12.2 State Agencies

STATE AGENCIES

STATE AGENCIES THAT SUBMITTED COMMENTS ON THE DRAFT PEIR

Comment Letter Format	Comment Letter ID	Name of Commenter	Title	Organization/ Affiliation	Page
Mail	S_Caltrans	Tom Dumas	Chief of Office for Metropolitan Planning	California Department of Transportation	12.2-1
Mail	S_CC	Sam Schuchat	Executive Officer	Coastal Conservancy	12.2-1
Mail	S_CDFG1	W.E. Loudermilk	Regional Manager	California Department of Fish and Game	12.2-4
Mail	S_CDFG2	Charles Armor	Regional Manager, Bay Delta Region	California Department of Fish and Game	12.2-4
Mail	S_CSA	Sally Lieber	Assemblywoman, 22nd District	California State Assembly	12.2-24
Mail	S_DWR	Christopher Huitt	Staff Environmental Scientist	California Department of Water Resources, Floodway Protection Section	12.2-25
Mail	S_RWQCBCV	Greg Vaughn	Senior Engineer	Regional Water Quality Control Board, Central Valley Region	12.2-27
Mail	S_RWQCBSF	Keith H. Lichten	Senior Engineer	Regional Water Quality Control Board, San Francisco Bay Region	12.2-30

S_Caltrans

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 STOCKTON, CA 95201
(1976 E. CHARTER WAY/1976 E. DR. MARTIN LUTHER KING JR. BLVD. 95205)
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July 23, 2007

10-Var Counties
SCH# 2005092026
SFPUC Water System
Improvement Project

Diana Sokolove
City and County of San Francisco
Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Dear Ms. Sokolove:

The California Department of Transportation (Department) appreciates the opportunity to have reviewed the Draft Environmental Impact Report for the proposed project to modify and improve the SFPUC Water System through the counties of San Joaquin, Stanislaus, and Tuolumne. The Department has the following comments:

- Please contact the Department for any planned construction of pipeline crossing the State facilities.
- An Encroachment Permit will be required for work (if any) done within the Department's right of way. This work is subject to the California Environmental Quality Act. Therefore, environmental studies may be required as part of the encroachment permit application including biological, cultural resources, and exposure to hazardous materials. A qualified professional must conduct any such studies undertaken to satisfy the Department's environmental review responsibilities. Ground disturbing activities to the site prior to completion and/or approval of required environmental documents may affect the Department's ability to issue a permit for the project. Furthermore, if engineering plans or drawings will be part of your permit application, they should be prepared in standard units.

01

If you have any questions, please contact Annette Clark at (209) 948-3909 (e-mail: annette_clark@dot.ca.gov) or me at (209) 941-1921.

Sincerely,

Tom Dumas, Chief
Office of Metropolitan Planning

c: SMorgan CA Office of Planning and Research

"Caltrans improves mobility across California"

12.2-1

S_CC

Coastal Conservancy

RECEIVED
OCT 0 1 2007
CITY & COUNTY OF S.F.
PLANNING DEPARTMENT

September 17, 2007

San Francisco Planning Department
Attention: Paul Maltzer, Environmental Review Officer, WSIP PEIR
1650 Mission Street, Suite 400
San Francisco, CA 94103

Dear Mr. Maltzer:

Thank you for the opportunity to review the Draft Program Environmental Impact Report (PEIR) for the San Francisco Public Utilities Commission's Water System Improvement Program (WSIP).

The State Coastal Conservancy acts with others to preserve, protect and restore the resources of the California Coast. The San Francisco Bay Area Conservancy Program was created by the State Legislature in 1997 as a special program within the State Coastal Conservancy to help public agencies and private nonprofit organizations preserve open space, protect and restore fish and wildlife habitat, promote the use of habitat restoration projects for environmental education, provide public access to open space areas, and restore urban waterfronts in the nine Bay Area counties.

The Conservancy's comments on the PEIR for the WSIP are connected to the South Bay Salt Pond Restoration Project (SBSP Project). The Conservancy is facilitating the restoration, public access, and flood management planning for the SBSP Project, in coordination with the landowners, U.S. Fish and Wildlife Service and California Department of Fish and Game, and the local flood control agencies, Santa Clara Valley Water District and Alameda County Flood Control and Water Conservation District, as well as many other partners and stakeholders. We are currently in the process of producing the Final EIR/EIS for the SBSP Project. The Draft EIR/EIS, as well as the public comments, can be viewed at www.southbayrestoration.org.

01

The Conservancy supports the construction of a new Bay Division Pipeline 5, due to the fact that it would be underground from the Newark Valve Lot to the Ravenswood Valve Lot. The five mile "Bay Tunnel" segment of the pipeline would pass under marshlands, mudflats, and open Bay water. While there will be construction and maintenance impacts that need to be planned during species windows and mitigated, the tunnel is preferable to the existing aboveground Bay Division Pipelines Nos. 1 and 2, which pass over

02

1330 Broadway, 13th Floor
Oakland, California 94612-2530
510·286·1015 *Fax:* 510·286·0470

marshlands, reducing the amount of wildlife habitat and blocking the movement of wildlife, including endangered species.

The PEIR states in Table S.2 on Page S-14 that the portions of BDPL Nos. 1 and 2 between the Newark Valve Lot and the Ravenswood Valve Lot will be decommissioned, but that decommissioning is not part of this project. As part of the construction of the "Bay Tunnel", this five-mile segment of BDPL Nos. 1 and 2 needs to be decommissioned and physically removed. Without the physical removal of the pipelines, constructing the "Bay Tunnel" loses its potential benefits to fish and wildlife habitat and simply results in the addition of construction impacts to the existing impacts from BDPL Nos. 1 and 2. If the plan is to decommission this portion of the pipeline, it should be included in the Programmatic EIR and physical removal of the pipeline should be planned. The short term impacts of the removal outweigh the long-term impacts of maintenance and potential deterioration of the pipelines. The SFPUC should also consider that physical removal of BDPL Nos. 1 and 2 through the Bay and marshlands may partially mitigate for activities in the Bay and marshlands contemplated as part of the WSIP.

02 cont.

The SBSP Project could benefit from any clean dredge material produced as a result of construction of the "Bay Tunnel". Many of the former salt ponds are subsided and the placement of dredge material on the pond bottoms would raise the elevation to a level more suitable for tidal marsh restoration. The Conservancy requests that the SFPUC coordinates with the SBSP Project, particularly with the Don Edwards San Francisco Bay National Wildlife Refuge, as the "Bay Tunnel" project proceeds, to determine the potential use of dredge material for salt pond restoration.

03

The construction of the "Bay Tunnel" and physical removal of the BDPL Nos. 1 and 2 could also assist with completion of a gap in the San Francisco Bay Trail. The Bay Trail is a planned recreational corridor that, when complete, will encircle San Francisco Bay and San Pablo Bay with a continuous 500-mile network of bicycling and hiking trails. It will connect the shoreline of all nine Bay Area counties, link 47 cities, and cross the major toll bridges in the region. To date, approximately 290 miles of the alignment—over half the Bay Trail's ultimate length—have been completed.

A major gap in the Bay Trail exists between Highway 84 and the Ravenswood Open Space Preserve. The City of Menlo Park, in an effort to develop alternatives for completing this gap, conducted a Bay Trail Feasibility Study (the final Feasibility Study report was completed January 5, 2005). The completion of this gap is of interest to the Conservancy for two reasons. One is that the Conservancy's enabling legislation includes completion of regional trails, such as the Bay Trail, as an objective. The Conservancy provides block grants to the Bay Trail project at ABAG to help achieve this goal. The second reason is the connection between this trail gap and the trails that will be built as part of the SBSP Project. All of the alternatives for the SBSP Project include completion of the Bay Trail through the project area, including the Ravenswood Pond Complex (attached are the 2 action alternatives for the Ravenswood ponds). The trail connection between Pond SF2 in the Ravenswood Pond Complex and the Ravenswood Open Space Preserve to the south is difficult primarily due to the presence of the

04

12.2-2

S_CC

Dumbarton Rail right of way. Another factor, however, is the presence of the BDPL Nos. 1 and 2. The Conservancy asks that as the "Bay Tunnel" project proceeds, the SFPUC coordinates and works cooperatively with the Conservancy and ABAG's Bay Trail project regarding completion of this Bay Trail gap through SFPUC lands.

04 cont.

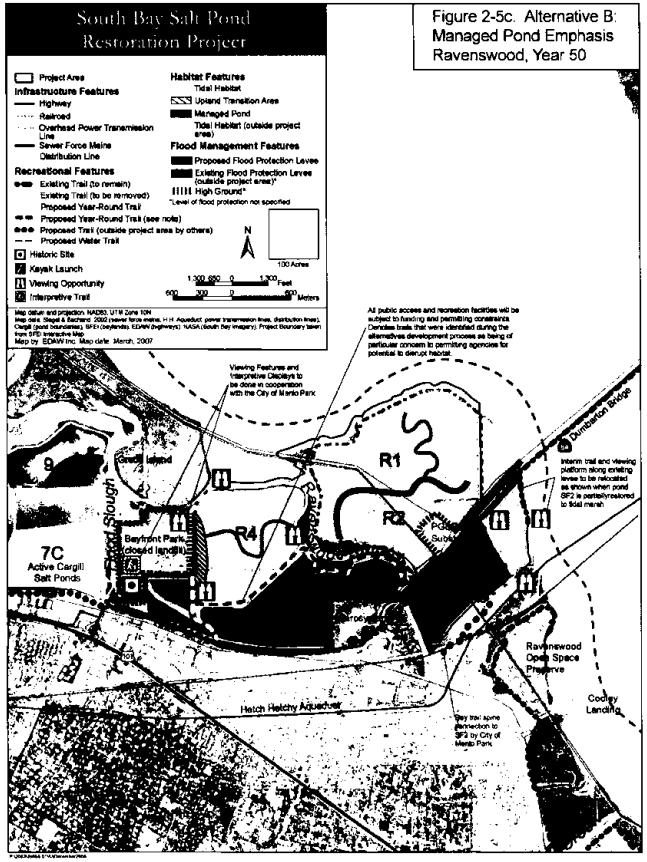
Thanks for this opportunity to comment on the PEIR for the San Francisco Public Utilities Commission's Water System Improvement Program. Any questions can be directed to Amy Hutzel, San Francisco Bay Area Program Manager at (510) 286-4180 or ahutzel@scc.ca.gov.

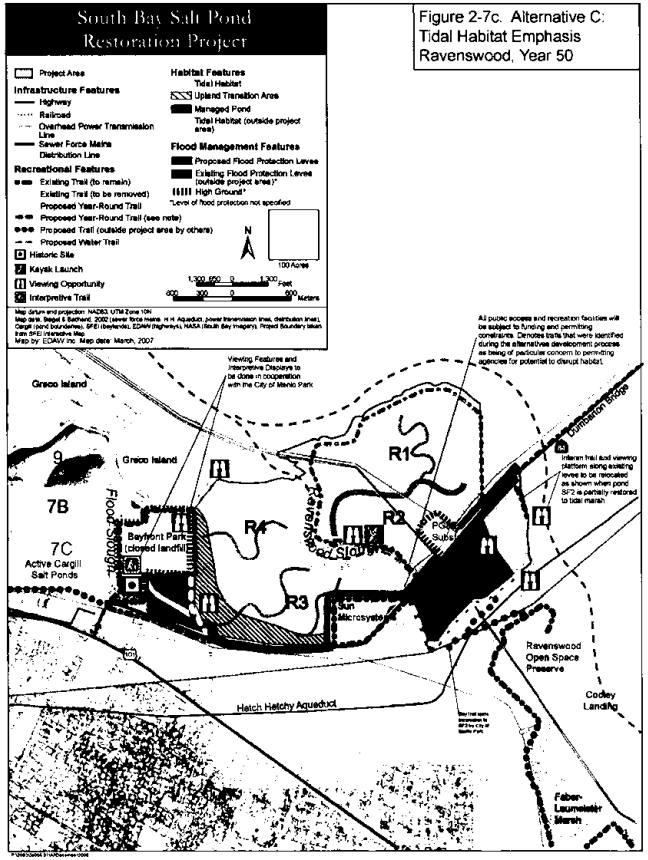
Sincerely,

Sam Schuchat
Executive Officer

cc. Laura Thompson, San Francisco Bay Trail
Mendel Stewart, Don Edwards San Francisco Bay National Wildlife Refuge

S_CC


South Bay Salt Pond Restoration Project
Project Area
Infrastructure Features
Highway
Railroad
Overhead Power Transmission Line
Sewer Force Mains
Distribution Line
Recreational Features
Existing Trail (to remain)
Existing Trail (to be removed)
Proposed Year-Round Trail
Proposed Year-Round Trail (see note)
Proposed Trail (outside project area by others)
Proposed Water Trail
Historic Site
Kayak Launch
Viewing Opportunity
Interpretive Trail
Habitat Features
Tidal Habitat
Upland Transition Area
Managed Pond
Tidal Habitat (outside project area)
Flood Management Features
Proposed Flood Protection Levee
Existing Flood Protection Levee (outside project area)*
High Ground*
*Level of flood protection not specified
N
100 Acres
1,300 650 0 1,300 Feet
600 300 0 600 Meters
Map datum and projection: NAD83, UTM Zone 10N
Map by: EDAW Inc. Map date: March, 2007
Figure 2-5c. Alternative B: Managed Pond Emphasis Ravenswood, Year 50
All public access and recreation facilities will be subject to funding and permitting constraints. Denotes trails that were identified during the alternatives development process as being of particular concern to permitting agencies for potential to disrupt habitat.
Viewing Features and Interpretive Displays to be done in cooperation with the City of Menlo Park
Dumbarton Bridge
Greco Island
9
7B
7C
Active Cargill Salt Ponds
Bayfront Park (closed landfill)
Flood Slough
Ravenswood Slough
R1
R2
R3
R4
Pond 3 Subsidence
Interim trail and viewing platform along existing levee to be relocated as shown when pond SF2 is partially restored to tidal marsh
Ravenswood Open Space Preserve
Cooley Landing
Hetch Hetchy Aqueduct
Faber-Laumeister Marsh


South Bay Salt Pond Restoration Project
Project Area
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Highway
Railroad
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Sewer Force Mains
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Proposed Year-Round Trail (see note)
Proposed Trail (outside project area by others)
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Historic Site
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Habitat Features
Tidal Habitat
Upland Transition Area
Managed Pond
Tidal Habitat (outside project area)
Flood Management Features
Proposed Flood Protection Levee
Existing Flood Protection Levee (outside project area)*
High Ground*
*Level of flood protection not specified
N
100 Acres
1,300 650 0 1,300 Feet
600 300 0 600 Meters
Map datum and projection: NAD83, UTM Zone 10N
Map by: EDAW Inc. Map date: March, 2007
Figure 2-7c. Alternative C: Tidal Habitat Emphasis Ravenswood, Year 50
All public access and recreation facilities will be subject to funding and permitting constraints. Denotes trails that were identified during the alternatives development process as being of particular concern to permitting agencies for potential to disrupt habitat.
Viewing Features and Interpretive Displays to be done in cooperation with the City of Menlo Park
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Greco Island
9
7B
7C
Active Cargill Salt Ponds
Bayfront Park (closed landfill)
Flood Slough
Ravenswood Slough
R1
R2
R3
R4
Pond 3 Subsidence
Interim trail and viewing platform along existing levee to be relocated as shown when pond SF2 is partially restored to tidal marsh
Ravenswood Open Space Preserve
Cooley Landing
Hetch Hetchy Aqueduct
Faber-Laumeister Marsh

S_CDFG1

State of California - The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

ARNOLD SCHWARZENEGGER, Governor

October 1, 2007

Mr. Paul Maltzer
Environmental Review Officer
San Francisco Planning Department: WSIP PEIR.
1650 Mission Street, Suite 400
San Francisco, California 94103

Dear Mr. Maltzer:

Subject: Case No. 2005.0159E, SCH No. 2005092926, Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program

Moccasin Creek State Fish Hatchery Flow Protection:

For more than fifty years, the Department of Fish and Game has operated its Moccasin Creek Trout Hatchery facility, located downstream of Priest Reservoir, using a water supply supplied pursuant to an agreement between the Department and Hetch Hetchy Water and Power. We have been informed by local operations staff that in future years, maintenance of the HHWP facilities could require temporary interruption of water flows to the hatchery for some substantial periods, and that this could occur annually or nearly annually. If flow interruptions occur, it will have a devastating effect on fish hatchery operations and will adversely affect the Department's ability to meet statewide trout production goals. These goals are now legislatively mandated, within Fish and Game Code Section 12007. 01

Given the scope of major infrastructural changes planned and articulated through the subject Programmatic EIR/EIS, we believe it is reasonable to request that alternatives, such as bypass pipelines or other features, be considered that could effectively remediate the impacts of the planned maintenance on our facility operations. 02

Sincerely,

W. E. Loudermilk

W.E. Loudermilk
Regional Manager

Conserving California's Wildlife Since 1870

12.2-4

State of California – The Resources Agency
DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
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YOUNTVILLE, CALIFORNIA 94599
(707) 944-5500

ARNOLD SCHWARZENEGGER, Governor

October 1, 2007

S_CDFG2

Mr. Paul Maltzer
Environmental Review Officer
San Francisco Planning Department: WSIP PEIR.
1650 Mission Street, Suite 400
San Francisco, CA 94103

Dear Mr. Maltzer:

Subject: Case No. 2005.0159E, SCH No. 2005092926, Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program

The California Department of Fish and Game (DFG) has reviewed the draft Program Environmental Impact Report (PEIR) for the Water System Improvement Program (WSIP) being proposed by the San Francisco Public Utilities Commission (SFPUC). The SFPUC proposes to adopt and implement the WSIP to increase the reliability of the regional water system, which provides drinking water to 2.4 million people in San Francisco, San Mateo, Santa Clara, Alameda, and Tuolumne counties. WSIP implementation would involve using additional water supplies to serve customer needs through 2030 as well as constructing repairs and improvements to many facilities within the existing system located in Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo, and San Francisco counties.

DFG, a Trustee Agency under the California Environmental Quality Act (CEQA), is responsible for the conservation, protection, and management of the State's biological resources. The purpose of DFG's comments is to provide guidance to the SFPUC to ensure that, if the WSIP is implemented, biological resources are protected. Like the PEIR, DFG has organized comments beginning with the WSIP and proceeding with comments by each respective watershed (i.e.,Tuolumne River, Alameda Creek and San Francisco Peninsula).

WSIP

Please be advised that for any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Streambed Alteration Agreement (SAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. The PEIR identifies several existing points of water diversion and could be subject to Section 1600 01

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et seq. of the Fish and Game Code. These include: Alameda Creek Diversion Dam, Stone Dam, and Early Intake Diversion Dam. However, given the complex nature of the SFPUC's water transport, other PODs may also exist and be subject to Section 1600 et seq. of the Fish and Game Code.

Issuance of SAAs is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document 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. To obtain information about the SAA notification process, please access our website at www.dfg.ca.gov/1600; or to request a notification package, contact the Streambed Alteration Program at (707) 944-5520. 01 cont.

TUOLUMNE RIVER

The Tuolumne River flows from the crest of the Sierra Nevada westward to its confluence with the San Joaquin River. The San Joaquin River flows north to the Sacramento–San Joaquin Delta, which then from the Delta discharges to the San Francisco Bay Estuary and the Pacific Ocean. Surface water bodies in the Tuolumne River system that could be affected by the proposed program include the Tuolumne River, Cherry Creek, Eleanor Creek, and a quarter-mile reach of Moccasin Creek. Several reservoirs could be affected by the WSIP, including Hetch Hetchy Reservoir, Lake Lloyd, Lake Eleanor, and Don Pedro Reservoir. Because the Tuolumne River drains to the San Joaquin River and the Sacramento–San Joaquin Delta, these water bodies could also be affected by the WSIP. The proposed program could affect flow in the streams and water levels and water quality in the reservoirs.

Upper Tuolumne River Watershed (Below O'Shaughnessy Dam but including Cherry Valley Dam and Lake Eleanor)

The PEIR states that the implementation of the WSIP would have a less than significant impact on stream flow from O'Shaughnessy, and that releases are subject to an instream flow agreement set in 1987 between the U.S. Department of Interior and the SFPUC. In addition, the PEIR also states that the WSIP has the potential to have a significant negative impact on terrestrial biological resources along the Tuolumne River below O'Shaughnessy Dam. This analysis implies that the 1987 instream flow agreement could be inadequate to maintain riparian habitat for wildlife along the Tuolumne River below O'Shaughnessy Dam. We recommend the 1987 instream flow agreement be re-evaluated and appropriately revised to consider the geomorphic processes that maintain alluvial features and riparian habitat. In addition, it should consider the life histories of resident native fish and special status species such as: State-listed endangered 02 03

12.2-5

Willow flycatcher (*Empidonax traillii*); State species of special concern foothill yellow-legged frog (FYLF) (*Rana boyii)* and western pond turtle *(Clemmys marmorata)*; and Federal Threatened California red-legged frog (CRLF) (*Rana draytonii)*. A re-evaluation of the 1987 flow agreement may provide insight leading to an appropriate flow regime that could accommodate the needs of the SFPUC and the needs of biological resources below O'Shaughnessy Dam. 03 cont.

We applaud and encourage the SFPUC to continue their ongoing efforts to better characterize the relationships between regulated flow, physical habitat, and the biological communities in the upper Tuolumne River watershed (McBain and Trush 2006, McBain and Trush 2007). The intensive effort the SFPUC has invested into characterizing these relationships presents a firm scientific foundation to re-evaluate and possibly revise the1987 instream flow agreement. We recommend that a re-evaluation and possible revision of the 1987 flow agreement be incorporated into mitigation measure 5.3.7-2. Section 11 of the Raker Act requires the City and County of

San Francisco (CCSF) to comply with applicable state law, including but not limited to, DFG codes 5937 and 1600 et seq. and the CESA; we request that the SFPUC collaborate with us to implement mitigation measure 5.3.7-2. We look forward to working with the SFPUC, the public, and the other agencies in the upper Tuolumne River watershed.

Mitigation Measure 5.3.7-2

The PEIR proposes mitigation measure 5.3.7-2 to offset WSIP impacts on terrestrial biological resources due to potential effects on riparian habitat and special status species. Measure 5.3.7-2 would manage releases from Hetch Hetchy Reservoir to recharge riverside meadows, including the Poopenaut Valley. The PEIR states that well-managed, timely releases under 5.3.7-2, in addition to groundwater and plant population monitoring, would likely maintain meadow conditions in the Poopenaut Valley. 04

We recommend that monitoring of meadow systems along the Tuolumne River not be limited to groundwater and plant population surveys, but be expanded to include the monitoring of aquatic habitat or ecosystems. Botanical surveys are a useful tool in monitoring how meadow systems react to certain management activities (Wexelman et al. 2003; Ratliff 1985). However, it is unclear how sensitive botanical surveys are in detecting changes to aquatic habitat or ecosystems that can potentially occur with implementation of 5.3.7-2. For example, changes in stream hydrology resulting in stream bank failure or channel incision could have adverse impacts to the aquatic and riparian habitat and ecosystem (Micheli and Kirchner 2002), which may only be reflected over time in species composition/diversity that are described in botanical surveys. A community ecology approach to monitoring meadow systems may be a more

effective approach in detecting changes in community structure, especially in a complex and relatively pristine system such as Poopenaut Valley. Furthermore, additional monitoring is required in order to generate sufficient data demonstrating that operations at O'Shaughnessy Dam comply with Fish and Game code 5937. Fish and Game code 5937 states that "[t]he owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam." We recommend that 5.3.7-2 include fishery surveys in order to analyze the impacts of pulse releases on the fishery. We recognize that implementing a comprehensive protocol may be costly and difficult, which is why we recommend that the SFPUC work with us in addition to the U. S. Fish and Wildlife Service (USFWS), National Park Service, and the U. S. Forest Service when implementing a monitoring protocol for mitigation measure 5.3.7-2.

04 cont.

Lower Tuolumne River (Below New Don Pedro)

The PEIR states that the implementation of WSIP would have no impact on the current minimum instream flow requirement set by the Federal Energy Regulatory Commission (FERC) in the 1996 Fishery Settlement Agreement. DFG is concerned that the current FERC required flow regime (i.e. PEIR's CEQA baseline conditions) may not be sufficient to prevent salmon populations in the Tuolumne River from declining. In fact, we have evidence demonstrating that adult Tuolumne River fall-run Chinook salmon *(Oncorhynchus tshawytscha)* produced at a given spring flow has declined by about 50% (mean of 6,805 recruits) since the FERC Settlement Agreement (FSA) was implemented in 1996. The decline is statistically significant based on an F-test comparison of two flow recruitment regression models: one based on the period from 1980 to 1990 and the other based on the period from 1998 to 2003. We believe that, as proposed, WSIP would make these conditions worse for Tuolumne River salmonids, thus exacerbate the current decline of this population.

To address this concern, DFG wrote a letter dated August 1, 2007 to Secretary Kathleen Bose of the FERC and requested the FERC to direct the Modesto Irrigation District (MID) and Turlock Irrigation District (TID) to provide higher magnitude and greater duration instream flows during the spring period of each year in order to assure acceptable salmon smolt survival and assure that the now-critically-impaired salmon populations will remain intact until a new license is considered for Project 2299 in 2014. In this letter, DFG presents evidence, which is summarized below, that demonstrates strong correlations between this observed population decline and the conditions of reduced spring flow and elevated spring water temperature, as directly caused by the operations of project 2299.

05

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The CEQA environmental baseline conditions in the lower Tuolumne River are essentially driven by the operations of project 2299 which, for reasons we identify below, are creating conditions that are not suitable for the anadromous fisheries in the Tuolumne River. Although we recognize that the CCSF are not the licensees for project 2299, it is irrefutable that the actions of the SFPUC on the Tuolumne River at Early Intake, Cherry Valley Dam, and Hetch Hetchy and Lake Eleanor reservoirs influence the timing, duration, and magnitude of water releases from the New Don Pedro Dam. Increased diversion of waters from a river system which currently lacks sufficient flow to support sustainable anadramous fisheries including Federally Threatened Central Valley steelhead (*Oncorhynchus mykiss iridieus*) should be considered a significant cumulative impact. Although the proposed increase in diversion in itself may (arguably) not be deemed significant, when viewed in conjunction with project 2299, existing SFPUC diversions, and other diversions from the Tuolumne River, the effects are cumulatively considerable [see CCR Title 14, section15065(a)(3)]. In this context, *we believe the proposed project has the potential to cause anadromous fish populations to drop below self-sustaining levels and further reduce the number and restrict range of Federally Threatened Central Valley steelhead* – thereby requiring a finding of significant effect (CCR Title 14, section 15065 (a)(1)). Therefore, we respectfully request the SFPUC use alternative water sources other than Tuolumne River system to meet purchase requests in 2030 and drought year demands, at least until Project 2299 can properly address the inadequacies in the current flow regime for the purpose of creating, enhancing and supporting a sustainable anadromous fishery in the lower Tuolumne River.

05 cont.

Documented Tuolumne River Salmon Population Decline

Strong evidence exists that the Tuolumne River fall-run Chinook salmon population has declined severely. Historically, this fall run was documented (USFWS 1940) to annually exceed 72,000 escaping (i.e., spawning) adults. This number became reduced severely, coincidentally with, and in part caused by, water diversions and dams which were developed and operated on the Tuolumne River. Immediately prior to the operation of the New Don Pedro Project, fall-run Chinook salmon numbers annually reached 20,000 to 25,000 escaping adults, but unfortunately, the instream flow and other fishery protection measures included in the original Project 2299 license were inadequate to stem the continuing decline of salmon. By the time of the 1996 Fisheries Settlement Agreement, salmon numbers had progressively declined to less than 1,000 adults annually. This decline, both overall and when dissected into various life-stage survival components, very strongly correlates with Tuolumne River flow inadequacy during critical salmon life-stages.

In 1997, a record high water year produced substantial project spill, essentially rendering moot the fishery effects of Project 2299 water operations, as well as the effects of some of the out-of-tributary influences on juvenile salmon survival during that year. Absent those controlling influences, the salmon experienced

much greater juvenile survival and downstream migration success. Accordingly, in 2000, when most of these fish returned to the Tuolumne River as adults, we documented runs well in excess of 18,000 individuals. Unfortunately, that benefit was short-lived. Since 2000, and after normal Project 2299 operations resumed, the Tuolumne River salmon escapements have again sharply declined. As of 2006, the Tuolumne River escapement population had dwindled to about 600 returning adults. This represents an order-of-magnitude salmon population reduction, during the time when the Fishery Settlement Agreement Flows and other "protective conditions" under that agreement were in full effect.

Effects of Out-of-tributary Salmon Population Controllers

Within the San Joaquin River watershed, there are four major tributaries; three of which support fall-run salmon populations. These populations are controlled: i) by an array of limiting factors within the specific tributaries, ii) by limiting effects of water operations, water quality, temperature and other parameters within the downstream San Joaquin River and delta, and iii) by oceanic mortality, including sport and commercial angling. Separating the quantitative effects of these various population controllers presents a challenge, given the limitation of being only able to observe and measure salmon success at the earliest (i.e., fry-smolt) and latest (i.e., escapement) stages.

12.2-7

Some biologists believe ocean harvest and Delta water diversions and exports are the sources of substantial adult population limiting mortality across the San Joaquin river watershed. Both ocean harvest and Tuolumne salmon escapement are compared (years 2000 through 2006) in Figure 11 (attached Appendix). Delta exports and Tuolumne River adult brood year production trends were compared (years 1998 through 2004) in Figure 12 (attached Appendix). Based upon these figures, we believe neither ocean harvest, as described by the multi-agency Central Valley Harvest Index, nor South Delta export trends correlate significantly with Tuolumne River escapement or brood production year trends. This suggests (i.e. infers) that neither ocean harvest nor Delta exports, even though they are sources or mortality, are strong controllers of the Tuolumne River salmon population.

05 cont.

The deployment of hatchery operations on only one of the San Joaquin River tributaries provides a useful comparative tool to separate the importance of in-tributary effects upon salmon survival and population levels. Within the San Joaquin River watershed, a salmon hatchery operation exists only on the Merced River. Most of the production of that hatchery is released into the Merced River directly, with lesser numbers of juveniles being released below the confluence of Merced and San Joaquin rivers. These latter releases are a part of basin-wide salmon downstream (juvenile) migrant survival studies.[1]

[1] These studies are required pursuant to the Vernalis Adaptive Management Program in which water operators on the several major tributaries coordinate downstream flows for the purpose of reversing declines in San Joaquin River salmon populations.

The process of hatching and rearing the juvenile salmon in a controlled, out-of-river hatchery environment essentially circumvents any dependency of these eggs or juveniles upon water and other habitat conditions within the natural channel of the Merced River tributary. So, to the extent that the most important salmon population controllers are located within the tributary habitat, the hatchery reared eggs and juvenile salmon should not be exposed to those controllers and as such their survival should be unaffected. As such, returning adult numbers should not vary as a feature of differential in-tributary conditions. Conversely, to the extent that the principal population controllers exist in areas downstream from the Merced River and other major tributary habitats (e.g., in the main-stem San Joaquin River, Delta, or Pacific Ocean), as is asserted on the Tuolumne River by the Licensees, then we would logically expect the post-hatchery-released Merced River salmon to experience those same limiting factors and thus be affected similarly to the salmon leaving the Tuolumne and Stanislaus rivers. Consequently, we would expect the Merced River returning adult population to be similarly reduced in magnitude.

This comparison between neighboring rivers provides a useful indication of where and when, within the salmon life history, the key limiting factors are occurring. In fact, since the Merced River Hatchery has been in operation and juvenile survival has been regularly artificially supported, the Merced River salmon population has been maintained at much more numerous and stable levels than the populations within the Tuolumne and Stanislaus rivers, which have experienced similar water-year sequences, but in which salmon juveniles have been exposed to in-tributary limiting factors. The evidence thus strongly suggests that these salmon populations are substantially affected and controlled by in-tributary limiting factors, rather than oceanic or other downstream controlling features.

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Tuolumne River Salmon Population Controllers: Flow Magnitude, Timing and Duration

Figures 2 and 3 (attached Appendix) show trends in fall and spring flow within the Tuolumne River. Tuolumne River fall (i.e., spawning) flows, from 1997 through 2003 are essentially uniform in release timing and magnitude, and do not significantly correlate with observed brood-year reductions. Spring rearing and downstream conveyance flow releases (April and May) for years 1998 through 2004 do strongly correlate survival across a variety of different water/brood-years. Figure 4 (attached Appendix) shows the annual Tuolumne River flow at La Grange, versus salmon escapement occurring 2.5 years later (past evidence reflects that salmon escapement is typically dominated by three-year-old returning adults). We reiterate that this reflects a very consistent relationship between spring flow reduction and escapement reduction in the Tuolumne River between escapement years 2000 and 2006.

To investigate the relationship between spring flow (magnitude, frequency/ duration) and salmon escapement 2.5 years later, spring flows for the period 2000- 2006, were categorized by both flow and frequency/duration of occurrence. We used 1500 cfs increments, encompassing the range from 1500 cfs or less to 7500 cfs, for the April and May period of each year (see attached Table 1). We note a very clear trend in spring flow magnitude and duration, which strongly correlates with Tuolumne River adult salmon production. This relationship prevails regardless of whether annual escapement or brood-year cohort production metrics are used. Figure 5 (enclosed Appendix) shows the statistical correlation between La Grange spring flow level and Tuolumne River adult salmon brood year production (e.g. linear r-square = 0.97, non-linear r-square = 0.82).

Relationship of Salmon Production to Water Temperature:

In addition to assessing Tuolumne River spring flow as a factor in Tuolumne River salmon production declines, spring Tuolumne River (Modesto measurement station) water temperature was evaluated as a factor affecting Tuolumne River salmon brood year production. Figure 6 (see attached Appendix) shows the statistical relationship between spring daily flow and water temperature at Modesto from 1998 through 2006 (We point out the linear r-square = 0.99). This represents strong (i.e., statistically valid) evidence that water temperatures at the Modesto measurement station are driven primarily by Tuolumne River instream flow releases from Project 2299.

To determine if variation in spring water temperature frequency occurred during production years 1998 through 2004 (years consistent with 2000 through 2006 escapements), spring water temperatures were categorized in 1°C increments from 15 to 20°C (59 to 68°F) (Table 2 see enclosed). Substantial variation across this critical salmon thermal range occurred among spring Tuolumne River temperatures during this period. Years with colder spring water temperatures clearly produced higher adult escapement 2.5 years later than was observed under warmer springtime conditions. We note that when spring water temperatures in the Tuolumne River at Modesto were below 15°C (the U.S. Environmental Protection Agency (EPA) Region 10 Water Temperature Threshold Standard for Tributary Out-migrating Juvenile Chinook Salmon smolts), Tuolumne River adult salmon brood year production was at its highest.

Figure 7 (attached) shows the statistical relationship between spring Tuolumne River water temperature at Modesto and both annual escapement (e.g. non-linear r-square = 0.75) and brood year production trends (e.g. non-linear r-square = 0.65). These correlations infer that water temperature is an important variable influencing adult salmon production trends in the Tuolumne River. We note that due to the demonstrated influence of instream flow releases upon water temperatures, the thermal regime within the Tuolumne River, downstream of New Don Pedro Dam results directly from Licensees' Project 2299 operations.

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Lower Tuolumne Fishery Impact Conclusion

In conclusion, we have observed a very dramatic decline in Tuolumne River salmon adult escapement between 2000 and 2006 while the Fishery Settlement Agreement flow regimes and other protective features have been in place. We have observed a strong relationship between this observed population decline and the conditions of reduced spring flow and elevated spring water temperature, as directly caused by the operations of project 2299. As mentioned earlier, we recognize that the City and County of San Francisco are not the licensees for project 2299; however, it is irrefutable that the actions of the SFPUC on the Tuolumne River at Early Intake, Cherry Valley Dam, and Hetch Hetchy, and Lake Eleanor reservoirs influence the water releases from the New Don Pedro Dam. Increased diversion of waters from a river system which currently lacks sufficient flow to support sustainable anadromous fisheries (including Federally Threatened steelhead) should be considered a significant cumulative impact. Although the proposed increase in diversion in itself may (arguably) not be deemed significant, when viewed in conjunction with project 2299, existing SFPUC diversions, and other diversions from the Tuolumne River, the effects are cumulatively considerable [see CCR Title 14, section15065(a)(3)]. In this context we believe the *WSIP has the potential to cause anadramous fish populations to drop below self-sustaining levels and further reduce the number and restrict range Federal Threatened Central Valley steelhead* – thereby requiring a finding of significant effect [CCR Title 14, section 15065 (a)(1)]. Given the dramatic decline in Tuolumne River salmon adult escapement between 2000 and 2006; we believe that if implemented as proposed, the WSIP would only exacerbate the current decline of anadromous fisheries in the Tuolumne River. Consequently, we respectfully request that the SFPUC use alternative water sources other than the Tuolumne river system or implement water conservation measures to meet drought year demands and 2030 purchase requests, at least until Project 2299 can properly address the inadequacies in the current flow regime for the purpose of creating, enhancing and supporting a sustainable anadromous fishery in the lower Tuolumne River.

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Proposed Mitigation to Offset WSIP Impacts to Fisheries Below La Grange Dam

The PEIR justifiably acknowledges that the WSIP would have a significant impact on fisheries in the Tuolumne River below La Grange dam. The PEIR proposes two mitigation measures to offset the WSIP impacts on fisheries (5.4-3a and 5.4-3b). These mitigation measures are presented from, and based on, a firm scientific foundation (McBain and Trush 2000). However, in light of recent science (Mesick et al. 2007), we believe these mitigations are potentially inadequate to reduce WSIP's impacts on fisheries in the lower Tuolumne River to *less than significant.*

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Mitigation Measure 5.4-3a

The PEIR states that implementation of this mitigation measure will require the SFPUC to pursue a water transfer arrangement with MID/TID and/or water agencies such that demand on Don Pedro Reservoir as a result of conservation, improved delivery efficiency, inter-agency water transfer or use of an alternative supply such as groundwater. Although we support the continued development of the mitigation measure, the high degree of uncertainty causes us concern that this mitigation may not be sufficient to offset WSIP's impacts on fisheries in the Tuolumne River. If this mitigation measure is implemented, the terms and conditions of the transfer agreement should be disclosed to the public to determine the adequacy of the mitigation and the impacts to resources. We also believe that this mitigation measure could potentially be transferring WSIP impacts to another watershed, which would likely require the SFPUC to mitigate its own mitigation. For these reasons, we believe that this mitigation measure has potential to be inadequate to offset WSIP impacts to fisheries to *less than significant* threshold.

Alternatively, we will actively support and provide technical assistance to the SFPUC and CCSF in further developing this mitigation measure in order to increase use of water recycling/conservation strategies, and conjunctive groundwater. We request that as part of this mitigation measure, the SFPUC implement and mandate enforceable water recycling/conservation strategies or upgrades for its wholesale customers and their constituents that elect not to use feasible water recycling/conservation strategies or upgrades. We highly recommend that the SFPUC become more assertive with its wholesale customers for the purpose of conserving water and to ensure that growth is feasible with respect to the water supply that is currently available. We look forward to working with the CCSF, SFPUC and other resource agencies to provide comments during the environmental review of this mitigation measure.

07 cont.

Mitigation Measure 5.4-3b

The PEIR proposes to offset impacts to fisheries by implementing gravel augmentation projects and/or removal of gravel quarry pits. The objective of these projects would be to introduce enhance spawning gravel and fill in instream gravel pits occupied by fish predators. Mesick et al. 2007 developed a Tuolumne River Management Conceptual Model (Model) that includes a limiting factor analysis of the Tuolumne River populations, unanswered management questions and related testable hypotheses, and recommended studies and experimental instream flow schedules needed to test the hypotheses. Part of their limiting factor analysis included a preliminary analysis of previous habitat restoration projects that are similar to the projects proposed in this mitigation measure. This preliminary analysis produced hypotheses and experiments that test the hypotheses. In light of analysis presented by Mesick et al. 2007, which is partially summarized below, we question the ability of 5.4-3b to mitigate WSIP's

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impacts on fisheries to *"less than significant."* We have reason to believe that the projects under 5.4-3b are potentially inadequate to reduce WSIP's impacts to *"less than significant."* We concur with and support the hypotheses and purposed experiments presented by Mesick et al. 2007. If WSIP is implemented as proposed, we request the SFPUC and CCSF to consider the hypotheses set forth by Mesick et al. 2007 when planning mitigation measures in the lower Tuolumne River.

Spawning Habitat Restoration (from Mesick et al. 2007)

Preliminary analyses suggests that although the degraded condition of the spawning habitat in the Tuolumne River limits the production of fry, more fry are currently being produced than can be supported by the rearing habitat. If true, then gravel augmentation and restoring sediment transport will not substantially increase adult recruitment.

The preliminary analysis is based on rotary screw trap captures in the Tuolumne River. At least 7,300,000 and 3,500,000 juveniles were produced in the Tuolumne River in 1999 and 2000, respectively. The estimates are based on rotary screw trap catches at the 7/11 site (RM 38.6), which is downstream of the majority of the spawning habitat in the Tuolumne River (Turlock Irrigation District and Modesto Irrigation District 2005); only a portion of the migratory period was sampled during both years and so the true estimates are probably higher. It is likely that these numbers far exceeded the capacity of the rearing habitat, because only 0.4% of these fish in 1999 and 1.4% of these fish in 2000 survived to a smolt-size at the downstream Tuolumne River trap at Grayson (RM 5.2).

Smolt production also appears to be controlled by the quality of the rearing habitat and not the production of fry in the Stanislaus River. After implementing a spawning habitat restoration project in the Stanislaus River that added spawning-sized gravel to 18 sites between Goodwin Dam and Oakdale in summer 1999 (Carl Mesick Consultants 2002), juvenile production, which was measured with a rotary screw trap at Oakdale (RM 40), increased by 32% in spring 2000 compared to spring 1999 (Figure 15 see attached). However, there was no increase in the number of smolt-sized fish that migrated from the river in spring 2000 compared to spring 1999 (Figure 15) as measured with rotary screw traps at Caswell Park (RM 5 see attached) even though the mean flow from March 1 to June 15 at Goodwin Dam was nearly identical (1,497 cfs) in 1999 and 2000.

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Fish Predators (from Mesick et al. 2007)

It is likely that high winter and spring flows reduce predation by largemouth bass (*Micropterus salmoides*), smallmouth bass (*M. dolomieu*), Sacramento pikeminnow (*Ptychocheilus grandis*), and striped bass (*Morone saxatilis*) on juvenile salmon in the Tuolumne River and that predation rates are abnormally

high where predator habitat was enhanced by in-river gravel extractions. Although the initial studies indicated that predation by largemouth and smallmouth bass in the large captured mine pits is a major source of mortality in the Tuolumne River (Turlock Irrigation District and Modesto Irrigation District 1992b), there is uncertainty about the importance of predation relative to other rearing habitat limitations and there is uncertainty about the importance of other predator species, such as Sacramento pikeminnow and striped bass.

The initial studies conducted by EA indicated that very few bass contained juvenile salmon in their stomachs except during May 1990 when 93,653 hatchery reared salmon smolts were released at Old La Grange Bridge for survival studies (Table 5 see enclosed). Furthermore, predation by black bass should have been unusually high during the drought conditions of 1989 and 1990 when EA conducted their studies, and so typical predation rates by black bass should be much lower than those shown in Table 5. There is no evidence that restoring the large pond at Special Run Pool 9 and isolating the pond at Special Run Pool 10 reduced predation rates or improved the survival of juvenile salmon in the Tuolumne River (Turlock Irrigation District and Modesto Irrigation District 2005).

We also suspect that the electrofishing methods used by EA (Turlock Irrigation District and Modesto Irrigation District 1992b) were selective for largemouth and smallmouth bass, which utilize cover compared to striped bass and Sacramento pikeminnow, which tend to utilize open water. Radio tracking studies conducted by S.P. Cramer & Associates in 1998 and 1999 in the Stanislaus River (Demko and others 1998, SPCA unpublished data) suggest that the survival of large naturally produced and hatchery juveniles, 105 to 150 mm fork length, with gastrically implanted transmitters and 12-inch external whip antennas, was less than 10% during May and June (Demko and others 1998). Three striped bass collected had radio tagged juvenile Chinook salmon in their stomachs and striped bass were observed near the locations where many of the tagged juveniles ceased their migration. However, there is uncertainty as to whether the tagging procedure affected the fish's vulnerability to predators. Gastric implantation is stressful to juvenile salmonids and the whip antenna impairs their swimming ability (Vogel, personal communication, see "Notes"). During the 1998 SPCA studies, only 73% of the fish survived the tagging procedure and no observations were made to verify that tagging did not affect the fish's behavior (Demko and others 1998). Another potential predator of juvenile salmon in the Tuolumne River is the adult Sacramento pikeminnow, which forms large schools in 3 to 8 foot deep ditch-like channels called Special Run-Pools. Sport anglers report that large adults frequently have numerous salmon fry in their stomachs particularly during January and February.

08 cont.

Proposed Lower Tuolumne Fishery Mitigation Conclusion

We support the development of mitigation measure 5.4-3a in order to increase use of water recycling/conservation strategies and conjunctive groundwater. We also recommend that the SFPUC become more involved with wholesale customers to address responsible growth with respect to the current water supply capabilities. We request that, as part of this mitigation measure, the SFPUC implement and mandate enforceable water recycling/conservation strategies or upgrades for its wholesale customers and their constituents that elect not to use feasible water recycling/conservation strategies or upgrades.

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Although the SFPUC and CCSF have built mitigation measure 5.4-3b from a firm scientific foundation, recent evidence and preliminary analysis suggests that the projects described in 5.4-3b may not be an effective mitigation measure in the current flow regime, let alone in the reduced flow regime being proposed by the WSIP. We request that the SFPUC and CCSF consider the hypotheses and proposed experiments describe by Mesick et al. 2007, when developing mitigation measures for fishery enhancements on the lower Tuolumne River. We also recommend that the SFPUC and CCSF coordinate with the National Marine Fisheries Service (NMFS), USFWS, and DFG to develop adequate mitigation measures for the lower Tuolumne River fishery.

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ALAMEDA CREEK

The SFPUC manages the Alameda Creek watershed portion of the regional system with the primary objective of conserving local watershed runoff for delivery to customers. Therefore, the Alameda reservoirs are managed to capture winter and early spring runoff in order to maximize storage and water delivery to customers during the winter months, while Hetch Hetchy runoff is stored for summer and fall delivery. This interconnectivity of the Alameda and Hetch Hetchy systems provides for substantial flexibility in operations.

The proposed WSIP system operations would affect the two SFPUC reservoirs in this watershed—Calaveras and San Antonio Reservoirs—as well as some reaches of Alameda Creek and its tributaries. Within the CCSF owned watershed, Calaveras Creek and Arroyo Hondo drain directly to Calaveras Reservoir, and Alameda Creek flow is diverted into Calaveras Reservoir via the Alameda Creek Diversion Tunnel through operation of the Alameda Creek Diversion Dam. Farther downstream, San Antonio Creek drainage flows to San Antonio Reservoir, which is also used to store water from the Hetch Hetchy system and, periodically, water from Calaveras Reservoir. Downstream of its confluence with San Antonio Creek, Alameda Creek continues flowing through the Sunol Valley and then through Niles Canyon, eventually draining to San Francisco Bay.

Calaveras Reservoir and Calaveras Creek below the reservoir

Calaveras Reservoir is currently operated to conserve local watershed runoff for integration into the SFPUC regional water supply; however, due to Division of Safety of Dams (DSOD) restrictions, the water level in Calaveras Reservoir has

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been considerably lower since the end of 2001 than in previous years. Reservoir storage is constrained to approximately 37,800 acre-feet, about 40% capacity. Under the WSIP, Calaveras would be restored to its full design capacity (approximately 96,800 acre-feet), which would allow the SFPUC to maximize the use of local watershed supplies. Furthermore, fishery releases from the reservoir (measured below the confluence of Alameda and Calaveras creeks) and flow recapture would be implemented under the WSIP in accordance with a 1997 Memorandum of Understanding (MOU) with DFG, regarding releases of water from Calaveras Reservoir and maintenance of minimum storage levels from July through October to enhance fishery habitat, improve the coldwater fishery resources downstream of Calaveras Dam, and enhance warm-water native fisheries in the lower reach of the creek.

The SFPUC, under the aforementioned 1997 MOU with DFG, agreed to specific flow releases to provide habitat for resident rainbow trout and other native fish species downstream of Calaveras Reservoir based on the knowledge of fish migration barriers being present in the lower downstream reaches of Alameda Creek. At this time, there is continuing work to remove or remediate the downstream fish barriers (e.g. BART weir, USGS gauge, etc.). As these barriers are removed or retrofitted for adequate fish passage, the SFPUC will need to assess adequate flows for anadromous steelhead trout, the native resident fish community, FYLF, and CRLF and will need to renegotiate with DFG such that adequate flows from Calaveras Reservoir, San Antonio Reservoir and the Alameda Creek diversion dam are released or bypassed to provide suitable resource protection and comply with Fish and Game Code 5937.

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Before the SFPUC releases water from Calaveras Reservoir to comply with the DFG 1997 MOU, DFG recommends that the SFPUC propose and submit to DFG and USFWS an invasive specie eradication plan to eliminate or suppress populations of bullfrog and non-native centrarchids from the Calaveras reservoir watershed. We are aware that Calaveras Reservoir has a healthy population of bullfrog (*Rana catesbeiana*). We are concerned this population will jeopardize the success of the SFPUC mitigation projects surrounding Calaveras Reservoir for California tiger salamander (*Ambystoma californiense*) and CRLF. We are also concerned that flow releases from Calaveras Reservoir, without having screens at the intake towers, could be a mechanism for expanding the range of bullfrogs and non-native centrarchids. Expanding the range of these species in the Alameda Creek watershed would likely have a significant negative impact on special status species such as FYLF, juvenile rainbow/steelhead trout, California tiger salamander and CRLF. Part of this plan should include the following measures:

1) A specific plan to screen as per DFG screening criteria at the new intake tower/adit(s) at Calaveras Reservoir.
2) Implementation of a comprehensive multi-year eradication program aimed at different life stages of invasive species (e.g. bullfrogs, and

non-native centrarchids) in Calaveras reservoir, San Antonio reservoir and the stock ponds in both watersheds.
3) Adaptive management measures that can be swiftly implemented if invasive species migrate or escape from the reservoir during uncontrolled releases.

11 cont.

Part of the environmental review for the Calaveras Dam Replacement project should be an assessment of operations of the water elevation during critical periods of migration for the landlocked steelhead/rainbow trout. The SFPUC should ensure that Calaveras Reservoir is operated such that fish passage is maintained between the reservoir and Arroyo Hondo by keeping reservoir water elevations as high as possible during the period when adult trout migrate upstream from the reservoir through the end of the downstream (adult and juvenile trout) migration season.

Alameda Creek between the Diversion Dam and Calaveras Creek Confluence

The Alameda Creek diversion dam and tunnel divert water from the upper Alameda Creek watershed to Calaveras reservoir. Inflow at the diversion dam is diverted into the tunnel up to the maximum capacity of the tunnel, about 650 cfs. Inflow to the diversion dam that exceeds the tunnel capacity flows past the diversion dam and continues downstream in Alameda Creek. Diversions from Alameda Creek to Calaveras Reservoir have been substantially reduced because of the DSOD restrictions on Calaveras Reservoir. The SFPUC is unable to capture most local watershed runoff from upper Alameda Creek, and post 2002 flows in Alameda Creek below the diversion dam have been substantially greater than they were prior to 2002. The rediversion of flows from Alameda creek at the diversion dam affects two reaches of the creek: the reach between the diversion dam and the confluence with Calaveras Creek and the reach below the confluence with Calaveras Creek (see impact 5.4.1-2).

Mitigation Measure 5.4.1-2 and 5.4.5-3(a)(b)

To offset impact 5.4.1-2, the PEIR proposes to implement mitigation measure 5.4.5-3a Minimum Flows for resident trout on Alameda Creek and 5.4.1-2 Diversion Tunnel. Measure 5.4.5-3a, requires the SFPUC to develop and carry out as part of the implementation of the Calaveras Dam Replacement project, an operation plan to implement minimum stream flows when precipitation generates runoff into the creek below the Alameda Creek Diversion Dam (ACDD) to the Calaveras Creek confluence from December 1 through April 30 to support resident trout spawning and egg incubation. The operation plan will identify the specific minimum flow requirements to support resident trout spawning and egg incubation, a detailed monitoring plan to survey and document trout spawning and egg incubation, and any diversion facility modifications that are needed to implement the minimum stream flows. The PEIR continues by stating that a

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monitoring plan will be provided to appropriate resource agencies for review and comment and will subsequently be implemented by the SFPUC staff. At the completion of the monitoring period (5-10 years) the SFPUC shall produce a draft comprehensive report describing the methods, data collected, and results used to assess the performance of the minimum stream flow in provided suitable habitat for resident trout spawning and egg incubation. The PEIR states, that if monitoring indicates that this measure does not sustain the resident trout fishery in this reach, then the SFPUC shall either modify the minimum stream flow to enhance downstream habitat conditions to fully meet the mitigation requirement or also implement mitigation measure 5.4.3-3b Diversion Restrictions or Fish Screens (further described below).

Measure 5.4.1-2 states that the SPFUC will establish and implement written operational criteria for the Alameda Creek Diversion Dam that directs that the diversion dam and tunnel shall be operated to pass flows down Alameda Creek when diversion of those flows is not required to maintain desired levels in Calaveras Reservoir in order to provide the maximum possible days of winter and spring flows in Alameda Creek below the diversion dam. The PEIR states that this mitigation measure reinforces the way the SPFUC generally operates the diversion tunnel now: that diversion gates are closed in the spring once desired Calaveras reservoir storage have been reached.

12 cont.

12.2-12

Mitigation Measure 5.4.3-3a

We support the continued developed of this mitigation measure; however, we are concerned about the lack of scope involved in the objectives and monitoring protocol described in this mitigation measure. There are viable populations of Federal Threatened CRLF and State Species of Special Concern FYLF in Alameda Creek at Camp Ohlone (Bobzien and Didonato 2007). When sufficient flows are bypassed from the ACDD, Alameda Creek from the ACDD to Little Yosemite provides about 2.5 to 3 miles of suitable habitat for both species. We believe that an objective of this mitigation measure should include providing sufficient bypass flows to support viable populations of CRLF and FYLF. Consequently, the monitoring protocol described in this mitigation measure should include monitoring how these amphibian populations respond to the bypass flows. If this mitigation measure is implemented successfully, we would expect the population dynamics of these populations to be similar to those at Camp Ohlone. Therefore, we recommend that success of this objective be partially determined by using the Camp Ohlone amphibian population as a model.

This mitigation measure calls for evaluating success after five to ten years of monitoring. We recommend that the SFPUC coordinate with us frequently throughout the monitoring program to evaluate the results. As the monitoring results are evaluated, testable-hypotheses and adaptive management measures

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testing these hypotheses should be formulated and incorporated into mitigation measure 5.4.5-3b.

Currently, there are migration barriers for Federal Threatened Central Coast Steelhead present in the lower downstream reaches of Alameda Creek. As these barriers are removed or retrofitted for adequate fish passage, the SFPUC will need to reassess this mitigation measure to provide adequate flows for anadromous steelhead trout, the native resident fish community, FYLF, and CRLF and will need to renegotiate with DFG such that adequate flows from the ACDD are bypassed to provide suitable resource protection and comply with Fish and Game Code 5937.

We look forward to working with the SFPUC and CCSF in developing and monitoring the success of this mitigation measure.

13 cont.

Mitigation Measure 5.4.3-3b

The PEIR states that if, after 10 years of monitoring, results for Measure 5.4.5-3a indicate that the measure does not sustain the resident trout population in Alameda Creek below the ACDD, the SFPUC shall also implement additional measures as follows: either implement restrictions on diversions to Calaveras Reservoir to protect the downstream resident rainbow trout fishery during the critical spawning period (December 1 to April 30) or install and operate a fish passage barrier to "screen" the diversion facility.

We support the development of this mitigation measure for the purposes of having a contingency plan for mitigation measure 5.4.3-3a. We recommend that if, after 5-10 years of monitoring, results for 5.4.5-3 indicate the measure does not sustain resident rainbow trout, CRLF, and FYLF populations, that the following be also evaluated and, if feasible, incorporated into this mitigation measure.

1.) The ACDD be decommissioned and removed.

2.) The ACDD be retrofitted to accommodate fish passage to comply with DFG code 5901.

3.) Other adaptive management measures that might arise during the analysis of monitoring results.

Furthermore, we believe ten years is too long to consider screening the tunnels at the ACDD. The diversion tunnels at the ACDD should be screened concurrently with the Calaveras Dam Replacement project in order to comply with DFG codes 5980 et seq.

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S_CDFG2

Mitigation Measure 5.4.1-2

We believe this mitigation measure should be re-evaluated and be developed in coordination with mitigation measure 5.4.5-3a. Implementation of this mitigation measure means the SFPUC diverts all of the early winter storms (up to 650 cfs) only to leave portions of storms after Dec. 1 to bypass the ACDD. Given the boulder-bedrock character of Alameda Creek, if early winter flows are diverted to Calaveras Reservoir, late season flows could go subterranean only to recharge groundwater. Consequently, only bypassing late season flows may be insufficient to maintain flowing water in Alameda Creek. We recommend that appropriate hydrologic studies be conducted in Alameda Creek from the diversion dam to Little Yosemite in order to determine the amount of flow required during various water years to bypass sufficient instream water to support the different life stages of resident native fish, FYLF and CRLF. 15

San Francisco Peninsula

San Mateo Creek Watershed

The SFPUC operates four water supply reservoirs on the San Francisco Peninsula: Pilarcitos, Upper and Lower Crystal Springs, and San Andreas reservoirs. The four reservoirs and two streams (San Mateo Creek and Pilarcitos Creek) on the Peninsula could be affected by the WSIP. San Mateo Creek, and its tributary San Andreas Creek, flow southward in the rift valley formed by the San Andreas fault and then turn east, flowing to San Francisco Bay. Pilarcitos Creek also flows southward, but it turns to the west and flows to the Pacific Ocean. The SFPUC's water supply facilities on the San Francisco Peninsula lie within two watersheds, the San Mateo Creek and Pilarcitos Creek watersheds, which are referred to collectively as the Peninsula watershed.

12.2-13

San Mateo creek Below Crystal Springs Reservoirs

The SFPUC operates the upper and lower Crystal Springs Reservoirs (Reservoirs) to store water from local watersheds and water imported from the Tuolumne River, and Pilarcitos and San Mateo creeks. Since 1983, the SFPUC has been forced by the Division of Safety of Dams to change the management of the Reservoirs by reducing the historic storage capacity of the Reservoirs from 68,300 acre-feet to 58,000 acre-feet. Under the WSIP, the SFPUC proposes to change the management of the Reservoirs by operating the Reservoirs at full storage capacity. The SFPUC manages these Reservoirs to collect as much runoff as possible from the upper San Mateo Creek watershed. Most of the time, the SFPUC captures all of the runoff from the upper watershed and no water is released to San Mateo Creek below Lower Crystal Springs Dam (LCSD). Under the WSIP, the SFPUC proposes to operate the Reservoirs as they are currently operated. Releases to San Mateo Creek are proposed to occur infrequently, as they do under existing condition, and are proposed to be of a similar magnitude. 16

S_CDFG2

The Reservoirs should be managed to store water and to support fish and wildlife in the Reservoirs and in lower San Mateo Creek. DFG requests that the SFPUC provide flow releases to the stream channel below LCSD to encourage riparian habitat complexity, invertebrate productivity, adequate dissolved oxygen, low water temperatures, improved water quality, provide habitat complexity for federal threatened CRLF and Federal and State Endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), rearing habitat for juvenile steelhead and spawning habitat for adult steelhead. DFG requests that the SFPUC propose and submit to DFG for approval, flows regimes for various water years from LCSD immediately following the completion of the LCSD improvement project. During the interim, DFG recommends that the SFPUC implement a monitoring program in the San Mateo Creek watershed that would generate sufficient data to determine an adequate flow regime from LCSD to comply with Fish and Game code 5937, which states that "the owner of any dam shall allow sufficient water at all times to pass through fishways, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam..." This monitoring program should include the following: 16 cont.

1.) Stream gauges to assess flows and water temperatures in upper and lower San Mateo Creek. Stream gauges should also be placed in the tributaries to the reservoirs.

2.) A habitat-based stream assessment for upper/lower San Mateo Creek and Laguna Creek done at a seasonally appropriate time period that incorporates habitat and life history criteria of resident rainbow trout, steelhead, CRLF and San Francisco garter snake.

3.) A fish passage study of potential barriers on lower San Mateo Creek.

4.) A hydrologic study to determine the amount of water that is needed to support steelhead through critical reaches under various water year conditions within the reaches affected by WSIP (i.e. upper San Mateo Creek and Laguna Creek) and reaches of lower San Mateo Creek below LCSD.

5.) A hydrologic study to assess the instream channel capacity in various reaches throughout lower San Mateo creek.

6.) The SFPUC should collect baseline data on lower San Mateo Creek and determine appropriate success criteria to reach when the flow regime has been implemented. Such baseline data should include:

   a. Diversity and abundance of fish in lower San Mateo Creek.

   b. Diversity and abundance of aquatic insects.

c. Instream habitat assessment for Central coast ESU steelhead and riparian habitat assessment focused at the life history of CRLF and San Francisco garter snake.

d. Water quality monitoring of the following parameters:
   i. Water temperature
   ii. Dissolved oxygen
   iii. Water chemistry (e.g. turbidity, pH, containments etc)

The SFPUC should assess adequate flows for steelhead and should submit flow regime proposals to DFG such that adequate flows are released. Although there have not been formal studies and agreements that have set a minimum instream flow requirements for LCSD and Stone Dam, it does not exempt the SFPUC from complying with Fish and Game code 5937, 1600 et seq. or the Endangered Species Act. DFG recognizes and encourages the ongoing effort the SFPUC has invested in attempting to restore steelhead populations in Alameda Creek; however, the SFPUC shouldn't limit this effort to the Alameda Creek watershed and should extend a similar restoration effort to San Mateo Creek watershed and other watersheds that the SFPUC owns and manages (e.g. Pilarcitos and San Antonio). 16 cont.

12.2-14

Crystal Springs Reservoirs

The Notice of Preparation for the LCSD improvement project proposes the future minimum pool elevation to be 277.4 feet. We are uncertain if the reservoirs will have a hydrological disconnect that can be defined by an active channel between the reservoir and the tributaries that Steelhead/rainbow trout use for spawning. The WSIP could severely impact the population of *Oncorhynchus mykiss* spp. in the reservoirs especially if there are no hydrological connections or defined channels when *Oncorhynchus mykiss* spp. are migrating to/from the tributaries.

The lack of active channels and hydrological connections could impede migration and therefore have a significant negative impact on out-migrating smolts and spawning adult *Oncorhynchus mykiss* spp. Consequently, as part of the environmental review of WSIP and the LCSD improvement project DFG recommends the SFPUC conduct surveys to: 17

1.) Identify when *Oncorhynchus mykiss* spp make spawning runs in upper San Mateo Creek and Laguna Creek.
2.) Identify when smolts and adult *Oncorhynchus mykiss* spp are out-migrating from the tributaries to the reservoir.
3.) Determine if there are hydrological connections and defined active channels that fish can migrate through between the reservoir and the tributaries during periods of the year critical for migration of steelhead/rainbow trout.

4.) Propose a mitigation strategy if it is determined that hydrological disconnects and lake of active channels constitutes a fish passage barrier. 17 cont.

Pilarcitos Watershed

Pilarcitos Creek rises on the eastern flanks of Montara Mountain in the Coast Ranges. The creek flows southward through the mountains before turning westward and discharging to the Pacific Ocean at Half Moon Bay. Rainfall in the Pilarcitos Creek watershed is variable, ranging from 26 inches annually at the coast to 42 inches near Pilarcitos Reservoir. The approximately 27-square-mile Pilarcitos Creek watershed consists primarily of relatively rugged uplands, characterized by shrubs and grasslands. The CCSF owns substantial portions of the upper watershed, and the Peninsula Open Space Trust protects large areas of the lower watershed above Arroyo Leon. Developed lands within the watershed are primarily agricultural and are located along the lower reaches of the stream corridors. Residential land uses are also present in the watershed, generally along roadways. Other land uses include a cemetery on Highway 92 at Skyline Boulevard, a sanitary landfill in upper Corrida Los Trancos Canyon, and a quarry in Nuff Creek Canyon.

Pilarcitos Creek

The PEIR states that WSIP would have significant impacts on surface water quality (5.5.3-2), fisheries (impacts 5.5.5-4, 5.5.5-5), sensitive habitats and key special-status species (impacts 5.5.6-4, 5.5.6-5) in Pilarcitos Reservoir and along Pilarcitos Creek below the reservoir. To mitigate these impacts the SFPUC proposes mitigation measure 5.5.3-2 Revised Operations Plan for Pilarcitos Watershed Facilities. The PEIR states that implementation of 5.5.3-2 will require the SFPUC to develop an operations plan for Pilarcitos Reservoir, Stone Dam, and associated diversions that would manage storage in Pilarcitos Reservoir and releases to Pilarcitos Creek so that flows in Pilarcitos Creek between Pilarcitos Reservoir and Stone Dam would be similar to those that occur under the existing condition. As a result of the operation plan, storage in Pilarcitos reservoir would be similar under WSIP as they are in existing conditions. 18

DFG supports the SFPUC in revising operations in the Pilarcitos watershed. We support this operational revision provided that the SFPUC utilize the wealth of science that has been done to characterize steelhead use and habitat in the Pilarcitos watershed (*"An analysis of Sediment Mobilization in Pilarcitos Creek," "Evaluation of Flow-Habitat Relationships Downstream of Stone Dam," "Pilarcitos Aquatic Habitat and Fish Population Surveys" and "Pilarcitos Operations"*). These studies could provide a firm foundation for operational revisions to consider the welfare of Federally Threatened Central Coast steelhead,

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San Francisco garter snake and CRLF in the watershed, above and below Stone Dam. We agree with the CCSF in that the best opportunity for steelhead restoration in the Pilarcitos Creek arises from the SFPUC's proposed multi-billion dollar capital improvement program (CCSF 2002). We believe that the development of this mitigation measure should include the recommendations for steelhead restoration that have been previously presented by the National Marine Fisheries Service (NMFS, 2006, NMFS 2004, NMFS 2002, NMFS 2003). The NMFS recommendations that we believe should be evaluated and included in mitigation measure 5.5.3-2 are the following:

1.) Complete removal of Old Stone Dam.
2.) Partial removal of Old Stone Dam
3.) Retrofitting Old Stone Dam to accommodate fish-passage.
4.) Flushing flows from Pilarcitos Lake to transport aggraded sediment in the channel.
5.) Instream flow assessment for the purposes of implementing a bypass flows regime from Pilarcitos Lake and Stone Dam that would accommodate steelhead migration, spawning, and rearing in lower Pilarcitos Creek.

18 cont.

12.2-15

We appreciate your consideration of our comments. DFG personnel are available for consultation regarding resources and strategies to minimize impacts. If you have questions please contact Dan Wilson, Environmental Scientist, at (707) 944-5534 or Greg Martinelli, Water Conservation Supervisor, at (707) 944-5570.

Sincerely,

Charles Armor
Regional Manager
Bay Delta Region

cc: See Next Page

S_CDFG2

Mr. Tim Ramirez
Ms. Janice Hutton
San Francisco Public Utilities Commission
1145 Market Street, Suite 500
San Francisco, CA 94103

Mr. Jonathon Ambrose
Mr. Stacy Li, Ph.D.
Mr. Gary Stern
NOAA Fisheries
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

Mr. Mike Monroe, US EPA
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Mr. Ryan Olah,
Mr. Carl Mesick, Ph.D.
Mr. Michael Hoover
U. S. Fish and Wildlife Service
2800 Cottage Way, W2605
Sacramento, CA 95825

Mr. Xavier Fernandez
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Mr. Robert Smith
U.S. Army Corps of Engineers
333 Market Street 8th floor
San Francisco, CA 94105-2197

Mr. Jeff Miller, Director
Alameda Creek Alliance
Post Office Box 192
Canyon, CA 94516

Andrew J. Gunther, Ph.D.
Center for Ecosystem Management and Restoration
4179 Piedmont Avenue, Suite 325
Oakland, CA 94611

S_CDFG2

Mr. Eric Wesselman
Tuolumne River Trust
Fort Mason Building C
San Francisco, CA 94123

Mr. Bill Loudermilk
Department of Fish and Game
1234 E. Shaw Avenue
Fresno, CA 93710

e⊠: Wilson, Dan; Martinelli, Greg; Atkinson, Kristine; Gresfrud, Marcia; Glushkoff, Serge; Heyne, Tim; Marston, Dean; Blakeman, Dennis; Quelvog, Brian; Beal, Brian

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12.2-17

APPENDIX

Tables

Figures

Table 1. Tuolumne River Spring Flow Comparison (1997 thru 2003)

Tuolumne River April & May La Grange Flow Frequency Comparison							
	Year						
Flow Range (cfs) Categories	1998	1999	2000	2001	2002	2003	2004
1500		20	42	61	61	61	61
3000	9	32	13				0
4500	22	9	6				0
6000	22						0
7500	8						0
Total (# of Days)	61	61	61	61	61	61	61
Average	4492	1863	1353	633	540	579	706
Median	4490	1950	1120	618	553	551	636
Escapement (+2.5 Yrs)	17873	8782	7173	2163	1984	500	500
Recruitment (Brood Year)	*43119*	*10504*	*7083*	*5644*	*2335*	*2102*	*877*

Note: Salmon production in the Tuolumne River begins to rise sharply consistent with spring period flows approaching 2000 cfs and takes off consistent with flows approaching 4500 cfs.

Table 2. Tuolumne River Spring Flow and Water Temperature

Tuolumne at Modesto April & May Water Temperature Comparison							
	Years						
Categories	1998	1999	2000	2001	2002	2003	2004
<=15	61	47	33	11	11	12	17
16		0	8	10	6	11	5
17		1	5	5	4	11	3
18		1	1	11	10	4	14
19		2	2	12	5	10	10
20		1	2	0	10	3	1
Total # Days	61	52	51	49	46	51	50
Average	12.1	14.2	15.7	17.9	18.0	17.1	17.3
Median	12.2	12.9	14.9	17.2	17.9	16.7	17.5
Mean Flow (cfs)	4567	1894	1375	644	549	589	717
Escapement (+2.5 Yrs)	17873	8782	7173	2163	1984	500	500
Recruitment (Broodyear)	43119	10504	7083	5644	2335	2102	877

Note: Salmon production in the Tuolumne River begins to rise sharply consistent with smolt out-migration (e.g. spring period) water temperatures drop to 15°C (59°F)and really take off when water temperatures are at 12°C (54°F). Consistent with Table 1, and Graph ??, spring water temperatures in the Tuolumne River are primarily controlled by spring flow level. A Tuolumne River spring flow of 2000 cfs would produce water temperature of about 14°C (57°F) while a flow of 4500 would produce a corresponding water temperature of about 12°C (54°F).

19

12.2-18

Table 3. Stanislaus River Spring Flow Comparison (1998 thru 2004)

Stanislaus River April & May Ripon Flow Frequency Comparison							
	Year						
Categories	1998	1999	2000	2001	2002	2003	2004
500				3	0	0	19
1000			11	26	33	51	27
1500		22	10	24	28	10	15
2000	17	39	40	8			
2500	44						
Total (# of Days)	61	61	61	61	61	61	61
Average	2022	1476	1408	1074	977	817	722
Median	2040	1530	1540	1340	969	705	682
Escapement (+2.5 Yrs)	8498	7033	7787	5902	4015	3500	3022
Recruitment (Brood Year)	31602	11015	5678	10726	7309	9142	2574

Note: Salmon production in the Stanislaus River begins to rise sharply consistent with spring period flows approaching 1500 cfs and takes off consistent with flows approaching 2000 cfs.

Table 4. Merced River Spring Flow Comparison (1998 thru 2004)

Merced River April & May Stevinson Flow Frequency Comparison							
	Year						
Categories	1998	1999	2000	2001	2002	2003	2004
750		28	38	39	48	50	45
1500		18	12	22	13	11	16
2250		11	11				
3000	57	4					
3750	4						
Total (# of Days)	61	61	61	61	61	61	61
Average	2665	1037	780	707	489	580	550
Median	2659	1136	522	554	358	553	405
Escapement (+2.5 Yrs)	13076	10844	10706	3079	4320	2921	2150
Recruitment (Brood Year)	22684	13295	6205	7436	6488	6658	1614

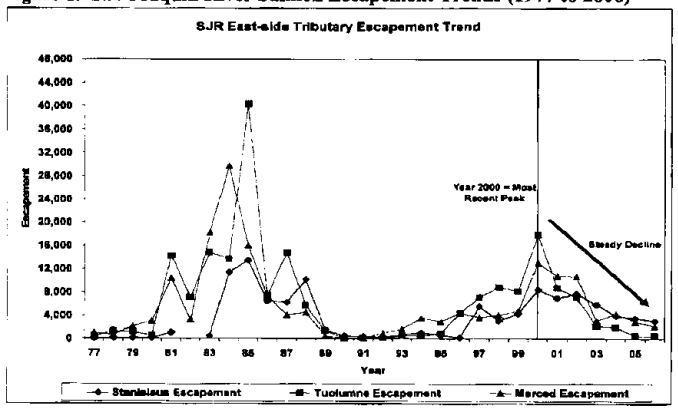
Note: Salmon production in the Merced River begins to rise sharply consistent with spring period flows approaching 1100 cfs and takes off consistent with flows approaching 2600 cfs.

19 cont.

Table 2. EA Engineering, Science, and Technology predation studies in the lower Tuolumne River in 1989 and 1990.

Sampling Dates	La Grange Flows (cfs)	% Largemouth Bass with juvenile salmon in their stomachs	% Smallmouth Bass with juvenile salmon in their stomachs	Origin of Juvenile Salmon
4/19 to 5/17, 1989	40 – 121	3.6% (2/56)	8.6% (5/58)	Naturally Produced
1/29 to 3/27, 1990	142 – 174	2.1% (2/97)	3.1% (1/32)	Naturally Produced
4/25 to 4/28, 1990	187 – 207	2.6% (2/76)	6.3% (1/16)	Naturally Produced
5/2 to 5/4, 1990	299 -572	26% (40/152)	33.3% (6/18)	CWT Hatchery

Figure 1. San Joaquin River Salmon Escapement Trends (1977 to 2006)

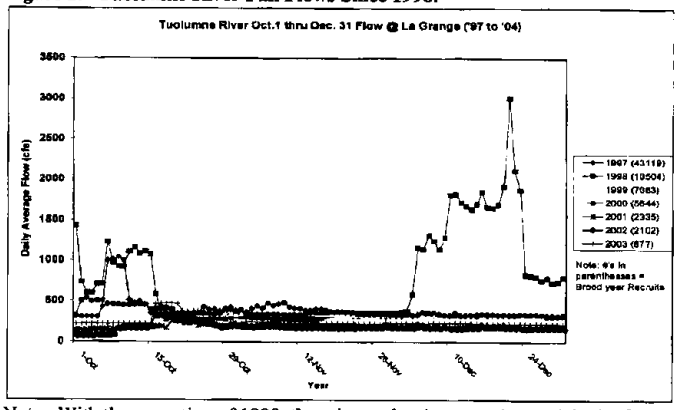


The year 2000 was the last peak salmon production period for each SJR east-side tributary. Since 2000, each east-side tributary's escapement has steadily declined with the Tuolumne River escapement "bottoming out" at levels lower than both the Stanislaus and Merced Rivers.

19 cont.

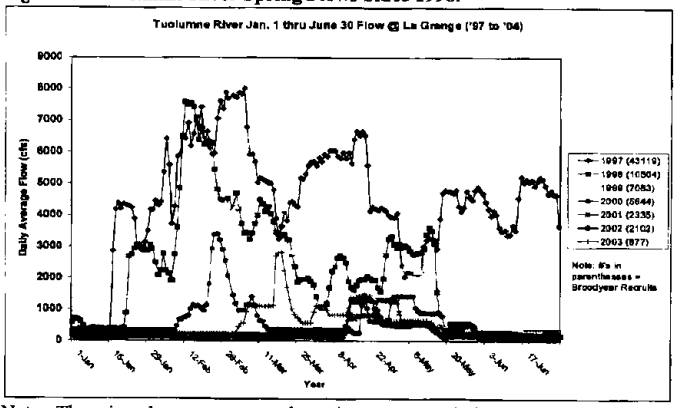
12.2-19

Figure 2. Tuolumne River Fall Flows Since 1998.



Note: With the exception of 1998, there is overlap (e.g. consistency) in the fall spawning flow patterns that does not correspond well with variation in future year escapement suggesting that fall flow has less influence upon adult production than other potential production related variables.

Figure 3. Tuolumne River Spring Flows Since 1998.

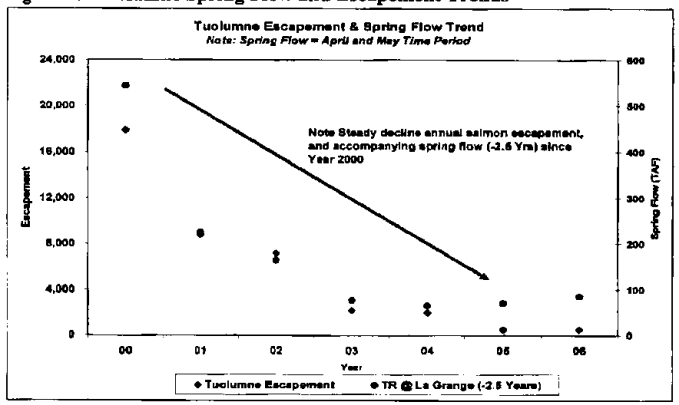


Note: There is a sharp contrast, and consistent pattern, in both winter and spring flow between for the years comprising the 2000 to 2006 escapements (here depicted as 1997 thru 2003 brood production years). Wherein both winter, and spring, flow magnitude and duration have diminished with each successive year. At spring flow levels of about

19 cont.

1500 cfs, salmon production begins to sharply fall. The importance of winter flow can be seen comparing years 1998 (red line), 1999 (yellow line), and 2000 (green line). In years where short duration winter pulse combined with a low spring pulse (year 2000) occur fewer salmon are produced than years with moderate winter and spring pulse flows (year 1999) and, far fewer salmon that years with when higher magnitude and longer duration winter pulse flow combined with elevated spring flow (year 1998) occurs.

Figure 4. Tuolumne Spring Flow and Escapement Trends

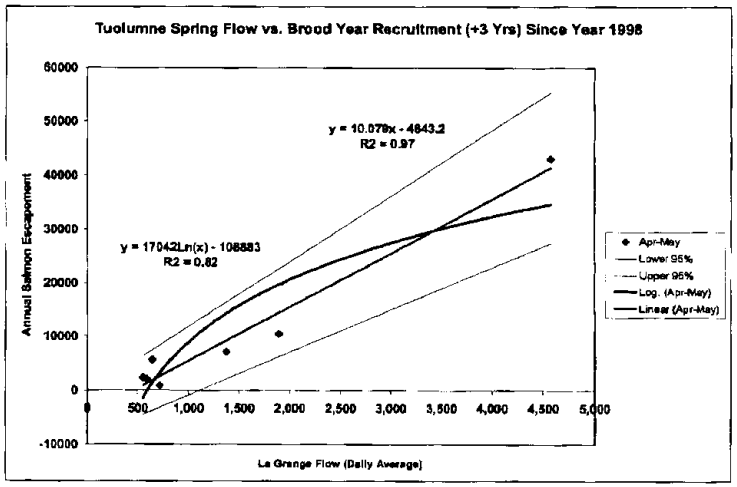


Note similarity between annual escapement and spring period flow allocation volume

Figure 5. Tuolumne Spring Flow and Brood Year Recruitment Production

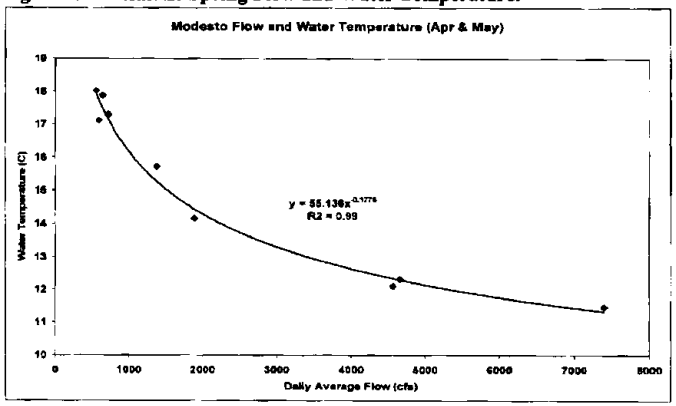
19 cont.

12.2-20



Note how the non-linear log normal relationship drops in r-square (e.g. line fitness) value and fails have proximity to empirical escapement data values >750. The use of brood year recruitment values improves the linear fitness (e.g. r-square value) suggesting that the relationship between brood year recruitment production is, under these value ranges, linear in nature.

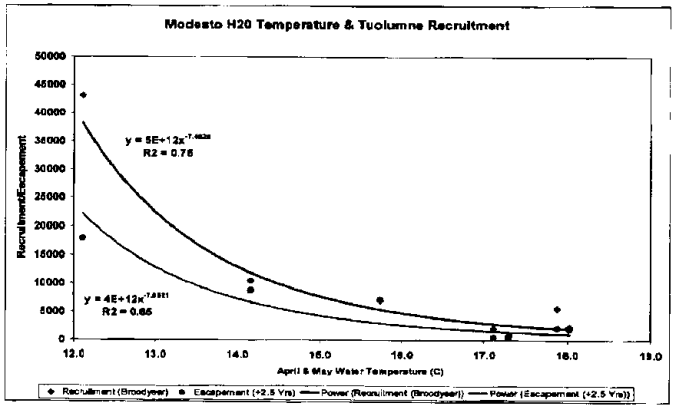
Figure 6. Tuolumne Spring Flow and Water Temperature.



19 cont.

Note: The relationship between Tuolumne River (at Modesto) flow and water temperature is for the years 1998 thru 2006. A broad range of flows is included in this Figure. Water temperature data for the years 1998 thru 2000 was calculated using Hughson (River Mile 23.6) water temperature data, and its very strong linear relationship with Modesto (River Mile 16) water temperature (R2=0.98). Water temperature drops sharply with a corresponding increase in Tuolumne River flow.

Figure 7. Tuolume River Spring Water Temperature and Adult Salmon Production

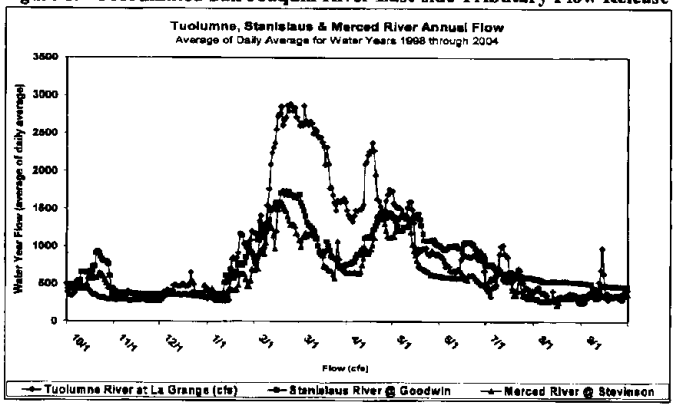


Note: There is a sharp increase in production, whether measured by annual escapement or by brood year production, consistent with Tuolumne River (at Modesto) water temperature decline during the spring period (e.g. April and May) annual escapement years 2000 thru 2006 and for brood production years 1997 thru 2003. Said differently, water temperatures exceeding 15°C (59°F) in the Tuolumne River at Modesto concurrently, and consistently, occur with sharply diminished adult salmon production in the Tuolumne River since escapement year 2000.

19 cont.

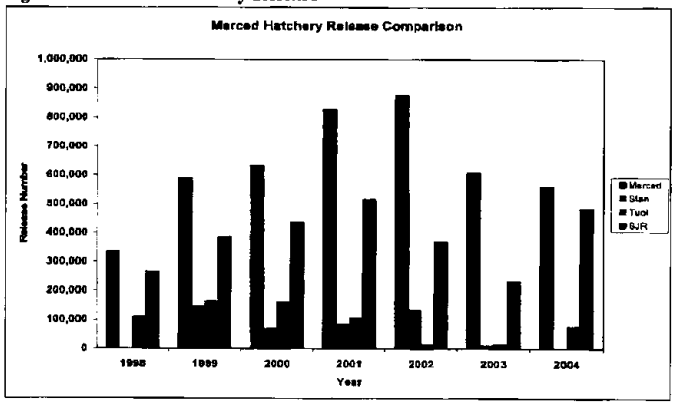
12.2-21

Figure 8. Coordinated San Joaquin River East-side Tributary Flow Release



Note: Flows for the three San Joaquin River east-side tributaries have been consistently managed, during the fall, winter and spring, since the late 1990's. The Tuolumne is by far the largest basin with a watershed area of 1540 square miles, as compared to the Stanislaus at 1075 square miles and the Merced at 1273 square miles[2].

Figure 9. Merced Hatchery Release



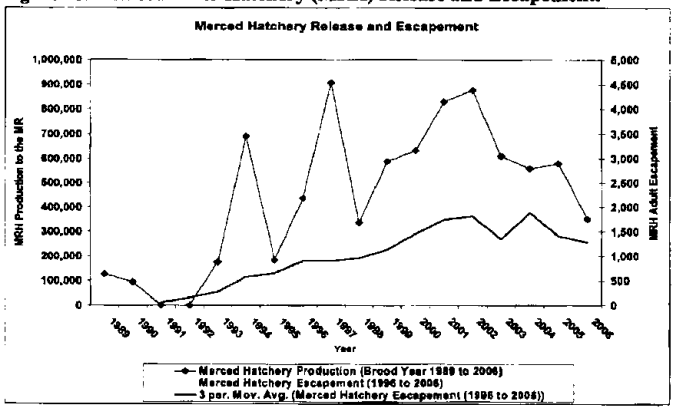
Note: The Merced River has received the vast majority of hatchery produced salmon smolts since 1998. Returns of Merced Hatchery smolts are consistent with release

19 cont.

[2] From http://www.delta.dfg.ca.gov/afrp/ws_stats

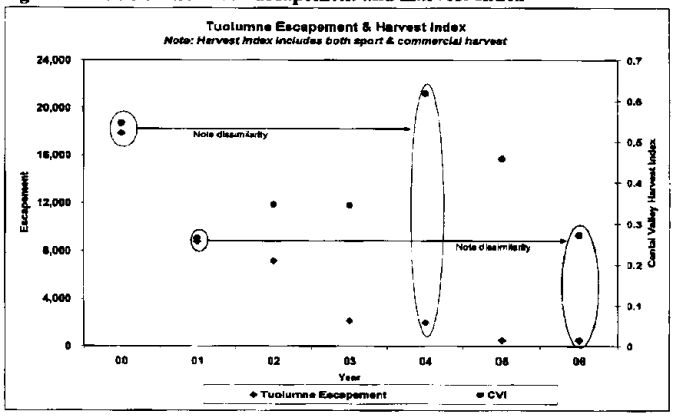
location (e.g. a smolt released into the Merced is likely to return as an adult to the Merced etc.). San Joaquin River released smolts tend to return as adults to the Merced River (from data obtained from coded-wire-tag recoveries).

Figure 10. Merced River Hatchery (MRH) Release and Escapement.



Note: The Merced River Hatchery (MRH) escapement trend is a moving three year average to account for variation in adult return age. As MRH releases into the Merced River increased MRH escapement trend also increased.

Figure 11. Tuolumne River Escapement and Harvest Index

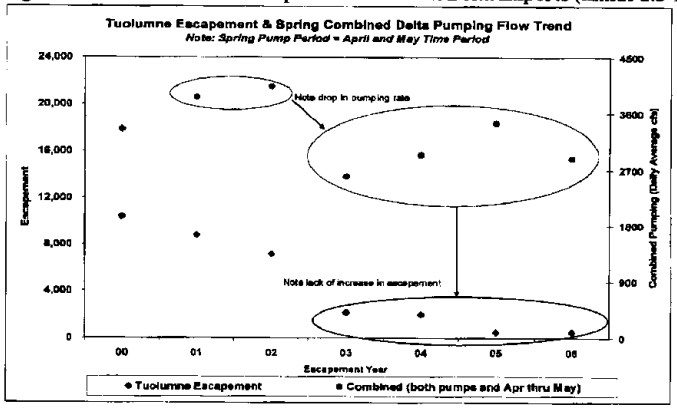


19 cont.

12.2-22

Note dissimilarity between CVI values and escapement estimates. This suggests that something other than ocean harvest is influencing salmon escapement in the Tuolumne River.

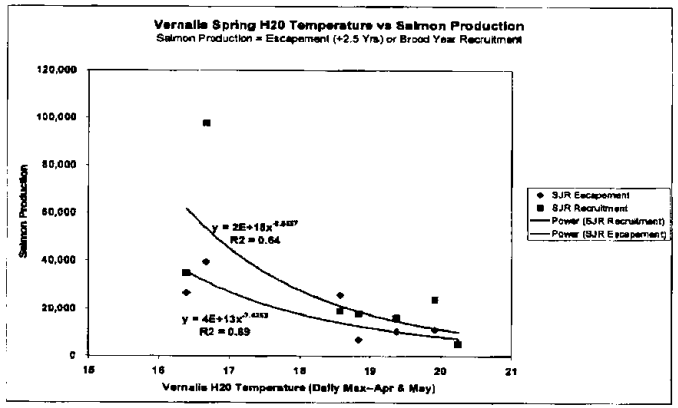
Figure 12. Tuolume River Escapement and South Delta Exports (minus 2.5 Years).



Notes: i) Pumping year is 2.5 years earlier than Escapement year (e.g. Escapement Year 2000 corresponds to Delta Pump Year 1998); ii) even though there appears to be a connection between Escapement Years 2000-2002 and Combined Pumping rates for 1998-2001, when pumping rates lowered for the 2003-2006 Escapement Years salmon escapement did not show a corresponding increase. This lack of consistent relationship suggests that something else besides Delta Spring Time Pumping is controlling Tuolumne River salmon escapement abundance.

Figure 13. Vernalis Spring Water Temperature and Tuolumne Salmon Production

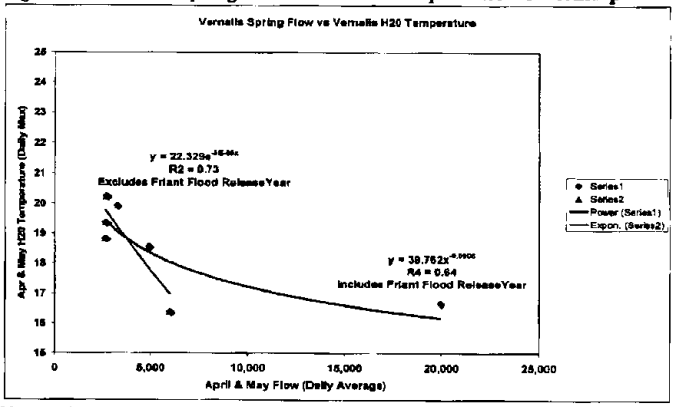
19 cont.



Note: The correlation between spring Vernalis water temperature and Tuolumne River salmon production (both annual escapement and brood year production). Tuolumne River salmon production sharply rises consistent with Vernalis flow water temperatures <18°C (64°F).

19 cont.

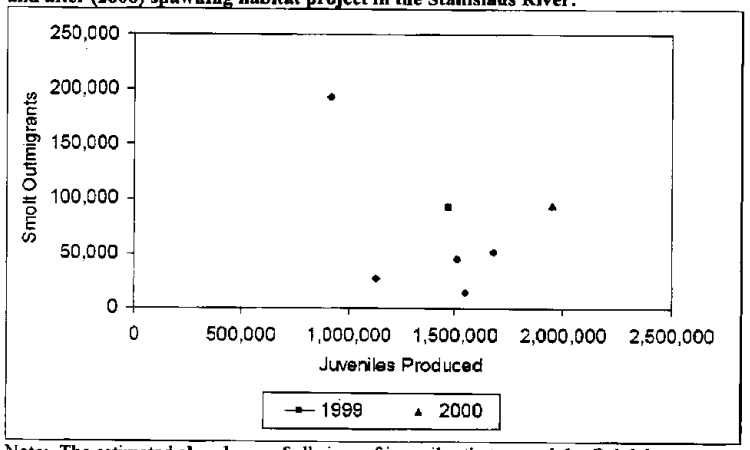
Figure 14. Vernalis Spring Flow and Water Temperature Relationship



Note: The apparent data outlier is associated with Friant flood control releases. Excluding this data point causes the correlation between spring Vernalis flow and spring Vernalis water temperature to sharply increase.

12.2-23

Figure 15. Juvenile Production and Smolt Outmigrants relationship before (1999) and after (2000) spawning habitat project in the Stanislaus River.



Note: The estimated abundance of all sizes of juveniles that passed the Oakdale screw trap (RM 40) plotted with the estimated abundance of smolt out-migrants (> 70 mm Fork Length) at the Caswell State Park screw traps (RM 5) in the Stanislaus River from 1998 to 2004. The Knights Ferry Gravel Replenishment Project (KFGRP) constructed 18 spawning beds in the Stanislaus River in summer 1999. A comparison of the 1999 and 2000 estimates provides the best evaluation of the effects of gravel augmentation on juvenile and smolt production, because they occurred immediately before and after the KFGRP and they were both affected by similar spring flows between February 1 and June 15 (7,394 cfs and 6,940 cfs, respectively) and similar numbers of spawners (2,600 and 3,200 Age 3 equivalent fish, respectively). (From Mesick et al. 2007)

19 cont.

Office of Assemblywoman Sally J. Lieber
274 Castro Street, Suite 202
Mountain View, CA 94041

Telephone: 408.277.2003
Fax: 408.277.2084
e-mail: assemblywoman.lieber@assembly.ca.gov

Facsimile Transmittal

To: Bill Wycko Fax: (415) 558-6409
Date: 10/1/07 Phone:
Re: Sketch Sketchy PEIR Comments Page: 1 of 3

From:
- ☑ Assemblywoman Lieber
- ☐ Harry Adams
- ☐ Monica Smith
- ☐ Joyce Iwasaki
- ☐ Leslie Bulbuk
- ☐ Marta Donayre

☑ Urgent ☐ For Your Information ☐ Please Comment ☐ Please Reply ☐ Please Sign and Return

12.2-24

STATE CAPITOL:
P.O. BOX 942849
SACRAMENTO, CA 94249-0022
(916) 319-2022
FAX (916) 319-2122
DISTRICT OFFICE:
274 CASTRO STREET, SUITE 202
MOUNTAIN VIEW, CA 94041
(408) 277-2003
FAX (408) 277-2084
E-MAIL:
assemblywoman.lieber@assembly.ca.gov
WEBSITE:
www.assembly.ca.gov/lieber

Assembly
California Legislature

SALLY J. LIEBER
ASSEMBLYWOMAN, TWENTY-SECOND DISTRICT
SPEAKER PRO TEMPORE

CHAIR, SELECT COMMITTEE ON MOBILE HOMES
COMMITTEE ON INSURANCE
COMMITTEE ON JUDICIARY
COMMITTEE ON LOCAL GOVERNMENT
COMMITTEE ON HEALTH

September 28, 2007

Bill Wycko, Environmental Review Officer
San Francisco Planning Department
1650 Mission Street, Suite 400
San Francisco, CA 94103

Dear Mr. Wycko,

We are arriving at a critical juncture in the development and implementation of the SFPUC's Water System Improvement Program. We appreciate the efforts the San Francisco Planning Department in preparing the draft PEIR. Many local agencies, elected officials and consumers have been waiting eagerly for the release of the draft.

Many of our constituents are served by some of the 27 cities, water districts and water companies represented by the Bay Area Water Supply and Conservation Agency. We share the view of the importance and urgency to rebuild the regional water system's infrastructure in order to protect the health and well-being of over 2 million residents and 31,000 businesses. We believe this primary goal must be reiterated and focused upon throughout this process. 01

The draft PEIR has provoked concerns about additional diversion of water from the Tuolumne River. We urge you to undertake more comprehensive studies of the alternatives that minimize new diversions. The "Environmentally Superior Alternative" presented in the draft certainly seems to be a direction that the Planning Department should more fully explore in the final PEIR. 02

Implementation of more water conservation, efficiency, and recycling is the best way to lessen impacts on the Tuolumne River while promoting a sustainable water plan for the Bay Area. We know BAWSCA, its member agencies and our Bay Area consumers have done an exceptional job in reducing residential use so that we have among the lowest per capita utilization in the state. 03

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We are aware that BAWSCA is committed to even greater conservation measures. The possibilities of urban and agricultural agencies working together to reduce net diversions in the future seem hopeful and worthy of energetic collaborative efforts. Investing in agricultural conservation, as proposed by BAWSCA and supported by Environmental Defense, appears to be cost-effective in providing water, increased agricultural conservation and could benefit the lower Tuolumne. 04

The balance of urban, suburban and agricultural water needs along with the need for environmental protection of such treasures as the Tuolumne River will be a difficult, but solvable, issue over time. The one thing that is clear and immediate is the need to avoid potential catastrophe of the collapse of our water delivery system from a major earthquake. The repair of the infrastructure must remain front and center throughout this process. 05

Therefore, we urge the Planning Department seriously consider BAWSCA's idea to improve the "Environmentally Superior Alternative" and finalize the PEIR promptly after receiving and considering all comments it receives, and that the Planning Commission certify the PEIR so that San Francisco can move ahead with rebuilding the Hetch Hetchy water system to protect the health, safety and economic well being of our region. 06

Thank you for your efforts.

Sincerely,

SALLY J. LIEBER
Assemblywoman, 22nd District
Speaker pro Tempore
California State Assembly

IRA RUSKIN
Assemblymember, 21st District
California State Assembly

SJL:ha

cc: San Francisco Public Utilities Commissioners

12.2-25

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STATE OF CALIFORNIA – THE RESOURCES AGENCY
ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 942360001
(916) 653-5791

July 13, 2007

Diana Sokolove
City and County of San Francisco, Planning Department
1650 Mission Street, Suite 400
San Francisco, California 94103-2479

San Francisco Public Utilities Commission's (SFPUC) Water System Improvement Program
State Clearinghouse (SCH) Number: 2005092026

The project corresponding to the subject SCH identification number has come to our attention. The limited project description suggests your project may be an encroachment on the State Adopted Plan of Flood Control. You may refer to the California Code of Regulations, Title 23 and Designated Floodway maps at http://recbd.ca.gov/. Please be advised that your county office also has copies of the Board's designated floodways for your review. If indeed your project encroaches on an adopted food control plan, you will need to obtain an encroachment permit from the Reclamation Board prior to initiating any activities. The attached Fact Sheet explains the permitting process. Please note that the permitting process may take as much as 45 to 60 days to process. Also note that a condition of the permit requires the securing all of the appropriate additional permits before initiating work. This information is provided so that you may plan accordingly. 01

If after careful evaluation, it is your assessment that your project is not within the authority of the Reclamation Board, you may disregard this notice. For further information, please contact me at (916) 574-1249.

Sincerely,

Christopher Huitt
Staff Environmental Scientist
Floodway Protection Section

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

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Encroachment Permits Fact Sheet

Basis for Authority
State law (Water Code Sections 8534, 8608, 8609, and 8710 – 8723) tasks the Reclamation Board with enforcing appropriate standards for the construction, maintenance, and protection of adopted flood control plans. Regulations implementing these directives are found in California Code of Regulations (CCR) Title 23, Division 1.

Area of Reclamation Board Jurisdiction
The adopted plan of flood control under the jurisdiction and authority of the Reclamation Board includes the Sacramento and San Joaquin Rivers and their tributaries and distributaries and the designated floodways.

Streams regulated by the Reclamation Board can be found in Title 23 Section 112. Information on designated floodways can be found on the Reclamation Board's website at http://recbd.ca.gov/designated_floodway/ and CCR Title 23 Sections 101 - 107.

Regulatory Process
The Reclamation Board ensures the integrity of the flood control system through a permit process (Water Code Section 8710). A permit must be obtained prior to initiating any activity, including excavation and construction, removal or planting of landscaping within floodways, levees, and 10 feet landward of the landside levee toes. Additionally, activities located outside of the adopted plan of flood control but which may foreseeable interfere with the functioning or operation of the plan of flood control is also subject to a permit of the Reclamation Board.

Details regarding the permitting process and the regulations can be found on the Reclamation Board's website at http://recbd.ca.gov/ under "Frequently Asked Questions" and "Regulations," respectively. The application form and the accompanying environmental questionnaire can be found on the Reclamation Board's website at http://recbd.ca.gov/forms.cfm.

Application Review Process
Applications when deemed complete will undergo technical and environmental review by Reclamation Board and/or Department of Water Resources staff.

Technical Review
A technical review is conducted of the application to ensure consistency with the regulatory standards designed to ensure the function and structural integrity of the adopted plan of flood control for the protection of public welfare and safety. Standards and permitted uses of designated floodways are found in CCR Title 23 Sections 107 and Article 8 (Sections 111 to 137). The permit contains 12 standard conditions and additional special conditions may be placed on the permit as the situation warrants. Special conditions, for example, may include mitigation for the hydraulic impacts of the project by reducing or eliminating the additional flood risk to third parties that may caused by the project.

Additional information may be requested in support of the technical review of your application pursuant to CCR Title 23 Section 8(b)(4). This information may include but not limited to geotechnical exploration, soil testing, hydraulic or sediment transport studies, and other analyses may be required at any time prior to a determination on the application.

Environmental Review
A determination on an encroachment application is a discretionary action by the Reclamation Board and its staff and subject to the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code 21000 et seq.). Additional environmental considerations are placed on the issuance of the encroachment permit by Water Code Section 8608 and the corresponding implementing regulations (California Code of Regulations – CCR Title 23 Sections 10 and 16).

In most cases, the Reclamation Board will be assuming the role of a "responsible agency" within the meaning of CEQA. In these situations, the application must include a certified CEQA document by the "lead agency" [CCR Title 23 Section 8(b)(2)]. We emphasize that such a document must include within its project description and environmental assessment of the activities for which are being considered under the permit.

Encroachment applications will also undergo a review by an interagency Environmental Review Committee (ERC) pursuant to CCR Title 23 Section 10. Review of your application will be facilitated by providing as much additional environmental information as pertinent and available to the applicant at the time of submission of the encroachment application.

These additional documentations may include the following documentation:

- California Department of Fish and Game Streambed Alteration Notification (http://www.dfg.ca.gov/1600/),
- Clean Water Act Section 404 applications, and Rivers and Harbors Section 10 application (US Army Corp of Engineers),
- Clean Water Act Section 401 Water Quality Certification, and
- corresponding determinations by the respective regulatory agencies to the aforementioned applications, including Biological Opinions, if available at the time of submission of your application.

The submission of this information, if pertinent to your application, will expedite review and prevent overlapping requirements. This information should be made available as a supplement to your application as it becomes available. Transmittal information should reference the application number provided by the Reclamation Board.

In some limited situations, such as for minor projects, there may be no other agency with approval authority over the project, other than the encroachment permit by Reclamation Board. In these limited instances, the Reclamation Board

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may choose to serve as the "lead agency" within the meaning of CEQA and in most cases the projects are of such a nature that a categorical or statutory exemption will apply. The Reclamation Board cannot invest staff resources to prepare complex environmental documentation.

Additional information may be requested in support of the environmental review of your application pursuant to CCR Title 23 Section 8(b)(4). This information may include biological surveys or other environmental surveys and may be required at anytime prior to a determination on the application.

12.2-27

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Linda S. Adams
Secretary for Environmental Protection

California Regional Water Quality Control Board
Central Valley Region
Karl E. Longley, ScD, PE, Chair

Sacramento Main Office
11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Phone (916) 464-3291 • FAX (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

Arnold Schwarzenegger
Governor

12 October 2007

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OCT 17 2007
STATE CLEARING HOUSE

San Francisco Planning Department
Attn.: Mr. Paul Maltzer
Environmental Review Officer
1660 Mission Street, Suite 500
San Francisco, CA 94103-2414

RECEIVED
OCT 19 2007
CITY & COUNTY OF S.F.
PLANNING DEPARTMENT

Comments on Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program, SCH No. 2005092026

Dear Mr. Maltzer:

We have reviewed the Draft Program Environmental Impact Report (PEIR) for the San Francisco Public Utility Commission's (SFPUC) Water System Improvement Program (WSIP). The goals and objectives of WSIP include the following:

- **Water Quality:** (A) Design improvements to meet current and foreseeable future federal and state water quality requirements; (B) Provide clean, unfiltered water originating from Hetch Hetchy Reservoir and filter all other surface water sources; and (C) Continue to implement watershed protection measures.
- **Seismic Reliability:** (A) Design improvements to meet current seismic standards; (B) Deliver basic service to the East/South Bay, Peninsula, and San Francisco within 24 hours after a major earthquake (229 million gallons per day [mgd] and deliver to at least 70 percent of the turnouts). (C) Restore facilities to meet average-day demand of 300 mgd within 30 days after a major earthquake.
- **Delivery Reliability:** (A) Provide operational flexibility to allow planned maintenance shutdowns of individual facilities without interruption of service; (B) Provide operational flexibility to minimize risk of service interruption due to unplanned facility upsets or outages; (C) Provide operational flexibility and system capacity to replenish local reservoirs as needed; (D) Meet estimated average annual demand of 300 mgd for 2030 under the conditions of one planned shutdown of a major facility for maintenance concurrent with one unplanned facility outage.
- **Water Supply:** (A) Meet average annual water purchase requests from retail and wholesale customers during nondrought years through 2030 (estimated average annual demand of 300 mgd for 2030); (B) Meet dry-year delivery needs through 2030 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts; (C) Diversify water supply options during nondrought years and drought periods; (D) Improve use of new water sources and drought management, including use of groundwater, recycled water, conservation, and transfers.

- **Sustainability:** (A) Manage natural resources and physical systems to protect watershed ecosystems; (B) Meet, at a minimum, all current and anticipated legal requirements for protection of fish and other wildlife habitat; and (C) Manage natural resources and physical systems to protect public health and safety.
- **Cost-effectiveness:** (A) Ensure cost-effective use of funds; (B) Maintain gravity fed system; and (C) Implement regular inspection and maintenance program for all facilities.

Based on the information provided in the Draft PEIR, Central Valley Regional Water Quality Control Board (Water Board) staff offer the following comments to advise the SFPUC of our concerns.

Comment 1
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Water Quality Regulations, Page 4.5-9.

The discussion of Water Quality Regulations in Section 4.5 should be expanded to clarify that the Water Board also issues WDRs to regulate discharges of waste into waters of the State that are outside federal jurisdiction as defined under the Clean Water Act (CWA), including isolated waters under the Supreme Court's SWANCC and Rapanos decisions. 01

Please also note that the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan) was last revised in February 2007. A copy of the revised Basin Plan can be obtained at http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.html .

Comment 2
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Beneficial Uses, Pages 4.5-9 and 4.5-10.

The discussion of beneficial uses indicates that beneficial uses of surface waters serve as the basis for establishing water quality objectives and discharge prohibitions to attain beneficial use goals. This discussion should be expanded to indicate that beneficial uses are designated in Water Quality Control Plans (Basin Plans) for surface waters and ground water basins. These beneficial uses serve as the basis for establishing water quality objectives and discharge prohibitions to attain the goal of achieving the highest water quality consistent with maximum benefit to the people of the state. Table 4.5-1 lists the designated beneficial uses for water bodies that may be affected by the WSIP. Please expand this table to include the beneficial uses for the Tuolumne River and groundwater basins that may be affected by the WSIP. As listed in Table II-1 of the Basin Plan, the beneficial uses of the Tuolumne River include the following: 02

- **Source to (New) Don Pedro Reservoir include Municipal (i.e. see Figure II-1 in the Basin Plan)**: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Hydropower Generation (POW); Water Contact Recreation (REC-1); Non-water Contact Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); and Wildlife Habitat (WILD).

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- **New Don Pedro Reservoir:** MUN (Potential); POW; REC-1; REC-2; WARM; COLD; and WILD.
- **New Don Pedro Dam to San Joaquin River:** MUN (Potential); AGR; REC-1; REC-2; WARM; COLD; Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and WILD. 02 cont.

Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for MUN, AGR, industrial service supply (IND), and industrial process supply (PRO). Criteria for making exceptions to beneficial uses of ground waters are provided on Page II-3.00 of the Basin Plan.

Comment 3
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Construction in Waters of the State and of the United States, Page 4.5-12; and Section 4.6, Biological Resources, Regulation of Activities in Wetlands, Page 4.6-32.

The discussions of Construction in Waters of the State and United States in Section 4.5 and Regulation of Activities in Wetlands in Section 4.6 should be expanded to clarify that the Water Board has regulatory authority over construction in waters of the United States and waters of the State, including activities in wetlands, under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the Water Board has regulatory authority over actions in waters of the United States, through the issuance of water quality certifications (certifications) under Section 401 of the CWA, which are issued in conjunction with permits issued by the Army Corps of Engineers (ACOE) under Section 404 of the CWA. When the Water Board issues Section 401 certifications, the project is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. Activities in areas that are outside of the jurisdiction of the ACOE (e.g., isolated wetlands, vernal pools, or stream banks above the ordinary high water mark) are regulated by the Water Board, under the authority of the Porter-Cologne Act. Activities that lie outside of ACOE jurisdiction may require the issuance of either individual or general WDRs. 03

Comment 4
Section 4.5: Hydrology and Water Quality, Impact 4.5-1: Degradation of water bodies as a result of erosion and sedimentation or a hazardous materials release during construction, Pages 4.5-21 through 4.5-28; and Section 6.2: SFPUC Construction Measures, Measure #3: Onsite air and water quality measures during construction, Page 6-4.

The text indicates the WSIP will result in less than significant impacts to water bodies as a result of erosion and sedimentation or a hazardous materials release during construction. The rationale for this conclusion is that all projects will be required to implement best management practices (BMP) specified in SFPUC Construction Measure #3 (onsite air and water quality measures during construction). In addition, projects outside of San Francisco that disturb more than 1 acre will have to comply with either the NPDES Permit for Small Linear Projects or the NPDES General Permit for Construction, which require the BMPs to be implemented in 04

accordance with stormwater pollution prevention plans (SWPPP). In San Francisco, projects would be subject to Article 4.1 of the San Francisco Public Works which requires, at a minimum, the development of an erosion and sediment control plan to reduce the impact of runoff from construction sites.

SFPUC Construction Measure #3 includes many effective BMPs, such as preservation of existing vegetation and stabilization of site ingress/egress locations, to minimize erosion. However, scheduling is not included in SFPUC Construction Measure #3 and should be used as a BMP for all WSIP projects. Scheduling should be used to phase construction to limit areas and periods of disturbance to the maximum extent practicable and to minimize the area of disturbed soil during the wet season. Scheduling should also be used to coordinate construction activities with implementation of appropriate erosion and sediment control BMPs. 04 cont.

Comment 5
Section 4.6: Biological Resources. Impacts, Significance Criteria, Page 4.6-37.

The third bullet under the significance criteria for biological impacts should be expanded to include wetlands protected under the State of California's Porter-Cologne Water Quality Control Act. 05

Comment 6
Section 4.6: Biological Resources, Impact 4.6-1: Impacts on wetlands and aquatic resources, Page 4.6-43; and Section 6.3: Mitigation Measures to Minimize Facilities Impacts, Mitigation Measure 4.6-1a: Wetlands Assessment, and Mitigation Measure 4.6-1b: Compensation for Wetlands and Other Biological Resources, Pages 6-11 and 6-12.

The discussion of impacts on wetlands and aquatic resources in Section 4.6 discloses that impacts on wetlands are assumed to occur for all WSIP projects that involve surface disturbance. We also acknowledge and appreciate mitigation measures presented in Section 6.3. To mitigate potential impacts to wetlands and aquatic features, a qualified wetland scientist will assess and delineate wetlands potentially occurring at project sites (Mitigation Measure 4.6-1a), and site-specific mitigation measures will be identified as part of the project specific CEQA reviews (Mitigation Measure 4.6-1b). Mitigation Measure 4.6-1b states that when a WSIP project will affect jurisdictional wetlands, the SFPUC will implement avoidance measures, restoration procedures, and compensatory creation or enhancement. 06

We acknowledge and appreciate these mitigation measures, and wish to emphasize that under the Porter-Cologne Act, the Water Board has jurisdiction over wetlands of any type, including areas that are outside of ACOE jurisdiction under the CWA. In addition, Mitigation Measure 4.6-1b should be expanded to include measures to minimize impacts to wetlands. For all impacts to wetlands, the SFPUC will be required to demonstrate to the Water Board that they have avoided and minimized impacts to the maximum extent practicable before considering compensation measures.

Comment 7
Section 4.6: Biological Resources, Impact 4.6-1: Impacts on wetlands and aquatic resources, Page 4.6-43. 07

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The PEIR should note that the discussion of potential changes to jurisdictional determinations pending outcomes of recent federal court cases only pertains to federal jurisdiction under the CWA. State jurisdiction under the Porter-Cologne Act will not be affected by the pending outcomes of recent federal court cases and has not been affected by earlier decisions, such as the Tulloch, SWANCC, and Rapanos decisions. To regulate impacts to waters of the State that are outside federal jurisdiction, the Water Board may issue either individual or general WDRs. 07 cont.

Comment 8
Section 5.2: Plans and Policies, Federal Statutes and Agreements, Clean Water Act, Page 5.2-6.

The discussion of the CWA includes requirements under Section 404 of the Act; however, requirements under Section 401 of CWA were not provided in this discussion. Under Section 401 of CWA, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification (Certification) that the proposed activity will comply with state water quality standards. Most Certifications are issued in connection with CWA Section 404 permits for dredge and fill discharges. Please revise the discussion of the CWA in Section 5.2 to include requirements under Section 401 of the Act. 08

Comment 9
Section 5.3: Tuolumne River System and Downstream Water Bodies, Impact 5.3.7-2: Impacts on Alluvial Features that Support Meadow and Riparian Habitat along the Tuolumne River from O'Shaughnessey Dam to Don Pedro Reservoir, Pages 5.3.7-15 through 5.3.7-22; and Section 6.4: Mitigation Measures to Minimize Water Supply and System Operations Impacts, Mitigation Measure 5.3.7-2, Controlled Releases to Recharge Groundwater in Streamside Meadows and Other Alluvial Deposits, Pages 6-49 through 6-50.

On page 5.3.7-15 of Section 5.3, the text indicates that the two primary factors influencing riparian ecological resources are hydrology and geomorphology because of the following:

- Flood flows create open sites for colonization by new individuals and are important in determining the period of saturation in the root zone.
- High flows determine the extent and type of habitats in meadow and riparian systems by recharging groundwater.
- Minimum flows maintain groundwater levels and affect the extent and diversity of riparian, meadow, and aquatic habitats.

Impact 5.3.7-2 indicates that there are potentially significant impacts on wet meadow and riparian habitats along the Tuolumne River between O'Shaughnessey Dam to Don Pedro Reservoir. These impacts occur because of changes in geomorphologic processes and reductions in groundwater recharge primarily in the Poopenaut Valley. Under Mitigation Measure 5.3.7-2, the SFPUC proposes to manage reservoir releases in a pattern that provides flows of a magnitude to inundate the meadows and streamside alluvial deposits for as long as possible (i.e. pulse flows). The SFPUC also proposes to collect baseline data and follow up monitoring to evaluate whether the proposed pulse flows are meeting the objective of maintaining and improving wet meadow habitat. Some of the baseline data needed may be available from the study effort in Poopenaut Valley performed collaboratively by the National 09

Park Service, U.S. Forest Service and SFPUC to evaluate sediment transport and deposition relationships. Water Board staff appreciate the SFPUC's effort to mitigate effects on meadow and riparian habitats. As waters of the State, meadows and riparian habitat provide beneficial uses, such as endangered species habitat, that need to be protected. As a result, Water Board Staff recommend using the baseline studies to evaluate the effectiveness of pulse flows and verify that minimum flows are sufficient to ensure the continued health of riparian and meadow systems in the upper Tuolumne River watershed. 09 cont.

Comment 10
Section 5.7: Cumulative Projects and Impacts Related to WSIP Water Supply and System operations, Subsection 5.7.6 Climate Change and Global Warming, Pages 5.7-92 through 5.7-97.

The discussion on climate change in Section 5.7 evaluates effects from reductions in annual snowpack, increased precipitation in the form of rain, and shifts in seasonal precipitation. We acknowledge and appreciate the difficulty in assessing impacts related to climate change because of the uncertainty associated with the models. However, the discussion on climate change should be expanded to include a discussion of potential effects resulting from changes in the frequency and duration of extreme climatic events, such as droughts and flood events. 10

The projections by the Intergovernmental Panel on Climate Change (IPCC) summarized indicate that more intense precipitation and drought events are likely to occur in the 21st century. These predictions are summarized in Table 9.6 of Climate Change 2001: The Scientific Basis (http://www.grida.no/climate/ipcc_tar/wg1/pdf/TAR-09.PDF). On Page 891 in Climate Change 2007: The Physical Science Basis, the IPCC's review of regional climate models also found increases in extreme temperature events in California, prolonged hot spells and increased diurnal temperature range (http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch11.pdf). Although there is no clear scientific consensus on the quantification of these extreme events, a qualitative assessment acknowledging the uncertainties in climate models should be performed to evaluate whether changes in operations will exacerbate adverse effects associated with extreme climatic events.

Conclusion
Please contact Xavier Fernandez at 510-622-5685 xafernandez@waterboards.ca.gov at the San Francisco Bay Regional Board office or me at (916) 474-4742 if you have any questions.

Greg Vaughn
Senior Engineer
Stormwater / Water Quality Certification Unit

cc: State Clearinghouse
Xavier Fernandez, San Francisco Bay Regional Board, Oakland

12.2-30

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400, Oakland, California 94612
Phone (510) 622-2300 • FAX (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay/

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

Date: SEP 26 2007
File No. 2198.09/2178.05/2188.05 (XF)

San Francisco Planning Department
Attn.: Mr. Paul Maltzer
Environmental Review Officer
1660 Mission Street, Suite 500
San Francisco, CA 94103-2414

Subject: Comments on Draft Program Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program
SCH No. 2005092026

Dear Mr. Maltzer:

We have reviewed the Draft Program Environmental Impact Report (PEIR) for the San Francisco Public Utility Commission's (SFPUC's) Water System Improvement Program (WSIP). The goals and objectives of WSIP include the following:

1. **Water Quality:** (A) Design improvements to meet current and foreseeable future federal and state water quality requirements; (B) Provide clean, unfiltered water originating from Hetch Hetchy Reservoir and filter all other surface water sources; and (C) Continue to implement watershed protection measures.
2. **Seismic Reliability:** (A) Design improvements to meet current seismic standards; (B) Deliver basic service to the East/South Bay, Peninsula, and San Francisco within 24 hours after a major earthquake (229 million gallons per day [mgd] and deliver to at least 70 percent of the turnouts). (C) Restore facilities to meet average-day demand of 300 mgd within 30 days after a major earthquake.
3. **Delivery Reliability:** (A) Provide operational flexibility to allow planned maintenance shutdowns of individual facilities without interruption of service; (B) Provide operational flexibility to minimize risk of service interruption due to unplanned facility upsets or outages; (C) Provide operational flexibility and system capacity to replenish local reservoirs as needed; (D) Meet estimated average annual demand of 300 mgd for 2030 under the conditions of one planned shutdown of a major facility for maintenance concurrent with one unplanned facility outage.

4. **Water Supply:** (A) Meet average annual water purchase requests from retail and wholesale customers during nondrought years through 2030 (estimated average annual demand of 300 mgd for 2030); (B) Meet dry-year delivery needs through 2030 while limiting rationing to a maximum 20 percent system-wide reduction in water service during extended droughts; (C) Diversify water supply options during nondrought years and drought periods; (D) Improve use of new water sources and drought management, including use of groundwater, recycled water, conservation, and transfers.
5. **Sustainability:** (A) Manage natural resources and physical systems to protect watershed ecosystems; (B) Meet, at a minimum, all current and anticipated legal requirements for protection of fish and other wildlife habitat; and (C) Manage natural resources and physical systems to protect public health and safety.
6. **Cost-effectiveness:** (A) Ensure cost-effective use of funds; (B) Maintain gravity fed system; and (C) Implement regular inspection and maintenance program for all facilities.

Based on the information provided in the Draft PEIR, San Francisco Bay Regional Water Quality Control Board (Water Board) staff offers the following comments to advise the SFPUC of our concerns.

12.2-31

Comment 1
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Water Quality Regulations, Page 4.5-9.

The discussion of Water Quality Regulations in Section 4.5 should be expanded to clarify that the Water Board also issues Waste Discharge Requirements (WDR) to regulate discharges of waste into waters of the State that are outside federal jurisdiction as defined under the Clean Water Act (CWA), including isolated waters under the Supreme Court's SWANCC and Rapanos decisions. 01

Please also note that revisions to the San Francisco Bay Basin Water Quality Control Plan (SF Basin Plan) were recently approved by the Office of Administrative Law. The effective date of the revised plan is December 22, 2006. A copy of the revised SF Basin Plan can be obtained at http://www.waterboards.ca.gov/sanfranciscobay/basinplan.htm.

Comment 2
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Beneficial Uses, Pages 4.5-9 and 4.5-10.

The discussion of beneficial uses indicates that beneficial uses of surface waters serve as the basis for establishing water quality objectives (WQOs) and discharge prohibitions to attain beneficial use goals. This discussion should be expanded to indicate that 02

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beneficial uses are designated in Water Quality Control Plans (Basin Plans) for surface waters, groundwater basins, and in the case of the San Francisco Bay Basin, wetlands. The beneficial uses designated in the Basin Plans serve as the basis for establishing WQOs and discharge prohibitions to attain the goal of achieving the highest water quality consistent with maximum benefit to the people of the state. Table 4.5-1 lists the designated beneficial uses for water bodies that may be affected by the WSIP. Please expand this table to include the beneficial uses for groundwater basins that may be affected by the WSIP as listed in Table 2-2 of the SF Basin Plan. Table 2-2 can be obtained at http://www.waterboards.ca.gov/sanfranciscobay/basinplan/web/tab/tab_2-02.pdf. Please include a footnote stating that beneficial uses for specific wetland sites affected by the WSIP will be determined as needed based on the process described in Chapter 4 of the SF Basin Plan. 02 cont.

Comment 3
Section 4.5: Hydrology and Water Quality, Regulatory Framework, Construction in Waters of the State and of the United States, Page 4.5-12; and Section 4.6, Biological Resources, Regulation of Activities in Wetlands, Page 4.6-32.

The discussions of Construction in Waters of the State and United States in Section 4.5 and Regulation of Activities in Wetlands in Section 4.6 should be expanded to clarify that the Water Board has regulatory authority over construction in waters of the United States and waters of the State, including activities in wetlands, under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the Water Board has regulatory authority over actions in waters of the United States, through the issuance of water quality certifications (certifications) under Section 401 of the CWA, which are issued in conjunction with permits issued by the Army Corps of Engineers (ACOE) under Section 404 of the CWA. When the Water Board issues Section 401 certifications, the project is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. Activities in areas that are outside of the jurisdiction of the ACOE (e.g., isolated wetlands, vernal pools, or stream banks above the ordinary high water mark) are regulated by the Water Board, under the authority of the Porter-Cologne Act. Activities that lie outside of ACOE jurisdiction may require the issuance of either individual or general Waste Discharge Requirements (WDRs). 03

Comment 4
Section 4.5: Hydrology and Water Quality, Regulatory Framework, NPDES Waste Discharge Regulations, Municipal Stormwater Permits, Pages 4.5-12 and 4.5-13.

This Section describes requirements and provisions in municipal stormwater permits for Alameda, Santa Clara, and San Mateo Counties. Included in this description is the 04

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following statement: "Projects completed in a public right-of-way, such as pipeline projects proposed as part of the WSIP, are exempt from the C.3 requirements when both sides of the right-of-way are developed." This statement is incorrect. The exemption for projects in a public right-of-way is only for reconstruction projects within a public street or road right-of-way, where both sides of the right-of-way are developed.

Please also note that the Water Board is in the process of developing a Municipal Regional Urban Runoff Phase I NPDES Stormwater Permit (MRP) that will replace the municipal stormwater permits for these counties. The purpose of the MRP is to improve regional consistency in permit requirements and to require more specific actions than previous stormwater permits. The administrative draft was issued on May 1, 2007, and can be obtained from the Water Board's website at http://www.waterboards.ca.gov/sanfranciscobay/mrp.htm. A revised draft is expected shortly and will be available at the same address.

04 cont.

Comment 5

Section 4.5: Hydrology and Water Quality, Impact 4.5-1: Degradation of water bodies as a result of erosion and sedimentation or a hazardous materials release during construction, Pages 4.5-21 through 4.5-28; and Section 6.2: SFPUC Construction Measures, Measure #3: Onsite air and water quality measures during construction, Page 6-4.

The text indicates the WSIP will result in less than significant impacts to water bodies as a result of erosion and sedimentation or a hazardous materials release during construction. The rationale for this conclusion is that all projects will be required to implement best management practices (BMPs) specified in SFPUC Construction Measure #3 (onsite air and water quality measures during construction). In addition, projects outside of San Francisco's combined sewer system that disturb more than 1 acre will have to comply with either the NPDES Permit for Small Linear Projects or the NPDES General Permit for Construction, which require the BMPs to be implemented in accordance with permit requirements and stormwater pollution prevention plans (SWPPP). The text further states, that projects within the area served by the combined sewer in San Francisco would also be subject to Article 4.1 of the San Francisco Public Works Code which requires, at a minimum, the development of an erosion and sediment control plan to reduce the impact of runoff from construction sites that are 0.5 acres or more in size. Projects within the area served by a separate sewer system in San Francisco would be subject to the Statewide General Permit for Stormwater Discharges from Small Separate Storm Sewer Systems.

05

SFPUC Construction Measure #3 includes many effective BMPs, such as preservation of existing vegetation and stabilization of site ingress/egress locations, to minimize erosion. However, scheduling is not included in SFPUC Construction Measure #3 and should be used as a BMP for all WSIP projects. Scheduling should be used to phase

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construction to limit areas and periods of disturbance to the maximum extent practicable and to minimize the area of disturbed soil during the wet season. Scheduling should also be used to coordinate construction activities with implementation of appropriate erosion and sediment control BMPs. In addition, the SFPUC should allow 60 days for the Water Board to review and accept SWPPPs prior to commencement of construction activities.

05 cont.

Comment 6

Section 4.5: Hydrology and Water Quality, Impact 4.5-2: Depletion of groundwater resources, Sunol Valley Region, Pages 4.5-29 and 4.5-30; Section 4.6: Biological Resources, Impact 4.6-3: Impacts on key special status species –direct mortality and/or habitat effects; and Section 6.3: Mitigation Measures to Minimize Facilities Impacts, Mitigation Measure 4.5-2: Site Specific Groundwater Analysis and Identified Measures and Mitigation Measure 4.6-1a: Wetlands Assessment, Page 6-9.

The discussion in Section 4.5 indicates potentially significant impacts to groundwater resources in the vicinity of the New Irvington Tunnel project because construction of the existing Irvington Tunnel in the 1930's resulted in depletion of groundwater resources in the area (Impact 4.5-2). In addition, the text in Section 4.6 indicates that dewatering during the New Irvington Tunnel Project could alter surface water features thereby potentially impacting key special status species, such as the California red-legged frog and California tiger salamander.

We acknowledge and appreciate mitigation measures presented in Section 6.3. The measures to mitigate detrimental effects related to depletion of groundwater (Mitigation Measure 4.5-2) include taking an inventory of springs and wells in the area of the planned tunnel and conducting a project-specific analysis as part of the California Environmental Quality Act (CEQA) review process for the Irvington Tunnel Project. If a significant impact is identified in the project-specific CEQA review, measures such as altering groundwater withdrawal rates and/or providing alternate water supply for affected users will be implemented to mitigate impacts to groundwater resources and beneficial uses. To mitigate potential impacts to wetlands and aquatic features, a qualified wetland scientist will assess and delineate wetlands potentially occurring at project sites (Mitigation Measure 4.6-1a), and site-specific mitigation measures will be identified as part of the project-specific CEQA reviews (Mitigation Measure 4.6-1b).

06

In addition to Mitigation Measure 4.5-2, the PEIR mitigation measures should include evaluating indirect effects on aquatic and riparian habitat associated with lowering of groundwater levels. This should be accomplished by expanding Mitigation Measure 4.6-1a to include sensitive habitat in and around springs and creeks in the area around the New Irvington Tunnel Project. If potentially significant impacts to aquatic and/or riparian habitat are identified, then Mitigation Measure 4.6-1b should be used to (1) avoid the impact, (2) minimize unavoidable impacts, and (3) compensate for

unavoidable impacts. The Water Board will review the use this three-step process when reviewing project impacts. We will also require appropriate mitigation for unavoidable impacts as part of project review. Please revise the PEIR to include a citation of the three-step review process described above and in Comment 11. 06 cont.

Comment 7
Section 4.5: Hydrology and Water Quality, Impact 4.5-3: Construction dewatering discharges to surface waters and construction related discharges of treated water, Pages 4.5-31 through 4.5-33.

The PEIR discloses that dewatering of groundwater will be required for projects requiring excavation below the groundwater table. The dewatered groundwater may contain sediments and contaminants that could degrade water quality. The text further explains that discharges of groundwater to surface water may be possible under the General Construction Permit. The PEIR should note that discharges of dewatered groundwater are possible under the General Construction Permit provided that it can be demonstrated that the water is uncontaminated. The PEIR further states that in the San Joaquin Region, the dewatering discharges may be performed in accordance with the General Order for Dewatering and Other Low Threat Discharges to Surface Waters, and for any discharge to land, it may be possible to perform the discharge in accordance with the State General Waste Discharge Requirements for Discharges to Land with a Low Threat to Surface Waters. The PEIR also acknowledges that an individual National Pollutant Discharge Elimination System (NPDES) permit, or a waiver, may be required. 07

The discussion of potential permits under which dewatered groundwater may be discharged should be expanded to include General Permits in the San Francisco Regions. These include the following General NPDES Permits:

- General NPDES Permit for VOC Cleanups (Order No. R2-2004-0055);
- General NPDES Permit for Fuel Cleanups (Order No. R2-2006-0075);
- General NPDES Permit for Groundwater Dewatering (Order No. R2-2006-0075).

Please note that before discharging under any general permit, the SFPUC must submit a completed Notice of Intent (NOI) that includes a dewatering plan with appropriate treatment and monitoring specifications. The SFPUC should also allow at least 60 days for Water Board review and acceptance of NOIs and dewatering plans.

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Comment 8
Section 4.5: Hydrology and Water Quality, Impact 4.5-5: Degradation of water quality and increased flows due to discharges to surface water during operation, Crossover Facilities and Pipelines, Pages 4.5-41 through 4.5-49.

The text indicates that discharges of chlorinated and chloraminated water from crossover facilities and pipelines will occur in the Sunol Valley, Bay Division, Peninsula, and San Francisco Regions of the WSIP. The PEIR states that "These discharges would be dechlorinated or dechloraminated and would occur at a rate that would not cause erosion or downstream flooding." However, historical discharges from pipelines and crossover facilities have impacted water quality and beneficial uses despite BMPs to prevent adverse effects from these discharges. As a result, we recommend that the SFPUC evaluate the potential to plumb blow off valves, crossover facilities, and other potable water discharge locations to treatment plants and sanitary sewers, where feasible. 08

Comment 9
Section 4.5: Hydrology and Water Quality, Impact 4.5-6: Degradation of water quality as a result of alteration of drainage patterns or an increase in impervious surfaces, Pages 4.5-49 through 4.5-54.

The text indicates that projects in the Sunol Valley, Bay Division, Peninsula, and San Francisco Regions of the WSIP will result in increases or replacement of impervious surfaces. The text goes further to state that stormwater treatment is required for projects creating or replacing 10,000 square feet or more of impervious surface, but that this threshold only applies to specific projects and not to a cumulative set of projects such as the WSIP. However, this is only correct if the locations of a cumulative set of projects under a single program are noncontiguous, and/or are not part of a single common plan of development. As a result, the text should be revised to reflect that contiguous projects under WSIP will be required to meet this threshold. For instance, both the Additional 40-mgd Treated Water Supply (SV-3) and SVWTP-Treated Water Reservoirs (SV-5) projects will create new impervious surfaces and will occur at the Sunol Valley Water Treatment Plant. As a result, the 10,000 square foot threshold would apply to the cumulative area of new impervious surfaces created by these projects. Further, to the extent that projects are part of a single common plan of development that cumulatively exceeds 10,000 square feet of new or replaced impervious surface, the smaller amount of impervious surface from each sub-project would be require appropriately sized stormwater treatment BMPs. Appropriately sized treatment must be based on the following hydraulic design criteria: 09

Volume Hydraulic Design Basis: Treatment BMPs whose primary mode of action depends on volume capacity, such as detention/retention units or infiltration structures, shall be designed to treat stormwater runoff equal to:

1. the maximized stormwater quality capture volume for the area, based on historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998), pages 175-178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or,
2. the volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Appendix D of the California Stormwater Best Management Practices Handbook, (1993), using local rainfall data.

Flow Hydraulic Design Basis: Treatment BMPs whose primary mode of action depends on flow capacity, such as swales, sand filters, or wetlands, shall be sized to treat:

1. 10% of the 50-year peak flow rate;
2. or the flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or,
3. the flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

09 cont.

The text in Section 4.5 also states that projects disturbing more than 1 acre of land would be required to include post-construction erosion and sediment control BMPs in the SWPPP prepared for the project. Please also note that under the municipal stormwater permits, the post-construction erosion and sediment control BMPs for projects creating or replacing more than 1 acre of impervious surface must also comply with requirements in the Hydrograph Modification Management Plans for Alameda, Santa Clara, and San Mateo Counties.

We appreciate and acknowledge the watershed management actions pertaining to onsite stormwater collection and drainage systems. We are especially concerned that these actions continue in perpetuity (i.e. for the life of the system/facility) and are implemented at all SFPUC facilities, including, but not limited to, maintenance and access roads, corporation yards, and parking lots.

Comment 10
Section 4.6: Biological Resources. Impacts, Significance Criteria, Page 4.6-37.

The third bullet under the significance criteria for biological impacts should be expanded to include wetlands protected under the State of California's Porter-Cologne Water Quality Control Act.

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Comment 11
Section 4.6: Biological Resources, Impact 4.6-1: Impacts on wetlands and aquatic resources, Page 4.6-43; and Section 6.3: Mitigation Measures to Minimize Facilities Impacts, Mitigation Measure 4.6-1a: Wetlands Assessment, and Mitigation Measure 4.6-1b: Compensation for Wetlands and Other Biological Resources, Pages 6-11 and 6-12.

The discussion of impacts to wetlands and aquatic resources in Section 4.6 discloses that impacts to wetlands are assumed to occur for all WSIP projects that involve surface disturbance. The PEIR should note that under the Porter-Cologne Act, waters of the State are defined as "any water, surface or underground, including saline waters, within the boundaries of the State." Based on this definition, the SF Basin Plan states that "Wetlands water quality control is therefore clearly within the jurisdiction of the State and Regional Boards." As a result, the Water Board has jurisdiction over wetlands of any type, including isolated wetlands under the Supreme Court's SWANCC and Rapanos decisions.

The PEIR proposes two measures to mitigate potential impacts to wetlands and aquatic features. First, a qualified wetland scientist will assess and delineate wetlands potentially occurring at project sites (Mitigation Measure 4.6-1a). Second, site-specific mitigation measures will be identified as part of the project-specific CEQA reviews (Mitigation Measure 4.6-1b). Mitigation Measure 4.6-1b states that when a WSIP project will affect jurisdictional wetlands, the SFPUC will implement avoidance measures, restoration procedures, and compensatory creation or enhancement.

11

We wish to emphasize that all wetlands are within the Water Board's jurisdiction. To protect wetlands, the Water Board adopted U.S. EPA's Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredge or Fill Material," dated December 24, 1980, in the SF Basin Plan for determining the circumstance under which filling of wetlands, streams or other waters of the State may be permitted. Section 404(b)(1) Guidelines prohibit all discharges of fill material into regulated waters of the United States, unless a discharge, as proposed, constitutes the least environmentally damaging practicable alternative that will achieve the basic project purpose.

The Guidelines sequence the order in which proposals should be approached: (1) Avoid - avoid impacts to waters; (2) Minimize - modify project to minimize impacts to waters; and, (3) Mitigate – once impacts have been fully minimized, compensate for unavoidable impacts to waters. When it is not possible to avoid impacts to water bodies, disturbance should be minimized. Mitigation for lost water body acreage and functions through restoration or creation should only be considered after disturbance has been minimized. Where impacts cannot be avoided, the creation of adequate mitigation habitat to compensate for the loss of water body acreage, functions and values must be provided.

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As a result, the SFPUC will be required to obtain appropriate approvals from the Water Board for wetland fill. Applications for these approvals must demonstrate to the Water Board that impacts to wetlands have been avoided and minimized to the maximum extent practicable before considering compensation measures. Mitigation Measure 4.6-1b should be expanded to reflect this by stating that measures will be implemented to minimize unavoidable impacts to wetlands before implementing restoration, enhancement, or creation activities.

Cumulative and indirect impacts to wetlands must also be prevented. Indirect impacts include: deposition of sediments; erosion of substratum; additional water (flooding); reduced water supply or flows; creating a condition of pollution; shading; and, watershed degradation.

11 cont.

Comment 12
Section 4.6: Biological Resources, Impact 4.6-1: Impacts on wetlands and aquatic resources, Page 4.6-43.

The PEIR should note that the discussion of potential changes to jurisdictional determinations pending outcomes of recent federal court cases only pertains to federal jurisdiction under the CWA. State jurisdiction under the Porter-Cologne Act will not be affected by the pending outcomes of recent federal court cases and has not been affected by earlier decisions, such as the Tulloch, SWANCC, and Rapanos decisions. To regulate impacts to waters of the State that are outside federal jurisdiction, the Water Board may issue either individual or general WDRs.

12

Comment 13
Section 5.2: Plans and Policies, Federal Statutes and Agreements, Clean Water Act, Page 5.2-6.

The discussion of the CWA includes requirements under Section 404 of the Act; however, requirements under Section 401 of CWA were not provided in this discussion. Under Section 401 of CWA, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification (Certification) that the proposed activity will comply with state water quality standards. Most Certifications are issued in connection with CWA Section 404 permits for dredge and fill discharges. Please revise the discussion of the CWA in Section 5.2 to include requirements under Section 401 of the CWA.

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Comment 14
Section 5.4: Alameda Creek Watershed Streams and Reservoirs, Subsection 5.4.2: Geomorphology, Impact 5.4.2-1: Effects on channel formation and sediment transport along Calaveras Creek, and Impact 5.4.2-2: Effects on channel formation and sediment transport along Alameda Creek downstream of diversion dam, Pages 5.4.2-1 through 5.4.2-4.

The description of geomorphology and sediment transport characteristics beginning on Page 5.4.2-1 should include a discussion of Luna Leopold's effective work concept, particularly as modified by GeoSyntech's recent work on creeks dominated by fine grained sediment (GeoSyntech 2002). This concept suggests that relatively frequent moderate flows cumulatively transport a large proportion of total sediment in streams and control channel stability, or instability. Even low flows (less than 60 percent of bankfull) were found to mobilize fine grained bed material although bulk gravels were undisturbed (Carling 1987 as cited in GeoSyntech 2002). Furthermore, sediment load, particle size range, input timing and mechanisms, and longitudinal distribution were all determined to be important in the development of geomorphic surfaces and instream deposits, both of which serve as the foundation for riparian and aquatic habitat. As a result, a change in either the discharge or sediment load may initiate adjustments to channel morphology that impact the beneficial uses of the stream.

The text on page 5.4.2-2 states that the SFPUC will discharge about 900 cubic yards per year of sediment accumulated behind the Alameda Creek Diversion Dam. In addition, there are significant and unmitigatable effects on stream flow along Alameda Creek between the diversion dam and the Calaveras Creek confluence (Impact 5.4.1-2). Specifically, flows above 650 cubic feet per second (cfs) will be significantly reduced, and flows below 650 cfs will be virtually eliminated. As a result, flows occurring during major storms will resemble flows currently occurring during small storms and flows during small storms will be virtually nonexistent. The overall effect will be to reduce the frequency of low and moderate flows (i.e. flows currently associated with small storms will only occur during major storms) while eliminating high flows (i.e. flows currently associated with major storms will not occur). Changes in both the timing of sediment input and water flows have the potential to impact channel shape and sediment transport along Alameda Creek downstream of the diversion dam (Impact 5.4.2-2).

14

The text on pages 5.4.1-19 through 5.4.1-25 indicates that there will be changes in the timing and magnitude of flows as a result of the WSIP. Reduced winter flows would occur in years with above average rainfall. New instream fishery releases would increase flows in summer months. We support fisheries releases; however, it is important that these releases as well as other operational changes be performed in a manner that does not result in detrimental impacts to stream geomorphology.

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The evaluation of effects on channel formation and sediment transport along Calaveras Creek and along Alameda Creek downstream of the diversion dam (Impacts 5.4.2-1 and 5.4.2-2) should be revised to include an assessment of the expected effects on stream geomorphology resulting from changes in frequency, magnitude and duration of low, moderate and high flows, and the timing of sediment inputs. To account for the cumulative effect of small and moderate flows, continuous modeling over a period of record rather than focusing on a particular return period flow (e.g. 3.5-year flow) should be used for this assessment. Please incorporate continuous modeling into the impact assessment in the PEIR, or include it as a mitigation requirement in the PEIR. 14 cont.

Reference:
GeoSyntec Consultants. 2002. Hydromodification Management Plan Literature Review, Santa Clara Valley Urban Runoff Pollution Prevention Program. (A compact disc with an electronic copy of this literature review is enclosed.)

Comment 15
Section 5.4: Alameda Creek Watershed Streams and Reservoirs, Subsection 5.4.3: Surface Water Quality, Impact 5.4.3-3: Effects on water quality along Calaveras, San Antonio, and Alameda Creeks, Alameda Creek-Reach 1, Page 5.4.3-11.

The text on page 5.4.2-2 states that the SFPUC will discharge about 900 cubic yards per year of sediment accumulated behind the Alameda Creek Diversion Dam. Releasing this sediment though sluice gates has the potential to impact the water quality downstream of this discharge. However, the PEIR does not include an evaluation of potential water quality impacts associated with the sluicing of sediment from behind the diversion dam. It also does not indicate whether the sediment is expected to be released in a single event or multiple events. As a result, the PEIR should be revised to include an assessment of potential impacts on beneficial uses and/or water quality as a result of releasing sediment. This assessment should, at a minimum, include; (1) the expected frequency, magnitude, and timing of sediment releases; (2) any associated changes in total dissolved solids (TDS) and/or turbidity; (3) the expected fate and transport of the sediment; and (4) any associated changes in benthic macroinvertebrate or fish spawning habitat. Sediment discharges that have the potential to exceed WQOs in the SF Basin Plan should be considered significant impacts. The following WQOs should be considered in the assessment: 15

- **TDS in the Alameda Creek Watershed above Niles:**
  - 250 milligrams per liter (mg/l) (90 day-arithmetic mean)
  - 360 mg/l (90 day-90th percentile)
  - 500 mg/l (daily maximum)

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- **Sediment:** The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

  Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life.

- **Settable Material:** Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.

- **Suspended Material:** Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. 15 cont.

- **Turbidity**: Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.

Adverse effects on beneficial uses would include, but are not limited to, clogging of spawning beds with fine grained sediment, and covering of benthic macroinvertebrate habitat with excessive sediment.

If the evaluation identifies significant impacts to beneficial uses and/or water quality, mitigation for these impacts must be developed and proposed. Mitigation may include operational changes that modify the frequency in which sediment is sluiced from behind the dam or modify the frequency and duration of water diversions, or changes in sediment management that could preclude the current sediment discharge method.

Comment 16
Section 5.7: Cumulative Projects and Impacts Related to WSIP Water Supply and System operations, Subsection 5.7.6 Climate Change and Global Warming, Pages 5.7-92 through 5.7-97.

The discussion on climate change in Section 5.7 evaluates effects from reductions in annual snowpack, increased precipitation in the form of rain, and shifts in seasonal precipitation. We acknowledge and appreciate the difficulty in assessing impacts related to climate change because of the uncertainty associated with the models. However, the discussion on climate change should be expanded to include a discussion of potential effects resulting from changes in the frequency and duration of extreme climatic events, such as droughts and flood events. 16

The projections by the Intergovernmental Panel on Climate Change (IPCC) summarized indicate that more intense precipitation and drought events are likely to occur in the 21st century. These predictions are summarized in Table 9.6 of Climate Change 2001: The Scientific Basis (http://www.grida.no/climate/ipcc_tar/wg1/pdf/TAR-09.PDF). On Page 891 in Climate Change 2007: The Physical Science Basis, the IPCC's review of regional climate models also found increases in extreme temperature events in California, prolonged hot spells and increased diurnal temperature range (http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_Ch11.pdf). Although there is no clear scientific consensus on the quantification of these extreme events, a qualitative assessment acknowledging the uncertainties in climate models should be performed to evaluate whether changes in operations will exacerbate adverse effects associated with extreme climatic events. 16 cont.

Closing
Please contact Xavier Fernandez at 510-622-5685 or xafernandez@waterboards.ca.gov with any questions or comments.

Sincerely,

Keith H. Lichten, P.E.
Senior Engineer

Enc: Hydromodification Management Plan Literature Review, Santa Clara Valley Pollution Prevention Program

Cc: Mr. Robert Smith, USACE
Mr. Dan Wilson, CDFG
Mr. Michael Monroe, EPA
Mr. Ryan Olah, FWS

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Interagency Permitting Task Force Contact List

Name	Agency	Address	Telephone Number/E-Mail
Robert F. Smith	U.S. Army Corps of Engineers	1455 Market Street, SPNOR-R San Francisco, CA 94103-1398	415-503-6792/ robert.f.smith@usace.army.mil
Ryan Olah	U.S. Fish and Wildlife Service Chief, Coast Bay Delta Branch	2800 Cottage Way W-2605 Sacramento, CA 95825	916-414-6623 Ryan_Olah@fws.gov
Mike Monroe	U.S. Environmental Protection Agency	75 Hawthorne Street San Francisco, CA 94105	415-972-3453 Monroe.Michael@epa.gov
Dan Wilson	California Department of Fish and Game	P.O. Box 47 Yountville, CA 94599	707-944-5534 Dwilson@dfg.ca.gov