million per year.

Given the high cost of providing fish passage via a fish ladder at Calaveras Dam, the inability to provide volitional passage with a fish ladder, and the multiple stages at which handling would be involved in the fish ladder passage option, trap-and-haul for both immigrating adult and emigrating juvenile steelhead is the only potentially feasible option for fish passage at Calaveras Dam. No feasible means of successfully capturing post-spawn adult steelhead was identified. Although comparatively feasible, collection of emigrating juveniles in Arroyo Hondo could prove challenging, due to the flashy nature of the flows in that creek. The total order-of-magnitude capital cost of the design components involved in the trap-and-haul option is estimated to be approximately \$25 million. The order-of-magnitude annual cost of passage via trap-and-haul for both immigrating adults and emigrating juveniles is estimated at approximately \$1.4 million per year.

As a result of these findings, no facilities or provisions for fish passage are proposed at the replacement dam, and the proposed replacement dam, under both the Draft EIR project and the CDRP Variant, would not change the extent to which fish passage or migration is impeded by the existing dam under the baseline condition.

Flow-Related Effects on Fish and Habitat Conditions

Comments stated that the Draft EIR did not adequately characterize the effects of re-diverting flows currently bypassed downstream to Alameda Creek under the DSOD restrictions, and that proposed flow releases from Calaveras Dam may not be suitable for the resident fish community, including rainbow trout. Please refer to the master response presented in 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for additional discussion of analysis of flow effects under both the Draft EIR project and CDRP Variant.

Analysis of Proposed Flow Schedules

The proposed flow schedules are a central part of the proposed operations of the Draft EIR project and Variant, and the impact analyses for fisheries and hydrology (see Sections 4.5, 4.6,

and 6.2.3.3 and Appendix J of the EIR, and Chapter 9 of this Comments and Responses document) evaluate the implementation of the proposed flow schedules against the environmental baseline using the EIR's significance criteria.

The proposed flow schedules represent the minimum flows that would be bypassed and/or released whenever flows are naturally present. As a result, the evaluation of proposed operations of the Draft EIR project and Variant on fisheries and aquatic habitats does not need to rely entirely on water operations modeling (at a particular time-step) to predict or simulate future operations, because the SFPUC has committed to providing minimum flows consistent with the flow schedules as part of the project. Additional analysis, including interpretation of modeling results and extensive review of historical flow data, was conducted to evaluate those flows that are expected to exceed the minimum flows specified in the schedules during and following rainfall. These types of rain-event-based flow conditions were primarily evaluated from the standpoint of fish migration and movement, as the minimum flow schedules are anticipated to provide suitable habitat conditions for other life-stage functions (e.g., rearing and spawning). Please see Appendix J (pages 21 – 27, 30 – 32, including Figures 4.2, 4.3, and 4.5) for examples of analyses performed using historical daily average, daily maximum, and 15-minute flow data in relation to steelhead migration, including migration through natural barriers in the lower Sunol Valley and the Little Yosemite reach of Alameda Creek. Also refer to Section, 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for a discussion on the basis for development of the flow schedules.

Operation of ACDD

A complete discussion of operations at the ACDD under the DSOD restrictions is provided in the EIR (pages 4.5-16 and 4.6-33). This discussion points out that diversions at the ACDD under the DSOD restrictions occurred on a variable basis. For example, Figure 4.5.3: Daily Flows in Alameda Creek and Diversions at the ACDD during DSOD-Restricted Conditions, shows that diversions occurred for variable durations during 6 of the 9 years shown in the period of record.

Bypass Flows. Effects of the Draft EIR project on fisheries downstream of the ACDD associated with operation of the dam are analyzed in Chapter 4, page 4.5-60. The analysis indicates that proposed operations under the Draft EIR project would result in more regular diversions from Alameda Creek to Calaveras Reservoir at the ACDD when compared to the baseline condition; however, proposed operations would also include operational criteria that would provide flows downstream of the ACDD at all times when those flows are naturally present to meet the required instream flow targets, thus ensuring bypass flows. The modeling studies performed for the EIR (see ETJV 2008) indicated that the bypass flows proposed under the Draft EIR project would provide suitable spawning, egg incubation, and rearing habitat for the resident fish community, including rainbow trout and steelhead. Under the Draft EIR project, increases in the frequency and duration of flow diversions of up to 650 cfs, combined with flow bypasses (consistent with

the Draft EIR project's proposed bypass schedules) whenever flow is naturally present, would result in more regular creek flow and thus sustained habitat conditions in Alameda Creek downstream of the ACDD when compared to the existing condition; under the existing, DSOD-restricted condition, the habitat is subject to variable periods of no diversions and full diversions without bypass flows. Bypass flows proposed under the Draft EIR project would ameliorate effects on habitat caused by the increased diversion frequency and duration and would support a viable fish community downstream of the ACDD. Because the Draft EIR project's proposed flow release/bypass schedules would provide bypass flows, additional modeling at a more detailed (e.g., daily) time-step is not required.

Under the CDRP Variant, the proposed flow schedules would provide increased minimum flow bypasses and a reduced period of diversions at the ACDD. Minimum flow bypasses would increase from 5–15 cfs (depending on the time of year) to 30 cfs when compared to the Draft EIR project. The flow schedules proposed under the Variant also include a limited season of diversions (from December 1 to March 31). Under this scenario, flows in Alameda Creek would be effectively unimpaired from April 1 through November 30. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

Channel-Forming Flows. The EIR analysis also describes how project-related diversions and bypasses at the ACDD would alter the frequency and magnitude of channel-forming flows that support geomorphic processes within the creek. The analysis concludes that operation of the ACDD under the Draft EIR project would result in the same downstream hydrologic conditions that have influenced the channel form over time, namely, hydrologic conditions that include periodic intermediate and episodic flow events when Alameda Creek exhibits flows well above the 650-cfs capacity of the tunnel, and substantial flows pass over the ACDD and downstream. For example, Figure 4.5.3 (EIR page 4.5-19) shows periods in early 2003, 2004, and 2008 when peak flows greatly exceeded the 650-cfs capacity of the diversion tunnel. Under the Draft EIR project, such flows would continue to occur in the future. Additionally, implementation of operational criteria at the ACDD would result in regular closures of the diversion tunnel and full bypass of all flows at the ACDD when storage goals in Calaveras Reservoir have been met (as shown in Figures 4.6.14a and 4.6.14b, pages 4.6-84 to 4.6-85).

The CDRP Variant includes minimum instream flow schedules at the ACDD and Calaveras Dam (described above), installation of a fish screen at the Alameda Creek Diversion Tunnel, and other fishery enhancements. The fish screen at the diversion tunnel would reduce the effective diversion capacity of the tunnel from approximately 650 cfs to 370 cfs relative to the existing condition and the Draft EIR project. Reducing the diversion capacity of the diversion tunnel under the Variant would result in more frequent, higher, and longer duration flows passing over the ACDD during storm events. These more frequent, higher, and longer duration flows would generally result in increased geomorphic processes, which in turn would contribute to channel formation and habitat maintenance (see the master response presented in Section 10.3, and

specifically Section 10.3.4, Geomorphology, Sediment Transport, and Channel Formation for additional discussion of changes in hydrology). Please also refer to Chapter 9 (specifically, Section 9.3.6, Hydrology) of this Comments and Responses document for a description and analysis of the CDRP Variant.

Sediment Sluicing. Proposed sluicing at the ACDD under the Draft EIR project would occur in all years and would result in sediment transport and distribution and associated effect on habitat conditions in Alameda Creek similar to that under the existing condition. With the addition of a fish screen at the diversion tunnel under the Variant, sluicing would be performed every 4 to 8 weeks during the wet season instead of annually, as occurs under existing conditions. The increased frequency of sluicing would result in reduced accumulations of sediment behind the ACDD and allow for sediment transport and associated habitat formation/maintenance processes to more closely match natural conditions.

Fish Entrainment at the Diversion Tunnel. Under the Draft EIR project, more regular diversions at the ACDD could result in a greater number of fish becoming entrained in the diversion tunnel; however, the number of entrained fish is expected to be relatively low because of the general behavioral characteristics of the fish (e.g., site fidelity or seeking refugia under high flows) (Moyle pers. com. 2009); also, the population of resident rainbow trout upstream of the ACDD is believed to be relatively small and isolated. The populations of rainbow trout and California roach upstream of the ACDD have sustained themselves for approximately 70 years of regular diversions at the ACDD. As a result, returning to regular diversions at the ACDD, as proposed under the Draft EIR project, is not expected to cause a substantial adverse effect on those populations compared to the existing condition. Further, implementation of operational criteria at the ACDD under the Draft EIR project is expected to result in more frequent closures of the diversion tunnel during the late winter and spring months (see Figures 4.6.14a and 4.6.14b, pages 4.6-84 – 4.6-85) when the most vulnerable young-of-the-year fish would be present in the creek. Therefore, as described in the EIR, it is expected that operation of the ACDD (in terms of fish entrainment and the consequent loss of individuals in the upstream fish population) would result in a less-than-significant impact. Although entrainment impacts on resident rainbow trout in Alameda Creek would be less than significant under the Draft EIR project, the monitoring and adaptive management required in Mitigation Measures 5.5.5a (Resident Rainbow Trout Monitoring) and 5.5.5b (Resident Rainbow Trout Adaptive Management) (pages 5-16 and 5-17) would further ensure that ACDD operations under the Draft EIR project sustain the resident trout population downstream of the ACDD.

Additionally, as stated for the Draft EIR project, although the proposed bypass flows are expected to be adequate to sustain habitat conditions and the fish community downstream of the ACDD, implementation of Mitigation Measures 5.5.5a and 5.5.5b, requiring monitoring and adaptive management, would further ensure that future operations of the ACDD would not have a significant impact on the resident trout population in Alameda Creek. Pursuant to Mitigation

Measure 5.5.5a, the SFPUC would monitor the effects of operating the CDRP on resident trout in Alameda Creek downstream of the ACDD. If monitoring demonstrated that the MOU flow bypasses would not be adequate to sustain the resident trout fishery downstream of the ACDD, the SFPUC would implement Mitigation Measure 5.5.5b. Under this measure, the SFPUC would be required to modify the flow release schedule, implement seasonal restrictions on Alameda Creek diversions during the spawning period, or install a fish screen at the diversion tunnel. Therefore, with implementation of the MOU flow bypasses under the Draft EIR project and the monitoring and adaptive management requirements described in Mitigation Measures 5.5.5a and 5.5.5b, the impacts of operating the Draft EIR project on resident trout in Alameda Creek would be less than significant.

Under the CDRP Variant, the beneficial effects associated with the fish screen at the diversion tunnel, the revised flows schedules (including reduced diversion capacity and period of diversion), and the AMIP would obviate the need for Mitigation Measure 5.5.5a, which requires the SFPUC to develop and implement a monitoring program to ensure that the proposed flow releases are sufficient to sustain the resident trout population in Alameda Creek downstream of the ACDD, and for Mitigation Measure 5.5.5b, which requires the SFPUC to implement adaptive management measures including additional flow releases, place seasonal restrictions on operation of the ACDD, or install a fish screen at the diversion tunnel. As a result, these mitigation measures do not apply to the CDRP Variant.

Operation of Calaveras Dam and Reservoir

A complete discussion of operations at Calaveras Dam under the DSOD restrictions is provided in the EIR (pages 4.5-20, 4.6-16, and 4.6-27). The discussion points out that releases of approximately 325 cfs under the DSOD restrictions occur on a variable basis for water evacuation purposes, and seepage (approximately 0.5 cfs) is present at all other times. During the construction period, these variable operations would remain unchanged.

Under the Draft EIR project, as soon as construction is complete, flow schedules would be implemented through bypasses at the ACDD (when flow and water temperatures are adequate to meet MOU criteria) and/or through the two low-flow valves that would be installed at the proposed replacement dam. The flow release schedule implemented under the Draft EIR project would have a beneficial impact on native fish and aquatic habitat in Alameda Creek downstream of the ACDD as well as downstream of the confluence with Calaveras Creek. During the rainy season when the proposed flows would be provided through bypass at the ACDD, flow in the 0.6-mile segment of Calaveras Creek between the dam and the confluence (Reach C-1) would be maintained through the proposed 2-cfs minimum flow release from Calaveras Dam and inflow from runoff. This proposed release would improve aquatic habitat compared to the current 0.5-cfs seepage that occurs under the baseline condition. An additional benefit to fish from the Draft EIR project would occur when the dam construction is complete and the reservoir has been filled.

The increased reservoir volume would improve hydrologic connectivity between the reservoir and Arroyo Hondo and result in an increased cold-water pool and improved water quality that would become available for fish residing in the reservoir and for cold-water releases downstream. This increased availability of cold water and improved water quality would benefit fish, especially rainbow trout occupying habitats upstream and downstream of the new dam during summer periods. Further, use of the cone valve would employ ramping criteria to reduce the potential for redd scouring and or fish isolation or stranding. Current operations do not include any ramping criteria.

Under the CDRP Variant, minimum flow releases at Calaveras Dam (which do not occur under the existing condition) would be generally similar to the releases proposed under the Draft EIR project (i.e., a range from 5 to 15 cfs under the Draft EIR project versus a range of 5 to 12 cfs under the Variant). An important difference between the Draft EIR project and the Variant, however, is that the Variant includes a compliance point in Calaveras Creek immediately downstream of the dam instead of below its confluence with Alameda Creek, meaning that the flow target could not be met through flows that would be bypassed at the ACDD, as could be the case under the Draft EIR project. This could result in increased flows in the segment of Calaveras Creek below the dam compared to the Draft EIR project during periods when the flow target would otherwise be met through bypasses at the ACDD. Similar to the Draft EIR project, the instream flow schedules would be implemented immediately upon completion of construction and would include a ramping schedule. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

Timeline for Monitoring and Adaptive Management

Comments on the Draft EIR raised concern that the timeframe for adaptive management is too long to allow for a meaningful response. Mitigation Measure 5.5.5 (page 5-16) provides a framework for monitoring to determine the effectiveness of the bypass flows at the ACDD and flow releases at Calaveras Dam, and for taking appropriate action if indicated. The measure is not intended to allow the SFPUC to wait up to 10 years to take action if monitoring shows that suitable habitat conditions for resident trout are not being sustained. Rather, the 10-year period is the maximum period during which monitoring would occur. Contingency measures to address any problems identified through monitoring would be implemented as soon as the issues are reasonably understood, and any changes in management would be conducted in consultation with the appropriate resources agencies.

Under the CDRP Variant, the beneficial effects associated with the fish screen at the diversion tunnel, the reduced diversion capacity and period of diversion, and the AMIP would obviate the need for Mitigation Measure 5.5.5a, which requires the SFPUC to develop and implement a monitoring program to ensure that the proposed flow releases are sufficient to sustain the resident trout population in Alameda Creek downstream of the ACDD, and for Mitigation Measure 5.5.5b,

which requires the SFPUC to implement adaptive management measures including additional flow releases, place seasonal restrictions on operation of the ACDD, or install a fish screen at the diversion tunnel. As a result, these mitigation measures would not apply to the CDRP Variant.

10.4.6 OTHER ANADROMOUS FISH SPECIES IN ALAMEDA CREEK

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACPWA-18	A-GCRCD-03	O-AudOh1-01
A-ACPWA-19	A-SFBOS-Daly-04	O-AudOh2-07
A-ACPWA-21	O-ACA2-02	O-AudOh2-08
A-ACPWA-25	O-ACA&CBD1-03	O-GPFF-01
A-ACPWA-38	O-ACA&CBD1-35	O-SierraC-02
A-ACPWA-40	O-ACA&CBD1-42	I-LaCommare-01
A-ACPWA-69	O-ACA&CBD1-93	I-Lynn-1
A_EBRPD-25	O-Acterra et al. 02	I-Reazer-02
A-GCRCD-01	O-Acterra et al.-11	I-Reazer-05
A-GCRCD-02	O-Acterra et al.-15	I-Workman-01

- The Alameda Creek watershed historically supported coho and Chinook salmon. [O-ACA&CBD1-93]
- The Draft EIR should discuss project impacts on other anadromous fish species including Chinook salmon and Pacific lamprey. [O-ACA&CBD1-35, A-ACPWA-18, A-ACPWA-19, I-Lynn-01, A-ACPWA-25, A-GCRCD-01, O-AudOh1-01, O-AudOh2-07]
- The additional diversion of flows would permanently prevent Endangered Species Act-protected fish in Calaveras Creek downstream of the existing dam. [O-AudOh1-01]
- Proposed flow releases should address the hydrologic requirements of Chinook salmon and Pacific lamprey to support restoration of these and other native species. [A-ACPWA-21, A-ACPWA-38, A-GCRCD-02, O-ACA&CBD1-42, ACA&CBD1-03, O-Acterra et al.-02, O-Acterra et al.-11, O-Acterra et al.-15, A-GCRCD-03, A-SFBOS-Daly-04, LaCommare-01, I-Workman-01, O-GPFF-01, O-SierraC-02, O-AudOh2-08, I-Lynn-01]

Response

Chinook Salmon, Coho Salmon, and Pacific Lamprey

Chinook Salmon

Chinook salmon are addressed in the EIR as part of the environmental setting for Alameda Creek fisheries (page 4.5-27). While small runs of Chinook salmon may have historically occurred within Alameda Creek, in recent years only a small number of individual Chinook salmon adults have been recovered in the flood control channel downstream of the BART weir. It is believed

that hatchery-produced salmon have strayed into streams that did not traditionally (and do not currently) support them (Gunther et al. 2000; Leidy 2007).

Although Chinook salmon are occasionally observed and documented below the BART weir, these few individuals are not currently able to migrate upstream of this barrier. If the migration barriers were absent, as discussed on EIR page 4.5-34, seasonal high temperatures and low stream flow conditions during both the adult and juvenile migration and rearing periods would likely limit successful Chinook salmon production in most years. Nevertheless, it has been stated that management actions aimed at improving watershed conditions for other anadromous fishes (e.g., steelhead) would also likely benefit Chinook salmon (Leidy 2007:102).

As described above, the discussion of existing conditions in the EIR does not identify Chinook salmon as a species of concern in the study areas upstream of the BART weir. Based on hydrological modeling of flow changes in lower Alameda Creek (see pages 4.6-94 – 4.6-98), potential impacts on Chinook salmon or any other species due to reduced flows below the BART weir were determined to be less than significant. Further discussion of project-related effects in the flood control channel is provided in Impact 4.5-8 on page 4.5-78.

Coho Salmon

The geographic range for the Central California Coast coho salmon distinct population segment extends from Punta Gorda in northern California south to and including the San Lorenzo River in central California (NMFS 2006).

Evidence presented by Leidy (2007) shows the Alameda Creek watershed historically supported a run of coho salmon. Although there is evidence to support the historical presence of coho salmon in tributaries and coastal streams in and around San Francisco Bay, current findings on the geographic distribution of coho salmon conclude that the species is absent from San Francisco Bay and its tributaries and is limited locally to a small number of tributaries in Marin County (NMFS 2005).

A report by NMFS (2005) on the status of the federally listed Evolutionarily Significant Unit (ESU) of West Coast salmon and steelhead summarized a range of surveys and reports on the occurrence of coho salmon in tributaries and coastal streams in and around San Francisco Bay. The report indicated that coho salmon were not present in San Francisco Bay and its tributaries.

In summary, there is no documentation indicating contemporary presence of coho salmon within Alameda Creek. Therefore, the EIR does not include an analysis of impacts on coho salmon as a species of concern in the project study areas.

Pacific Lamprey

Pacific lamprey is addressed in the EIR as part of the environmental setting for Alameda Creek fisheries (page 4.5-27). Additionally, the SFPUC (Sak, pers. comm., 2010) and Leidy (2007) present records for the upper Alameda Creek watershed suggesting that lamprey are able to ascend some formidable migration barriers to reach spawning habitat in the upper Sunol Valley, including the BART weir and the PG&E gas line crossing, as well as more transitory obstacles such as the ACWD inflatable dams in the Alameda Creek flood control channel downstream of Niles Canyon. During every year of electrofishing (2000 to present) the SFPUC has collected ammocetes (i.e., larval life stages of lamprey) at a variety of stages of development, ranging from newly hatched 2-inch-long fish to 5-inch eyed specimens about to emerge. These fish are primarily collected in the reach of Alameda Creek between the Sunol Valley Water Treatment Plant and the Calaveras Creek confluence (Sak, pers. comm., 2010).

There are no known direct observations of either Pacific lamprey or river lamprey spawning in Alameda Creek, and no recorded observations of lamprey attached to other fish or of scars on fish from lamprey attacks. If adult Pacific lamprey can ascend barriers in the lower creek and reach Sunol Park, it is unclear how often they are successful at doing so.

Based on hydrological modeling of flow changes in lower Alameda Creek, impacts on Pacific lamprey due to reduced flows below the BART weir (where individual lamprey have recently been netted in the flood control channel section) were determined to be less than significant. Further discussion of project-related effects in the flood control channel is provided in Impact 4.5-8 on page 4.5-78.

10.4.7 FUTURE CUMULATIVE ANALYSIS OF EFFECTS ON STEELHEAD

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-NMFS-01	O-ACA&CBD1-45	O-CL713-14
A-NMFS-02	O-ACA&CBD1-48	O-CL713-15
A-NMFS-03	O-ACA&CBD1-51	O-CL713-16
A-NMFS-04	O-ACA&CBD1-53	O-CL713-17
A-CDFG-04	O-ACA&CBD1-55	O-CL713-19
A-CDFG-05	O-ACA&CBD1-66	O-GWWF1-1
A-CDFG-19	O-ACA&CBD1-73	O-GWWF1-2
A-ACWD-6	O-ACA&CBD1-78	O-GWWF2-2
A-ACPWA-15	O-ACA&CBD1-81	O-GWWF2-3
A-ACPWA-20	O-ACA&CBD1-85	O-LWVBA-3

A-ACPWA-28	O-ACA&CBD1-87	O-NCCFFF1-1
A-ACPWA-30	O-ACA&CBD1-88	O-NCCFFF2-2
A-ACPWA-39	O-ACA&CBD1-98	O-TRT1-1
A-ACPWA-40	O-ACA&CBD1-103	O-TRT1-3
A-ACPWA-55	O-ACA&CBD1-123	O-TRT2-1
A-ACPWA-64	O-ACA&CBD1-125	O-TRT2-3
A-ACPWA-81	O-ACA&CBD1-126	O-TRT3-2
A-EBRPD-23	O-ACA&CBD2-11	O-GPFF-1
A-SFBOS-Daly-02	O-ACA&CBD2-37	O-SierraC-2
A-SFBOS-Daly-04	O-ACA&CBD2-40	I-Atkinson-02
A-SFBOS-Daly-07	O-Acterra et al.-4	I-Blickenstaff-01
O-ACA1-04	O-Acterra et al.-07	I-Blickenstaff-02
O-ACA2-02	O-Acterra et al.-14	I-Blickenstaff-03
O-ACA3-01	O-AFS-02	I-Cant-02
O-ACA&CBD1-03	O-AFS-03	I-Carroll-01
O-ACA&CBD1-04	O-AFS-04	I-Cate-01
O-ACA&CBD1-08	O-AudOh1-01	I-Cate-02
O-ACA&CBD1-10	O-AudOh1-02	I-Epp-02
O-ACA&CBD1-14	O-AudOh2-03	I-Graber-02
O-ACA&CBD1-15	O-AudOh2-06	I-Lynn-01
O-ACA&CBD1-16	O-AudOh2-08	I-Means-01
O-ACA&CBD1-22	O-CL713-01	I-Meghrouni-01
O-ACA&CBD1-24	O-CL713-04	I-Reazer-02
O-ACA&CBD1-25	O-CL713-06	I-Richardson-02
O-ACA&CBD1-29	O-CL713-08	I-Sargent-02
O-ACA&CBD1-33	O-CL713-09	I-Urquhart-03
O-ACA&CBD1-34	O-CL713-11	I-Urquhart-04
O-ACA&CBD1-42	O-CL713-12	I-Werning-01

- The Draft EIR discussion does not accurately characterize past and present effects (including SFPUC facility operations). [A-ACPWA-55]
- The EIR must consider the cumulative effects of water diversions on the watershed and fish habitat. [O-ACA&CBD1-08]
- The DEIR analysis should address the potential presence of steelhead during project construction. [A-CDFG-19, O-ACA&CBD1-14, O-ACA3-1]

- The proposed project should be consistent with the SFPUC's Water Enterprise Environmental Stewardship Policy. [A-SFBOS-Daly-02]
- Project flows/operations should be consistent with the restoration efforts of the Alameda Creek Restoration Workgroup. In light of the planned removal of the BART weir and/or other restoration projects on Alameda Creek, the project should support steelhead/native/migratory fish restoration. [A-ACWD-06, A-SFBOS-Daly-07, O-ACA&CBD1-16, O-ACA&CBD1-85, O-ACA&CBD1-98, O-ACA&CBD1-123, O-CL713-01]
- The EIR should incorporate the requirements and conditions of the Biological Opinion issued by NMFS pursuant to the Federal Endangered Species Act (FESA) Section 7 consultation. [A-SFBOS-Daly-04, O-ACA&CBD1-29, O-Acterra et al.-14]
- The EIR fails to analyze potential project conflicts with steelhead protections under FESA. The project should be revised to protect steelhead, as it is listed as a threatened species under the FESA [A-SFBOS-Daly-02, O-ACA&CBD1-24, O-ACA&CBD1-25, O-ACA&CBD1-33; O-ACA&CBD2-11, O-Acterra et al.-04, O-ACA2-2, O-AFS-03, O-AudOh1-02]
- A plan to monitor compliance with bypass flows, the effectiveness of the flows, and procedures for making modifications should be in place before a streambed alteration agreement is issued. [A-CDFG-04]
- The Upper Alameda Creek Filter Gallery Project will have adverse impacts on steelhead and other native migratory fish. To assess the CDRP effects, the impacts of the recapture facility must be addressed in the CDRP EIR. The EIR should provide a more thorough analysis of cumulative impacts of the Upper Alameda Creek Filter Gallery Project on steelhead. [A-ACPWA-15 A-ACPWA-28, A-ACPWA-30, A-EBRPD-23, O-ACA&CBD1-15, O-ACA&CBD1-10, O-ACA&CBD1-42, O-ACA&CBD1-55, O-ACA&CBD1-103, O-ACA&CBD1-126, O-ACA&CBD2-40]

Response

Although the presence of steelhead in Alameda Creek upstream of the BART weir is not an existing condition as defined by CEQA, the EIR acknowledges that steelhead will likely gain access to upper Alameda Creek in the future as a result of the cumulative implementation of planned and proposed projects and ongoing actions designed to restore steelhead in Alameda Creek. Therefore, a section of the fisheries and aquatic habitat cumulative impact analysis examines the potential effects of the CDRP under a "future cumulative scenario" in which it is assumed that steelhead access to the watershed has been restored upstream of the BART weir. Because it is possible that steelhead access could be restored before the completion of construction, the cumulative analysis addresses the potential effects resulting from both construction and operation of the proposed project.

Past and Present Effects

Some commenters raised the concern that the future cumulative steelhead scenario does not accurately characterize past and present effects (including SFPUC facility operations). One commenter stated that the EIR must consider the full operational impacts of the ACDD and

Calaveras Reservoir in the cumulative impact analysis, and that the analysis of the effects of water diversions on the watershed and fish habitat should compare conditions without any water supply operations (unimpaired flows) to conditions with the CDRP.

Past and present effects are clearly described in the EIR in the context of existing conditions and under the future cumulative scenario (see Chapter 6, pages 6-23 – 6-32, and Appendix J, page 8). The EIR evaluation indicates that the combined effects of past and present projects (including other changes to the creek detailed in Section 4.5, page 4.5-11) have resulted in a significant, adverse, cumulative impact on the steelhead population in the Alameda Creek watershed compared to historical conditions (page 6-25). Consistent with CEQA, the analysis of cumulative impacts focuses on whether the CDRP's contribution to cumulative impacts would be cumulatively considerable. *CEQA Guidelines* Section 15064(a)(3) states that: "Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects." The fact that past projects have had a considerably adverse effect on Alameda Creek and its natural resources is appropriately reflected in the EIR.

Steelhead Presence During Project Construction

Commenters suggested that the future cumulative scenario does not assume steelhead presence during project construction. The commenters are referred to pages 6-26 – 6-28 for a discussion of potential construction-related effects on steelhead under the future cumulative scenario. This analysis assumes the possibility that steelhead will regain access to the watershed prior to the completion of project construction, describes potential impacts, and identifies mitigation measures. In the event that steelhead regain access to Alameda Creek above the BART weir during the construction period for either the Draft EIR project or the CDRP Variant, the SFPUC would attempt to meet the flow schedule for steelhead during the construction period. See also Section 10.4.4, Construction-related Effects on Calaveras Creek and Calaveras Reservoir, above for additional discussion on flow releases from Calaveras Dam during the construction period.

SFPUC Water Enterprise Environmental Stewardship Policy and Alameda Creek Fisheries Restoration Workgroup

Several commenters suggested that the SFPUC adhere to its Water Enterprise Environmental Stewardship Policy and continue to participate in and coordinate fishery-related studies and management activities with the Alameda Creek Fisheries Restoration Workgroup (ACFRW). Regarding project consistency with the SFPUC Water Enterprise Environmental Stewardship Policy, refer to Response A-CDFG-10. As part of the continuing effort to address steelhead restoration in Alameda Creek, the SFPUC has entered into an agreement with 17 public agencies and organizations as part of the ACFRW to provide funding and collaborate on flow studies focused on steelhead restoration. To date, these studies have not developed instream flow recommendations, but an initial workplan—the *Alameda Creek Population Recovery Strategies*

and Instream Flow Assessment for Steelhead Trout (McBain and Trush 2008)—was produced and several studies are underway. Collaborative data collection is underway and scheduled for the near future. The referenced report details this effort to establish instream flow targets and outlines specific studies intended to result in a flow strategy for restoring and maintaining native fishes in the watershed (McBain and Trush 2008).

Cumulative Impacts on Steelhead

Commenters raised concern that the Draft EIR failed to properly analyze or mitigate impacts on fish passage within the context of proposed future projects designed to increase habitat quality and connectivity within Alameda Creek for steelhead. The EIR provides a detailed discussion of future cumulative scenario conditions and the Draft EIR project's potential contribution to cumulative impacts on future-occurring steelhead in Alameda Creek (see Chapter 6, pages 6-23 – 6-32, and Appendix J). In addition, Chapter 9, Section 9.5.2, provides a detailed discussion of the Variant's contribution to cumulative impacts.

As previously described, various watershed and habitat studies have established that steelhead currently do not migrate above the BART weir (Gunther et al. 2000). The SFPUC acknowledges that the BART weir and other existing obstacles/barriers are in the process of being remedied, and that steelhead will have access to the watershed in the future when those projects are successfully implemented. Regardless of the timing of the BART weir fish passage project and other planned habitat enhancement/restoration actions, the SFPUC will continue to participate in steelhead restoration efforts as a member of the ACFRW. Ongoing studies are expected to result in specific flow recommendations to support steelhead restoration in the watershed, and the SFPUC will continue to work with NMFS, CDFG, and other ACFRW members on these studies. As noted in Chapter 9 of this Comments and Responses document, the SFPUC has proposed flows to address steelhead recovery in the watershed as part of the CDRP Variant, and the SFPUC plans to continue participation in the ACFRW and to incorporate steelhead recovery strategies developed in the CDRP and through the ACFRW process, as they become available, into its Alameda Watershed Habitat Conservation Plan (HCP) or other future regulatory mechanism. It is anticipated that the SFPUC's Alameda Watershed HCP will provide long-term coverage under FESA for regional water system operations and maintenance in the southern Alameda Creek watershed.

FESA Section 7 Consultation with NMFS

Biological Opinion

Commenters suggested that the project is required to undergo a FESA Section 7 consultation with NMFS, and that the Final EIR should incorporate the requirements and conditions of a Biological Opinion issued by NMFS. The commenters are correct in that the SFPUC is currently undergoing a FESA Section 7 consultation with NMFS, with the U.S. Army Corps of Engineers

serving as the federal action agency. Through the Section 7 consultation process, NMFS (and the U.S. Fish and Wildlife Service for species protected under FESA other than anadromous fishes) will establish its own conditions of approval for the project consistent with its regulatory jurisdiction. Various components of the project as they pertain to steelhead management are subject to final approval by NMFS. The EIR (page 3-69) acknowledges that the flow release schedules and other measures are subject to approval by NMFS in accordance with FESA and may therefore be modified through the federal permitting process. The timing of the Final EIR does not allow for incorporation of the forthcoming NMFS Biological Opinion, and CEQA does not require the inclusion of such conditions in the Final EIR. However, as noted in Chapter 9, several of the fishery enhancements included in the CDRP Variant are, in part, the product of close coordination with NMFS and CDFG.

Monitoring and Adaptive Management

An important component of the ongoing FESA Section 7 consultation is monitoring and adaptive management. In order to address uncertainties regarding the future recovery of a steelhead population in the Alameda Creek watershed, the SFPUC committed to work with NMFS during the Section 7 consultation to prepare a monitoring and adaptive management plan, which has resulted in the development of the AMIP that is included as part of the Variant. The purpose of the AMIP is to address and resolve uncertainties related to implementation of the proposed CDRP and the associated effects on habitat conditions for future steelhead in the upper Alameda Creek watershed.

The AMIP, presented in Appendix N, has been developed to be consistent with the Central California Coast Steelhead Recovery Plan, which is currently in draft form with NMFS. It also includes a provision to allow for subsequent revisions when new information becomes available, including the final components of the Recovery Plan.

The AMIP will also be integrated into the development of the biological goals and objectives and the monitoring and adaptive management components of the SFPUC's Alameda Watershed HCP, which is being developed in consultation with NMFS and other resource agencies. Ultimately, it is anticipated that the HCP will serve as a long-term management tool for helping in the recovery of a viable steelhead population within the watershed.

Cumulative Project – Upper Alameda Creek Filter Gallery Project

Comments on the Draft EIR suggested that the Upper Alameda Creek Filter Gallery Project should be incorporated in the proposed project and that the EIR should more thoroughly address its impacts. The Filter Gallery Project is a separate project being pursued by the SFPUC, although, like the CDRP, it is also one of the facility improvement projects under the WSIP and the WSIP PEIR analyzed this project programmatically as well as considering the water supply effects of all projects in this watershed, including the CDRP. The Filter Gallery Project was

identified as a reasonably foreseeable future project and is included in the EIR list of cumulative projects in Section 6.2.3. As such, it is specifically addressed in the cumulative impact analysis related to a future steelhead population in Alameda Creek (see page 6-24 and Appendix J); the impact determination and conclusion regarding the CDRP's contribution to cumulative impacts, as described above, assume implementation of the Filter Gallery Project along with all other WSIP projects evaluated in the PEIR. Because details of the Filter Gallery Project sufficient for a project-level CEQA analysis are not currently available, a detailed analysis of this cumulative project cannot be provided in the EIR, and the level of detail at which the Filter Gallery Project is evaluated meets or exceeds CEQA requirements for cumulative impacts.¹⁵ The Filter Gallery Project, as a separate project, is subject to project-specific CEQA review, environmental compliance, and permitting processes. The San Francisco Planning Department expects that project-level CEQA review of the Filter Gallery Project will begin in 2011. Please also refer to Section 10.3.6, Cumulative Impacts, for discussion regarding the Filter Gallery Project with respect to impacts on hydrology.

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10.5 GREENHOUSE GAS EMISSIONS

10.5.1 INTRODUCTION

Overview

This master response addresses comments on the Calaveras Dam Replacement Project (CDRP) Environmental Impact Report (EIR) related to the adequacy of the impact analysis and mitigation provided for emissions of greenhouse gases (GHGs).

This master response addresses the following subtopic:

10.5.2 Construction GHG Emissions Impacts and Mitigation

Project Variant

After the Draft EIR was published, the San Francisco Public Utilities Commission (SFPUC) developed a variant of the proposed project that incorporates fishery enhancements and other project refinements in response to ongoing permit negotiations with regulatory agencies and as part of the continuing design process. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. The CDRP Variant is similar to the project described in the EIR (referred to herein as the “Draft EIR project”), but it includes a number of additional features intended to improve conditions for native fish, including steelhead, which are targeted for restoration in Alameda Creek; these Variant features include proposed instream flow schedules for Alameda and Calaveras Creeks, installation of a fish screen on the diversion tunnel at the Alameda Creek Diversion Dam (ACDD), and addition of a fish ladder at the ACDD. Some of these enhancements and refinements, such as installation of a fish screen and construction of a fish ladder at the ACDD, would result in an incremental increase in additional construction activity, and therefore, additional construction GHG emissions. Where appropriate, this master response to comments regarding GHG emission addresses the CDRP Variant in addition to the Draft EIR project.

Commenters

Commenters who addressed this topic include:

Agencies

- San Francisco Planning Commission (A-SFPC)
- San Francisco Board of Supervisors, Supervisor Daly (A-SFBOS-Daly)

Organizations

- Alameda Creek Alliance and Center for Biological Diversity (O-ACA&CBD)
- Alameda Creek Alliance (as an individual organization) (O-ACA)

- Acterra and 45 other Bay Area conservation organizations cosigning a single letter (O-Acterra et al.)

Individuals

No individuals commented on this topic.

EIR Section Reference

The EIR describes the project, evaluates impacts related to GHG emissions, presents mitigation measures to reduce GHG emissions, and evaluates the cumulative impacts of GHG emissions in the following locations: Vol. 1, Chapter 3 (Project Description); Vol. 2, Chapter 4, Section 4.13 (Air Quality); Chapter 5, Section 5.13 (Air Quality); Chapter 6, Section 6.2 (Cumulative Impacts); and Vol. 3, Appendix G (Air Quality Modeling).

10.5.2 CONSTRUCTION GHG EMISSIONS IMPACTS AND MITIGATION

Summary of Issues Raised by Commenters

This section of this master response responds to all or part of the following comments:

A-ACPWA-05	O-ACA1-07	O-Acterra et al.-19
A-BAWSCA4-05	O-ACA2-04	O-ACA&CBD1-05
A-SFPC2-03	O-Acterra et al.-13	O-ACA&CBD1-56 through 61
A-SFBOS-Daly-06		

- Construction GHG emissions thresholds (use of “net zero”) [O-ACA&CBD1-57]
- Adequacy of Draft EIR construction GHG emissions mitigation [A-SFPC2-03, O-Acterra et al.-13, O-ACA1-07, O-ACA&CBD1-56, O-ACA&CBD1-58, O-ACA&CBD1-59, O-ACA&CBD1-60, A-SFBOS-Daly-06]
- Use of GHG emission offsets as mitigation [O-Acterra et al.-19, O-ACA2-04, O-ACA&CBD1-61]
- Use of the updated BAAQMD CEQA significance thresholds for GHG emissions in the EIR [A-ACPWA-05]
- Clarification of the level of significance determinations after mitigation for air quality impacts 4.13.1 and 4.13.7 [A-BAWSCA4-05]

Response

BAAQMD Thresholds

As described in the EIR (Vol. 2, Chapter 4, Section 4.13, Air Quality, EIR page 4.13-20), at the time the Draft EIR was prepared, the Bay Area Air Quality Management District (BAAQMD) was in the process of developing revised California Environmental Quality Act (CEQA) significance thresholds. At the time of publication of the Draft EIR, the BAAQMD was expected to adopt the new thresholds by the end of 2009, but that did not occur. The updated thresholds

were adopted on June 2, 2010, as discussed below, well after the Draft EIR was published in October 2009.

As the Draft EIR was being prepared in 2009, the BAAQMD was considering at one point quantitative construction GHG emission thresholds for CEQA documents. Later in 2009, the BAAQMD considered thresholds based on best management practices (BMPs) for construction-generated GHG emissions as well as quantitative thresholds. At the time the Draft EIR was completed, BMP-based thresholds were being considered, and these are reflected in the EIR (Impact 4.13.7, EIR page 4.13-43). The EIR also provides a quantitative analysis of construction GHG emissions based on the draft BAAQMD significance thresholds that were considered earlier in 2009 (see EIR page 4.13-32 [last paragraph] and Impact 4.13.7, page 4.13-44). Given the draft nature of the BAAQMD thresholds at the time the Draft EIR was prepared, the impact analysis also considered statewide guidance provided by the California Air Resources Board and GHG reduction requirements implemented by the City and County of San Francisco (CCSF) in the assessment of Impact 4.13.7.

As mentioned above, the BAAQMD updated its 1999 CEQA Air Quality Guidelines (BAAQMD 1999) by adopting significance thresholds for GHGs, criteria air pollutants, and health risks on June 2, 2010. These updated thresholds are contained in a report entitled *California Environmental Quality Act Air Quality Guidelines* (BAAQMD 2010). The revised CEQA Air Quality Guidelines include significance thresholds, assessment methodologies, and mitigation strategies for GHG emissions, criteria air pollutants, and health risks. It is BAAQMD policy that the recently adopted thresholds of significance for criteria air pollutants, GHGs, and health risks are only intended to apply to projects for which a Notice of Preparation (NOP) is published or environmental analyses begins on or after June 2, 2010 and thresholds pertaining to the health risks to sensitive receptors are only intended to apply to projects where an NOP is published or environmental analyses begins on or after January 1, 2011. Since the NOP for the CDRP was published October 24, 2005, and environmental analysis began well in advance of June 2, 2010, the thresholds do not apply. Nevertheless, the analysis has been updated in this Comments and Responses document in consideration of the adopted assessment methodologies, significance thresholds, and mitigation strategies to ensure the Final EIR is consistent with the most up-to-date BAAQMD guidance.

The adopted BAAQMD CEQA thresholds do not provide a construction GHG emission threshold (BAAQMD 2010). GHG emission thresholds are only provided for a project's operational emissions. Due to this change in approach, the potentially significant and unavoidable impact described on page 4.13-44 of the Draft EIR (Volume 2, Chapter 4, Section 4.13, Air Quality) related to exceedance of daily construction emissions of carbon dioxide equivalents (CO₂e) does not apply. The second and third full paragraphs on page 4.13-44 of the EIR are modified to read as follows.

As discussed above, ~~on June 2, 2010 the BAAQMD is considering the future adoption of quantitative adopted~~ CEQA thresholds of significance for construction-related air quality impacts. ~~Although construction emission thresholds are provided for criteria pollutants and risks and hazards, none are provided for GHG emissions (BAAQMD 2010). However, at the time the Draft EIR was prepared in 2009, At present, two quantitative options are were~~ under consideration for construction-related GHG emission thresholds (BAAQMD 2009). Option 1 ~~is was~~ based on the total construction-related CO₂e emissions over the duration of project construction. Under this option, a project would have a significant impact if its total emissions of CO₂e over the duration of construction exceed 35,250 metric tons (MT) ~~(equivalent to 35,560 standard 2,000-lb tons)~~. Option 2 under consideration ~~was is~~ based on daily construction emissions of CO₂e. Under this option, a project would have a significant impact if daily construction emissions exceed 10 MT per day ~~(equivalent to 11 standard tons)~~. ~~In anticipation of the future implementation of proposed new BAAQMD CEQA thresholds of significance for GHG emissions, this EIR provides an analysis of the project's construction GHG emissions under each of the proposed thresholds of significance identified above.~~

Based on the worst-case analysis above, construction-related GHG emissions were calculated to be approximately 21 ~~tons MF~~ per day CO₂e (19 MT) and 24,012 ~~tons MF~~ CO₂e (21,779.6 MT) over the duration of construction (a maximum of 6,003 ~~tons MF~~ CO₂e per year multiplied by the 4-year construction schedule). Actual emissions would not reach worst-case levels on a daily basis; therefore, total emissions would likely be much less than 24,012 MT CO₂e over the duration of the project. Nevertheless, even under this worst-case scenario, emissions would not exceed 35,250 MT CO₂e. Therefore, project emissions would not be anticipated to exceed the total construction emissions threshold of 35,250 MT CO₂e under the proposed 2009 draft threshold Option 1; however, the project would be likely to exceed the daily threshold of 10 MT CO₂e under the 2009 draft threshold Option 2. Implementation of the BAAQMD exhaust and diesel PM controls identified in Mitigation Measures 5.13.1b, 5.13.3a, and 5.13.3b would reduce project-related GHG emissions. The exact reduction percentage cannot be calculated at this time; however, even with these reductions, construction-related emissions of GHG would likely still exceed the 2009 draft daily threshold of significance of 10 MT per day CO₂e. No other feasible mitigation exists that would reduce construction-related emissions of GHG to below ~~the this~~ BAAQMD 2009 draft daily threshold of significance. Therefore, if the 2009 draft daily threshold of significance had been adopted by BAAQMD, construction-related emissions of GHGs would have been considered a potentially significant and unavoidable impacts on climate change. in accordance with the proposed Option 2, BAAQMD threshold of significance.

However, the BAAQMD CEQA Thresholds of Significance adopted on June 2, 2010 do not identify a quantitative GHG threshold for construction emissions; instead, the 2010 guidelines encourage incorporation of best management practices to reduce GHG emissions during construction (BAAQMD 2010a). As described above, because project construction would conform to the requirements of the EAMs pursuant to the California Global Warming Solutions Act of 2006 and with the CCSF and SFPUC GHG reduction actions, the project would

incorporate best management practices to reduce GHG emissions during construction, and impacts related to construction GHG emissions would be considered less-than-significant.

The following new reference is added to EIR page 4.13-45 after the seventh listed reference to support the revised discussion above:

Bay Area Air Quality Management District (BAAQMD). 2010a. California Environmental Quality Act, Air Quality Guidelines. San Francisco, CA.

Other than the nullification of the potentially significant and unavoidable impact related to construction GHG emissions, the conclusions in the Draft EIR would not change due to the BAAQMD's retraction of its previously proposed GHG thresholds for construction-generated GHG emissions.

With respect to the CDRP Variant, some of the proposed project enhancements and refinements, such as installation of a fish screen and construction of a fish ladder at the Alameda Creek Diversion Dam, would result in additional construction activity, and therefore, additional construction GHG emissions. The environmental effects of the CDRP Variant, including additional construction GHG emissions, are described in Chapter 9, Section 9.3.13. As described in Section 9.3.13, the updated conclusions identified above for the Draft EIR project also apply to the CDRP Variant.

Net Zero Threshold

In regards to the suggestion of adoption of a "net zero" GHG emissions threshold, as indicated in the discussion above, BAAQMD has not adopted a net zero GHG emissions threshold for construction. BAAQMD has also not adopted a net zero GHG emissions criteria for project operations, planning level actions, or regional plans (BAAQMD 2010).

A net zero GHG emissions threshold also is not included in recently adopted revisions to the State *CEQA Guidelines* related to GHGs. Although not required since the changes in the Guidelines were not in effect when the Draft EIR was released for public review, the impact evaluation and mitigation approach in the Draft EIR is consistent with the recently adopted revisions to *CEQA Guidelines* for evaluating GHG impacts, as mandated by Senate Bill 97 enacted in 2007.¹⁶ These new Guidelines sections provide, among other things, that lead agencies should make a good-faith effort to estimate or describe the GHG emissions that would result from a project and select among a variety of potential criteria to determine the significance of the impact (e.g., "The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions"). Notably, nothing in the new Guidelines provisions mentions, much less requires, the use of a net-zero

¹⁶ See Pub. Resources Code, § 21083.05.

emissions threshold. In addition, there is no published guidance calling for a net-zero significance threshold for GHG emissions, and no agencies have proposed use of this criterion. This state of affairs strongly suggests that, even prior to the adoption of the new *CEQA Guidelines* sections, a “net zero” approach was never required. In fact, in 2008 the staff of the California Air Resources Board declared categorically that a zero contribution significance threshold for GHGs is not mandated (CARB 2008). CARB staff explained that non-zero thresholds can be supported by substantial evidence in light of the fact that (1) some level of emission in the near term and at mid-century is still consistent with climate stabilization and (2) current and anticipated regulations and programs apart from CEQA will proliferate and increasingly reduce the GHG contributions of past, present and future projects. These conclusions are consistent with CEQA case law, which has held that the ‘one molecule [addition] rule’ is not the rule of law.¹⁷”

Another concern raised by commenters is that additional “feasible” mitigation exists but is not included (i.e., carbon offsets). The commenter indicates that even if the project included all feasible on-site mitigation, the SFPUC should purchase carbon offsets to further reduce the impact to result in a net-zero increase in construction GHG emissions. As discussed above, a net-zero emissions threshold is not required by CEQA, CEQA case law, BAAQMD, or CARB.

Furthermore, no standardized, verifiable carbon offset mitigation program currently exists. The San Francisco Planning Department determined that the impact is less-than-significant and no mitigation is required; however, mitigation measures identified for other air quality impacts (Mitigation Measures 5.13.1b, 5.13.3a, and 5.13.3b (in Vol. 2, Chapter 5, Section 5.13, EIR pages 5-39 – 5-40) would reduce GHG emissions from construction equipment exhaust by reducing fuel consumption and inefficient operation of equipment, consistent with the significance criteria included in the EIR and the CEQA Guidelines and in the guidance adopted by BAAQMD. Construction-related measures that would reduce GHG emissions include limiting equipment idling time, keeping equipment in good operating condition, and requiring the use of modern, fuel-efficient construction equipment. CEQA does not require analysis of every *imaginable* alternative or mitigation measure; its concern is with *feasible* means of reducing significant environmental effects.¹⁸ Thus, it is not the SFPUC’s obligation under CEQA to offset emissions to a net-zero level.

Finally, with adoption of the final GHG emissions thresholds by BAAQMD as discussed above, which reject the guidance that was the basis for the conclusion that the proposed project would cause a significant and unavoidable GHG construction emissions impact identified in the Draft EIR, there is no longer a basis for requiring additional mitigation.

¹⁷ *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98). 120.

¹⁸ *Concerned Citizens of South Central Los Angeles v. Los Angeles Unified School District* [1994] 24 Cal. App. 4th 826, 841.

The discussion above regarding a net-zero emissions criteria also applies to the CDRP Variant. As discussed in Chapter 9, Section 9.3.13 of this Comments and Responses document, the CDRP Variant does not result in a significant GHG impact and mitigation is not required. There is no basis for use of a net-zero criteria for mitigation.

REFERENCES

- Bay Area Air Quality Management District (BAAQMD). 1999. BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans. San Francisco, CA.
- Bay Area Air Quality Management District (BAAQMD). 2009 (December). Bay Area Air Quality Management District Proposed Air Quality CEQA Thresholds of Significance. <http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/Proposed%20Thresholds%20of%20Significance%20Dec%207%202009.ashx>. Accessed March 4, 2010.
- Bay Area Air Quality Management District (BAAQMD). 2010. California Environmental Quality Act, Air Quality Guidelines. San Francisco, CA. http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_June%202010.ashx Accessed March 22, 2010.
- California Air Resources Board (CARB). 2008. *Preliminary Draft Staff Proposal, "Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act,"* October 24, 2008).

11. COMMENTS AND RESPONSES

11.1 AGENCIES

Listed below are the agencies that submitted comments on the *Calaveras Dam Replacement Project Draft EIR*, along with the order of the responses in this subsection, the commenter code for each agency, and the page number on which each set of responses begins.

Response Order	Code	Commenter	Comment Format and Date	Beginning Page Number of Responses
Federal				
11.1.1	A-NMFS	National Marine Fisheries Service Dick Butler, Santa Rosa Area Office Supervisor, Protected Resources Division	Letter, December 17, 2009	11.1.1-1
State				
11.1.2	A-Cal EMA	California Emergency Management Agency Ken Worman, State Hazard Mitigation Officer	Letter, November 24, 2009	11.1.2-1
11.1.3	A-CDFG	California Department of Fish and Game Scott Wilson for Charles Armor, Regional Manager, Delta Region	Letter, December 21, 2009	11.1.3-1
11.1.4	A-DWR	Department of Water Resources Michael Waggoner for David A. Gutierrez, Chief, Division of Safety of Dams	Letter, November 18, 2009	11.1.4-1
11.1.5	A-RWQCB	California Regional Water Quality Control Board, San Francisco Bay Region William B. Hurley, Senior Engineer	Letter, November 5, 2009	11.1.5-1
Regional/Local				
11.1.6	A-Zone 7	Alameda County Flood Control and Water Conservation District, Zone 7 Kent Arends for G.F. Duerig, General Manager, Zone 7 Water Agency	Letter, December 21, 2009	11.1.6-1

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Response Order	Code	Commenter	Comment Format and Date	Beginning Page Number of Responses
11.1.7	A-ACPWA	Alameda County Public Works Agency Kwablah Attiogbe, Environmental Services Manager	Letter, December 18, 2009	11.1.7-1
11.1.8	A-ACWD	Alameda County Water District Walter L. Wadlow, General Manager	Letter, December 17, 2009	11.1.8-1
11.1.9	A-ABAG	Association of Bay Area Governments Kenneth Kirkey, Planning Director	Letter, November 12, 2009	11.1.9-1
11.1.10	A-BAWSCA1	Bay Area Water Supply and Conservation Agency Nicole Sandkulla	Public hearing comments, Fremont Main Library, November 10, 2009, pages 19-20	11.1.10-1
11.1.11	A-BAWSCA2	Bay Area Water Supply and Conservation Agency Arthur Jensen, CEO	Written statement submitted at the November 10, 2009, public hearing	11.1.11-1
11.1.12	A-BAWSCA3	Bay Area Water Supply and Conservation Agency Arthur Jensen	Public hearing comments, San Francisco City Hall, November 12, 2009, pages 22-24	11.1.12-1
11.1.13	A-BAWSCA4	Bay Area Water Supply and Conservation Agency Nicole M. Sandkulla, P.E., Senior Water Resources Engineer	Letter, December 18, 2009	11.1.13-1
11.1.14	A-Milpitas	City of Milpitas James Lindsay, Planning & Neighborhood Services Director	Letter, November 24, 2009	11.1.14-1
11.1.15	A-EBRPD	East Bay Regional Park District Nancy H. Wenninger for Robert E. Doyle, Assistant General Manager	Letter, December 11, 2009	11.1.15-1

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Response Order	Code	Commenter	Comment Format and Date	Beginning Page Number of Responses
11.1.16	A-GCRCD	Guadalupe/Coyote Resource Conservation District Roger Castillo	Public hearing comments, Fremont Main Library, November 10, 2009, pages 33-34	11.1.16-1
11.1.17	A-SCCPRD	Santa Clara County Parks and Recreation Department Antoinette Romeo, Park Planner	Letter, December 19, 2009	11.1.17-1
11.1.18	A-SCCRAD	Santa Clara County Roads and Airports Department Felix Lopez, Project Engineer	Letter, November 10, 2009	11.1.18-1
11.1.19	A-SFBOS-Daly	Chris Daly, Member of Board of Supervisors, San Francisco, CA	Letter, January 12, 2010	11.1.19-1
11.1.20	A-SFPC1	San Francisco Planning Commission Commissioner Michael J. Antonini	Public hearing comments, San Francisco City Hall, November 12, 2009, pages 44-45	11.1.20-1
11.1.21	A-SFPC2	San Francisco Planning Commission Commissioner Gwyneth Borden	Public hearing comments, San Francisco City Hall, November 12, 2009, pages 46-47	11.1.21-1
11.1.22	A-SFPC3	San Francisco Planning Commission Commissioner Christina R. Olague	Public hearing comments, San Francisco City Hall, November 12, 2009, pages 47-48	11.1.22-1
11.1.23	A-SFPC4	San Francisco Planning Commission Commissioner William L. Lee	Public hearing comments, San Francisco City Hall, November 12, 2009, pages 49-50	11.1.23-1
11.1.24	A-SFPC5	San Francisco Planning Commission Commissioner Kathrin Moore	Public hearing comments, San Francisco City Hall, November 12, 2009, page 51	11.1.24-1

**11.1.1 NATIONAL MARINE FISHERIES SERVICE, DICK BUTLER, SANTA ROSA
AREA OFFICE SUPERVISOR, PROTECTED RESOURCES DIVISION,
12/17/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-NMFS-01 The comment suggests that the SFPUC establish a joint SFPUC, National Marine Fisheries Service (NMFS), and California Department of Fish and Game (CDFG) task force to provide: (1) engineering evaluation of fish passage through the Calaveras Dam/Alameda Creek Diversion Dam (ACDD) tunnel to allow movement of adult and juvenile *Oncorhynchus mykiss* (*O. mykiss*) between Calaveras Reservoir and Upper Alameda Creek, (2) engineering evaluation of volitional downstream migration facilities for juvenile and adult fish (presumably *O. mykiss*), (3) engineering evaluation of non-volitional dam/reservoir upstream and downstream fish collection facilities for adult and juvenile (presumably *O. mykiss*), (4) a biological investigation of the current migration behavior and habitat use of *O. mykiss* in Arroyo Hondo and Calaveras Reservoir, and (5) a biological investigation of potential predation impacts to *O. mykiss* by bass in Calaveras Reservoir.

Since scoping was initiated for the Calaveras Dam Replacement Project (CDRP) EIR in 2005, and to some degree before that time, the SFPUC has been working directly with NMFS, CDFG, and other agencies regarding methods to address potential impacts on *O. mykiss* (both resident populations and anadromous steelhead) in the EIR and as part of permitting requirements for the project under the federal Endangered Species Act (FESA). The SFPUC is currently completing a FESA Section 7 consultation with NMFS, with the U.S. Army Corps of Engineers (USACE) serving as the federal action agency. The SFPUC will continue to work with NMFS, CDFG, and other members of the Alameda Creek Fisheries Restoration Workgroup (ACFRW) to develop studies to assess improvement actions, including instream flows and habitat enhancements, to support steelhead restoration.

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A-NMFS

As discussed in Chapter 9 of this Comments and Responses document, since publication of the Draft EIR, the SFPUC has developed a variant to the project analyzed in the Draft EIR. This CDRP Variant, which is SFPUC's preferred project, includes enhancements to fishery resources that have been developed, in part, as a result of the SFPUC's ongoing coordination with resource agencies. The CDRP Variant includes revised flow schedules, construction of a fish ladder at the ACDD, installation of fish screens at the ACDD and Calaveras Reservoir, and implementation of an Adaptive Management Implementation Plan (AMIP). Please refer to Chapter 9 of this Comments and Responses document for a description of the CDRP Variant and its potential environmental impacts. In addition, refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a description of the FESA Section 7 consultation process with NMFS. The ongoing coordination with NMFS, as described in the AMIP, will include consideration of the recommendations for engineering evaluations, feasibility studies, and biological investigations provided in this comment.

In addition, it should be noted that the SFPUC is conducting and has committed to conduct various monitoring, study, and adaptive management efforts related to native fishes. Some of these efforts are the outcome of participation in the ACFRW and in support of the development of the Alameda Watershed Habitat Conservation Plan (HCP). Some of these efforts are ongoing and originally based on past commitments, such as the 1997 Memorandum of Understanding (MOU) with CDFG (1997 MOU) (see EIR pages 4.5-5 and 4.5-6 in Vol. 1, Chapter 4, Section 4.5). Some efforts were originally required as mitigation in the EIR, such as Mitigation Measures 5.5.5a and 5.5.5b (see EIR pages 5-16 – 5-17 in Vol. 2, Chapter 5, Section 5.5). Some efforts, including the comprehensive AMIP, which is a result of the FESA consultation with NMFS and Streambed Alteration permit coordination with CDFG, will supersede both the monitoring associated with the 1997 MOU and Mitigation Measures 5.5.5a and 5.5.5b, if the CDRP Variant is adopted. For additional information on the SFPUC-led monitoring, study, and adaptive management efforts, please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

A-NMFS-02

The comment suggests that, until site-specific flow studies are completed, water releases from Calaveras Dam should follow the regime identified in the 1997 MOU between the SFPUC and CDFG, with the exception that the

11. Comments and Responses

11.1 Agencies

A-NMFS

compliance point for achieving flows should be the outlet works for Calaveras Dam instead of the confluence of Alameda and Calaveras Creeks as identified in the 1997 MOU.

The comment also lists release volumes as “flows established by the MOU,” but the flows provided in the comment are not exactly consistent with the 1997 MOU. For example, the comment states “November 1 to January 14 – release 5-cubic-feet-per second (cfs),” whereas the 1997 MOU states that, from November 1 through January 12, the minimum flow would be 4.5 cfs with a 5-day running average flow of 5 cfs. It is assumed that this element of the comment intends to convey the existing MOU flows and is not a suggestion to change the MOU flow regime.

As described on EIR page 3-20 (Vol. 1, Chapter 3, Section 3.3.4), the MOU with CDFG is part of the existing regulatory setting, as it is an existing agreement between the CDFG and the SFPUC. Modifying the MOU would require concurrence from CDFG, which is being conducted through the regulatory permitting process. Nevertheless, modifying the MOU is outside the scope of the EIR and is not necessary to mitigate project impacts to less-than-significant levels.

The comment does not state that the suggested modification to the project description is necessary to lessen or avoid potential adverse effects of the project on the environment. Rather, the comment letter states: “[c]onstruction of a new dam provides an opportunity to incorporate facilities and measures for anadromous and resident fish downstream of the dam, within the reservoir, and upstream of the dam.” The comment is therefore understood as a comment on the project analyzed in the Draft EIR rather than as a comment on the adequacy or accuracy of the EIR in disclosing the potential effects of the proposed project on the environment.

As described on EIR page 3-66 (Vol. 1, Chapter 3, Section 3.6.5), the SFPUC originally proposed to provide in-stream flows to support native fishes consistent with the flow regime defined in the 1997 MOU as part of the Draft EIR project. Consistent with the MOU, flow and temperature criteria would be met at the USGS stream gage located just below the confluence of Calaveras and Alameda Creeks. As previously proposed, flow requirements would be met first by bypassing water at the ACDD whenever sufficient natural stream flow upstream of the ACDD is present. Water would be released from Calaveras Reservoir primarily during the dry season when natural flow in

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A-NMFS

Alameda Creek above the ACDD is insufficient to meet the flow and/or temperature criteria defined under the MOU.

Under the revised flow proposal included in the CDRP Variant (see Chapter 9, Section 9.2 of this Comments and Responses document), which was developed through close coordination with NMFS and CDFG, the SFPUC would implement flow bypasses and reservoir releases that exceed the requirements of the 1997 MOU and is also now proposing to have two separate compliance points, one immediately downstream of the ACDD and the other at the outlet works of Calaveras Dam. Establishment of the two compliance points will allow for more accurate compliance monitoring of the flow requirements set for both Alameda Creek below the ACDD and for Calaveras Creek below the dam; this addresses the concern raised in the comment about the appropriate compliance point. The proposed instream flow schedules included in the CDRP Variant are designed to support existing native fish as well as steelhead once restored to the watershed. Analysis of changes in environmental effects associated with the revised flow proposal can be found in Chapter 9, Section 9.3 of this Comments and Responses document and a more detailed description of the proposed instream flow schedules can be found in Appendix N.

A-NMFS-03 The comment suggests that the SFPUC establish a joint SFPUC, NMFS, NMFS Southwest Fisheries Science Center, and CDFG steelhead translocation/reintroduction task force to (1) complete by no later than June 30, 2013 an evaluation of the genetic viability of the wild *O. mykiss* population in Calaveras Reservoir/Arroyo Hondo to determine its current status (with a parenthetical statement included in the comment that “we should include San Antonio”); and (2) complete by no later than June 30, 2013 an evaluation of the current status of *O. mykiss* and the suitability of habitat for translocation/reintroduction efforts in anadromous waters of Alameda Creek.

Again, this comment is understood as a comment on the project analyzed in the Draft EIR rather than as a comment on the adequacy or accuracy of the Draft EIR in disclosing the potential effects of the proposed project on the environment. The SFPUC is working directly with NMFS and CDFG to address permitting requirements for the CDRP. Numerous joint meetings have been held with SFPUC, NMFS, CDFG, and USACE. All of these agencies are included in the SFPUC’s Water System Improvement Program Inter Agency Task Force, which is a working group to coordinate permitting needs among different resource agencies.

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A-NMFS

As described above in Response A-NMFS-01, above, the SFPUC is currently conducting and has committed to conduct various monitoring, study, and adaptive management efforts related to fishery resources and specifically to steelhead. Some of these efforts will result from FESA consultation with NMFS; and others are being conducted as part of the SFPUC's participation in the ACFRW and in support of the development of the Alameda Watershed HCP. For additional information on SFPUC-led monitoring, study, and adaptive management efforts, please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

The need for the genetic study identified in item #1 of the comment is being determined as part of the SFPUC's ongoing coordination efforts with the resource agencies. Existing and future monitoring, study, and adaptive management efforts, as described in the Adaptive Management Implementation Plan (AMIP) (see Appendix N), would fulfill the study intent of item #2 of the comment.

A-NMFS-04

The comment recommends several measures and facilities to bring the ACDD up to current fish protection standards, including installation of a fish ladder/passage over the ACDD, installation of a fish screen at the intake of the diversion tunnel, and use of water diversion guidelines and the Physical Habitat Simulation Model of the Instream Flow Incremental Methodology (ETJV 2008) to meet downstream bypass flow requirements for salmonids until additional site-specific flow studies are completed. This comment also specifies recommendations for seasonal limits on water diversions, minimum bypass flows, and maximum rate of diversion.

Impact 4.5.5 in the EIR (pages 4.5-60 to 4.5-70) provides a thorough analysis of the effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek. The analysis concluded that implementation of proposed flow bypasses consistent with the 1997 MOU would result in more stable and reliable habitat conditions when compared to existing conditions. Fish entrainment in the diversion tunnel could increase, but any increases in entrainment would be expected to be small and not result in adverse effects on fish populations in Alameda Creek upstream or downstream of the ACDD, which have sustained themselves over 70 years of regular diversions (see also discussion in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam). Thus, under the Draft EIR project, the overall effect of

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project operations on fisheries resources along Alameda Creek would be less than significant, and no mitigation measures are required. Therefore, requiring inclusion of a fish ladder or fish screen at the ACDD in the Draft EIR project is not warranted under CEQA.

Since publication of the Draft EIR, the SFPUC has developed the CDRP Variant that includes construction of a fish ladder at the ACDD and installation of fish screens at the ACDD and in Calaveras Reservoir, revised proposed instream flow schedules, and an AMIP. Please refer to Chapter 9, Section 9.2 of this Comments and Responses document for a detailed description of the CDRP Variant. In addition, refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding flow schedules included in project implementation and to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, regarding FESA Section 7 consultation process with NMFS.

A-NMFS-05

The comment states that the releases and bypass flows from the CDRP will be integral to the successful restoration of steelhead in the watershed. The comment also states that sufficient bypass flows at the ACDD for steelhead passage through Little Yosemite and a fish passage facility at the ACDD will also significantly contribute to the spatial habitat diversity essential for the viability of the species.

Please refer to Chapter 9, Section 9.2 of this Comments and Responses document for a detailed description of the CDRP Variant and associated commitments to ensure future migratory fish passage at the ACDD and proposed instream flow schedules at the ACDD. In addition, refer to Sections 9.3.5 and 9.5.2 for an analysis of the direct and cumulative impacts of the CDRP Variant on fisheries. The cumulative analysis in Section 9.5.2 includes modifications of natural barriers in the Alameda Creek watershed (i.e., Little Yosemite reach of Alameda Creek) as a reasonably foreseeable future project. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding flow schedules proposed as part of the CDRP. Refer to Response O-ACA&CBD1-23 for a discussion of passage at Little Yosemite, and the discussion in Chapter 9, Section 9.5, Cumulative Impacts of the CDRP Variant, regarding the addition of a sub-project under the CDRP AMIP to improve passage conditions through the Little Yosemite reach of Alameda Creek.

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References

EDAW & Turnstone Joint Venture (ETJV). 2008. *Calaveras Dam Replacement Project Fisheries Technical Report 2008*. Prepared by Hagar Environmental Science and Thomas R. Payne and Associates for EDAW & Turnstone Joint Venture and SFPUC.

**11.1.2 CALIFORNIA EMERGENCY MANAGEMENT AGENCY, KEN WORMAN,
STATE HAZARD MITIGATION OFFICER, 11/24/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-Cal EMA-01 The comment gives notice that the SFPUC will be required to prepare a dam failure inundation map and submit it to the California Emergency Management Agency (Cal EMA) 60 days prior to the filling the Calaveras Reservoir after the replacement dam is complete.

The SFPUC has indicated that it acknowledges receipt of this notice and will comply with Cal EMA's requirements. Note that Figure 4.6.17: Depth of Floodwaters from Modeled Breach of Calaveras Dam, on EIR page 4.6-101 (Vol.1, Chapter 4, Section 4.6), is, in effect, a dam failure inundation map. The figure shows the anticipated depth of floodwaters from Calaveras Dam to San Francisco Bay resulting from a modeled breach of dam.

In response to this comment, the following text is added to EIR page 3-74 (Vol. 1, Chapter 3, Section 3.7.3) before the bullet "Bay Area Air Quality Management District (BAAQMD)" (new text is underlined):

- California Emergency Management Agency (Cal EMA)
 - Approval of Dam Inundation Map and Technical Study – A dam failure inundation map must be provided to Cal EMA at least 60 days prior to filling Calaveras Reservoir after the new dam is completed. Cal EMA reviews dam inundation maps to identify areas where death or injury would result from the partial or total failure of a dam and then determines whether adequate public safety measures exist for the evacuation and control of populated areas below the dam.

This revision does not change the analysis or conclusions presented in the Draft EIR.

11.1.3 CALIFORNIA DEPARTMENT OF FISH AND GAME, SCOTT WILSON FOR CHARLES ARMOR, REGIONAL MANAGER, BAY DELTA REGION, 12/21/09

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-CDFG-01 The California Department of Fish and Game (CDFG) states that the EIR should disclose the size of the future reservoir enlargement enabled by the proposed robust core dam design and address potential impacts on biological resources associated with the future enlargement. The CDFG also suggests that the watershed is already too impaired to consider enlargement of the reservoir. Please refer to Section 10.1, Potential Future Enlargement of Calaveras Reservoir, for detailed discussion of these issues. The commenter is correct in noting that the EIR identifies Alternative 5, New Downstream Dam without Provision for Potential Future Enlargement Alternative, as the environmentally superior alternative but that it fails to meet a primary project objective of constructing a dam with a robust design.

A-CDFG-02 The comment states that the Draft EIR does not adequately address eight specific issues that were requested in response to the CDRP Notice of Preparation. This response indicates where these issues are addressed in the EIR.

1. *Habitat-based stream assessment for Calaveras, Arroyo Hondo, and Alameda Creeks, and life history criteria of species which may be impacted by the Project:* Complete habitat-based stream assessments were conducted for Calaveras, Arroyo Hondo, and Alameda Creeks, and life history criteria of species which may be affected by the CDRP were also described and assessed. Please refer to Vol. 1, Section 4.5, pp. 4.5-1 and Vol. 1, Section 4.4, EIR page 4.4-1 for a summary description of the assessments that were conducted in support of these analyses. A more detailed description of the assessments conducted for fisheries and aquatic habitats is provided in the *Calaveras Dam Replacement Project, Fisheries Technical Report* (ETJV 2008), which is part of the administrative record and has been provided to the CDFG.

2. *Hydrologic study to determine amount of water needed to support steelhead:* EIR Section 4.5.1.1 (pages 4.5-14 – 4.5-27) describes flow conditions in the streams and water bodies in the study area, and Section 4.5.1.2 (pages 4.5-39 – 4.5-45) describes the life history and habitat needs of steelhead/rainbow trout. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant for a description of the flow release schedules and for information on the analyses that were conducted to assess the flow release schedules. A more detailed description of the hydrologic study to determine the amount of water needed to support steelhead is provided in Appendix J of the EIR (*CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead*) and *Calaveras Dam Replacement Project, Fisheries Technical Report* (ETJV 2008, see Appendix A), which is part of the administrative record and has been provided to the CDFG.

Since the Draft EIR was published the SFPUC has developed a project variant that includes enhancements to fishery resources and other refinements to the project analyzed in the Draft EIR. The CDRP Variant was developed as a result of the SFPUC's ongoing coordination with resource agencies and its own project development and design process. The CDRP Variant includes proposed instream flow schedules that differ from those included in the Draft EIR project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. The master responses on Hydrology (Section 10.3) and on Fisheries (Section 10.4) also discuss the CDRP Variant and the proposed instream flow schedules.

3. *Proposal to provide minimum bypass flows for Calaveras Dam and the ACDD:* EIR Chapter 3, Section 3.6.5 (pages 3-66 – 3-69) describes resident rainbow trout releases proposed as part of the CDRP, and Section 3.6.6 (page 3-69) presents steelhead flow releases also proposed as part of the project. Analysis of the flows is provided in EIR Vol. 1, Chapter 4, Section 4.5, Vol. 2, Chapter 6, and Vol. 3, Appendix J. Also refer to the master response presented in Section 10.3 Hydrology, and Section 10.4, Fisheries, and specifically to Sections 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant; 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam; and 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

Since the Draft EIR was published the SFPUC has developed a project variant that includes enhancements to fishery resources and other refinements to the project analyzed in the Draft EIR. The CDRP Variant was developed as a result of the SFPUC's ongoing coordination with resource agencies and its own project development and design process. The CDRP Variant includes proposed instream flow schedules that differ from those included in the Draft EIR project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. The master responses on Hydrology (Section 10.3) and on Fisheries (Section 10.4) also discuss the CDRP Variant and the proposed instream flow schedules.

4. *Assessment of impacts of Calaveras Dam and the ACDD on channel forming flows:* Effects of the CDRP on channel formation and sediment transport are addressed in the EIR in Impacts 4.6.9 to 4.6.11 (pages 4.6-102 – 4.6-105). Also, please refer to master responses in Chapter 10, Sections 10.3.3, Diversions and Streamflow; 10.3.4, Geomorphology, Sediment Transport, and Channel Formation; and 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam. See also Chapter 9, for description and analysis of the CDRP Variant, which includes proposed instream flow schedules that differ from those in the Draft EIR project along with altered sluicing operations at the ACDD.
5. *Analysis of current and projected operational scenarios for Calaveras Reservoir and impacts to existing population of land-locked steelhead that utilize Calaveras Reservoir and Arroyo Hondo, and potential alteration of operations at San Antonio Reservoir:* Please refer to Vol. 1, Chapter 4, Section 4.5 of the EIR (Impact 4.5.7, pages 4.5-76 – 4.5-78) and to the master response presented in Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion of these issues. See Chapter 9 for description of proposed screens and ladder at the ACDD and at the adits in Calaveras Reservoir that are a part of the CDRP Variant. The proposed interim and long-term operations of Calaveras Reservoir would not substantially alter the operation of San Antonio Reservoir compared to the existing condition; therefore, issues related to San Antonio Reservoir operations are not addressed in the CDRP EIR.

6. *Recommendation that Calaveras Reservoir dam not be built to accommodate future size increases based on concerns that future increases would adversely affect the landlocked steelhead population and foothill yellow-legged frogs:* See response to A-CDFG-1, above.
7. *Provide a specific plan to screen adits in Calaveras Reservoir and the ACDD per CDFG screening criteria:* See Chapter 9, CDRP Variant, for a description of proposed screens at the ACDD and at the adits in Calaveras Reservoir. Both are parts of the proposed CDRP Variant.
8. *Provide a specific plan to provide fish passage at the new Calaveras Dam and the ACDD:* See Chapter 9 for a description of the proposed ladder at the ACDD that is part of the CDRP Variant. No facilities or provisions for fish passage are proposed at the replacement Calaveras Dam; therefore, the proposed replacement dam would not change the extent to which fish passage or migration is impeded by the existing dam. Please also refer to the master response presented in Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion of passage issues at both the ACDD and Calaveras Dam.

A-CDFG-03

The comment states that the SFPUC has not released flows in compliance with the 1997 CDFG MOU, the 1997 CDFG MOU cannot be assumed to provide suitable habitat conditions, the 1997 CDFG MOU was not developed for steelhead, that the compliance point should not allow for flows in one creek to be substituted for another, and that minimum bypass flows at each structure must be assessed separately in order to comply with the Fish and Game Code. It also states that the recapture facility is only briefly addressed in the Draft EIR as a cumulative project.

As described on EIR page 3-20 (Vol. 1, Chapter 3), the SFPUC has committed to release up to 6,300 acre-feet (AF) per year to Calaveras Creek for the enhancement of fisheries and other natural resources consistent with the 1997 CDFG MOU. However, the 2001 DSOD restrictions on reservoir operations has substantially reduced usable storage and limited the available cold-water pool in the reservoir, and under current conditions, inflow to the reservoir in excess of DSOD restrictions is periodically bypassed at Calaveras Dam and the ACDD. The remaining limited storage has been used for water supply purposes only.

As stated on EIR pages 3-63 – 3-70 (Vol. 1, Chapter 3), the Draft EIR project includes flow schedules for the current fish community and for steelhead. The minimum flow schedule for the current fish community is consistent with the 1997 CDFG MOU. The minimum flow schedule also includes flow bypasses at the ACDD (minimum of 10 cfs from December 1 through April 30) and releases from Calaveras Dam (minimum 2 cfs). The proposed flow schedules for steelhead include additional flow schedules during normal and wet water-types for the management of enhanced spawning and rearing habitat.

The 1997 MOU flow schedule is based on detailed flow and water temperature modeling and analysis (see *Alameda Creek Water Resources Study* [Bookman-Edmonston Engineering, Inc. 1995]). The purpose of the modeling and analysis was to determine an appropriate flow schedule that could provide improved habitat conditions for native cold and warm water fish in Alameda Creek. Since development of the MOU flow schedules, the following studies related to Alameda creek hydrology and habitat requirements for steelhead in Alameda Creek have been completed:

- *Alameda Creek Aquatic Resources Monitoring Reports (1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007)* (SFPUC 1999, 2001, 2002a, 2002b, 2004, 2005, 2006, 2007, 2008, 2009),
- *An Assessment of the Potential for Restoration of a Viable Steelhead Population in the Alameda Creek Watershed* (Gunther et al. 2000),
- *Air and Water Temperature Monitoring within Alameda Creek: 2001-2002* (Hanson Environmental, Inc. 2002),
- *Alameda Creek Streamflow Study* (ENTRIX 2006),
- *Alameda Creek Population Recovery Strategies and Instream Flows Assessment for Steelhead* (McBain and Trush 2008),
- *Calaveras Dam Replacement Project Fisheries Technical Report* (ETJV 2008),
- *Assessment of Relationship Between Stream Flow and Spawning Habitat for Rainbow Trout and Steelhead in Alameda Creek* conducted by Hagar Environmental Sciences and Thomas R. Payne and Associates (Appendix A of ETJV 2008), and
- *CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead* (ETJV 2009).
- *Flow-habitat curves for steelhead, amphibians, and benthic macroinvertebrates on upper Alameda Creek, prepared for the Alameda Creek Fisheries Subcommittee* (McBain & Trush, SFPUC, and EBRPD 2010).

As further discussed in EIR Sections 3.6.5, 3.6.6, 4.5, and 6.2.3.3 all of these studies were considered by the SFPUC in developing the flow schedules proposed under the Draft EIR project and in the analysis of the effects of the Draft EIR project on native fish and other aquatic resources.

The CDRP Variant includes flow schedules for native fishes (proposed instream flow schedules) that differ from the flow schedules that are part of the Draft EIR project (See Chapter 9 for more information). The proposed instream flow schedules for the CDRP Variant were developed using the same information sources that were used to develop the flow schedules for native fish in the Draft EIR project and are listed above.

A-CDFG-04 The comment states that minimum bypass flows should be developed based on special studies and there should be a plan in place to monitor compliance, effectiveness, and procedures for making modifications prior to issuance of Lake and Streambed Alteration Agreements.

The SFPUC will submit the appropriate information to the CDFG necessary to obtain Lake and Streambed Alteration Agreements, and the information will be consistent with the EIR; see also Response A-CDFG-36 for additional discussion on requirements for Lake and Streambed Alteration Agreements.

See responses to Comments CDFG-02 and CDFG-03 above for more information on the studies that have been conducted in support of the development of the flow schedules that are part of the Draft EIR project. The same studies supported the development of the proposed instream flow schedules that are part of the CDRP Variant. Please also see the master response presented in Section 10.4, Fisheries, for further discussion. Specifically, refer to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant; and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a description of the flow release schedules, information on the analyses that were conducted to assess the flow release schedules, and information on monitoring and adaptive management (i.e., AMIP that is proposed by the SFPUC under the CDRP Variant).

A-CDFG-05 The comment states that the proposed steelhead flow release schedule is not supported by hydrologic or biologic data, that the proposal needs to address all life history needs of steelhead, and that it relies on determination by NMFS before implementation.

See responses to Comments CDFG-02 and CDFG-03 above for more information on the studies that have been conducted in support of the development of the flow schedules that are part of the Draft EIR project. The same studies supported the development of the proposed instream flow schedules that are part of the CDRP Variant. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding the timing of implementation of the proposed flows for steelhead and to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, regarding consultation with NMFS and monitoring and adaptive management.

A-CDFG-06 The comment states that because surveys have not been conducted in the reach of Calaveras Creek where construction is proposed, it is speculative to make the determination that trout are not present. The commenter also states that because under existing conditions, no flow is released from Calaveras Dam to Calaveras Creek except during infrequent cone valve releases, which have generally occurred during brief periods in the winter and spring, sufficient water is not allowed to pass the dam to keep fish in good condition. Lastly, the commenter states that if sufficient water is released from Calaveras Reservoir, CDFG would likely consider this reach of Calaveras Creek high quality habitat for fish and other wildlife.

This issue is addressed in the EIR under Impacts 4.5.1 and 4.5.2 (pages 4.5-55 – 4.5-56). Also, please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, for additional responses to comments regarding these issues. Regarding the quality of habitat for fish and other wildlife along this reach of Calaveras Creek, both the Draft EIR project and the CDRP Variant would implement ramped flow releases through low-flow valves installed as part of the project that would be an increase in flows and an improvement in aquatic and riparian habitat over the existing conditions. The flows would be released to enhance habitat for fish and other wildlife, and monitoring and adaptive management would be conducted to ensure appropriate biological and habitat response.

A-CDFG-07 The comment states that reduced diversions at the ACDD have resulted in more flow that has been passed over the ACDD and that this additional flow could be sufficient to provide land-locked steelhead access past the barrier commonly referred to as Little Yosemite.

Issues related to reduced diversions and flow at the ACDD are addressed in the master response in Section 10.3, Hydrology, in Section 10.3.3, Diversions and Streamflow. With specific regard to the potential for operation of the ACDD to potentially affect fish passage at Little Yosemite, please refer to Response O-ACA&CBD1-23.

The CDRP Variant includes proposed instream flow schedules that differ from those included in the Draft EIR project. The CDRP Variant and its environmental impacts are described in Chapter 9 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. The master responses presented in Section 10.3, Hydrology, and in Section 10.4, Fisheries, also discuss the CDRP Variant and the proposed instream flow schedules.

A-CDFG-08 The comment states that without provisions for passage at the ACDD and Calaveras Dam, the project will continue to be out of compliance with the Fish and Game Code.

See Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a response to comments regarding compliance with the Fish and Game Code. Further, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant, which includes additional fishery enhancements and project refinements including a fish ladder at the ACDD and a fish screen at the Alameda Creek Diversion Tunnel. The CDRP Variant and its environmental impacts are described in Chapter 9 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. With regard to passage at Calaveras Dam, please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion of these issues.

A-CDFG-09 The comment states that improving passage conditions at the ACDD and Little Yosemite is feasible and that without including passage as part of the project, the least environmentally damaging alternative is not included in the CEQA document. The commenter is interested in providing passage for steelhead at ACDD, and that a fish ladder combined with installation of screens at the diversion tunnel is a technologically feasible option.

The commenter notes that the Draft EIR does not include the least environmentally damaging alternative. Selection of the Least Environmentally

Damaging Practicable Alternative (LEDPA) is a requirement of Section 404 of the Clean Water Act (CWA), and specifically, the Section 404(b)(1) Guidelines. The SFPUC designed both the Draft EIR project and the Variant in close coordination with the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Regional Water Quality Control Board (RWQCB) to ensure compliance with CWA wetland protection policies. As stated on EIR page 3.7.3 (Vol. 1, Chapter 3, Section 3.7.3), “the project would require an Individual Permit under Section 404 of the CWA for the discharge of dredged or fill material into all waters of the United States, including wetlands.”¹ The LEDPA analysis for the CDRP will be conducted as part of that permit process. The CEQA Statute and Guidelines do not require evaluation of, or selection of, the LEDPA in an EIR.

The EIR does, however, identify the environmentally superior alternative pursuant to CEQA Guidelines Section 15126.6(e)(2). As stated in Volume 1, Chapter 1, Section 1.6, page 1-33, “Alternative 5, New Downstream Dam without Provision for Potential Future Enlargement, is considered to be the environmentally superior alternative. Alternative 5 would reduce some construction-related impacts of the proposed project due to the approximately 11 percent less material required to construct it, and is the only alternative that would not result in new or increased significant impacts in comparison to the CDRP. It would meet most of the CDRP’s objectives. It would not meet the primary objective of constructing a new dam with a robust design that could accommodate potential enlargement by future generations.”

Refer to Response O-ACA&CBD1-23 for a discussion of passage at Little Yosemite, and the discussion in Chapter 9, Section 9.5, Cumulative Impacts of the CDRP Variant, regarding the addition of a sub-project under the CDRP AMIP to improve passage conditions through the Little Yosemite reach of Alameda Creek.

The CDRP Variant includes a fish screen at the entrance to the diversion tunnel at the ACDD and a fish ladder at the ACDD that would provide future restored populations of steelhead access to spawning and rearing habitat above the ACDD. For more information, please see Chapter 9 of this Comments and Responses document.

¹ The focus of the LEDPA process under Section 404 of the CWA is to confirm the avoidance and minimization of fill to waters of the United States.

A-CDFG-10 The following issues are raised in this comment:

- Compliance with the SFPUC's Water Enterprise Environmental Stewardship Policy;
- Sluicing of sediment from behind the diversion dam;
- The adequacy of the analysis of the proposed project's effects on channel form in the reach of Alameda Creek below the diversion dam and subsequent effects on fish habitat;
- The baseline for the geomorphology analysis;
- Peak flows and channel form; and
- The statement that with-proposed project flows will be outside the pre-project range.

Environmental Stewardship Policy

The CDFG states that the CDRP would conflict with the SFPUC Water Enterprise Environmental Stewardship Policy because diversions at the ACDD would primarily occur during the rainy season of normal, above normal and wet years. CDFG recommends diversions be limited to December 15 to March 31 and that all natural flows outside of this period be bypassed.

The SFPUC Water Enterprise Environmental Stewardship Policy states, in relevant part:

Releases from SFPUC reservoirs will (consistent with the SFPUC mission described above, existing agreements, and applicable state and federal laws), mimic the variation of the seasonal hydrology (e.g., magnitude, timing, duration, and frequency) of their corresponding watersheds in order to sustain the aquatic and riparian ecosystems upon which these native fish and wildlife species depend. [Emphasis added.]

This policy does not prohibit diversion, capture, or storage of watershed runoff during the rainy season, and provides a framework for flows released from the SFPUC's reservoirs to mimic the variation of the seasonal hydrology, given the other considerations listed above. The proposed flow schedules developed to support resident rainbow trout and steelhead under the Draft EIR project would mimic the unimpaired variation of the seasonal hydrology of the Alameda Creek watershed, particularly below ACDD in the winter to support spawning and migration. The flow schedule for steelhead includes the bypass and release of greater quantities of water in wetter years which is consistent with the unimpaired hydrology. This approach of varying bypasses and releases from

year-to-year and season-to-season also supports the requirements of other native fishes and amphibians, particularly below the ACDD.

The CDRP Variant includes flow schedules for native fishes that differ from the flow schedules for resident trout and steelhead that are a part of the Draft EIR project. Under the CDRP Variant, the flow schedules are similar to the flow schedule for steelhead under the Draft EIR project in that the bypasses and releases made under it would mimic the year-to-year and seasonal variability of the unimpaired hydrology. The CDRP Variant includes a fish screen on the diversion tunnel that limits the maximum capacity of the diversion tunnel to 370 cfs. Consequently, less water would be diverted with the CDRP Variant than would be diverted with the Draft EIR project, and peak flows above 370 cfs would spill over the ACDD. With the Draft EIR project, peak flows above 650 cfs would spill over the ACDD. The CDRP Variant also includes a fish ladder that would provide restored steelhead access to Alameda Creek above the ACDD. For more information on the CDRP Variant and its potential environmental impacts, see Chapter 9 of this Comments and Responses document.

The proposed operations of the ACDD with either the Draft EIR project or the CDRP Variant would not conflict with the SFPUC Water Enterprise Environmental Stewardship Policy.

Sluicing of Sediment at the ACDD

Please see master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport and Channel Formation, for a discussion of the effects of sluicing sediment trapped behind ACDD to the creek below the diversion dam. This section of the master response discusses sluicing under both the Draft EIR project and the CDRP Variant.

Effects of Proposed Project on Sediment Transport and Geomorphology in Alameda Creek below the ACDD and Subsequent Effects on Fish Habitat

Please see master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion of the effects of the proposed project-related to changes in sediment movement and geomorphology and subsequent effects on fish habitat in Alameda Creek below the ACDD.

Baseline for Geomorphology Analysis

Please see master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport and Channel Formation, for a discussion of the baseline for the geomorphology analysis.

Peak Flows and Channel Form

Please see master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport and Channel Formation, for a discussion of peak flows and channel form.

Pre- and Post-Proposed Project Range of flows

Please see Response A-CDFG-20, below.

A-CDFG-11 The comment states that steelhead could be present before the 10-year monitoring period is complete (Mitigation Measure 5.5.5a and 5.5.5b) and because steelhead are not addressed in the monitoring, it does not sufficiently address conditions in the reasonably foreseeable future. The comment also states that the impact could be avoided by implementing suitable bypass flows.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Sections 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, and 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for responses to comments regarding issues related to the monitoring period, and analysis of the steelhead flow release schedules.

As discussed in Chapter 9, the CDRP Variant includes the AMIP as one of the fishery enhancements. The AMIP would play a similar role with the CDRP Variant as the monitoring and adaptive management provisions of Mitigation Measures 5.5.5a and 5.5.5b do with the Draft EIR project.

A-CDFG-12 The comment raises concerns regarding fish entrainment at the Alameda Creek Diversion Tunnel, associated effects on the downstream rearing habitat, and the source population upstream of the ACDD.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD, for responses to comments regarding issues related to entrainment at the

Alameda Creek Diversion Tunnel, effects of flow diversions at the ACDD on rearing habitat, and the source population upstream of the ACDD.

Since publication of the Draft EIR, the SFPUC has developed a variant of the CDRP (CDRP Variant) that includes the construction of fish screens at the entrance to the Alameda Creek Diversion Tunnel. Please see Chapter 9 for a description of CDRP Variant and its potential environmental impacts.

A-CDFG-13 The comment reiterates information in the EIR (page 4.5-31) regarding fish distribution and statements regarding the condition of the fish community. The comment states that low relative abundance of rainbow trout in Reaches A-2 and C-1 is not an indication of good health for trout and that a high proportion of roach throughout all areas sampled is indicative of low fish diversity.

The EIR presents an evaluation and characterization of the health of the fish community on pages 4.5-32 – 4.5-34 (Vol. 1, Chapter 4). The evaluation and characterization relies on methods described by Moyle et al. (1998) and finds that the fish community appears to be in good condition given existing limiting factors (e.g., as stated on EIR pages 4.5-30 – 4.5-34 [Vol. 1, Chapter 4; see also Table 4.5.3], species distribution throughout the study reaches is variable and dependent upon a number of different factors). For example, relative abundance of rainbow trout is higher in Reach A-3 (a reach that is influenced by operations of the ACDD) than in Reaches A-4 and A-5, two reaches that are located above the ACDD and have unimpaired flow conditions. Reaches A-1 and A-2 regularly exhibit warm summer water temperatures that are not conducive to coldwater rainbow trout and therefore would not be expected to support high abundance of this species. Reach A-4, an unimpaired reach located upstream of the ACDD, had the highest proportion of roach (~96 percent of all species documented).

The information presented in the EIR and above supports the statements made regarding the overall health of the fish community given the limiting factors that exist in Alameda Creek watershed streams with seasonally low flows and warm water temperatures.

A-CDFG-14 The comment states that minimum bypass flows should be maintained during the two shutdown periods of the outlet works during the construction period and that the Draft EIR does not provide sufficient evidence that the existing hydrologic conditions are sufficient to support a native fish community.

The term “bypass flows” in the context of the CDRP denotes stream flow that would bypass the ACDD by means of the proposed ACDD bypass tunnel or the fish ladder (only the CDRP Variant includes a fish ladder at the ACDD). During the two summer shutdown periods, water would not be diverted into Calaveras Reservoir through the Alameda Creek Diversion Tunnel, and any flow in Alameda Creek above the ACDD would therefore be allowed to spill over the diversion dam. The two summer shutdown periods would limit the SFPUC’s ability to release water from Calaveras Reservoir into Calaveras Creek below Calaveras Dam. However, summer cold water releases from the reservoir are not provided under existing conditions so there would be no change from existing conditions with implementation of the Draft EIR project or the CDRP Variant. As stated in the EIR (Impact 4.5.6, page 4.5-72), the existing seepage flows would continue to provide base flows to the creek during the two shutdown periods. These base flows support the current fish community downstream of the dam during summer periods. Thus, during the construction period, base flows would be similar to those that occur under the existing condition. Please also refer to Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, for additional responses to comments regarding this issue.

A-CDFG-15

The comment states that flows should be evaluated using a daily time scale to have more biologically meaningful results. The comment also states that sufficient flows should be provided to pass adults and juveniles over critical riffles.

Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.2, Hydrologic Modeling, for a discussion of the time scale of flows estimates used in the analysis. The analysis of the impacts of the proposed project on fish and fish habitat relied on estimates made with both monthly and 15-minute time-interval models. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding issues related to the appropriate time scales for hydrologic data needed to evaluate fishery impacts.

The flow schedule for support of steelhead shown in Table 3-7 in the EIR (page 3-70) was developed in part using a model known as PHABSIM that relates flow to the extent of fish habitat in various reaches of Alameda Creek. The flow schedule for steelhead varies by season and water year type. Maintenance of the minimum flows shown in the flow schedule in Alameda

Creek below its confluence with Calaveras Creek is expected to provide suitable habitat for steelhead from the ACDD downstream. In addition to minimum flows specified in the schedule, some high flows would continue to occur below ACDD that would enable migrating fish to access upstream spawning and rearing habitats. Please also refer to Section 10.3.3, Diversions and Streamflow, and specifically to the sub-section entitled “Releases from Calaveras Dam and the ACDD” for further information regarding flow schedules for trout and steelhead.

The CDRP Variant includes proposed instream flow schedules that differ from those included in the Draft EIR project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. The master responses on Hydrology (Section 10.3) and on Fisheries (Section 10.4) also discuss the CDRP Variant and the proposed instream flow schedules.

A-CDFG-16

The comment requests that the analysis of cone valve releases include all different life stages for fish and sensitive amphibians. The comment also raises concern over the ability of the proposed low-flow release valves to provide minimum flows needed to support fish in good health.

A description of cone valve operations is provided in Vol. 1, Chapter 3, Section 3.6.3 of the EIR. An analysis of potential effects of cone valve releases on all relevant life stages of fish (spawning, egg incubation, and rearing) and amphibians (breeding and egg incubation) is provided in Vol. 1, Chapter 4, Impacts 4.4.2, 4.4.7, and 4.5.6.

Impacts 4.4.2 and 4.4.7 (pages 4.4-84 and 4.4-102, respectively), address the impacts of cone valve operation on California red-legged frog and foothill yellow-legged frog, respectively, as well as discuss the egg, tadpole, and adult life stages of these frogs. Under the current operations, the releases from the 72-inch cone valve have ranged from an average of 336 to 375 cfs and can strand or wash away egg masses. Under proposed operations, there would be a Cone Valve Operations Plan (see additional details below as well as on pages 3-65 and 3-66 in Vol. 1 of the EIR) to minimize the impacts of cone valve releases on fish and amphibians; proposed releases from the cone valve would be conducted outside of the peak period of amphibian egg deposition and hatching. The proposed Cone Valve Operations Plan would also include the development and implementation of flow release ramping criteria for a full

range of potential flows that could be released from the low flow and cone valves. The Cone Valve Operations Plan would address both operation of the cone valve for reservoir management and testing of the valve as required by the DSOD. Compared to current operations, the impact of the proposed operations in accordance with the Cone Valve Operations Plan would be less-than-significant.

Impact 4.5.6 (page 4.5-75) describes the effects of proposed operations on native fish downstream of Calaveras Dam including use of the cone valve. Cone valve testing (under DSOD maintenance requirements) would be conducted during periods when high flows are naturally present, and if possible, at a time when salmonids and other native fish spawning is not likely to occur. November and December are likely the best window for testing, assuming these tests can be conducted in association with large precipitation/runoff events, absent precipitation levels that might otherwise present a flood risk to downstream entities. Implementation of cone valve testing in advance of the winter spawning season would prevent potential disruption to salmonids as well as other native fish spawning and sensitive amphibian life stages within Calaveras and Alameda Creeks immediately downstream of Calaveras Dam that may otherwise result from cone valve tests.

Rapid or sudden increase/decreases in flow releases associated with operation of the cone valve could result in fish isolation and stranding. However, the proposed Cone Valve Operations Plan would require cone valve testing to be conducted during the least sensitive periods to the extent feasible as well as development and implementation of flow release ramping criteria described above which would minimize stranding native fish and amphibian species and/or dewatering of redds. Therefore, compared to the existing conditions, the impacts of cone valve operations on native fish would be less than significant.

The flow release ramping criteria described in the 1997 CDFG MOU only address a relatively small range of flows (i.e., 5 cfs to 20 cfs). Therefore, flow release ramping criteria for Calaveras Dam are proposed to be developed and implemented for a full range of potential flows that could be released from the low flow and cone valves. The ramping criteria would prescribe rates and timing of both increases and decrease in releases to Calaveras and Alameda Creeks to minimize stranding native fish species and/or dewatering of redds. Before flow release ramping criteria are finalized, SFPUC would consult with NMFS and CDFG. The ramping criteria would be implemented in accordance with the Cone Valve Operations Plan (EIR pages 3-65 and 3-66) prior to

refilling of Calaveras Reservoir (completion of the replacement dam). Discharge rating curves indicating the outlet flow rate resulting from the outlet valve position over a range of storage conditions would be developed and utilized for ramping. Reservoir water supply/management releases, fisheries releases, and other planned (non-emergency) operational flow changes would use the discharge rating curves to implement the flow-specific ramping criteria.

A-CDFG-17 The comment states that the analysis of proposed operations at the ACDD and Calaveras Dam, including cone valve releases, was not adequate for resident fish, amphibians, and/or steelhead. This comment is a summary of the preceding comments; please see Response A-CDFG-16, above. With regard to steelhead, the analysis of potential cone valve operation effects provided in Vol. 1, Chapter 4, Impact 4.5.6 would be similar to that for future occurring steelhead (see Vol. 3, Appendix J for a detailed description of ACDD and Calaveras Dam operational effects steelhead).

A-CDFG-18 The comment states that the Draft EIR does not accurately describe or analyze issues associated with hydrologic connectivity between Calaveras Reservoir and Arroyo Hondo.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a response to comments regarding hydrologic connectivity between the reservoir and Arroyo Hondo.

A-CDFG-19 The comment states that plans to address downstream fish migration barriers (e.g., BART weir) are moving forward, a timeline to establish steelhead access into the watershed is available, and that the EIR should incorporate a discussion of this information. The comment also states that the EIR should include anadromous steelhead in the impact analysis.

Please refer to Vol. 2, Chapter 6 and Vol. 3, Appendix J of the EIR for a complete discussion on the downstream fish passage planning efforts and impact analysis of future occurring steelhead in the watershed. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for responses to comments regarding issues related to steelhead in the Alameda Creek watershed.

A-CDFG-20 The comment requests a clarification of what is meant by “within the range of past operations.” A number of significance criteria were used to evaluate the hydrologic impacts of the proposed project. One criterion states that a hydrologic impact would be judged to be significant if the proposed project substantially altered streamflows such that they are outside the range of pre-project conditions and results in substantial hydrologic changes. The range of pre-project flows extends from a minimum recorded flow to a maximum recorded flow. The hydrologic impacts of the proposed project would be judged to be significant if it resulted in minimum or maximum flows that fall outside the pre-project range. In evaluating the impacts of the proposed project with respect to this criterion, seasonality was considered.

The comment is made with reference to Impact 4.6.1: Construction of the replacement dam would temporarily change flow rates in Calaveras and Alameda Creeks downstream of Calaveras Dam (EIR pages 4.6-64 – 4.6-66). The narrative description of the impact indicates that because of construction work on the outlet structures at the dam, no flow would be released from the Calaveras Dam outlet structures from mid-April to mid-November in two sequential summers. As indicated in EIR Table 4.6-16, under the existing condition there are no releases to Calaveras Creek below Calaveras Dam in May through November in all year types. There are no releases to the creek in the month of November in all year types but releases do occur in the month of April in wet and above normal years. There are no releases to Calaveras Creek below Calaveras Dam in November because Calaveras Reservoir is drawn down in the summer and fall. By November, there is sufficient capacity available in the reservoir to capture any runoff from November storms. Releases are sometimes made from the reservoir in the month of April of wet and above normal years when late season storms occur when the reservoir is full or almost full.

During the two summer construction periods, no releases could be made from Calaveras Reservoir outlet structures. If the two construction periods occur in wet or above normal years and if late season storms occur in those years some releases of water that would occur in April under existing conditions would not occur during construction of the proposed project. Under these circumstances, water would be retained in the reservoir which would be released under the existing condition and as a result, at the start of the rainy season, the reservoir would contain more water with the proposed project than under the existing condition. This would lead to an increase in rainy season releases from

Calaveras Reservoir in the two rainy seasons following the summertime construction periods.

Flow in Calaveras Creek when no releases are being made from Calaveras Reservoir consists of seepage, groundwater infiltration, and local storm runoff into the reach of the creek between Calaveras Dam and Calaveras Creek's confluence with Alameda Creek. Little or no runoff occurs outside the rainy season. The range of existing flows is very great; the minimum flow is close to zero when no releases are being made from the reservoir and the other sources of flow are at their seasonal minimum. Maximum flows of several thousand cubic feet per second (cfs) occur when fairly rare emergency releases are made from the reservoir or when even rarer uncontrolled releases over the spillway occur. None of the flow changes that could occur during the construction period, described in the EIR (pages 4.6-64 – 4.6-66) and reiterated above, would result in flows in Calaveras Creek or Alameda Creeks substantially different from existing flows or outside the range of existing flows.

The comment states that the same level of analysis applied to flow impacts should also be applied to 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 (EIR pages 4.5-70 – 4.5-76). However, because Impact 4.5.6 addresses the consequences of operation rather than construction of the proposed project it is assumed that the commenter meant to refer to Impact 4.5.1, Construction-related effects on fish occupying habitat in Calaveras Creek downstream of the existing dam (EIR page 4.5-55). A third paragraph is added to Impact 4.5.1 EIR page 4.5-55 as follows (new text is underlined):

During the two summer construction periods, no releases would be made from Calaveras Reservoir outlet structures between mid-April and mid-November as described under Impact 4.6.1. If the two construction periods occur in wet or above normal years and if late season storms occur in those years, some releases of water that would occur in April under existing conditions would not occur during construction of the proposed project. If such a reduction in releases occurred, there could be a corresponding increase in releases in the rainy seasons following the two summertime construction periods. The changes in flow would be small and would have a less-than-significant impact on fisheries in Calaveras Creek and in Alameda Creek downstream of its confluence with Calaveras Creek.

See also master response presented in Section 10.2, Baselines Used in the Environmental Analysis, and specifically to Section 10.2.2, Use of Appropriate Baselines.

A-CDFG-21 The comment requests clarification for the assumptions used in the Hetch Hetchy/Local Simulation Model and the 15-minute model.

Please see the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.2, Hydrologic Modeling, for a description of modeling assumptions used in the hydrologic analysis in the EIR for the Draft EIR project and subsequently for evaluation of the CDRP Variant, presented in Chapter 9.

A-CDFG-22 The commenter requests clarification regarding the timing of mitigation measures proposed to restore temporary impacts to wetland, stream, pond, and riparian habitat.

As stated in Mitigation Measure 5.4.2a on EIR page 5-9 (Vol. 2, Chapter 5, Section 5.4), restoration would occur *within* three years of completion of construction. The measure does not state or otherwise suggest that SFPUC would wait for three years to begin restoration. The length of time proposed to complete restoration is reasonable given that vegetation at the restored sites is likely to take greater than one year to mature to the extent that functions and values are restored. Also see Response A-CDFG-30, below.

A-CDFG-23 The comment asserts that the impact analysis on riparian woodland communities is speculative on the following points: stand regeneration as it relates to reduced winter and increased summer flows; potential conversion of sycamore alluvial and valley oak woodland types would be minimal; and that channel incision would not be an important factor.

In response to this comment, the EIR text on page 4.4-82, middle of the second paragraph, is revised as follows (deleted text is shown as ~~strike through~~ and new text is underlined):

The change in flows ~~would have no~~ is expected ~~not to have no substantial~~ effects on the riparian woodland communities...

The impact assessment of stand regeneration is based on the hydrologic information presented in Section 4.6 of the EIR. As described in Impact 4.4.1, riparian communities along Alameda Creek are in generally good condition. High winter flows are important for seed dispersal, and with implementation of

the project, the flows would continue to occur at a magnitude similar to existing conditions. On average, summer flows would increase, which would increase the survival and recruitment of seedlings.

The impact assessment of conversion of woodland type is based on the hydrologic information presented in Impact 4.6.12 on EIR page 4.6-105. Potential conversion of woodland type would be mediated through increased groundwater levels around the perimeter of the reservoir that would occur with the restored water levels. Sycamores are intolerant of long-term exposure to water-logged, unaerated soils, and consistently elevated groundwater could degrade the health of sycamores in the sycamore alluvial woodland. As described in Impact 4.6.12, in the Sunol aquifer areas, the impact of the project is expected to be minor (either slightly positive or slightly negative), depending on the year's rainfall and seasonal conditions. The proposed operation of Calaveras Dam and the ACDD would likely have little effect on groundwater levels when compared with existing conditions.

The impact assessment of the potential impacts of channel incision on riparian vegetation is based on information presented in Impacts 4.6.10 and 4.6.11 (pages 4.6-103 – 4.6-105). Those impact discussions describe how potential downstream channel-forming flows with the project would be similar to those that occurred under the baseline and during historical operation, and that a substantial change in channel-forming flows and sediment conditions is not expected. In addition, please see the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport, and Channel Formation, for further discussion.

In response to this comment, the text on EIR page 4.4-82, end of the second paragraph, is revised as follows (deleted text is shown as ~~strike through~~ and new text is underlined):

As described in Impacts 4.6.10 and 4.6.11, cChannel incision is not expected to result from operation of the proposed project ~~be an important factor because of the large cobble content of the substrate.~~

A-CDFG-24

The comment states that bypass flows are a requirement of the project and are not appropriate as mitigation for inundation of stream habitat in Arroyo Hondo.

The commenter is correct in stating that bypass flows are a part of the proposed project (EIR pages 3-66 – 3-70). Impact 4.4.1 (EIR pages 4.4-79 – 4.4-84) indicates that refilling the reservoir upon completion of construction would result in the inundation of about 7,520 to 9,420 linear feet of Arroyo Hondo,

and that this impact would be offset by improvements to the functions and services of more than 16,000 feet of Alameda Creek downstream of the ACDD as a result of implementing minimum bypass flows proposed as part of the CDRP. While the implementation of the bypass flows at the ACDD are considered part of the proposed project, the EIR has determined that the indirect benefit of these flows to the functions and services of the downstream Alameda Creek corridor would adequately offset the inundation of Arroyo Hondo.

A-CDFG-25

The commenter states that the Draft EIR does not include sufficient evidence or analysis to make conclusions regarding identified impacts on California red-legged frog and foothill yellow-legged frog below Calaveras Dam and the ACDD.

Based on the fact that California red-legged frog habitat below the ACDD is relatively unimpaired when compared to the habitat below Calaveras Dam, it is reasonable to assume that flows released from Calaveras Dam would have less benefit to the species. Nonetheless, because the anticipated results cannot be demonstrated at this time, the EIR has been revised to include less conclusive language.

In response to this comment, the EIR text on page 4.4-87, beginning of the first full paragraph, is revised as follows (deleted text is shown as ~~strike through~~ and new text is underlined):

Because Calaveras Creek below Calaveras Dam is relatively short and impaired, Fflows released at the dam would likely have less benefit for the California red-legged frog than flows bypassed from the ACDD.

The commenter does not provide any support for the statement that impacts to California red-legged frog from the cone valve releases are not sufficiently assessed in the EIR. A detailed discussion of potential impacts on California red-legged frog resulting from future cone valve releases is presented on EIR pages 4.4-87 and 4.4-88 (Vol. 1, Chapter 4, Section 4.4). See also Response A-CDFG-16, above, which describes proposed improvements to flow and ramping rates for the cone valve releases.

The San Francisco Planning Department and the SFPUC recognize the work that the East Bay Regional Parks District (EBRPD) is doing with regards to foothill yellow-legged frog, and relevant information from EBRPD studies has been incorporated into the EIR (Vol.1, Chapter 4, Section 4.4, pages 4.4-42 – 4.4-45). In addition, foothill yellow-legged frog was discussed at meetings

between ETJV biologists and EBRPD staff on June 14 and July 18, 2006 (EIR page 4.4-4). The EIR (pages 4.4-42 – 4.4-45) provides extensive information on the foothill yellow-legged frog including results of data collection and literature review, and this information is used to support the impact analysis (Impact 4.4.7, pages 4.4-102 – 4.4-106) of the potential project effects on foothill yellow-legged frog. The analysis concluded that with implementation of Mitigation Measure 5.4.3, Compensation Measures, impacts on foothill yellow-legged frog would be reduced to less than significant; this measure includes a final compensation plan that would specifically address foothill yellow-legged frog habitat, ecologically based success criteria, and monitoring of appropriate parameters needed to meet performance standards.

A-CDFG-26 The commenter states that the Draft EIR does not include sufficient evidence to conclude that flow releases schedules specified in the 1997 CDFG MOU would also support California red-legged frog and other amphibians.

As stated on EIR page 4.4-89 (Vol. 1, Chapter 4, Section 4.4), compared to the baseline conditions, minimum flows would consistently provide water during the California red-legged frog breeding and rearing season. Under baseline conditions, breeding and rearing conditions below the ACDD may be impaired by diversion of all flows under 650 cfs. It is reasonable to conclude that by improving the reliability of suitable breeding and rearing habitat, there would be a net improvement in the overall quality of California red-legged frog habitat. Nonetheless, because the anticipated results are difficult to prove or otherwise measure at this time, the EIR has been revised to indicate less certainty and that the releases could benefit to the California red-legged frog when compared to baseline conditions.

In response to this comment, the text on EIR page 4.4-89, middle of the first (partial) paragraph, is revised as follows (deleted text is shown as ~~strike-through~~ and new text is underlined):

Compared to the baseline, minimum flows would provide more water during the California red-legged frog breeding and rearing season. Minimum flows would provide less water than under baseline years without diversion; however, they ~~would~~ are expected to maintain habitat availability for California red-legged frog in Alameda Creek downstream of the ACDD by providing sufficient flow to sustain breeding habitat.

A-CDFG-27 The commenter is concerned that without screens the Alameda Creek Diversion Tunnel will cause entrainment of California red-legged frog and foothill yellow-legged frog.

Entrainment of California red-legged frog or foothill yellow-legged frog into the ACDD diversion tunnel could occur, however the magnitude of this potential impact is very low, for the reasons described below in EIR text changes. The potential for operation of the project to take California red-legged frog is identified on EIR page 4.4-91 (Vol.1, Chapter 4, Section 4.4). Proposed compensation measures (Vol.2, Chapter 5, Section 5.4, page 5-11) would mitigate this impact.

In response to this comment, under Impact 4.4.2 on EIR page 4.4-88, the heading is revised as follows (deleted text is shown as ~~strike through~~ and new text is underlined):

Alameda Creek ~~Downstream of~~from ACDD to the Calaveras Creek Confluence

In Impact 4.4.2, the following new paragraph is inserted after the first paragraph on EIR page 4.4-89 (new text is underlined):

Increased operation of the ACDD could cause a minor increase in exposure to existing sources of injury or mortality of California red-legged frog through entrainment at the diversion tunnel. In order to enter the diversion, eggs, larvae, juvenile or adults would have to already have been caught in high flows. Once entrained by high flows (meaning they cannot swim well enough to escape to sheltered water or land), they are already subjected to several sources of injury and mortality, including collisions with rocks and other hard objects, increased exposure to predation, stranding, and desiccation. This is a natural condition for creek-breeding amphibians. As an example, EBRPD found 14 dead metamorphs at the bottom of Little Yosemite following a high flow event; it is presumed they died as a result of being battered on rocks after they were swept into the gorge (Bobzien, personal communication on 9/27/06). Entrainment into the diversion tunnel would incrementally increase exposure to these existing causes of damage or mortality. It is not known how many frogs could be entrained into the diversion tunnel, however this impact would mostly affect tadpoles and metamorphs, which are usually present in Alameda creek by about late March. Eggs dislodged from their oviposition sites are unlikely to survive, and juveniles and adults are not restricted to aquatic habitat; they can avoid high flows by moving to land. Therefore, the potential increase in mortality resulting from operation of the ACDD diversion cannot readily be quantified but is expected to be minor.

The CDRP Variant includes installation of a fish screen on the Alameda Creek Diversion Tunnel. The potential for entrainment of California red-legged frogs would be further reduced by new fish screens but it is unlikely to completely

avoid their loss. Because the California red-legged frog is a listed species this potential impact, although small, would be significant.

In Impact 4.4.2, the following text is revised on page 4.4-92, first full paragraph (new text is underlined):

Under future operation of the Calaveras Dam and ACDD, establishing bypass flows at the ACDD could improve conditions for California red-legged frogs in Alameda Creek; implementing them from Calaveras Dam in summer and fall would improve habitat conditions especially during critical dry season flows. Increased diversions to the Calaveras Reservoir through the diversion tunnel could result in a minor increase in the existing potential for injury or death of California red-legged frogs that are entrained by high flows above the diversion.

In Impact 4.4.7, the following text is revised on EIR page 4.4-104, first full paragraph (deleted text is shown as ~~strike through~~ and new text is underlined):

Impacts of operation would occur by the same mechanisms as described for creeks under the California red-legged frog (Impact 4.4.2). Operation of Calaveras Dam would affect the foothill yellow-legged frog habitat in the same four reaches: (1) Calaveras Creek below Calaveras Dam, (2) Alameda Creek ~~between~~ from the ACDD and to the confluence with Calaveras Creek, (3) Alameda Creek from Calaveras Creek to Arroyo de La Laguna, and (4) Alameda Creek in the extended study area.

In Impact 4.4.7, the following text is revised on EIR page 4.4-104, fourth full paragraph (new text is underlined):

In Alameda Creek from the ACDD to the confluence with Calaveras Creek (Reaches A-3 and A- 4), operation of the CDRP would decrease total wet season flows but the bypassing of water at the ACDD would ensure that there would be some flow in the creek during most winter months ~~increase dry season flows but reduce wet season flows.~~ Bypasses would typically continue into the spring so the duration of the period when the creek is almost completely dry would be reduced. Pools created by the bypasses could persist into the summer. Dry season flows would be increased by providing minimum flows established in the MOU (CDFG 1997). This would improve habitat in Alameda Creek by making aquatic habitat more reliably available, annually, during the breeding season. In this reach, Alameda Creek is not impaired by bullfrogs upstream of Little Yosemite. Increased diversions, relative to baseline, would cause a small increase in potential impacts from entrainment in the diversion tunnel by the same mechanism described for California red-legged frog in Impact 4.4.2.

In Impact 4.4.7, the following text is revised on EIR page 4.4-106, first full paragraph (new text is underlined):

Operation of the replacement dam, reservoir, and ACDD would maintain foothill yellow-legged frog habitat in Alameda Creek between the ACDD and Calaveras Creek, but could cause a minor increase in potential impacts from entrainment in the diversion tunnel.

The CDRP Variant includes installation of a fish screen on the Alameda Creek Diversion Tunnel. The potential for entrainment of foothill yellow-legged frogs would be substantially reduced by new fish screens but it is unlikely to completely avoid their loss. Because the foothill yellow-legged frog is regionally important this potential impact, although small, would be significant.

In Mitigation Measure 5.4.3a for California red-legged frog, the following text is revised on EIR page 5-11 (new text is underlined):

...fully compensate for any loss of California red-legged frog at the Alameda Creek Diversion Dam (ACDD) and breeding habitat in Alameda Creek downstream of the confluence with Calaveras Creek...

In Mitigation Measure 5.4.3a for foothill yellow-legged frog, the following text is revised on EIR page 5-11 (new text is underlined):

... fully compensate for any loss of foothill yellow-legged frog at the ACDD and for the loss of 9,421 linear feet of habitat in Arroyo Hondo, and fully compensate for any loss of breeding habitat in Alameda Creek downstream of the confluence with Calaveras Creek ...

A-CDFG-28

The comment is in two parts. The first is about the distance from breeding habitat that should be used to identify potential California tiger salamander upland habitat, and the second says the location and magnitude of temporary impacts to California tiger salamander habitat should be disclosed.

CDFG states in this comment:

According to interim guidance provided by CDFG and USFWS, habitat assessments for California tiger salamander should consider upland and aquatic habitats within 1.24 miles (2km) of potentially suitable breeding habitat (USFWS and CDFG, 2003)... Therefore, the upland estivation habitat should be calculated using 1.24 miles from accessible breeding ponds and the appropriate mitigation shall be based on those calculations.

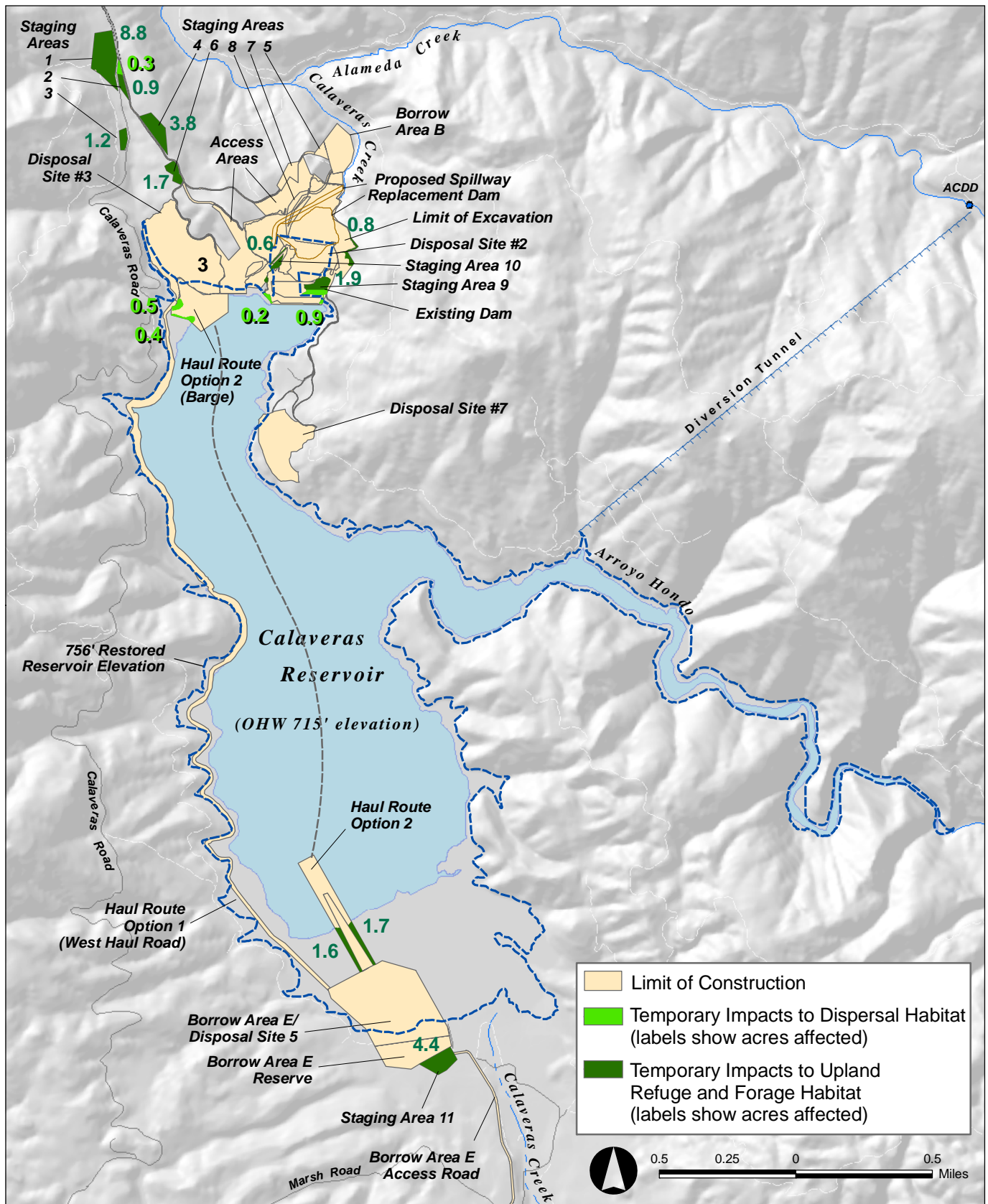
The EIR classifies upland habitat for California tiger salamander in accordance with the USFWS Designation of Critical Habitat for the California Tiger Salamander, Central Population; Final Rule, effective September 22, 2005,

(USFWS 2005a). This approach was suggested by USFWS at an Interagency Task Force (IATF) meeting with the SFPUUC on April 28, 2008, where resource agency representatives proposed using the definition of “primary constituent elements” of designated critical habitat to evaluate impacts to listed species, including California tiger salamander. In subsequent IATF meetings (e.g., on October 7, 2008 and February 3, 2009), this approach was described to, and supported by, the IATF, which included a representative of both the USFWS and CDFG. Pursuant to the adopted critical habitat designation:

We are designating critical habitat that allows for dispersal between extant occurrences within 0.70 mi (1.1 km) of each other. This distance is consistent with the final listing rule (69 FR 47212; August 4, 2004) and the final critical habitat designation for the CTS in Santa Barbara County (69 FR 68568; November 24, 2004). Trenham (pers comm. 2004) predicted that a distance of 0.70 mi would capture 99 percent of all interpond movements between breeding adults.

Therefore, the habitat classification used in the EIR to identify potential effects on California tiger salamander is consistent with applicable regulations and is supported by substantial evidence.

Figure 11.1.1: CDRP Temporary Impacts to California Tiger Salamander Habitat, is provided to show the locations and sizes of temporary impacts to California tiger salamander habitat. The EIR defines temporary impacts as including activities that would affect a species or its habitat only during the construction period (Vol. 1, Chapter 4, Section 4.4.2.2, page 4.71). The EIR does not provide a detailed construction schedule by project component; therefore, it is assumed that all components could be used in any or all of the four construction years. In compliance with CEQA, the EIR includes compensatory mitigation that would fully mitigate impacts on California tiger salamander (Vol. 2, Chapter 5, Section 5.4, EIR page 5-11). However, it is acknowledged that CDFG can require additional measures for impacts on California tiger salamander in compliance with the California Endangered Species Act.



Source: URS, January 2008; EDAW and Turnstone JV

CALAVERAS DAM REPLACEMENT PROJECT

FIGURE 11.1.1: CDRP TEMPORARY IMPACTS TO CALIFORNIA TIGER SALAMANDER HABITAT

- A-CDFG-29 The comment suggests that the EIR should quantify temporary impacts to Alameda whipsnake habitat and indicate the locations of these impacts.
- Temporary construction impacts on Alameda whipsnake habitat are quantified in Table 4.4.13 (Vol. 1, Chapter 4, Section 4.4, EIR page 4.4-95). The locations of temporary impacts are included as part of the project description (Vol. 1, Chapter 3). In compliance with CEQA, the EIR includes compensatory mitigation that would fully mitigate impacts on Alameda whipsnake (Vol. 2, Chapter 5, Section 5.4, EIR page 5-11). However, it is acknowledged that CDFG can require additional measures for impacts to Alameda whipsnake in compliance with the California Endangered Species Act.
- A-CDFG-30 The comment is requesting clarification regarding the timeframe for implementing habitat compensation measures.
- The timeframes associated with the proposed goals and objectives is the amount of time for meeting success criteria. In response to this comment, the text on EIR page 5-10 is revised as follows (new text is underlined):
- 5.4.3a Compensation Goals and Objectives
- Timeframes provided for the following goals and objectives are the goals for meeting success criteria, not for initiating compensation actions. Replanting and grading would begin as soon as practicable, but no later than one year, following completion of construction.
- A-CDFG-31 The comment asserts that compensation for the CDRP must include CDFG-approved conservation easement and management plan, and an endowment in perpetuity.
- The compensation measures presented in the EIR for impacts on vegetation and wildlife (Vol. 2, Chapter 5, Section 5.4, EIR pages 5-10 – 5-14) describe long-term protection, management, and funding of compensation project in sufficient detail to reduce impacts to less than significant under CEQA. However, it is acknowledged that CDFG can require additional measures for compensation projects as part of future permits, authorizations, and approvals required under the California Fish and Game Code.
- A-CDFG-32 The comment states that a means to provide water to the Calaveras and Alameda Creeks during construction should be provided.
- Please refer to Response A-CDFG-14 and the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-

Related Effects on Calaveras Creek and Calaveras Reservoir, for a discussion of water needed to maintain suitable habitat during construction.

A-CDFG-33 The comment states that minimum bypass flows at the ACDD should be provided during construction.

As discussed on EIR page 4.5-62 (Vol. 1, Chapter 4, Section 4.5), operation of the ACDD during project construction would be similar to that occurring under existing conditions. This would include variable periods where the diversion tunnel would be both opened and closed. Once construction of the bypass facility at the ACDD is complete, bypass flows would be made consistent with the proposed flow release schedule. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for additional discussion on current and proposed operations at the ACDD.

A-CDFG-34 The comment states that a hydrologic study should be performed to determine the amount of water that is needed to support steelhead through critical reaches.

Please see Responses A-CDFG-02 (particularly part 2) and A-CDFG-03, above, for information on the studies that have been conducted in support of the development of the flow schedules that are part of the Draft EIR project. The same studies supported the development of the proposed instream flow schedules that are part of the CDRP Variant. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for responses to comments regarding issues related to flows and steelhead migration in the Alameda Creek watershed.

A-CDFG-35 The commenter requests that the SFPUC discontinue future use of copper-based herbicides to control algal blooms in Calaveras Reservoir. The commenter also expresses their concern with the use of copper-based herbicides due to potential effects on aquatic organisms, including special-status and listed species below the dam.

The commenter requests that if copper-based herbicides continue to be used in the reservoir, that the impacts of this use be analyzed in the EIR in terms of its impact on listed species and sensitive habitat types. The commenter further states that careful consideration should be given to the timing of herbicide applications with regards to species life history and habitat needs.

As described on EIR page 4.7-18 (Vol. 2, Chapter 4, Section 4.7), copper sulfate would only be used in the future if the State Water Resources Control Board (SWRCB) permits its use and if alternative herbicides such as sodium percarbonate fail to produce results. The use of copper sulfate or other aquatic herbicides would be only be permitted by the SWRCB if there are assurances that beneficial uses, including fish habitat, continue to be protected. The SFPUC also expects to continue to operate the existing hypolimnetic oxygenation system annually to prevent anoxic conditions from forming in the spring, thereby increasing suitable habitat for resident rainbow trout within the reservoir and improving the quality of water in the reservoir that is available for release to Calaveras Creek. The oxygenation system has the flexibility to be operated in a larger reservoir and would continue to be operated when the dam is replaced. The SFPUC's management for algae control in Calaveras Reservoir is an ongoing activity independent of the CDRP, and as stated above, protection of water quality and beneficial uses are addressed through the NPDES permitting process in accordance with requirements of the SWRCB and RWQCB. The SFPUC expects to begin testing the use of sodium percarbonate for algae control at its reservoirs in the future and has recently completed the CEQA compliance documents for the use of the algicide.

A-CDFG-36

The commenter notes that a Lake and Streambed Alteration Agreement may be required for the proposed project, and that the EIR should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. As stated on EIR page 3-72 (Vol. 1, Chapter 3, Section 3.7.3), the SFPUC acknowledges that a Lake and Streambed Alteration Agreement may be required for the CDRP.

For the past several years, the SFPUC, CDFG, and other resource agencies have worked closely together to identify potential impacts of the CDRP on stream and riparian habitat resources through the IATF. In addition, the proposed project includes several components that are designed to avoid and minimize potential impacts. The potential impacts of the proposed project and Variant are fully addressed in the following sections of the CDRP EIR:

- Volume 1, Chapter 4, Sections 4.4 through 4.6 (Vegetation and Wildlife, Fisheries and Aquatic Habitat, and Hydrology);
- Volume 2, Chapter 4, Section 4.7 (Water Quality);
- Volume 2, Chapter 6, Section 6.2 (Cumulative Impacts); and
- Comments and Responses document, Chapter 9, Project Variant.

Mitigation measures for potential impacts to the stream or riparian habitat resources are presented in the EIR Vol. 2, Chapter 5, Sections 5.4 through 5.7 (Vegetation and Wildlife, Fisheries and Aquatic Habitat, Hydrology, and Water Quality) and Section 5.17 (Cumulative Impacts) as well as in Chapter 9, Section 9.4 (Mitigation Measures Applicable to the CDRP Variant). If the SFPUC approves the proposed project or Variant, it will be required to adopt a Mitigation Monitoring and Reporting Program for the CDRP and approve findings for the project pursuant to CEQA Statute Section 21081.6.

It is acknowledged that CDFG may require additional information on project impacts, as well as additional information on avoidance, mitigation, monitoring, and reporting commitments, as part of any future Streambed Alterations Agreement permit(s) that may be authorized by CDFG for the project.

References

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- EDAW & Turnstone Joint Venture (ETJV). 2009. *CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead*. Prepared for San Francisco Public Utilities Commission.
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- Gunther, A.J., J.M. Hagar, and P. Salop. 2000. *An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed*. Prepared for the Alameda Creek Fisheries Restoration Workgroup. February 7, 2000.
- Hanson Environmental Inc. 2002. *Air and Water Temperature Monitoring Within Alameda Creek: 2001-2002*. Draft October 1, 2002.
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A-CDFG

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U.S. Fish and Wildlife Service (USFWS). 2005a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Tiger Salamander, Central Population: Final Rule, August 23, 2005. 70 FR 49380, pages 49380–49458.

**11.1.4 DEPARTMENT OF WATER RESOURCES, MICHAEL WAGGONER FOR
DAVID A. GUTIERREZ, CHIEF, DIVISION OF SAFETY OF DAMS, 11/18/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-DWR-01 The comment notes that the SFPUC submitted a construction application for the Calaveras Dam to the Department of Water Resources, Division of Safety of Dams (DSOD) for review and approval and that the DSOD is currently working with the SFPUC to resolve all dam safety-related issues.

As stated on EIR pages 3-73 – 3-74 (Vol. 1, Chapter 3, Section 3.7.3), approvals from the DSOD are required for project implementation. The SFPUC has worked closely with the DSOD throughout the CDRP planning and design process and will continue to work closely with the DSOD to resolve all dam safety-related issues. Dam construction would not be initiated until appropriate DSOD approvals are obtained.

**11.1.5 CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,
SAN FRANCISCO BAY REGION, WILLIAM B. HURLEY,
SENIOR ENGINEER, 11/5/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-RWQCB-01 The comment expresses opposition to the proposed designing of the dam to enable future expansion, stating that expansion will exacerbate existing impacts on the beneficial uses of Alameda Creek, and that if the SFPUC does not foresee the need for expansion then there is no reason for the design to accommodate it.

Please refer to the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, and specifically to Section 10.1.2, Potential Future Enlargement of Calaveras Dam, for detailed discussion of the issues raised by this comment.

A-RWQCB-02 The comment suggests corrections to the text regarding the Porter-Cologne Water Quality Control Act.

In response, the following sentence in the third full paragraph on EIR page 4.4-65 is revised as follows (deletions are shown in ~~strike through~~ and new text is underlined):

Under the Porter-Cologne Water Quality Control Act, wetlands and drainages that are considered waters of the United States by the USACE are ~~often~~ classified as waters of the state as well. ~~However, w~~Waters of the state ~~can~~ also include waters USACE deems to be isolated or non-jurisdictional under Section 404 of the CWA.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-RWQCB-03 The comment suggests additional text changes to the description the Porter-Cologne Water Quality Control Act.

In response, the suggested changes are incorporated in the third full paragraph on EIR page 4.4-65 as follows (deletions are shown in ~~strike through~~ and new text is underlined):

Impacts on waters of the state ~~typically~~ require mitigation requiring no net loss of wetlands functions, acreage, and values of waters of the state.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-RWQCB-04 The comment indicates that the regulatory framework discussion on Draft EIR pages 4.5-49–4.5-50 of Section 4.5, Fisheries and Aquatic Habitat, fails to mention the Porter-Cologne Water Quality Control Act and the San Francisco Water Quality Control Plan (Basin Plan). A description of the Porter-Cologne Water Quality Control Act and Basin Plan for the Bay Area Bay Basin has been added to the EIR page 4.5-49 (Vol. 2, Section 4.5) (new text is underlined):

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, “waters of the state” fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Each basin plan protects water quality requirements for the following fisheries and aquatic habitat beneficial uses:

- Cold Freshwater Habitat: Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Fish Migration: Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region.
- Preservation of Rare and Endangered Species: Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.

- Fish Spawning: Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
- Warm Freshwater Habitat: Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Wildlife Habitat: Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

The Porter-Cologne Water Quality Act as it relates to wetland habitat is discussed in Section 4.4.1.3, Vegetation and Wildlife Regulatory Framework. The Porter-Cologne Water Quality Act as it relates to water quality, is also discussed in Section 4.7.1.2, Water Quality Regulatory Framework.

A-RWQCB-05 The comment states that the 1997 Memorandum of Understanding (MOU) established flow schedules to support native rainbow trout with the best available science at the time but that subsequent studies of flow requirements for steelhead in Alameda Creek should be used to update the flow schedule established in the 1997 MOU. (Note: the comment does not specifically identify any such studies.) The comment also states that the RWQCB would support additional studies to further refine flow requirements needed to enhance beneficial uses of Alameda Creek.

The 1997 MOU flow schedule is based on detailed flow and water temperature modeling and analysis (see *Alameda Creek Water Resources Study* [Bookman-Edmonston Engineering, Inc. 1995]). The purpose of the modeling and analysis was to determine appropriate flows that could provide improved habitat conditions for native cold and warm water fish in Alameda Creek. Since development of the MOU flow schedules, the following studies related to Alameda creek hydrology and habitat requirements for steelhead in Alameda Creek have been completed:

- *Alameda Creek Aquatic Resources Monitoring Reports (1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007)* (SFPUC 2000, 2001, 2002a, 2002b, 2004, 2005, 2006, 2007, 2008, 2009),
- *An Assessment of the Potential for Restoration of a Viable Steelhead Population in the Alameda Creek Watershed* (Gunther et al. 2000),
- *Air and Water Temperature Monitoring within Alameda Creek: 2001-2002* (Hanson Environmental, Inc. 2002),
- *Alameda Creek Streamflow Study* (ENTRIX 2006),

- *Alameda Creek Population Recovery Strategies and Instream Flows Assessment for Steelhead* (McBain and Trush 2008),
- *Calaveras Dam Replacement Project Fisheries Technical Report* (ETJV 2008),
- *Assessment of Relationship Between Stream Flow and Spawning Habitat for Rainbow Trout and Steelhead in Alameda Creek* conducted by Hagar Environmental Sciences and Thomas R. Payne and Associates (Appendix A of ETJV 2008),
- *CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead* (ETJV 2009) and,
- *Flow-habitat curves for steelhead, amphibians, and benthic macroinvertebrates on upper Alameda Creek*, prepared for the Alameda Creek Fisheries Subcommittee (McBain & Trush, SFPUC, and EBRPD 2010).

As further discussed in EIR Sections 3.6.5, 3.6.6, 4.5, and 6.2.3.3 all of these studies were considered by the SFPUC in developing the flow schedules proposed under the CDRP and in the analysis of the effects of the CDRP on native fish and other aquatic resources in the EIR. Neither the San Francisco Planning Department nor the SFPUC are aware of any further studies relevant to Alameda Creek hydrology or stream flows that have been completed and that are not considered in the EIR. A number of ongoing and future studies are also being conducted under the purview of the Alameda Creek Fish Restoration Work Group (ACFRWG) and in support of the development of the Alameda Watershed HCP and will be considered as part of long-term strategies for fisheries management in the watershed. In regards to the comment related to a future flow study to evaluate using cone valve releases during naturally high flow periods to better mimic the flashy nature of the watershed, this issue was discussed and evaluated in EIR Sections 3.6.3, 4.5, and Appendix J. Lastly, the Draft EIR project proposes a monitoring and adaptive management plan that would be used to further refine the proposed flow schedules, if necessary.

The CDRP Variant includes flow schedules for native fishes (proposed instream flow schedules) that differ from the 1997 MOU-based flow schedule for resident trout and the flow schedule for steelhead that are a part of the Draft EIR project. The proposed instream flow schedules were developed using the same studies and data sources, listed above, as were used to develop the flow schedule for resident trout and the flow schedule for steelhead. As with the mitigation measures under the Draft EIR project, the CDRP Variant includes a monitoring and adaptive management plan that would be used to further refine the proposed flow schedules, if necessary.

Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and Section 10.3.4, Geomorphology, Sediment Transport, and Channel Formation. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant; Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam; and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for information on the analyses that were conducted to assess the flow release schedules.

- A-RWQCB-06 The comment states that the RWQCB supports removing the recapture facility (Alameda Creek Filter Gallery Project) from the MOU because eliminating the recapture facility would avoid additional impacts on Alameda Creek that would result from construction and operation.

The comment is noted. The Draft EIR project proposes to make bypasses and/or releases consistent with the 1997 MOU independent of whether the Upper Alameda Creek Filter Gallery Project is constructed and operated. Similarly, with the CDRP Variant, the SFPUC would make bypasses or releases consistent with the proposed instream flow schedules independent of whether the Upper Alameda Creek Filter Gallery Project is constructed and operated. The EIR (Vol. 2, Chapter 6) identifies the Filter Gallery Project as a future cumulative project and analyzed the combined effects of the CDRP and the Filter Gallery Project (see Section 6.2.3.3 and Appendix J of the EIR), and Section 9.5.2 analyzes the cumulative impacts of the CDRP Variant. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant; Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam; and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a description of the flow release schedules, information on the analyses that were conducted to assess the flow release schedules, and information on the Upper Alameda Creek Filter Gallery Project.

- A-RWQCB-07 The comment states that the Draft EIR fails to evaluate fish screens at the Alameda Creek Diversion Dam (ACDD) and recommends revising the EIR to include an evaluation of the impacts and benefits of adding fish screens to the ACDD.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD

and Calaveras Dam, for responses to comments regarding issues related to fish entrainment at the ACDD diversion tunnel.

Since the Draft EIR was published, a project variant has been added to the CEQA analysis. The CDRP Variant was developed as a result of the SFPUC's ongoing coordination with resource agencies and its own project development and design process. The CDRP Variant includes a fish screen at the ACDD to prevent fish from being transported from Alameda Creek to Calaveras Reservoir through the existing diversion tunnel. Please see Chapter 9 for a description of the CDRP Variant, including the fish screen, as well as a discussion of the impacts associated with the variant's construction and operation.

- A-RWQCB-08 The comment refers to the SFPUC's practices with respect to sluicing sediment from the ACDD. Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport, and Channel Formation, for more information on sluicing practices. Also, as further described in Chapter 9, since the Draft EIR was published, the SFPUC has added a project variant to the CEQA analysis which includes more frequent sluicing than the Draft EIR project. The CDRP Variant includes sluicing sediment from the ACDD every 4 to 8 weeks during the rainy season. More frequent sluicing would reduce potential water quality impacts compared to existing conditions because the amount of sediment transported in a single episode would be reduced. See Chapter 9 for more information on the environmental impacts of the CDRP Variant.
- A-RWQCB-09 The comment addresses the role of moderate flows in creek channel formation. Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.4, Geomorphology, Sediment Transport, and Channel Formation.
- A-RWQCB-10 The comment refers to the effects of the proposed project on flows in Alameda Creek below its confluence with Arroyo de la Laguna. Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for more information on this topic.
- A-RWQCB-11 The comment notes that the Draft EIR incorrectly states that the Basin Plan does not have a water quality objective for asbestos. The EIR page 4.7-23 (Vol. 2, Chapter 4, Section 4.7) presents the U.S. Environmental Protection Agency maximum contaminant level (MCL) for asbestos of 7 million fibers

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per liter of water. The Basin Plan water quality objective for asbestos for municipal supply is based on the MCL for asbestos and is currently 7 million fibers per liter.

In response to this comment, the final paragraph starting on EIR page 4.7-48 and continuing on page 4.7-49 (Vol. 2, Chapter 4, Section 4.7.2.3) is revised as follows to provide the municipal water quality objective for asbestos and to clarify that the Basin Plan does not establish a surface water quality objective for asbestos (deletions are shown in ~~strike-through~~ and new text is underlined):

Releases of NOA would not exceed Basin Plan water quality objectives for surface water quality, as there is no Basin Plan surface water quality objectives standards exist for several of the metals that may be present in the serpentine rock, including arsenic, copper, chromium, and nickel (Table 4.7.9). The Basin Plan also establishes a municipal supply water quality objective of 7 million fibers per liter of water for asbestos, as well as establishing municipal supply water quality objectives for numerous metals and other water quality parameters (RWQCB 2006, Table 3-5). Releases of NOA and metals could affect beneficial uses including aquatic habitat in Calaveras Reservoir or Alameda Creek and recreation in Alameda Creek. However, releases into Calaveras Reservoir would not affect municipal and domestic water supply, as reservoir water is treated at the SVWTP prior to use. Treatment processes at SVWTP include coagulation, flocculation, sedimentation, filtration, and disinfection, which would remove or substantially reduce concentrations of asbestos and metals in drinking water to required levels. Furthermore, any elevated concentrations of asbestos or metals in raw water prior to treatment would be expected to be short-term in duration during construction. In general, health concerns related to asbestos and metals in drinking water are related to chronic exposure over extended periods of time. Asbestos exposure in drinking water is not known to cause health problems with short-term exposure (USEPA 2006; Wigle 1977).

In addition, the first full paragraph on EIR page 4.7-58 (Vol. 2, Chapter 4, Impact 4.7.4) is revised as follows to describe the municipal water quality objective for asbestos (deleted text is shown as ~~strike-through~~ and new text is underlined):

Freshly quarried blueschist containing metals and rock with NOA would be expected to undergo some physical/chemical alteration when placed in continuous contact with the reservoir. Thus, there may be a period when metals are mobilized and temporarily enter the water column. As the rock material weathers and becomes stable, it is likely that the concentrations of metals in the water would eventually drop off to current background levels. The amounts of metals and/or NOA released from hard rocks is likely to be very small compared to that of fill

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material and weathered rock containing these potential natural contaminants. This is because the total surface area of exposure to the water would be greater in the fill materials. In addition, materials that have been subject to long-term weathering in the dam could have metals that are more readily available for mobilization in comparison to freshly excavated rock. For these reasons, the most important action to be taken to reduce metals/NOA in the water column is the proposed encapsulation of the materials to prevent direct exposure to the reservoir water. It is unlikely there would be any impairment of drinking water beneficial use because, prior to its use, the raw water is treated at the SVWTP, where NOA, metals, and particulate are removed to meet required municipal supply water quality levels, as summarized in the Basin Plan Table 3-5, Water Quality Objectives for Municipal Supply (RWQCB 2006). ~~There is no Basin Plan objective for asbestos.~~ The primary human health concern is with airborne asbestos, not waterborne asbestos.

These revisions do not change the analysis or conclusions presented in the Draft EIR.

The full reference for the Basin Plan is as follows:

San Francisco Bay Regional Water Quality Control Board (RWQCB). 2006. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay*. Latest version effective as of December 22, 2006. San Francisco Bay Regional Water Quality Control Board website: http://www.swrcb.ca.gov/rwqcb2/basin_planning.shtml. Accessed February 16, 2010.

A-RWQCB-12 The comment notes that the SFPUC applied copper sulfate to Calaveras Reservoir from 1987 to 2005 to control algal blooms and encourages the SFPUC to seek other less toxic algae control alternatives that complement the hypolimnetic oxygenation system so that copper-based herbicide applications can be avoided in the future. As described on EIR page 4.7-18 (Vol. 2, Chapter 4, Section 4.7), the SFPUC has not used copper sulfate in Calaveras Reservoir since 2005. See Response A-CDFG-35 for a description of the technologies that will be used to control algae before the future use of copper sulfate is pursued.

The comment requests that the impacts relating to remobilization of copper under the barge option (Haul Route Option 2) be analyzed. Copper has been deposited in the reservoir as a result of past use of low doses of copper sulfate by the SFPUC to control the growth of blue-green algae. During the time period of 1987 to 2005, a total of 174,050 pounds of copper sulfate was used in Calaveras Reservoir. Polluted sediments are subjected to resuspension as a result of natural events such as strong waves resulting from storm events.

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Sediments can also be resuspended due to human activities such as dredging and pile driving, as would be conducted as part of the proposed project under this option. Sediments can act as a sink for pollutants and heavy metals due to the adsorption of contaminants to particulate matter. Contaminants adsorbed to these sediments may be released into the water when these sediments are disturbed, if released they may become bioavailable and toxic to aquatic organisms if present in excessive quantities.

Impacts of remobilized copper on municipal and domestic water supply are considered less than significant, as reservoir water is treated at the SVWTP prior to use. Impacts on reservoir and Calaveras Creek water quality from soil erosion and disturbance of sediments during construction of the CDRP would be potentially significant. This potentially significant impact would be reduced to a less-than-significant level through the implementation of Mitigation Measure 5.7.1, which would require site-specific best management practices (BMPs) to be implemented to avoid or minimize water quality impacts from potential remobilization of copper to meet the Basin Plan's water quality objectives and to protect designated beneficial uses. As set forth in Mitigation Measure 5.7.1, the use of suction dredgers instead of clamshell dredging machinery would be required, as suction dredgers would likely reduce the amount of disturbance and associated remobilization of copper from sediment into the water column. Turbidity barriers would also be installed around the work area during dredging and jetty/dock construction to confine sediments and prevent dispersion throughout the reservoir.

As described in Mitigation Measure 5.7.1, dredged material would be placed directly into haul trucks for disposal. Haul trucks would be lined to prevent leaks or spills of sediment-laden water from dredged material. Storage or dewatering of dredged spoils would not be allowed on site. During construction, dredged materials would be tested and any contaminated materials would only be disposed of at approved disposal facilities.

In response to this comment, the following text is added to EIR Impact 4.7.3 starting on the third paragraph on page 4.7-55 (deletions are shown in ~~strike-through~~ and new text is underlined):

Constructing the loading docks, loading and unloading the barges, and transporting the materials on the barges across Calaveras Reservoir could temporarily impair water quality in the reservoir. Pile driving would create strong vibrations in and displace bottom sediments, and thereby generate in-reservoir sediment turbidity plumes. Access lanes for the

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barges might need to be dredged, and maintenance dredging could also be required, particularly on the shallow southern end of the reservoir. Through these construction activities, there is the potential to remobilize copper from sediment into the water column. Copper has been deposited in the reservoir as a result of past use of low doses of copper sulfate by the SFPUC to control the growth of blue-green algae. Such dredging likely would generate the most substantial turbidity plumes but would be of temporary duration. As set forth in Mitigation Measure 5.7.1, the use of suction dredgers instead of clamshell dredging machinery would be required, as suction dredgers would likely reduce the amount of disturbance, the ~~and~~ size of turbidity plumes, and associated remobilization of copper from sediment into the water column. However, the amount of turbidity generated by dredging would remain significant. The potential effects of increased turbidity and remobilization of copper on aquatic habitats would be significant (see Impact 4.5.4 in Section 4.5, Fisheries and Aquatic Habitat).

Barge tugboat motors would stir up sediment in shallow waters and similarly create turbidity plumes. Waves generated by barge wakes could also cause erosion of exposed shores of Calaveras Reservoir, particularly in exposed, soft, saturated soils. Tugboat operations would be a repeated daily occurrence throughout much of the construction period; thus, the impacts on water quality would occur over an extended period. Fine material in the turbidity plumes would slowly settle out, but each operation could renew disturbance.

The effects of Haul Route Option 2 identified above could have potentially significant impacts on the water quality of Calaveras Reservoir. To reduce these potential impacts, Mitigation Measure 5.7.1 requires that barge and tugboat speeds and no-wake zones be established and enforced to decrease erosion energy and turbidity. During barging operations, all materials would be secured on the barge to prevent discharges to Calaveras Reservoir via wind, and sideboards would also be used to confine clay materials on the barge. Steel decking would be installed over the barge pontoons to minimize the potential for clay materials to be released during barge loading and transport. In addition, Mitigation Measure 5.7.1 states that turbidity would be monitored to assess the effectiveness of control measures. The SWPPP would describe these site-specific monitoring methods. Loading and unloading operations would also be confined to designated areas that would be isolated from the rest of the reservoir by turbidity barriers.

The SWPPP would also specify appropriate construction and material transport and stockpiling practices to reduce the discharge of sediment and other construction materials as well as increases in turbidity of Calaveras Reservoir. These practices would include using drip pans under all vehicles and equipment; ensuring equipment stored or used in streambeds or on docks and barges is not leaking; storing equipment that is not in use away from concentrated flows; providing proper training of

staff regarding spill control measures to be employed and reporting any spills; and installing turbidity barriers around the work area during dredging and jetty/dock construction to confine sediments and prevent dispersion throughout the reservoir. Dredged materials would be disposed of immediately and would not be stored or dewatered on site. Dredged materials would also be tested to determine proper options for treatment and disposal if the soil is contaminated.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-RWQCB-13 The comment recommends a change to the worker education program described in Mitigation Measure 5.4.1a.

In response to this comment, the text under the third bullet on EIR page 5-2 is revised as follows (new text is underlined):

- **Worker Education Program.** A worker education program shall be implemented to familiarize workers, including all vehicle operators, of the importance of avoidance of harm to special-status species and sensitive natural communities. The training shall include a discussion of the importance of maintaining speed limits, appropriate disposing of trash and waste materials, and respecting exclusion zones. The SFPUC and its construction contractor shall confirm that all workers have been trained appropriately.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-RWQCB-14 The comment requests revising the text describing bank stabilization measures.

In response to this comment, the bank stabilization measures described on EIR pages 5-7 and 5-8 (Vol. 2, Chapter 5) are revised to indicate that all erosion control materials shall be free of plastic monofilament and nylon wire, as erosion control blankets and mats backed with plastic and nylon netting are known to entrap and injure amphibians and snakes.

The last bullet on EIR page 5-7 and the first bullet on page 5-8 are revised as follows (new text is underlined):

- **Wetland Soils and Vegetation.** To minimize the degradation of saturated wetland soils and vegetation where avoidance is not practicable, protective practices such as use of geotextile cushions and other materials (e.g., timber pads, prefabricated equipment pads, thick vegetative slash, geotextile fabric free of plastic monofilament and nylon wire) and/or vehicles with balloon tires will be employed.

- **Streams and Drainages.** Stabilize banks of all streams and drainages disturbed during construction, including banks of Alameda and Calaveras Creeks, using a non-vegetative material that will protect the soil from erosion by wind or water initially and break down within a few years (e.g., jute matt). To minimize entrapment of amphibians and snakes, any geotextile fabrics used shall be free of plastic monofilament and nylon wire. If visual evidence of erosion (e.g., rilling or scour) is observed, geotextile mats, excelsior blankets, or other soil stabilization products shall also be used.

This revision does not change the analysis or conclusions presented in the Draft EIR.

- A-RWQCB-15 The comment addresses mitigation for material that may be inadvertently deposited in wetlands or waters and suggests changes to the mitigation text in the second bullet on EIR page 5-8.

The first suggested change, up to the word “immediately,” is redundant with Mitigation Measure 5.7.1, Storm Water Pollution Prevention Plan, and is not necessary.

In response to this comment, the remaining suggested text changes are incorporated into the EIR, and the second bullet on EIR page 5-8 is revised as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

- **Vegetation Removal.** During construction, immediately remove trees, shrubs, debris, soils, or construction materials that are inadvertently deposited below the ordinary high-water mark of any streams, drainages, ponds, wetlands, riparian areas, and Calaveras Reservoir in a manner that minimizes disturbance of the drainage bed and bank (e.g., manually). Such materials will be ~~set back at least 10 feet from Calaveras Reservoir and from streams, drainages, ponds, wetlands, and riparian areas that are not otherwise directly disturbed by construction~~ placed either in soil stock piles or appropriately managed waste collection containers until the materials can be properly disposed of.

This revision does not change the analysis or conclusions presented in the Draft EIR.

- A-RWQCB-16 The comment addresses the ability of the project to restore temporarily affected riparian areas within three years, and the timing of replanting and grading activities to restore temporarily affected wetlands, creeks, and riparian areas.

As described on EIR page 4.4-112 (Vol. 1, Chapter 4, Impact 4.4.9, Table 4.4.15), all impacts on riparian and other woodland natural communities are considered permanent, and so the goal of meeting success criteria for restoring temporarily affected riparian areas within three years would not apply. Mitigation Measure 5.4.3a on EIR page 5-9 provides a 10-year timeframe for meeting success criteria for riparian compensation goals.

In response to this comment, the text of Mitigation Measure 5.4.2a on EIR page 5-9 is revised as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

5.4.2a Habitat Restoration Goals and Objectives

Timeframes provided for the following goals and objectives are the goals for meeting success criteria, not for initiating restoration actions. Replanting and grading would begin as soon as practicable, but no later than one year following completion of construction.

- Restore temporary impacts on wetlands, and streams ~~and riparian habitat~~ located above the 756-foot inundation elevation within the reservoir, as well as downstream of the replacement dam and within the limit of work at Calaveras Creek...

This revision does not change the analysis or conclusions presented in the Draft EIR. In response to the commenter's request for clarification regarding the timeframe for implementing habitat restoration measures, please refer to Response A-CDFG-30, which includes revisions to Mitigation Measure 5.4.3a.

A-RWQCB-17 The comment recognizes that mitigation for impacts on perennial streams and on riparian areas associated with perennial streams would be out-of-kind, and requests that the SFPUC note that this would increase the amount of mitigation required by the RWQCB.

It is noted that the RWQCB may require a higher mitigation ratio for out-of-kind mitigation for impacts on perennial streams and riparian areas associated with perennial streams. As specified under Mitigation Measure 5.4.3e, the difference between the habitat functions and services lost and those expected to be provided by compensation for the project is one of the factors that would be used to determine compensation ratios (see Mitigation Measure 5.4.3e on EIR page 5-12).

A-RWQCB-18 The comment states that in the RWQCB's experience control of invasive plants and animals may include the use of herbicides and pesticides, and that the

adverse effects of using herbicides and pesticides for invasive plant and animal control are not identified in the Draft EIR as impacts resulting from the proposed mitigation. The comment suggests alternatives that could be used.

As described in Mitigation Measure 5.4.3f on EIR page 5-12 (Vol. 2, Chapter 5), the final compensation plan(s) shall include detailed written specification and work descriptions for the compensation projects, including plans to control invasive plant and animal species. If the SFPUC determines that the use of herbicides would be appropriate at any of the mitigation sites, the application of herbicides would be required to comply with all federal, state, and local pesticide use regulations to ensure worker safety and environmental protection and to minimize the potential for accidental release. Use of herbicides in accordance with all applicable regulations would include comprehensive measures to protect water quality. In addition, the SFPUC could use other invasive species removal methods, such as hand removal, management of grazing, brush clearing, and mowing at some sites. These activities would be performed during the dry season and would result in minimal surficial soil disturbance, minimizing potential impacts on water quality.

Please refer to Chapter 12, Draft EIR Revisions, Section 12.2, Staff-Initiated Text Changes, regarding clarification on impacts of implementing compensatory mitigation measures (including herbicides) under EIR Section 5.4, Impacts of Implementing Proposed Mitigation.

A-RWQCB-19 The comment states that prior to the RWQCB considering off-site mitigation of stormwater impacts, all other mitigation measures to protect water quality from stormwater impacts must be implemented.

In response to this comment, Mitigation Measure 5.7.1 on EIR pages 5-18–5.25 (Vol. 2, Chapter 5) is revised to clarify that all other BMPs and mitigation measures to protect water quality from stormwater impacts would be implemented before the RWQCB would consider off-site mitigation. Mitigation Measure 5.7.1 is also revised to identify an off-site mitigation opportunity, as requested by the RWQCB.

The third bullet on EIR page 5-21 is revised as follows (new text is underlined):

- An off-site project may be required if an unusual storm event occurs and water discharges have not settled to avoid significant

sedimentation from reaching Alameda Creek or its tributaries. All other mitigation measures to protect water quality from stormwater impacts would be implemented before the RWQCB would consider off-site mitigation. Off-site erosion control projects may include gully repairs, stream bank stabilization, slide repairs, or other actions acceptable to the RWQCB. The RWQCB may determine through the permitting process that an off-site erosion control project within the Alameda Watershed could be required to offset impacts on water quality. The RWQCB will determine appropriate drainage and runoff treatment controls as part of the SWPPP review and 401 Water Quality Certification permitting process.

Off-site mitigation opportunities have been identified so that they can be implemented as quickly as possible in the event that an impact occurs. The off-site mitigation project for stormwater impacts, contingent upon a 10-year storm event resulting in the release of untreated water from runoff and dewatering activities, would be identified in coordination with the RWQCB. Examples of potential erosion and sediment management projects include funding identified Natural Resources Conservation Service proposed projects along Arroyo de la Laguna or implementing a mitigation site in the Sunol Valley, where several opportunities for erosion and sediment management have been identified. In the event that off-site stormwater control projects are implemented, impacts of off-site mitigation on water quality, sensitive wildlife, and archaeological resources will be minimized and avoided through implementation of Mitigation Measures 5.4.1, 5.4.2, 5.7.1, 5.10.2, and 5.10.5. Also, surveys for archaeological resources will be conducted prior to commencing work on the projects.

The following text is added at the end of Mitigation Measure 5.7.1 on page 5-25 (new text is underlined):

IMPACTS OF IMPLEMENTING PROPOSED MITIGATION

Implementation of off-site erosion control projects, if required, could require the use of mechanized equipment in sensitive habitats and the temporary dewatering of aquatic habitat. Implementation could affect special-status species and water quality and could have temporary construction-related impacts. These impacts will be minimized and avoided through the prevention of the discharge of pollutants and by incorporating measures to protect and maintain water quality described in Mitigation Measure 5.7.1, including the preparation and implementation of a SWPPP and associated BMPs.

Impacts on sensitive wildlife would be avoided through the preconstruction surveys and avoidance measures for the California red-legged frog, California tiger salamander, and western pond turtle described in Mitigation Measure 5.4.1. Mitigation Measure 5.4.1 is

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applicable to both on-site construction and off-site mitigation areas. Temporary impacts will be restored by incorporating measures described in Mitigation Measure 5.4.2.

Impacts could occur if off-site erosion control projects occur in an area with near-surface archaeological resources. If present, archaeological resources could be disturbed by various erosion control activities, such as grading for stream bank stabilization or digging for slide or gully repairs. Disruption of archaeological resources, if present within the off-site erosion control project area, could impair the potential of such resources to yield information important to prehistory and history. Although an Archaeological Survey Report was completed for the proposed project and for the Biological Mitigation Areas, the potential areas identified for off-site erosion control projects are not finalized at this time and likely have not been surveyed for archaeological resources. Prior to commencing an off-site erosion control project, the site would be surveyed for archaeological resources in accordance with the procedures described in the San Francisco Planning Department WSIP Archaeological Guidance document, including preparation of: a CEQA Area of Potential Effects Report; Archaeological Survey Plan; and Historic Context and Archaeological Survey Report for the review and approval of the Planning Department's Environmental Review Officer or designee. In addition, 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, and Mitigation Measure 5.10.5, Paleontological Resources, which requires training on identification of fossil materials resources during construction and preconstruction assessment, resource avoidance and/or salvage, and monitoring in areas of high paleontological sensitivity, would be implemented.

The use of heavy equipment for excavation and grading and trucks to haul excess spoils offsite from offsite erosion control projects would generate criteria pollutants and particulate matter from diesel exhaust and fugitive dust. Although these emissions would be substantially lower than the emissions generated by construction of the CDRP, the same mitigation measures required for project construction would be applied to reduce emissions from implementation of the habitat compensation activities. Implementation of Mitigation Measures 5.13.1a, 5.13.1b, 5.13.3a and 5.13.3b (as applicable) would reduce air quality impacts related to any offsite erosion control projects to a less-than-significant level.

Overall, implementation of any offsite erosion control projects would not result in any additional significant impacts beyond those disclosed for the CDRP or an increase in the severity of a significant impact. Implementation of mitigation measures identified in the EIR

for the CDRP where applicable would reduce all associated impacts to a less than significant level.

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11.1.6 ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7, KENT ARENDS FOR G.F. DUERIG, GENERAL MANAGER, ZONE 7 WATER AGENCY, 12/21/09

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-Zone7-01 The comment notes an inconsistency in the Draft EIR with respect to flooding in the event of a catastrophic failure of Calaveras Dam.

Figure 4.6-17: Depth of Floodwaters from Modeled Breach of Calaveras Dam, on EIR page 4.6-101 (Vol.1, Chapter 4, Section 4.6), shows that floodwaters resulting from a catastrophic failure of Calaveras Dam would back up into Arroyo de la Laguna. This is inconsistent with a statement on EIR page 4.6-11. In response to this comment, the last sentence of the second full paragraph on EIR page 4.6-11 is modified as follows (new text is underlined):

The northern Alameda Creek watershed drained by the Arroyo de la Laguna and Arroyo Mocho is not discussed further here because the proposed project would have no impact in that area, except in the event of catastrophic failure of Calaveras Dam.

The comment also states that the Draft EIR does not discuss the environmental consequences of floodwater backing up into Arroyo de la Laguna. In response to this comment, the sixth sentence in the first full paragraph on EIR page 4.6-100 regarding flooding effects in the event of dam failure is modified as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

Floodwaters would then continue along Alameda Creek, ~~and~~ spread across the Sunol Valley, and back up several miles in the Arroyo de la Laguna.

However, as described in the EIR, although floodwaters could extend to the locations indicated, the proposed design of the dam would decrease the risk of failure in an earthquake when compared to the existing structure, and the impact would be less than significant. These revisions do not change the analysis or conclusions presented in the EIR. The analysis and conclusions for the CDRP Variant are the same as those for the Draft EIR project.

A-Zone7-02

The comment states that the Draft EIR does not fully analyze the effects of catastrophic failure of the proposed replacement Calaveras Dam.

One of the primary objectives of the proposed project is to improve the seismic reliability of Calaveras Dam to safely retain 96,850 acre-feet of water and withstand the Maximum Credible Earthquake on the Calaveras Fault. As described on EIR pages 3-24 – 3-25 (Vol. 1, Chapter 3), the proposed new dam would be designed to accommodate the Probable Maximum Flood, which is associated with the Probable Maximum Precipitation event, as well as to withstand the Maximum Credible Earthquake originating on the Calaveras Fault.

Flooding hazard in the event of dam failure is addressed in Section 4.6.8 of the EIR (see EIR pages 4.6-98 – 4.6-102). The impact analysis in the EIR concludes that while the increased storage in the reservoir could be a source of additional downstream floodwaters in the event of dam failure, the seismic and flood design considerations incorporated into the project would reduce the risk of dam failure when compared to the existing condition; therefore, this flood hazard impact would be less than significant.

The impacts of the Draft EIR project and the CDRP Variant with respect to flood hazard in the event of dam failure would be the same.

**11.1.7 ALAMEDA COUNTY PUBLIC WORKS AGENCY, KWABLAH ATTIOGBE,
ENVIRONMENTAL SERVICES MANAGER, 12/18/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-ACPWA-01 The comment recommends that the SFPUC preserve habitat on site and in specific acreage amounts. The comment suggests that these acreages of various habitat types should be preserved on site in perpetuity, via a conservation easement acceptable to the County of Alameda. The comment also indicates that these preserved lands should be located in Alameda County, in an area acceptable to the County, and should contain the same ecological function and quality as habitat affected by the project.

The mitigation acreages identified by the comment are the same as those provided on page 5-10 of the EIR (Vol. 2, Chapter 5, Section 5.4, Mitigation Measure 5.4-3a). The comment's suggestion that habitat losses be mitigated via preservation of existing habitat elsewhere at a 1-to-1 ratio may be less protective of affected resources than the mitigation measures specified in the EIR. The approach called for in the EIR (pages 5-10 – 5-14 Vol. 2, Chapter 5, Section 5.4, Mitigation Measure 5.4-3), requires habitat restoration (Mitigation Measure 5.4-3a) and establishment of mitigation ratios that result in "no net loss of habitat areas, functions, and services" (Mitigation Measure 5.4-3e).

There are circumstances where preservation of habitat at a 1-to-1 mitigation ratio, as suggested by the commenter, would not meet the "no net loss of habitat areas, functions, and services" criteria in the EIR. For example, if 1-acre of riparian habitat is removed, and another existing acre is preserved elsewhere, there would still be a net loss of 1-acre of riparian habitat in the ecosystem. If mitigation were achieved through restoration or creation of 1-acre of new riparian habitat to compensate for 1-acre lost, then the net acreage of riparian habitat in the ecosystem would remain the same. However, it could take several years for the restored/created riparian habitat to be of the same quality and age structure as the habitat removed. Until the restored/created

habitat matures, there would a net loss of riparian habitat functions and services in the ecosystem. It is for reasons such as these that mitigation ratios often exceed 1-to-1 and use of the “no net loss of habitat areas, functions, and services” criteria in the EIR is more protective than adoption of a blanket 1-to-1 mitigation ratio.

The comment’s suggestion that habitat mitigation areas be preserved in perpetuity is addressed by Mitigation Measure 5.4.3c, which requires that compensation plans include a description of the legal instruments that would be used to ensure long-term protection of compensation sites. One such legal instrument to ensure protection of the compensation sites is a conservation easement; however, other options are available to meet the required preservation standard in the mitigation measure, such as establishment of deed restrictions or transfer of the land in fee title with deed restrictions to a conservation organization or agency. Ultimately, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), as part of their respective permitting processes for the project, would have to approve whatever legal instrument is used to ensure long-term protection of the compensation sites.

The mitigation requirements identified in the EIR meet or exceed those recommended by the comment. However, not all of the habitat compensation would be located in Alameda County. The Calaveras Reservoir extends across the Santa Clara County-Alameda County line. The proposed mitigation sites likewise are located in proximity to the existing reservoir area in both Alameda and Santa Clara Counties. Where possible, disturbed habitat areas would be restored and enhanced, and additional compensatory habitat would be preserved and enhanced in proximity to the impact areas. The location of the habitat and species mitigation sites is guided first by ecological conservation principles rather than by political boundaries.

A-ACPWA-02 The comment asserts that the EIR should quantify carbon dioxide equivalent (CO₂e) emissions sequestered by existing vegetation using resources from the Air Resources Board (ARB) and Climate Action Reserve to assess a potential greenhouse gas (GHG) impact.

The Climate Action Reserve Forest Project Protocol cited in the comment is not intended to address impacts related to changes in carbon sequestration capability for projects under CEQA. The purpose of the protocol is to provide guidance for quantifying the net climate benefits of “Forest Projects” that

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sequester carbon on forest land to be used as the basis for issuing carbon offset credits. “Forest Projects” as defined in the protocol include Reforestation Projects, Improved Forest Management Projects, and Avoided Conversion Projects. The CDRP does not meet the definition of a Forest Project.

Even though the Forest Project Protocol is not intended for this purpose, the methodologies contained in the protocol could, in theory, be used to quantify the net project effects on atmospheric carbon due to proposed changes in vegetative cover, and these calculations could be used to assess the significance of impacts of the project on global climate change. In accordance with the recently amended CEQA Guidelines Section 15064.4, however, “A lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project and which model or methodology to use... or (2) Rely on a qualitative analysis or performance based standards.” For this project, the lead agency has decided to use a qualitative analysis to address project impacts on carbon sequestration related to changes in vegetation cover, for reasons described below.

Construction of the CDRP would involve removal of vegetation from portions of the project footprint and more frequent inundation of herbaceous vegetation growing in the exposed portion of the reservoir since implementation of the California Department of Water Resources, Division of Safety of Dams (DSOD) restrictions. Tree and brush removal, as well as mulching associated with disposal of this material, would cause some of the accumulated carbon in the woody biomass (“carbon stock”) to be released. As shown on EIR page 4.4-112 (Vol. 1, Chapter 4, Section 4.4, Table 4.4-15), approximately 32 acres of upland woodland and riparian forest would be removed as a result of construction of the Draft EIR project. In addition, approximately 483 acres of scrub and grassland habitat would be disturbed or inundated as a result of the Draft EIR project. For the CDRP Variant, slightly greater impacts would occur, with an additional fraction of an acre of upland woodland and riparian forest removal and approximately 6 acres of additional grassland disturbance (see Table 9.3 in Chapter 9 of this Comments and Responses document for information on the differences between the CDRP Variant and the Draft EIR project).

The process of carbon sequestration would decrease, and in some cases be eliminated, through the removal of trees and other vegetation as a result of the proposed project. Mitigation Measure 5.4.3a specifies that the SFPUC shall

fully compensate for impacts on riparian habitat, oak woodlands and savannah, and grasslands. Therefore, over time, restored vegetation would replace the carbon stock and sequestration potential lost as a result of project construction.

However, the proposed project would result in short-term reduction of carbon sequestration potential because of the time required to replace the carbon sequestration capacity of vegetation removed during project construction. Therefore, the proposed project would result in a short-term reduction in existing carbon sequestration capacity. Over the long term, carbon sequestration capacity of the project area would be restored.

The project would not have a substantial adverse effect on sequestration of atmospheric carbon, even in the short term, because the area containing vegetation proposed to be removed for project construction is relatively small (i.e., 32 acres) and any decrease in carbon sequestration rates resulting from the project construction would be temporary. In addition, as discussed above in Response A-ACPWA-01, the mitigation approach called for in the EIR requires habitat restoration and establishment of mitigation ratios that result in “no net loss of habitat areas, functions, and services.” To achieve this criterion typically requires restoration of more than one acre of habitat for each acre of habitat lost, to compensate, in part, for the time it takes for newly restored habitat to provide the functions, values, and services of the removed habitat. Therefore, over the long term the affected vegetation would be restored or replaced at a greater than 1:1 ratio (i.e., greater than 1 acre of a habitat restored for each acre of the same habitat type removed) pursuant to mitigation measures already included in the EIR. The project’s effects on climate change due to the net change in the carbon sequestration capacity of affected vegetation would not be cumulatively considerable and, therefore, would be less than significant.

A-ACPWA-03 The comment states that the compensation plan should be peer-reviewed to ensure that it is appropriate.

EIR page 5-10 (Vol. 2, Chapter 5, Section 5.4, Mitigation Measure 5.4.3) states that the compensation plan(s) shall be prepared by a qualified restoration ecologist and shall be consistent with all required permits. As part of permit conditions, such as U.S. Army Corps of Engineers authorization under Section 404 of the Clean Water Act for impacts on wetlands and waters of the United States, regulatory agency staff would review and approve compensation plans; thus, these plans are subject to regulatory review and approval; thus, additional

peer-review is unnecessary. In addition, monitoring and reporting of habitat compensation plan implementation and performance would be conducted in accordance with CEQA and applicable permit conditions.

A-ACPWA-04 The comment addresses the need to quantify sequestered carbon dioxide equivalent emissions.

Much of the text in this comment is identical to Comment A-ACPWA-02; therefore, please see Response A-ACPWA-02, above.

A-ACPWA-05 The comment notes that in 2009 the Bay Area Air Quality Management District (BAAQMD) released draft CEQA significance thresholds for GHG emissions and that these thresholds should be considered in the EIR, as well as GHG impacts from losses of vegetation.

Please see Response A-ACPWA-02, above, for issues related to losses of vegetation and potential GHG impacts. For a response to issues related to BAAQMD GHG significance thresholds, please refer to the master response presented in Section 10.5, Greenhouse Gas Emissions, and specifically to Section 10.5.2, Construction GHG Emissions Impacts and Mitigation.

A-ACPWA-06 This comment repeats verbatim Comment A-ACPWA-01. Please see Response A-ACPWA-01, above.

A-ACPWA-07 The comment states that the SFPUC should consider improving the view from Sunol Wilderness to help offset the loss of visual quality in the project area as a result of the project.

As discussed on EIR page 4.11-22, the SFPUC would implement site restoration improvements as called for in the SFPUC's Alameda Watershed Management Plan as part of the proposed project (including contouring and revegetation of disturbed areas). However, as discussed on EIR page 4.11-22, full restoration to pre-project conditions 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. For these reasons, the impact of site disturbance is considered significant and unavoidable in the EIR. As discussed on EIR pages 4.11-12 – 4.11-16, existing scenic views of the Calaveras Dam and Reservoir area from the Sunol Wilderness are of high scenic value. With the exception of the Calaveras Dam

and Reservoir project site itself, the Calaveras Valley viewshed retains a high degree of visual integrity as a scenic wildland. Similarly, views from trails in the Sunol Wilderness in other directions are mainly of scenic wildlands elsewhere in the Sunol or Ohlone Wilderness to the east, north, and south and of the Mission Peak Regional preserve to the west. Therefore, given the high quality of existing views in the area, there are no suitable off-site opportunities to enhance visual conditions on SFPUC or Sunol Wilderness lands that could offset the proposed project's adverse impact on scenic views from Sunol Wilderness.

A-ACPWA-08 The comment states that the EIR should include visual simulations. Please refer to Response A-EBRPD-37 regarding visual simulations.

A-ACPWA-09 The comment requests that the SFPUC work with the County to explore recreational opportunities on watershed lands.

As stated on EIR page 4.2-7 (Vol. 1, Chapter 4, Section 4.2), one of the secondary goals of the Alameda Watershed Management Plan is to provide opportunities for potential compatible uses on watershed lands, including educational, recreational, and scientific uses. EIR page 4.3-4 (Vol. 1, Chapter 4, Section 4.3) states that under the terms of the Alameda Watershed Management Plan, recreational uses are permitted on SFPUC primary and secondary watershed lands. Also, as shown on EIR page 4.3-8 (Vol. 1, Chapter 4, Section 4.3, Figure 4.3.3) the SFPUC currently leases approximately 3,812 acres of watershed land to East Bay Regional Park District (EBRPD) as part of the Sunol Regional Wilderness and there are established trails (e.g., Ohlone Wilderness Trail) that pass through other SFPUC lands. The SFPUC has worked with, and continues to work with a variety of agencies to provide recreational opportunities on watershed lands. This comment does not address the accuracy or adequacy of the EIR; therefore, no further response is required.

A-ACPWA-10 The comment requests that the SFPUC work with the EBRPD and the County to explore opportunities to improve recreational facilities in the surrounding recreational and resource management lands.

This comment does not address the adequacy or accuracy of the EIR. As discussed in the last paragraph on EIR page 4.3-7 (Vol. 1, Chapter 4, Section 4.3), there are thousands of acres of contiguous park and open space lands surrounding the SFPUC Alameda Creek watershed, much of which are owned or under the control of the EBRPD (some of which are lands leased from SFPUC), Alameda County, or Santa Clara County. Improving recreation

facilities on these lands would be under the jurisdiction of these respective agencies. The SFPUC has and will continue to coordinate with various agencies regarding recreational opportunities on lands under SFPUC control. See Response A-ACPWA-09.

A-ACPWA-11 The comment expresses concern over closure of Calaveras Road for approximately 20 months. No details are provided regarding the reasons for this concern, and no comment on the analysis, content, or conclusions of the EIR is provided.

The closure of Calaveras Road between south of Geary Road to Felter Road would be requested of Alameda and Santa Clara Counties Mondays through Fridays for a total of 20 months during the approximately 4-year construction period. The closed portion of Calaveras Road would be swept clean on either Friday evening or Saturday morning, and re-opened for traffic on Saturdays and Sundays (see EIR page 4.12-8 [Vol. 2, Chapter 4, Impact 4.12.1] and Mitigation Measure 5.12.4a [Vol. 2, Chapter 5, Section 5.12] which requires maintenance of adequate driving and bicycling conditions on Calaveras Road during the construction period). As also indicated on EIR page 4.12-8, this segment of Calaveras Road also would be open on “all state and national holidays.” Since publication of the Draft EIR, the SFPUC has clarified the construction holiday schedule. The last sentence in the first paragraph on page 4.12-8 now reads:

This segment of Calaveras Road would be open on all major holidays ~~state and national holidays~~.

This change is also made wherever “state and national holidays” are mentioned in the same context in the EIR.

Discussion of traffic impacts due to the temporary closure of Calaveras Road is presented on EIR pages 4.12-8 and 4.12-9 (Vol. 2, Chapter 4, Section 4.12). As discussed on EIR page 4.12-8, there are (under baseline conditions) between 100 and 400 vehicles per day on weekdays on Calaveras Road south of Geary Road, including operation and maintenance vehicle trips traveling to and from the existing dam. It is estimated that during construction related closures of Calaveras Road, approximately 200 vehicles per day would detour to other roadways, primarily to I-680, which would not substantially affect operating conditions.

A-ACPWA-12 The comment states that the SFPUC should pursue a more pro-active approach to water conservation and expresses the opinion that the Alameda Creek Diversion Dam (ACDD) should be removed.

This comment does not address the accuracy or adequacy of the Draft EIR but provides suggestions relative to SFPUC operations.

As described on EIR pages 1-3 – 1-5 (Vol. 1, Chapter 1, Section 1.2), the proposed project is one of the facility improvement projects under the SFPUC's Water System Improvement Program (WSIP), which the SFPUC adopted on October 30, 2008. The CDRP EIR tiers from the WSIP Program EIR (PEIR) and also incorporates by reference the relevant description and analyses presented in the PEIR as applicable to the CDRP. Under the adopted WSIP, the SFPUC has committed to developing 10 million gallons per day (mgd) of a combination of conservation, recycled water, and local groundwater projects within the SFPUC's retail service area. An additional 10 mgd of conservation/local supply would also be developed in the wholesale customer service area. The conservation included under this commitment is in addition to conservation programs already in place and/or assumed to occur in the service area over the next 20 years. Conservation practices already in place include the effects of plumbing code requirements that provide passive conservation savings; in addition, the projected future water demands in the SFPUC's service area used to develop the WSIP incorporate current and anticipated future conservation programs.

Further information on water conservation in San Francisco can be viewed here:

http://sfwater.org/msc_main.cfm/MC_ID/13/MSC_ID/168

Specific recycled water and groundwater projects being implemented in the San Francisco region include the Westside Recycled Water Project, Harding Park Recycled Water Project, Pacifica/Sharp Park Recycled Water Project, and East Side Recycled Water Project. Groundwater projects in the San Francisco region include the San Francisco Groundwater Supply Project and the Regional Groundwater Storage and Recovery Project. Information on any of these projects can be found at <http://sfwater.org>. Information on water conservation and recycling among wholesale customers can be viewed at <http://bawsca.org/>.

Note also that Senate Bill 7, codified in Section 10608 and 10800 *et seq* of the California Water Code, requires among other things that all urban water retailers

in the state achieve a 20 percent reduction in per capita water use in 2020. (See the following for details: <http://www.water.ca.gov/wateruseefficiency/sb7>).

The Commenter's support for removal of the ACDD is acknowledged. Removal of the ACDD is not proposed as part of the CDRP. Continued operation of the ACDD and diversions of Alameda Creek water to the Calaveras Reservoir are an essential component of the WSIP water supply portfolio for meeting existing and projected customer demand, particularly in dry years. The WSIP PEIR evaluated an alternative that examined the potential for the SFPUC and the wholesale customers to meet long-term water service goals through even higher levels of conservation and local recycled water and groundwater projects in order to avoid increasing surface water diversions and attendant environmental impacts (PEIR, Vol. 4, Chapter 9, beginning on page 9-47). While elements of this alternative, referred to as the "Aggressive Conservation/Water Recycling and Local Groundwater Alternative (with and without Tuolumne River Water)", were incorporated into the adopted WSIP, the PEIR acknowledged that implementation of the alternative as described, with limited surface water supply improvements, would have increased the frequency of water rationing, and would have provided less drought supply reliability relative to the adopted WSIP. Wholesale customers questioned the feasibility of this alternative to meet demand during dry years due to demand hardening.¹ Complete removal of the ACDD and the adverse effects on available surface water supply would contribute to the problems identified as part of the PEIR "Aggressive Conservation/Water Recycling and Local Groundwater Alternative (with and without Tuolumne River Water)".

As described on EIR pages 3-64 and 3-65 (Vol. 1, Chapter 3, Section 3.6), the proposed future operations of Calaveras Reservoir would result in a decrease in average annual diversions from Alameda Creek compared to diversions under current DSOD-restricted operations. Implementation of the CDRP Variant would further decrease average annual diversions from Alameda Creek relative to the Draft EIR project. For further information on ACDD diversions and flows in Alameda Creek please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, as well as the master response presented in Section 10.4,

¹ Demand hardening refers to the increasing difficulty and expense of achieving short-term water conservation levels during shortages as more long-term conservation measures are implemented and water-use efficiency is maximized.

Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant.

- A-ACPWA-13 The comment expresses the opinion that impacts on sensitive species at the base of the dam are not adequately addressed in the Draft EIR. The comment provides no evidence to support this opinion nor gives any specifics on the nature of any inadequacy.

The base of the existing dam is located within the vegetation and wildlife primary study area, which is shown on EIR page 4.4-2 (Vol.1, Chapter 4, Section 4.4, Figure 4.4.1). All necessary surveys were conducted in the primary study area for the EIR to determine impacts and prescribe mitigations. Each impact discussion addressing habitats and special-status species (i.e., Impacts 4.4.1 through 4.4.11 on EIR pages 4.4-75 – 4.4-116) includes a discussion of construction impacts, which includes disturbance to habitats, potential habitat for special-status species, and any applicable known occurrences of special-status species.

The same approach is taken for fisheries resources, with the area below the dam within the primary study area (Vol. 1, Chapter 4, Section 4.5, Figure 4.5.1) and construction impacts addressing losses of habitat, potential habitat for special-status species, and any applicable known occurrences of special-status species (i.e., Impacts 4.5.1 and 4.5.2 on EIR pages 4.5-55 and 4.5-56).

An adequate discussion of impacts on sensitive species at the base of the existing dam is provided in the EIR. This same conclusion applies to the CDRP Variant, with an analysis of environmental impact of the Variant provided in Section 9.2 of this Comments and Responses document.

- A-ACPWA-14 The comment requests that the SFPUC uses a watershed approach when considering mitigation areas.

As stated on EIR page 5-9 (Vol. 2, Chapter 5, Section 5.4, Mitigation Measure 5.4.2.b), location in the watershed must be considered when developing stream restoration plans. Mitigation Measure 5.4.3b (Vol. 2, Chapter 5, Section 5.4, page 5-12) requires that final compensation plan(s) include a description of the factors considered during the final mitigation site selection process, including consideration of watershed needs, and the practicability of accomplishing ecologically self-sustaining habitats at the mitigation sites. Therefore, the EIR already calls for the use of watershed based approaches when considering mitigation areas.

A-ACPWA-15 The comment states that planned post-project water releases from Calaveras Dam and subsequent recapture at the proposed Filter Gallery Project would support rainbow trout but are not adequate for steelhead. The comment further states that planned releases are not sufficient to allow salmonids from the San Francisco Bay to reach the base of the Calaveras Dam.

EIR Section 4.5.1.2 (pages 4.5-39 – 4.5-45) describes the life history and habitat needs of steelhead/rainbow trout. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a description of the originally proposed flow release schedules, information on the analyses that were conducted to develop and assess the flow release schedules, and information on the Filter Gallery Project. Additionally, more detailed description of the hydrologic study to determine the amount of water needed to support steelhead is provided in Appendix J of the EIR (*CDRP: Future Steelhead Cumulative Impact Analysis – California Central Coast Steelhead*) and *Calaveras Dam Replacement Project, Fisheries Technical Report* (ETJV 2008, see Appendix A), which is part of the administrative record and has been provided to the National Marine Fisheries Service (NMFS) and CDFG.

As discussed in Chapter 9 of this Comments and Responses document, since publication of the Draft EIR the SFPUC has developed the CDRP Variant, which includes project refinements and fishery enhancements including updated flow schedules and an adaptive management implementation plan (AMIP). The fishery enhancements and project refinements included in the CDRP Variant were developed, in part, as a result of the SFPUC's close coordination with NMFS and CDFG and as part of its project development and design process. Please refer to Chapter 9 for a detailed description and analysis of the proposed instream flow schedules and AMIP and to the master response sections referenced above for an analysis of the CDRP Variant relative to fishery resource issues identified in this comment.

A-ACPWA-16 The comment requests that, when Calaveras Road is reopened on weekends, the SFPUC thoroughly remove all debris from the roadway surface and ensure that any temporary asphalt repairs are completed to a standard that would ensure safe use by bicyclists.

Mitigation Measure 5.12.4a (sixth bullet point of the Traffic Control Plan) requires maintenance of adequate driving and bicycling conditions on

Calaveras Road during the construction period; (Refer to EIR page 5-38, Vol. 2, Chapter 5, Section 5.12). The closed portion of Calaveras Road would be swept clean on either Friday evening or Saturday morning, and re-opened for traffic on Saturdays and Sundays (see EIR page 4.12-8, Vol. 2, Chapter 4, Impact 4.12.1). SFPUC will also require the construction contractor to make any temporary asphalt repairs to a standard that would allow bicyclists to use the road in a safe manner.

A-ACPWA-17 The comment requests information about what the commenter understands to be the proposed closure of the Sunol Regional Wilderness.

There is no proposal to close the Sunol Regional Wilderness; neither construction nor operation of the proposed project would require closure. On EIR page 5-38 (Vol. 1, Chapter 5, Section 5.12), Mitigation Measure 5.12.4b states that the SFPUC plans to seek approval from Alameda County to close Calaveras Road between Geary Road and the dam access road to through traffic on weekdays for 2 months in summer 2011 and 18 months beginning in winter 2012 to mitigate possible traffic safety impacts and conflicts when off-site hauling to the dam site would occur. However, the Sunol Regional Wilderness would remain open and access would continue to be provided year-round to the Sunol Regional Wilderness from the northern segment of Calaveras Road. Please also refer to Response A-EBRPD-61 concerning temporary closure of Calaveras Road during project construction.

A-ACPWA-18 The comment asserts that the Draft EIR inadequately addresses impacts of the project on steelhead and does not, but should, address Chinook salmon and Pacific lamprey.

Potential project impacts on steelhead are thoroughly addressed in the EIR. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, regarding project effects on steelhead. Regarding Chinook salmon and Pacific lamprey, please refer to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek. Note that existing barriers to fish passage (e.g., BART weir) currently prevent migration of anadromous fish species into upper Alameda Creek from the Bay. Please also refer to Chapter 9 for a complete description and analysis of the CDRP Variant and to the master response sections referenced above regarding the CDRP Variant with respect to steelhead, Chinook salmon, and Pacific lamprey.

A-ACPWA-19 The comment states that the Draft EIR failed to address the flow diversions from the watershed, and indicates that, under post-project conditions, additional water would be diverted to Calaveras Reservoir from upstream watershed areas relative to existing conditions. The comment states that the increased diversions would have significant adverse effects on restoring stream reaches to benefit steelhead and other endangered species. In addition, the comment suggests that diversions of flows from Alameda Creek to Calaveras Reservoir be monitored with a U.S. Geological Survey (USGS) gage and that the gage data be available online and accessible to the public.

The effects of the Draft EIR project on stream flow within the watershed are addressed in Section 4.6 of the EIR (Vol. 1, Chapter 4, Section 4.6, pages 4.6-57 – 4.6-98). Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow. This section of the master response addresses both the Draft EIR project and the CDRP Variant. Also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding post project stream flows and fisheries; Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, regarding project effects on steelhead; and Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, regarding the analysis of project effects on other special-status fish species.

Regarding placement of an additional USGS gage to record diversions to Calaveras Reservoir, this is a suggestion by the commenter that does not address the accuracy or adequacy of the EIR. Although data from such a gage might be of some interest, a gage is not needed to operate the ACDD and Calaveras Reservoir or ensure compliance with operation and flow commitments for the Draft EIR project. Operation and flow commitments for the Draft EIR project are already designed to use data from existing gages as applicable. Under existing conditions, the highest volume of diversions from Alameda Creek to Calaveras Reservoir occurs during very high flows when the diversion rate equals the tunnel capacity of approximately 650 cfs. Therefore, recording the period of time that the diversion tunnel is open provides a good indicator of overall diversion volumes. However, a new flow gage is being installed below ACDD and will serve as the flow monitoring compliance point for the ACDD releases. The commenter's request for a flow gage below the ACDD is addressed.

A-ACPWA-20 The comment requests that the SFPUC provide temporary flow releases to support study of potential salmonid migration conditions on Alameda Creek. Data gathering and study of habitat conditions on Alameda Creek under different flow conditions would be led by the Alameda Creek Fisheries Restoration Workgroup (ACFRW) Flows Subgroup. The comment further states that providing these temporary artificial releases would expedite the study, as data gathering opportunities under different flow conditions would not be dependent on waiting for rain events.

This comment does not address the accuracy or adequacy of the EIR. The following is therefore provided for informational purposes. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead. As described in the master response, the SFPUC is supporting and participating in numerous studies of the Alameda Creek watershed and potential for fish passage, and has completed several flow studies and other fisheries-related studies. In addition, the SFPUC is conducting and has committed to conduct various monitoring, study, and adaptive management efforts related to fishery resources as part of its participation in the ACFRW and in support of the development of the Alameda Watershed Habitat Conservation Plan (HCP).

Flow release data are currently being collected as precipitation events provide a range of flow conditions. Artificial releases are not necessary to collect the desired data, although it is acknowledged that such release could expedite the collection of data. However, expediting this data collection would not alter the analysis or conclusions in the EIR. The EIR compares the environmental effects of a project against conditions present when the EIR was prepared. Adequate flow information was available at the time of EIR preparation for the purposes of impact analysis and mitigation development. Mitigation measures in the EIR do provide for an adaptive management approach to ensure that performance criteria are met (i.e., Mitigation Measure 5.5.5b, Resident Rainbow Trout Adaptive Management [Vol. 2, Chapter 5, page 5-17]). Additional flow data gathered from ongoing studies may be used, where appropriate, to refine mitigation implementation.

In addition, the ultimate results of ongoing studies, the achievement of mitigation performance criteria, and the ultimate effectiveness of monitoring and adaptive management programs such as the proposed AMIP (see

Chapter 9, Section 10.4.7, and Appendix P) are not adversely affected by relying on precipitation-generated flows for data gathering. These studies, programs, and mitigation measures are designed to function with data provided by precipitation generated flows and scheduled water system releases. Finally, when providing system releases for various studies, SFPUC water needs, customer delivery obligations, and costs must be considered.

- A-ACPWA-21 The comment suggests that flow releases from Calaveras Reservoir should address the hydrologic requirements of steelhead, Chinook salmon, and Pacific lamprey from San Francisco Bay to the headwaters of the watershed.

Please refer to the master response presented in Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for issues related to Chinook salmon and Pacific lamprey. The description and analysis of post-project flow releases in the EIR is sufficient to satisfy the requirements of CEQA pertaining to potential impacts, or avoidance of impacts, on these species. Also see Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for issues related to further analysis of flow releases from Calaveras Reservoir.

- A-ACPWA-22 The comment states that the County does not consider the analysis regarding the effects of asbestos on sensitive receptors and county residents to be sufficient and requests that the SFPUC “implement a rigorous monitoring program that will unequivocally absolve the SFPUC from any associated adverse health effects associated with asbestos-tainted soils.” The comment also requests more information regarding the imported fill materials that will be brought in from Santa Clara County and whether the material has been tested for asbestos.

Hazards related to construction in areas containing naturally occurring asbestos (including moving material from Borrow Area E in Santa Clara County to the dam site in Alameda County) are addressed in Section 4.9.2 of the EIR. Also see Response A-EBRPD-03, which addresses issues related to naturally occurring asbestos and provides a detailed description of Mitigation Measure 5.9.2a, Asbestos Dust Mitigation Plan and the Comprehensive Air Monitoring Program). In summary, the EIR concludes that construction activities in areas of the project site containing naturally occurring asbestos could have a significant adverse impact on project construction workers and the public, but that this impact can be mitigated to a less than significant level. The mitigation

measures identified in the EIR include: (1) implementation of dust control measures in accordance with the Bay Area Air Quality Management District Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations and June 2010 BAAQMD CEQA Guidelines; (2) implementation of a comprehensive air monitoring program with risk-based trigger levels for implementing corrective actions such as implementation of enhanced dust control measures, work slowdowns, or temporary work stoppages if determined necessary to protect the public from a hazard related to naturally-occurring asbestos; (3) construction worker protection in accordance with Cal/OSHA Asbestos Construction Safety Orders; (4) containment of the SFPUC watershed keeper's residence adjacent to the reservoir during construction to protect the residence from NOA-laden dust and post-construction clearance sampling and cleaning of the residence; (5) classification and segregation of materials excavated from NOA-containing soils and rock for separate hauling, stockpiling, and disposal on-site; and (6) third-party review and oversight by a Certified Industrial Hygienist who is also a Certified Asbestos Consultant or who has current 40-hour Asbestos Hazard Emergency Response Act training (see Mitigation Measures 5.9.2a, 5.9.2b, 5.9.2c and 5.9.2d [Vol. 2, Chapter 5, pages 5-27 – 5-32]). These measures meet or exceed industry standards and all applicable regulatory requirements for construction in NOA-containing areas, and would reduce the impact related to construction in NOA-containing areas to a less than significant level.

As described on EIR pages 3-37 – 3-42 (Vol. 1, Chapter 3, Section 3.5.1.4), approximately 298,000 cubic yards of sand and gravel for use in filters, drains, and concrete aggregate would be obtained from off-site commercial sources to be determined by the construction contractor. Through its contract specifications, the SFPUC would require the construction contractor to provide documentation from the commercial supplier that the fill materials do not contain hazardous materials, including asbestos.

A-ACPWA-23 The comment asserts that sedimentation in the lower reaches of Alameda Creek, which have been converted to a flood control channel, are the result of the SFPUC's diversion of water from the upper watershed and that some consideration is currently being given to reconfiguration of the flood control channel to better pass sediment. In addition, the comment indicates that the EIR should address the environmental consequences of past diversions of water from the watershed.

Sedimentation in the flood control channel is a result of a combination of human activities that have altered Alameda Creek from a naturally functioning stream to a stream managed, in large part, for water supply, aggregate mining, and flood control benefits. Even if no water was diverted from the upper Alameda Creek watershed by the SFPUC, it is doubtful that the sedimentation problem would be solved. The creek channel through the flatlands is sized to pass very large floods without overflowing its banks. Because the channel is so large, the velocity of flow in the channel in the intermediate-size floods that typically move the most sediment in a stream is too low to carry sediment to San Francisco Bay.

As indicated in the comment, some consideration is being given to reconfiguration of the flood control channel to better pass sediment. The CDRP would have no effect on the feasibility of such a channel reconfiguration project, which could go forward with or without the proposed dam replacement project.

Regarding the EIR addressing the environmental consequences of past diversions of water from the watershed, CEQA does not require that an EIR evaluate the environmental impacts of past actions except as a consideration in the cumulative impact assessment. The primary purpose of an EIR is to identify the environmental impacts of a proposed project with the impacts measured against the existing condition, whether the existing condition is pristine or degraded. The project effects on sediment transport relative to existing conditions are thoroughly evaluated on EIR pages 4.6-102 – 4.6-105 (Vol. 1, Chapter 4, Section 4.6, Impacts 4.6.9, 4.6.10, and 4.6.11). No EIR revisions are required.

A-ACPWA-24 The comment states that further diversion of natural spring flows in the Alameda Creek watershed would render the entire lower reach of Alameda Creek waterless. The comment also claims that the SFPUC's diversion of water from the Alameda Creek watershed is inconsistent with water rights law.

For information on anticipated flows in the lower reach of Alameda Creek after project implementation, please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and the subsection entitled "Flow in the Alameda Creek Downstream of the Arroyo de la Laguna." The Draft EIR project and the CDRP Variant would have little or no effect on flow in the lower reaches of Alameda Creek and would not render them "waterless." The claim in the

comment that the SFPUC's diversion of water from the Alameda Creek watershed is inconsistent with water rights law is incorrect. The SFPUC owns all riparian rights on Alameda Creek and tributaries for the watersheds downstream of the Calaveras and San Antonio Reservoirs as a result of its purchasing of the Spring Valley Water Company in 1930. As a result, the past, present, and future operation of the Calaveras Dam and ACDD cannot be inconsistent with the law of riparian rights. The SFPUC's diversion and storage of water at Calaveras Dam and diversion from Alameda Creek at the ACDD under pre-DSOD restriction conditions and existing conditions are authorized under a pre-1914 appropriative water right. The SFPUC's pre-1914 appropriative water rights for Calaveras Reservoir and the ACDD allows export of water out of the watershed and there are no express conditions limiting the exercise of the right. Water usage would remain consistent with the SFPUC's existing water rights after project implementation.

- A-ACPWA-25 The comment states that the CDRP is more than a seismic upgrade project; it is a capacity increase project to accommodate significantly higher flow diversions from the watershed. The comment further states that the Draft EIR does not address impacts of diversions on anadromous fish species, and that it narrowly defines project impacts to the immediate vicinity of the dam, which is inconsistent with CEQA Guidelines Sections 15122 to 15131.

The proposed CDRP (both the Draft EIR project and the CDRP Variant) would improve seismic safety and restore the design capacity of the dam compared to its historic capacity. It would not increase the design capacity of the dam. This is explained on EIR page 1-2 (Vol. 1, Chapter 1, Section 1.1), as follows:

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 DSOD directed the SFPUC to undertake necessary seismic improvements to the dam and lower the reservoir water level until these improvements are completed. The elevation of the lowered water level corresponds to about 38,100 acre-feet (AF) of storage, which is approximately 60 percent less than the total water storage volume prior to the DSOD restriction.

Implementation of the CDRP would restore the previously existing yield and reliability of the SFPUC local system and provide water supply during droughts.

As stated on EIR page 1-8 (Vol. 1, Chapter 1, Section 1.1), “the overall purpose of the proposed project is to replace the existing dam with a new dam to accommodate a public water supply reservoir and meet current seismic safety design requirements. When the proposed replacement dam is completed, DSOD restrictions, described above, would be lifted and the original reservoir pool could be restored.”

Although the proposed project would not increase the capacity of the reservoir relative to its original design, it would increase the amount of water stored compared to the existing condition with DSOD restrictions in place. This fact is acknowledged throughout the EIR and is the basis for every impact discussion, comparing the existing condition against the post-project condition. The timing and volume of diversions to the reservoir would also change, as indicated in the master response presented in Section 10.3, Hydrology, and specifically Section 10.3.3, Diversions and Streamflow. With respect to anadromous fish, the EIR addresses anadromous fish in several locations. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for discussion regarding operational impacts on steelhead, and to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for discussion of issues related to Chinook salmon and Pacific lamprey.

In regards to the assertion that the Draft EIR impact approach is inconsistent with CEQA Guidelines Sections 15122 to 15131, this statement is incorrect. These CEQA Guidelines sections pertain to the contents of an EIR and address EIR elements ranging from the Table of Contents to consideration and discussion of economic and social effects. The EIR contains all required sections applicable to the proposed project, consistent with CEQA Sections 15122 to 15131, including a table of contents, summary, project description, environmental setting, consideration and discussion of environmental impacts, consideration and discussion of mitigation measures proposed to minimize significant effects, consideration and discussion of alternatives to the proposed project, effects not found to be significant, organizations and persons consulted, and discussion of cumulative impacts.

Regarding the implication that the EIR analysis narrowly defines the project impact limits to the immediate vicinity of the dam, this is not the case. The EIR impact analysis in many cases extends well beyond the dam and reservoir site. For example, the impact analyses related to fisheries and hydrology consider project effects downstream of the Calaveras Reservoir and ACDD to the San Francisco Bay (see Vol. 1, Chapter 4, Sections 4.5 and 4.6). Similarly, the analysis of transportation and circulation evaluated project effects on roadways many miles from the Calaveras Dam (see Vol. 2, Chapter 4, Section 4.12). In addition, the WSIP PEIR, from which the CDRP EIR tiers, considered a project area encompassing the entire SFPUC water system (i.e., Tuolumne River watershed, Alameda Creek watershed and Peninsula watershed); thereby putting the discussion of the CDRP in a much larger geographic context.

A-ACPWA-26 The comment states that the WSIP would result in changes in reservoir levels and associated changes in downstream flows in rivers and creeks in the Tuolumne River, Alameda Creek, and Peninsula watersheds, potentially resulting in adverse effects on groundwater, water quality, fisheries, and terrestrial biological resources.

EIR page 1-6 (Vol. 1, Chapter 1, Section 1.2) provides a summary of the impact conclusions reached in the WSIP PEIR. The water supply and system operations impacts of the WSIP are thoroughly analyzed in the WSIP PEIR (see PEIR, Vol. 3, Chapter 5), which was certified by the San Francisco Planning Commission on October 30, 2008. The SFPUC adopted the CEQA Findings pursuant to the WSIP PEIR as well as the WSIP Mitigation Monitoring and Reporting Program, and the SFPUC is in the process of implementing the PEIR mitigation measures in concert with the development and implementation of the facility improvement projects under the WSIP.

A-ACPWA-27 The comment questions whether the temporary 12-inch diameter low flow release valve is still in place. The comment also suggests using the existing low-flow release valve to provide flows that would reach Alameda Creek's tidal estuary.

The 12-inch diameter low flow release valve is still in place, but would be removed during construction of the replacement dam. The outlet structure at the new dam would be equipped with permanent low-flow release valves (see EIR page 3-31, Vol. 1, Chapter 3, Section 3.4.2.3).

Regarding use of the existing low-flow release valve to provide flows that would reach Alameda Creek's tidal estuary, changing operation of the existing

temporary low-flow release valve is not part of the proposed project and is not a subject of the EIR. As stated above, this valve will be eliminated as part of the project. After project implementation, two new low-flow valves would be used to release water from Calaveras Reservoir to meet the proposed flow release schedules. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and the subsection entitled “Flow in Alameda Creek Downstream of the Arroyo de la Laguna.”

- A-ACPWA-28 The comment states that the proposed filter gallery in the Sunol Valley would preclude anadromous fish from reaching their historic upstream spawning grounds.

The filter gallery project, currently named the Upper Alameda Creek Filter Gallery Project, is not a component of the CDRP; rather, it is one of the many WSIP facility improvement projects and is identified as a reasonably foreseeable future project in the cumulative impact analysis (EIR page 6-14; Vol. 2, Chapter 6, Section 6.2.2, Table 6.1). The environmental effects of the filter gallery project were addressed programmatically in the WSIP PEIR. The potential effects of the Filter Gallery Project will also be examined in a separate EIR for that project. The SFPUC has indicated that it will design the project so that it does not preclude migration of anadromous fish. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.6, Cumulative Impacts, and the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

- A-ACPWA-29 The comment states that the EIR should address the anticipated future expansion of the reservoir enabled by the proposed robust dam core design, and that, in not doing so, the Draft EIR does not address the full range of the project’s impacts. The comment also expresses the opinion that “[f]uture generations would appreciate having a watershed that is diverse and supports [a] variety of habitat and species that are no longer at risk. Paramount to this envisioned habitat is adequate flows that are not subject to diversion into reservoirs.”

Please refer to the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, and specifically to Section 10.1.2, Potential Future Enlargement of the Calaveras Dam, for a response to the comment regarding the potential future enlargement of the dam.

The commenter's assumptions regarding the preferences of future generations do not address the accuracy or adequacy of the EIR; therefore, no further response to this comment is required.

A-ACPWA-30 Referring to EIR page 1-14 (Vol. 1, Chapter 1), the comment states that the project is inconsistent with applicable SFPUC land use policies adopted to avoid environmental impacts, and that the diversion of flows into dams and subsequent release and recapture is inconsistent with the Endangered Species Act.

EIR page 1-14 addresses design criteria and design and composition of the proposed spillway and does not address applicable land use policies. Applicable SFPUC land use policies are addressed on EIR pages 4.2-6 and 4.2-16 (Vol. 1, Chapter 4, Section 4.2). As discussed on EIR pages 4.2-16 and 4.2-17, the proposed project would be consistent with the SFPUC Alameda Watershed Management Plan and Water Enterprise Environmental Stewardship Policy.

Applicable state and federal laws, including the federal Endangered Species Act (FESA), are described on EIR pages 4.4-61 – 4.4-67 (Vol. 1, Chapter 4, Section 4.4). Project-related effects, including effects of releases and flows on special-status and endangered species, are analyzed on EIR pages 4.4-71 – 4.4-117. The EIR analyses conclude that project impacts on native species and ecosystems would be less than significant or less than significant with mitigation. Mitigation measures beginning on EIR page 5-2 (Vol. 2, Chapter 5) are proposed to avoid, minimize, and compensate for significant impacts of the proposed project on special-status species and sensitive habitats during project operation. With mitigation, the proposed project would be consistent with the FESA. In addition, the SFPUC is in consultation with the USFWS and NMFS in compliance with Section 7 of the FESA. Project construction would not proceed without appropriate Endangered Species Act authorization from these agencies.

For further discussion on project compliance with FESA in response to several comments on this topic, please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for responses to comments regarding the SFPUC's Environmental Stewardship Policy and compliance with the FESA. Refer also to Response A-SFBOS-Daly-04, which addresses compliance of the

proposed CDRP with FESA, and Response O-ACA&CDB2-04, which addresses fish capture and relocation and compliance with FESA.

The recapture of released flows is not part of the proposed CDRP and will be addressed as part of the proposed SFPUC Upper Alameda Creek Filter Gallery Project described on EIR page 6-14 (Vol. 2, Chapter 6, Table 6.1, Cumulative Project No. 8). The Upper Alameda Creek Filter Gallery Project will be subject to a separate EIR as described above in Response A-ACPWA-28.

A-ACPWA-31 The comment addresses two issues: (1) post-construction impacts to perennial stream crossings, and (2) California tiger salamander aestivation habitat. The comment states that perennial streams may not always have surface flows present, and requests that post-construction impacts on wetlands at perennial stream crossings be addressed. The comment also states that a single gopher hole could support aestivating California tiger salamander and that the project would result in take of California tiger salamander.

Post-construction mitigation measures for impacts on streams are addressed in Mitigation Measure 5.4.2 (Vol. 2, Chapter 5, Section 5.4, page 5-9). This measure requires the SFPUC to restore temporarily affected wetland, stream, pond, and riparian habitats located above the 756-foot inundation elevation, within 3 years of completion of construction. This mitigation measure applies to all temporarily affected streams regardless of whether flow is perennial, intermittent or ephemeral.

EIR page 4.4-94 addresses the potential for California tiger salamander death or injury to occur as a result of construction activity, and this impact is considered significant (Vol. 1, Chapter 4, Section 4.4, Impact 4.4.3). The SFPUC will prepare a California tiger salamander salvage and relocation plan in coordination with the USFWS and CDFG (Mitigation Measure 5.4.1a, Vol. 2, Chapter 5, Section 5.4, page 5-3) that would minimize impacts on this species. The identification of aestivation habitat via observation of small mammal burrows is only a part of the plan. The primary mechanisms to avoid impacts on California tiger salamander are trapping and relocating salamanders to suitable habitat outside of the construction zone, and installation of exclusion fencing to prevent salamanders from entering the construction areas. In addition, Mitigation Measure 5.4.3a requires the SFPUC to fully compensate for impacts on California tiger salamander habitat, including losses of aquatic habitat and upland habitat. These mitigation measures have been developed in close coordination with the USFWS and CDFG.

It should also be noted that in addition to the mitigation measures identified in the EIR for California tiger salamander, SFPUC is obtaining incidental take authorization from the USFWS for California tiger salamander and will need to adhere to all associated permit requirements.

A-ACPWA-32 The comment questions whether the period for the preconstruction survey to determine if bald eagles are nesting at Calaveras Reservoir required under Mitigation Measure 5.4.1a should be extended.

Mitigation Measure 5.4.1a requires 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. This monitoring would not only record nests, but also track courtship behavior and any other potential signs that nest building/nesting might occur. This monitoring period was adopted based on data collected on a pair of bald eagles nesting in the primary study area during 2006 and 2007 (Vol.1, Chapter 4, Section 4.4, page 4.4-50). Because that nest was determined to be active in February 2007, and because bald eagle nests are typically occupied for several months during the nesting season, it is highly unlikely that surveys in December, January, and February would not detect any bald eagles exhibiting courtship or other breeding behavior or nest building in the primary study area. If an active bald eagle nest is found as a result of the monitoring, measures such as establishment of no-disturbance buffers will be implemented. The portion of Mitigation Measure 5.4.1a on EIR page 5-4 addressing bald eagles (Vol. 2, Chapter 5, Section 5.4) provides adequate protection for nesting bald eagles.

However, in the highly unlikely event that bald eagles did not first exhibit some discernable breeding or nesting behavior in the project area until March or later, these activities would be observed by biologist conducting surveys for other tree-nesting raptors, described on EIR page 4.4-51, which would be conducted from February 1 through July 31. To ensure that bald eagles are considered during implementation of “Other Tree-Nesting Raptor Pre-Construction Surveys” (part of Mitigation Measure 5.4.1a), and in response to comment A-EBRPD-73 which requests acknowledgement of peregrine and prairie falcons, the text of this mitigation measure on page 5-5 of the EIR has been modified to read as follows:

- **Other Tree or Cliff-Nesting Raptor Pre-construction Survey.** A survey to identify active nests for tree or cliff-nesting raptors (~~other than~~ including bald eagles) will be conducted by a qualified biologist

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no more than 2-weeks before the start of construction at project sites from February 1 through July 30.

Active raptor nests located within 500 feet (0.25 mile for golden eagle and bald eagle or falcons) of the project will be mapped, to the extent allowed by access.

If an active bald eagle nest is found, implement nest protection measures described previously for bald eagles. If an active raptor nest is found within 500 feet (0.25 mile for golden eagle or falcons) of the project, a determination will be made by a qualified biologist, in coordination with the CDFG, as to whether or not construction work will affect the active nest or disrupt reproductive behavior. Criteria used for this evaluation will include, but not be limited to, presence of visual screening between the nest and construction activities, and behavior of adult raptors in response to the surveyors or other ambient human activity. Alternatively, other appropriate avoidance measures, as approved by CDFG may be implemented to ensure that the nest is protected. If it is determined that construction will not affect an active nest or disrupt breeding behavior, construction will proceed without any restriction or mitigation measure. If it is determined that construction will affect an active raptor nest or disrupt reproductive behavior, then avoidance is the only mitigation available.

Construction will be delayed within 300 feet (0.25 mile for golden eagle or falcons)...

A-ACPWA-33 The comment recommends removal of vegetation during the loggerhead shrike non-breeding season.

The portion of Mitigation Measure 5.4.1a on EIR page 5-6 addressing loggerhead shrike (Vol. 2, Chapter 5, Section 5.4) provides adequate protection for nesting loggerhead shrikes by requiring protection of any active nests detected during preconstruction surveys.

Mitigation Measure 5.4.1a requires preconstruction surveys and establishment of buffer area to protect nesting loggerhead shrikes from disturbance during construction activities. This measure is adequate to ensure that any impacts on loggerhead shrike during project construction would be less than significant.

A-ACPWA-34 The comment requests that the SFPUC explain how millions of cubic yards of soil would be transported from Santa Clara County to Alameda County without pre-approval from the County.

The comment is correct in noting that material from Santa Clara County (i.e., Borrow Area E) would need to be transported to the new dam site in Alameda County. As noted on EIR page 3-41 (Vol. 1, Chapter 3, Section 3.5.1.5), it is

estimated that approximately 840,000 cubic yards of alluvium material would be removed from Borrow Area E for use in the core of the dam. However, it is not expected that use of county roads would be required to move material from Borrow Area E because an on-site haul road (not a public road) would be constructed and used.

Design, construction and operation of the project is under the oversight and jurisdiction of the DSOD. The construction, including movement of material from Borrow Area E, would be done on SFPUC property and no grading, excavation or similar permits are required from Santa Clara County or Alameda County for the SFPUC to do work on its own property.

A-ACPWA-35 The comment indicates that the timing of restoration and compensatory mitigation for grasslands, wetlands and riparian habitat, and California tiger salamander aquatic habitat is unclear.

Mitigation Measure 5.4.2a (Vol. 2, Chapter 5, Section 5.4, page 5-9) requires that the SFPUC restore temporarily affected annual grasslands within the limit of work located above the 756-foot inundation elevation within 3 years of completion of construction. The intent is that grassland seeding/planting would be conducted soon after completion of construction, and restoration of grassland habitat would be complete within 3 years after construction. An exception to this 3-year performance schedule would be any long-term monitoring that might be required in a restoration plan and completion of remediation actions if restoration success criteria were not met with the first planting.

As stated in Mitigation Measure 5.4.3a (Vol. 2, Chapter 5, Section 5.4, page 5-10), wetland habitat would be established at mitigations areas such as the proposed South Calaveras and San Antonio Mitigation Areas within 5 to 10 years of the completion of construction. Because it can take multiple years for wetland vegetation and hydric conditions to become established at wetland mitigation sites, a 5- to 10-year window is provided. It is anticipated that, at the end of the 5- to 10-year period, the compensatory mitigation habitat would be sufficiently established to fully compensate for habitat loss. In accordance with the 5- to 10-year performance schedule, any earthwork and the planting for wetland habitat compensation would need to be initiated soon after construction is complete.

Mitigation Measure 5.4.3a (Vol. 2, Chapter 5, Section 5.4, page 5-10) requires that compensatory riparian habitat be restored and established within 10 years

of completion of construction. Because replacement riparian habitat requires several years to become established, a 10-year window for completion is provided. In order to satisfy this measure, any riparian plantings would need to occur soon after project construction is complete.

As described in Mitigation Measures 5.4.3a (Vol. 2, Chapter 5, Section 5.4, page 5-11), impacts on California tiger salamander would be fully compensated for by improving aquatic habitat through predator control in impaired waters bodies such as those in the South Calaveras Mitigation Area. Predator control programs may take multiple years before exhibiting substantive benefits. It is anticipated that predator control efforts would be initiated soon after completion of project construction and, at the end of the 5-year period, the aquatic habitat would be sufficiently improved to fully mitigate the impact.

The comment asks whether it would be preferable to begin mitigation activities prior to the start of project construction. The timing of implementation of habitat restoration and compensation mitigation measures would be scheduled consistent with resource agencies' requirements.

A-ACPWA-36 The comment requests clarification of what is meant by “consideration of watershed needs” with regard to mitigation area site selection.

This statement refers to using a watershed approach to site selection for compensatory mitigation in order to integrate compensation activities in a manner that improves ecological functions and values for multiple resources in a given watershed (also see Response A-ACPWA-14). At the broadest scale, this means favoring mitigation sites within the same watershed where impacts occur, which would be the Alameda Creek watershed. The proposed mitigation sites are within the Alameda Creek watershed. The watershed scale can be refined to focus on subwatersheds (e.g., the upper Alameda Creek watershed), and this is considered in the selection of mitigation sites. For example, the South Calaveras mitigation site is located along the south side of the Calaveras Reservoir, within the area of the Calaveras Creek watershed where many of the project construction impacts will occur. For mitigation sites with an aquatic habitat component, the intent is also to select sites with a large enough local watershed to allow natural precipitation to support the aquatic habitat. All sites selected for aquatic habitat components must be known to support, or be able to support, the planned habitat functions and services.

A-ACPWA-37 The comment expresses the unsubstantiated opinion that certain impacts should be considered significant and that mitigation timing is inadequate. It is assumed that the commenter is referring to the impacts listed on EIR page 1-53 (Vol. 1, Chapter 1, Table S.2). The impacts listed on this page all refer to potential impacts on special status species, including Alameda whipsnake, callippe silverspot butterfly, bald eagle, foothill yellow-legged frog, Heermann's kangaroo rat, and western pond turtle under Impacts 4.4.4, 4.4.5, 4.4.6, 4.4.7, 4.4.8, and 4.4.9a, respectively.

The detailed discussion and analysis of these impacts are presented on EIR pages 4.4-95 – 4.4-108, and the impact discussions are broken down to address impacts associated with construction, filling of the reservoir, and operation. The commenter is referred to these discussions, which provide detailed explanations and rationales for the findings of significant impact, less-than-significant impact, or no impact. For all impacts determined to be significant, mitigation measures are identified that would reduce the impacts to less-than-significant levels. With regard to the timing of mitigation, the mitigation measures would be implemented consistent with the timeframes specified by the mitigation measures. For example, Mitigation Measure 5.4.3a specifies that restoration and establishment of stream and wetland habitats to compensate for impacts on wetlands, open water and streams shall be completed within 5 to 10 years of completion of project construction. Also see Response A-ACPWA-35 above regarding timing of mitigation measures.

A-ACPWA-38 The comment refers to Impact 4.5.2 on EIR page 1-54 (Vol. 1, Chapter 1, Table S.2) and indicates that the additional diversion of flows would permanently prevent ESA fish in Calaveras Creek downstream of the existing dam.

Impact 4.5.2 relates to the direct loss of fish habitat as a result of dam construction (Vol. 1, Chapter 4, Section 4.5, pages 4.5-55 and 4.5-56). The comment's statement that "the additional diversion of flows would permanently prevent ESA fish from the corridor" appears to be related to project operation. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir regarding the loss of habitat within the footprint of the replacement dam.

For responses to the issue of proposed flows and project effects on downstream flows, please refer to the master response presented in Section

10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam. For responses related to passage of endangered fish species please see Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead.

A-ACPWA-39 The comment states that the Draft EIR fails to identify flow-related impacts on the downstream corridor of Alameda Creek below the ACDD and that limiting the impact discussion to a narrowly defined perimeter around the dam is flawed and misleading.

A detailed analysis of potential impacts of the proposed project on vegetation and wildlife, fisheries, and hydrology is provided in EIR Sections 4.4, 4.5, and 4.6, respectively. The analyses provided in each of the sections address potential construction and operational impacts within the Calaveras Reservoir area, the construction areas, and downstream in the Alameda Creek corridor from the ACDD and Calaveras Dam to the San Francisco Bay. The comment is incorrect in stating that the project impact analysis is limited to “a narrowly defined perimeter around the dam.” Also see Response A-ACPWA-25 regarding the geographic extent of the EIR impact analysis.

The comment is also incorrect in stating that the proposed project would exacerbate “lack of flows” downstream of the ACDD and Calaveras Dam. As shown in multiple locations in the analysis of hydrologic impacts of the flow schedules included in the Draft EIR project (Vol. 2, Chapter 4, Section 4.6, pages 4.6-64 – 4.6-106) and as summarized in Tables 4.6.18 (page 4.6-81), 4.6.19 (page 4.6-82), 4.6.20 (page 4.6-91), and 4.6.21 (page 4.6-92), on average, water releases from Calaveras Dam and the ACDD and downstream flows would be greater after the proposed project than under existing conditions. In addition, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant, which includes revised flow schedules, installation of a fish screen at the upstream end of the diversion tunnel at the ACDD, and a fish ladder at the ACDD. These project updates would result in further increasing downstream flows in Alameda Creek below the ACDD. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

Many of the months when increased flows would occur are targeted to times that would be most beneficial to resident fishes and other aquatic resources and

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steelhead. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for issues related to further analysis of flow releases; Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for issues related to steelhead, including future monitoring and adaptive management commitments related to fish migration. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and the subsection titled “SFPUC’s Total Annual Diversions from the Alameda Creek Watershed” for detailed information changes in streamflows relative to existing conditions resulting from the Draft EIR project and the CDRP Variant.

A-ACPWA-40 The comment repeats several concerns and themes provided previously in the comment letter, such as effects of the planned water recapture facility and the appropriateness of characterizing the project as a seismic retrofit activity.

Please see Responses A-ACPWA-24, -25, -26, and -39, above, for responses to issues raised in this comment. For additional information on the comparison between pre-project and post-project releases and flows, please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and the subsection titled “SFPUC’s Total Annual Diversions from the Alameda Creek Watershed.” Refer also to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for issues related to further analysis of flow releases; Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for issues related to steelhead; and Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for issues related to salmon and Pacific lamprey.

A-ACPWA-41 The comment expresses the opinion that impacts on EIR page 1-54 should be considered significant and that mitigation should be provided. It is assumed that the comment refers to the assessment of Impact 4.5.3 in Table S.2. The comment suggests changing the impact conclusion for the effect of the project on creating barriers to fish movement/migration upstream in Calaveras and Alameda Creeks from “no” impact to “significant” impact and also requests that mitigation be provided.

As described on EIR page 4.5-16 (Vol. 1, Chapter 4, Section 4.5), construction of the replacement Calaveras Dam and modifications to the ACDD would not change the extent to which passage or migration is impeded by the existing

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structures; therefore, the proposed project would have no effect on fish passage at either of these barriers. In addition, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant, which includes a fish ladder at the ACDD and therefore improves passage opportunities related to existing conditions. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant. Refer also to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for additional discussion on fish passage at the ACDD and Calaveras Dam.

- A-ACPWA-42 The comment states that the framing of the statement on EIR page 1-55, which is assumed to be the impact title for Impact 4.5.4 in Table S.2, is questionable, that water flows downstream, and that if flows are unavailable because of dam diversion, it stands to reason that the downstream reaches will be adversely affected.

The full discussion of Impact 4.5.4 is provided on EIR pages 4.5-57 – 4.5-60 (Vol. 1, Chapter 4, Section 4.5). This impact discussion provides a full analysis of project effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek. The analysis finds that the impact would be potentially significant and provides mitigation to reduce the impact to a less-than-significant level. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for additional discussion of the impact analysis. In addition, since publication of the Draft EIR, the SFPUC developed the CDRP Variant, which includes revised flow schedules at the ACDD and Calaveras Dam. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

- A-ACPWA-43 The comment expresses the opinion that impacts on EIR pages 1-56, 1-57, and 1-58 should be considered significant and that mitigation should be provided.

It is assumed that the comment refers to the assessment of Impacts 4.5.6 through 4.5.9 regarding Fisheries, Impacts 4.6.1 through 4.6.12 regarding Hydrology, and Impact 4.7.1 regarding Water Quality in Table S.2. The commenter is referred to the detailed discussion and analysis of these fisheries, hydrology, and water quality impacts presented on EIR pages 4.5-70 – 4.5-82 (Vol. 1), pages 4.6-64 – 4.6-106 (Vol. 1), and pages 4.7-25 – 4.7-44 (Vol. 2),

respectively. The EIR provides detailed explanations and rationales as to why these impacts are determined to be either significant, less than significant, or beneficial. For all impacts determined to be significant, mitigation measures are identified that would reduce the impacts to less than significant. The conclusions provided in the Draft EIR do not change for the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document).

A-ACPWA-44 The comment states that a performance objective of the WSIP's sustainability goal should include protection of fish and wildlife habitat within the Alameda Creek Flood Control Channel from Mission Boulevard to San Francisco Bay.

This comment does not address the adequacy or accuracy of the EIR. For information regarding mitigation areas, refer to two new appendices that have been added to the EIR: Appendix C.3 is an update to Appendix C.2, and Appendix C.4 provides a description of the Koopmann Road Mitigation Area. No additional response is necessary.

A-ACPWA-45 The comment states that Figure 3.3 shows reservoir intake adit #1 without a fish screen and requests an explanation for the lack of a screen.

At the time of publication of the Draft EIR, the proposed project did not include a fish screen at reservoir intake adit #1. Analysis of potential fish entrainment in the adits is provided in Vol. 1, Section 4.5, Impact 4.5.7. As discussed in the analysis (see page 4.5-78), the Draft EIR project did not propose any changes at reservoir intake adit #1, therefore, the potential for fish entrainment into the adit would be similar to what currently takes place under the existing condition. Because there would be little change relative to existing conditions, impacts associated with continued use of the unscreened adit were found to be less than significant.

Since publication of the Draft EIR, the SFPUC has developed the CDRP Variant, which includes fish screens at Calaveras Dam adits #1 and #2 (adit #3 currently has a CDFG-compliant fish screen). Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

A-ACPWA-46 The comment recites text from EIR pages 3-59 – 3-60 (Vol. 1, Chapter 3, Section 3.5.4) regarding greenhouse gas reduction actions, and from EIR page 4.13-20 (Vol. 2, Chapter 4, Section 4.13.1.2) regarding local and regional air quality regulations, and provides no additional comment or discussion on the adequacy or accuracy of the EIR concerning these topics.

Impacts related to greenhouse gas emissions and related regulations and CEQA significance thresholds are addressed under Impact 4.13.7 of the EIR. These conclusions do not change for the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document).

- A-ACPWA-47 The comment recites text from the EIR describing visual impacts of the proposed project, and provides no additional comment or discussion on the adequacy or accuracy of the EIR concerning these topics.

Visual impacts of the proposed project are addressed under Impacts 4.11.1 and 4.11.2 on EIR pages 4.11-19 – 4.11-22 (Vol. 1, Chapter 4, Section 4.11). The conclusions provided for the Draft EIR project for these impacts do not change for the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document).

- A-ACPWA-48 The comment expresses the opinion that the impact described in EIR Section 4.12.6 should be considered significant and that mitigation should be provided.

It is assumed that the comment is intended to reference Impact 4.12.6 on EIR page 4.12-17 (Vol. 2, Chapter 4, Section 4.12) related to long-term traffic associated with operation and maintenance of the replacement dam. The comment does not provide any information as to why long-term traffic associated with operation and maintenance of the replacement dam would result in a significant impact. As described on EIR page 4.12-17, the new dam would require periodic operations review and maintenance, similar to the existing operations, and would not generate a significant number of new vehicle trips. Overall, any increases in traffic generated by operation and maintenance of the replacement dam would be minor, would not result in a noticeable increase in traffic on adjacent streets, and would therefore have a less-than-significant impact. The conclusions provided for the Draft EIR project for these impacts do not change for the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document).

- A-ACPWA-49 The comment expresses the opinion that the impact in EIR Section 4.13.1 should be considered significant and that mitigation should be provided.

It is assumed that the comment is intended to reference Impact 4.13.1 on EIR pages 4.13-33 – 4.13-37 (Vol. 2, Chapter 4, Section 4.13) regarding construction-related emissions of criteria air pollutants and precursors. As described in the EIR, this impact was found to be less than significant with mitigation when analyzed using the adopted BAAQMD thresholds of

significance at the time the Draft EIR was prepared and significant and unavoidable when analyzed using proposed BAAQMD thresholds considered at that time. Feasible mitigation measures intended to reduce the severity of Impact 4.13.1 are proposed on EIR pages 5-38 – 5-40 (Vol. 2, Chapter 5, Section 5.13). In June 2010, after the Draft EIR was completed, the BAAQMD formally adopted revised CEQA thresholds of significance. In most instances, the adopted thresholds are the same as those considered in the Draft EIR. For example, the thresholds for reactive organic gasses (ROG) and nitrates of oxygen (NO_x) are both 54 pounds per day under both the old and new thresholds. In one instance where thresholds change somewhat (i.e., a construction emission threshold for carbon monoxide has been removed), use of these new adopted thresholds does not change the conclusions of Impact 4.13.1. The June 2010 thresholds also clarify that PM₁₀ and PM_{2.5} emissions thresholds (particulate matter smaller than 10 microns and 2.5 microns in diameter respectively) apply to vehicle exhaust emissions and do not include fugitive dust emissions. Looking only at vehicle exhaust emissions, the project falls below the BAAQMD threshold, and what is considered a significant unavoidable impact in the Draft EIR (i.e., PM₁₀ and PM_{2.5} emissions) is now considered less than significant using the 2010 BAAQMD thresholds. All adjustments to the EIR air quality analysis to address the 2010 BAAQMD thresholds are shown in Chapter 12, Section 12.2 of this Comments and Responses document. Impact conclusions are also the same for the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document for analysis of the Variant and consideration of the new BAAQMD thresholds).

A-ACPWA-50 The comment states that the County considers the noise control measures identified in Section 4.14.1 to be inadequate.

Based on the nature of the comment, it is assumed that the comment refers to the combination of discussions presented in Impact 4.14.1 and Mitigation Measure 5.14.1. The following response is prepared accordingly.

Impact 4.14.1 uses the following CEQA significance criteria to determine the significance of estimated noise increases: (1) exposure of people to noise levels in excess of standards established by the local general plan or noise ordinance or applicable standards of other agencies; and (2) creation of a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. For the first criterion, EIR page 4.14-7 (Vol. 1, Chapter 4, Section 4.14) presents noise limits specified in

Section 6.60.040 of the Alameda County General Code. For the second criterion, EIR page 4.14-12 (Vol. 1, Chapter 4, Section 4.14) defines a “substantial” noise increase as interference with activities during the day and night, and the EIR analysis applies a 70-dBA speech interference threshold as an indicator of interference with daytime activities and a 50-dBA sleep interference threshold as an indicator of interference with nighttime activities.

Impact 4.14.1 estimates maximum construction-related noise levels at the closest sensitive receptors during the day and night in Tables 4.14.5 and 4.14.6 (Vol. 1, Chapter 4, Section 4.14, pages 4.14-14 – 4.14-17). By comparing these noise estimates to the above criteria and thresholds, construction activities were determined to potentially result in significant noise impacts on nearby sensitive receptors. Therefore, noise controls specified in Mitigation Measure 5.14.1 would be required as necessary to reduce this impact to a less-than-significant level by reducing construction noise levels to the performance standards specified in this mitigation measure: ordinance noise limits, the 70-dBA speech interference criterion, and the 50-dBA sleep interference criterion. Estimated reductions that could be achieved by implementing specified noise controls in Mitigation Measure 5.14.1 are presented in Tables 4.14.5 and 4.14.6 (Vol. 2, Chapter 4, Section 5.14, pages 5.14-14 – 5.14-17), and are based on estimated reductions specified by the U.S. Environmental Protection Agency (USEPA) when feasible noise controls are implemented (noise control features requiring no major redesign or extreme cost) (USEPA 1971). The reductions are presented in these tables to demonstrate that performance standards could be achieved by implementing feasible noise controls such as those identified in Mitigation Measure 5.14.1 (refer to right column of both tables). The contractor would be required to implement whatever noise controls necessary to meet performance standards; they could be different from those listed in the EIR as long as the performance standards are met.

The EIR provides ample evidence that noise control measures included in Mitigation Measure 5.14.1 are adequate and would reduce significant noise impacts to less-than-significant levels, except for noise impacts associated with backup beepers. The EIR notes (page 4.14-21, paragraph 2) that ordinance noise limits and the sleep interference threshold would be met except with the possible exception of back-up beepers operating during the night. The EIR conservatively defines construction noise impacts (Impact 4.14.1) as significant and unavoidable because of the possibility that operation of back-up beepers could exceed ordinance limits and the 50-dBA sleep interference

criterion during the nighttime hours on a regular basis for a substantial portion of the 4-year construction period.

A-ACPWA-51 The comment references several beneficial effects on fishery resources identified on EIR page 4-18 (Vol. 1, Chapter 4, Table 4.1.2) and requests additional information on these effects, particularly with respect to the Alameda Creek Flood Control Channel.

The information referenced by the comment is in Table 4.1.2: Summary of Water Supply Impacts and Mitigation Measures in the WSIP PEIR – Alameda Creek Watershed. This table summarizes impacts and mitigation measures from the WSIP PEIR related to the water supply and system operations of the overall SFPUC water supply system. The PEIR determined that the WSIP would have beneficial effects on fishery resources in Calaveras Reservoir (Impact 5.4.5-1), along Calaveras Creek below Calaveras Dam and along Alameda Creek below the confluence with Calaveras Creek (Impact 5.4.5-2), and in San Antonio Reservoir (Impact 5.4.5-4). The project-specific impacts of the CDRP on fishery resources in Calaveras Reservoir, Calaveras Creek below Calaveras Dam, and along Alameda Creek below the confluence with Calaveras Creek are re-evaluated in the CDRP EIR. The CDRP would have no effect on San Antonio Reservoir. Table 4.1.2 does not indicate that the WSIP would have a beneficial effect on fishery resources in the Alameda Creek Flood Control Channel.

CDRP EIR Impact 4.5.7 (effects of project operations on fish habitat in Calaveras Reservoir and in streams upstream of the replacement dam) on Draft EIR pages 4.5-76 – 4.5-78 provides more detailed project-level analysis and corroborates the finding of PEIR Impact 5.4.5-1. It also concludes that the proposed operation of Calaveras Reservoir would be beneficial to fisheries habitat within the reservoir due to the increase in reservoir depth and volume that would occur following completion of the replacement dam and the reservoir is filled to its historical capacity. The increased depth and volume would result in an increased amount of cold water and improved water quality conditions in the reservoir, benefiting fish species in the reservoir. The inclusion of fish screens at adits #1 and #2 as part of the CDRP Variant (see Chapter 9 for further description), which would prevent entrainment of fish in the adits, provides further beneficial impacts compared to the existing condition.

CDRP EIR 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) on EIR pages 4.5-70 – 4.5-76 provides more detailed project-level analysis of PEIR Impact 5.4.5-2 and corroborates the finding of PEIR Impact 5.4.5-2. It also concludes that the proposed operation of Calaveras Reservoir would be beneficial to fish habitat conditions in Calaveras Creek downstream of the dam and in Alameda Creek between the confluence with Calaveras Creek and the extended study area due to 1997 MOU releases that would occur. Because there are currently periods where there are no flow releases and or bypasses for the downstream aquatic community, it was determined that the originally proposed flow schedules would provide more reliable and improved habitat conditions for fish compared to existing conditions and would therefore be a beneficial impact. These benefits would also occur with the flow schedules included as part of the CDRP Variant. These flow schedules were developed in close coordination with NMFS and CDFG with the intent of improving fish habitat conditions downstream of the CDRP. Please see Chapter 9, Section 9.3, for a description of potential environmental effects under the CDRP Variant.

A-ACPWA-52 The comment references an impact conclusion and mitigation provided on EIR page 4-18 (Vol. 1, Chapter 4, Table 4.1.2) and requests additional information regarding the proposed monitoring. The comment also requests that the ACDD be removed, or that a fish screen be installed on the diversion tunnel and a fish ladder installed.

As described above in Response A-ACPWA-51, the information referenced by the comment is in Table 4.1.2: Summary of Water Supply Impacts and Mitigation Measures in the WSIP PEIR – Alameda Creek Watershed, and the comment refers specifically to PEIR Impacts 5.4.5-3 (effects on fishery resources along Alameda Creek downstream of Alameda Creek Diversion Dam). The WSIP PEIR determined that this impact was potentially significant but mitigable, and as indicated by the asterisk in Table 4.1.2, these project-specific impacts are re-evaluated in the CDRP EIR.

CDRP Impact 4.5.5 (effects on native fish in Alameda Creek from the ACDD downstream to the confluence with Calaveras Creek) on Draft EIR pages 4.5-60 – 4.5-70 provides more detailed project-level analysis and corroborates the finding of PEIR Impact 5.4.5-3. It also concluded that based on the best available information at this the time, implementation of bypass flows at the ACDD proposed under the Draft EIR project is expected to ensure that future

operation of the CDRP would have a less than significant impact on resident rainbow trout in Alameda Creek below the ACDD. The EIR also states that pursuant to Mitigation Measure 5.5.5a Resident Rainbow Trout Monitoring, the SFPUC would monitor the effects of operation of the CDRP on resident trout in Alameda Creek downstream of the ACDD. If monitoring demonstrates that the proposed flow bypasses are not adequate to sustain the resident trout fishery downstream of the ACDD, the SFPUC would implement Mitigation Measure 5.5.5b Resident Rainbow Trout Adaptive Management. Under Mitigation Measure 5.5.5b, the SFPUC would be required to modify the flow release schedule, implement seasonal restrictions on Alameda Creek diversions during the spawning period, or install a fish screen at the diversion tunnel. Therefore, it was determined that with the implementation of the proposed flow bypasses under the proposed project and the monitoring and adaptive management requirements under Mitigation Measures 5.5.5a and 5.5.5b, the impacts of operation of the CDRP on resident trout in Alameda Creek would be less than significant.

For further discussion of the project-level impact analysis and associated mitigation for the proposed CDRP, please refer to Vol. 1, Section 4.5 of the EIR and the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam.

In addition, since publication of the Draft EIR, the SFPUC developed the CDRP Variant, which includes updated flow schedules, construction of a fish ladder at the ACDD, installation of a fish screen at the diversion tunnel, and implementation of the AMIP. The AMIP would supersede mitigation measures 5.5.5a and 5.5.5b described above. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

A-ACPWA-53 The comment suggests that alternative baseline conditions should be considered for the impact conditions in the EIR. Suggested baselines are conditions during the approximately 70 years between Calaveras Dam and ACDD construction and the initiation of DSOD restrictions and conditions prior to construction of the dam and ACDD.

For an evaluation of baseline conditions used in the EIR and consideration of alternative baseline conditions, please refer to the master response presented in Section 10.2, Baselines Used in the Environmental Analysis, and specifically to Section 10.2.2, Use of Appropriate Baselines, and Section 10.2.3, Baseline

Considerations Regarding California Department of Water Resources Division of Safety of Dams (DSOD) Restrictions, the 1997 Memorandum of Understanding (MOU) Between the San Francisco Public Utilities Commission (SFPUC) and the California Department of Fish and Game (CDFG), and Unimpaired Flows.

A-ACPWA-54 The comment requests that consideration be given to reducing the diversion of water from the ACDD to Calaveras Reservoir.

The comment is a suggestion regarding operations of the CDRP and does not address the accuracy or adequacy of the EIR. However, information regarding the CDRP Variant is provided below as it is relevant to the commenter's suggestions.

As discussed above, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant. The Variant includes installation of a fish screen at the upstream end of the diversion tunnel at the ACDD and revised flow schedules. The fish screens would reduce the maximum capacity of the tunnel from 650 cfs to 370 cfs. The reduction in tunnel capacity would reduce the average annual diversions of water from the ACDD to Calaveras Reservoir. The revised flow schedule requires minimum bypasses at the ACDD at certain times and under certain conditions. For example, from December 1 through March 31 of each year, the first 30 cfs of flow in Alameda Creek must be allowed to bypass the ACDD. Under some circumstances, meeting these minimum bypass volumes would result in reduced diversions to Calaveras Reservoir. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for information on bypasses and flow conditions.

A-ACPWA-55 The comment states that the discussion in the EIR on the impaired condition of the Alameda Creek steelhead fishery and aquatic habitat is misleading and may lack full presentation of the facts. The comment posits that dams constructed by SFPUC and associated changes in downstream flows are the primary reason for decline of steelhead in the watershed.

The EIR provides discussion regarding dams constructed by the SFPUC and their contribution to declines in steelhead populations in the watershed. For example:

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- EIR page 4.5-44 (Vol. 1, Chapter 4, Section 4.5): “As described above, Alameda Creek historically hosted a steelhead population, with spawning occurring in the upper reaches of the watershed (Gunther et al. 2000, McBain and Trush 2008). That steelhead population was eliminated by the placement of several obstructions to migration within the Alameda Creek Channel over the past century. These obstructions include the ACFCWCD [Alameda County Flood Control Water Conservation District] flood control channel, BART weir,...and the PG&E gas pipeline drop structure in Sunol Valley (see Figure 4.5.2: Major Facilities and Fish Passage Barriers/Obstacles in the Alameda Creek Watershed). In addition, the Calaveras Dam, San Antonio Dam and ACDD (all owned by CCSF and operated by SFPUC) and Del Valle Dam (owned and operated by the California Department of Water Resources) are all impassable barriers in the upper part of the watershed.”
- EIR page 4.5-40 (Vol. 1, Chapter 4, Section 4.5): “As discussed above, steelhead, the ocean migratory form of *O. mykiss*, formerly inhabited the Alameda Creek watershed prior to construction of dams and other water resource development (Gunther et al. 2000, Leidy et al. 2005).”
- EIR page 6-25 (Vol. 2, Chapter 6, Section 6.2): “This steelhead run was eliminated over the past century by the placement of several obstructions to migration within the Alameda Creek channel. Major alterations to Alameda Creek and its tributaries include...the construction of Calaveras Dam, the ACDD, Turner Dam, and Del Valle Dam for water supply....”

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a discussion of past and present effects on steelhead conditions in the study area and the basis for the cumulative impact analysis of effects on steelhead.

A-ACPWA-56 The comment references a discussion of the WSIP program and the WSIP PEIR provided on EIR page 4-6 (Vol. 1, Chapter 4, Section 4.1) and requests additional information regarding the effect that the proposed CDRP could have on fisheries resources.

Please see EIR pages 4.5-1 – 4.5-86 (Vol. 1, Chapter 4, Section 4.5) and EIR pages 6-23 – 6-32 (Vol. 2, Chapter 6, Section 6.2) for a full discussion of existing conditions and impacts on fisheries and aquatic habitats related to the Draft EIR project. Please also refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant and the master responses in Chapter 10, Section 10.4, for additional information related to fisheries issues.

A-ACPWA-57 The comment requests elaboration on the less-than-significant determination for effects on fisheries resources along San Antonio Creek below San Antonio Reservoir.

It is assumed that the comment refers to the discussion of PEIR Impact 5.4.5-5 on EIR page 4-19 (Vol. 1, Chapter 4, Section 4.1). Table 4.1.2 summarizes impacts and mitigation measures from the WSIP PEIR, and this impact does not apply to proposed actions specific to the CDRP. Therefore, no further discussion of this impact is provided in the CDRP EIR.

PEIR Impact 5.4.5-5 (effects on fishery resources along San Antonio Creek below San Antonio Reservoir) on PEIR page 5.4.5-21 (PEIR Vol. 3, Chapter 5, Section 5.4) concludes that, based on hydrologic modeling of system-wide operations, the pattern in the magnitude of instream flow releases and seasonal spills from San Antonio Reservoir to San Antonio Creek would be similar to existing conditions, and this impact would be less than significant.

A-ACPWA-58 The comment requests elaboration on the less-than-significant determination for effects on fisheries resources along Alameda Creek below the confluence with San Antonio Creek. It is assumed that the comment refers to the discussion of PEIR Impact 5.4.5-6 on EIR page 4-19 (Vol. 1, Chapter 4, Section 4.1, Table 4.1.2). Table 4.1.2 summarizes impacts and mitigation measures from the WSIP PEIR, and as indicated by the asterisk in Table 4.1.2, this project-specific impact is re-evaluated in the CDRP EIR.

CDRP EIR Impact 4.5.6 (effects of native fish in Alameda Creek downstream of the confluence with Calaveras Creek in the primary study area) on EIR pages 4.5-60 – 4.5-70 and CDRP EIR Impact 4.5.8 (effects of project operations on native fish in Alameda Creek in the extended study area) on EIR pages 4.5-78 – 4.5-80 provide more detailed project-level analysis and corroborate the finding of PEIR Impact 5.4.5-6. This analysis also concludes that the proposed CDRP operations would have less-than-significant impacts on fisheries resources along Alameda Creek below the confluence with San Antonio Creek because predicted changes in the flow regime and associated changes in habitat conditions in lower Alameda Creek would be relatively small and would be diminished by non-SFPUC-related downstream conditions, including operations of other water resources entities in the Arroyo de la Laguna watershed. This conclusion is largely based on hydrologic modeling conducted for the project that provides quantitative estimates of existing and post-project flow conditions. (See EIR Section 5.4.6, Hydrology, and

specifically Section 4.6.2.2, Approach to Analysis, for description of the hydrologic modeling.) These same general impact conclusions (e.g., less-than-significant) apply to the CDRP Variant. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

- A-ACPWA-59 The comment recites text from Draft EIR page 4.2-8, and asks whether flow releases from the SFPUC reservoirs will mimic historic flows to allow for pool formation in lower Alameda Creek. The comment further cites recent findings from historical ecological studies of the Alameda Creek Watershed and asks to what extent will the SFPUC use this information to recreate historic flows that will benefit the entire length of Alameda Creek. Last, the comment seeks clarification of the SFPUC Water Enterprise Stewardship Policy reference to “operating the SFPUC water system in a manner that protects and restores native fish and wildlife.”

The text quoted in the comment is part of the Water Enterprise Environmental Stewardship Policy adopted by the SFPUC. It should be noted that the quote in the comment omits a significant parenthetical statement in the policy that is included on EIR page 4.2-8. The sentence from the EIR reads as follows (text omitted in comment is underlined):

Releases from SFPUC reservoirs will (consistent with the SFPUC mission described above, existing agreements, and applicable state and federal laws), mimic the variation of the seasonal hydrology (e.g., magnitude, timing, duration, and frequency) of their corresponding watersheds in order to sustain the aquatic and riparian ecosystems upon which these native fish and wildlife species depend.

The operational effects of the Draft EIR project on flow releases in lower Alameda Creek are evaluated on EIR pages 4.6-68 – 4.6-106 (Vol. 1, Chapter 6, Section 4.6). Overall, the analysis concludes that impacts on flows in lower Alameda Creek would be similar to existing conditions or that changes in flows would be beneficial or less than significant. These same impact conclusions apply to the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document). Also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for additional discussion of flows in lower Alameda Creek.

Attempting to recreate a historic flow regime along the entire length of Alameda Creek as suggested in the comment is outside the scope of the EIR.

CEQA requires that post-project conditions be compared to existing environmental conditions and that any significant adverse changes in the environment are identified. Where feasible, mitigation should be identified to reduce significant adverse effects to less-than-significant levels. The EIR indicates that either before or after mitigation, project effects on Alameda Creek hydrology, geomorphic processes, fisheries, and wildlife and vegetation resources would be less than significant. Recreation of a historic flow regime along the entire length of Alameda Creek would be well beyond the actions required to reduce project impacts to less-than-significant levels under CEQA.

The SFPUC Water Enterprise Environmental Stewardship Policy states, in part, that “It is the policy of the SFPUC to operate the SFPUC water system in a manner that protects and restores native fish and wildlife downstream of SFPUC dams and water diversions, within SFPUC reservoirs, and on SFPUC watershed lands.” This sentence in the policy immediately precedes the sentence quoted above where a parenthetical statement had been omitted in the comment. The policy statement, in its entirety, is intended to reflect that the SFPUC will design, construct, and operate its facilities and manage its lands to protect and restore native fish and wildlife, including incorporation of mitigation measures, as appropriate, and consistent with the SFPUC mission, existing agreements, and applicable state and federal laws. Please also refer to A-CDFG-10 for more discussion on the Environmental Stewardship Policy.

A-ACPWA-60 The comment identifies impacts on cyclists due to the closure of Calaveras Road during construction, including possible impacts on the AMGEN cycling event and access to regional recreational facilities, and indicates that these are significant impacts that require mitigation.

Information on the road closure as well as the conclusion that the temporary road closure would not result in a significant impact on access to regional recreational facilities is presented on EIR pages 4.3-22 and 4.3-23 (Vol. 1, Chapter 4, Section 4.3), and pages 4.12-15 and 4.12-16 (Vol. 2, Chapter 4, Section 4.12). The effects on the AMGEN Tour are also discussed and were found to be significant (as suggested in the comment), but reduced to less-than-significant levels with implementation of Mitigation Measure 5.3.6, which would require the SFPUC to coordinate with the organizers of the AMGEN Tour to ensure that temporary road closures, haul truck traffic, and other construction-related activities would not interfere with the bicycle tour (see Vol. 2, Chapter 5, Section 5.3, pages 5-1 and 5-2). Additionally, implementation of Mitigation Measure 5.12.4a (Vol. 2, Chapter 5,

Section 5.12, pages 5-37 and 5-38) requires the SFPUC or its contractors to prepare and implement a Traffic Control Plan, which would include maintenance of adequate driving and bicycling conditions of Calaveras Road during construction.

- A-ACPWA-61 The comment suggests that the SFPUC adopt and implement a plan to eradicate non-native fish from Calaveras Reservoir. A motivation for this request is to prevent non-native fish from travelling over the reservoir spillway and into Alameda Creek.

This comment provides a suggestion for reservoir management and does not address the accuracy or adequacy of the EIR. However, the following response is provided regarding the suggestion. For decades prior to the DSOD restrictions on reservoir operations, occasional spillway releases have occurred, which presumably would allow fish in the Calaveras Reservoir to enter Alameda Creek. As shown in Table 4.5.2 on EIR pages 4.5-29 and 4.5-30 (Vol. 1, Chapter 4, Section 4.5), numerous fish surveys conducted between 1953 and 2007 have found non-native fish species, including bass, sunfish, and catfish in the Alameda Creek watershed. The 2007 survey (Leidy 2007), conducted approximately 7 years after the last spillway release in 2000 (see EIR page 4.6-32, Vol. 1, Chapter 4, Section 4.6 for spillway release data), found 14 non-native fish species in the Alameda Creek watershed. Eradicating non-native fish populations in Calaveras Reservoir would not alter the presence of non-native fish in Alameda Creek. The proposed project would result in no changes compared to existing conditions with respect to non-native fish in Calaveras Reservoir.

- A-ACPWA-62 The comment suggests that the SFPUC adopt and implement a plan to eradicate non-native fish and bullfrogs from its properties within the Alameda Creek watershed.

See Response A-ACPWA-61, above, regarding eradication of non-native species in Calaveras Reservoir and the fact that this would not influence the occurrence of non-native species downstream of the reservoir. For linear waterways (e.g., Alameda Creek), attempts at eradication of non-native species on SFPUC lands would have limited effect because non-native species would recolonize from nearby non-SFPUC lands. Mitigation Measure 5.4.3a on EIR pages 5-10 and 5-11 (Vol. 2, Chapter 5, Section 5.4) calls for predator control (i.e., removal of bullfrogs and non-native fish) in impaired water bodies in applicable mitigation areas to improve habitat conditions for California red-

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legged frog and California tiger salamander. The impaired water bodies consist primarily of stock ponds where various control measures can be implemented effectively, such as seining or temporarily draining the ponds to remove fish and frogs. However, these mitigation measures do not call for eradication of non-native predators because recolonization can still occur and total eradication is not a realistic objective.

The EIR uses geographically focused control of non-native predatory species as an element of an overall mitigation approach for impacts associated with the CDRP.

A-ACPWA-63 The comment recommends that the SFPUC follow guidelines identified in the USFWS 2002 California Red-legged Frog Recovery Plan for managing California red-legged frog habitat on its properties in the Alameda Creek watershed. These activities range from offering public education programs, to planting wetland and riparian vegetation, to removing predatory fish.

Mitigation Measure 5.4.3a on EIR page 5-11 (Vol. 2, Chapter 5, Section 5.4) calls for various actions to be implemented to improve habitat conditions for California red-legged frog. These measures include restoring, enhancing, and protecting intermittent stream habitat at applicable mitigation areas and conducting predator control (i.e., removal of bullfrogs and non-native fish) in impaired water bodies at applicable mitigation areas. The mitigation approach is consistent with applicable portions of the USFWS 2002 California Red-legged Frog Recovery Plan, such as enhancing habitat and managing predators. Various topics, such as managing gravel mining and reducing the effects of timber harvesting would not apply to the management of mitigation areas. Other topics, such as providing public education programs, are not necessary to mitigate project impacts and do not necessarily enhance conditions for target species at the mitigation areas and are not included as part of the mitigation actions.

Conducting broad-scale habitat enhancement activities over all SFPUC lands in the Alameda Creek watershed is beyond the scope of the CDRP.

A-ACPWA-64 The comment references text describing habitat conditions that are intended to be provided by bypassing and/or releasing flows consistent with the 1997 MOU. The comment requests that the lower reach description in the 1997 MOU be expanded to include the entire length of Alameda Creek and that the SFPUC reassess its MOU with CDFG. The comment also references an element of the 1997 MOU that includes construction of downstream facilities

to recapture the water released. The comment requests that this element of the MOU be discarded.

Discussion and analysis provided on EIR pages 4.5-1 – 4.5-86 (Vol. 1, Chapter 4, Section 4.5) and on EIR pages 6-23 – 6-32 (Vol. 2, Chapter 6, Section 6.2) address existing conditions and potential project effects on fisheries and aquatic habitat in Alameda Creek from the ACDD and replacement Calaveras Dam downstream to San Francisco Bay. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for discussion on this topic.

The recapture facility (currently named the Upper Alameda Creek Filter Gallery Project) is not a component of the CDRP but it is considered a reasonably foreseeable future project in the EIR analysis of cumulative impacts (Vol. 2, Chapter 6). Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for additional discussion on this topic. See also Responses A-CDFG-03 and A-CDFG-04 regarding the 1997 MOU and the status of other requirements of the CDFG.

In addition, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant, which includes revised flow schedules, construction of a fish ladder at the ACDD, installation of a fish screen at the diversion tunnel, and the AMIP. In coordination with CDFG, the flow schedules in the CDRP Variant replace those required by the 1997 MOU. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant.

A-ACPWA-65 The comment references the Draft EIR as listing the Alameda County Flood Control and Water Conservation District (ACFCWCD) channelization project as a barrier/obstacle to fish migration. The comment contends that the statement in the Draft EIR is inaccurate and misleading and that upstream diversion of flows is the primary barrier to fish migration in Alameda Creek.

The mention of the ACFCWCD channelization project on EIR page 4.5-13 (Vol. 1, Chapter 4, Section 4.5) is part of a list of projects that begins on page 4.5-11. The subsection title for the discussion that includes this list is; “Past and Present Projects Affecting Aquatic Habitat Conditions,” and text in the subsection indicates that “Some structures are direct barriers to fish migration, while other facilities pose various degrees of control /influence over habitat

conditions....” Thus, the list in question does not exclusively include projects that physically block fish migration, but also includes facilities that affect habitat conditions via other mechanisms (e.g., modifications to the channel form, loss of riparian habitat, loss of active floodplain, etc.). The ACFCWCD channelization project falls within this latter category and is a past project that continues to affect aquatic habitat conditions in Alameda Creek. It should be noted that Figure 4.5.2 “Major Facilities and Fish Passage Barriers/Obstacles in the Alameda Creek Watershed” on EIR page 4.5-12 is intended to show fish passage barriers/obstacles and does not include the ACFCWCD channelization project.

In response to this comment, the reference to the “ACFCWCD channelization project” under the first bullet on EIR page 4.5-13 is revised as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

- ACFCWCD ~~channelization project~~ flood control channel

This revision does not change the analysis or conclusions presented in the EIR.

A-ACPWA-66 The comment references a statement in the Draft EIR regarding warm water fish species not being likely to have the swimming ability to ascend Little Yosemite and requests additional information to qualify the statement in relation to the swimming capability of adult Sacramento sucker.

EIR page 4.5-31 (Vol. 1, Chapter 4, Section 4.5) presents summary information on fish sampling results in Alameda Creek (see Table 4.5.3). The table presents information showing that Sacramento sucker have never been documented in Alameda Creek upstream of Little Yosemite. Further, a study on swimming performances of several fish species conducted by Myrick and Cech (2000) demonstrates that Sacramento sucker and other native warm water fish species have reduced swimming abilities compared to rainbow trout.

A-ACPWA-67 The comment states that, currently, downstream movement of coarse sediment from the Calaveras Reservoir watershed is prevented by Calaveras Dam and that some of the coarse sediment from the upper Alameda Creek watershed is diverted to Calaveras Reservoir rather than moving downstream.

The comment is generally correct, although the configuration of the ACDD makes it likely that most coarse sediment is temporarily trapped behind the diversion dam rather than diverted into the tunnel. This is evidenced by the fact that, under the existing conditions, sediment is sluiced downstream from behind the ACDD annually. Annual sluicing would continue under the Draft

EIR project. With the CDRP Variant, which includes the installation of a fish screen at ACDD, it is proposed that sediment would be sluiced from behind the diversion dam every 4 – 8 weeks during the wet season. In any of these cases, whether pre-project conditions or post-project conditions, sediment trapped behind the ACDD is sluiced downstream and continues through the Alameda Creek watershed. It should be noted that the installation of the fish screens at the ACDD under the CDRP Variant would reduce the potential for coarse sediment to be diverted to Calaveras Reservoir, potentially resulting in less entrapment of sediment at Calaveras Reservoir.

At the Calaveras Dam there is no sluicing or other mechanism for passage of coarse sediment beyond the dam. Both before and after establishment of DSOD restrictions, and after project implementation, virtually all coarse sediment entering the reservoir will remain trapped behind the dam.

The CDRP would have no effect on the passage of coarse sediment at Calaveras Dam and would have a neutral or small beneficial effect on the passage of sediment at the ACDD; it therefore would not alter pre-project conditions, and no impact would occur within the context of CEQA. Because no impact would occur, no mitigation is required. Therefore, the comment's suggestion that the SFPUC commission a sediment entrapment study and provide measures for loss of downstream sediment movement is beyond the scope of the EIR.

A-ACPWA-68 The comment states that flows released from the SFPUC's dams for the benefit of resident trout and steelhead should not be recaptured at the filter gallery and that the MOU with CDFG allowing this recapture should be modified.

The comment is noted. Please see Response A-ACPWA-28 and Response A-ACPWA-64, above, addressing water recapture and modification to the MOU, respectively.

A-ACPWA-69 The comment states that flow releases allowed to bypass the ACDD should be sufficient to support native fish downstream to San Francisco Bay.

The proposed flow schedules for the benefit of native fishes are intended to maintain suitable spawning and rearing habitat between the SFPUC's dams and the downstream end of Niles Canyon and to contribute to large winter flows that would enable fish migration from and to San Francisco Bay. Regarding passage at Little Yosemite, refer to Response O-ACA&CBD1-23 and to the discussion in Chapter 9, Section 9.5, Cumulative Impacts of the CDRP Variant,

regarding the addition of a sub-project under the CDRP AMIP to improve passage conditions through the Little Yosemite reach of Alameda Creek.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a description of the proposed flow release schedules and information on flow-related effects on fish and habitat. Also refer to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses to comments related to salmonids entering the Alameda Creek system.

- A-ACPWA-70 The comment states that the effects of the CDRP have not been adequately addressed in the Draft EIR and that the impact analysis should address the entire length of Alameda Creek extending from the SFPUC's dams to San Francisco Bay.

The study area and impact analysis in the EIR related to vegetation and wildlife, fisheries, and hydrology already considers project effects downstream of the Calaveras Reservoir and ACDD to the San Francisco Bay (see Vol. 1, Chapter 4, Sections 4.4, 4.5, and 4.6).

Relevant information supporting the analysis in the EIR, including conditions and effects along Alameda Creek downstream to the San Francisco Bay, is also discussed in the master response presented in Section 10.3, Hydrology, and specifically Section 10.3.3, Diversions and Streamflow, and the subsection entitled "Flow in Alameda Creek Downstream of Arroyo de la Laguna." Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a description and analysis of flow release schedules. Refer to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses related to salmonids entering the Alameda Creek system (e.g., addressing project analysis to the San Francisco Bay where anadromous fish would enter the watershed).

- A-ACPWA-71 The comment asks what design storm will be used for the preparation of stormwater pollution prevention plans and if there is a plan of action to respond to a catastrophic failure of erosion control and water quality treatment features and facilities.

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As described in EIR pages 3-60 – 3-61 (Vol. 1, Chapter 3, Section 3.5.5), project construction would occur over four years during both the wet and dry season. Mitigation Measure 5.7.1 on EIR pages 5-18 – 5-25 (Vol. 2, Chapter 5, Section 5.7) describes BMPs that would be implemented year-round during wet and dry weather and a wet-weather contingency plan that would be completed to describe which BMPs would be used. Construction would be conducted year-round, with the exception of the placement of the clay core for the replacement dam and excavation in Borrow Area E, which would not occur from mid-December to mid-March, unless it is dry.

Inspection and maintenance of BMPs and disturbed sites are also described in Mitigation Measure 5.7.1 (EIR pages 5-24 and 5-25). After the first storm of record, inspection of all erosion and sediment control measures would occur daily during and after each storm event. Any breaches in erosion and sediment control devices would be repaired at the close of each day whenever rain is forecasted, and after each rainstorm, any erosion control devices that need repair or replacement would be restored. Any failure, deficient performance, or improper installation of any control measures would be immediately corrected and reported. With this regular and frequent process of inspection and correction, a catastrophic failure of the proposed erosion control or water quality protection systems is highly unlikely. Plans for managing a catastrophic failure, if any, would be consistent with RWQCB requirements. Similarly, the design storm to be used in preparation of the SWPPP, as well as all other stormwater management measures, would adhere to RWQCB requirements, which is expected to be the 10-year 24-hour storm event. The following agencies would be notified in the event of elevated turbidity or a spill of contaminants, NOA, or metals to any waterways in the Alameda Creek system: RWQCB, Alameda County Water District, Alameda County Environmental Health Services Department, and East Bay Regional Park District (EIR page 5-25).

It should be noted that on September 2, 2009 the State Water Resources Control Board (SWRCB) approved important changes to the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 99-08-Division of Water Quality [DWQ]). The amended General Permit (Order 2009-0009-DWQ) will become effective on July 1, 2010 and has much more stringent water quality protection, monitoring, and reporting standards for large projects than the previous permit. Because the amended permit will be in effect when construction of the CDRP occurs, the

more stringent standards will be implemented. See also Response A-SCCRAD-06.

If an unusual storm event occurs and water discharges have not achieved RWQCB specified discharge criteria, the RWQCB may require an off-site mitigation project. All other mitigation measures to protect water quality from stormwater impacts would be implemented first before the RWQCB would consider off-site mitigation. See also Response A-RWQCB-19.

A-ACPWA-72 The comment states that the CDRP may cause deposition of sediments in the Alameda Creek Federal Project downstream of Niles Canyon and the SFPUC should be responsible for removal of these sediments and other contaminants.

Sediment transport during operation of the proposed project is discussed in the Impact 4.6.11 on EIR pages 4.6-104 – 4.6-105 (Vol. 1, Chapter 4, Section 4.6) and is expected to be similar to the baseline and during historical operation, resulting in a less-than-significant impact.

Regarding the potential for sediment discharge during construction, which is the impact mechanism described in the EIR excerpt provided in the comment (page 4.7-29, Vol. 1, Chapter 4, Section 4.7, Impact 4.7.1), this impact would be mitigated to a less-than-significant level with implementation of Mitigation Measure 5.7.1, Storm Water Pollution Prevention Plan. As part of this mitigation measure, erosion and sediment control BMPs would be implemented, monitored, and maintained to minimize the transport of sediment into waterways. In order to meet the Basin Plan water quality objectives, turbidity barriers would be installed and runoff water from any part of the work area that has become turbid with eroded soil, silt, or clay would be collected and treated to reduce turbidity prior to discharge to receiving waters.

Therefore, although the discussion of Impact 4.7.1 indicates that combined sediment releases resulting from a large storm event coupled with construction-related sediment releases would result in a significant impact, this impact would be reduced to a less-than-significant level by preventing/minimizing construction-related sediment releases through the BMPs and other measures. Also see Response A-ACPWA-71, above, and Response A-SCCRAD-06.

Regarding the suggestion that the SFPUC be responsible for removal of any project-related sediment deposited downstream of Niles Canyon at the Alameda Creek Federal Project, with implementation of Mitigation Measure 5.7.1, releases of project-generated sediment would be less than significant. As

described on EIR page 4.7-29, “The effects [of sediment releases] would be attenuated over the long distances to downstream water supply collection facilities....” Any sediment generated by project construction that reached the Alameda Creek Federal Project would be minimal, if any; such project construction is not expected to affect the functioning of the Alameda Creek Federal Project. Therefore, sediment removal in the Federal Project by the SFPUC is not warranted.

- A-ACPWA-73 The comment requests that the SFPUC conduct detailed surveys in lower stream reaches within Alameda Creek consistent with detailed surveys already conducted in upper stream reaches. The comment suggests that such surveys are required to collect baseline data to assess project impacts.

Aquatic resources surveys conducted as part of the 1997 MOU with CDFG have monitored water temperature, turbidity, pH, and dissolved oxygen and have sampled fish populations using electrofishing techniques annually since 1998. The lower study reach along Alameda Creek extends just north of the confluence of Welch Creek and Alameda Creek. However, similar surveys have not been conducted farther downstream along Alameda Creek.

As stated under Impact 4.6.7 in the EIR, the effect of the Draft EIR project on stream flow in Alameda Creek would be substantially diminished downstream of Arroyo de la Laguna and other tributaries and would not result in flows outside of the range of existing conditions. The same conclusion applies to the CDRP Variant (See Chapter 9, Section 9.3 of this Comments and Responses document). The EIR uses the currently best available data to assess baseline conditions in the lower reaches of Alameda Creek; see the Existing Conditions portions of Section 4.4, Vegetation and Wildlife (pages 4.4-6 – 4.4-60), Section 4.5, Fisheries (pages 4.5-4 – 4.5-54), Section 4.6, Hydrology (pages 4.6-1 – 4.6-4.6-63), and Section 4.7, Water Quality (pages 4.7-3 – 4.7-16). Conducting further detailed surveys in the lower reaches of Alameda Creek as suggested by the comment is not necessary to properly assess project effects in this EIR.

- A-ACPWA-74 The comment requests that the SFPUC implement a sediment and water quality monitoring program at County-reviewed monitoring locations from just below the base of the dam to San Francisco Bay. The comment also requests that all monitoring methodologies be reviewed and mutually approved.

See Response A- ACPWA-72, above, for information on the approach to and adequacy of construction sediment control and monitoring measures already

included in the EIR. The sediment control program will be finalized and implemented consistent with SWRCB and RWQCB requirements. These are the agencies with direct regulatory authority over potential construction sediment discharges. As provided by Mitigation Measure 5.7.1, the SFPUC will notify appropriate agencies, including Alameda County in the event of elevated turbidity or a spill or release of contaminants, NOA, or metals into any waterways in the Alameda Creek system. See also Response A-SCCRAD-06.

A-ACPWA-75 The comment quotes a portion of Draft EIR Mitigation Measure 5.12.4b, expresses the opinion that there would be conflicts between construction vehicles and auto traffic on Calaveras Road beyond the closure limits, and suggests additional mitigation measures.

Impacts related to traffic safety hazards associated with Draft EIR project are discussed on EIR pages 4.12-15 and 4.12-16 (Vol. 2, Chapter 4, Section 4.12, Impact 4.12.4). The discussion in the EIR includes assessment of Calaveras Road outside of the closed segment in the vicinity of the dam and identifies the increased potential for traffic safety hazards as a significant impact. Mitigation Measure 5.12.4a (Vol. 2, Chapter 5, Section 5.12, pages 5-37 and 5-38) requires the SFPUC or its contractors to prepare and implement a Traffic Control Plan, which would include provisions to minimize hazards associated with potential conflicts with construction vehicles such as placement of advance warning signs, development of detour routes, and use of flaggers. The same impact conclusions and mitigation measures apply to the CDRP Variant (see Chapter 9, Section 9.3 of this Comments and Responses document).

Although the comment suggests some additional mitigation actions (e.g., widening roadway lanes and shoulders), the numerous actions included in Mitigation Measure 5.12.4a are sufficient to reduce construction-related traffic hazards on the portions of Calaveras Road not identified for closure to less-than-significant levels.

It also should be noted that the portion of Calaveras Road north of the dam site has been designed and constructed to accommodate a mix of vehicle types, and part of this roadway segment is currently used by heavy trucks associated with the existing aggregate mining operations.

A-ACPWA-76 The comment recommends that the preconstruction mitigation measure to “remove and/or destroy any individuals of non-native species, such as bullfrogs, crayfish, and centrarchid fishes from within the dewatered habitat...”

be made a general policy to be implemented during all biological surveys in the watershed.

Mitigation Measures 5.4.1a and 5.4.1c include provisions for the control of non-native invasive species. However, a watershed-wide non-native species eradication program as recommended by the commenter is not required to mitigate the impacts of the proposed project and is beyond the scope of the CDRP EIR. Please see Responses A-ACPWA-61 and A-ACPWA-62, above, for additional information on non-native species control.

A-ACPWA-77 The comment correctly restates text from EIR page 5-10 (Vol. 5, Chapter 5, Section 5.4.3, Mitigation Measures 5.4.3 and 5.4.3a) regarding compensation goals and objectives, and provides no additional comment or discussion. As no commentary on the adequacy or accuracy of EIR is included, no response is necessary.

A-ACPWA-78 The comment suggests that construction-related erosion control inspection and implementation timing identified in the EIR be made consistent with the Alameda County Grading Ordinance.

Design, construction and operation of the project are under the oversight and jurisdiction of the DSOD. The construction, including movement of material from Borrow Area E, would be done on SFPUC property and no grading, excavation or similar permits are required from Santa Clara County or Alameda County for the SFPUC to do work on its own property. Erosion control inspection and implementation timing identified in the EIR remain consistent with RWQCB guidelines.

A-ACPWA-79 The comment suggests that the ACFCWCD be added to the list of agencies in Mitigation Measure 5.7.1 that are notified in the event of elevated turbidity or a spill or release of contaminants. The comment also suggests that the SFPUC be responsible for removal of any project-generated sediment or contaminants from the Alameda Creek Federal Project.

Regarding sediments at the Alameda Creek Federal Project, see Response A-ACPWA-72, which addresses the same suggestion from the commenter.

Mitigation Measure 5.7.1, Storm Water Pollution Prevention Plan, on EIR Page 5-25 (Vol. 2, Chapter 5, Section 5.7), is modified to include notification of the Alameda County Flood Control and Water Conservation District in the

event of elevated turbidity or a spill or release of contaminants, NOA, or metals to any waterways in the Alameda Creek system.

In response to this comment, the last bullet on EIR page 5-25 is revised as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

Monitoring and Reporting

- During construction, ~~N~~otify the RWQCB, Alameda County Water District, Alameda County Environmental Health Services Department, ~~and~~ East Bay Regional Park District, and the Alameda County Flood Control and Water Conservation District in the event of elevated turbidity or a spill or release of contaminants, NOA, or metals to any waterways in the Alameda Creek system.

This revision does not change the analysis or conclusions presented in the EIR.

A-ACPWA-80 The comment refers to language in Mitigation Measure 5.9.5 (Vol. 2, Chapter 5, Section 5.9, page 5-32) and asks whether electrical equipment containing polychlorinated biphenyls (PCBs), fluorescent lights containing mercury vapors, or fluorescent light ballasts containing PCBs or bis (2-ethylhexyl) phthalate (DEHP) would be disposed of in the on-site disposal areas. The comment suggests that the County and public be provided an opportunity to review the Material Handling Plan.

Anticipated occurrences of electrical equipment containing PCBs, fluorescent lights containing mercury vapors, and fluorescent light ballasts containing PCBs or DEHP are described on EIR pages 4.9-3 – 4.9-5. As discussed in Impact 4.9.5 (Vol. 2, Chapter 4, Section 4.9, pages 4.9-27 and 4.9-28), these materials would be considered hazardous wastes and would be legally disposed of in accordance with Mitigation Measure 5.9.5. Because these materials would be considered hazardous wastes, they could not legally be disposed of in the on-site disposal areas. The text of Impact 4.9.5 and Mitigation Measure 5.9.5 has been edited to clarify this point. Implementation of Mitigation Measure 5.9.5 would not require preparation of a Material Handling Plan; therefore, there would not be a plan for the County or public to review.

In response to this comment, the last paragraph on EIR page 4.9-28 is revised as follows (new text is underlined):

Implementation of Mitigation Measure 5.9.5, which requires legal disposal of electrical equipment containing PCBs as well as fluorescent light tubes and ballasts at a permitted off-site facility, would reduce this impact to a less-than-significant level.

In addition, in response to this comment, Mitigation Measure 5.9.5 on EIR page 5-32 is revised as follows (deletions are shown in ~~strike through~~ and new text is underlined):

Hazardous Materials in Structures to be Demolished

Any electrical equipment containing polychlorinated biphenyls (PCBs), fluorescent lights containing mercury vapors or fluorescent light ballasts containing PCBs or Bis (2-ethylhexyl) phthalate (DEHP) in any of the structures to be demolished shall be removed and legally disposed of properly at a permitted off-site facility.

These revisions do not change the analysis or conclusions presented in the EIR.

A-ACPWA-81 The comment requests that the SFPUC abandon the Upper Alameda Creek Filter Gallery Project (Filter Gallery Project), asserting that that project is inconsistent with water right laws. Instead, the comment supports amendment of the 1997 MOU between the SFPUC to provide fishery flows in Alameda Creek downstream to the San Francisco Bay.

ACPWA's opposition to the Filter Gallery Project is acknowledged. This project is not a component of the CDRP but it is considered a reasonably foreseeable future project for purposes of the cumulative impacts analysis in Vol. 2, Chapter 6 of the EIR. Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for additional discussion of this topic.

The Draft EIR project would be operated within the SFPUC's existing water rights and would provide flow releases consistent with the terms of the 1997 MOU. The terms of the 1997 MOU are consistent with the SFPUC's riparian rights, as are the flow schedules included in the CDRP Variant. See Response A-ACPWA-24 regarding riparian water rights.

The Filter Gallery Project is a part of the SFPUC WSIP and is evaluated in the WSIP Program EIR, which was certified on October 30, 2008 (San Francisco Planning Department, 2008). The issues raised by the commenter will be further addressed in a separate project-level EIR for the Filter Gallery Project prior to implementation of that project. See also Responses A-ACWD-02, A-ACPWA-27, and A-ACPWA-64.

A-ACPWA-82 The comment indicates that the proposed project would affect a number of relevant policies of the Alameda County East County Area Plan (ECAP)

because diversion of flows would render certain corridors of Alameda Creek and its tributaries barren and, therefore, would affect the quality of the Alameda Creek corridor. The comment contends that impacts related to these policies are not adequately addressed in the EIR.

The comment incorrectly states that the proposed diversion flows would yield Alameda Creek and its tributaries barren (i.e., waterless). Please see Response A-ACPWA-24, above, which addresses the same issue.

As discussed in the second paragraph on EIR page 4.2-9, Alameda County's land use plans and policies are discussed in the EIR to the extent that the policies are relevant to the criteria used in the EIR to identify significant impacts of the project. Significance criteria related to local plans and policies used in the EIR include criteria related to local noise ordinances and conflicts with any local policies or ordinances protecting biological resources, including local tree ordinances or regulations (see the second and fourth bullets on EIR page 4.2-9).

Biological resources are analyzed in the EIR (Vol. 1, Chapter 4, Section 4.4, Vegetation and Wildlife, and Section 4.5, Fisheries and Aquatic Habitat). ECAP Policy 127 and Policy 129 are specifically noted in Section 4.4 (EIR page 4.4-68), and ECAP Policy 123, Policy 124, Policy 125, Policy 126, and Policy 129 are noted in Section 4.5 (EIR pages 4.5-50 and 4.5-51). Section 4.4 and Section 4.5 also address ECAP Policy 110 and Policy 122 referenced in the comment. Impacts related to noise exposure or noise generation are analyzed in Vol. 1, Chapter 4, Section 4.14, Noise and Vibration (although the comment does not identify ECAP policies pertaining to noise). The EIR also identifies mitigation measures to reduce or avoid biological resource and noise-related impacts in Vol. 2, Chapter 5, Mitigation Measures.

Several ECAP policies listed in the comment do not address the proposed project or relate to significance criteria used in the EIR, but state how the County intends to govern and protect Alameda watershed lands by encouraging compatible uses, including recreation (ECAP Policy 101, Policy 102, Policy 103, Policy 104, and Policy 121). Inclusion of this information is not required for the adequacy of the EIR. Even so, the proposed project would be consistent with those ECAP policies since protection of SFPUC watershed land, including provisions for compatible land uses and recreational activities where appropriate, are key goals of the Alameda Watershed Management Plan as stated on CDRP EIR page 4.2-7.

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Other ECAP policies listed in the comment relate to siting, design, and building materials of new development (ECAP Policy 114, Policy 115, and Policy 120), and visual issues related to grading, excavation, fill, and siting of access roads that would change natural landforms (ECAP Policy 116, Policy 117, Policy 118, Policy 119, and Policy 120). These policies do not address the adequacy of the EIR and do not relate to significance criteria used in the EIR; however, the proposed project would be consistent with these policies which are evaluated in EIR Vol.1, Chapter 4, Section 4.11, Visual Resources, beginning on EIR page 4.11-1.

ECAP Policy 113 addresses County review of proposed development adjacent to or near public parklands to ensure that views from parks and trails are maintained. As discussed in Section 4.11, Visual Resources on EIR pages 4.11-21 to 4.11-22, excavation and grading of Observation Hill and Hill 1000, and the excavation of Borrow Area B would have a significant unavoidable impact on scenic vistas from the EBRPD Sunol Wilderness and, therefore, this aspect of the CDRP would not be consistent with ECAP Policy 113.

In January 2010, the Alameda County Planning Commission approved conformance of the CDRP with the General Plan (Alameda County Planning Commission, 2010), and determined that, overall, the CDRP project would be consistent with the ECAP (a component of the General Plan). Their findings concluded that the nature and intent of the CDRP, along with DSOD-required facility improvements, public need, and related safety measures superseded the long-term visual and short-term construction-related transportation and nighttime noise impacts associated with the project. Further, ECAP policies support development and expansion of major public facilities, such as the CDRP, in appropriate locations which are consistent with the policies and Land Use Diagram of the ECAP (Alameda County Community Development Agency 2009).

A-ACPWA-83 The comment states that the EIR requires revision and recirculation in accordance with Section 15073.5 of CEQA and requests a written response to the comments.

Written responses to ACPWA's comments are provided in this Comments and Responses document. Any associated changes to the EIR are described here and will be incorporated into the CDRP Final EIR.

Section 15073.5 of the CEQA Guidelines identifies conditions under which a negative declaration must be recirculated prior to adoption. This portion of the

CEQA Guidelines is not applicable to the CDRP EIR. It is assumed that the commenter intended to reference CEQA Guidelines Section 15088.5, which identifies the conditions under which a draft EIR must be recirculated prior to certification. A lead agency is required to recirculate a draft EIR under CEQA Guidelines Section 15088.5 when significant new information is added to the EIR after it is published for public review but prior to certification. The CEQA Guidelines provide that “significant new information” requiring recirculation may include, for example: (1) identification of a new significant impact that would result from the project or from a new mitigation measure; (2) a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted; (3) a feasible mitigation measure or alternative considerably different from those in the EIR would clearly lessen the significant environmental impacts of the project, but the project proponents decline to adopt it; and (4) the draft EIR is so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. CEQA Guidelines Section 15088.5 further states that recirculation is not required unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such effect. Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

None of the conditions for recirculation cited above are applicable to the CDRP EIR. Although this Comments and Responses document includes revisions to the Draft EIR, these revisions consist of either clarification and amplification of information in the Draft EIR or information related to the CDRP Variant (described in Chapter 9 of this EIR) that would not deprive the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such effect. As described in Section 9.3 of this Comments and Responses document, the CDRP Variant does not result in a new significant impact or a substantial increase in the severity of an environmental impact.

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U.S. Environmental Protection Agency. 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, December 1971.

**11.1.8 ALAMEDA COUNTY WATER DISTRICT, WALTER L. WADLOW, GENERAL
MANAGER, 12/17/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-ACWD-01 The comment states that use of a monthly time-step model is inappropriate for the hydrologic analysis in the EIR and that an already-developed daily model should be used.

Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.2, Hydrologic Modeling, for a discussion of these issues related to the modeling.

A-ACWD-02 The comment asserts that the Upper Alameda Creek Filter Gallery Project is “an integral component of the CDRP and should be included as part of the EIR’s project description,” and that by not doing so the SFPUC would be “piecemealing” its analysis of these two projects under CEQA.

Both the Calaveras Dam Replacement Project (CDRP) and the Upper Alameda Creek Filter Gallery Project (Filter Gallery Project) are identified as components of the SFPUC Water System Improvement Program (WSIP) that was adopted by the SFPUC on October 30, 2008 (SFPUC 2008). The WSIP includes numerous proposed facility improvement projects (including the CDRP and the Filter Gallery Project, referred to in the WSIP as the Alameda Creek Fishery Enhancement Project) to improve the regional system with respect to water quality, seismic response, water delivery, and water supply. To address the potential environmental impacts of the WSIP, the San Francisco Planning Department prepared a Program EIR (PEIR) on the proposed WSIP, which was certified by the San Francisco Planning Commission on October 30, 2008 (San Francisco Planning Department 2008). At a project level of detail, the PEIR evaluated the environmental impacts of the WSIP’s water supply and system operations strategy and, at a program level of detail, evaluated the environmental impacts of the individual WSIP facility improvement projects.

As such, the CDRP and Filter Gallery Project have already been reviewed together in the PEIR as part of the WSIP. The PEIR provides a comprehensive review of the combined effects of implementing all of the facility improvement projects, including an analysis of potential stream flow, geomorphology, and water quality impacts on Alameda Creek (PEIR, Vol. 3, Section 5.4). Using a program EIR (in accordance with CEQA Guidelines Section 15168) has the advantage of allowing a more exhaustive consideration of regional influences, secondary effects, and cumulative impacts of the program as a whole, and allowing subsequent project-specific EIRs to focus on new impacts that had not been considered before. The San Francisco Planning Department has taken this approach – using a program EIR to consider broad policy alternatives and system-wide issues, and project-level CEQA document to address specific program components in greater detail – for the WSIP. The Filter Gallery Project is also addressed within the cumulative impacts analysis (Chapter 6) of the CDRP EIR as it is a reasonably foreseeable project with potential for similar impacts as the proposed project. Contrary to the assertion of “piecemealing,” the San Francisco Planning Department has completed a comprehensive analysis of the WSIP in the PEIR and is now proceeding with subsequent, site-specific environmental analyses of component projects, including the CDRP and the Filter Gallery Project, through individual CEQA documents.

The commenter suggests that the Filter Gallery Project is an integral component of the CDRP. This is not the case. To clarify, while the CDRP would provide the facilities (Alameda Creek Diversion Dam [ACDD] bypass tunnel and low-flow release valves at Calaveras Dam) and the operational flexibility (restoration of reservoir levels) to provide flows releases to support native fishes and other aquatic species (see EIR page 1-24 [Section 1.4.4.2] and page 3-66 [Section 3.6.5]), the primary objectives of the CDRP are to re-establish water delivery reliability, restore water supply and capacity of Calaveras Reservoir, and improve seismic reliability (EIR page 3-6). As a separate project with separate project objectives, the Filter Gallery Project would recapture a portion of these flows downstream and return this water to the regional water system. While it is the SFPUC’s intent to implement the Filter Gallery Project so that it is ready for operation at the same time the dam replacement project becomes operational, the SFPUC has committed to providing the proposed flow releases for native fishes regardless of whether the recapture of those flows is enabled by the completion of the Filter Gallery Project. Contrary to the commenter’s suggestion that the flow releases for

native fishes proposed under the CDRP are dependent on completion of the Filter Gallery Project, the CDRP EIR indicates that the releases that are part of the Draft EIR project would be implemented whether or not the Filter Gallery Project is implemented (EIR pages 4.5-73 and 4.6-62 – 4.6-63). The same is true for the CDRP Variant; the releases for native fishes that are a part of the CDRP Variant would be implemented whether or not the Filter Gallery Project is implemented.

The comment's assertion that achieving the CDRP's primary objective of re-establishing water delivery reliability is dependent on implementation of the Filter Gallery Project is not entirely correct. All of the WSIP projects have a common objective of improving water delivery reliability. While the CDRP and the Filter Gallery Project share this objective, these projects also have specific independent objectives. The CDRP would restore the reservoir to its pre-2001 restriction and improve the seismic reliability of the dam irrespective of implementation of the Filter Gallery Project.

With regard to the timing of the two projects, the EIR notes an estimated completion of the Filter Gallery Project by 2015; however, because operation of the CDRP is not contingent on the construction of the Filter Gallery Project, the potentially concurrent construction schedules of these two projects is not a compelling reason to include the Filter Gallery Project in the project description. Again, the proposed flow releases would be made under the CDRP regardless of whether or not the Filter Gallery Project is in place.

As noted by the comment, the hydrologic modeling of downstream flow impacts of the CDRP in the EIR assumes operation of the Filter Gallery Project. The hydrologic model developed for the WSIP assumes implementation of all WSIP projects. The WSIP is an approved program, and it is therefore appropriate to consider future implementation of all WSIP projects in the assessment of downstream impacts and in consideration of water supply reliability. The CDRP is a component of a complex water supply system. A hydrologic model based only on this one facility that does not take into account the other components of the water supply system would mischaracterize the actual effects of operating the CDRP on the environment. Thus, it is neither necessary nor appropriate to exclude the Filter Gallery Project or other WSIP components from the hydrologic modeling used to evaluate the hydrologic effects of the CDRP. It is for this reason that the WSIP PEIR evaluates the water supply and system operation impacts of the system as a whole at a project-level of detail.

By assuming implementation of the Filter Gallery Project along with all other WSIP components for purposes of the CDRP impact analysis, the EIR provides a more conservative, worst-case evaluation of potential impacts of the CDRP on downstream resources in Alameda Creek. As noted on EIR page 4.6-63 (Vol. 2, Chapter 4, Section 4.6), the analysis includes recapture of the MOU flows, which represents a greater reduction of flows in lower Alameda Creek than would occur if only the CDRP project was implemented. If the Filter Gallery Project is not implemented, the bypass flows would not be recaptured and would remain in the creek. If the EIR assumed that the flows were not recaptured (an approach the comment suggests), then it would potentially underestimate impacts associated with the reduced downstream flows in Alameda Creek. Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.6, Cumulative Impacts, regarding the manner in which impacts on Alameda Creek flows from these two projects are addressed in the EIR.

A-ACWD-03 The comment states that the Draft EIR contains an inadequate analysis of downstream impacts on the ACWD's water supplies. Please refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, and Section 10.3.5, Water Supply Impacts, for discussion of these issues.

A-ACWD-04 The comment states that the description of progress made by the ACWD and Alameda County Flood Control and Water Conservation District (ACFCWCD) in addressing downstream fish passage in the Alameda Creek flood control channel should be updated. The comment is referring to a series of planned projects in the Alameda Flood Control Channel that would improve fish passage past several of ACWD's rubber dams. The projects include construction of fish ladders and screens to exclude juvenile fish from water intakes facilities.

The comment is noted. EIR page 6-15 (Vol. 2, Chapter 6 [Table 6-1]) and Appendix J (Vol. 3, Appendix J, pages 9 – 11) summarize downstream fish passage activities proposed by the ACWD and ACFCWCD in the Alameda Creek flood control channel. The updates requested by the comment do not change the extent to which the descriptions in the EIR characterize future projects that have the potential to influence habitat conditions for steelhead. The additional progress made by the ACWD and ACFCWCD in addressing downstream fish passage constraints is acknowledged, but no additional EIR

text changes are proposed as the updated information provided by the ACWD does not change the analysis or conclusions provided in the EIR.

A-ACWD-05 The comment states that the Draft EIR does not recognize the significant impacts that the historical and projected future Calaveras Dam operations have on downstream flows.

The primary purpose of an EIR is to identify the environmental impacts that would occur if a proposed project was implemented, with the impacts measured against the existing condition, whether the existing condition is pristine or degraded. CEQA does not require that an EIR evaluate the environmental impacts of historical actions except as a consideration in the cumulative impact assessment. Accordingly, the cumulative impacts analyses for the Draft EIR project and CDRP Variant contained in the EIR consider effects of the Calaveras Dam along with the other past, present and foreseeable future water supply, gravel mining, flood control, and urban development projects on the fishery habitat throughout the watershed (see Section 6.2.3.4, pages 6-32 through 6-35. The cumulative impacts analysis for the CDRP Variant is contained in Chapter 9 of this Comments and Responses document.

The effects of future Calaveras Dam operations on streamflows under the Draft EIR project are described in the EIR (pages 4.6-68 through 4.6-98). The effects of Calaveras Dam operations on streamflows under the CDRP Variant are described in Chapter 9 of this Comments and Responses document. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, for more information on the CDRP's effects on streamflow. The comment also includes ACWD's calculation of the SFPUC's percentage diversions of water from the Calaveras Reservoir watershed between 2001 and 2008. Please refer to Section 10.3.3, Diversions and Streamflow, under the subsection entitled "SFPUC's Total Annual Diversions from the Alameda Creek Watershed" for a discussion of this topic.

A-ACWD-06 The comment states that the EIR should address the hydrologic connection between Calaveras Reservoir and the downstream reaches in Niles Canyon and the Alameda Creek flood control channel, and the need for sufficient flow releases for migrating steelhead.

With respect to the hydrologic connection between Calaveras Reservoir and Alameda Creek downstream of Sunol Valley, please refer to the master

response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow. With respect to the adequacy of the steelhead flow schedule for migrating fish, please see the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for a description of the flow release schedules proposed as part of the CDRP, information on the analyses that were conducted to assess the flow release schedules, and information on monitoring and adaptive management (i.e. the AMIP proposed by the SFPUC) for steelhead. Please also see Section 9.3.6 for a discussion of the hydrologic effect of the CDRP Variant, including proposed instream flow schedules for Alameda and Calaveras Creeks, on streamflow in Alameda Creek downstream of Arroyo de la Laguna.

A-ACWD-07 The comment states that the EIR must further characterize and address the water quality impacts to Alameda County Water District's potable water supply.

The San Francisco Planning Department and the SFPUC acknowledge the importance of ACWD's supply as a potable water source, and the Hydrology setting of the EIR (Section 4.6.1, page 4.6-55 to 4.6-56) describes the relationship among lower Alameda Creek, the Niles Cone Groundwater Basin, and the ACWD water system. EIR pages 4.7-72 – 4.7-75 (Vol. 2, Chapter 4, Section 4.7, Impact 4.7.7) provide an analysis of the impacts of construction and operations of the proposed project on groundwater quality. Operation of the CDRP would result in no changes to the quality of water flowing down Alameda Creek to the ACWD's water supply facilities compared to existing conditions. Construction-related impacts on water quality could be significant but would be mitigated to a less-than-significant level with implementation of a Storm Water Pollution Prevention Plan that contains, at a minimum, the project-specific Best Management Practices set forth in Mitigation Measure 5.7.1.

In response to this comment, the first full paragraph on EIR page 4.7-16 is modified as follows (new text is underlined):

A sodium chloride groundwater type predominates along the western margin and center of the Niles Cone groundwater sub-basin near San Francisco Bay but does not extend into the study area. TDS in the groundwater sub-basin ranges from about 286 mg/L to 39,734 mg/L and averages 2,204 mg/L based on data from 113 wells (DWR 2006). The

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ACWD's groundwater recharge program plays an important role in preventing saltwater intrusion into the Niles Cone Groundwater Basin from San Francisco Bay. Groundwater within the Sunol Valley area is calcium-magnesium bicarbonate water, with concentrations of individual constituents at generally low levels. TDS concentrations are low (from about 350 to 500 mg/L), as are nitrate (NO₃) concentrations (from 1 to 6 mg/L), with the exception of some localized and elevated NO₃ and TDS concentrations in shallow groundwater due to historical farming and nursery operations (Bookman-Edmonston Engineering 1993, p. 29). Monitoring wells were installed just north of the Alameda Creek and Calaveras Creek confluence for the ACWD groundwater exploration effort in 1986 and some groundwater samples were collected. The constituent concentrations in these samples are shown in Table 4.7.6 and indicate values well within Basin Plan water quality objectives.

In addition, on EIR page 4.7-72, the first full paragraph under Impact 4.7.7 is modified as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

Construction and operations of the proposed project could affect groundwater quality in the Sunol Valley and Niles Cone. The Niles Cone Groundwater Basin is a potable drinking water source for the ACWD, and this basin is recharged by Alameda Creek watershed runoff and by State Water Project water imported from the Sacramento-San Joaquin Delta to Del Valle Reservoir and then released down the Arroyo de la Laguna to Alameda Creek . The SFPUC places great emphasis on protection of the Alameda Creek watershed as a drinking water source both for its own interests and interests of the ACWD. The SFPUC understands the importance of state and federal Maximum Contaminant Level to drinking water suppliers.

Any construction-related runoff and associated sediment and contaminants that are captured in Calaveras Reservoir during construction (when releases are not being carried out from the base of Calaveras Reservoir) ~~would be considered to~~ have a less-than-significant impact on groundwater quality. For asbestos in particular, while fibers may be carried long distances by water before settling, they do not migrate to groundwater through soils (USEPA 2006). Construction-related contaminants or sediments mobilized downstream of Calaveras Dam during storm events could be carried downstream and affect groundwater quality. The extent to which metals and construction-related contaminants could be mobilized and transported into groundwater is uncertain with available data. It is possible that contaminant plumes in groundwater related to spills or elevated natural metals could occur during construction near the reservoir and in Calaveras Creek, and therefore a conservative assessment suggests that this would be a potentially significant impact. Implementation of a SWPPP that contains, at a minimum, the project-specific BMPs set forth in Mitigation Measure 5.7.1 would reduce the potential impacts on groundwater quality due to

the release of hazardous materials, NOA, and metals during construction to less-than-significant levels.

Further, the following paragraph is inserted on EIR page 4.7-74 following the second full paragraph (new text is underlined):

Operation of the proposed project would have little or no effect on surface and groundwater quality in the Alameda Creek watershed. The only changes attributable to the proposed project that could potentially have an effect on water quality are those associated with reservoir releases and streamflow. The changes in flow would be too small to have a substantial effect on water quality in Alameda Creek except for water temperature. Water temperature in Alameda Creek would be reduced in some months when reservoir releases that are part of the proposed project would increase streamflow compared to the existing condition; this reduction in water temperature would be beneficial to coldwater habitat for fish but would not affect the suitability of water percolating into the Niles Cone for water supply purposes. Operation of the proposed project would have less-than-significant impacts on the quality of both surface and groundwater.

These revisions do not change the analysis or conclusions presented in the EIR for the Draft EIR project. The analysis and conclusions for the CDRP Variant are very similar to those for the Draft EIR project; see Chapter 9 of this Comments and Responses document for more information.

The comment states that the significance criteria for water quality impacts should be revised to better reflect the need to protect drinking water supplies. The significance criterion used in the EIR to assess impacts on drinking water supplies considers that a project would have a significant water quality impact if it were to cause a violation of water quality standards or otherwise substantially degrades water quality (Section 4.7.21., page 4.7-22). To assess impacts on drinking water, this criterion is used to compare water quality effects of the project with drinking water quality standards and regulations, to determine the impact significance. The criterion is thus protective of drinking water quality in accordance with current applicable regulations (see EIR, Section 4.7.2.2, Approach to Analysis, page 4.7-23).

The comment raises several other issues with respect to water quality. It notes that increased turbidity could impair the ACWD's ability to divert water from Alameda Creek. With the implementation of the mitigation measures identified in the EIR, the CDRP would not have a substantial adverse effect on turbidity in the vicinity of the project construction areas. Moreover, any effects on turbidity in the vicinity of the project site would dissipate as water moves more

than 12 miles downstream to the ACWD's water supply facilities. Turbidity in the vicinity of the ACWD's water supply facilities would be the same or similar to turbidity under the existing condition and would not have a substantial adverse impact on water diversion by the ACWD.

The comment identifies a concern that discharges from construction dewatering and treatment systems could increase contaminant loading in Alameda Creek above background levels, and states that “[d]ilution identified in the DEIR as justification for a ‘less than significant’ finding is not an appropriate mitigation under CEQA or under standard Drinking Water Source Protection practices.” The EIR does not rely on dilution to support a less than significant impact determination related to discharge of contaminants from construction dewatering and treatment. Rather, Mitigation Measure 5.7.1 (page 5-20 to 5-21) contains the following provisions to prevent the discharge of contaminants to any surface or groundwater bodies including Alameda Creek:

- In order to meet the Basin Plan water quality objectives, install turbidity barriers and collect and treat drainage and runoff water from any part of the work area that has become turbid with eroded soil, silt, or clay to reduce turbidity prior to discharge to receiving waters.
- Use only certified ANSI/NSF 60 (Drinking Water Treatment Chemicals – Health Effects) coagulants or flocculants for treatment unless otherwise approved by the RWQCB. Review information on the effects of the coagulant or flocculant on aquatic life prior to selection.
- For naturally occurring asbestos (NOA)-containing areas, treatment may include coagulation/flocculation (if necessary), sedimentation, and filtration. For non-NOA/metals-containing areas, treatment may include only sedimentation.
- Prepare a dewatering plan prior to excavation.
- Impound dewatering discharges in sediment retention basins or other holding facilities to settle the solids and provide treatment prior to discharge to receiving waters as necessary to meet Basin Plan water quality objectives.
- Locate sediment retention basins a minimum of 50 feet from surface waters, creeks, drainage channels, and drainage swales, whenever possible.

Moreover, in accordance the State Water Resource Control Board General Permit for Storm Water Discharges Associate with Construction Activity, the project would be undertaken in accordance with a SWPPP subject to review and approval by the RWQCB; the RWQCB would have the opportunity during

the permit review and approval process to require additional measures if determined necessary to fully protect beneficial uses, including municipal and domestic water supply.

As described in Chapter 9, the SWPPP for the CDRP Variant would be similar to that for the Draft EIR project and would be similarly subject to review and approval by the RWQCB.

A-ACWD-08 The comment expresses the opinion that an individual National Pollutant Discharge Elimination System (NPDES) permit is needed for this project because the proposed project is too large to be adequately covered by the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit). Please see Response A-ACPWA-71 describing the SFPUC's intent to secure an NPDES permit for this project.

On September 2, 2009, the State Water Resources Control Board (SWRCB) approved important changes to the General Permit (Order 2009-0009-Division of Water Quality). The amended General Permit will become effective on July 1, 2010. It includes much more stringent water quality protection standards for large projects than those contained in the General Permit in effect until July 1, 2010. Because the amended General Permit will be in effect when construction of the CDRP occurs, the more stringent standards will apply to the CDRP. The RWQCB would evaluate the adequacy of the General Permit requirements, implementation of BMPs through a Stormwater Pollution Prevention Plan (SWPPP), and the possibility of off-site mitigation as part of its permit process for the proposed project.

The comment requests that the SFPUC provide assurances that BMP and SWPPP implementation and on-site work practices would ensure constant water quality protection during construction. It also requests that the SFPUC further commit to installing real-time water quality monitoring downstream of the construction operations, including automated alerts to key agencies and staff. The mitigation measures proposed to address water quality effects during construction—including preservation of existing vegetation, erosion and sediment controls, slope protection, temporary stream crossings, wind erosion control, treatment controls, hazardous materials controls, solid waste management, equipment maintenance, equipment washing controls, material and equipment management over water, material delivery and storage, post-construction site restoration and stabilization, and inspection and maintenance

(see EIR pages 5-18 – 5-25)—would be implemented in accordance with the SWPPP approved by the RWQCB to protect water quality during construction and in combination with the amended General Permit requirements.

Compliance with the SWPPP would be monitored through the construction period as determined by the RWQCB, and additional downstream monitoring is not expected to be necessary. Furthermore, the SFPUC has a strong motivation to protect water quality and avoid contamination of water during construction because contamination could harm the quality of its own water supplies.

With regard to off-site mitigation for stormwater impacts, refer to Response A-RWQCB-19.

A-ACWD-09 The comment states that the EIR should address plans for dealing with sanitary and greywater waste.

The SFPUC would require that the construction contractor provide temporary sanitary facilities for the construction workers and that all sanitary wastes be contained at the site and trucked to appropriate off-site disposal facilities. Greywater would not be collected and disposed of separately from sanitary wastewater.

In response to this comment, the title of Impact 4.7.2 on EIR page 4.7-44 is revised as follows (new text is underlined):

Impact on water bodies as a result of a hazardous waste release, NOA or metals release, or sanitary, greywater, or solid waste discharge during construction.

In addition, the following text is added to the Impact 4.7.2 discussion at the top of EIR page 4.7-54 (new text is underlined):

Sanitary and Greywater Impacts

Releases of sanitary or greywater waste during construction could be detrimental to water quality if discharged directly or indirectly to receiving waters. The construction period is estimated to be 4 years and would require the presence of construction workers on site throughout that time. Impacts on water quality that could result from the release of untreated sanitary wastewater or greywater include increased fecal coliform bacteria concentrations, elevated nutrients, a decrease in dissolved oxygen, and resulting algal blooms. Without proper facilities, water quality impacts would be significant. With implementation of Mitigation Measure 5.7.1, which includes BMPs to ensure convenient

and well-maintained sanitary and greywater facilities, this impact would be less than significant.

The following text, consistent with the recommendations of the California Stormwater Quality Association (CASQA 2003), is added to Mitigation Measure 5.7.1 on EIR page 5-23 prior to the “Solid Waste Management” heading (new text is underlined):

Sanitary and Greywater Waste Management

- Provide temporary sanitary facilities for construction workers that completely contain all sanitary and greywater waste produced at the construction site with the waste trucked to an appropriate disposal site.
- Locate facilities in convenient locations.
- Locate temporary sanitary facilities away from drainage facilities, watercourses, and traffic circulation.
- Secure temporary sanitary facilities to prevent overturning when subjected to high winds or risk of high winds.
- Use only reputable, licensed sanitary waste haulers.
- Maintain sanitary facilities in good working order and arrange regular collection to prevent overflows.
- Require regular maintenance of facilities and inspect facilities weekly during the rainy season and at two-week intervals in the non-rainy season to verify proper maintenance.

These revisions do not change the analysis or conclusions presented in the EIR.

A-ACWD-10

The comment states that the SFPUC should commit to regular coordination with the ACWD on watershed operations and implementation of a real-time notification and communication procedure, including an alert system using the best available technology that will give advance notification to all entities located downstream of Calaveras Reservoir and the ACDD of the time, rate, and quality of flow of all water releases into Alameda Creek. The comment also correctly notes that the EIR does not contain any such commitment beyond the water quality discharge notification that is part of the SWPPP.

The comment is noted. The effects of operation of the CDRP on streamflow in Alameda Creek were found to be less than significant, as indicated on EIR pages 4.6-94 – 4.6-98 (Vol. 1, Chapter 4, Section 4.6, Impact 4.6.7). Consequently, no mitigation measures for hydrologic impacts were found necessary or proposed. The SFPUC’s current practice is to notify ACWD and

other agencies before it makes a release from Calaveras Reservoir as described in the EIR (page 3-20). The practice would continue with the Draft EIR project or the CDRP Variant but not as a mitigation measure resulting from the EIR. Independent of the CDRP, the SFPUC is willing to discuss improvements to communication practices with the ACWD and other potentially affected agencies.

References

- California Stormwater Quality Association (CASQA). 2003. *California Stormwater BMP Construction Handbook*, CASQA website:
<http://www.cabmphandbooks.com/Documents/Construction/WM-9.pdf>. Accessed February 23, 2010.
- San Francisco Public Utilities Commission (SFPUC). 2008. *Water System Improvement Program California Environmental Quality Act Findings: Findings of Fact, Evaluation of Mitigation Measures and Alternatives, and Statement of Overriding Considerations*. October 2008.
- San Francisco Planning Department. 2008. *Program Environmental Impact Report on the San Francisco Public Utilities Commission's Water System Improvement Program*. October 2008.

**11.1.9 ASSOCIATION OF BAY AREA GOVERNMENTS, KENNETH KIRKEY,
PLANNING DIRECTOR, 11/12/09**

A-ABAG-01 This comment notes that the Calaveras Reservoir is a major local water source for the SFPUC in the Bay Area (see EIR page 3-7 in Vol. 1, Chapter 3, Section 3.2.2.1). The comment states that the EIR should be approved because of the importance of the Calaveras Dam Replacement Project to the regional water supply.

The comment is acknowledged. The comment does not address the accuracy or adequacy of the EIR; therefore, no further response is required.

**11.1.10 BAY AREA WATER SUPPLY AND CONSERVATION AGENCY,
NICOLE SANDKULLA, 11/10/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-BAWSCA1-01 The comment expressing BAWSCA's support for the CDRP is acknowledged.

A-BAWSCA1-02 The comment, which states that the EIR does a good job of addressing environmental impacts, is acknowledged.

¹ Comment provided at the public hearing held at Fremont Main Library, November 10, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, page 20.

**11.1.11 BAY AREA WATER SUPPLY AND CONSERVATION AGENCY,
ARTHUR JENSEN, CEO, 11/10/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-BAWSCA2-01 The comment expresses support for the CDRP and recognizes that the CDRP is essential to ensuring the continued delivery of a reliable supply of water to residents and businesses that rely on the San Francisco regional water system. The comment is acknowledged.

A-BAWSCA2-02 The comment supports construction of the base of the replacement dam in such a manner that it can be expanded in the future to meet additional needs if necessary. The comment is acknowledged.

Please refer to the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, for detailed discussion of the issue raised in this comment.

A-BAWSCA2-03 The comment, which states that the EIR does a good job of addressing environmental impacts, is acknowledged.

**11.1.12 BAY AREA WATER SUPPLY AND CONSERVATION AGENCY,
ARTHUR JENSEN, 11/12/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-BAWSCA3-01 The comment supports the CDRP, specifically noting the need for the CDRP and the appropriateness of building the base of the replacement dam in such a way that it can be expanded in the future. The comment also states that the Draft EIR does a good job of addressing the potential environmental impacts of the CDRP.

The comments on the need for the CDRP and the adequacy of the EIR are acknowledged. For a detailed discussion of the proposed design features that would allow future generations to enlarge the reservoir, please refer to the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir.

¹ Comment provided at the public meeting of the San Francisco Planning Commission, November 12, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, pages 22 – 24.

**11.1.13 BAY AREA WATER SUPPLY AND CONSERVATION AGENCY,
NICOLE M. SANDKULLA, P.E., SENIOR WATER RESOURCES ENGINEER,
12/18/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-BAWSCA4-01 The comment states that all alternatives examined as part of this environmental review, including any new alternatives evaluated prior to the Final EIR that would increase fishery flows, should provide an equivalent water supply yield and reliability for the San Francisco regional water system, and that any impacts on supply reliability should be documented. The comment further states that the modeling results for all alternatives should be provided prior to the Final EIR consistent with the modeling information provided for the Proposed Project and the No Project Alternative. As noted above, this Comments and Responses document presents the CDRP Variant, described and evaluated in Chapter 9. Section 9.2 presents a description of the CDRP Variant and Section 9.3 presents the analysis of the environmental effects of the Variant.

Like the Draft EIR project, the CDRP Variant is considered a component of the SFPUC's Water System Improvement Program (WSIP). Therefore, as described in EIR Section 4.1.3.3 (Vol. 1, Chapter 4, pages 4-5 to 4-31), the Variant would contribute to the WSIP's water supply and system operations impacts, which were analyzed in the PEIR on the WSIP (San Francisco Planning Department, 2008). Section 9.3.1 of this Comments and Responses document includes a discussion of Water Supply Effects of Fishery Flows included in the CDRP Variant. As described therein, implementation of the CDRP Variant (particularly two of the proposed fishery enhancements: the proposed instream flow schedules and fish screen at the Alameda Creek Diversion Dam [ACDD]) would reduce the amount of supply captured by the SFPUC regional water system from the local watersheds for delivery to customers compared to the amount assumed in the WSIP PEIR. The SFPUC

also proposes to implement new flow releases from Lower Crystal Springs Dam to San Mateo Creek to benefit fishery resources.

Based on the modeling results (described in Section 9.3.6), in combination, the proposed fishery enhancements for the CDRP and the proposed flow releases from Lower Crystal Springs Dam would result in a potential decrease in available water supply for the regional system of 7.4 million gallons per day (mgd), average annual, from what was assumed under the adopted WSIP. As a result, the SFPUC has identified a potential water supply shortfall that could occur between 2013 and 2018 as a result of implementation of fishery flow releases.

Section 9.3.1 identifies possible water supply scenarios that could occur between 2013 and 2018, possible actions by the SFPUC and its customers might take in response to potential water supply shortfalls, and the environmental effects generally associated with such actions. For additional discussion on the ability of the CDRP Variant to meet project objectives, please refer to Section 9.3.1.

A-BAWSCA4-02 The comment states that the EIR should be updated to reflect the recently adopted June 2009 WSIP, which incorporates a revised program description, schedule and budget; and specifically, that text referring to the Westside Groundwater Basin conjunctive use project be changed to reflect that project's current name: the Regional Groundwater Storage and Recovery project.

The change in the name of the referenced WSIP project from the Conjunctive Use Project to the Regional Groundwater Storage and Recovery Project is acknowledged. The citations in the EIR to the project approval in October 30, 2008 remain valid and the CDRP EIR does reflect program changes associated with the June 2009 action to the extent that they are relevant to the description and analysis of the WSIP program elements.

In response to this comment, the fourth bullet on EIR page 1-5 is revised as follows (new text is underlined and deleted text is shown as ~~strike through~~):

- Dry year transfer from Modesto and/or Turlock Irrigation Districts of about 2 mgd coupled with the ~~Westside Groundwater Basin conjunctive use~~ Regional Groundwater Storage and Recovery project to meet the drought year goal of limiting rationing to no more than 20 percent on a system-wide basis.

A-BAWSCA4-03 The comment requests that the discussion of project objectives presented on EIR page 1-8 (Vol. 1, Chapter 1, Section 1.3.1) be expanded to note that Calaveras Reservoir provides water during a seismic/emergency event and that the project is needed for supply during maintenance of the San Joaquin Pipeline System.

Chapter 1 is the Executive Summary of the EIR; the summary of project objectives on page 1-8 is necessarily brief. The EIR presents a more detailed discussion of project objectives on pages 3-6 – 3-14 (Vol. 1, Chapter 3, Section 3.2.2). The discussion of the seismic safety objective on pages 3-8 – 3-9 (Section 3.2.2.3) indicates that the SFPUC considers Calaveras Reservoir to be an important source of supply following a major earthquake. The discussion of the water delivery reliability objective on page 3-7 (Section 3.2.2.1) explains that “when the supply of water from the Hetch Hetchy System is interrupted due to planned and unplanned outages (for example, when there is a scheduled shutdown for system maintenance, when emergency repairs are needed, or when the Hetch Hetchy System supply temporarily does not meet water quality standards and must be removed from the system), water from the Calaveras Reservoir is used to meet customer demand.” Thus, the information requested in the comment is provided elsewhere in the EIR and no revisions are necessary.

As noted above, since publication of the Draft EIR the SFPUC has developed the CDRP Variant. Refer to Section 9.3.1 of this document regarding a discussion of the ability of the CDRP Variant to meet project objectives.

A-BAWSCA4-04 The comment requests that the text describing the outlet pipe and stream discharge valves be revised to indicate that a seismically activated valve will be placed in the outlet line to prevent uncontrolled discharge during an earthquake on the Calaveras Fault.

Work on Valve V-34 at the toe of Calaveras Dam that would allow remote closure of the valve in the event of an earthquake is not part of the CDRP. In 2009 the SFPUC and CH2MHill prepared a report evaluating valve operational and seismic reliability, which included evaluation of Valve V-34 (SFPUC Systems Engineering Group and CH2MHill 2009). In the event of a large, earthquake, Valve V-34 would need to be closed in order to allow isolation of a failed Calaveras Pipeline. The evaluation found that up to 470 acre-feet of stored water (0.5 percent of the reservoir volume) could be lost prior to the inspection and manual closure of the valve that is required to

occur within 12 hours following an earthquake. The water from the broken pipeline would be captured in Alameda Creek without causing external flooding, and the SFPUC considers the projected loss of stored water to be relatively minor. Therefore, the SFPUC considers any work associated with installing a permanent power supply and/or hydraulic actuator and radio transmission of Supervisory Control and Data Acquisition (SCADA) (remote computerized operations system) that would be needed to remotely close the valve to be non-critical and, consequently, a lower priority than work on other valves in the Sunol Valley that were evaluated in the report. Although work that would allow the remote closure of Valve V-34 is not proposed as part of the CDRP, it would be considered as part of future SFPUC water system operations budget planning processes.

- A-BAWSCA4-05 The comment states that the level of significance after mitigation for two air quality impacts (Impacts 4.13.1 and 4.13.7) as shown in the Executive Summary should be clarified. The comment states that the two level-of-significance findings – less than significant with mitigation (LSM) and significant and unavoidable (SU) – should be explicit about the two significance thresholds they represent.

The comment refers to Table S.2 (Summary of Impacts and Mitigation Measures) on EIR pages 1-85 and 1-88 (Vol. 1, Chapter 1). In the Draft EIR, the note included in the third column of the table, “Level of Significance Before Mitigation,” indicates that the second impact significance determination is made assuming the (then) proposed (draft) BAAQMD construction emissions CEQA thresholds of significance were used. As described in the master response presented in Section 10.5, Greenhouse Gas Emissions, the Draft EIR evaluated Impact 4.13.1 (construction-related emissions) and Impact 4.13.7 (greenhouse gas emissions) under two sets of BAAQMD CEQA Guidelines (the existing thresholds and those proposed at the time the Draft EIR was prepared). As discussed in Section 10.5, the final thresholds adopted by BAAQMD reject the guidance that had been the basis for the conclusion that Project construction would cause a significant and unavoidable GHG impact identified in the Draft EIR. Under the thresholds adopted in 2010, as under the 1999 thresholds in effect at the time the Draft EIR, the project’s impact due to construction-related GHG emissions would be less than significant. These changes are reflected in Chapter 12, Draft EIR Revisions, of this Comments and Responses document.

A-BAWSCA4-06 The comment asks whether the net reservoir storage capacity of 92,000 acre-feet, described in footnote 3 on EIR page 3-6, supports the required yield for the 7- mgd design drought supply objective and the normal year reservoir yield requirements.

As explained on EIR page 3-8 (Vol. 1, Chapter 3, Section 3.2.2.2), on EIR page 3-8, the proposed replacement dam would allow the reservoir to be refilled to its original nominal capacity (i.e. 96,850 acre-feet), which “would not only facilitate the water system’s ability to meet average daily demand, but also would restore 7 mgd of water supply during the 8.5-year design drought....” Footnote 3 on EIR page 3-6 explains that the storage capacity of the reservoir when it was first constructed in 1925 was 96,850 acre-feet, and that is how it continues to be identified; however, the accumulation of sediment from surrounding drainages has reduced the actual capacity to approximately 92,000 acre-feet. Thus, restoring the reservoir to its original nominal capacity of 96,850 acre-feet would provide the required design drought supply.

The CDRP Variant would provide the same reservoir capacity as the CDRP described for the Draft EIR project. Regarding the ability of the CDRP Variant to meet the supply objectives described in the WSIP PEIR, refer to Section 9.3.1, Overview and Relationship to the WSIP, in Chapter 9.

A-BAWSCA4-07 The comment suggests that the EIR text describing the robust design of the replacement dam (EIR page 3-9, Vol. 1, Chapter 3, Section 3.2.2.4) be expanded to identify additional reasons for this configuration, specifically that the dam could be raised to accommodate a larger conservation pool with less cost and environmental impact than a complete reconstruction.

Please refer to the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, for detailed discussion of the issues raised by this comment.

A-BAWSCA4-08 The comment requests that, to avoid confusion, the discussion on EIR page 3-11 (Vol. 1, Chapter 3, Section 3.3.1.1) be revised to state the design Probable Maximum Flood (PMF) quantity. The comment states that whereas Section 3.3.1.1 implies that the design PMF quantity is 48,440 cfs, Section 3.4.1 gives the design PMF outflow as 39,700 cfs.

The design capacity of the spillway is a routed outflow of 39,700 cfs, as stated on EIR page 3-28 (Vol. 1, Chapter 3, Section 3.4.2.1). In response to

this comment, the second and fourth paragraphs under Section 3.3.1.1 on EIR page 3-11 are revised as follows (new text is underlined and deleted text is shown as ~~strike-through~~):

The spillway is capable of passing the flows of the Probable Maximum Flood* (PMF) (estimated at 39,700 cfs) although such an event has not yet occurred in the life of the dam (URS 2007a)....

Calaveras Dam has spilled infrequently prior to the DSOD restrictions. Based on reservoir elevation records, the reservoir was allowed to fill and spill for prolonged periods of time, an average of about 67 days in years when spill occurred. The maximum rate of spill was approximately 5,813 cubic feet per second (cfs) on April 3, 1958. That flow over the spillway was about 12 to 15 percent of the projected flow under the PMF event.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-BAWSCA4-09 The comment notes that EIR page 3-13 (Vol. 1, Chapter 3, Section 3.3.1.3) should include a discussion of the seismically activated control valve on the reservoir outlet.

See Response A-BAWSCA4-04 above.

A-BAWSCA4-10 The comment requests that the discussion on EIR page 3-23 be expanded to state that the planned upgrades to the Sunol Valley Water Treatment Plant (SVWTP) will negate the need for potassium permanganate pretreatment of Calaveras Dam releases to the Calaveras Pipeline in the future.

EIR pages 3-10 – 3-32 (Vol. 1, Chapter 3) present a description of existing facilities and operations (Section 3.3), followed by a description of proposed facilities and operations (Section 3.4). The existing potassium permanganate facility and its operations are described on EIR page 3-23. The planned upgrades to the SVWTP have not yet occurred; the discussion of existing facilities is, therefore, correct on EIR page 3-23. It would not be appropriate to discuss a planned future condition in the EIR section that describes existing operations.

The text on EIR page 3-31 describes the proposed demolition of the potassium permanganate facility and its relationship to the SVWTP, stating that “The potassium permanganate building (approximately 22 feet by 35 feet) would be demolished and would not be replaced because it would not be needed after planned upgrades to the SVWTP.”

- A-BAWSCA4-11 The comment requests that the text on Draft EIR page 3-31 be revised to state that the facilities will include a seismically activated valve on the outlet line to prevent uncontrolled discharge during an earthquake on the Calaveras Fault.

See Response A-BAWSCA4-04 above.

- A-BAWSCA4-12 The comment requests further discussion of planned modifications, if any, to normal operations for drought periods beyond the stated reservoir drawdown procedures.

The proposed water supply and system operations aspects of the CDRP are addressed at a project-level of detail as one of the facility improvement projects under the WSIP, in the WSIP PEIR, from which the CDRP project-level EIR tiers (as provided in CEQA Guidelines Section 15152(h)(3)). As described in the WSIP PEIR (PEIR Vol. 1, Chapter 3, page 3-42), during drought years, the SFPUC would manage drought-year supplies and water deliveries consistent with the WSIP objective of limiting rationing to a maximum of 20 percent system-wide, and would implement a four-stage response program.

The first stage of response would be to implement water supply options specific to drought-year water conditions, namely the conjunctive-use program within the Groundwater Storage and Recovery and the Turlock Irrigation District (TID) and Modesto Irrigation District (MID) water transfer. The groundwater conjunctive-use program in the Westside Groundwater Basin would be put into the extraction mode, with the participating customers substituting groundwater for a portion of their otherwise requested system delivery. During this first stage of response and if still needed following implementation of groundwater pumping in the Westside Basin, the water transfer from TID and MID would also supplement the supply available for SFPUC deliveries. Then, as needed for a severe drought, the SFPUC would implement Stages 2 and 3 of the response program in combination with the supplemental dry-year supplies and would initiate water delivery reductions. A Stage 2 response would include up to 10 percent system-wide rationing, and a Stage 3 response would include up to 20 percent system-wide rationing. The procedures include customer notification, customer allocation if necessary, and evaluation of customer performance. Water use reduction programs would remain in place until total system storage is recovered and drought conditions appear to have ended.

During a drought that exceeds the 8.5-year design drought scenario¹, a fourth stage of response would be implemented. Stage 4 would increase rationing beyond the WSIP proposed level of service goal of 20 percent. .

The SFPUC uses total system and local system reservoir storage levels as parameters to indicate response level in the four-stage dry-year response program. The specific storage levels that indicate a certain response are related to demand and water supply resources and are updated as demand and resources change. As part of operations, by April 15 of each year, the SFPUC can project what system storage will be on July 1, based on current storage, rainfall, and snowpack conditions (SFPUC 2007).

A-BAWSCA4-13 The comment requests that the EIR address the impacts that would result from building a new dam, desalination plant, or other water supply project that would need to be constructed if the proposed Calaveras Dam were not expanded in the future to meet the known, projected water supply needs of San Francisco and its wholesale customers.

As discussed on EIR page 3-9 (Vol. 1, Chapter 3, Section 3.2.2.4), the SFPUC has designed the proposed dam with a robust core that would allow future generations to expand the reservoir by enlarging the proposed dam rather than removing it and construction a new dam. However, the SFPUC is not proposing to enlarge the reservoir and has not identified a need to do so at this time. As discussed in detail in the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, analysis of future reservoir enlargement is appropriately excluded from the scope of the EIR. Likewise, it is beyond the scope of this EIR to analyze alternatives to a hypothetical future enlargement. A future decision to enlarge the reservoir would constitute a new discretionary action and would be subject to a new CEQA process; alternatives to future enlargement (such as those noted by the comment) would need to be evaluated at that time. The WSIP PEIR evaluated the impacts associated with construction and operation of desalination facilities as alternatives to the WSIP (refer to PEIR Vol. 4, Chapter 9, Sections 9.2.6 and 9.2.6, pp 9-66 to 9-78).

¹ The 8.5 year design drought consists of a sequence based on the hydrology of the six years of the regional water system's worst historical drought (1987–1992) plus the 2.5 years of the 1976-1977 drought. Studies indicate a 30 percent chance that the SFPUC system will experience a drought equal to or more severe than the 1987-1992 drought in the next 75 years (PEIR Vol. 1, Chapter 2, p. 2-25). A system performance objective for the adopted WSIP is to meet dry year delivery needs through 2018 while limiting rationing to a maximum 20 percent system-wide.

A-BAWSCA4-14 The comment states that BAWSCA supports the proposed project, and that replacement of Calaveras Dam is essential to ensuring the continued delivery of a reliable water supply.

The comment is acknowledged. Reliability is one of the project objectives, as discussed on EIR pages 1-8, 2-6, and 3-7 (Vol. 1, Chapter 1, Section 1.3.1; Chapter 2, Section 2.2.2; and Chapter 3, Section 3.2.2.1). See also the master response presented in Section 10.1, Potential Future Enlargement of Calaveras Reservoir, regarding potential future expansion.

References

- San Francisco Planning Department. 2008. *Program Environmental Impact Report on the San Francisco Public Utilities Commission's Water System Improvement Program*, October 2008, certified in San Francisco Planning Commission Motion 17734.
- San Francisco Public Utilities Commission (SFPUC). 2007. *Water Supply Options*. June 2007.
- SFPUC Systems Engineering Group and CH2M Hill (SFPUC and CH2MHill). 2009. "Alameda Siphons Evaluation of Valve Operational and Seismic Reliability." October 2009.
- URS Corporation (URS). 2007a. *Spillway Model Test (Task C6)*. Prepared for the San Francisco Public Utilities Commission. January 8, 2007.

11.1.14 CITY OF MILPITAS, JAMES LINDSAY, PLANNING & NEIGHBORHOOD SERVICES DIRECTOR, 11/24/09

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-Milpitas-01 The comment indicates that Calaveras Road west of Ed Levin County Park is owned and maintained by the City of Milpitas, and that the traffic impact discussion and mitigation measures should be revised to include the City of Milpitas, as well as Santa Clara County, when referring to Calaveras Road south of the dam. The comment also notes that Mitigation Measure 5.12.4a, on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), should be revised to indicate that a Milpitas truck haul permit is required for construction vehicles traveling on Calaveras Road within the city since the road is not an approved truck route, and that the City of Milpitas should be included in the list of agencies that the SFPUC will enter into an agreement with for implementing a post-construction roadway repair/rehabilitation program.

In response to this comment, text describing the roadway network in the last sentence on EIR page 4.12-1 is revised as follows (new text is underlined):

Access to I-680 in the project area is via on- and off-ramps at Calaveras Road and Paloma Way in Alameda County, and East Calaveras Boulevard in the City of Milpitas and Santa Clara County.

The construction contractor would be responsible for obtaining any applicable truck haul permits, such as a truck haul permit for travel through the City of Milpitas, if one is required. The SFPUC has indicated that it would also consider entering into an agreement with the City of Milpitas to restore Calaveras Road to pre-construction conditions, if necessary; however, the volume of construction-related traffic on this segment of Calaveras Road would be minimal. Refer to Response A-SCCPRD-03 and Response A-SCCPRD-04 for discussions of limited construction-related traffic south of the reservoir.

To address these comments, the sixth bullet of the Mitigation Measure 5.12.4a, Traffic Control Plan, on EIR page 5-38, is modified as follows (new text is underlined):

- Public roadway rights-of-way shall be repaired or restored to their pre-construction conditions upon completion of construction. The SFPUC shall inspect and document the condition of Calaveras Road prior to and after completion of the project and, if roadway damage is detected, enter into an agreement with Alameda and Santa Clara Counties or the City of Milpitas, if applicable, for implementing a post-construction roadway repair/rehabilitation program. At a minimum, roads damaged by the project shall be repaired to a structural condition equal to that which existed prior to the project construction activities. Maintenance of adequate driving and bicycling conditions of Calaveras Road during the construction period shall also be addressed.

The following item is added to Mitigation Measure 5.12.4a, Traffic Control Plan, on EIR page 5-38 as a new eighth bullet (new text is underlined):

- If applicable, the construction contractor shall obtain a truck haul permit related to construction vehicle travel through the City of Milpitas.

These revisions do not change the analysis or conclusions presented in the EIR.

A-Milpitas-02 The comment notes that noise from haul or delivery trucks would affect several residences located at the southeast corner of Calaveras and Piedmont Roads, and nighttime operations should be prohibited.

As indicated on EIR page 4.12-10 (Vol. 2, Chapter 4, Section 4.12), the proposed route for haul or delivery trucks from off-site locations would be the section of Calaveras Road north of the dam. Therefore, haul or delivery trucks would not affect the residential noise environment in the vicinity of Calaveras and Piedmont Roads, which are located south of the dam. On-site haul activities would use temporary haul roads and would not pass near the homes on the referenced portion of Calaveras Road. Nighttime truck operations would also not affect these residences, since nighttime truck operations would also be limited to the section of Calaveras Road north of the dam. Therefore, no change to the EIR is necessary in response to this comment.

**11.1.15 EAST BAY REGIONAL PARK DISTRICT, NANCY H. WENNINGER FOR
ROBERT E. DOYLE, ASSISTANT GENERAL MANAGER, 12/11/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-EBRPD-01 The comment states that the proposed project will result in a number of significant adverse impacts on recreation, including maintenance and operation of parks and trails. The comment also states that the project would have short-term impacts, such as traffic, and long-term impacts, such as human health.

The comment correctly summarizes the Draft EIR impact analysis concluding that the proposed project would result in significant impacts in the areas of recreation; vegetation and wildlife; fisheries and aquatic habitat; hydrology; visual resources; transportation; air quality; noise; and hazards. A significant construction-related traffic safety impact (e.g., public safety) on motorists, bicyclists, and pedestrians was identified. Implementation of a Traffic Control Plan in accordance with Mitigation Measure 5.12.4a and temporary closure of a portion of Calaveras Road from Geary Road to the dam site under Mitigation Measure 5.12.4b would reduce this impact to a less-than-significant level. However, if Alameda County does not permit the temporary closure of this portion of Calaveras Road, implementation of this provision of Mitigation Measure 5.12.4b would not be feasible. Therefore, the impact of the CDRP on traffic safety hazards during project construction is potentially significant and unavoidable. For a brief list of significant impacts, see EIR pages 1-27 – 1-29 (Vol. 1, Chapter 1), and for a comprehensive list of impacts and related mitigation measures by topic, see EIR pages 1-37 – 1-92. For a detailed analysis of the significant impacts by topic, see the specific sections in Chapter 4.

CEQA Guidelines Section 15382 emphasizes that a significant effect on the environment is a substantial adverse change in the physical condition of the project area. The recreation impact analysis on EIR pages 4.3-20 – 4.3-23 (Vol. 1, Chapter 4, Section 4.3.2.5) considers physical impacts such as siting,

construction, and operation of the replacement dam and its ancillary features on recreational resources.

As identified on EIR page 4.3-20, the City and County of San Francisco generally considers that implementation of a proposed project would have significant impacts on recreational resources if it were to 1) increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated; 2) include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment; or 3) physically degrade existing recreational resources. These significance criteria do not identify management and operation of recreation facilities as an environmental issue that requires analysis.

Impacts on the subjective experiences of nature appreciation, hiking, and photography could occur as a result of physical environmental impacts (such as traffic, air quality, noise, park access, biological resources, and visual impacts). The EIR's analysis of the proposed project's construction-related visual, noise, dust, and traffic impacts is addressed under the third significance criterion listed above, since these impacts on recreational experiences would temporarily degrade existing recreational resources. Impacts on existing recreational resources are discussed on EIR pages 4.3-20 – 4.3-23 under Impact 4.3.6.

Indirect short-term impacts concerning vegetation and wildlife, fisheries, hydrology, human health, visual resources, transportation, air quality, noise land use, public safety and park operations would be reduced to less-than-significant levels by mitigation measures identified in the EIR (Vol. 2, Chapter VI). Implementation of the project would not result in long-term impacts on recreational uses that would affect on-going maintenance and operation of East Bay Regional Park District (EBRPD) parks and trails since after construction, the proposed project would operate similar to existing conditions.

Refer to Response A-EBRPD-03 for a discussion of long-term human health effects of the proposed project.

A-EBRPD-02 The comment states that there will be significant cumulative impacts resulting from construction of other SFPUC projects in the Alameda Creek watershed.

As the comment notes, there are a number of other projects that could contribute to cumulative environmental effects in the Alameda Creek

watershed. These projects are listed in Table 6.1: Cumulative Projects Related to the CDRP in the Sunol Valley Region, on EIR pages 6-11 – 6-17 (Vol. 2, Chapter 6), and include SFPUC projects proposed under the Water System Improvement Program (Project Nos. 1-10) and other related SFPUC projects (Project Nos. 13, 14, and 19). As discussed on EIR pages 6-7 – 6-55, the proposed project could contribute to significant cumulative impacts; however, with the project-level mitigation measures identified in Vol. 2, Chapter 5, the proposed project's contribution to significant cumulative effects would be reduced to less-than-significant levels.

A-EBRPD-03 The District commented that the potential health effects of grading or moving four million cubic yards of soil and rock containing naturally occurring concentrations of asbestos (see Comment A-EBRPD-3) are inadequately considered in the Draft EIR. The District also stated that the District may need to consider closing portions or all of the Sunol Regional Wilderness during the project construction period (see Comment A-EBRPD-5). The District's comment letter also noted several related concerns regarding asbestos, including the presence of amphibole and chrysotile asbestos, and the potential for unacceptable exposures to the workers and visitors to the Park, even with implementation of the proposed mitigation measures and additional measures recommended by the EBRPD (see Comment A-EBRPD-36). The comment letter notes the appearance of inconsistency in whether asbestos-containing material would be transported off site (see Comment A-EBRPD-36).

Impacts related to potential exposure to naturally occurring asbestos are described in Impact 4.9-2, on EIR pages 4.9-22 – 4.9-25 (Vol. 2, Chapter 4, Section 4.9.2.3). As discussed in the EIR and required by Mitigation Measure 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program, Chapter 5, Section 5.9, pages 5-27 to 5-30), the SFPUC would comply with the Asbestos Airborne Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations during construction activities in areas containing naturally occurring asbestos and naturally occurring metals. Components of Mitigation Measure 5.9.2a include:

- 1) Dust control measures;
- 2) Air monitoring integrated with risk-based trigger levels; and
- 3) Corrective actions to be implemented to avoid and minimize the potential for trigger levels to be exceeded

These dust control measures, air monitoring activities, risk-based trigger levels, and corrective actions are part of the integrated program of dust control and air

monitoring proposed for CDRP (Berman 2010) and would be specified in the Asbestos Dust Mitigation Plan and the Comprehensive Air Monitoring Program prepared for the CDRP and subject to review by the Bay Area Air Quality Management District (BAAQMD). Implementation of the measures specified in these plans will prevent visible dust from crossing the work area boundary and will also prevent unacceptable exposure of off-site receptors (e.g., recreational users, visitors, residents, and park employees) to chrysotile or amphibole asbestos or naturally occurring metals due to CDRP construction activities. The “work area boundary” is the limits of the active work areas of the project, within which soil and rock will be disturbed during construction. These measures are discussed below.

Dust Control Measures

In accordance with the Asbestos ATCM and Mitigation Measure 5.9.2a, the SFPUC would implement dust control measures to minimize dust generation during construction. The dust control protocols would be specified in the Asbestos Dust Mitigation Plan and, as addressed in Mitigation Measure 5.9.2a, would be based on the regulatory guidelines for temporary construction impacts under the Asbestos ATCM. The protocols would also incorporate the applicable dust mitigation measures from Tables 8-2 and 8-3 of the BAAQMD’s June 2010 *California Environmental Quality Act Air Quality Guidelines* (BAAQMD 2010) that were issued since publication of the Draft EIR.

Air Monitoring and Risk-Based Trigger Levels

The SFPUC would implement an integrated air monitoring program in the project area and vicinity in accordance with Mitigation Measure 5.9.2a. The program would be described in the Comprehensive Air Monitoring Program, and would include development and implementation of risk-based trigger levels linked to the dust control measures in Mitigation Measure 5.9.2a. The Comprehensive Air Monitoring Program will designate an air monitoring “control boundary.” This control boundary will encompass the active work areas of the project (i.e., the “work area boundary”) and lie entirely within the property boundary; the control boundary will be the boundary at which CDRP-generated emissions of naturally occurring asbestos/metals will be controlled. The “property boundary” is defined as the surveyed boundaries of the property owned by the City and County of San Francisco in the project vicinity. In accordance with the Comprehensive Air Monitoring Program, the SFPUC

would implement three types of daily air monitoring: (1) within the active work area (construction activity area monitoring locations within the work area boundary); (2) at or within the control boundary (perimeter monitoring locations); and (3) at additional locations outside the control boundary in the vicinity of the project and Park (ambient monitoring locations). This monitoring would include analysis for dust, chrysotile and amphibole asbestos (including relevant fiber sizes and mineralogy), and metals. The results of the *construction area activity monitoring* will be used to distinguish emissions from specific activities or geologic substrate types. The results of the *perimeter monitoring* locations would be used to evaluate whether enhanced source control measures described in Mitigation Measure 5.9.2a would be implemented. The results of the *ambient monitoring* locations will be reviewed within the context of overall monitoring and meteorological data; if concentrations of airborne asbestos or metals are detected that, with high confidence, exceed ambient baseline levels, construction activities will be modified to reduce airborne asbestos or metals concentrations.

The Comprehensive Air Monitoring Program would define site-specific, risk-based trigger levels based on the approach described for the CDRP by Berman (2010). The risk-based trigger levels would be developed in accordance with risk protocols for asbestos in current use by USEPA (IRIS 2008, USEPA 2008) and the California Air Board (BAAQMD 2005). As an added level of health protection, the risk protocols used in the development of CDRP trigger levels would also include a third, more detailed protocol, which explicitly accounts for differences in the potency of the different asbestos mineral types (Berman and Crump 2008a,b).

The risk calculations used to develop the trigger levels would include the potential duration and frequency of exposure to asbestos for the types of off-site receptors (e.g., visitors, recreational users, residents, and park employees). Using methods consistent with the risk protocols, an exposure scenario would be developed and defined for each type of off-site receptor who could potentially be exposed to airborne asbestos or metals that could be released from CDRP construction activities. Such exposure scenarios would specify the frequency (hours per day and days per year) and the duration (number of years) over which relevant exposures could potentially occur (Berman 2010). To provide a factor of safety, the risk calculations would consider exposure of a receptor to the specified trigger level over the entire construction period. However, because implementation of dust control measures and corrective actions (described below) would ensure that trigger levels are not regularly

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exceeded, the *average* asbestos and metals concentrations in project-related emissions would be below the specified the trigger level over the duration of the project. Therefore, an occasional exceedance of a trigger level for a short period would not result in exposure to unacceptable levels of asbestos or naturally occurring metals over the long term. As long as the *average* concentration remains below the specified trigger level over the duration of the project, the program would be adequately protective of public health.

To increase the sensitivity of air monitoring for asbestos, a modified version of the Asbestos Hazard Emergency Response Act (AHERA) method (referred to as the “CARB AHERA”, CARB 2002) would be used for sample analysis. This method is more sensitive because it requires counting of the substantially more numerous, short asbestos fibers (i.e., those shorter than 5 μm) in addition to the longer fibers typically enumerated to assess risk. The proposed trigger levels would be defined for the range of fiber sizes counted in baseline air quality samples collected since August 2008 and analyzed using the CARB AHERA method. The analytical results for baseline samples collected between August 2008 and August 2009 are available to the public (SFPUC 2009), and the Comprehensive Air Monitoring Program would include a summary of this data as well as the results of all sampling conducted since August 2009.

The risk-based trigger levels would be determined by: (1) adjusting risk-based targets for differences in the field-observed concentrations of AHERA fibers and the subset of such fibers typically counted to assess risk; (2) adjusting for attenuation between the perimeter monitoring locations and locations where exposure may occur; (3) incorporating safety factors as discussed above and based on other considerations such as site specific meteorology (i.e., weather conditions); and (4) considering ambient concentrations (based on the baseline sampling described above) when selecting monitoring locations. Risk-based trigger levels would be specific to the corresponding exposure scenarios and associated perimeter monitoring locations, depending on the nature of the nearest potential receptor type (e.g., visitors, recreational users, residents, and park employees) as well as proximity of the receptor. If the trigger levels are exceeded, implementation of corrective actions would ensure that average concentrations of asbestos and metals in dust emissions do not exceed the trigger levels over the duration of project construction, which means that neither airborne asbestos nor airborne metals would cross the work area boundary at concentrations sufficient to cause unacceptable exposures (as defined by USEPA and other regulatory agencies) to people who may visit, recreate, work, or live in the areas surrounding the CDRP project area. The

margin of safety included in the trigger levels would protect off-site receptors and ensure that the CDRP does not exceed a cancer risk threshold of one in one-hundred-thousand (1×10^{-5}) over the duration of project construction, consistent with applicable regulatory guidance (USEPA 2008; CHSC 1987).

Corrective Actions to Reduce Dust Generation

Because of the incorporation of safety factors as described above, exceedance of the trigger level over a short period does not suggest that unacceptable exposure has occurred; it would only be indicative that better dust control needs to be reestablished to ensure that long-term *average* concentrations of asbestos and metals do not exceed the trigger level over the duration of project construction. Therefore, if concentrations observed at any perimeter monitoring location exceed the corresponding trigger level, increasingly restrictive corrective actions would be applied to construction activities until air monitoring results have returned to below trigger levels, confirming that dust control has been reestablished. Corrective actions would include implementation of enhanced dust control measures (including those detailed below), work slowdowns, and, when necessary, work stoppages to eliminate dust generation during high wind conditions or to review construction activities and related dust control corrective actions. Airborne asbestos and metals concentrations would be monitored daily in work areas potentially containing naturally occurring asbestos and metals. Therefore, implementation of corrective actions would ensure that the long-term average concentrations of asbestos and metals would not exceed the risk-based trigger levels and would prevent construction activities from exposing off-site receptors to unacceptable levels of risk.

Activities During High Wind Conditions

The EBRPD letter notes that there could be uncontrolled dust from construction due to gusts of southerly winds. However, with implementation of the dust control measures specified in Mitigation Measure 5.9.2a and the storm water control measures required by Mitigation Measure 5.7.1, releases of dust from construction activities would be controlled. Applicable dust control measures include:

- Both the CDRP's Asbestos Dust Monitoring Plan (required by Mitigation Measure 5.9.2a) and Storm Water Pollution Prevention Plan (required by Mitigation Measure 5.7.1) would include dust control measures specifically designed to prevent inactive disturbed

areas and stockpiles from becoming dust sources by applying soil tackifiers and dust palliatives, in addition to water application and other measures for active construction areas;

- The proposed monitoring under the Comprehensive Air Monitoring Program would include continuous collection of wind speed and direction data as part of the daily air monitoring; and
- All ground disturbing work would be temporarily stopped when winds produce visible dust that crosses the work area boundary or the average wind speeds are in excess of 20 miles per hour, consistent with the BAAQMD requirements.

Specifically, continuous meteorological monitoring for wind speed and direction would occur under the Comprehensive Air Monitoring Program, which would provide important data to manage implementation of dust control measures during construction.

Implementation of the dust control, air monitoring, and corrective actions as required in Mitigation Measure 5.9.2a would reduce the potential health and safety impacts related to exposure to naturally occurring asbestos and metals to less than significant.

SFPUC and EBRPD Coordination and Elimination of Unplanned Closures

The EBRPD's letter notes that unscheduled closures of the Park would be difficult to implement. The San Francisco Planning Department and SFPUC recognize that unscheduled closure of the Park may be difficult to implement, and therefore, would not rely on Park closure as a mitigation measure for the CDRP. In response to this comment, the impact discussion and Mitigation Measure 5.9.2a have been modified to remove the reference to temporary park closures based on air monitoring results.

The commenter notes that on page 5-28 of the EIR, Mitigation Measure 5.9.2a includes a dust control measure for the off-site transport of asbestos-containing materials, although it is stated on page 4.9-15 of the EIR that no asbestos-containing materials would be transported outside of the project limits (defined here as the "work area boundary") or on public roadways. The dust control measure referred to on page 5-28 of the EIR is a measure specifically included in the Asbestos ATCM, and it was included in Mitigation Measure 5.9.2a for completeness. A clarifying note to this effect has been added to the mitigation measure.

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Note that the SFPUC has conducted regional baseline monitoring of airborne asbestos at the CDRP and surrounding vicinity since August of 2008. Based on 13 months of study results that are publicly available (SFPUC 2009), airborne asbestos can be found as far north as Interstate 680 and as far south as the south end of the Calaveras Reservoir, including in the East Bay Regional Park District's (EBRPD) Sunol Regional Wilderness. During the 13 months of study, SFPUC also participated in several meetings with the EBRPD to present and discuss the results of the study as they became available. Subjects discussed included the presence of naturally occurring asbestos both in the region and in the Park as well as the potential effect of CDRP construction on park visitor activities.

With regard to the CDRP Variant, the proposed fish screen at the ACDD, fish ladder at the ACDD, spillway discharge channel grade-control structures, and right dam abutment excavation could involve work within rock containing naturally occurring asbestos and elevated levels of naturally occurring metals, as discussed in Chapter 9, Section 9.3.9 of this Comments and Responses document. While construction activities at these sites would incrementally increase the construction area with potential for airborne release of these constituents during excavation, the total area of disturbance would increase by less than a 0.5 percent relative to the Draft EIR project. As described in Chapter 9, Section 9.2.3, geotechnical investigations would be conducted as part of construction of the fish screen and fish ladder at the ACDD to evaluate the levels of naturally occurring asbestos and metals in the geologic unit where the proposed fish screen at the ACDD and fish ladder at the ACDD would be constructed. If asbestos concentrations in excess of 0.25 percent are identified in the rock units sampled, then Mitigation Measures 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program) and 5.9.2b (Construction Worker Protection) would be applicable to these sites. Implementation of these measures would ensure that construction activities associated with the Variant do not cause unacceptable exposure of off-site receptors to asbestos and metals, and similar to the Draft EIR project, this impact under the Variant would be less than significant with implementation of the identified mitigation measures.

The text of Impact 4.9-2 (EIR pages 4.9-23 to 4.9-24) is revised below to provide clarification, including the additional dust control measures specified in the updated BAAQMD CEQA Guidelines, removal of references to temporary park closures, and provide clarification regarding the monitoring of

and corrective actions for asbestos containing materials. Deletions in text are shown in ~~strike through~~ and new text is shown in underline.

Impacts to On-Site Workers, and Recreational Users, Visitors, Employees, and Park Employees During Excavation, Tunneling, Blasting, Hauling, and Placement

Project-related activities that could produce dust containing NOA and naturally occurring metals include excavation and handling of approximately 4 million cubic yards of Franciscan Complex serpentinite and mélange rock as well as colluvium, alluvium, topsoil, and fill derived from these rock types for construction (of the dam, spillway, Borrow Area B, Disposal Sites 3 and 7, stilling basin, tunnel and adits, and access roads) as well as the removal of the upper portion of the existing dam where some of the fill materials were obtained from serpentinite and mélange as described in the Setting. Use of haul roads constructed within these rock types on the hillside to the west of the existing dam where Franciscan Complex serpentinite and mélange bedrock are mapped (see Figure 4.8.1, in Section 4.8, Geology, Soils, and Seismicity) and placement of surplus rock (including tunnel spoils) could also generate NOA and metals-containing dust. In addition, excavation of Borrow Area B and the stilling basin would require blasting of Franciscan Complex serpentinite and mélange bedrock, and construction of the intake/outlet shaft and adits would require tunneling through Franciscan serpentinite and mélange. Dust and tunnel emissions generated during these construction activities would contain NOA and naturally occurring metals that could be inhaled by construction workers, ~~and recreational users, visitors, residents, and park employees including bicyclists on Calaveras Road.~~ Because of the volume of material disturbed and the proximity of ~~potential receptors~~ recreational users, potential impacts related to exposure of workers, ~~and recreational users, visitors, residents, and park employees~~ to NOA and naturally occurring metals in dust during construction are considered significant.

Impact Conclusion

For recreational users, visitors, residents, and park employees, these impacts would be reduced to less than significant with implementation of Mitigation Measure 5.9.2a, which requires the construction contractor to comply with the BAAQMD's Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations and to implement dust control measures specified in the 2010 BAAQMD California Environmental Quality Act Air Quality Guidelines. Because the construction activities would disturb more than one acre of land, the contractor would be required to submit the appropriate notification forms and prepare an ~~a~~ Asbestos Dust Mitigation Plan specifying measures that would be taken to ensure that no visible dust crosses the ~~air monitoring perimeter of work area boundary limits~~ area boundary limits during construction. The "work area boundary" is the limits of the active work areas of the project, within which soil and rock will be disturbed during construction.

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Mitigation Measure 5.9.2a also requires the SFPUC to prepare and implement a Comprehensive Air Monitoring ~~Plan~~ Program specifying the air quality monitoring that would be implemented by a third party consultant qualified in ambient air monitoring under the supervision of a Certified Industrial Hygienist who is also a California Certified Asbestos Consultant or who has current 40-hour AHERA training to ensure compliance with the Asbestos ATCM. The Comprehensive Air Monitoring Program would identify a “control boundary” which will encompass the work area boundary and lie entirely within the property boundary and will be the boundary at which CDRP-generated emissions of NOA/metals will be controlled. The Comprehensive Air Monitoring ~~Plan-Program~~ would require daily both monitoring to be conducted at: (1) perimeter monitoring ~~locations~~the air monitoring perimeter of work limits; an(2) construction activity monitoring of specific cells of construction activity areas within the work area boundary; and (3) ambient air monitoring at locations in the vicinity of the project and Sunol Regional Wilderness Area that are outside the control boundary. The Comprehensive Air Monitoring ~~Plan~~ Program would specify the location and frequency of monitoring, risk-based trigger levels of asbestos and metals (including chromium, nickel, arsenic, copper, and cobalt) that would be protective of off-site receptors (e.g., recreational users of Calaveras Road and/or nearby trails in the Sunol Regional Wilderness aArea, visitors, residents, and park employees), and corrective actions to be taken should ~~the acceptable level of asbestos or metals~~ risk-based trigger levels be exceeded at any a perimeter monitoring location. Should trigger levels be exceeded at a perimeter monitoring location, the SFPUC would notify the appropriate authorities, ~~and implement corrective actions including possible closure of the affected road or trail,~~ investigate the cause of the exceedance, and implement corrective actions such as implementation of enhanced dust suppression techniques. Should corrective action fail to bring asbestos or metals concentrations to within ~~the trigger levels~~acceptable limits, the Comprehensive Air Monitoring ~~Plan-Program~~ would require the contractor to modify or temporarily halt construction activities in areas generating excessive dust until dust generation could be maintained within ~~the trigger~~ acceptable levels.

Mitigation Measure 5.9.2b requires the construction contractor to comply with 8 CCR Section 1529, Construction Safety Orders for Asbestos, with additional worker protection measures for the proposed project. The additional worker protection measures would be within the oversight of the third party consultant required under Mitigation Measure 5.9.2a. These additional requirements have been developed in consultation with the SFPUC, the San Francisco Department of Public Health, and Cal/OSHA (URS 2009b), and address educational and training requirements for supervisory staff, personal air monitoring and respiratory protection requirements, acceptable work practices, signage, and personnel decontamination. These modifications would be incorporated into the Contract Documents for the construction project

and all workers with the potential to be exposed above permissible exposure limits for asbestos would be required to follow these requirements.

The text of Mitigation Measure 5.9.2a (EIR pages 5-27 to 5-30) is revised below to provide clarification, including the additional dust control measures specified in the updated BAAQMD CEQA Guidelines, removal of references to temporary park closures, and provide clarification regarding the monitoring of and corrective actions for asbestos containing materials. Deletions in text are shown in ~~strike through~~ and new text is shown in underline.

5.9.2a Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Plan Program

The SFPUC shall prepare an ~~a~~Asbestos Dust Mitigation Plan for approval by the Bay Area Air Quality Management District (BAAQMD) as required in Section 93105 of Title 17 of the California Code of Regulations, “Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.” The SFPUC shall also prepare a Comprehensive Air Monitoring Program that shall be submitted for review by the BAAQMD. The Asbestos Dust Mitigation Plan shall specify site-specific measures that ~~would~~ will be ~~taken~~ implemented to minimize emissions of naturally occurring asbestos (NOA) and metals-containing dust. Risk-based trigger levels will be utilized during construction to evaluate whether additional dust control measures are required so that the project does not cause unacceptable off-site exposure and to ensure that ~~to airborne~~ asbestos and metals (including chromium, nickel, arsenic, copper, and cobalt) concentrations do not exceed regulatory approved risk-based trigger levels at the air monitoring perimeter of work limits during construction. Off-site exposure will be evaluated for receptors that are located beyond the control boundary, which in turn, entirely encompasses the work area boundary of the project.¹ The SFPUC shall include all applicable ~~dust mitigation~~ measures set forth in the Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program in the construction contract for the project.

The SFPUC ~~would~~ shall also engage a third party consultant that would provide review and monitoring of the construction contractor’s air monitoring activities, other ~~NOA-~~ related construction contractor worker protection measures, and the construction contractor’s NOA soil and rock evaluations for compliance with contract requirements. The consultant ~~would~~ shall also conduct the comprehensive air monitoring

¹ The “work area boundary” is defined as the limits of the active work areas of the project, within which soil and rock will be disturbed during construction; construction activity area monitoring locations will be within the work area boundary. The “control boundary” will be identified under the Comprehensive Air Monitoring Program and will encompass the work area boundaries and lie entirely within the CCSF-owned property boundary; perimeter monitoring locations will be located along or within the control boundary.

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required by ~~the~~ Comprehensive Air Monitoring ~~Plan~~ Program (described below). The third party consultant ~~would~~shall be qualified in ambient air monitoring under the supervision of a Certified Industrial Hygienist who is also a California Certified Asbestos Consultant or who has current 40-hour AHERA training.

Examples of dust control measures that may be implemented include the measures identified in the Asbestos Airborne Toxics Control Measure (ATCM) and the 2010 BAAQMD California Environmental Quality Act Air Quality Guidelines, as well as project-specific measures to be included in the Asbestos Dust Mitigation Plan. As provided for in the Asbestos ATCM, alternative measures that provide an equivalent level of dust control may be included in the Asbestos Dust Mitigation Plan subject to BAAQMD authorization. The Asbestos ATCM and the BAAQMD Air Quality Guidelines includes the following dust control measures ~~for applicable to~~ construction activities in NOA containing areas:

- Restriction of vehicle speeds on on-site unpaved roads, staging areas, and parking lots to 15 miles per hour; as well as wetting, use of a chemical dust suppressant, or use of a gravel cover containing less than 0.25 percent asbestos or other effective measures in these areas to control dust generation;
- Wetting all exposed surfaces at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe;
- Wetting of work surfaces prior to and during construction activities and suspension of grading operations when wind speeds are high enough to result in visible dust emissions crossing the ~~air monitoring perimeter of work limits~~ work area boundary that would incorporate all active work areas;
- Suspension of all excavation, grading, and/or demolition activities when average wind speeds exceed 20 mph;
- Wetting or use of a cover to control dust from active storage piles;
- Wetting, use of a chemical dust suppressant, use of a cover (such as a tarp or vegetative cover), establishment of a surface crusting, use of wind barriers or other effective measures to control dust from inactive storage piles and inactive work areas;
- ~~Cleaning of all visible track out on paved public roads at the end of the work day or at least once per work day;~~
- Removal of all visible mud or dirt track-out onto adjacent public roads using wet power vacuum street sweepers at least once per work day. The use of dry power sweeping is prohibited;
- Implementation of track-out prevention measures such as a gravel pad, wheel wash system, use of a paved approach, or other equally effective measures to prevent and control track-out to a public road;

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- Loading of trucks for ~~off-site~~ transport of NOA-containing materials outside the work area boundary such that no spillage could occur, as well as wetting the load, covering it with a tarp and loading the truck such that material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point in the load extends above the top of the cargo compartment (note that this measure is included for completeness to be consistent with the Asbestos ATCM, but would not be required for the proposed project because no NOA-containing materials would be transported outside the work area boundary as part of the project); ~~and~~
- Limiting the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time. Activities shall be phased to reduce the amount of disturbed surfaces at any one time;
- Paving all roadways, driveways, and sidewalks planned for paving as soon as possible after the start of construction;
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;
- Washing all trucks and equipment, including tires, such that they shall be free of NOA, prior to leaving the site;
- Post-construction stabilization of disturbed areas with vegetative ground cover (fast-germinating native grass seed), placement of at least 3 inches of non-asbestos containing material, paving, or any other measure deemed sufficient as soon as possible and water appropriately until vegetation is established; ~~to prevent wind speeds of 10 miles per hour or greater from causing visible dust emissions.~~
- Treating site accesses to a distance of 100 feet from the paved road with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel;
- Posting a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations; and
- Restricting blasting activities in areas of NOA and metals to daylight hours Monday through Friday and when average wind speeds are less than 20 miles per hour or less.

If needed for adequate dust control, tThe Asbestos Dust Mitigation Plan ~~may~~shall also include additional project-specific dust control actions (enhanced measures) for general construction activities, drilling, blasting, rock processing, tunneling, and dam foundation cleaning activities to prevent NOA and metals-visible dust from migrating beyond the project site work area boundaries. Enhanced measures would also be implemented if daily air monitoring detects an exceedance of the

established trigger levels at a perimeter monitoring location. Examples of possible ~~These~~ actions include:

- ~~Washing of equipment used in NOA-disturbing activities after use and prior to removing it from the site;~~
- Increased frequency of Ssweeping all paved access roads, parking areas, and staging areas daily;
- Reducing wind speeds to soil surfaces (by using a wind screen or changing the shape or orientation of the stockpile) to control dust from active storage piles;
- Drilling with water in NOA-containing areas;
- ~~Restricting blasting activities in areas of NOA and metals to Monday through Friday;~~
- Wetting blast areas as feasible, before, during, and after the blast;
- Using blasting blankets as feasible;
- Continuous misting or using an equivalent water application technique during the cleaning of the dam foundation and processing of earth and rockfill materials for the new embankment where NOA- and metals-containing rock is present;
- Wetting the adit and shaft work surfaces and materials when tunneling in NOA and metals-containing rock, as well as materials derived from these activities;
- Prohibiting the use of compressed air for drilling and foundation cleaning and the use of air-driven jack hammers for any activities disturbing NOA-containing rocks unless measures are implemented to capture or control airborne dust generated by the process;
- Applying water whenever NOA-containing materials are being removed from the tunnel or adits by mechanical processes such as shovels, excavator buckets, and hydraulic breakers; and/or
- Using a treatment system such as a baghouse or HEPA-type filtering device to remove NOA-containing dust from the tunnel exhaust air.

The measures in the Asbestos Dust Mitigation Plan may be altered, supplemented, or replaced during the BAAQMD's review process, since the BAAQMD has final authority over the terms of the Asbestos Dust Mitigation Plan.

The SFPUC shall prepare and implement a Comprehensive Air Monitoring ~~Plan-Program~~ that ~~would~~ will describe monitoring that ~~would~~ will be conducted to demonstrate compliance with the Asbestos ATCM. The plan ~~would~~ will specify ~~two~~ three types of daily monitoring: 1) air monitoring to be conducted at the perimeter monitoring locations (locations along or within the control boundary) air monitoring perimeter; and 2) construction activity area monitoring of specific ~~cells of~~ construction ~~activity~~ activities within the work area boundary to provide

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~~an added level of analysis and control of dust generation during construction; and 3) ambient air monitoring at locations in the vicinity of the project and Sunol Regional Wilderness Area that are outside the control boundary. Close m~~Monitoring of construction ~~activity cells activities~~ will provide information to demonstrate whether the generation of dust, asbestos and metals is being effectively controlled at the source, before it reaches the work ~~area boundary limits, providing valuable information regarding the contractor's dust control measures in each cell while monitoring at the perimeter of the work limits would be used to demonstrate compliance with the Asbestos ATCM. Perimeter monitoring locations will be selected within or at the control boundary to detect dust, asbestos, and metals for comparison with the trigger levels identified in the Comprehensive Air Monitoring Program. In addition, monitoring will include continuous collection of meteorological data on wind speed and direction in the project area.~~

The Comprehensive Air Monitoring ~~Plan Program would~~shall specify the location(s) and frequency of perimeter monitoring, and risk-based trigger levels of asbestos and metals (including chromium, nickel, arsenic, copper, and cobalt) that would be protective of off-site receptors (e.g., recreational users of Calaveras Road and/or nearby trails in the Sunol Regional Wilderness area, as well as visitors, residents, and park employees~~workers stationed in the Sunol Wilderness~~);. The Comprehensive Air Monitoring Program shall also specify ~~and~~ corrective actions to be taken should the ~~acceptable trigger level of asbestos or metals be exceeded at perimeter monitoring locations. Should~~If trigger levels ~~be~~are exceeded at a perimeter monitoring location, the SFPUC ~~would~~shall notify Alameda County, East Bay Regional Park District, and other applicable entities; ~~to coordinate activities that may include closure of the affected road or trail, investigate the cause of the exceedance;~~ and implement corrective actions such as implementation of enhanced dust suppression techniques. Should corrective action fail to bring asbestos or metals concentrations to within ~~acceptable risk-based trigger limits, the Comprehensive Air Monitoring Plan Program would~~will require the contractor to modify or temporarily halt construction activities in areas generating excessive dust until dust generation could be maintained within ~~acceptable trigger levels. Affected roads and trails would not be reopened until monitoring indicated that asbestos and metals concentrations are within acceptable limits.~~

Should trigger levels be exceeded in the tunnel emissions, the SFPUC ~~would~~ shall investigate the cause of the exceedance, and implement corrective actions such as implementation of enhanced dust suppression techniques or additional emission controls. Should corrective action fail to bring asbestos concentrations to within ~~acceptable risk-based trigger limits, the Comprehensive Air Monitoring Plan Program would~~shall require the contractor to reduce or stop tunneling in areas generating excessive dust until dust generation could be maintained within ~~acceptable levels~~ trigger limits.

~~Both the Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Plan would~~ shall be subject to review and approval by the BAAQMD prior to the start of construction. The Comprehensive Air Monitoring Program shall be reviewed by the BAAQMD prior to the start of construction. These revisions do not change the analysis or conclusions presented in the EIR.

A-EBRPD-04 The comment expresses concern about the traffic and safety impacts from an estimated 16,000 truck trips on Calaveras Road.

Impacts associated with the additional construction vehicles (including construction trucks and construction worker vehicles) are presented on EIR pages 4.12-9 – 4.12-17 (Vol. 2, Chapter 4, Section 4.12). The EIR analyzes impacts on traffic operations on Calaveras Road between I-680 and Geary Road, impacts on emergency response vehicles, increased potential for traffic safety hazards, and increased wear and tear on designated haul routes. Table 4.12-2: Daily Construction Vehicles Between Project Work Area and Off-Site Locations, on EIR page 4.12-11, summarizes the number of daily construction vehicle trips, including sand and gravel haul trips, generated by the project that would travel to and from the off-site locations.

As stated on EIR page 4.12-14, traffic impacts associated with short-term increases in traffic on Calaveras Road during construction would be less than significant. However, as stated on EIR page 4.12-16, construction-related traffic on Calaveras Road would have a significant traffic safety impact on motorists, bicyclists, and pedestrians. Implementation of Mitigation Measure 5.12.4a, which calls for implementation of a Traffic Control Plan, and Mitigation Measure 5.12.4b would reduce this traffic safety impact to a less-than-significant level. Mitigation Measure 5.12.4b would require approval from Alameda County for weekday closure of Calaveras Road between Geary Road and the dam site; and approval from Santa Clara County for weekday closure of Calaveras Road from Felter Road to Geary Road. However, if Alameda County does not permit the temporary closure of the portion of Calaveras Road from Geary Road to the dam site, implementation of this provision of Mitigation Measure 5.12.4b would not be feasible. Therefore, the impact of the CDRP on traffic safety hazards during project construction is potentially significant and unavoidable.

Increased construction-related traffic generated by the CDRP Variant described in Chapter 9 would not increase the peak number of construction-related

worker and truck trips, and would not increase traffic safety hazards on Calaveras Road beyond those described for the Draft EIR project.

Even with increased construction truck traffic, access to the Sunol Regional Wilderness would still be provided throughout the four-year construction period. Visitors would have continuous access to the Sunol Regional Wilderness from the north via I-680 and the northern segment of Calaveras Road and Geary Road. Access from the southern segment of Calaveras Road would also be available on weekends all year, typically the peak recreation period throughout the year.

A-EBRPD-05 The comment states that to protect the health and safety of EBRPD employees and the public, the EBRPD may need to close all or portions of the Sunol Regional Wilderness during the construction period.

See Response A-EBRPD-03 above for a discussion of this issue.

A-EBRPD-06 The comment suggests mitigation measures that should be included in the EIR to mitigate significant effects on the EBRPD's parks and trails. The significant effects referred to in the comment relate to human health, traffic safety, and air quality; for responses to these concerns, see Responses A-EBRPD-01, A-EBRPD-02 and A-EBRPD-03, above.

The mitigation measures suggested in the comment include:

1. Reimbursement for lost revenues and increased operating costs
2. Relocation of Park Facilities and Programs
3. Construction of New Recreation Facilities
4. Replacement of the trestle bridge over Alameda Creek
5. Acquisition and dedication of new parklands.

The comment letter discusses suggested mitigation measures in detail in Comments A-EBRPD-65 and A-EBRPD-66 below. Therefore, please refer to Responses A-EBRPD-65 and A-EBRPD-66.

A-EBRPD-07 The comment states that the District has no objection to the proposed project. The comment asks that the Draft EIR be withdrawn, revised to correct deficiencies and recirculated for public comment, because the District believes that the Draft EIR overlooks impacts and provides for inadequate mitigation.

The comment is provided in an introductory portion of the letter, and provides no specifics regarding any deficiencies in the Draft EIR. Responses to specific issues raised by the commenter later in the letter are provided below. As indicated in the responses below, Responses A-EBRPD-08 to A-EBRPD-81, and supported by evidence included in those responses, all significant and potentially significant environmental effects have been adequately identified and evaluated in the Draft EIR and feasible mitigation has been included. The Draft EIR is compliant with the CEQA legislation and statute, and recirculation of the Draft EIR per Section 15088.5 of the State CEQA Guidelines is not required.

A-EBRPD-08 The comment asks that rock outcrops be added to the list of sensitive habitats based on their scenic qualities, cultural values, and unique assemblages of plant and animal habitats. The comment also states that impacts to rock outcrops as Alameda whipsnake habitat should be considered significant and mitigation, which could include fee acquisition or protection of similar habitat on adjacent properties, should be provided.

Sensitive plants that could be found in rock outcrop habitat are considered in the EIR (Vol. 3, Appendix C.1). One species, most beautiful jewel-flower, was found in the project area. Impacts to this species are considered (Impact 4.4.10 in Vol. 1, Chapter 4, Section 4.4, EIR page 4.4-113) and mitigation is provided (Vol. 2, Chapter 5, Section 5.4, EIR page 5-7).

Rock outcrops are identified as Alameda whipsnake habitat in Table 4.4.6: Habitat Classification for Alameda Whipsnake in the Calaveras Dam Replacement Project Study Area, on EIR page 4.4-48, and are considered in Impact 4.4.4, on EIR page 4.4-95. Mitigation for Alameda whipsnake habitat, including preservation of rock outcrops on adjacent areas, is provided in Mitigation Measure 5.4.1, on EIR page 5-9, and Mitigation Measure 5.4.3a, on EIR page 5-11.

The contribution of rock outcrops to the scenic quality of the area is discussed on EIR page 4.11-1 (Vol. 1, Chapter 4, Section 4.11.1). The potential cultural value of rock outcrops is discussed in Chapter 4, Section 4.10, EIR page 4.10-36. These visual and cultural values of rock outcrops do not affect the habitat value of rock outcrops and are not among the ecological values that define sensitive habitats for the purposes of CEQA.

A-EBRPD-09 The comment states that the sources used to determine the special status plants evaluated in the Draft EIR are inadequate because a particular source (Lake

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2001) was not used, and that there are a number of special status plant species that were not, or were inadequately, considered in the Draft EIR.

The referenced botanical report, “Unusual and Significant plants of Alameda and Contra Costa County. 2001. 6th Edition. Diane Lake. California Native Plant Society, East Bay Chapter. Clayton, CA. 77pp” was not used as a reference document for the EIR because the report is focused on locally rare species, and is duplicative of information present in the California Native Plant Society’s RareFind Database (2001) and the CNDDDB records search for multiple 7.5 minute quadrangles surrounding the project site (2006) (both of these are references that are identified as sources of information in the EIR (Vol. 1, Section 4.4.1.2, page 4.4-21) and the botanical survey report (Vol. 3, Appendix C-1, page 7)).

Nonetheless, the referenced document was obtained and compared with the results of the 2006 botanical surveys. The referenced 2001 source document provided additional information on locally rare plant occurrences in proximity to Sunol. However, this additional information detail does not substantively change any of the findings presented in the EIR (Vol. 1, Section 4.4.1.2, page 4.4-21) and botanical survey report (Vol. 3, Appendix C-1, page 7). Detailed information to support this conclusion, and provide a more complete response to individual issues included in the comment letter is presented below.

A botanical survey was conducted for the CDRP according to CDFG’s (2000) *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (referenced in the EIR as May and Associates 2006a in Vol.1, Chapter 4, Section 4.4, page 4.4-119). Both the botanical surveys, and the technical report prepared from those surveys, used industry standards for identifying potentially occurring species, and for identifying special-status species (whether or not these species were identified as potentially occurring in the project area). The list of potentially occurring species presented in the EIR and botanical survey report would not change substantially based on findings in the Lake 2001 report. Further, regardless of any changes to the list of potentially occurring species, the list of species observed compiled based on surveys conducted for the project would not be influenced by the use of the Lake 2001 source document. There was no uncertainty about whether or not a species referenced in the comment letter was present. The species examples provided in the comment are discussed individually below.

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Acanthomintha lanceolata – CNPS List 4 species; not considered special status for the purpose of the EIR (EIR page 4.4-21). Included in botanical survey report (Vol. 3, Appendix C-1, page 9). None located during botanical surveys. No suitable habitat (tallus scree slopes) is present in study area.

Allium sharsmithae – Not present in the CDRP impact area. All congeners (i.e., species in the same genus) detected during the botanical survey were identified to species (Appendix C-1, EIR page 41), meaning that there was no uncertainty about whether the species was present. No suitable habitat (tallus scree slopes) is present in study area. Known records not in close enough proximity to CDRP to have been identified in the background database search conducted for the botanical survey report. This species was not included in target species in Botanical Survey Report, and none were located during botanical surveys.

Androsace elongate ssp. acuta – CNPS List 4 species; not considered special status for the purpose of the EIR (EIR page 4.4-21). Known occurrences are primarily from Mt. Diablo on rocky ridgetops, a habitat that is uncommon in the study area. No plants of this genus were detected during the botanical survey (Appendix C-1, page 41).

Arabis breweri – Not considered special status for the purpose of the EIR (Vol. 1, Section 4.4.1.2, page 4.4-21). The only rare subspecies listed in the CNPS database is from southern California. Known local occurrences are primarily from Mt. Diablo and are limited to rock outcrops, an uncommon habitat in the study area. No plants of this genus were detected during the botanical survey (Appendix C-1, page 41).

Aspidotus carlotta-halliae – CNPS List 4 species; not considered special status for the purpose of the EIR (EIR page 4.4-21). No suitable habitat (tallus scree slopes) in study area. No plants of this genus were detected during the botanical survey (Appendix C-1, page 41).

Campanula exigua – Comment erroneously describes the EIR as reporting that the species has not been seen since 1973; it is the closest reported occurrence to the CDRP that was observed in 1973 (Appendix C-1, page 10). This species was not present in the CDRP impact area.

Delphinium californicum ssp. interius – Comment erroneously describes the EIR as reporting that the species has not been seen since 1928; it is the closest

reported occurrence to the CDRP that was observed in 1928 (Appendix C-1, page 10). This species was not present in the CDRP impact area.

Streptanthus albidus ssp. peramoenus – Comment states that surveys were inadequate. Surveys in support of the project were conducted at appropriate blooming periods during a wet year, following accepted CDFG protocol.

The identity of the species *Streptanthus albidus ssp. peramoenus* as reported from Contra Costa County (including specimens collected from the Calaveras watershed) is currently in dispute in California, and the species recognized in 2006 as *Streptanthus albidus ssp. peramoenus* is likely to be reclassified as *S. glandulosus ssp. glandulosus*, in the next edition of the Jepson Manual. *S. glandulosus ssp. glandulosus* is a common species, and would not at present be considered special status for the purpose of the EIR (Vol. 1, Section 4.4.1.2, page 4.4-21). A specimen was sent by B. Leitner in 2009 to Dr. Al-Shebaz at the Missouri Botanical gardens who identified it as *S. glandulosus ssp. glandulosus*, and noted that *Streptanthus albidus ssp. peramoenus* is only known from Santa Clara Counties (Al-Shebaz, pers. comm., 2009).

The evaluation of special status plants in the EIR meets the CEQA standard for identifying potential impacts and reducing impacts to less than significant.

A-EBRPD-10 The comment states that impacts of invasive plant species resulting from construction need to be included in the Draft EIR.

The EIR contains provisions to protect the watershed from the potential spread of invasive non-native plants, including preparing and implementing a re-vegetation plan for disturbed areas, re-seeding disturbed areas with native vegetation (Vol. 2, Chapter 5, Section 5.7, Mitigation Measure 5.7.1, EIR page 5-19), and washing construction vehicles. Therefore, the potential for such an impact is very low, and found to be well below the threshold of having a substantial adverse effect on any riparian habitat or other sensitive natural community. The following changes are made to Mitigation Measure 5.7.1, Storm Water Pollution Prevention Plan, on EIR pages 5-18 – 5-25, for clarity (new text is underlined):

In the second bullet under “Erosion and Sediment Controls” on EIR page 5-19:

Install weed-free fiber rolls, straw-wattles, coir logs, silt fences, or other effective devices along drainage channels to prevent soils from moving into creeks.

In the second bullet under “Equipment Washing” on EIR page 5-23:

Wash equipment off site, except when on-site washing is required to reduce hazards associated with NOA. Prior to first use on the CDRP, equipment shall be washed to remove debris that could be a source of foreign contaminants such as non-native invasive plant seeds or propagules. If equipment must be washed on site, then only water may be used. Do not use soaps, solvents, degreasers, steam cleaning, or other similar products or methods unless all of the discharge is collected for appropriate off-site disposal.

In the second bullet under “Post-Construction Site Restoration and Stabilization” on EIR page 5-24:

Prepare and implement a detailed re-vegetation plan to ensure that appropriate plant cover (i.e., no invasive non-native plant species) becomes established in disturbed areas. This plan will identify measures to establish vegetation by planting, seeding, and irrigation, if necessary. The restoration plan will specify slope inclination and permanent drainage swales and berms to mitigate erosion of the disposal fills.

A-EBRPD-11 The comment makes the point that grazing may have neutral or beneficial effects on several special status species, including callippe silverspot butterfly and California red-legged frog, and that the Draft EIR inadequately considers impacts of elimination of grazing on these species.

It is recognized that the EBRPD is doing valuable research with regard to California red-legged frog research on its lands, including the effects of grazing on California red-legged frog habitat. The EIR acknowledges that “unsuitable” levels of grazing can have a negative impact on callippe silverspot (Vol. 1, Chapter 4, Section 4.4, EIR page 4.4-25), and cites EBRPD research into the benefits of grazing for California red-legged frog (EIR page 4.4-28).

As described in Impact 4.3.4, on EIR page 4.3-18, grazing leases would only be affected in areas that would otherwise be disturbed as a result of CDRP construction activities. Since these areas would be subject to construction disturbance, any potential impact from the alteration of grazing on these lands would be moot. The EIR analysis assumes that there would be temporary or permanent impacts to these lands and provides mitigation for loss of the habitat through restoration (Vol. 2, Chapter 5, Section 5.4, Mitigation Measure 5.4.2, EIR pages 5-9 – 5-10) and compensation (Mitigation Measure 5.4.3, EIR pages 5-10 – 5-14).

A-EBRPD-12 The comment states that additional mitigation lands should be acquired in fee, should be near the location of impacts, and should have conservation easements and non-wasting endowments for management and monitoring. The comment is concerned that locating mitigation areas on SFPUC-owned land would lead to a net loss of natural resources.

SFPUC lands are currently subject to a variety of uses, including use for mining, nurseries, and other commercial enterprises; grazing leases; and recreation leases. Mitigation Measure 5.4.3, on EIR page 5-13 (Vol. 2, Chapter 5, Section 5.4) describes mitigation site selection criteria, including on-site alternatives; legal arrangements and instruments to ensure no net loss of habitat areas, functions, and services; the long-term protection of the sites; and long-term financing mechanisms for management. As specified under Mitigation Measure 5.4.3e, the difference between the habitat functions and services lost and those expected to be provided by compensation for the project is one of the factors that would be used to determine compensation ratios (see Mitigation Measure 5.4.3e on EIR page 5-12). Also see O-CNPS2-16 for additional discussion of sites that would replace habitat functions lost as a result of the impact.

A-EBRPD-13 The comment presents the opinion that a long-term monitoring and management plan should be created for preserve lands that are acquired for mitigation, including contingencies and funding.

Mitigation Measure 5.4.3, on EIR pages 5-13 – 5-14 (Vol. 2, Chapter 5, Section 5.4), describes long-term monitoring and management and financing mechanisms, including an adaptive management plan to respond to unforeseen contingencies (Measure 5.4.3k, EIR page 5-13) and financial assurances (Measures 5.4.3j and 5.4.3l, EIR page 5-13) that the mitigation will be able to meet its performance standards. The mitigation proposed meets the CEQA standard for reducing impacts to less-than-significant levels. Also see Response O-ACA&CBD1-64 for additional clarification of, and rationale for, compensation measures, and Response O-ACA&CBD1-62 for more detail on long-term management of land used for compensatory mitigation.

A-EBRPD-14 The comment provides an example of monitoring and management provisions that the commenter believes should be included in a long term management plan for preserve lands. The example relates to the control of non-native plants through grazing combined with prescribed fire and/or herbicide application.

Mitigation Measure 5.4.2b on EIR pages 5-9 – 5-10) and Mitigation Work Plan (Mitigation Measure 5.4.3f, EIR pages 5-12 – 5-13) include plans to control invasive plant species, developed in coordination with regulatory agencies. These plans are expected to include grazing and, if necessary to meet performance standards, the selective application of herbicides.

With respect to mitigation funding, Mitigation Measure 5.4.3, on EIR pages 5-13 – 5-14 (Vol. 2, Chapter 5, Section 5.4), describes long-term management and financing mechanisms that include an adaptive management plan to respond to unforeseen contingencies (Measure 5.4.3k, EIR page 5-13) and financial assurances to meet mitigation performance standards (Measures 5.4.3j and 5.4.3l, EIR page 5-13).

A-EBRPD-15 The comment is regarding control of non-native animals that could negatively affect long-term mitigation success.

EBRP makes recommendations for the SFPUC's management of preserve lands in the Alameda Creek Watershed. Mitigation Measure 5.4.3, on EIR pages 5-10 – 5-14 (Vol. 2, Chapter 5, Section 5.4), includes control of invasive fish and non-native frogs in ponds (Measure 5.4.3a, EIR page 5-10), and an adaptive management plan to respond to unforeseen contingencies (Measure 5.4.3k, EIR page 5-13) such as damage from non-native animals.

A-EBRPD-16 The comment is an example of monitoring and management provisions that the commenter believes should be included in a long-term management plan for preserve lands. The example relates to pond management for amphibians, and the rehabilitation and long-term maintenance of ponds and related water control structures.

The EBRPD makes recommendations for the SFPUC's management of preserve lands in the Alameda Creek Watershed. Mitigation Measure 5.4.3, on EIR pages 5-10 – 5-14 (Vol. 2, Chapter 5, Section 5.4), includes control of invasive fish and non-native frogs in ponds (Measure 5.4.3a, EIR page 5-11), a maintenance plan to ensure habitat viability (Measure 5.4.3g, EIR page 5-13), a long-term management plan (Measure 5.4.3j, EIR page 5-13), and an adaptive management plan to respond to unforeseen contingencies (Measure 5.4.3k, EIR page 5-13) such as possible pond failure.

A-EBRPD-17 The comment provides suggestions for management features to include in a long-term management plan for preserve lands. The suggestions include

maintenance of site security, police and fire services, and funding for these services.

Mitigation Measure 5.4.3 that provides for compensation for impacts on special-status species includes a provision for legal arrangements to ensure long-term protection (Measure 5.4.3c, on EIR page 5-12, in Vol. 2, Chapter 5); a maintenance plan to ensure the continued viability of habitats, which could reasonably be assumed to include maintenance of fences and gates where they are installed as part of the habitat protection (Measure 5.4.3g, on EIR page 5-13); and an adaptive management strategy (Measure 5.4.3k, on EIR page 5-13). It is reasonable to assume that police and fire access would continue as under existing conditions, and that these services would have access through any new gates established to protect habitats.

With respect to mitigation funding, Mitigation Measure 5.4.3, on EIR pages 5-13 – 5-14 (Vol. 2, Chapter 5, Section 5.4), describes long-term management and financing mechanisms, including an adaptive management plan to respond to unforeseen contingencies (Measure 5.4.3k, EIR page 5-13) and financial assurances (Measures 5.4.3j and 5.4.3l, EIR page 5-13) that the mitigation will be able to meet its performance standards.

A-EBRPD-18 The comment suggests that a long-term management plan provide for public access in lands set aside as preserves to mitigate biological resource impacts.

As explained in more detail in Response A-EBRPD-20, any existing trails located in mitigation areas that are proposed to be fenced would have gates to allow pedestrian and equestrian access to the trails while continuing to provide protection for the special habitats being rehabilitated and preserved. Public access to the protected areas would be restricted to protect the sensitive habitats. These proposed procedures are consistent with Access, Restriction and Management policies of the SFPUC's Alameda Watershed Management Plan which limits open public access to recreational trails to minimize disturbance to sensitive wildlife and vegetation communities, and cause the least disruption to wildlife movement resulting from trailside fencing (Watershed Activities Policy WA15); and restricts public access to high ecological sensitivity zones to minimize human disturbance to sensitive wildlife and their habitat (Wildlife Policy W8).

A-EBRPD-19 The comment provides examples of monitoring and management provisions that the commenter believes should be included in a long term management plan for preserve lands. The examples relates to habitat monitoring.

The EBRPD makes recommendations for the SFPUC's management of preserve lands in the Alameda Creek Watershed. Mitigation Measure 5.4.3, on EIR pages 5-10 – 5-14 (Vol. 2, Chapter 5, Section 5.4), includes a long term management plan to ensure the long-term sustainability of the resources (Measure 5.4.3j, EIR page 5-13), and an adaptive management plan to address both foreseeable and unforeseen circumstances that adversely affect mitigation success (Measure 5.4.3k, EIR page 5-13).

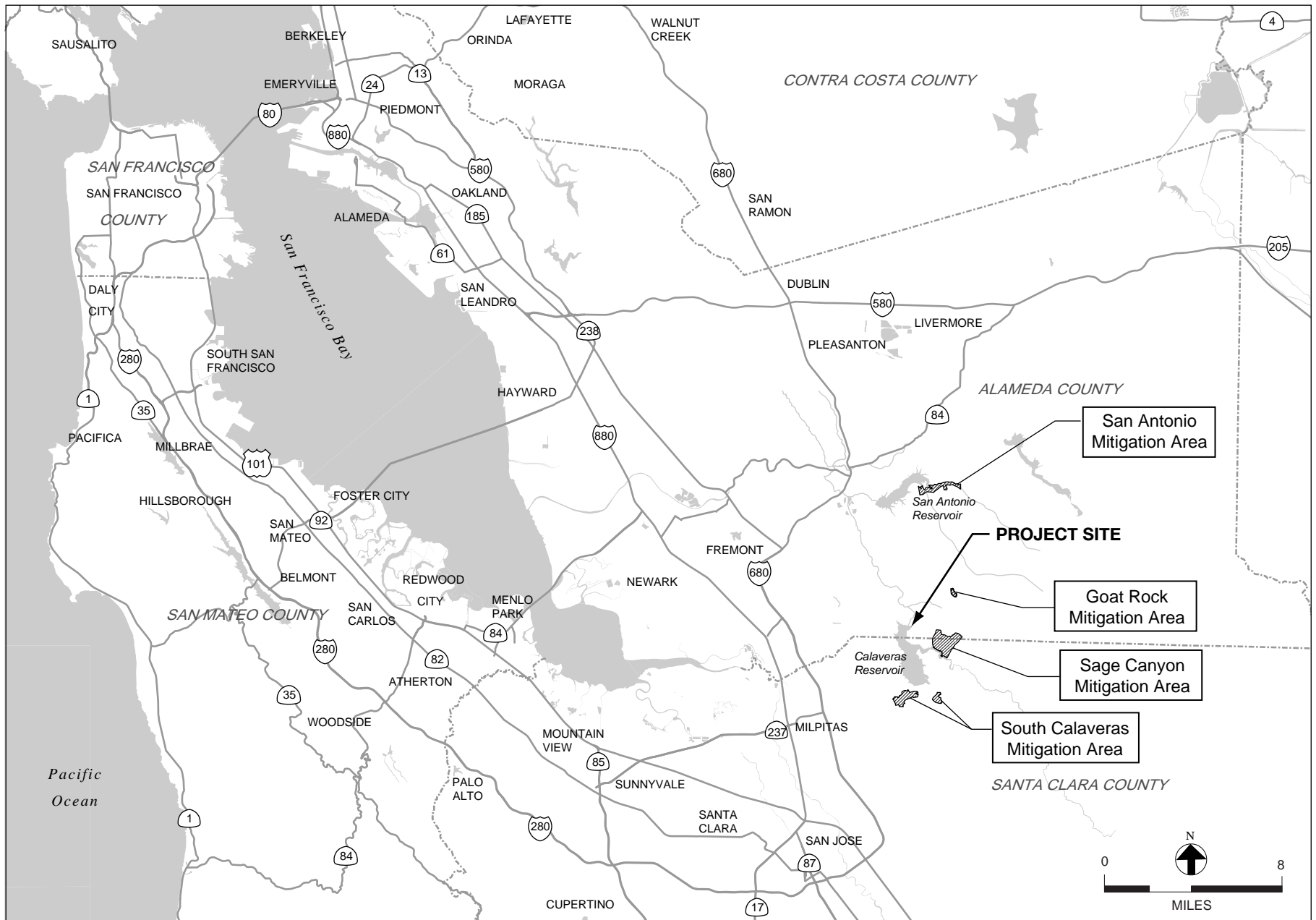
A-EBRPD-20 The comment notes that Appendix C.2 is missing figures and that the Goat Rock Mitigation Area described in the EIR is smaller than the Goat Rock Mitigation Area described on a figure obtained by EBRPD from the U.S. Army Corps of Engineers. The comment notes that portions of two recreational trails are within the mitigation area and requests that potential impacts resulting from restrictions on use of the area be identified.

The comment is correct that Appendix C.2 is missing figures. Figures 1 and 2, and the photo appendix are added to Appendix C.2; copies are provided as part of this response (these additions to the EIR are shown on the following pages). Two appendices related to mitigation have been added to the EIR: Appendix C.3 is an update to Appendix C.2, and Appendix C.4 provides a description of the Koopmann Road Mitigation Area.

The SFPUC proposes to implement mitigation for biological impacts of other SFPUC Water System Improvement Program (WSIP) projects in addition to the CDRP at the Goat Rock Mitigation Area. As such, the Goat Rock Site encompasses an area that is larger than the area needed for the CDRP. To ensure adequate habitat protection, fencing would be installed at certain locations around the perimeter of the Goat Rock mitigation area.

If exclusionary fencing within the Goat Rock mitigation area crosses EBRPD public trails, gates would be installed to ensure public access to hiking trails. No trails would be removed or restricted from public access as a result of implementing the habitat mitigation measures at the Goat Rock mitigation area.

Therefore, no significant impacts to trail access would occur as a result of the proposed project.

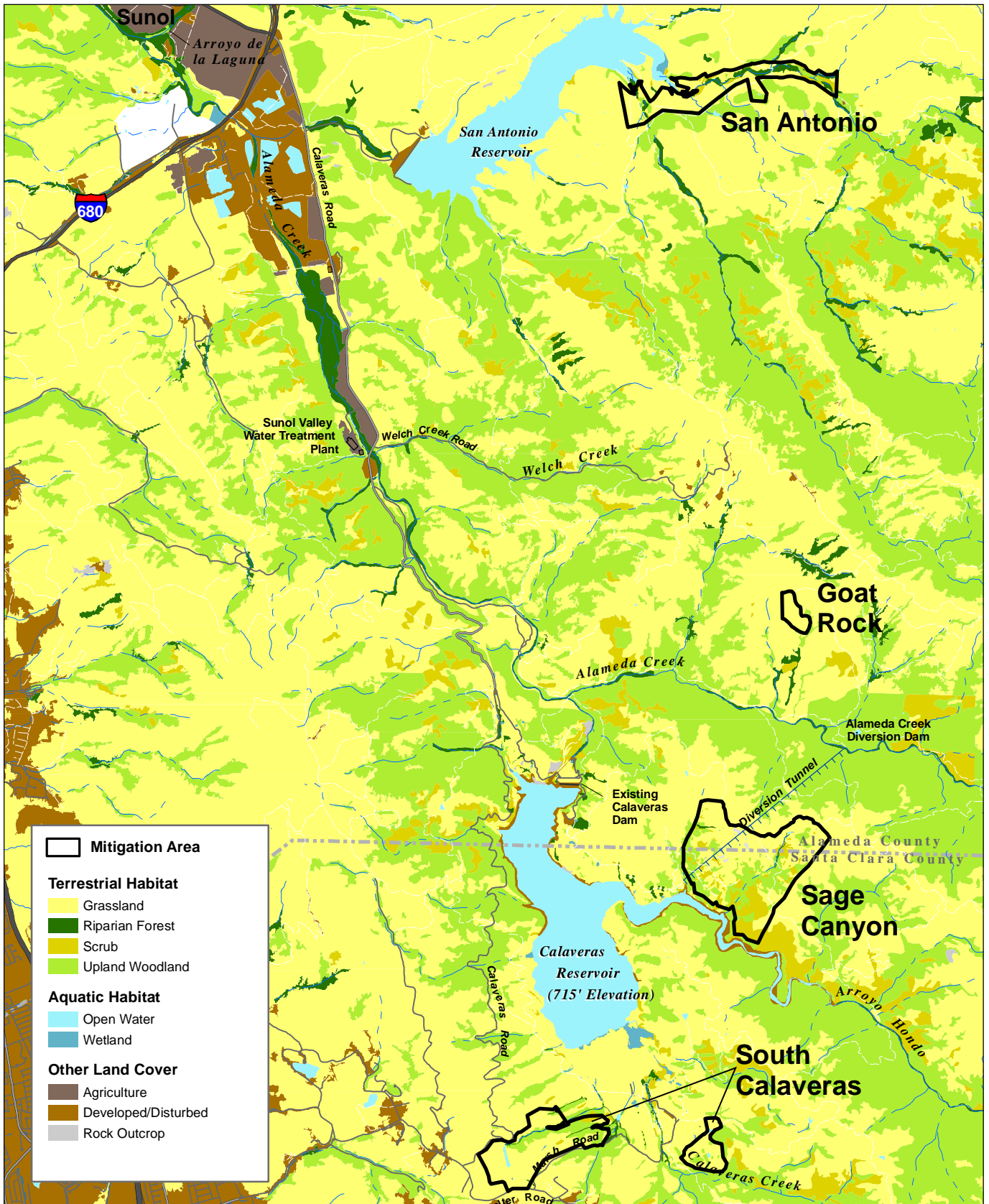


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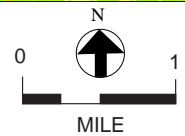
CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 1: CALAVERAS DAM REPLACEMENT PROJECT AND MITIGATION AREAS LOCATOR MAP (UPDATED)



EDAW&Turnstone JV



CALAVERAS DAM REPLACEMENT PROJECT

2005.0161E

FIGURE 2: MITIGATION AREAS AND REGIONAL LAND COVER (UPDATED)

ATTACHMENT A

**PHOTOGRAPHS OF THE
CALAVERAS DAM REPLACEMENT PROJECT MITIGATION AREAS:
SOUTH CALAVERAS, SAN ANTONIO, SAGE CANYON, AND GOAT ROCK**



Photo 1. South Calaveras Mitigation Area – Goldfish Pond looking south.



Photo 2. South Calaveras Mitigation Area – ephemeral drainage perpendicular to main ridges draining to reservoir.



Photo 3. South Calaveras Mitigation Area – view of Calaveras Reservoir to the north with patchy scrub habitat in foreground and drainage in background.



Photo 4. South Calaveras Mitigation Area – large scrub patch in background on central portion of site.



Photo 5. San Antonio Mitigation Area looking northeast at San Antonio creek corridor and scrub on north bank in background.



Photo 6. San Antonio Mitigation Area looking north at confluence of Indian Creek on western portion of site.



Photo 7. San Antonio Mitigation Area – off channel pool on eastern portion of site.



Photo 8. San Antonio Mitigation Area – tree frog egg mass in off channel pool.



Photo 9. San Antonio Mitigation Area looking southeast.



Photo 10. San Antonio Mitigation Area – steep north bank with scrub vegetation.



Photo 11. Sage Canyon Mitigation Area – looking east at large stock pond and rock outcrop.



Photo 12. Sage Canyon Mitigation Area – looking south down steep drainages on site.



Photo 13. Sage Canyon Mitigation Area – looking south at characteristic rock outcrops and scrub habitat on site.



Photo 14. Goat Rock Mitigation Area – serpentine grassland.



Photo 15. Goat Rock Mitigation Area – many rock outcrops.

A-EBRPD-21 The comment suggests that the SFPUC consider transplanting some of the large oak trees that would be removed by the CDRP.

This comment to consider alternative measures to preserve oak trees is acknowledged. Compensation for impacts to oak woodlands is described in Mitigation Measure 5.4.3a, on EIR page 5-10 (Vol. 2, Chapter 5), and includes restoring and establishing oak woodland and savannah habitat at mitigation areas such as the San Antonio Mitigation Area. Transplanting large oak trees would not be precluded by this measure, and could be considered as an option for achieving the mitigation success criteria.

A-EBRPD-22 The comment states that nuisance or hazardous wildlife (such as skunks, raccoons, rattlesnakes, opossum and rodents) would be displaced by construction activities, could be harmful to people using parklands, and suggests that there is a significant impact that would require mitigation.

Construction near the dam, in the area closest to the park, would affect approximately 192 acres. Published average home range sizes of several of the species mentioned in the comment range from 29 acres (raccoon) (Zeiner et al. 1990a) and 43 acres (striped skunk) (Zeiner et al. 1990b), to 193 acres (western rattlesnake) (Sarell 2004). Even assuming that these species are evenly distributed throughout the work area, and that home ranges of individuals can overlap, it is unlikely that numerous individuals would be displaced. Furthermore, the project area is surrounded by suitable habitat for these species and it is reasonable to expect that any displaced animals would move away from the work areas in all directions, and not just to the north, towards the Sunol Wilderness. Therefore there is no expectation that nuisance or hazardous wildlife would be displaced by the project in sufficient numbers, and would lack alternative dispersal habitat, such that they would cause an appreciable increase in nuisance or hazard levels currently experienced by Park visitors.

A-EBRPD-23 The comment states that flow releases have not been in compliance with the 1997 MOU between the CDFG and SFPUC. The comment also states that the SFPUC recapture facility designed to recapture flows for diversion to the filtration plant is problematic due to increased water temperature, as well as other factors contributing to the survival of non-native predatory species in this facility and that the Draft EIR does not adequately address or mitigate these impacts to Alameda Creek fisheries.

The commenter is referred to Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a response to comments regarding compliance with the 1997 MOU.

The recapture facility (currently named the Upper Alameda Creek Filter Gallery Project) is not a component of the proposed project but it has been identified as a reasonably foreseeable cumulative project and a discussion is provided in Vol. 2, Chapter 6 of the EIR. The proposed Upper Alameda Creek Filter Galley Project no longer includes a rubber dam or similar component that would increase water temperatures by impounding surface water within Alameda Creek. Please also see Section 10.4, Fisheries, and specifically Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for additional discussion on this topic.

A-EBRPD-24 The comment states that water releases to improve fish reproduction and rearing must consider amphibian reproduction and rearing requirements, that flows should mimic unimpaired baseline watershed conditions, and should be ramped appropriately.

The issues raised in this comment are addressed in the EIR. Impact 4.4.2, on EIR pages 4.4-86 – 4.4-90 (Vol. 1, Chapter 4), and Impact 4.4.7, on EIR pages 4.4-104 – 4.4-105, discuss operation of the proposed project on California red-legged frog and foothill yellow-legged frog, respectively. The discussion addresses operational releases to satisfy the 1997 CDFG MOU. As discussed, those releases would ensure that water, if present under unimpaired conditions, would be present in reaches that could otherwise be dry as a result of diversions at the ACDD, especially during the reproductive season; and the potential for scour would be unchanged in reaches which are not already subject to current levels of scour, and reduced in reaches which are. Other natural conditions that may cue reproductive behavior (e.g., high flow events) would be mimicked by operation of the proposed project (Impact 4.4.1, EIR page 4.4-82). Ramping schedules are defined (Vol. 1, Glossary, EIR page xxviii) as gradual changes in flows to reduce impacts caused by sudden changes in flow conditions (e.g., scouring of redds, stranding, etc.). Ramping of water releases for fish habitat and for cone-valve releases is necessary to minimize stranding of native fish and amphibian species (Impact 4.5.6, EIR pages 4.5-75 – 4.5.76). Mitigation for the CDRP includes monitoring requirements and adaptive management to ensure that the goals of improving California red-legged frog and foothill yellow-legged frog habitat in Alameda Creek are achieved (Vol. 2, Chapter 5, Section 5.4, Measure 5.4.3a, EIR

page 5-11; Measure 5.4.3i, EIR page 5-13; Measure 5.4.3k, EIR page 5-13). Therefore, the project, as described in the EIR coupled with mitigation measures included in the EIR, already provides what the commenter requests: water releases that provide for amphibian reproduction and rearing requirements, flows that mimic unimpaired baseline watershed conditions, and ramping of flows.

The CDRP Variant, described in Chapter 9, Section 9.2, includes additional flows in the Alameda Creek at specified time periods of the year. The proposed instream flow schedules for the Variant are discussed in detail in Section 9.2.5 and the effects on amphibians are addressed in Section 9.3.4.

A-EBRPD-25 The comment states that Draft EIR contains no provisions for migratory fish passage around the new Calaveras Dam and that there needs to be adequate flows to facilitate upstream migration for adults or downstream migration for juveniles.

Please refer to Section 10.4, Fisheries, and specifically Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion on passage issues. Also refer to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, and to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for a description of the proposed flow release schedules and information on flow-related effects on fish and habitat.

A-EBRPD-26 The comment states that potential impacts associated with the unscreened adits should be mitigated as part of the proposed project.

As discussed in Impact 4.5.7 of the EIR (Vol. 1, Chapter 4, Section 4.5), the Draft EIR project included the existing fish screens over the top two adits and no fish screens over the remaining adits, as under the existing condition. The impact evaluation concluded that fish mortality through entrainment in outlet structures is not anticipated to increase from existing conditions because the Draft EIR project includes the same fish screens over the top two adits and the restored reservoir elevation could allow the top two screens to function more effectively per original designs; therefore, this would be a less-than-significant impact.

Under the CDRP Variant described in Chapter 9, the screens on the two lower adits (Adit #1 and Adit #2) on the Calaveras Reservoir intake shaft would be replaced to protect the existing resident population of rainbow trout from

entrainment; refer to Chapter 9, Section 9.2.2, “Fish Screens at Calaveras Dam Adits #1 and #1.” The new screens would prevent entrainment/impingement of fish when water is being transmitted from the reservoir through the adits to Calaveras Creek. With installation of the proposed fish screen at Adits #1 and #2, the commenter's concerns would be addressed.

A-EBRPD-27 The comment states that Sinbad Creek is not a tributary to the section of Alameda Creek described on EIR page 4.5-25 (Vol. 1, Chapter 4, Section 4.5); Sinbad Creek is a tributary to Arroyo de la Laguna. No steelhead or rainbow trout have been observed in Sinbad Creek over at least the past 18 years. A population of Sacramento suckers (*Catostomus occidentalis*) does exist in Sinbad Creek.

The comment is correct: Sinbad Creek is not a tributary to Alameda Creek. In response, the second full paragraph on EIR page 4.5-25 is revised as follows (deletions are shown in ~~strike-through~~ and new text is underlined):

Beginning downstream of the Arroyo de la Laguna confluence, Alameda Creek flows approximately 6.5 miles through Niles Canyon to Niles Junction (near the crossing of Highway 238). The stream channel is relatively confined within the steep walled canyon and, with the exception of Highway 84 and a rail line, there is little development on the narrow flood plain and surrounding hills. There is a relatively well-developed riparian zone throughout Niles Canyon. ~~There are two~~ is one major tributary ~~ies~~ in this reach, ~~Sinbad Creek and~~ Stonybrook Creek. The reach is a relatively low-gradient (approximately 1-2 percent) perennial stream characterized by large, moderately deep pools, and runs separated by short, shallow riffles. The substrate is highly variable, ranging from sand, gravel, and cobble-dominated riffles and glides to cobble-boulder and silt, mud, and sand pools.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-EBRPD-28 The comment states that rainbow trout are present in Indian Joe Creek.

The comment is correct. In response to this comment, the second full paragraph on EIR page 4.5-43 (Vol. 1, Chapter 4, Section 4.5.1) is revised as follows (new text is underlined):

Populations of resident rainbow trout occupy habitats in upper Alameda Creek, Calaveras Reservoir, and Arroyo Hondo in the primary study area (Leidy 1984, ETJV 2008). Young-of-year *O. mykiss* have been observed in Stonybrook Creek, a and Sinbad Creek, tributaries to the Niles Canyon reach of Alameda Creek (extended study area) (Gunther et al.

2000). ~~However, e~~Electrofishing in Sinbad Creek in 1997 and 1998 failed to capture any *O. mykiss*. Stonybrook Creek is regarded as potential *O. mykiss* habitat based on the presence of several age classes of resident individuals, including young-of-year (Gunther et al. 2000). Rainbow trout are also present in Indian Joe Creek, a tributary to upper Alameda Creek (EBRPD 2009, p. 7).

The following reference is added to EIR page 4.5-83 to after the reference to California Storm Water Quality Association 2003:

East Bay Regional Park District (EBRPD). 2009. Comments on the DEIR for the Calaveras Dam Replacement Project. December 11, 2009.

This revision does not change the analysis or conclusions presented in the Draft EIR.

A-EBRPD-29 The comment agrees with Draft EIR text (page 4.5-46) regarding the presence of Sacramento perch in at least one stock pond near the ACDD but states that the stock pond does not overflow into Alameda Creek.

The text on page 4.5-46 does not state that the ponds overflow into Alameda Creek. No revisions to the text are necessary.

A-EBRPD-30 The comment states that the Draft EIR does not have provisions for fish passage at the ACDD and loss of fish, amphibians and other aquatic organisms to entrainment in the Alameda Creek diversion tunnel is not adequately addressed and should be mitigated.

Please refer to the master response in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for a discussion of these issues.

Additionally, the CDRP Variant includes several fishery enhancements, which were made, in part, as a result of the SFPUC's close coordination with NMFS and CDFG and as part of its project development and design process. The fisheries enhancements include a ladder over the ACDD and a fish screen over the diversion tunnel. A description and evaluation of the fish ladder and screen is presented in Chapter 9 and specifically in Section 9.2, Description of the CDRP Variant, under the headings "Fish Screen at the Alameda Creek Diversion Tunnel," and "Fish Ladder around the Alameda Creek Diversion Dam."

A-EBRPD-31 The comment states that increased spring flows in segments of Alameda Creek located within the Sunol Regional Wilderness will adversely affect interpretative programs, public recreation and park operations. The comment also suggests that current ford crossings within the Sunol Regional Wilderness will be unusable by park operations and emergency vehicles during high flow periods. In particular, vehicles that exceed weight limits at the trestle bridge which may require relocation of the bridge potential conflicts.

Access constraints across Alameda Creek for EBRPD truck maintenance and emergency operations are primarily a function of rainfall and weather conditions, and not the operation of the Calaveras Dam. This would remain the case under either the Draft EIR project or the CDRP Variant. Except during and in the aftermath of storms, flow in Alameda Creek is modest even in the rainy season (see EIR Figure 4.6.10, page 4.6-36). As described on EIR pages 3-67 - 3-68 (Vol. 1, Chapter 3), the bypass flows for resident rainbow trout would diminish from March to April and remain at the same level until decreasing again at the end of the following October. During periods of heavy rainfall or after a storm, access across Alameda Creek could be impaired and EBRPD would need to re-schedule operations that require vehicle access across the creek, and identify alternate routes for emergency vehicles, as occurs now under existing conditions. Interpretive programs and public recreation also would not be adversely affected by spring flows in the Alameda Creek, as these activities are unlikely to occur during inclement weather conditions.

Neither the Draft EIR project nor the CDRP Variant would result in flows in Alameda Creek that would substantially affect EBRPD operations and emergency as compared to existing conditions.

Please also refer to the master response in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, regarding seasonal flows in Alameda Creek.

The trestle bridge referred to in the comment is the Geary Bridge, located east of Calaveras Road, that provides access across Alameda Creek to the EBRPD "Little Yosemite" recreation area and to the Alameda Creek Diversion Dam. As described in Table 6.1: Cumulative Projects Related to the CDRP in the Sunol Valley Region, on EIR page 6-15 (Vol. 2, Chapter 6), the SFPUC is proposing to replace the existing trestle bridge with a new bridge. Replacement of the trestle bridge is a separate project from the proposed CDRP; refer also to Response A-EBRPD-65. Design of the replacement

bridge at its current location would take into consideration any changes in hydrologic conditions and appropriate load bearing capacity for standard operations and maintenance vehicles.

A-EBRPD-32 The comment requests clarification of the quantities of materials that would be excavated and either used in the dam or sent to one of the disposal sites.

As shown in Table 3.1: Comparison of the Existing Dam with the Proposed Replacement Dam (EIR page 3-28), Table 3.3: Sources of Construction Materials for the Calaveras Dam Replacement Project (EIR page 3-40), and Figure 3.9: Material Balance Diagram (EIR page 3-38) (Volume 1, Chapter 3), the new Calaveras Dam would require approximately 2.77 million cubic yards of material. In addition to the construction of the dam, several earth-moving operations would be performed as shown in Figure 3.9. These include:

- Removing topsoil at work locations;
- Excavating the dike location at Disposal Site 3;
- Removing a portion of the existing dam;
- Excavating the dam foundation;
- Excavating the left abutment trench (part of the dam foundation);
- Filling the existing spillway;
- Placing the right abutment land stabilization berm; and
- Excavating the spillway and stilling basin.

The quantity of material involved in each of these operations is shown in Figure 3.9. The top row of boxes in Figure 3.9 shows all the sites at which excavation would occur and the quantities that would be moved. The middle and bottom row of boxes in the figure show all the sites at which materials would be placed and the quantities that would be used. So, the total amount of material that would be moved is approximately 7.29 million cubic yards, consisting of approximately 2.77 million cubic yards for the dam, a cumulative 3.835 million cubic yards placed in the four disposal sites, 88,000 cubic yards used to fill the existing spillway, and 595,000 cubic yards used to construct the right abutment landslide stabilization berm.

Construction of the CDRP Variant would essentially involve the same, but slightly larger amount of excavated materials that would be replaced on-site in the dam area. Refer to Chapter 9, Section 9.2 Description of CDRP Variant, and Table 9.3 for a description of excavation and materials handling for the CDRP Variant.

Regarding the second part of the question, EIR page 3-43 correctly states that 2.4 million cubic yards of Franciscan complex rock and soil *would be disposed of* within the project area (emphasis added). The quantity stated on EIR page 4.9-23 (Vol.2, Chapter 4, Section 4.9), approximately 4 million cubic yards of Franciscan materials, *would be excavated or handled* in the project area (emphasis added). The latter figure includes the previous figure. Materials would be handled in several different operations, of which disposal of material is only one. Thus, both figures are correct.

- A-EBRPD-33 The comment states that Borrow Area B may be misidentified as Borrow Area D on EIR page 4.3-4 (Vol. 1, Chapter 4, Section 4.3) when indicating the location of the EBRPD year-round residence located near the Visitor Center of the Sunol Regional Wilderness.

The comment is correct. The next-to-last sentence in the paragraph ending on the top of EIR page 4.3-4 is revised as follows to account for this correction (deleted text is shown as ~~strike-out~~ and new text is underlined):

South of Geary Road near the visitor center for the Sunol Wilderness, there is a year-round EBRPD residence, located about 1.2 miles from ~~Borrow Area D/Dam Vicinity~~ Borrow Area B/Dam Vicinity.

This correction to the text of the EIR does not change the EIR analysis and its conclusions regarding potential noise, air quality or human health effects on the occupants of the EBRPD year-round resident.

- A-EBRPD-34 The comment states that there may be bed rock mortar in or near Borrow Area B which should be investigated.

As discussed in EIR Section 4.10.1.5, Known Cultural Resources within the Study Area, a single early Native American bedrock mortar site (CD26) was identified within the study area during the archaeological survey. This site included a single shallow mortar cup and several fragments of ground stone artifacts and flaked stone debitage. Soils on the site were very shallow and heavily eroded and as a result this site does not appear to possess the integrity or data potential necessary for consideration as a “significant” cultural resource per National Register of Historic Places or California Register of Historical Resources criteria. This site is located outside of Borrow Area B and would not be impacted by project construction activities.

- A-EBRPD-35 The comment requests clarification of the depth of the foundation excavation in the Franciscan formation.

Franciscan rock would be excavated to depths ranging from 15 feet to 70 feet below ground surface. However, the grout curtain would not be excavated; instead, it would be installed by drilling holes approximately 100 feet deep below the bottom of the foundation excavation and filling the holes with grout. Thus, the total depth of the excavation in the Franciscan formation is 15 to 70 feet as stated on the EIR page 3-35 (Volume 1, Chapter 3).

- A-EBRPD-36 The comment expresses concerns about health risks to EBRPD employees and the public if a release of material containing asbestos or naturally occurring metals occurs and notes that the health risks associated with amphibole asbestos, which has been identified in the rocks that would be disturbed, are greater than the risks associated with chrysotile asbestos. The comment states that there is no certainty that there will not be a discharge of asbestos to the park, even with implementation of the proposed mitigation, particularly during blasting and as a result of gusts of wind. The comment is concerned that implementation of Mitigation Measure 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program), would not adequately mitigate impacts related to a release of dust because corrective action would be taken after a release has occurred and park workers and the public could be potentially exposed to asbestos-containing dust. The comment suggests additional mitigation measures such as suspension of weekday naturalist programs, camping and picnicking, relocation of park staff to other parks, and potential closure of the park. The comment also points to apparent inconsistencies in whether asbestos-containing material would be transported off-site.

These issues are addressed in Response A-EBRPD-03.

- A-EBRPD-37 The comment states the Draft EIR does not adequately describe visual impacts on the Sunol and Ohlone Regional Wilderness Preserves and that it does not provide any substantial evidence as to how its conclusions were made.

The visibility and visual character of the existing project site was evaluated by visual reconnaissance, documented in photographs, and described in that discussion of Setting. Viewpoints are representative, and do not constitute an exhaustive survey of potentially affected views from Sunol Regional Wilderness. Park viewpoints selected for presentation in the EIR are from a representative range of locations: Cerro Este (an area from which the project site is highly visible); Little Yosemite (the area closest to the project site and a popular park destination); Flag Hill (a popular park destination); and the

southernmost parking lot (a heavily used park facility). The EIR notes that to the extent that the project sites may be visible from other parks, like Ohlone Regional Wilderness, the visual impacts on views from these areas would be similar to those described for Sunol Regional Wilderness, although lessened in degree by greater distance and intervening topography and vegetation.

The EIR describes the visibility of the project site from the Sunol Regional Wilderness on, EIR pages 4.11-12 – 4.11-16 (Vol. 2, Chapter 4, Section 4.11). As shown in Figure 4.11.10: View of Existing Dam Site Looking Southwest from Cerro Este, and Figure 4.11.11: View of Observation Hill Looking Southeast from Flag Hill, EIR pages 4.11-15 and 4.11-17, respectively, views of the reservoir and dam site are available from multiple vantage points along the park's upland hiking trails. As shown in EIR Figure 4.11.8: View of Observation Hill Looking Southeast from Southern End of Sunol Wilderness Parking Lot, and Figure 4.11.9, View of Hill 1000 Looking South from Little Yosemite, EIR pages 4.11-13 and 4.11-14, respectively, the existing dam and reservoir are not visible from lowland areas of the park because views from these areas are blocked by intervening topography (like the foot of Oak Ridge, the foot of Observation Hill, and the foot of Cerro Este). However, as also shown in these figures, elevated features of the project site (like the ridges of Observation Hill and Hill 1000) are visible from some lowland areas of the park.

Site disturbance on the project site resulting from various construction activities (like staging areas, road construction, spillway excavation on Observation Hill, and the borrow area on Hill 1000) would occur at or below existing grade. As such, the existing visibility of the project site and features thereon from Sunol Regional Wilderness may be relied upon to assess the visibility of proposed project activities that would take place within the project site and affect features within the project site. To the extent that the project site and its features are not visible from Sunol Regional Wilderness under existing conditions, construction activities and site disturbance occurring at or below grade within these areas would likewise not be visible under the proposed project.

The EIR (pages 4.11.19 – 4.11.21) describes the visual character of project construction activities and their impact on the quality of scenic views from areas of the park where views of the project site are now available. On page 4.11.21, the EIR concludes:

This impact, although temporary (about 4 years), would be a significant impact on scenic vistas, scenic resources, and the visual character of the reservoir. Screening through the use of fencing or temporary landscaping around the construction area would be ineffective in this case 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. Further, from these vantage points, screening devices would themselves become a visually intrusive presence. Therefore, this impact would be significant and unavoidable.

EIR pages 4.11.19 – 4.11.21 describe the location and visual character of proposed site disturbance and its impact on the quality of scenic views from areas of the park where views of the project site are now available. On page 4.11.22, the EIR concludes:

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 on scenic vistas from the park, and on scenic resources and the visual character of the dam site and its surroundings 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: revegetate graded areas) would occur as part of the proposed 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 (see Chapter 5). 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. This impact would therefore be considered significant and unavoidable.

The existing visibility and visual character of the existing dam is a baseline visual condition against which visual effects of the proposed replacement dam are compared. As described on EIR page 4.11-22, the proposed replacement dam would be comparable with respect to its size and volume, and would occupy a similar position in the landscape as that of the existing Calaveras Dam. Like the existing dam (see Figure 4.11.10), the proposed dam would be covered with grasses. The proposed replacement dam would be 1,000 feet closer than the existing dam to viewers in Sunol Wilderness (in Figure 4.11.10, the existing dam is about 10,032 feet from the viewer). The proposed replacement dam would be similar in size, visual character, and placement in the landscape as the existing dam.

The comment asserts that the Draft EIR must show how site disturbance would appear from various viewpoints. Although visual simulations could be a useful tool for better visualizing the appearance of the project, visual simulations from various viewpoints are not required for the adequacy of the EIR. The EIR's narrative descriptions and analysis sufficiently substantiate the conclusions of the EIR as to visual impacts, and describe and disclose the significant adverse impacts of the project on the visual quality of scenic views from Sunol Regional Wilderness for the purposes of CEQA. As discussed above, the visibility of the project site and its features, and the visual character of the existing dam can be relied upon to assess the visibility and visual character of the proposed replacement dam, construction activities and site disturbance.

The comment asserts that the Draft EIR must provide engineering design standards that specify how finished grades would be blended with surrounding areas. As noted on EIR page 4.11-22, and as reproduced above, graded areas would be contoured to mimic surrounding landforms and would be revegetated to the extent feasible as part of the proposed project, and as called for by the *Alameda Watershed Management Plan*. Provision of the requested information is not necessary for the adequacy of the EIR or to substantiate the conclusion that these measures would lessen, but not avoid, the significant impact of site disturbance on the scenic quality of views from Sunol Regional Wilderness. This impact is therefore considered significant and unavoidable.

The EIR adequately describes, analyzes, and evaluates the impact on the visual quality of views from Sunol Regional Wilderness. It presents substantial evidence that the proposed construction activities and site disturbance resulting from these activities would have a significant adverse impact on scenic vistas, scenic resources, and the visual character of the reservoir. Although the analysis of visual impacts is not exhaustive, it is adequate under CEQA (see *CEQA Guidelines* Section 15151, "Standards for Adequacy of an EIR.")

A-EBRPD-38 As the comment notes, the print quality of photographic views in Figure 4.11.8: View of Observation Hill Looking Southeast from Southern End of Sunol Wilderness Parking Lot, and Figure 4.11.9: View of Hill 1000 Looking South from Little Yosemite, EIR pages 4.11-13 and 4.11-14, respectively, is poor compared to that of other views presented in the EIR. However, the quality of these views is sufficient to satisfy their purpose for inclusion in the EIR: to represent the degree of visibility of the dam site and other features of the project site from representative areas within the Sunol

Regional Wilderness. Figure 4.11.8 is sufficiently clear to show that the dam site is not visible from the parking lot, while the crest of Observation Hill is visible from this location. Figure 4.11.9 is sufficiently clear to show that the dam site is not visible from Little Yosemite, while the crest of Hill 1000 is visible from this location.

- A-EBRPD-39 The comment provides calculations for determining 16,000 round trips from the Sunol quarry site and the project area to haul import fill, and states that the EIR should provide specific information that can be used to fully understand the magnitude of the significant transportation impacts of the project.

The daily construction worker and truck trips were estimated based on engineering analyses conducted to determine construction worker and materials needs by construction phase. Table 4.12-2: Daily Construction Vehicles Between Project Work Area and Off-Site Locations, on EIR page 4.12-11 (Vol. 2, Chapter 4, Section 4.12), summarizes the number of daily construction vehicle trips generated by the project that would travel to and from the off-site locations. Depending on the construction phase, there would be between 12 and 172 construction truck trips per day. These daily construction truck trips and the construction worker vehicle trips were used to analyze traffic impacts as well as impact of the project on air quality and noise.

The total number of truck round trips to import filter and drain material for the proposed new dam would be approximately 25,000 over the 20-month period when this hauling activity is expected to occur. These trips have been accounted for in the EIR transportation analysis. The EIR does not specify the total number of truck trips because traffic impacts are not assessed based on a total number of trips, but on the number of vehicles using a road per day, compared to existing daily traffic and the roadway capacity available to accommodate that traffic, and on the number of vehicles using the road during the peak travel times on that road. The EIR provides information on the total number of vehicles per day from the proposed project that would use Calaveras Road during various times throughout the construction period on page 4.12-11 in Table 4.12.2: Daily Construction Vehicles Between Project Work Area and Off-Site Locations (Vol. 2, Chapter 4, Impact 4.12.2), and explains that traffic volumes would remain at levels less than the carrying capacity of the roadway (EIR page 4.12-12). The EIR analyzes the impacts of the proposed project on Calaveras Road during the morning and evening peak hours on pages 4.12-12 and 4.12-13, and states that the proposed project would generate about 108 additional vehicles on Calaveras Road during the morning and evening peak

hours. The EIR acknowledges that drivers on Calaveras Road would experience delays but that the delays would not result in significant environmental effects (see page 4.12-13). The delays would not be caused by the total numbers of trucks using the roads throughout the entire 4-year construction period, but by the numbers of trucks using the road during the peaks of a representative day.

A-EBRPD-40 The comment states that the Draft EIR does not examine the impact of increased truck traffic on publicly maintained roadways, including damage to roadways during and after the construction period. In addition, the comment expresses concern that damaged roadways may need to be closed which would increase the recreational impacts of the project, and that additional mitigation measures, such as construction of alternative means of access to the Park or potential closure of the Park, would be required.

Impacts associated with the additional construction vehicles (including construction trucks and construction worker vehicles) are presented on EIR pages 4.12-9 through 4.12-17 (Vol. 2, Chapter 4, Section 4.12). The EIR analyzes impacts on traffic operations on Calaveras Road between I-680 and Geary Road, impacts on emergency response vehicles, increased potential for traffic safety hazards, and increased wear and tear on designated haul routes. Table 4.12-2: Daily Construction Vehicles Between Project Work Area and Off-Site Locations, on EIR page 4.12-11 (Vol. 2, Chapter 4, Section 4.12), summarizes the number of daily construction vehicle trips, including sand and gravel haul trips, generated by the project that would travel to and from the off-site locations. There would be between 12 and 172 construction truck trips per day, depending on the phase of construction. Mitigation Measure 5.12.4a (the Traffic Control Plan), on EIR pages 5-37 – 5-38 (Vol. 1, Chapter 5, Section 5.12), includes a measure that requires maintenance of adequate driving and bicycling conditions on Calaveras Road during the construction period. Details related to roadway maintenance would be addressed through agreements between SFPUC and Alameda and Santa Clara Counties (see also responses to A-SCCRAD). It is not expected that any additional segments of Calaveras Road would need to be closed as a result of construction activities, and access to the Park would be maintained throughout the construction period. The EIR identifies implementation of Mitigation Measure 5.12.4a, which would reduce excessive wear and tear impacts on public roadways, including Calaveras Road, to a less-than-significant level by requiring repair of roadway segments damaged by construction activities to a structural condition equal to that which existing prior to construction (Vol. 2, Chapter 4, Section 4.12,

pages 4.12-16 to 4.12-17, and Chapter 5, Section 5.12, page 5-38). Therefore, additional mitigation measures such as new access roadways would not be required.

A-EBRPD-41 The comment addresses potential closure of Calaveras Road on weekend days when air quality monitoring indicates unacceptable levels of dust, resulting in possible cancellation of naturalist programs, camping and picnic reservations, special events, restricted trail and bicycle access, and other day use activities.

The EIR no longer includes temporary road closure as mitigation for potential impacts on recreationalists due to emissions of airborne asbestos and naturally occurring metals. Instead, the SFPUC proposes to implement dust control measures, risk-based trigger levels, monitoring activities, and corrective actions specified in an Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program, subject to approval by the Bay Area Air Quality Management District. Implementation of the measures specified in these plans would prevent off-site migration of visible dust and maintain airborne asbestos and metals at concentrations below risk-based trigger levels at the perimeter of the CDRP work area. Therefore, the public and park workers would not be exposed to unacceptable level of asbestos or naturally occurring metals resulting from the project construction. The text on EIR page 5-30 and Mitigation Measure 5.9.2a have been modified to remove references to temporary park closures. Refer to Response A-EBRPD-03 for a detailed description of these measures.

A-EBRPD-42 The comment states that the addition of construction worker vehicles would increase the risk of vehicle collisions on Calaveras Road, and that speed limits and safe materials hauling practice should be strictly enforced during project construction.

Discussion of increased potential for traffic safety hazards is presented on EIR pages 4.12-15 and 4.12-16 (Vol. 2, Chapter 4, Section 4.12). To avoid the potential traffic safety hazards during construction, the SFPUC or its contractors would prepare and implement a Traffic Control Plan as part of Mitigation Measure 5.12.4a, on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12). Speed limits on Calaveras Road are enforced by the Alameda County Sheriff's Office.

A-EBRPD-43 The comment states that reduction of vehicle speeds on Calaveras Road may be required due to dust generated by excessive truck traffic, similar to the 15

mph limit on unpaved roadways. The comment also states that roadways should be kept in good condition to allow for normal speeds so that access to EBRPD is not impaired.

Limitation of vehicle speeds on unpaved roadways is related to transport of potentially hazardous excavated materials (i.e., excavated materials may include naturally occurring asbestos), within the designated project area. The project would not involve the transport of surplus rock or soil outside of the project limits or SFPUC property, or on public roadways. The impact of hauling sand and gravel from off-site commercial sources is not anticipated to result in excessive dust that would impair Calaveras Road. Mitigation Measure 5.12.4a (the Traffic Control Plan), on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), includes a measure that requires maintenance of adequate driving and bicycling conditions on Calaveras Road during the construction period. Details related to roadway maintenance would be determined through an agreement between SFPUC and Alameda County. In addition, Mitigation Measure 5.13.1a on EIR page 5-38 would require covering all trucks hauling soil, sand, and other loose materials offsite.

A-EBRPD-44 The comment states that sufficient information and analysis of the overlapping WSIP projects is not included in the Draft EIR, and requests information on 1) location of traffic controls, 2) location of roadway modifications, 3) analysis of the build/design of Calaveras Road and measure of wear and tear, 4) quantification of project contribution to traffic control delays affecting bicycles and motorist, and 5) mitigation measure requiring coordination of individual traffic control plans.

The EIR presents the traffic assessment that was conducted for analysis of cumulative impacts of overlapping SFPUC projects in the Sunol Valley on pages 6-40 – 6-43 (Vol. 2, Chapter 6, Section 6.2.3.10). Most SFPUC projects in the Sunol Valley are currently under environmental review and/or are in the design stage. Final project-specific traffic control plans with information on traffic controls, flaggers, signals, and detours are developed by the construction contractor, and are not available at this time. Therefore, it is not possible to conduct a more detailed analysis of the overlapping traffic control plans as requested by the comment.

Roadway modifications are not proposed as part of the SFPUC projects in the Sunol Valley. As indicated on EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12), the Traffic Control Plan for the CDRP requires that Calaveras

Road be repaired or restored to its preconstruction condition upon completion of construction. This measure also states that SFPUC shall inspect and document the conditions of Calaveras Road prior to and after completion of the project, and if roadway damage is detected, enter into an agreement with Alameda and Santa Clara Counties for implementing a post-construction roadway repair/rehabilitation program. Since the Draft EIR was published in October 2009, the SFPUC has committed to Alameda County that this will entail repaving the entire length of Calaveras Road between I-680 and the Alameda County line south of the dam access road. In addition, SFPUC has indicated that it would commit to repair any potholes and/or localized pavement damage caused by the project during the 4-year construction period to ensure that bicyclists and other recreational road users have a usable road. SFPUC also has recently conducted a Calaveras Road assessment that will be provided to the contractor and Alameda County for use as a baseline/preconstruction condition.

Table 6.2: Cumulative Project Vehicle Trip Generation on EIR page 6-42 (Vol. 2, Chapter 6, Section 6.2.3.10) presents the estimated vehicle trips on Calaveras Road and I-680 associated with the planned SFPUC projects in the Sunol Valley. Combined, the SFPUC projects would add up to 525 vehicle trips to Calaveras Road, and the CDRP would represent about 21 percent of these trips. As indicated on EIR page 6-41, the traffic analysis using the Highway Capacity Manual 2000 methodology indicated that both Calaveras Road and I-680 would continue to operate at an acceptable level of service during the 4-year construction period for the project and that there would be no significant cumulative traffic impacts on Calaveras Road. Although the cumulative impact of the anticipated future projects on the condition of Calaveras Road is expected to be less than significant, the mitigation identified for the CDRP's project-level impacts on road conditions would further ensure that the proposed project would not have a considerable contribution to any potentially significant cumulative impact on road conditions.

As indicated on EIR page 6-43, the individual Traffic Control Plans for the SFPUC projects in the Sunol Valley (e.g., New Irvington Tunnel, San Antonio Backup Pipeline, Sunol Valley Water Treatment Plant) would be coordinated. Mitigation Measure 5.12.4a, on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), is clarified by adding the following Traffic Control Plan element (new text is underlined):

- SFPUC and its contactors shall coordinate individual traffic control plans for SFPUC projects in the Sunol Valley.

A-EBRPD-45 The comment indicates that visitors to the Sunol Regional Wilderness coming from Santa Clara County would be significantly inconvenienced due to the weekday closure of Calaveras Road and the associated 25-mile detour.

Access to the Park would be provided at all times, although, as noted by the comment, some visitors from the south of the dam destined to the area north of the dam may be required to detour to I-680, and would access the EBRPD facilities via Calaveras Road from the north. These drivers may experience additional delays to reach their destination during the construction period. However, since travel speeds on I-680 are generally higher throughout the day than on Calaveras Road, travel times would generally be shorter, even with the detour. EIR page 4.12-8 (Vol. 2, Chapter 4, Section 4.12) presents the discussion related to traffic detours that would occur due to the Calaveras Road closure. As indicated on EIR page 4.12-9 footnote, non-peak travel times between East Calaveras Boulevard/I-680 in Milpitas, and Calaveras Road/I-680 in Sunol Valley are about 12 minutes for the 14-mile segment using I-680, and about 35 minutes for the 17-mile segment using East Calaveras Boulevard and Calaveras Road. Based on these non-peak conditions, travel times between East Calaveras Boulevard/I-680 in Milpitas and Welch Creek Road (the access road to the Sunol Regional Wilderness) were estimated to be about 18 minutes via I-680 and Calaveras Road between I-680 and Welch Creek Road, and 29 minutes via East Calaveras and Calaveras Road.

As discussed below under Response A-EBRPD-65, Item 1, reimbursement of lost revenues and increased operating costs, there is no basis to conclude that there would be a decrease in the number of park visitors due to weekday closures of Calaveras Road, as access would be provided throughout the construction period from I-680 and the northern segment of Calaveras Road and other alternative park and wilderness area sites are available within the District's regional park system.

A-EBRPD-46 The comment states that the Draft EIR does not quantify expected traffic delays due to construction, and states that the project would cause a significant adverse impact for District operations when Calaveras Road will be impassible.

Impact 4.12.1, on EIR pages 4.12-7 – 4.12-9 (Vol.2, Chapter 4, Section 4.12), describes the impacts of the Calaveras Road closure on traffic operations.

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Closure of Calaveras Road on weekdays would occur during a 2-month period in summer 2011 and for an approximately 18-month period beginning in winter 2012. Closure would be limited to the portion of Calaveras Road between Felter and Geary Roads in Santa Clara and Alameda County; weekend access would not be restricted during the construction closure periods. Mitigation Measure 5.12-4a (Vol. 2, Chapter 5, Section 5.12, EIR pages 5-37 – 5-38) requires that the SFPUC develop a program to notify the potential users (including drivers, bicyclists, and pedestrians) of Calaveras Road between Geary Road and Felter Road of the schedule of roadway closures, detour routes for vehicles, and alternate recreational bicycle routes. The SFPUC would disseminate this information by posting signs along Calaveras Road north and south of the dam, by providing up-to-date details to the East Bay Regional Park District, Alameda County and Santa Clara County, and by posting this information on a project website or other easily-accessible media. Refer also to Response A-EBRPD-41 for more information about potential road closures and the effects on recreational activities at the Sunol Regional Wilderness.

A-EBRPD-47 The comment refers to EIR page 5-30, and requests that the EIR analyze access impacts to the Sunol Regional Wilderness, provide an alternate access route, or avoidance measures to address potential trail and road closures due to airborne asbestos or metals.

The EIR no longer includes temporary road and trail closure as mitigation for potential impacts on recreationalists due to emissions of airborne asbestos and naturally occurring metals. The text on EIR page 5-30 and Mitigation Measure 5.9.2a have been modified to remove references to temporary park closures. Refer also to Response A-EBRPD-41, which also addresses impacts of airborne asbestos and naturally occurring metals on recreationists and Response A-EBRPD-03 for a detailed description of Mitigation Measure 5.9.2a.

For an analysis of limitations to auto access to the Sunol Regional Wilderness see EIR pages 4.3.21 – 4.3.22 (Vol. 1, Chapter 4, Section 4.3). The analysis concluded that access to the park would be limited by the closure of Calaveras Road south of the Geary Road entrance but, due to the temporary nature of the access limitation and the availability of alternate routes to the Sunol Regional Wilderness, the impact would be less than significant.

A-EBRPD-48 The comment states that unsafe transport of materials by trucks is a reasonably foreseeable traffic and circulation impact that is not addressed in the Draft EIR.

Impact 4.12-4, on EIR pages 4.12-15 and 4.12-16 (Vol. 2, Chapter 4, Section 4.12), discusses the increased potential for traffic safety hazards due to construction vehicle delivery materials to the project site. Implementation of a Traffic Control Plan in accordance with Mitigation Measure 5.12.4a and temporary closure of a portion of Calaveras Road under Mitigation Measure 5.12.4b, on EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12), would reduce potential traffic safety impacts on motorists, bicyclist, and pedestrians. Also, SFPUC contract specifications require general contractors to comply with local and state laws regarding transport of materials and driving safety. See also Response A-EBRPD-53 concerning these issues.

A-EBRPD-49 The comment indicates that the Draft EIR relied solely on LOS standards to address potential emergency access impacts.

Impact 4.12-3, on EIR page 4.12-14 (Vol. 2, Chapter 4, Section 4.12), addresses access impacts. The discussion does indicate that the project would not substantially affect the LOS operating conditions on Calaveras Road (projected to operate at LOS B with the project), and therefore emergency response vehicles would not be impacted. All vehicles must comply with the California Vehicle Code Section 21806 that requires that drivers yield right of way to authorized emergency vehicles, and drive to the right road edge, stop and remain stopped until the emergency vehicle passes. Since LOS operating conditions on Calaveras Road would be LOS B with the proposed project, and since Calaveras Road has shoulders throughout the majority of the segment north of Geary Road, yielding to emergency vehicles would not represent a problem. The impact discussion also states that emergency vehicles would be able to access Calaveras Road between Geary Road and Felter Road at all times, including during the temporary closure for a 2-month period in summer 2011, and for an approximately 18-month period beginning in winter 2012. Therefore, emergency vehicle access is fully addressed in the EIR; as no significant impacts were identified, no mitigation measures are required.

A-EBRPD-50 The comment requests that an analysis of how the CDRP would specifically coordinate overlapping construction schedules and activities, truck arrivals and departures, lane closures and detours and the adequacy of on-street staging requirements for other SFPUC projects as a mitigation measure for impacts on transportation.

As indicated on EIR page 6-43 (Vol. 2, Chapter 6), the individual Traffic Control Plans for the SFPUC projects in the Sunol Valley (e.g., New Irvington

Tunnel, San Antonio Backup Pipeline, Sunol Valley Water Treatment Plant) would be coordinated. Mitigation Measure 5.12.4a is clarified in Response A-EBRPD-44.

Analysis of cumulative traffic volume increases on Calaveras Road is presented on EIR pages 6-40 – 6-43 (Vol. 2, Chapter 6). Additional mitigation measures are not required.

A-EBRPD-51 The comment requests that performance standards that will minimize traffic control delays be considered for inclusion in the EIR as a mitigation measure.

As indicated on EIR pages 4.12-7 – 4.12-14 (Vol. 2, Chapter 4, Section 4.12), construction-related vehicle traffic and closure of a portion of Calaveras Road would not result in substantial traffic delays. The proposed project would not have significant impacts on traffic operations and the use of roads in the project vicinity, and therefore mitigation measures would not be required.

A-EBRPD-52 The comment requests that restrictions for truck access from the north be considered for inclusion in the EIR as a mitigation measure.

Trucks delivering materials from off-site locations would primarily include sand and gravel from off-site commercial sources, with the closest source located about 7 miles north of the dam site, on Calaveras Road at the Sunol quarries. While the Sunol quarries are the closest source, the construction contractor would determine which source it would use. The most direct route for trucks delivering sand and gravel would be via Calaveras Road north of the dam. All sand and gravel deliveries would be considered essential truck trips, and therefore routing these trips via Calaveras Road south of the reservoir would not be practical or desirable. No construction trucks are anticipated to access the project work area via Calaveras Road south of the reservoir, with the exception of equipment to be used at Staging Area 11 and Borrow Area E, and equipment required to prepare the South Calaveras Mitigation Area, and to construct jetties or other docking facilities and delivery of barges at Borrow Area E if the barge haul route option is selected. Additional mitigation measures to address this issue are not required.

A-EBRPD-53 The comment requests that a mandatory suspension of truck operators that do not comply with established standards for accessing the project area and material transport be included in construction contract documents and considered for inclusion in the EIR as a mitigation measure. In addition, the comment requests that a process for reporting dangerous truck operators and

for reporting hazardous roadway conditions be considered for inclusion in the EIR as a mitigation measure.

The SFPUC standard construction documents include provisions that the prime contractor would be solely responsible for safety, which could include measures to suspend, dismiss or otherwise remove dangerous truck operators. Additionally, as noted on EIR page 3.59 (Vol. 1, Chapter 3), the SFPUC has established Standard Construction Measures for all WSIP projects. They include activities such as notifying businesses, owners, and residents of adjacent areas potentially affected by the project about the nature, extent and duration of construction activities. Such a notification program would include contact information related to questions and reporting problems, such as reporting dangerous truck operations or hazardous roadway conditions. Given that the Standard Construction Measures include provision for notification of safety concerns, and SFPUC standard construction documents require the prime contractor to maintain safe conditions, a specific mitigation measure for construction safety and notification is not required. In addition, Mitigation Measure 5.12-4a, on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), requires that SFPUC develop a program to notify the potential users (including drivers, bicyclists, and pedestrians) of Calaveras Road between Geary Road and Felter Road of the schedule of roadway closures, detour routes for vehicles, and alternate recreational bicycle routes. Additional mitigation measures to address this issue are not required.

A-EBRPD-54 The comment requests street maintenance and a cleaning program be considered for inclusion in the EIR as a mitigation measure.

Mitigation Measure 5.12.4a (Traffic Control Plan), on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), requires maintenance of adequate driving and bicycling conditions on Calaveras Road during the construction period. In addition, as stated on EIR page 4.12-14 (Vol. 2, Chapter 4, Section 4.12), during the construction period the closed portion of Calaveras Road between Geary Road and Felter Road would be swept clean on either Friday evening or Saturday morning, and re-opened to traffic on Saturday and Sunday. Details related to roadway maintenance would be specified as part of agreements between SFPUC and Alameda and Santa Clara Counties.

In response to this comment, Mitigation Measures 5.12.4a on EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12) is clarified by adding the following Traffic Control Plan element as a new bullet (new text is underlined):

The closed portion of Calaveras Road between Geary Road and Felter Road shall be swept clean before 6:00 a.m. Saturday morning, and re-opened to traffic on Saturday and Sunday.

A-EBRPD-55 The comment states that particulate matter and vehicle exhaust associated with hauling sand and gravel along Calaveras Road during construction may result in cumulative impacts on human health, even with sweeping and watering of public roads. This comment is consistent with the conclusion of Impact 4.13.1 in the EIR (Volume 2, pages 4.13-33 – 4.13-37) and the discussion of cumulative air quality impacts in Section 6.2.3.11 of the EIR (Volume 2, pages 6-43 – 6-48).

Impact 4.13.1 concludes that construction emissions (particulate and exhaust) would be less than significant with mitigation using the 1999 Bay Area Air Quality Management District (BAAQMD) thresholds for construction emissions, but would result in a potentially significant and unavoidable impact associated with construction-related emissions of reactive organic gases and nitrogen oxides using quantitative thresholds adopted by the BAAQMD in June 2010. Since publication of the Draft EIR, the BAAQMD adopted air quality CEQA thresholds of significance, and the EIR text has been updated accordingly (see Chapter 12, Draft EIR Revisions, Section 12.2, Staff-Initiated Text Changes). Under the 2010 adopted BAAQMD thresholds, the particulate matter from exhaust associated with project construction would be below the identified threshold, and fugitive dust from project construction would be mitigated to less than significant with implementation of best management practices specified in Mitigation Measures 5.13.1a (Fugitive dust mitigation measures recommended by the BAAQMD), 5.13.1b (BAAQMD-recommended exhaust emissions mitigation measures), and 5.9.2a (Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program).

Similarly, the evaluation of cumulative air quality impacts identifies that CDRP construction would not make a substantial contribution to a significant cumulative air quality impact due to fugitive dust or particulate matter exhaust when evaluated using the 1999 or 2010 BAAQMD construction emission thresholds. The cumulative analysis previously presented in the Draft EIR has also been updated in Chapter 12, Draft EIR Revisions, in Section 12.2, Staff-Initiated Text Changes.

The analysis in the EIR is consistent with the commenter's statements and the commenter provides no specific information that questions the methodologies, analysis, or conclusions in the EIR. No further response is required for the

Draft EIR project. See Chapter 9, CDRP Variant, Section 9.3.13, for a discussion of the air quality impacts of the Variant.

- A-EBRPD-56 The comment notes that the public would not be able to distinguish between dust particles that contain asbestos and those that do not, and this may cause unnecessary alarm and further deter use of Calaveras Road and reduce Park visitation. The EIR should include mitigation for degraded air quality that could result in these effects.

The CDRP work area is located approximately 0.3 mile from the EBRPD Sunol Regional Wilderness trails at its nearest point. The closest park employee and public use park buildings are approximately 0.5 mile from the CDRP work area and the farthest are up to three miles from the CDRP work area.

As discussed in Impact 4.9.2, on EIR pages 4.9-23 and 4.9-24 (Vol. 2, Chapter 4, Section 4.9.2.3), and in Response A-EBRPD-3, the SFPUC would implement an Asbestos Dust Mitigation Plan and Comprehensive Air Monitoring Program in accordance with Mitigation Measure 5.9.2a, on EIR pages 5-27 – 5-30 (Vol. 2, Chapter 5, Section 5.9), for construction activities in areas containing naturally occurring asbestos. These plans would specify measures that would be taken to minimize dust generation and prevent visible dust from crossing the work area boundary during construction, and monitoring that would be conducted to demonstrate compliance with this criterion (see Response A-EBRPD-3 for further discussion of these measures, including definitions of work area and control boundaries).

As discussed in Impact 4.13-1, on EIR pages 4.13-33 – 4.13-37 (Vol. 2, Chapter 4, Section 4.13.2.3), the SFPUC would implement BAAQMD-specified dust control measures in accordance with Mitigation Measure 5.13-3a, on EIR pages 5-38 – 5-39 (Vol. 2, Chapter 5, Section 5.13), during construction activities within areas that do not contain naturally occurring asbestos. Implementation of these measures, including watering of work areas; paving, watering, or stabilizing unpaved roadways; hydroseeding or stabilizing inactive work areas; enclosing, watering, or stabilizing soil stockpiles; and limiting traffic speeds on unpaved roads would minimize dust generation during construction in these areas.

Construction activities would incorporate dust control measures and continuous monitoring to prevent visible dust from crossing the work area

boundary and asbestos and metals from crossing the control boundary at concentrations that could result in unacceptable exposure of off-site receptors during construction in areas containing naturally occurring asbestos and metals (as specified in the BAAQMD-approved Asbestos Dust Mitigation Plan and confirmed through monitoring, in accordance with Mitigation Measure 5.9.2a). The SFPUC would also implement BAAQMD-specified dust control measures in accordance with Mitigation Measure 5.13.1a during construction in areas that do not contain naturally occurring asbestos. Because the above referenced mitigation measures would prevent visible dust from crossing the work area boundaries during all construction activities, and the public would not have access to the work areas, the public is not expected to see visible dust resulting from project activities. Therefore, impacts related to exposure of the public and park workers to dust generated from construction activities would be less than significant with implementation of the identified mitigation measures, and there should be no alarm related to emissions of visible dust from the project. No further mitigation is necessary.

A-EBRPD-57 The comment states that the CEQA Findings for the CDRP will need to address the significant air quality impacts and that the WSIP dust and exhaust control mitigation measures should be adopted for the CDRP.

CEQA Findings will be adopted for all significant impacts identified in the EIR, consistent with Section 15091 of the State CEQA Guidelines. As discussed on page 3-59 of the EIR (Volume 1, Section 3.5.3), the SFPUC will apply the adopted Standard Construction Measures for all WSIP projects to the CDRP. All applicable WSIP standards, mitigation measures, and best management practices will be implemented during construction of the CDRP. Mitigation Measures 5.13.1a, 5.13.1b, 5.13.3a, and 5.13.3b (Volume 2, pages 5-38 through 5-30) are consistent with WSIP best management practices and would minimize air quality impacts during construction to the extent feasible.

A-EBRPD-58 The District indicates that noise impacts on recreationalists at the Sunol Regional Wilderness are not evaluated and park users (visitors and workers, especially campers and interpretive program students) should be recognized as sensitive receptors with appropriate mitigation measures developed to avoid or minimize noise impacts on them due to the four-year duration and long hours associated with construction of this project.

Noise impacts on hikers using trails in the Sunol Regional Wilderness are discussed in Impact 4.14.1, on EIR page 4.14-18 (Vol. 2, Chapter 4, Section 4.14) and in Impact 4.3.6, on EIR page 4.3-20 (Vol. 1, Chapter 4, Section 4.3), and the EIR indicates that hikers could be subject to project-related construction noise when traveling on sections of trails where there is a direct line-of-sight to the dam vicinity. This impact was determined to be less than significant since hikers would be subject to these noise increases as they pass the dam vicinity, which would be limited in duration. The campground is located ¼ mile or more from Calaveras Road and at this distance, peak truck noise along Calaveras Road during the nighttime hours is expected to be approximately 43 dBA (Leq) at this distance, which would not exceed the significance thresholds applied in this EIR (noise ordinance limits and the 50 dBA sleep interference criterion) and therefore, would be less than significant. The EIR (page 4.14-21) notes, however, that construction-related noise levels, at times, could still be noticeable because ambient noise levels are lower in some areas than the ordinance limits and significance threshold.

Although project construction would last four years, hikers would be subject to construction noise for a short time as they pass the dam vicinity. On page 4.14-21, the EIR indicates that noise controls would be required to be implemented as necessary (Mitigation Measure 5.14.1) to ensure that construction-related noise increases do not exceed ordinance noise limits and the 50-dBA sleep interference criterion; these measures would also help reduce short-term noise impacts on Park users.

Chapter 9, Section 9.3.14, Noise and Vibration, discusses potential noise impacts of the CDRP Variant related to construction of the proposed fish screen and fish ladder at the ACDD, which would occur in the vicinity of some hiking trails in the Sunol Regional Wilderness Area. Potential noise impacts of the CDRP Variant would be similar to those of the Draft EIR project, and would not change the analyses or conclusions of the EIR.

A-EBRPD-59 Although the EIR concludes on page 4.14-18 (Vol. 2, Chapter 4, Section 4.14) that noise impacts on hikers would be insignificant because hikers can avoid noisy areas, the District does not consider the alteration of planned activities by Park visitors to be an acceptable approach for mitigating noise impacts; mitigation should be the project sponsor's responsibility, not the impacted public.

CEQA significance criteria that relate to recreation (Vol. 1, Chapter 4, Section 4.3, EIR page 4.3-20) and noise (EIR page 4.14-9) do not support the comment's suggested threshold that any change in planned activities by Park visitors is a significant impact. CEQA Guidelines' significance criteria applied in this analysis include: (1) physical degradation of recreational resources (discussed on EIR page 4.3-20); (2) exposure of people to noise levels in excess of standards established by the local general plan or noise ordinance or applicable standards of other agencies; and (3) creation of a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Pertinent ordinance noise limits are those in Alameda County; noise limits applicable to construction noise are described on EIR page 4.14-7 and include Section 6.60.040 of the Alameda County General Code. A "substantial" noise increase is defined as interference with activities during the day and night (EIR page 4.14-12), and the EIR analysis applies a 70-dBA speech interference threshold as an indicator of interference with daytime activities and a 50-dBA sleep interference threshold as an indicator of interference with nighttime activities.

The closest trail is located over 1,000 feet away from the closest construction area for the Draft EIR project (Borrow Area B), and the setback distance between other borrow or disposal areas and the dam vicinity is even farther. At such distances, noise levels are not expected to exceed the 70-dBA speech interference threshold. Given this distance and the short duration of hikers' exposure to audible construction noise (when traveling on sections of trails where there is a direct line-of-sight to the dam vicinity) as noted in Impact 4.14.1, on EIR page 4.14-18, and in Impact 4.3.6, on EIR page 4.3-20, this effect was determined to be less than significant based on these CEQA significance criteria and thresholds. Therefore, mitigation measures are not required.

Construction-related noise impacts of the CDRP Variant, particularly the additional construction activities in the vicinity of the ACDD, are described in Chapter 9, Section 9.3.14, and would be similar to those of the Draft EIR project.

A-EBRPD-60 The comment states that the text on EIR page 4.3-16 (Vol. 1, Chapter 4, Section 4.3) incorrectly states that increased construction traffic in Sunol Valley would be similar to ongoing activities that occur in the vicinity. The comment further states that increased construction traffic in Sunol Valley

would interrupt existing land uses and would be a significant impact that would require mitigation.

The impact of construction truck traffic is discussed in Section 4.12, Transportation and Circulation, of the EIR (Vol. 2, Chapter 4). Increased truck traffic in Sunol Valley and on Calaveras Road would be short-term. The impact analysis of short-term traffic increases on area roadways due to construction-related traffic found that the impact would be less than significant. Therefore, no mitigation measures are required.

In response to the comment, the third complete sentence in the first full paragraph on EIR page 4.3-16 is revised as follows (deletions are shown in ~~strike through~~):

Further, ~~any indirect project effects, such as those resulting from increased construction traffic, would be similar to ongoing activities that occur in the vicinity;~~ all existing land uses would continue to operate uninterrupted throughout the construction period, including the existing dam, which would continue to operate under restricted conditions.

- A-EBRPD-61 The comment indicates that the EIR should provide specific information related to permission from Alameda and Santa Clara Counties to close portions of Calaveras Road, and types of noticing that would be required.

Details related to discussions with Alameda and Santa Clara Counties about the Calaveras Road Closure and the public information program are not yet available; however these details are not required for purposes of the environmental impact assessment. Mitigation Measure 5.12.4a, on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12) requires that SFPUC develop a program to notify the potential users (including drivers, bicyclists, and pedestrians) of Calaveras Road between Geary Road and Felter Road of the schedule of roadway closures, detour routes for vehicles, and alternate recreational bicycle routes. Mitigation Measure 5.12.4b, on EIR page 5-38, indicates that SFPUC will seek approvals from Alameda and Santa Clara County for the Calaveras Road closure.

- A-EBRPD-62 The comment states that there would be increased demand for fire and police services during project construction, and notes that the District provides fire and police services to its regional parks and trails.

Section 4.15, Utilities, Service Systems, and Public Services, of the EIR (Vol. 2, Chapter 4) discusses demand for fire and police services. The most

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common cause of wildfires in the Alameda Creek watershed has been mechanical equipment, including motor vehicles and landscaping equipment. The two proposed closures of Calaveras Road would result in a reduction in the number of existing unmonitored potential ignition sources. However, as stated on EIR page 4.15-17, new project-related ignition sources, i.e., construction equipment, would be introduced. As described on EIR pages 4.15-17 – 4.15-18, implementation of regulations governing the use of construction equipment in areas classified as high fire hazard areas by the California Department of Forestry and Fire Protection would be built into the construction contract and would minimize the risk of wildfires. In the case of a fire at the dam site, disposal sites, borrow areas, staging areas, or along the roadways used to access any of these locations, the SFPUC construction contractors and the watershed keeper at the Calaveras facility would be the first line of defense (see EIR page 4.15-18). Therefore, it is not expected that construction would result in a substantial increase in demand for fire protection services. In the case of a major fire disaster, county and city fire departments would respond as they currently do by request under existing countywide mutual aid agreements. Therefore, the temporary impacts of the proposed project on existing fire protection services would be less than significant, and no mitigation is required.

As discussed on EIR page 4.15-19, the periodic traffic controls on Calaveras Road and the two road closure periods could result in less demand for law enforcement services on and adjacent to the project site during the construction period. Upon completion of the replacement dam, demand for law enforcement services would return to existing levels and no new or expanded facilities would be needed for any of the law enforcement agencies serving the project site. Therefore, this project would result in a less-than-significant impact, and no mitigation is required.

Under the CDRP Variant, described in Chapter 9, Section 9.3.15 discusses potential impacts on fire protection and law enforcement services. As with the Draft EIR project, potential impacts on fire protection and law enforcement services would be less than significant, and there would be no change to the EIR analysis for the CDRP Variant.

A-EBRPD-63 The comment correctly identifies the total acreage of the Sunol Regional Wilderness as 6,858 acres and the portion leased from the SFPUC as totaling 3,812 acres. The acreage of the lease land in the EIR was rounded and represents a less than 0.01 percent difference in the total land acreage. In

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response to the comment, the first sentence in the first full paragraph on EIR page 4.3-9 (Vol. 1, Chapter 4, Section 4.3) is revised (deletions are shown as ~~strike through~~ and new text is underlined):

The SFPUC currently leases ~~3,800~~ 3,812 acres to the EBRPD as part of the 6,858-acre Sunol Regional Wilderness. The Sunol Regional Wilderness is located between San Antonio Reservoir and Calaveras Reservoir.

Where the acreage total in the EIR is preceded by the words “about” or “approximately” the number is rounded to 3,800 acres.

The comment states that the remaining 3,146 acres are owned in fee by the District. However, this number, when added to the 3,812 acres leased to the EBRPD by the SFPUC, results in a total acreage of 6,958 acres – a difference of 100 additional acres in the total size of the park as provided by the District.

The comment correctly identifies the total acreage of the Del Valle Regional Park as 4,395 acres. The acreage number identified in the EIR for the Del Valle Regional Park is incorrect. In response to the comment, the first sentence in the first full paragraph on EIR page 4.3-10 has been revised with new text underlined and replaced text struck through.

The EBRPD’s Del Valle Regional Park is located north and east of the project site. The park encompasses approximately ~~4,000~~ 4,395 acres in central Alameda County, about 10 miles south of the City of Livermore off Interstate 580.

The stated acreages of the Sunol Regional Wilderness do not change the EIR recreational analysis provided on EIR pages 4.3-20 – 4.3-23.

A-EBRPD-64 The comment correctly identifies that swimming is prohibited in the Sunol Regional Wilderness and all other EBRPD parks if not specifically designated. In response to the comment, the fifth sentence in the second full paragraph on EIR page 4.3-9 is revised as follows (deleted text is shown as ~~strike through~~ and new text is underlined):

The Sunol Wilderness has over 26 miles of trails for hikers and equestrians and several multi-use trails for hikers, equestrians, and mountain bikers. Recreational facilities and programs include picnic areas, barbecue pits, group and backpack campsites, a visitor’s center, naturalist-led activities, and equestrian facilities. At least one camping area is located adjacent to Alameda Creek. Little Yosemite, a scenic gorge on Alameda Creek, is located within the Sunol Wilderness. Swimming is ~~not~~ prohibited within the Sunol Wilderness, ~~except in Little~~

~~Yosemite~~. Other water sports, including boating, rafting, and canoeing, generally are not feasible in this portion of Alameda Creek due to the creek's water level, and fishing is not allowed in Alameda Creek. There is an EBRPD residence occupied year round south of Geary Road near the visitor center.

A-EBRPD-65 The comment discusses potential significant impacts on recreational facilities due to periodic and unscheduled closure of roads, traffic congestion, construction noise and dust, trail closures and potential exposure to NOA and metals related dust during project construction.

Please refer to Response A-EBRPD-03 for a discussion of impacts from NOA and to Response A-EBRPD-41 regarding the change to eliminate temporary, short-term road closures related to dust.

The comment also describes mitigation measures that should be included in the EIR to mitigate significant effects on the EBRPD's parks and trails pertaining to human health, traffic safety, and air quality impacts.

1. Reimbursement for Lost Revenues and Increased Operating Costs.

The EBRPD is a regional park district that includes a comprehensive network of open space preserves, parks, and trails that serve Alameda and Contra Costa Counties in the eastern region of the greater San Francisco Bay Area. It manages over 100,000 acres that encompass 65 regional parks, recreation areas, wilderness, shorelines, preserves and land bank areas. The District manages 29 regional inter-park trails, and 1,150 miles of trails within parklands.² The District also sponsors nine interpretive and education centers, 235 family campsites and 42 youth camping areas. Two of EBRPD largest park and wilderness areas are located in the Sunol Valley, the Sunol Regional Wilderness and the Del Valle Regional Park.

Access to the Sunol Regional Wilderness would not be closed during the four-year construction period. Throughout the entire construction period, visitors would have continuous access to the Sunol Regional Wilderness from the north via I-680 and the northern segment of Calaveras Road and Geary Road. Access from the southern segment of Calaveras Road would also be available except during 20 months throughout the four-year construction period when Calaveras Road between Geary Road and Felter Road is planned to be closed on weekdays. During the proposed

² East Bay Regional Park District website, <http://www.ebparks.org/about>, accessed February 22, 2010.

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20 months of Calaveras Road closure, access would continue to be available from the south on weekends, typically the peak recreation period throughout the year. As discussed in Response A-EBRPD-41, unscheduled road and trail closures due to NOA and metals dust are no longer proposed.

Some recreationalists could be deterred from visiting Sunol Regional Wilderness during the 20-month period when access from the southern segment of Calaveras Road to Geary Road would be restricted due to possible delays or weekday closures and detours. Recreationalists would have the option to visit other EBRPD facilities that could offset potential reductions in gate revenues at the Sunol Regional Wilderness and provide similar recreation experiences.

As shown in the **Table 11.1.15-1** below, there are four regional EBRPD facilities within about 5 to 48 miles of the Sunol Regional Wilderness that can be accessed using I-680 and the northern segment of Calaveras Road from selected points in Santa Clara County and the East Bay region. Although each EBRPD facility has its own unique characteristics and recreational experience, the Mission Peak Regional Preserve, Del Valle Regional Park, Las Trampas Regional Park, and Shadow Cliffs Regional Recreation Area provide activities and recreation activities similar to those provided at the Sunol Regional Wilderness, including a visitor center, picnic areas, camping areas, trails and seasonal special events.

Under Section 15131 of the *CEQA Guidelines*, economic effects of a project are not significant effects on the environment unless they trigger, or are related to, a significant physical change in the environment. Because current visitors to the Sunol Regional Wilderness who may visit other EBRPD facilities during the four-year project construction period would be dispersed among a number of EBRPD facilities, increased usage at any one facility would not be expected to be substantial. Therefore, increased, temporary use would not be expected to result in accelerated deterioration of other existing EBRPD properties. This temporary increase in use would not be expected to require construction or expansion of EBRPD recreational facilities or degrade existing EBRPD recreation resources.

Table 11.1.15-1: East Bay Regional Park District Regional Preserves, Parks and Recreational Areas in the Vicinity of Sunol Regional Wilderness

Activity	Sunol Regional Wilderness	Mission Peak Regional Preserve	Del Valle Regional Park	Las Trampas Regional Park	Shadow Cliffs Regional Recreation Area
Visitor Center	X		X		
Trails/hiking	X	X	X	X	X
Horseback riding	X	X	X	X	X
Nature study	X	X	X	X	X
Swimming			X		X
Fishing			X		X
Picnic Areas	X	X	X	X	X
Camping	X	X	X	X	
Boating and sailing			X		X
Lake tours			X		
Interpretative programs	X		X		
Biking	X	X	X	X	X
Dog walking	X	X	X	X	X
Radio-controlled flying		X			
Hang gliding		X			
Water slide					X
Historic site				X	
Food concession			X		X
Hours	7 am to dusk year-round	7 am to dusk year-round	Park hours subject to change depending on time of year	5 am to 10 pm	Park hours subject to change depending on time of year
Driving Distance to the Sunol Regional Wilderness from: ¹					
I-880/US 101 interchange in San Jose	23.5 miles	18 miles	36 miles	38.6 miles	25.7 miles
I-580/Hwy 24 interchange in Oakland	42.5 miles	38.8 miles	47.5 miles	33.5 miles	36 miles
1 st Street/ Livermore Ave. interchange in Livermore	14.8 miles	15 miles	9 miles	21.1 miles	4.3 miles
<i>Note:</i> ¹ Driving distances to Sunol Regional Wilderness based on MapQuest shortest driving time route from the north via Calaveras Road.					

Source: Turnstone Consulting, 2010

Closure of the EBRPD security residence located approximately 1.2 miles north of the dam site (refer to Receptor G shown on Figure 4.14-1: Noise Measurement and Sensitive Receptor Locations on EIR page 4.14-5 in Vol. 2, Chapter 4, Section 4.14) would not be required due to project construction. Mitigation Measures 5.9.2a (Dust Control and Air Quality Monitoring Plans, EIR pages 5-27 – 5-30); 5.12.4a (Traffic Control Plan and Approval for Road Closures, EIR pages 5-37 – 5-38); 5.13.1a (Fugitive Dust Control, EIR pages 5-38 – 5-39); and 5.14.1 and 5.14.3 (Noise and Blasting Noise Controls, respectively, EIR pages 5-40 – 5-43) (Vol. 2, Chapter 5) would mitigate potential health, traffic safety, and noise effects on the existing EBRPD security residence in the vicinity of Borrow Area B to a less-than-significant level.

Increased EBRPD operating costs due to project construction would be not be expected to occur because the EIR includes a number of Mitigation Measures 5.9.2a, 5.14a, and 5.14b, as well as SFPUC management activities and actions required in the *Alameda Watershed Management Plan* (see EIR pages 4.3-11 – 4.3-13 in Vol. 1, Chapter 4, Section 4.3) which would limit construction and operational activities that would affect EBRPD property.

2. **Relocation of Park Facilities.** The comment states that relocation of EBRPD facilities and programs would be required if roads, trails or facilities at Sunol Regional Wilderness were closed. As addressed in Response A-EBRPD-41, closure of EBRPD roads, trails or facilities related to dust and/or NOA is no longer proposed as a mitigation.
3. **Construction of New Facilities.** Construction of new recreation facilities, such as park offices, maintenance facilities, staging areas, restrooms, drinking water, trails, picnic areas, camp grounds and road improvements, would not be required within the Sunol Regional Wilderness as a result of the proposed project. There is no basis in the comment to presume that new recreation facilities would need to be constructed to replace lost recreation opportunities during project construction due to restricted access to the Sunol Regional Wilderness. Access to the Sunol Regional Wilderness would be provided year round from the north via I-680 and the northern segment of Calaveras Road to Geary Road. Additionally, as noted in the discussion of Item 1 in this response, EBRPD provides a number of alternate, nearby regional locations, offering recreationalists the option of visiting other EBRPD

parks, open space and facilities with activities similar to those at the Sunol Regional Wilderness.

- 4. Construction of New Bridges.** The trestle bridge referred to in the comment is the Geary Bridge, located east of Calaveras Road, that provides access across Alameda Creek to the EBRPD “Little Yosemite” recreation area and to the Alameda Creek Diversion Dam. This bridge is listed as Project #14 (Geary Road Bridge) in Table 6.1: Cumulative Projects Related to the CDRP in the Sunol Valley Region, on EIR page 6-15 (Vol. 2, Chapter 6). The SFPUC is proposing to replace the existing trestle bridge with a new bridge. Replacement of the trestle bridge is a separate project from the proposed CDRP. If this new bridge is not complete in time, the existing trestle bridge would be used to access the ACDD during an approximately 6-month construction period; however, use of the bridge which is planned for replacement, would be minimal. The Geary Road Bridge is currently in the final design phase and initial stages of environmental review. Therefore, the commenter's concern would be addressed with replacement and construction of the new bridge if it is approved and implemented as a separate project. The cumulative effects of the Geary Bridge replacement project and the proposed CDRP project are included in the cumulative impact analyses of the EIR, and no significant cumulative impacts are identified in the EIR.

A-EBRPD-66 The comment expresses the opinion that mitigation proposed for the CDRP is inadequate and proposes alternative mitigation for impacts to wildlife and vegetation and to parklands. The suggested mitigation consists of purchasing in fee properties for management or dedication to EBRPD.

This comment is acknowledged. Please see Response A-EBRPD-12.

The following comments (A-EBRPD-67 to A-EBRPD-81) are from EBRPD’s comments on the CDRP Notice of Preparation during public scoping and incorporated by reference into the District’s comments on the Draft EIR. All of the comments were taken into consideration during preparation of the Draft EIR.

A-EBRPD-67 The comment states that construction of the replacement Calaveras Dam could result in increased sedimentation or erosion, increased turbidity, changes in water chemistry, reduced dissolved oxygen, increased or fluctuating water temperature and creation of new barriers.

Construction-related effects on fish and aquatic habitats are addressed in Vol. 1, Section 4.5, Impacts 4.5.1, 4.5.2, 4.5.3, and 4.5.4 of the Draft EIR. Please also refer to the master response in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for additional information on this topic.

A-EBRPD-68 The comment states that the EIR should identify downstream impacts to Alameda Creek and implement measures to mitigate the individual and cumulative effects of water diversion and storage projects on Alameda Creek.

Please refer to the master response in Section 10.3, Hydrology, and specifically to Sections 10.3.3, Diversions and Stream Flow, and 10.3.6, Cumulative Impacts.

A-EBRPD-69 The comment, made during the public scoping period in 2005, states that the EIR should evaluate the proposed project's impacts on special status plants and wildlife habitat. The comment specifically names grassland, scrub, chaparral, oak woodland, coniferous forest, riparian woodland, and freshwater wetland habitats.

This comment is acknowledged. The EIR (Vol. 1, Chapter 4, Section 4.4, pages 4.4-1 – 4.4-124) evaluates impacts on special status plants and wildlife, including grassland, scrub, chaparral, oak woodland, riparian woodland, and freshwater wetland habitats. The design of the CDRP was refined subsequent to the release of the NOP, and avoided impacts on coniferous forest habitat.

A-EBRPD-70 The comment expresses particular interest in the EIR including analyses of native fish, such as anadromous, landlocked salmonids, and squawfish.

Squawfish are currently called pikeminnow. Native rainbow trout (landlocked salmonids) and pikeminnow are discussed on EIR pages 4.5-23 – 4.5-27 and 4.5-35 – 4.5-45 (Vol. 1, Chapter 4, Section 4.5.1.1); in Impacts 4.5.1, 4.5.2, 4.5.4, and 4.5.5; and in many other locations in the EIR. Steelhead are also discussed in the EIR in many locations, including Sections 4.5.1.2 and 4.5.2.2 (Vol. 1, Chapter 4). Future presence of steelhead in Alameda Creek and Calaveras Creek near the ACDD and Calaveras Dam is discussed on EIR pages 6-15 – 6-16 and 6-20 – 6-31 (Vol. 2, Chapter 6, Section 6.2). See also the master response in Section 10.4, Fisheries, and specifically Sections 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, and

10.4.7, Future Cumulative Analysis of Effects on Steelhead, for additional information on these topics.

A-EBRPD-71 This comment is from EBRPD comments on the CDRP NOP in 2005. The comment lists several wildlife species that are of particular interest to the District (California red-legged frog, foothill yellow-legged frog, California tiger salamander, western pond turtle, horned lizard, and Alameda whipsnake), and which could be affected by the proposed project.

All of these species are evaluated in the EIR. Impacts on these species are discussed in Section 4.4 (Vol. 1, Chapter 4) as follows: California red-legged frog – Impact 4.4.2, EIR pages 4.4.84 – 4.4.92; foothill yellow-legged frog – Impact 4.4.7, EIR pages 4.4.102 – 4.4.106; California tiger salamander – Impact 4.4.3, EIR pages 4.4.93 – 4.4.95; western pond turtle – Impact 4.4.9a, EIR pages 4.4.107 – 4.4.108; horned lizard – Impact 4.4.9c, EIR pages 4.4.109 – 4.4.112; and Alameda whipsnake – Impact 4.4.4, EIR pages 4.4.95 – 4.4.98.

A-EBRPD-72 The comment requests that the EIR identify project impacts on special-status fisheries, amphibians and reptiles and identify measures to mitigate project-related and cumulative effects of water diversion and storage projects in the Alameda Creek Watershed.

Please refer to the master response in Section 10.3, Hydrology, and specifically Section 10.3.3, Diversions and Stream Flow, and 10.3.6, Cumulative Impacts.

A-EBRPD-73 The comment lists several raptor species (golden eagle, bald eagle, peregrine falcon, and prairie falcon) that are of particular interest to the District.

These species are discussed in the EIR. Impacts on bald eagle are discussed in Impact 4.4.6, on EIR pages 4.4.100 – 4.4.102 (Vol.1, Chapter 4, Section 4.4). Impacts to golden eagle are addressed in Impact 4.4.9b (EIR pages 4.4.108 – 4.4.109). Because of limited nesting habitat, peregrine and prairie falcons are not likely to nest in the project area; however, the EIR acknowledges that there is suitable nesting habitat for these species (page 4.4-58). Impact 4.4.9b (EIR pages 4.4.108 – 4.4.109) discusses impacts on raptors, and is expanded to explicitly cover peregrine and prairie falcons, as shown below (deletions are shown as ~~strike through~~ and new text is underlined):

Impact 4.4.9b: Effect of CDRP on nesting raptors.

Impacts of Construction

The study area contains suitable nesting habitat for ~~both~~ tree-, cliff-, and ground-nesting raptors. Tree nesting raptors, such as golden eagle, white-tailed kite, and Cooper's hawk (*Accipiter cooperii*), may use upland and riparian forest for nesting. American peregrine falcon and prairie falcon could nest on cliffs in the vicinity of the dam. Northern harrier and burrowing owl may use grasslands in the study area for nesting although they have not been observed during breeding raptor surveys. Additionally, burrowing owls are uncommon breeders in the region, and there is a low likelihood that they nest in the project area (Center for Biological Diversity 2003).

Construction of the proposed project, including construction of haul routes and blasting, could result in 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 impact is similar in kind to that discussed under Impact 4.4.6 for the bald eagle. This impact would be a significant environmental effect.

Similarly, Mitigation Measure 5.4.1a, on EIR page 5-5 (Vol. 2, Chapter 5, Section 5.4), provides pre-construction avoidance measures for nesting raptors, and is expanded to explicitly cover peregrine and prairie falcons. This mitigation measure is also revised in response to comment A-ACPWA-32 which requests acknowledgement of bald eagles, as shown below (new text is underlined):

- **Other Tree or Cliff-Nesting Raptor Pre-construction Survey.** A survey to identify active nests for tree or cliff-nesting raptors (~~other than~~ including bald eagles) will be conducted by a qualified biologist no more than 2-weeks before the start of construction at project sites from February 1 through July 30.

Active raptor nests located within 500 feet (0.25 mile for golden eagle and bald eagle or falcons) of the project will be mapped, to the extent allowed by access.

If an active bald eagle nest is found, implement nest protection measures described previously for bald eagles. If an active raptor nest is found within 500 feet (0.25 mile for golden eagle or falcons) of the project, a determination will be made by a qualified biologist, in coordination with the CDFG, as to whether or not construction work will affect the active nest or disrupt reproductive behavior. Criteria used for this evaluation will include, but not be limited to, presence of visual screening between the nest and construction activities, and behavior of adult raptors in response to the surveyors or other ambient

human activity. Alternatively, other appropriate avoidance measures, as approved by CDFG may be implemented to ensure that the nest is protected. If it is determined that construction will not affect an active nest or disrupt breeding behavior, construction will proceed without any restriction or mitigation measure. If it is determined that construction will affect an active raptor nest or disrupt reproductive behavior, then avoidance is the only mitigation available. Construction will be delayed within 300 feet (0.25 mile for golden eagle or falcons)...

A-EBRPD-74 The comment lists several plant species that the commenter believes could be affected by the CDRP.

Please see Response A-EBRPD-09 for a discussion of *Acanthomintha lanceolata* and *Campanula exigua*. The remaining species included in the comment are addressed below:

Lessingia hololeauca – Known records not in close enough proximity to CDRP to have been identified in the background database search conducted for the botanical survey report. CNPS List 3 species; not considered special status for the purpose of the EIR (Vol. 1, Chapter 4, Section 4.4.1.2, EIR page 4.4-21).

L. tenuis – Known records not in close enough proximity to CDRP to have been identified in the background database search conducted for the botanical survey report. CNPS List 4 species; not considered special status for the purpose of the EIR (Section 4.4.1.2, EIR page 4.4-21).

Helianthella castanae – Discussed under Impact 4.4.10 (EIR page 4.4-113).

Eriophyllum jepsonii – Included in botanical survey report (Vol. 3, Appendix C-1, page 13). Not present in the CDRP impact area. One congener detected during the botanical survey was identified to species (Appendix C-1, page 42), meaning that there was no uncertainty about whether the species was present. CNPS List 4 species; not considered special status for the purpose of the EIR (Section 4.4.1.2, EIR page 4.4-21).

Linanthus ambiguous(sic) – (= *Leptosiphon ambiguus*) Known records not in close enough proximity to CDRP to have been identified in the background database search conducted for the botanical survey report. CNPS List 4 species; not considered special status for the purpose of the EIR (Section 4.4.1.2, EIR page 4.4-21).

Monardella villosa ssp. *globosa* – Included in botanical survey report and not detected during the botanical surveys (Appendix C-1, page 16).

- A-EBRPD-75 The commenter states that the EIR should identify downstream impacts to Alameda Creek in the Sunol Regional Wilderness and implement measures to mitigate impacts to water quality.

Impacts on water quality during construction are described in the EIR (Impacts 4.7.1, 4.7.2 and 4.7.3, in Vol. 2, Chapter 4) and this analysis includes water that is released downstream to Alameda Creek. Water quality impacts during construction were determined to be significant and were reduced to a less-than-significant level with implementation of Mitigation Measures 5.7.1 and 5.7.2 (Vol. 2, Chapter 5, Section 5.7).

Impacts on water quality resulting from operations of the proposed project downstream of confluence of Alameda Creek with Calaveras Creek to confluence of Alameda Creek and Arroyo de la Laguna is included in the EIR (Vol. 2, Chapter 4, Section 4.7, pages 4.7-70 through 4.7-72). This analysis includes the portion of Alameda Creek that traverses the Sunol Regional Wilderness. As described in the EIR, proposed project operations would not substantially degrade water quality parameters in Alameda and Calaveras Creeks compared to existing conditions in the affected reaches; therefore, impacts would be less than significant.

- A-EBRPD-76 The comment states that excavation and construction-related project traffic would generate significant amounts of air pollutants and water pollutants.

The discussion of Impact 4.13.1, beginning on page 4.11-19 of the EIR (Volume 2), addresses emission mechanisms listed in the comment, such as emissions from construction vehicles and particulates generated by vehicle travel over roadways, and considers emissions impacts from the construction activities listed in the comment, including handling and transport of materials.

The potential for construction-related sediment mobilization to affect water quality are addressed in Impacts 4.7.1 (Volume 2, pages 4.7-25 through 4.7-44) and 4.7.2 (Volume 2, pages 4.7-44 through 4.7-55). The potential for construction-related sediment mobilization to pose a hazard to nearby humans, including users of recreational facilities, is addressed in Impact 4.9.2 (Volume 2, pages 4.9-22 through 4.9-25).

The issues raised in this scoping comment are all evaluated and addressed in the EIR.

A-EBRPD-77 The District notes that the project would generate significant amounts of noise during construction of the dam and transportation of materials on public roadways or unpaved roads in the watershed, as well as disruption of wildlife and the recreating public due to potential blasting at the dam site or borrow sites. The District suggests that such activities be prohibited on weekends and during high use periods at Sunol Regional Wilderness.

As noted on EIR page 4.14-18 (Vol. 2, Chapter 4, Section 4.14), hikers could be subject to project-related construction noise when traveling on sections of trails where there is a direct line-of-sight to the dam vicinity, but this was determined to be less than significant since hikers would be subject to these noise increases as they pass the dam vicinity, which exposure would be limited in duration. Noise impacts on hikers are further discussed in Response A-EBRPD-58. In addition, blasting would occur on weekdays only, which would be consistent with the comment's suggestion and would avoid the high use, weekend periods.

Likewise, only one trail crosses Calaveras Road and no trails are located along Calaveras Road, the primary truck route. Traffic noise increases along this road would only affect hikers on sections of trails located in the vicinity of this road. Therefore, the effect of traffic increases on public roadways and unpaved roads would be primarily a traffic access impact not a noise impact. While there would be a temporary increase in truck traffic on Calaveras Road during project construction, this increase would be less than significant as identified in Impact 4.14.2, on EIR page 4.14-23. Daytime truck-related noise increases would exceed ambient noise levels in the vicinity of Calaveras Road (see Table 4.14.5: Estimated Daytime Construction Noise Levels at the Closest Sensitive Receptors and Consistency with Significance Criteria, on EIR page 4.14-14), indicating that traffic noise increases could be noticeable to hikers. However, this table also indicates that estimated noise levels (with project traffic) would not exceed the ordinance noise limit criterion or the 70-dBA speech interference threshold. Therefore, traffic noise increases were determined to be less than significant.

Noise impacts on the bald eagle and other nesting raptors were determined to be significant, but mitigated to a less-than-significant level with Mitigation

Measure 5.4.1 (EIR pages 4.4-102 and 4.4-109). See Responses A-EBRPD-A-71 and A-EBRPD-A-73.

A-EBRPD-78 The comment expresses concern for the impacts on visual quality associated with the excavation of features on the project site that are prominent from Sunol Wilderness. The EIR, on pages 4.11-1 - 4.11-28 (Vol. 2, Chapter 4, Section 4.11), describes, analyzes and evaluates the impact of project construction activities and site disturbance on scenic views from Sunol Wilderness. Consistent with this comment, the EIR concludes that the impacts of project construction and site disturbance would be significant and unavoidable.

The comment states that the EIR should include visual simulations. See Response A-EBRPD-37 regarding visual simulations.

The comment states that the EIR should consider a range of potential sources for fill materials that will not result in impacts to Sunol Wilderness. Vol. 2, Chapter 7, Section 7.5 Alternative 3, Off-site Borrow Alternative, on EIR pages 7-42 – 7-50, describes, analyzes and evaluates an alternative that would obtain construction materials from off-site locations. However, as discussed on EIR pages 7-46 – 7-47, impacts on visual resources under this alternative would be similar to the proposed project, and as with the proposed project, a significant and unavoidable impact on visual resources would result. Hill 1000 would not be excavated as a borrow area under this alternative. As Borrow Area B on Hill 1000 is the closest portion of the project site visible from Sunol Wilderness, visual impacts of site disturbance on scenic views from Sunol Wilderness under this alternative would be reduced somewhat. However, as with the proposed project, Observation Hill would be excavated for the spillway and significant site disturbance for staging areas and roads on the north face of Observation Hill would still occur under this alternative, resulting in a significant adverse impact on visual resources.

A-EBRPD-79 The comment states that a number of existing recreation activities could be affected by the proposed project, and specifically identifies impacts on campers and backpackers at Sunol Regional Wilderness and Camp Ohlone due to nighttime construction noise, and impacts on hikers, equestrians, and bicyclists in permitted areas within the Sunol Regional Wilderness due to potential road closures.

Potential impacts associated with nighttime noise in the project vicinity, including the Sunol Regional Wilderness, are discussed in Volume 2, Chapter 4, Section 4.14 Noise and Vibration, on EIR pages 4.14-21 through 4.14. The EIR identifies Mitigation Measure 4.14.1, Noise Controls and 5.14.3 Blasting Noise Control to avoid or minimize nighttime noise impacts to less than significant levels. However, with mitigation, the proposed project could still have significant, unavoidable impacts on nighttime noise, as identified on EIR page 1-34 and pages 4.14-10 through 4.14-23.

Refer to Response A-EBRPD-41 for more information about road closures and potential effects on recreational activities at the Sunol Regional Wilderness.

- A-EBRPD-80 The comment identifies concerns related to closure of a portion of Calaveras Road on cutting off access to the Sunol Regional Wilderness from Santa Clara County and disruption of public access to the Ohlone Wilderness Regional Trail. In addition, the comment asks whether materials from the Apperson Quarry would be required for the new dam.

Impacts of the closure of portions of Calaveras Road on recreational facilities are discussed in Vol. 1, Chapter 4, Section 4.3 on EIR pages 4.3-21 to 4.3-22. Public access to the Sunol Regional Wilderness from Santa Clara County would be possible via I-680 and Calaveras Road north of the dam. Because disruption to recreational access would be temporary, and since alternate routes would continue to be available, the impacts on recreational facilities were determined to be less than significant. The project would not involve import of materials from the Apperson Quarry.

- A-EBRPD-81 The comment identifies concerns related to traffic safety due to additional vehicles on Calaveras Road between Geary Road and I-680.

Impact 4.12-4 in Vol. 2, Chapter 4, Section 4.12 on pages 4.12-15 and 4.12-16 discusses the increased potential for traffic safety hazards due to construction vehicle trips to the project site. Implementation of a Traffic Control Plan in accordance with Mitigation Measure 5.12.4a and temporary closure of a portion of Calaveras Road under Mitigation Measure 5.12.4b would reduce potential traffic safety impacts on motorists, bicyclists, and pedestrians to a less- than-significant level.

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11. Comments and Responses

11.1 Agencies

A-EBRPD

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**11.1.16 GUADALUPE/COYOTE RESOURCE CONSERVATION DISTRICT,
ROGER CASTILLO, 11/10/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-GCRCD-01 The comment raises concern over the Draft EIR's analysis of flows to support migratory species and questions adequacy of the flows. The comment specifically requests that steelhead and King salmon be addressed in the EIR.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses to comments regarding the need for the EIR to address Chinook salmon and coho salmon. (The comment uses the name "King salmon," which is another name for Chinook salmon.) Please also refer to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for a discussion of flow schedules included in project implementation, to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding flow related effects, and to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, regarding proposed monitoring and adaptive management for steelhead.

The CDRP Variant includes proposed instream flow schedules that differ from those included in the Draft EIR project. The CDRP Variant and its potential environmental impacts are described in Chapter 9, Sections 9.2 and 9.3, of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant. The master responses in Chapter 10 on Hydrology (Section 10.3) and on Fisheries (Section 10.4) also discuss the CDRP Variant and the proposed instream flow schedules.

A-GCRCD-02 The comment states that the EIR should address and prepare for the possibility of other species in the watershed in the future and set guidelines for flows that

¹ Comments provided at the public hearing held at Fremont Main Library, November 10, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, pages 33 – 34.

would serve more than just one species. The comment specifically mentions King salmon, which, as described in the response above, is another name for Chinook salmon.

Please refer to the master response in Section 10.4, Fisheries, and specifically to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses to comments regarding the presence of other species within Alameda Creek and the potential impacts that were evaluated in the EIR. Please also refer to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for a discussion of flows included in project implementation, and to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding flow related effects.

As noted in Response A-GCRCD-01 the instream flow schedules included as part of the CDRP Variant differ from those of the Draft EIR project; refer to Chapter 9, Sections 9.2 and 9.3, for a description of the Variant and analysis of its potential environmental impacts.

A-GCRCD-03 The comment states that the EIR needs to address flows for fall, winter, and spring and for anadromous fish species that will potentially be present in the Alameda Creek watershed in the future.

The EIR evaluates habitat requirements for all steelhead life stages in the Alameda Creek watershed (i.e., spawning and egg incubation, rearing, and migration) using physical habitat modeling tools that represent the best available science. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, for a discussion of the potential future occurrence of steelhead in Alameda Creek and flows included in project implementation; Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses to comments regarding the presence of other salmon species within Alameda Creek and the potential impacts evaluated in the EIR; and to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding flow related effects.

As noted in Response A-GCRCD-01 the instream flow schedules included as part of the CDRP Variant differ from those of the Draft EIR project; refer to Chapter 9, Sections 9.2 and 9.3, for a description of the Variant and analysis of its potential environmental impacts.

**11.1.17 SANTA CLARA COUNTY PARKS AND RECREATION DEPARTMENT,
ANTOINETTE ROMEO, PARK PLANNER, 12/19/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SCCPRD-01 The comment presents additional information concerning Ed R. Levin County Park and requests that this information be included in the EIR to more accurately reflect the recreational uses provided in the park.

EIR page 4.3-10 (Vol. 1, Chapter 4, Section 4.3.1.5) provides a description of Ed R. Levin County Park, including a summary of its recreational facilities. To respond to the comment's request, the third paragraph on EIR page 4.3-10 is revised as follows to provide additional information (deletions are shown in ~~strike through~~ and new text is underlined):

Ed R. Levin County Park

The 1,539-acre Ed R. Levin County Park lies on the border of Alameda County and Santa Clara County, approximately 2 miles west of the Calaveras Reservoir. ~~The county park surrounds the Spring Valley Golf Course.~~ Portions of its western half are within the City of Milpitas and its ~~the~~ eastern edge ~~of the county park borders on the~~ SFPUC-owned watershed lands. Calaveras Road, west of Felter Road, bisects the southern portion of the park. ~~This park~~ Ed R. Levin County Park offers many recreational facilities and activities, including over picnic and play areas, and 19 miles of regional and internal park trails (including a stretch of the Bay Area Ridge Trail), a group camping area, an off-leash dog park, an equestrian staging area, and picnicking, fishing, hang gliding, and golfing facilities. Spring Valley Golf Course, a leased facility, and Airpoint School, a private in-holding property, are located within the park. ~~for hiking, cycling, and horseback riding, including a stretch of the Bay Area Ridge Trail.~~ It also includes areas for fishing and hang gliding. The southern portion of the park contains numerous trails designated for hiking and equestrian use, four of which parallel Calaveras Road. In addition, there are approximately six trail access/crossing points within the park, including a segment of the Bay Area Ridge Trail, which cross Calaveras Road (SCCPRD 2009).

The following new reference cited in this text change is added to EIR page 4.3-24, after the reference to San Francisco Planning Department 2001 (new text is underlined):

Santa Clara County Parks and Recreation Department (SCCPRD). 2009. Letter communication, Antoinette Romeo, Park Planner. December 19, 2009.

These revisions do not change the analysis or conclusions presented in the Draft EIR.

Response A-SCCPRD-03 below discusses the information provided in the comment that identifies specific access roads into the park from Calaveras Road.

A-SCCPRD-02 The comment requests that the *Santa Clara Countywide Trails Master Plan Update* be acknowledged in the EIR because two trail segments – the Bay Area Ridge Trail and the Calaveras Connector Trail – may be directly affected by the proposed project.

The *Santa Clara County General Plan* (1995-2010) is discussed on EIR page 4.2-12 (Vol.1, Chapter 4, Section 4.2.4.2). As stated on pages G-10 and G-11 of the *Santa Clara County General Plan*, relevant policies of the *Countywide Trails Master Plan Update* are incorporated into the Parks and Recreation Element of the *Santa Clara County General Plan*.

In response to this comment, the following statement is added as the last sentence in the second full paragraph on EIR page 4.2-12 (new text is underlined):

The Parks and Recreation Element encourages implementation of a countywide system of trails, including trails within and between parks and other publicly owned open space lands, and trails linked to regional facilities including the Bay Area Ridge Trail.

The Bay Area Ridge Trail segment that crosses Calaveras Road has been addressed in the EIR as part of the revised discussion described in Response A-SCCPRD-01 above. The EIR describes the Calaveras Connector Trail in the first paragraph on EIR page 4.12-4 (Vol. 2, Chapter 4, Section 4.12.1.4), noting that Calaveras Road between Interstate 680 (I-680) in Alameda County, and East Calaveras Boulevard/Evans Road in Santa Clara County, is an on-road route recommended for bicycle travel.

As discussed in Response A-SCCPRD-04 below, the proposed project would have temporary, less-than-significant impacts on trail access within and in the vicinity of Ed R. Levin County Park. The following sentence is added to the end of the last paragraph on EIR page 4.2-17 (new text is underlined):

The project also would not conflict with goals to implement and preserve a system of countywide trails and trails linked to the Bay Area Ridge Trail, as project construction would not permanently alter existing or proposed trails in the vicinity of Ed R. Levin County Park.

These revisions do not change the analysis or conclusions presented in the Draft EIR.

- A-SCCPRD-03 The comment states that the Draft EIR only evaluates potential impacts on recreational facilities in the Sunol Ohlone Wilderness and limits the discussion of impacts on Ed R. Levin County Park to closure of Calaveras Road north of Felter Road. The comment requests that potential impacts and mitigation measures concerning recreational uses in Ed R. Levin County Park, particularly those addressing trails routes, trail access/crossing points, and uses in close proximity to Calaveras Road, be included in the EIR.

EIR pages 4.3-20 – 4.3-23 (Vol. 1, Chapter 4, Section 4.3.2.5) evaluate construction impacts on recreational uses in the project vicinity and identify potential indirect construction-related impacts on the nearby Sunol Regional Wilderness. Construction of the proposed project would not result in visual effects on the Ed R. Levin County Park; construction-related activities and site disturbance would not be visible due to intervening topography. Construction-related noise and dust are not expected to adversely affect recreational uses at the park due to its distance from the project construction site, and implementation of proposed mitigation measures would further reduce the potential for impacts at this location. EIR pages 5-38 – 5-42 (Vol. 2, Chapter 5, Mitigation Measures) include measures that would be incorporated into the project to minimize off-site construction-related dust (Mitigation Measures 5.13.1a, 5.13.1b, 5.13.3a, and 5.13.3b) and noise (Mitigation Measures 5.14.1 and 5.14.3).

As discussed in Response A-SCCPRD-04 below, the proposed project would not have adverse construction-related traffic effects on Ed R. Levin County Park, including potential impacts on recreational uses and trails routes, and trail access/crossing points. To clarify this issue in the EIR, the last paragraph on

EIR page 4.3-22 (and continuing on EIR page 4.3-23) is revised as follows (deletions are shown in ~~strike through~~ and new text is underlined):

Construction-related traffic effects, including ~~the~~ the closure of Calaveras Road, ~~is~~ are not expected to limit recreational use of the Ed R. Levin County Park. Several public roads and one private road within the park boundary originate or have access from Calaveras Road west of the location of the road closure at Felter Road; these include Downing Road, the park entry on Old Calaveras Road, the park's maintenance facility road, Spring Valley Road, park access to equestrian facilities and trails, and Vista Ridge Drive, a private residential road. As described in the discussion of Impact 4.12.2 in Subsection 4.12.2.3, the majority of construction worker trips and construction vehicle trips would occur on Calaveras Road north of the dam, between I-680 and Geary Road. No construction trucks are expected to reach the project work area via Calaveras Road south of the reservoir, with the exception of equipment to be used at Staging Area 11 and Borrow Area E. Therefore, potential construction-related traffic would not be expected to result in substantial adverse impacts on park access roads, recreational facilities, or trails along Calaveras Road between Felter Road and I-680. Implementation of Mitigation Measure 5.12.4a would avoid or reduce any potential impacts to less-than-significant levels.

Closure of Calaveras Road also would also not be expected to limit recreational use of ~~and~~ the EBRPD's Mission Peak Regional Preserve and Del Valle Regional Park facilities. These recreational facilities would not be affected by the proposed project because of their distance from the proposed construction activities. Roads that lead to these park entrances are not part of the network of roads that would accommodate the project-related increase in traffic or would be closed during any portion of the construction period of approximately 4 years.

This revision does not change the conclusions presented in the Draft EIR.

As described in Chapter 9 on pages 9-20 – 9-21, the CDRP Variant would upgrade approximately 7 miles of an existing PG&E electrical distribution line that includes segments located in Ed R. Levin County Park and within the Spring Valley Golf Course; refer to Section 9.5, which shows the portion of the existing distribution line that would be upgraded. As discussed on page 9-54, construction and operation of the upgraded electrical distribution line would not result in any new significant effects on recreational uses or activities beyond those identified for the Draft EIR project, and no new mitigation measures would be required.

A-SCCPRD-04 The comment notes that Calaveras Road is the primary access road to the project area, and that the southern segment of Calaveras Road bisects Ed R.

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11.1 Agencies

A-SCCPRD

Levin County Park. Summarizing the impact statement concerning increased potential for traffic safety hazards during construction on Calaveras Road north of Felter Road, the comment requests that the EIR evaluate potential construction-related traffic impacts on park facilities and recreational uses, particularly trails and trail access/crossings, in close proximity to the park. The comment also requests that the EIR include additional mitigation measures to address these impacts and suggests several measures for consideration. In reference to Mitigation Measure 5.12.4a, Traffic Control Plan, the comment asks that preparation and implementation of the plan be coordinated with staff of the County Department of Parks and Recreation and the County Roads and Airports Department.

The comment accurately notes that Calaveras Road is the primary access to the project area and correctly summarizes Impact 4.12.4 on EIR page 4.12-15 (Vol. 1, Chapter 4, Section 4.12).

Impact 4.12.4, which addresses construction-related activities and the potential for traffic safety hazards, applies to Calaveras Road north and south of the reservoir. However, as described in the discussion of Impact 4.12.2 on EIR pages 4.12-9 – 4.12-12, the majority of construction worker trips and construction vehicle trips would occur on Calaveras Road north of the dam, between I-680 and Geary Road. The exception would be some construction workers destined to the staging areas near Borrow Area E, who would use the segment of Calaveras Road in Milpitas for access to the project work area. No construction trucks are expected to reach the project work area via Calaveras Road south of the reservoir, with the exception of deliveries of equipment to be used at Staging Area 11 and Borrow Area E, and equipment used to construct jetties or other docking facilities and delivery of barges at Borrow Area E if the barge haul route is selected. These equipment deliveries would occur once at the beginning of construction and a second time when equipment was removed, with an occasional equipment delivery during the construction period. These equipment deliveries would not be a daily occurrence.

Since the majority of construction worker and vehicle trips would occur north of the reservoir, the potential for traffic safety hazards would be greater on Calaveras Road north of the dam, between I-680 and Geary Road. Therefore, potential construction-related traffic would not be expected to have substantial adverse impacts on park facilities, recreational uses, or trails and trail access points located along and near the segment of Calaveras Road that traverses Ed R. Levin County Park.

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11.1 Agencies

A-SCCPRD

As described in the discussion under Impact 4.12.4, to reduce or avoid traffic safety hazards during construction, Mitigation Measure 5.12.4a on EIR pages 5-37 – 5-38 requires the SFPUC or its contractors to prepare and implement a Traffic Control Plan. The Traffic Control Plan would include provisions to install advance warning signs on Calaveras Road north of Geary Road and on Felter Road and East Calaveras Road south of the dam advising motorists of the construction zone ahead to minimize hazards associated with potential conflict with construction vehicles and to notify motorists of any weekday closures of Calaveras Road between Geary Road and Felter Road (if road closure is authorized by Alameda and Santa Clara Counties).

The Traffic Control Plan also would include provisions to advise the public of construction-related delays and detours, including notification of motorists, bicyclists, and pedestrians of the schedule of any roadway closures, detour routes for vehicles, and alternate recreational bicycle routes. This information would be disseminated by posting signs along Calaveras Road north and south of the dam; providing up-to-date information to the East Bay Regional Park District, Alameda County, and Santa Clara County; and by posting this information on a project website or other easily accessible media.

As stated on EIR page 5-38, the Traffic Control Plan would also require that public road rights-of-way be repaired or restored to their pre-construction conditions upon completion of construction. If roadway damage is detected, the SFPUC would enter into an agreement with Alameda and Santa Clara Counties for implementing a post-construction roadway repair/rehabilitation program. Maintenance of adequate and safe driving and bicycle conditions on Calaveras Road, north and south of the dam, during the construction period is also required.

With implementation of Mitigation Measure 5.12.4a, potential impacts on access to and use of park facilities, recreation uses, and trails would be less than significant. No additional EIR mitigation measures would be required.

As stated in the first paragraph of Mitigation Measure 5.12.4a on EIR page 5-37, the Traffic Control Plan, including roadway repair standards, would be coordinated with applicable agencies. Applicable agencies would include Santa Clara County, since the SFPUC would need to obtain permits from the County for roadwork, including temporary closure. The County would have the discretion and responsibility of determining which departments, such as the

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11.1 Agencies

A-SCCPRD

Department of Parks and Recreation or the Roads and Airports Department, would be included in coordination of the Traffic Control Plan.

Please refer to Response A-SCCPRD-03 above for further discussion of potential impacts on Ed R. Levin County Park.

**11.1.18 SANTA CLARA COUNTY ROADS AND AIRPORTS DEPARTMENT,
FELIX LOPEZ, PROJECT ENGINEER, 11/10/09**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SCCRAD-01 The comment states that the current Pavement Condition Index (PCI) of Calaveras Road is 88, and that the road shall be repaired/reconstructed to the same condition or better following project construction. The comment also states that repairs shall be based on PCI and standard practices; that the PCI shall be surveyed by Santa Clara County staff; and while the SFPUC's contractor may conduct its own PCI survey, repairs shall be based on the County's PCI survey.

Mitigation Measure 5.12.4a, Traffic Control Plan, which is presented on EIR pages 1-84 – 1-85 (Vol. 1, Chapter 1, Table S.2) as well as on EIR pages 5-37 – 5-38 (Vol. 2, Chapter 5, Section 5.12), indicates that the SFPUC shall inspect and document the condition of Calaveras Road prior to and after construction and, if damage is detected, enter into an agreement with Alameda and Santa Clara Counties for implementing a post-construction roadway repair/rehabilitation program. Details such as those provided by the comment would be established through this agreement.

A-SCCRAD-02 The comment requests that the last sentence on EIR page 3-50 be revised to require that Calaveras Road and the dam access road be repaved to their pre-construction condition or better.

Mitigation Measure 5.12.4a, Traffic Control Plan, states the following on EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12):

Public roadway rights-of-way shall be repaired or restored to their pre-construction conditions upon completion of construction. The SFPUC shall inspect and document the condition of Calaveras Road prior to and after completion of the project and, if roadway damage is detected, enter into an agreement with Alameda and Santa Clara Counties for implementing a post-construction roadway repair/rehabilitation

program. At a minimum, roads damaged by the project shall be repaired to a structural condition equal to that which existed prior to the project construction activities. Maintenance of adequate driving and bicycling conditions of Calaveras Road during the construction period shall also be addressed.

Therefore, Mitigation Measure 5.12.4a would require that the SFPUC ensure that, at a minimum, public roads be repaired or restored to their pre-construction conditions. Refer also to Response A-Milpitas-01 concerning repair of roadways in the City of Milpitas.

The text on EIR page 3-50 (Vol. 1, Chapter 3, Section 3.5.1.7) cited by the comment is consistent with the requirements of Mitigation Measure 5.12.4a; therefore, no revision to the text on EIR page 3-50 is necessary.

A-SCCRAD-03 The comment raises concerns about damage to Calaveras Road during construction and states that damaged roadways should be immediately repaired during construction to the satisfaction of Santa Clara County.

As quoted in Response A-SCCRAD-02, above, Mitigation Measure 5.12.4a, Traffic Control Plan, includes a measure on EIR page 5-38 that requires maintenance of adequate driving and bicycling conditions on Calaveras Road during the construction period. Details related to roadway maintenance and repair would be established through an agreement between the SFPUC and Santa Clara and Alameda Counties. The intent of the maintenance and repair activities to be performed by the SFPUC's contractor would be to avoid added expense to Santa Clara and Alameda Counties as a result of the project.

A-SCCRAD-04 The comment states that all repairs within the Santa Clara County right-of-way should be made upon completion of the project, at no expense to the County, to the County's standards and satisfaction, and under the County's inspection.

As stated in Response A-SCCRAD-03, above, Mitigation Measure 5.12.4a requires the SFPUC to repair or restore all public roads to their pre-construction condition upon completion of construction in accordance with an agreement with Santa Clara and Alameda Counties. Details concerning road repair standards and inspections will be established through the roadway repair agreement between the SFPUC and the counties.

In response to this comment, the sixth bullet in Mitigation Measure 5.12.4a, at the top of EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12), is revised and expanded as follows (new text is underlined):

Public roadway rights-of-way shall be repaired or restored to their preconstruction conditions upon completion of construction. The SFPUC shall inspect and document the condition of Calaveras Road prior to and after completion of the project and, if roadway damage is detected, enter into an agreement with Alameda and Santa Clara Counties for implementing a post-construction roadway repair/rehabilitation program. At a minimum, roads damaged by the project shall be repaired to a structural condition equal to that which existed prior to the project construction activities at no expense to Alameda or Santa Clara Counties, or the City of Milpitas. Maintenance of adequate driving and bicycling conditions of Calaveras Road during the construction period shall also be addressed.

A-SCCRAD-05 The comment states that the weight limit on Calaveras Road from Evans Road to Ed R. Levin County Park is 3 tons.

The 3-ton weight limit on Calaveras Road from Evans Road to Ed R. Levin County Park is posted at the intersection of East Calaveras Road and Evans Road. It is anticipated that some equipment exceeding the 3-ton weight limit will need to be trucked in. Since the equipment deliveries are considered local traffic, and not through truck traffic, these deliveries will be exempt from the weight restriction.

In response to this comment, the following paragraph is added as the second paragraph on EIR page 4.12-13 (Vol. 2, Chapter 4, Section 4.12) (new text is underlined):

In Milpitas, Calaveras Road between Evans Road and Ed R. Levin County Park has a truck weight restriction of 3 tons for through traffic. It is anticipated that some construction equipment weighing more than 3 tons would need to be trucked to Borrow Area E. These trucks would be considered local traffic, and would be exempt from the 3-ton weight restriction. In general, the construction contractor would be required to obtain appropriate permits from Santa Clara County.

A-SCCRAD-06 The comment states that the Regional Water Quality Control Board (RWQCB) recently adopted a new General Permit and that the Stormwater Pollution Preventions Plan and Best Management Practices (BMPs) for the project should be revised to meet the new requirements.

The comment is correct. The RWQCB adopted a new General Permit (Order No. 2009-0009-DWQ; National Pollutant Discharge Elimination System (NPDES) No. CAS000002) on September 2, 2009; the new General Permit went into effect on July 1, 2010. This order supersedes Order No. 99-08-DWQ, which is described on EIR page 4.7-18 (Vol. 2, Chapter 4, Section 4.7).

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11.1 Agencies

A-SCCRAD

The description of the previous General Permit provided in the Draft EIR is still relevant; however, additional text is provided to describe how the new General Permit differs from the previous Order 99-08-DWQ.

In response to this comment, the first full paragraph on EIR page 4.7-18 is revised and expanded as follows (deletions are shown in ~~strike through~~ and new text is underlined):

The NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (or General Permit) ~~are~~ is required for projects that disturb more than 1 acre of land. ~~The current~~ A new General-NPDES General Permit that covers stormwater discharges, Order 2009-0009-DWQ, was adopted on September 2, 2009 and went into effect on July 1, 2010. ~~is Order No. 99-08-DWQ.~~ This new permit differs from the previous Order 99-08-DWQ in several ways. Among other changes, the new permit revises requirements for monitoring and reporting, specifies minimum BMPs and requirements, uses technology-based numerical action and effluent limits, uses risk-based permitting, and requires preparation of a Rain Event Action Plan.

The new Construction General Permit requires specific minimum BMPs, depending upon a projected sediment risk (Risk Level 1 through 3). Sediment risk is determined based on the sensitivity of the receiving water to sediment and the potential for site erosion and sediment transport. For moderate sediment risk projects (Risk Level 2), Numeric Action Levels (NALs) for turbidity and pH are imposed, and for high sediment risk projects (Risk Level 3), Numeric Effluent Limitations (NELs) for turbidity and pH are imposed. Post-construction stormwater performance standards are also included for sites not covered by a municipal stormwater permit. The Construction General Permit requires effluent and receiving water monitoring (only for some Risk Level 3 sites) to demonstrate compliance with permit requirements, and corrective action must be taken if these limits are exceeded. The results of monitoring and corrective actions must be reported annually to the SWRCB. This permit also specifies minimum qualifications for Storm Water Pollution Prevention Plan (SWPPP) developers and construction site inspectors.

The NPDES permitting process requires the applicant to file a public Notice of Intent to discharge stormwater and to prepare and implement a ~~Storm Water Pollution Prevention Plan (SWPPP)~~. The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the Best Management Practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are

correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

In response to this comment, the impact conclusion on EIR page 4.7-42 (Vol. 2, Chapter 4, Section 4.7, Impact 4.7.1) is revised as follows (new text is underlined):

Given the massive scale of the proposed excavation and spoils hauling and disposal and year-round construction schedule, erosion and sediment discharges during project construction could violate water quality standards and otherwise substantially degrade water quality. As such, the proposed project could have a significant impact on water quality.

In accordance with Mitigation Measure 5.7.1, site-specific BMPs would be implemented consistent with the requirements of the new NPDES General Permit (Order 2009-0009-DWQ; adopted on September 2, 2009) to avoid or minimize water quality impacts from the erosion and transport of sediment, meet Basin Plan water quality objectives, and protect beneficial uses. The implementation of BMPs would occur before construction activity is initiated at a given site. The BMPs would include measures such as, but not limited to, installing silt fences, directing runoff into constructed settling basins, covering stockpiled soils, and locating stockpiled soils away from drainage areas. Silt fences intercept and detain sediment while decreasing the velocity of sheet flow runoff, allowing particles to settle and preventing them from entering water bodies (CASQA 2003).

In response to this comment, Mitigation Measure 5.7.1 on EIR page 5-18 (Vol. 2, Chapter 5, Section 5.7) is revised and expanded as follows (deletions are shown in ~~strike through~~ and new text is underlined):

Consistent with the requirements of the State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ; adopted on September 2, 2009), the SFPUC shall undertake the proposed project in accordance with a project-specific ~~Storm Water Pollution Prevention Plan (SWPPP)~~. The San Francisco Bay Regional Water Quality Control Board (RWQCB), the primary agency responsible for protecting water quality within the project area, is responsible for reviewing and ensuring compliance with the SWPPP. This review is based on the general permit issued by the State Water Resources Control Board.

The recommended Best Management Practices (BMPs), subject to review and approval by the RWQCB, include the measures listed below. However, the measures themselves may be altered, supplemented, or deleted during the RWQCB's review process, since the RWQCB has final authority over the terms of the SWPPP.

These revisions do not change the analysis or conclusions presented in the Draft EIR.

A-SCCRAD-07 The comment indicates that the Draft EIR states that the SFPUC shall obtain approval from Santa Clara County for traffic control options. The comment also states that the SFPUC or the construction contractor shall be required to post bond when applying for an encroachment permit to assure repair of damaged County facilities due to CDRP construction.

The comment is correct in that the mitigation measure presented in the EIR provides for the SFPUC to obtain approval from Santa Clara County for one of two traffic control options. Mitigation Measure 5.12.4b, Approval for Road Closures, on EIR page 5-38 (Vol. 2, Chapter 5, Section 5.12) states the following: “The SFPUC shall also seek approval from Santa Clara County for either (1) closure of the Calaveras Road between the dam site and Felter Road, to through traffic, Monday to Friday, except emergency vehicles, to avoid creating a 7-mile long dead-end with no outlet, or (2) constructing a turnaround at the dam site and installing signage at Felter Road advising of no outlet 7-miles up the road due to construction for the same 2 periods.”

As stated on EIR page 3-74 (Vol. 1, Chapter 3, Section 3.7.3), an encroachment permit would be required from Santa Clara County for construction work that would occur within County road rights-of-way and for proposed temporary road closures. The SFPUC and/or the construction contractor would consult with the County regarding the encroachment permit process and would comply with all required permit procedures and requirements, including posting an assurance bond for road repair, as applicable.

**11.1.19 SAN FRANCISCO BOARD OF SUPERVISORS, SUPERVISOR DALY –
A-SFBOS-DALY**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SFBOS-Daly-01 The comment notes that there has been controversy and continuing public concern about the adequacy of the proposed stream flows for native fish in Alameda Creek.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding the adequacy of flows included in the project evaluated in the Draft EIR. Also discussed in this master response, as well as in Chapter 9 of this Comments and Responses document, is the fact that since publication of the Draft EIR, the SFPUC has developed a variant to the project analyzed in the Draft EIR. This CDRP Variant, which is the SFPUC's preferred project, includes enhancements to fishery resources that have been developed, in part, as a result of the SFPUC's ongoing coordination with resource agencies (e.g., National Marine Fisheries Service [NMFS] and California Department of Fish and Game [CDFG]). The CDRP Variant includes revised flow schedules, construction of a fish ladder at the Alameda Creek Diversion Dam (ACDD), installation of fish screens at the ACDD and Calaveras Reservoir, and implementation of an adaptive management implementation plan (AMIP). Please refer to Chapter 9, Sections 9.2 and 9.3 of this Comments and Responses document for a description of the CDRP Variant and its potential environmental impacts.

Please also refer the master response discussion provided in Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding the adequacy of the proposed instream flow schedules for native fishes and other aquatic resources.

A-SFBOS-Daly-02 The comment expresses an interest in ensuring that the Final EIR and future SFPUC water system operating plans are consistent with federal and state environmental laws and the SFPUC's watershed stewardship policy. The comment also states that the operation of the rebuilt dam should allow for the restoration of steelhead trout to Alameda Creek.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding flows included in Draft EIR project and the CDRP Variant and to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding proposed project operations, their effects on fishery resources, and compliance with the California Fish and Game Code. Please also refer to Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for responses to comments regarding the SFPUC's Environmental Stewardship Policy, involvement with the Alameda Creek Fisheries Restoration Workgroup, Federal Endangered Species Act (FESA) compliance, and the effects of the proposed project on steelhead.

In addition, please refer to Chapter 9, which discusses the CDRP Variant, developed by the SFPUC since the Draft EIR was published. The CDRP Variant includes enhancements to fishery resources and other refinements to the project analyzed in the Draft EIR. The CDRP Variant was developed as a result of the SFPUC's ongoing coordination with resource agencies and its own project development and design process. The CDRP Variant and its potential environmental impacts are described in Chapter 9, Sections 9.2 and 9.3 of this Comments and Responses document. Please see Chapter 9 for further discussion of the CDRP Variant regarding its compliance with state and federal regulations as well as its consistency in supporting steelhead restoration goals. The master responses on hydrology (Section 10.3) and on fisheries (Section 10.4) also discuss the CDRP Variant and address the points raised in this comment.

A-SFBOS-Daly-03 The comment raises concern that future SFPUC water system operations in the Alameda Creek watershed may adversely affect water flow, habitat suitability, and fish passage downstream of SFPUC dams. The comment also encourages the SFPUC to take the lead in watershed stewardship and operate the city's water system in a more sustainable manner.

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Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows as Part of the Proposed Project and Variant, regarding flows included in Draft EIR project and the CDRP Variant and to Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding fish passage at the ACDD and Calaveras Dam and project-related effects on water flow, aquatic habitat, and fisheries downstream of these facilities.

The suggestion that the SFPUC take the lead in watershed stewardship and operate the water system in a more sustainable manner does not pertain to the content or adequacy of the EIR. However, the CDRP, as one of the facility improvement projects under the SFPUC's Water System Improvement Program (WSIP), contributes to the WSIP's overall goals, including the goal to enhance sustainability in all system activities (see EIR page 2-6, Vol. 1 Chapter 2, Section 2.2.3). Other WSIP projects and operations that support this sustainability goal include water conservation programs; projects that generate and use recycled water; and projects that allow use of available groundwater, reducing dependence on surface water sources (e.g., the Lake Merced Project, the Regional Conjunctive-use Project).

A-SFBOS-Daly-04 The comment requests mitigation measures that would allow the project to proceed quickly and without conflict, such as adequate minimum stream flows that are consistent with those proposed by NMFS, that are adequate for upstream passage and outmigration of steelhead trout and Chinook salmon, and that mimic the natural hydrograph of the stream. The comment also states that the project should fully mitigate for the impacts of the operation of the Calaveras Dam and ACDD in blocking spawning and rearing habitat for steelhead, impairing flows, and changing downstream habitat.

Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.2, Flows Proposed as Part of the Draft EIR Project and CDRP Variant, regarding flows included in the Draft EIR project and the CDRP Variant and Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding proposed project operations and their effects on fishery resources, including fish passage and migration. Please also refer to Section 10.4.6, Other Anadromous Fish Species in Alameda Creek, for responses to comments regarding the presence of Chinook salmon within Alameda Creek and the potential impacts that were evaluated in the EIR. Please refer to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for

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responses to comments regarding endangered species act compliance (i.e., NMFS requirements), steelhead passage, and consideration in the EIR of the effects of the project on steelhead.

Regarding mitigation for operational impacts on access to spawning and rearing habitat for steelhead, impairment of flows, and changes to downstream habitat, see the master responses presented in Sections 10.4.2, 10.4.5, and 10.4.7 referenced above. The EIR determined that impacts related to these issues would be either less than significant without mitigation or mitigated to a less-than-significant level (see EIR pages 4.5-60 – 4.5-82, Vol. 1, Chapter 4, Section 4.5). Regarding project consistency with NMFS requirements, the SFPUC is currently completing a FESA Section 7 consultation for the CDRP with NMFS. The SFPUC will construct and operate the CDRP in compliance with all regulatory permitting requirements including stream flow requirements acceptable to NMFS. The CDRP Variant, which as discussed above in Response A-SFBOS-Daly-01, is SFPUC's preferred project, has been developed, in part, as a result of the SFPUC's ongoing coordination with NMFS. In addition, SFPUC is completing a Habitat Conservation Plan with NMFS and other resource agencies in order to ensure SFPUC operations in the Alameda watershed are FESA compliant.

A-SFBOS-Daly-05 The comment requests consideration of passage for migratory fish at the ACDD and Calaveras Dam as mitigation.

As identified in the analyses of project impacts in Section 4.5 of the EIR, Fisheries and Aquatic Habitat (Vol.1, Chapter 4, pages 4.5-54 – 4.5-82) and cumulative impacts in Section 6.2 (Vol. 2, Chapter 6, pages 6-23 – 6-32), providing fish passage at the ACDD and/or Calaveras Dam is not required for impacts to migratory fish from the Draft EIR project to be less than significant.

In addition, as indicated in Response A-SFBOS-Daly-01, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant that includes construction of a fish ladder at the ACDD, installation of fish screens at the ACDD and Calaveras Reservoir, and proposed instream flow schedules that differ from those included in the Draft EIR project. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of the CDRP Variant. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.5, Current and

Proposed Operations of the ACDD and Calaveras Dam, for additional discussion of fish passage for both the Draft EIR project and the CDRP Variant.

A-SFBOS-Daly-06 The comment states that the EIR should include meaningful mitigations for construction impacts and greenhouse gas (GHG) emissions due to the project.

Volume 2 of the EIR provides mitigation measures for construction impacts on vegetation and wildlife in Section 5.4, EIR pages 5-2 – 5-14; on fisheries in Section 5.5, EIR page 5-16; on water quality in Section 5.7, EIR pages 5-18 – 5-26; on geology, soils and seismicity in Section 5.8, EIR page 5-27; on hazards encountered during construction in Section 5.9, EIR pages 5-27 – 5-32; on cultural resources in Section 5.10, EIR pages 5-32 – 5-37; on transportation in Section 5.12, EIR pages 5-37 and 5-38; on air quality in Section 5.13, EIR pages 5-38 – 5-40; and on noise and vibration in Section 5.14, EIR pages 5-40 – 5-42. These mitigation measures would reduce most of the impacts of construction to less-than-significant levels; as explained on EIR pages 6-53 and 6-54, some visual, noise, traffic, and air quality impacts would not be reduced to less-than-significant levels with implementation of feasible mitigation measures. However, the GHG impact related to construction emissions was considered significant in the Draft EIR based on draft guidelines that have since been superseded by guidelines formally adopted by the Bay Area Air Quality Management District (BAAQMD) in June 2010. Under these adopted guidelines, GHG emissions from the project would no longer be considered a significant impact under CEQA. As described in the EIR (page 4.13-44), project construction would not conflict with the California Global Warming Solutions Act of 2006 and would conform with the CCSF and SFPUC GHG reduction actions, including incorporating best management practices to reduce GHG emissions during construction.

Please refer to the master response presented in Section 10.5, Greenhouse Gas Emissions, and specifically to Section 10.5.2, Construction GHG Emissions Impacts and Mitigation, for further information regarding the BAAQMD thresholds for GHG emissions and responses to comments regarding GHG emissions.

A-SFBOS-Daly-07 The comment states that San Francisco can and should play a major role in restoration of the watershed as part of the proposed project in light of the major fish passage projects in Alameda Creek moving forward.

The SFPUC has and continues to participate in fisheries restoration in the Alameda Creek watershed, including SFPUC's funding and participation in the Alameda Creek Fisheries Restoration Workgroup and SFPUC's removal of Niles and Sunol dams in 2006. In addition, as described above in Responses A-SFBOS-Daly-01 and A-SFBOS-Daly-05, since publication of the Draft EIR, the SFPUC has developed the CDRP Variant that includes construction of a fish ladder at the ACDD, installation of fish screens at the ACDD and Calaveras Reservoir, and proposed instream flow schedules that differ from those included in the Draft EIR project. Please refer to Chapter 9 of this Comments and Responses document for a description and analysis of these project changes. Please refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.7, Future Cumulative Analysis of Effects on Steelhead, for responses to comments regarding the SFPUC's Environmental Stewardship Policy, and the project's role in restoring steelhead to the watershed for both the Draft EIR project and the CDRP Variant. Please also see Section 10.4.5, Current and Proposed Operations of the ACDD and Calaveras Dam, for responses to comments regarding the proposed instream flow schedules and other project elements and SFPUC actions to benefit native fishes and other aquatic resources in Alameda Creek.

**11.1.20 SAN FRANCISCO CITY PLANNING COMMISSION, COMMISSIONER
MICHAEL J. ANTONINI, 11/12/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SFPC1-01 The comment questions whether an earthen dam is the best type of dam to construct at Calaveras Reservoir.

The SFPUC considered a range of dam types for the CDRP. An earthfill dam was selected as appropriate for this site because it can withstand earthquakes better than a concrete dam. Alternatives considered by the engineering team during preparation of the *Calaveras Dam Replacement Project Conceptual Engineering Report* included earthfill and earth and rock fill dams, a concrete-faced rockfill dam, and an asphalt concrete core rockfill dam (URS Corporation 2005b, cited in EIR Vol. 1, Chapter 3, Project Description).

A-SFPC1-02 The comment asks about contributions to Alameda Creek from Arroyo del Valle and restoration of conditions that might be better than those that existed before the first dams were built in Niles Canyon.

The northern portion of the Alameda Creek watershed drains to Arroyo de la Laguna. Arroyo de la Laguna joins Alameda Creek at the northern end of the Sunol Valley. Tributaries of Arroyo de la Laguna include Arroyo del Valle, Arroyo Mocho, Tassajara Creek, and Alamo Creek. Flows from Arroyo del Valle and releases from Del Valle Reservoir enter Alameda Creek via Arroyo de la Laguna. The Alameda Creek watershed is described on EIR page 4.6-11 (Vol. 1, Chapter 4, Section 4.6.1.1). Flows in Alameda Creek below the Arroyo de la Laguna confluence are described on EIR pages 4.6-25 – 4.6-27. About one-third of the measured flow in Alameda Creek at Niles is from the southern portion of the Alameda Creek watershed. The remainder is from the

¹ Comment provided at the public hearing held at San Francisco City Hall, November 12, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, pages 44 – 45.

northern portion of the Alameda Creek watershed and from small tributaries that drain directly to Niles Canyon.

Operational effects of the Draft EIR project on flows downstream of Arroyo de la Laguna are discussed in Impact 4.6.7 on EIR pages 4.6-94 – 4.6-98.

Operational effects of the CDRP Variant on flows in Alameda Creek are discussed in Chapter 9, Section 9.2.5, Variant Operations. Please also refer to the master response presented in Section 10.3, Hydrology, and specifically to Section 10.3.3, Diversions and Streamflow, under “Flow in Alameda Creek Downstream of Arroyo de la Laguna.”

With respect to restoration of fish and wildlife habitat in the Alameda Creek watershed, implementation of the flow schedules for native fishes and other aquatic resources, fish screens, and the provision for future fish passage at the Alameda Creek Diversion Dam that are included in the CDRP Variant would improve fish habitat compared to existing conditions. However, it is unlikely that these improvements would restore fish and wildlife habitat to better conditions than existed before any dams were constructed in the watershed.

References

URS Corporation (URS). 2005. Final Technical Memorandum, Evaluation of Dam Remediation and Replacement Alternatives (Task 9.3), Calaveras Dam Conceptual Engineering. Prepared for the San Francisco Public Utilities Commission. March 18, 2005.

11.1.21 SAN FRANCISCO CITY PLANNING COMMISSION, COMMISSIONER GWYNETH BORDEN, 11/12/09¹

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SFPC2-01 The comment seeks to confirm that the Draft EIR includes an evaluation of a broad range of alternatives with respect to stream flows, including flows for migratory fish.

As required by CEQA, the EIR (Vol. 2, Chapter 7) contains an analysis of a number of alternatives to the proposed project. The proposed project and its alternatives would result in different flow regimes in Alameda Creek downstream of the Alameda Creek Diversion Dam (ACDD) and in Calaveras Creek downstream of Calaveras Dam. Consequently, the EIR contains an analysis of flow regimes that represent a broad range of stream flows.

Under the No Project Alternative, flows in excess of those captured by the SFPUC's water supply facilities, with Division of Safety of Dams restrictions on Calaveras Reservoir in effect, would continue downstream but no releases would be made to support native fish. With the Draft EIR project, flows in excess of those captured by the SFPUC's water supply facilities, with the capacity of Calaveras Reservoir restored, would continue downstream, but the SFPUC would also release up to 6,300 acre-feet per year of additional water to support resident trout (see EIR pages 3-66 – 3-69, Vol. 1, Chapter 3, Section 3.6.5). Once steelhead have regained access to the upper Alameda Creek watershed, the SFPUC would increase its releases to support these migratory fish (see EIR pages 3-69 – 3-70, Vol. 3, Chapter 3, Section 3.6.6). The CDRP Variant includes enhancements to fishery resources. With these enhancements, there would be greater flow volumes in Alameda Creek below the ACDD with the CDRP Variant than with the Draft EIR project (see Chapter 9, Section 9.1, Introduction to the CDRP Variant, Section 9.2,

¹ Comment provided at the public hearing held at San Francisco City Hall, November 12, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, pages 46 – 47.

Description of the CDRP Variant, and in particular Section 9.2.5, Variant Operations). These additional flows would support native fishes and would also support steelhead or other anadromous fish if they are found in the upper reaches of Alameda Creek in the future.

The EIR also considers alternative locations for water storage, including the SFPUC's Upper Tuolumne River system, other SFPUC Bay Area facilities, and non-SFPUC Bay Area facilities (Vol. 2, Chapter 7, Section 7.10.1). Under these alternatives, Calaveras Dam and the ACDD would be removed. These alternatives were rejected from further consideration in the EIR because (1) they would not meet the project objectives or the WSIP program objectives related to using water from the Alameda and Calaveras Creek watersheds for drought protection, re-establishing water delivery reliability, and limiting rationing to no more than 20 percent during droughts; and (2) they would not reduce or avoid environmental impacts associated with either the Draft EIR project or the CDRP Variant. With respect to provision of flows to support native fish, the No Project Alternative represents the most restrictive alternative because no flow releases were assumed to be made during the summer downstream of the Calaveras Dam under this alternative.

A-SFPC2-02

The comment raises concern over the mitigation for construction-related impacts on fisheries.

EIR pages 4.5-55 – 4.5-60 (Vol. 1, Section 4.5, Impacts 4.5-1, 4.5-2, 4.5-3, and 4.5-4) address potential construction-related impacts on native fishes and other aquatic resources. EIR pages 4.4-75 – 4.4-95, and 4.4-102 – 4.4-108 (Vol. 1, Section 4.4, Impacts 4.4.1, 4.4.2, 4.4.3, 4.4.7 and 4.4.9a) address potential construction-related impacts on wetlands and aquatic habitats and related wildlife, including California red-legged frog, California yellow-legged frog, California tiger salamander, and other wildlife that would be affected by construction activities and changes in flows in Alameda and Calaveras Creeks. Mitigation measures for impacts on these species are described in detail in EIR Chapter 5, Measures 5.4-1, 5.4-2, and 5.4.3 (Vol. 2, pages 5-2 – 5-14).

Please also refer to the master response presented in Section 10.4, Fisheries, and specifically to Section 10.4.4, Construction-Related Effects on Calaveras Creek and Calaveras Reservoir, for responses to comments regarding construction impacts on native fishes and other aquatic resources. In addition, the construction impacts of implementing proposed mitigation measures involving habitat creation and restoration activities are discussed on EIR

page 5-14, along with proposed avoidance and other mitigation measures that would reduce these impacts to less-than-significant levels.

Chapter 9, Section 9.4, describes the mitigation measures applicable to the CDRP Variant.

A-SFPC2-03

The comment asks about greenhouse gas emissions during construction.

EIR Section 4.13, Air Quality, includes a detailed analysis of greenhouse gas emissions during construction of the proposed project. Please see, in particular, EIR pages 4.13-14 – 4.13-16, 4.13-23 – 4.13-30, and 4.13-42 – 4.13-44 (Vol. 2, Chapter 4, Section 4.13). Please also refer to the master response presented in Section 10.5, Greenhouse Gas Emissions, and specifically to Section 10.5.2, Construction GHG Emissions Impacts and Mitigation.

**11.1.22 SAN FRANCISCO CITY PLANNING COMMISSION, COMMISSIONER
CHRISTINA R. OLAGUE, 11/12/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SFPC3-01 The comment expresses support for the project. The comment is acknowledged. The comment does not address environmental issues; therefore, no response is required.

A-SFPC3-02 The comment recognizes the SFPUC's engagement with ecologists and other stakeholders and expresses the commenter's desire to see that the concerns they raise are addressed in the EIR responses to comments.

For ecological information, please refer to responses to comments from the California Department of Fish and Game, the East Bay Regional Park District, the San Francisco Bay Regional Water Quality Control Board, the Alameda Creek Alliance and Center for Biological Diversity, the Tuolumne River Trust, and other interested agencies and organizations.

¹ Comment provided at the public hearing held at San Francisco City Hall, November 12, 2009. See the public hearing transcript in Appendix M of the Comments and Responses document, pages 47 – 48.

**11.1.23 SAN FRANCISCO CITY PLANNING COMMISSION, COMMISSIONER
WILLIAM L. LEE, 11/12/09¹**

Note to Reader: After the Draft EIR was published, the SFPUC developed a variant of the project that incorporates additional features to enhance fishery resources and other refinements to the dam replacement project. The CDRP Variant and its potential environmental impacts are described in Chapter 9 of this Comments and Responses document. As described in Chapter 9, the mitigation measures applicable to the CDRP Variant are the same as those for the Draft EIR project, unless otherwise noted. The following responses apply to both the Draft EIR project and the CDRP Variant.

A-SFPC4-01 The comment raises concerns about water quality conditions in addition to flows. Specifically, the comment raises the question about concentrations of biological oxygen demand (BOD) during historic times when Alameda Creek supported migratory fish.

There are no known data on BOD or other water quality parameters for historic periods when Alameda Creek supported migratory steelhead. BOD is a metric that is typically used to measure nutrient, organic matter, and/or organic waste loading in surface water bodies. Water quality impacts related to nutrient loading are most often associated with the discharge of nitrates, phosphates, and other nutrients from wastewater treatment plants, urban runoff, and agriculture (e.g., cattle grazing). The proposed project would not result in the new or additional discharges of nutrients into Alameda Creek or any other water bodies above existing conditions (i.e., existing cattle grazing activities would continue after project construction), and would have no impacts related to nutrient loading/BOD. The commenter is referred to EIR pages 4.7-1 – 4.7-78 (Vol. 2, Section 4.7) for additional information on the effects of the CDRP on water quality.

A-SFPC4-02 The comment asks how fisheries mitigation can be proposed without data describing the fish populations that existed 100 years ago.

The baseline against which the proposed project's impacts are measured is the conditions that existed when the Notice of Preparation was circulated in October 2005, with appropriate updates based on resource surveys in 2006-2009. Knowledge or data regarding conditions existing 100 year ago

¹ Comment provided at the public hearing held at San Francisco City Hall, November 12, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, pages 49 – 50.

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therefore are not necessary for an adequate environmental analysis under CEQA; however, please note that the cumulative analysis in the EIR (Vol. 2, Chapter 6, Section 6.2.3.3, pages 6-23 to 6-32) considers the historical conditions of fish populations in Alameda Creek and the changes that have occurred to these resources over the past century. Please refer to the master response presented in Section 10.2, Baseline Used in the Environmental Analysis, and specifically to Section 10.2.3, Baseline Considerations Regarding California Department of Water Resources Division of Safety of Dams (DSOD) Restrictions, the 1997 Memorandum of Understanding (MOU) between the San Francisco Public Utilities Commission (SFPUC) and the California Department of Fish and Game (CDFG), and Unimpaired Flows, regarding the environmental baseline used for the EIR.

**11.1.24 SAN FRANCISCO CITY PLANNING COMMISSION, COMMISSIONER
KATHRIN MOORE, 11/12/09¹**

A-SFPC5-01 The comment states that the Draft EIR has a solid base and that responses to the questions on the Draft EIR should provide further information.

Responses to comments received on the Draft EIR have been provided in this Comments and Responses document, which includes detailed master responses on key issues in Chapter 10 and individual responses to specific comments in Chapter 11.

¹ Comment provided at the public hearing held at San Francisco City Hall, November 12, 2009. See the public hearing transcript in Appendix M of this Comments and Responses document, page 51.