

## 12.4 Groups

# GROUPS

## GROUPS THAT SUBMITTED COMMENTS ON THE DRAFT PEIR

Comment Letter Format	Comment Letter ID	Name of Commenter	Title	Organization/ Affiliation	Page
Email	SI_ACA1	Jeff Miller	Director	Alameda Creek Alliance	12.4-1
PH Fremont	SI_ACA2	Jeff Miller	Director	Alameda Creek Alliance	12.6-52
Email	SI_ACT	David T. Smernoff, Ph.D.	Board Vice President	Acterra: Action for a Sustainable Earth	12.4-12
Email	SI_CAC1	Steve Lawrence	Vice Chair	Citizens Advisory Committee to the SFPUC	12.4-13
Email	SI_CAC2	Steve Lawrence	Vice Chair	Citizens Advisory Committee to the SFPUC	12.4-13
Mail	SI_Caltrout	Brian Stranko	Chief Executive Officer	California Trout	12.4-14
Email	SI_CAREP	Buddy Burke / Virginia Chang Kiraly	CA REP President & CA REP Vice President	Republicans for Environmental Protection, Protection Commissioner, California Commission for Economic Development	12.4-14
PH Palo Alto	SI_CI	Katherine Forrest	Member	Commonwealth Institute	12.6-77
Mail	SI_CNPS	Amanda Jorgenson	Executive Director	California Native Plant Society	12.4-15
Email	SI_CNPS-EB1	Laura Baker	Conservation Committee Chair	California Native Plant Society, East Bay Chapter	12.4-15
PH Fremont	SI_CNPS-EB2	Lech Naumovich		California Native Plant Society, East Bay Chapter	12.6-56
Email	SI_CNPS-SCV1	Kevin Bryant	President, Santa Clara Valley Chapter	California Native Plant Society, Santa Clara Valley Chapter	12.4-33
Mail	SI_CNPS-SCV2	Libby Lucas	Conservation	California Native Plant Society, Santa Clara Valley Chapter	12.4-36

**GROUPS THAT SUBMITTED COMMENTS ON THE DRAFT PEIR (Continued)**

<b>Comment Letter Format</b>	<b>Comment Letter ID</b>	<b>Name of Commenter</b>	<b>Title</b>	<b>Organization/ Affiliation</b>	<b>Page</b>
Email	SI_CNPS-WLJ	Tedmund Swiecki	Conservation Committee Co-Chair	California Native Plant Society, Willis Jepson Chapter	12.4-38
Email	SI_CRS	Meredith Wingate / Brad Drda	Director Clean Energy Policy Design and Implementation Program	Center for Resource Solutions	12.4-38
Email	SI_CSERC	Brenda Whited	Staff Biology	Central Sierra Environmental Resource Center	12.4-40
Email	SI_CWA1	Jennifer Clary	Water Policy Analyst	Clean Water Action	12.4-40
PH SF1	SI_CWA2	Jennifer Clary	Water Policy Analyst	Clean Water Action	12.6-92
Mail	SI_D3Dem1	Tony Gantner	President	District 3 Democratic Club	12.4-41
PH SF1	SI_D3Dem2	Tony Gantner	President	District 3 Democratic Club	12.6-88
Mail	SI_EcoCtr	Martin Bourque	Executive Director	Ecology Center	12.4-41
Email	SI_EnvDef	Spreck Rosekrans	Senior Analyst	Environmental Defense	12.4-42
Mail	SI_Greenp	Krikor Didonian		Greenpeace	12.4-47
Email	SI_GWWF1	Cindy Charles	Conservation Chair	Golden West Women Flyfishers	12.4-48
PH SF1	SI_GWWF2	Cindy Charles	Chairperson	Golden West Women Flyfishers	12.6-89
Email	SI_KSWC	Joseph Vaile	Campaign Director	Klamath-Siskiyou Wildlands Center	12.4-48
Mail	SI_MenloBP	J. Wesley Skow	Attorney	Menlo Business Park LLC (on behalf of by DLA Piper US LLP)	12.4-49
Email	SI_NCFFSC	Dougald Scott	Chair	NCCFFF Steelhead Committee	12.4-51
Email	SI_Paclnst	Peter Gleick	President	Pacific Institute	12.4-53
Email	SI_PilarCrk	Tim Frahm	Chair	Pilarcitos Creek Advisory Committee	12.4-78
Email	SI_RHH1	Jerry Cadagan	Board Member/Founder	Restore Hetch Hetchy; Committee to Save Lake Merced	12.4-79

**GROUPS THAT SUBMITTED COMMENTS ON THE DRAFT PEIR (Continued)**

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Hand-delivered, PH	SI_RHH2	Bob Hackmack	Tech/Engineering Chair	Restore Hetch Hetchy	12.4-82
PH Sonora	SI_RHH3	Bob Hackmack	Tech/Engineering Chair	Restore Hetch Hetchy	12.6-11 12.6-23
PH Sonora	SI_RHH4	Jerry Cadagan	Board Member/Founder	Restore Hetch Hetchy; Committee to Save Lake Merced	12.6-12 12.6-24
Email	SI_SCCCC	Mondy Lariz		Santa Clara County Creeks Coalition	12.4-82
PH SF1	SI_SFNeigh	Joan Girardot		Coalition for San Francisco Neighborhoods	12.6-96
Mail	SI_SierraC1	Blaine Rogers		Sierra Club, Tuolumne Group	12.4-83
PH Modesto	SI_SierraC2	Sandra Wilson	Chair	Sierra Club	12.6-41
PH Palo Alto	SI_SierraC3	Bill Young	Member	Sierra Club	12.6-67
PH Palo Alto	SI_SierraC4	Richard Zimmerman	Member	Sierra Club	12.6-68
PH SF1	SI_SierraC5	Gwynn MacKellen	Member	Sierra Club	12.6-88
PH SF1	SI_SierraC6	John Rizzo	Executive Committee Member	Sierra Club, San Francisco Bay Chapter	12.6-95
PH SF2	SI_SierraC7	John Rizzo	Executive Committee Member	Sierra Club, San Francisco Bay Chapter	12.6-127
Mail	SI_SPUR	Laura Tam	Sustainable Development Policy Director	San Francisco Planning and Urban Research Association	12.4-83
Mail	SI_SWC	Terry Erlewine	General Manager	State Water Contractors	12.4-85
PH Sonora	SI_TCFB	Stan Kellogg	President	Tuolumne County Farm Bureau	12.6-5
Email	SI_TROA	Stephen Welch	President	Tuolumne River Outfitters Association	12.4-86
Email	SI_TRT1	Amy Meyer	Founding Member	Tuolumne River Trust	12.4-88
PH Sonora	SI_TRT2	Cynthia King	Sierra Nevada Program Director	Tuolumne River Trust	12.6-
PH Sonora	SI_TRT3	Galen Weston	Part-time Employee	Tuolumne River Trust	12.6-13

**GROUPS THAT SUBMITTED COMMENTS ON THE DRAFT PEIR (Continued)**

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PH Modesto	SI_TRT4	Meg Gonzalez	Director of Community Outreach and Education	Tuolumne River Trust	12.6-32
PH Modesto	SI_TRT5	Patrick Koepele	Central Valley Program Director	Tuolumne River Trust	12.6-36
PH Modesto	SI_TRT6	Eric Wesselman	Executive Director	Tuolumne River Trust	12.6-38
PH Fremont	SI_TRT7	Eric Wesselman	Executive Director	Tuolumne River Trust	12.6-49
PH Palo Alto	SI_TRT8	Peter Drekmeier	Bay Area Program Director	Tuolumne River Trust	12.6-64
PH SF1	SI_TRT9	Eric Wesselman	Executive Director	Tuolumne River Trust	12.6-91
PH SF2	SI_TRT10	Peter Drekmeier	Bay Area Program Director	Tuolumne River Trust	12.6-124
Mail	SI_TRT-CWA-SierraC	Peter Drekmeier, Jennifer Clary, John Rizzo		Tuolumne River Trust, Clean Water Action, Sierra Club	12.4-89



### Alameda Creek Alliance

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Sent via e-mail to [wsip.peir.comments@gmail.com](mailto:wsip.peir.comments@gmail.com) on October 1, 2007

October 1, 2007

San Francisco Planning Department  
Attention: Paul Maltzer  
Environmental Review Officer, WSIP PEIR  
30 Van Ness Avenue, Suite 4150  
San Francisco, CA 94103

#### Alameda Creek Alliance Comments on WSIP Draft PEIR

Attached are the comments of the Alameda Creek Alliance (ACA) on the Draft Program Environmental Impact Report (DPEIR) for the SFPUC's Water System Improvement Program (WSIP). The ACA is a community watershed group dedicated to the protection and restoration of the natural ecosystems of the Alameda Creek watershed. The ACA has over 1,450 members that live in or near the Alameda Creek watershed. The ACA has been working to restore steelhead trout and salmon to Alameda Creek and to protect endangered species in the Alameda Creek watershed since 1997.

The ACA supports the SFPUC's efforts to make needed repairs and earthquake safety retrofits to its water system, however we also expect the rebuilt water system infrastructure in the Sunol Valley (including Calaveras Dam and Reservoir, Alameda Diversion Dam, and San Antonio Reservoir) to be operated to allow restoration of steelhead trout and salmon to Alameda Creek. We have some serious concerns with the DPEIR. The failure of the DPEIR to address impacts to anadromous fish in Alameda Creek and its inadequate mitigation measures for special-status species has the potential to jeopardize the SFPUC's time table for implementing the WSIP projects.

We are very concerned that two of the WSIP projects proposed in the Sunol Valley Region, the Calaveras Dam Replacement Project and the Alameda Creek Fishery Enhancement Project, include proposals to divert additional streamflow from Alameda Creek, water diversions that which would severely impact native fish and other aquatic wildlife in Alameda Creek. The SFPUC already diverts 86% of the stream flows tributary to the Sunol Valley, from Alameda, Calaveras and San Antonio Creeks, with significant, unmitigated impacts to native fish and wildlife.

The SFPUC continues to illegally operate Calaveras and San Antonio Reservoirs, with no minimum bypass flows to keep native fish downstream in good condition. It is questionable whether the SFPUC has a legal water right to divert Alameda Creek streamflow at the Alameda Diversion Dam, and the WSIP plan to divert almost all of the

winter and spring stream flows from upper Alameda Creek at this dam is unacceptable. It is inconceivable that the Calaveras Dam replacement, a major infrastructure project that should address and remedy the impacts of the dam on Alameda Creek fisheries, does not include adequate minimum flows for anadromous fish nor mitigations commensurate with the impacts of the operation of the dam.

With other agencies planning fish passage projects in lower Alameda Creek that could allow steelhead trout and chinook salmon to return to the upper watershed by 2010 (before construction of Calaveras Dam is complete), we are extremely disappointed that the WSIP does not include planning, environmental benefits and adequate mitigations for sustaining steelhead and salmon in Alameda Creek.

The ACA has made every effort since 2001 to communicate our concerns and suggestions regarding the SFPUC's Sunol Valley projects with potentially significant impacts to the fisheries of Alameda Creek, to every level of the SFPUC, at numerous public forums and meetings, and in numerous written comments. In 2005, 68 Bay Area conservation groups called on the SFPUC to improve its stewardship of local and regional watershed lands, specifically asking the SFPUC to restore stream flows in Alameda Creek sufficient to sustain steelhead and rainbow trout, protect rare fish populations in SFPUC reservoirs, remove the Alameda Diversion Dam, and abandon plans to construct a controversial dam as part of the Fishery Enhancement Project.

The public expects the SFPUC to operate a water system that adequately protects and restores the watersheds and wildlife habitats under the SFPUC's management. The WSIP should reflect this stewardship obligation and the PEIR should adequately analyze and mitigate for reasonably foreseeable significant impacts to all special-status species and rare habitats.

Sincerely,

Jeff Miller

Director, Alameda Creek Alliance

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**THE DPEIR FAILS TO CONSIDER IMPACTS AND INCLUDE ADEQUATE MITIGATIONS FOR ANADROMOUS FISH**

The DPEIR approach to the issue of potential steelhead restoration in Alameda Creek is that since “there is no current steelhead migration above the BART weir” (page S-67) in lower Alameda Creek, there can be no impacts to steelhead from implementation of the WSIP. The DPEIR states:

“For the purposes of full disclosure the PEIR provides this discussion of steelhead in lower Alameda Creek, and the potential for steelhead to be restored to the upper reaches of Alameda Creek (above the BART Weir). However, because this steelhead access does not currently exist and there is no current steelhead migration above the BART Weir, there would be no impact on steelhead migration, spawning, or juvenile rearing upstream of the BART Weir as a result of WSIP implementation. Further, as described in the preceding discussion, since a number of steps are required before steelhead migration further upstream can occur, it is speculative to assess the specific impacts that system operation under the WSIP might have on the potential future restoration of steelhead. Thus, no impact analysis or conclusion is developed in this PEIR. If and when steelhead are restored, the SFPUC will be required to conform its system operations to comply with the applicable Endangered Species Act requirements.”

This approach is nonsensical. The WSIP contemplates construction and operation of facilities that will last decades, if not centuries. Over a dozen public agencies are working Alameda Creek restoration projects that will bring steelhead trout and salmon back into upper Alameda Creek, very likely before environmental review and construction have been completed for WSIP projects in the Sunol Valley. Operations of Calaveras Dam and other WSIP facilities are certain to impact these fish. It makes no sense to install major infrastructure and conduct environmental review for operating procedures that may then need to be modified or replaced to comply with wildlife protection laws.

Furthermore, on July 31, 2007, the Alameda County Flood Control and Water Conservation District and the Alameda County Water District signed a Memorandum of Understanding (MOU) for an agreement to develop a preliminary design of a fish passage facility in the Alameda Creek flood control channel. The MOU states the goal of these agencies to “have the Fish Passage Facility constructed by the end of calendar year 2010,” before construction of Calaveras Dam begins. This facility will provide fish passage for anadromous fish past the BART weir and the middle ACWD rubber dam, the primary barriers to steelhead migration up lower Alameda Creek.

The lower ACWD rubber dam is scheduled for removal in 2008. The ACWD operates the upper ACWD rubber dam to have the dam deflated during winter storm events, which will allow some anadromous fish to bypass the dam and migrate into Niles Canyon during some winter flows. The next significant fish passage barriers on Alameda Creek are the USGS gaging station weir in lower Niles Canyon, owned by the SFPUC and

likely not a barrier to fish migration at higher flows, and a PG&E gas pipeline crossing in the Sunol Valley. The DPEIR (Table 5.7-13) states that the PG&E gas pipeline crossing fish passage project is scheduled for completion by 2009.

The construction of Calaveras Dam from 2009 through 2011 or 2012 clearly has a reasonably foreseeable impact on steelhead trout that could access Alameda Creek by 2010. The DPEIR claims that it is “speculative to assess the specific impacts that system operation under the WSIP might have on the potential future restoration of steelhead.” As discussed above, it is not speculative to consider the impacts of the construction and operation of WSIP projects on migratory fish. Indeed, it is known that stream flows contemplated in the WSIP will be inadequate to protect steelhead and salmon. The DPEIR must assess potential impacts to all anadromous fish in Alameda Creek, including steelhead trout, chinook salmon and Pacific lamprey.

Status of Fisheries

Pacific lamprey are designated a state Species of Concern, and have declined severely in California. The species was petitioned for federal ESA listing in 2003. Pacific lamprey have been found recently in only three other streams in the Bay Area - Coyote Creek, Conn Creek and Sonoma Creek - so the Alameda Creek lamprey population is quite significant. Adult lamprey already have passage into upper Alameda Creek and are known to occur from the lower Sunol Valley through Sunol Regional Park. The DPEIR fails to discuss or analyze the impacts of WSIP projects on lamprey and whether proposed stream flows are adequate to keep lamprey populations below SFPUC dams in good condition. The DPEIR discussion of Alameda Creek fisheries (5.4.5-2) states that SFPUC fishery monitoring has documented successful lamprey spawning and rearing within Niles Canyon in recent years. The Alameda Creek Alliance citation given, *Comments on Central California Coast steelhead status review, October 19, 2004 (ACA, 2004)*, does not refer to lamprey. There is also documentation of lamprey in Alameda Creek from the Sunol Valley up to near the Calaveras Creek confluence.

The DPEIR discussion of Alameda Creek historical fisheries (section 5.4.5.1) should acknowledge that Alameda Creek also supported coho salmon and chinook salmon, and that there is historical evidence of steelhead trout in Arroyo de la Laguna, Arroyo Mocho, and Arroyo Valle – these occurrences have been extensively documented by the Alameda Creek Alliance (see [http://www.alamedacreek.org/About\\_Alameda\\_Creek/Alameda%20Creek%20salmonid%20documentation%203-8-06.pdf](http://www.alamedacreek.org/About_Alameda_Creek/Alameda%20Creek%20salmonid%20documentation%203-8-06.pdf)).

The DPEIR discussion of the regulatory status of steelhead/rainbow trout should mention the SFPUC’s role in eliminating proposed ESA protections for resident rainbow trout in Alameda Creek, and the resultant removal of Alameda Creek from designated critical habitat protections for Central California Coast steelhead.

The National Marine Fisheries Service (NMFS) proposed in June of 2005 to include resident trout and some landlocked steelhead, including those in Alameda Creek, as part

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of the Central Coast steelhead population, based on genetic evidence that Alameda Creek’s resident fish are similar to adult ocean-run steelhead. Studies published by the U.S. Geological Survey in 1999 and 2003 demonstrated that native Alameda Creek rainbow trout and reservoir fish above SFPUC dams are genetically related to wild steelhead in the Central Coast steelhead population. The studies analyzed fin clips from adult steelhead captured at the Fremont BART weir in recent years by ACA volunteers, rainbow trout populations in upper Alameda Creek and its tributaries collected by Alameda County in 1999, and landlocked reservoir trout from surveys conducted by the SFPUC. Landlocked trout behind the two SFPUC reservoirs are thought to be the descendants of the original migratory steelhead run in Alameda Creek and represent the best native gene pool for restoring steelhead below the dams.

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The SFPUC lobbied against listing Alameda Creek trout, despite compelling genetic evidence that these fish are descendants of wild steelhead, and the final NMFS determination in December 2005 excluded resident fish and excluded Alameda Creek from designated critical habitat for Central Coast steelhead. This issue will likely be revisited by the courts and NMFS, and it is foreseeable that resident rainbow trout in SFPUC reservoirs and in Alameda Creek could be listed under the ESA.

**PROPOSED WATER SUPPLY OPERATIONS IN THE DPEIR FAIL TO COMPLY WITH STATE AND FEDERAL WILDLIFE PROTECTION LAWS AND THE SFPUC ENVIRONMENTAL STEWARDSHIP POLICY AND THE DPEIR HAS AN INCOMPLETE DISCUSSION OF REGULATORY REQUIREMENTS, REQUIRED ACTIONS AND APPROVALS**

The WSIP states (pages S-10 and 3-39) that the proposed SFPUC water system operation strategy includes “complying with all water quality, environmental, and public safety regulations” and “meeting all downstream flow requirements.” The DPEIR (page 3-43) claims that the SFPUC “will meet, at a minimum, all current and anticipated legal requirements for protection of fish and other wildlife habitat.”

State Fish and Game Codes

The DPEIR fails to discuss relevant California Fish and Game Codes and California Department of Fish and Game (CDFG) requirements to protect native fish and wildlife.

The SFPUC currently operates Calaveras and San Antonio Reservoirs with no minimum bypass flows to keep native fish downstream in good condition, in violation of California Fish and Game Code §5937. California Fish and Game Code §5937 requires that the owner of a dam allow sufficient water to pass through a fishway or dam, to keep in “good condition” any fish that may be planted or exist below the dam. The law applies to any dam regardless of when it was built.

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The California Department of Fish and Game submitted comments on the Notice of Preparation for the DPEIR on November 22, 2005, stating that “at this time, both the Alameda Creek Diversion Dam and Calaveras Reservoir are out of compliance with Fish

and Game Code 5937 which requires dam owners to release enough water to keep downstream fish populations in good condition.”

Under the WSIP, the SFPUC proposes to operate the Alameda Diversion Dam in a manner that will violate §5937, diverting almost the entirety of late fall through spring flows from upper Alameda Creek, which will clearly fail to keep fish populations downstream of the diversion dam in good condition. The SFPUC also has not demonstrated that the proposed operation of Calaveras and San Antonio Reservoirs under the WSIP will keep fish populations downstream of these dams in good condition. The SFPUC must show that the minimum flows proposed for Calaveras Reservoir will maintain healthy fish and wildlife populations downstream. The CDFG commented that the SFPUC “will need to assess adequate flows for anadromous steelhead trout and will need to renegotiate with DFG such that adequate flows are released to comply with Fish and Game Code 5937.”

The CDFG commented that the DPEIR should “consider utilizing the SFPUC’s related water storage facilities within the Alameda Creek watershed (i.e., San Antonio Reservoir) to meet the needed minimum bypass flows in the affected reach of Alameda Creek and in particular passage flows needed through Sunol Valley.” The WSIP does not include consideration of any minimum flows from San Antonio Reservoir.

The proposed operation of the Alameda Diversion Dam without fish passage violates California Fish and Game Code §5901, which makes it illegal to maintain any device which prevents or impedes the passing of fish up and down stream. The diversion dam blocks the upstream and downstream movements of both resident and transient fishes, including resident rainbow trout. Once fish passage projects in lower Alameda Creek are completed, the diversion dam could block upstream and downstream migration of steelhead trout. Operation of the diversion dam not only affects fish migration past the diversion dam, but also potential fish passage through Little Yosemite, by diverting the majority of the annual flow of upper Alameda Creek. Reducing the frequency of high flow periods downstream of the diversion dam reduces fish passage opportunities through Little Yosemite.<sup>1</sup>

The WSIP should also include feasible fish passage provisions for Calaveras and San Antonio Dams. Calaveras and San Antonio Dams block the upstream and downstream movements of both resident and migratory fishes, including steelhead trout.<sup>2</sup> The reservoir trout populations appear to be descended from native steelhead populations isolated behind the dam.<sup>3</sup> Calaveras Dam blocks steelhead access to the upper Calaveras watershed including its tributaries Arroyo Hondo, Smith, and Isabel Creeks, likely the

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<sup>1</sup> Gunther, A. J. et al. 2000. An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed. Prepared for the Alameda Creek Fisheries Restoration Workgroup.

<sup>2</sup> San Francisco Public Utilities Commission (SFPUC). 2005. Population Size Estimates for Adult Rainbow Trout (*Oncorhynchus mykiss*) in San Antonio and Calaveras Reservoirs. Technical Memorandum No. 2-04-006, October 2005. Water Quality Bureau, Sunol, CA.

<sup>3</sup> Nielsen, J. L. 2003. Population Genetic Structure of Alameda Creek Rainbow/Steelhead Trout - 2002. Final Report Submitted to Hagar Environmental Science December 4, 2003. US Geological Survey, Alaska Science Center, Anchorage, Alaska.

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best historical steelhead spawning and rearing habitat in the entire Alameda Creek watershed. San Antonio Dam blocks steelhead access to San Antonio and Indian Creeks. These dams prevent gene flow between trout populations above and below the reservoirs, and may be affecting the long-term genetic viability of reservoir and stream populations.

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1997 MOU for Flows from Calaveras Reservoir

The WSIP references a Memorandum of Understanding (MOU) the SFPUC signed with CDFG in 1997, to release up to 6,300 acre-feet per year of water to Calaveras and Alameda Creeks for enhancement of fisheries and the other natural resources. Compliance with the MOU would restore minimal stream flows to approximately five miles of Alameda Creek, at which point the water would be recaptured and diverted back into the SFPUC's water supply system.

To date the SFPUC has not released water for this purpose, but the WSIP proposes releasing these flows after completion of construction of Calaveras Dam. The DPEIR (pages 5.4.1-9 and 5.4.1-10) claims that implementation of the 1997 MOU is "hindered by the lack of sufficient cold-water storage in Calaveras Reservoir" and that the releases are "on hold due to lack of sufficient cold-water storage in the reservoir." The SFPUC has also stated in its *Final Conceptual Engineering Report* for Calaveras Dam that the 1997 MOU flows have "not been fully implemented because of the current limitations on storage" and "because of the storage restriction ordered by DSOD at the reservoir."

This is a misrepresentation of the limitations the DSOD drawdown places on the SFPUC's ability to immediately release flows from the reservoir. Although current water storage in Calaveras Reservoir is at 60% less than the maximum before the DSOD drawdown, the SFPUC's yield (available treated water supply) from Calaveras has apparently only been minutely affected by the DSOD operating restrictions on Calaveras Reservoir. According to the Notice of Preparation for the WSIP PEIR published by the SFPUC in 2005, Calaveras yield was 219 mgd, fully 98% of the normal system yield of 223 mgd. This means that water was available for flow releases to Calaveras Creek and Alameda Creek, but that the SFPUC chose to divert this water to its water treatment plant instead. As discussed below, the resident trout population below Calaveras Dam is not being kept in good condition - low summer flows and high water temperatures have reduced native rainbow trout to remnant populations in upper Alameda Creek.

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The MOU flows are intended to benefit resident rainbow trout in five miles of stream, and were not intended to meet the habitat needs of anadromous fishes such as steelhead trout, salmon, or lamprey. The MOU also allows these flow releases to be recaptured downstream in the vicinity of the Sunol Valley Water Treatment Plant. It is important to note that the MOU flows are required minimum stream flows at the confluence of Calaveras and Alameda Creeks, not flows that must be released from Calaveras Reservoir. During most winters, the flows required under the MOU from November 1 through March 15 could be met by natural stream flow in Alameda Creek, thus requiring little or no flow releases from Calaveras Reservoir by the SFPUC. For normal and wet water years, summer releases would be the only truly enhanced stream flow, so that in

most years the SFPUC would release only 3,150 acre-feet under the proposed Project. The DPEIR fails to discuss the rationale and scientific basis for the proposed flow schedule and whether these flows are adequate for all life stages of anadromous, or for that matter, resident fish. These flows will not allow for upstream and downstream migration of anadromous fish and will not provide rearing habitat for fish below the recapture point. The WSIP should include adequate flows for anadromous fish without downstream recapture as part of the operating criteria for the rebuilt Calaveras Reservoir.

The California Department of Fish and Game stated in their comments on the Notice of Preparation for the DPEIR on November 22, 2005, that the SFPUC must:

"provide flow releases to the stream channel below Calaveras Reservoir dam to encourage riparian vegetation growth, invertebrate productivity, adequate dissolved oxygen, low water temperatures, and provide some rearing habitat for juvenile steelhead trout and spawning adult steelhead trout. 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, however, there is active fish passage remediation at these barriers. The SFPUC will need to assess adequate flows for anadromous steelhead trout and will need to renegotiate with DFG such that adequate flows are released to comply with Fish and Game Code 5937."

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Questions About SFPUC Water Rights

The DPEIR discussion of existing water rights and entitlements (Section 2.5.1) does not mention the potential lack of a valid water right for the Alameda Diversion Dam, and also fails to mention that existing water rights can be adjudicated by the State Water Board to protect beneficial uses, including fisheries.

It is questionable whether the SFPUC has a legal water right to divert Alameda Creek streamflow at the Alameda Diversion Dam. The SFPUC has a valid pre-1914 appropriative right for Calaveras Dam and reservoir, but this water right does not mention the Alameda Creek diversion dam and tunnel, which were not built until the 1930s. The WSIP plan to divert almost all of the winter and spring stream flows from upper Alameda Creek at this dam violates Fish and Game Code §5937. As noted by the State Water Resources Control Board in a DPEIR scoping comment letter to the SFPUC dated October 3, 2005, "an appropriative water right issued by the State Water Board is also required for any increased diversion from Alameda Creek."

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In a letter submitted during the scoping phase for the PEIR, the State Water Resources Control Board (SWRCB) stated, "the DEIR should include sufficient information for the State Water Board to use the document for water right permitting purposes. Therefore, the document should evaluate the availability of unappropriated water after taking into

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consideration prior rights and the water required to maintain public trust resources. Division staff recommends that any evaluation utilize a cumulative flow impairment methodology, such as the assessment method described in the *Guidelines for Maintaining Instream Flows to Protect Fisheries Resources Downstream of Water Diversions in Mid-California Coastal Streams (Draft)* prepared by NOAA Fisheries Service and the Department of Fish and Game and dated June 17, 2002.” The impact evaluation in the DPEIR does not employ a cumulative flow impairment methodology and falls short of answering the question of whether there is sufficient water available to maintain public trust resources.

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The DPEIR should mention that in 2001 the SWRCB estimated that the entire Alameda Creek watershed is 72% “impaired,” impairment representing the ratio of water appropriation under existing water rights to estimated stream flow, and that in 2002 the state Department of Water Resources DWR concludes the Alameda Creek watershed is “fully appropriated” and no further water diversions will be considered.

Misinterpretation of the Raker Act

The discussion of the Raker Act in the WSIP misinterprets the Act. The Raker Act, Section 9(h) provides:

“That the said grantee shall not divert beyond the limits of the San Joaquin Valley any more of the waters from the Tuolumne watershed than, together with the waters which it now has or may hereafter acquire, shall be necessary for its beneficial use for domestic and other municipal purposes.”

Since San Francisco must fulfill its “beneficial use” water needs with “waters which it now has or may hereafter acquire,” Tuolumne River water must be a source of last resort for San Francisco. The DPEIR has interpreted this section of the Raker Act as follows: “section 9(h) of the Raker Act requires San Francisco to make full use of its local sources of water.” The Notice of Preparation interpreted this requirement in the Raker Act in an overly narrow way:

“under the WSIP, the regional water system would continue to comply with the conditions of all applicable institutional and planning requirements, including: . . . maximizing use of water from local watersheds.”

The Raker Act does not define the “water which it now has” as “water from local watersheds.” It is true that San Francisco “now has” water rights to water from Bay Area creeks including Alameda Creek. However, it is also true that San Francisco “now has” waters that it is discharging from waste water treatment plants that could be recycled, and waters recoverable through water use efficiency and water conservation measures.

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Federal Endangered Species Act

The federal Endangered Species Act (ESA) prohibits unauthorized take of listed species. The DPEIR does not ensure that WSIP projects will be in compliance with the ESA, specifically with regards to adequate stream flows for steelhead trout in Alameda Creek.

The DPEIR claims that the U. S. Army Corps of Engineers (USACE) will not need to consult with the National Marine Fisheries Service (NMFS) on steelhead trout impacts for the operation of Calaveras Dam. The DPEIR states:

“the UASCE is required under Section 7 of the ESA to consult with NMFS and the USFWS on designated species to obtain a biological opinion of no jeopardy and an incidental take statement. NMFS also advised the SFPUC that while the USACE would need to initiate a Section 7 consultation with NMFS on the Calaveras Dam Replacement project, it was unlikely that operation of Calaveras Dam would adversely affect steelhead in the area below the BART Weir by making conditions unsuitable for successful steelhead spawning, egg incubation, or juvenile rearing. For this reason, NMFS advised that the steelhead issues above the BART Weir would not be addressed in the Calaveras Dam Replacement project Section 7 consultation, and that incidental take coverage for steelhead in the upper watershed would have to be obtained through a habitat conservation plan (HCP) or through a re-initiated USACE consultation on the Calaveras Dam Replacement project after the lower passage problems are remedied.”

This is incorrect. It would be illegal for the Corps to fail to consult on the impacts to steelhead. As noted above, steelhead trout will potentially have access to Alameda Creek stream reaches affected by the operation of Calaveras Reservoir (and San Antonio reservoir and the Alameda Diversion Dam) by 2010, including the Niles Canyon, Sunol Valley, Little Yosemite, and lower Calaveras Creek reaches managed by the SFPUC. It is reasonably foreseeable that listed anadromous steelhead will return to SFPUC stream reaches before or shortly after construction of Calaveras dam and will be significantly affected by operation of the SFPUC dams.

The DPEIR states that “if and when steelhead are restored, the SFPUC will be required to conform its system operations to comply with the applicable Endangered Species Act requirements.” However, the DPEIR must analyze the reasonably foreseeable impacts to steelhead and other anadromous fish now, since it is highly probable that these species will be present in Alameda Creek during the construction and operation of the proposed Sunol Valley WSIP projects. Future operation of SFPUC dams and diversions to comply with the ESA requirements for steelhead will be dependent on current planning and inclusion of appropriate infrastructure in the WSIP projects.

The discussion of the Regulatory and Conservation Planning Framework in the DPEIR (p 4.6-23) mentions the need for consultation with federal wildlife agencies on listed

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species. The DPEIR should also discuss published recovery plans for listed species potentially affected by the WSIP and ensure that WSIP activities are consistent with these recovery plans.

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Water Enterprise Environmental Stewardship Policy

One of the stated Program Goals of the WSIP is to enhance sustainability in all system activities and more specifically to manage natural resources and physical systems to protect watershed ecosystems. To further clarify their commitment to environmental stewardship, the SFPUC adopted the Water Enterprise Environmental Stewardship Policy in 2006. The policy states, "It is the policy of the SFPUC to operate the SFPUC water system in a manner that protects and restores native fish and wildlife downstream of SFPUC dams and water diversions, within SFPUC reservoirs, and on SFPUC watershed lands."

The DPEIR description of how the SFPUC manages the Alameda Creek watershed (page 5.4.1-3) with the "primary objective of conserving local watershed runoff for delivery to customers" and how it plans to operate Calaveras Reservoir and the Alameda Diversion Dam (pages 3-14, 3-39, and 5.4.1-7), appears to conflict with this policy. The proposed system operation strategy is to "maximize use of water from local watersheds."

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Although the stewardship policy is cited in section 5.2.3 of the DPEIR, it is missing from Table 2.3, SFPUC Water Resource Policies Related to the WSIP. The SFPUC Water Enterprise Environmental Stewardship Policy is a foundational policy for the WSIP, and should be listed as a policy upon which the WSIP is supposed to be based, not simply one the WSIP should be "consistent" with. The Policy establishes environmental stewardship as a fundamental component of the Water Enterprise mission and was adopted with the explicit intent that implementation of the policy would occur through: "Integration of the policy into the Water System Improvements." Because the proposed WSIP program will have significant impacts on native fish and wildlife populations in the Alameda Creek watershed, the SFPUC has failed to "integrate" the Environmental Stewardship Policy into the WSIP.

**THE DPEIR OMITTS CONSIDERATION OF IMPACTS TO SEVERAL SPECIAL-STATUS SPECIES**

The ACA has provided the SFPUC with specific information about the occurrence of special-status species as part of formal and informal comments on the Alameda Watershed Management Plan, Calaveras Dam Project, Alameda Creek Fishery Enhancement Project, Sunol valley Water Treatment Plant Project, Habitat Reserve Program, Habitat Conservation Plan, and WSIP PEIR scoping. Not all of this information is reflected in the DPEIR.

The SFPUC should publicly make available the species surveys and reports cited in the DPEIR (such as Entomological Consulting Services 2004 and 2005, Leeman 2006, Lorán 2006), before the public and regulatory agencies can determine if adequate surveys have

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been done for special-status species and if the assessment of potential impacts is reasonable. For example, for special-status plants, surveys may need to be made over several years to determine whether plant species are present, since plants do not necessarily germinate or flower in every year. Likewise, for many species, the Fish and Wildlife Service and CDFG have published protocol surveys to properly determine whether a species is present – the DPEIR should discuss whether protocol-level surveys have been completed for any special-status species.

Bay Checkerspot Butterfly

For the Bay checkerspot butterfly, the 2004 Entomological Consulting Services report referenced in the DPEIR (the 2005 report has not been publicly available) was based on surveys that did not specify how many days were spent searching for butterflies, how thorough the searches were, and exactly what dates the searches began and concluded. The 2004 report noted that "flight season for the Bay Checkerspot butterfly was already underway" when surveys started on an unspecified date in March. Since flight season for the Bay checkerspot butterfly can begin in late February and is typically four to six weeks in length, and it is known that the flight season began early in 2004 due to unseasonably warm weather, depending on when in March the surveys began, the surveys could have missed all or most of the butterflies of the 2004 flight season. Since individual adult butterflies live approximately ten days, the surveys could easily have missed butterflies that emerged early in the season.

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The 2004 report also expressed the opinion that that the species is unlikely to occur in serpentine grassland habitats containing the checkerspot's larval and adult food plants within the Alameda Creek watershed. The U. S. Fish and Wildlife Service considers any site with appropriate habitat within the vicinity of the butterfly's range to be potentially occupied. Given the fact that populations of the checkerspot historically occurred north of the watershed at Mt. Diablo and south of the watershed in Santa Clara County, and the acknowledgment in the 2004 report that there are patches of the checkerspot's primary larval food plant growing in association with adult food plants (albeit in low abundance), there is potential for undetected populations of the checkerspot to persist within the watershed. Since the species is so rare, with only two known populations in existence, the SFPUC has an obligation to presume the species may be present and protect the remaining patches of habitat, no matter how fragmented.

Berkeley Kangaroo Rat

The DPEIR fails to consider potential impacts to the Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), which has recently been potentially rediscovered by the East Bay Regional Park District on ridges east of Calaveras Reservoir. The CDFG scoping comments on the PEIR noted that:

"The Berkeley kangaroo rat has been considered extinct, but was historically known to live in a few locations near the hills of Berkeley, Eureka Peak, Orinda Lake, Mt. Diablo, and Calaveras Reservoir; it was

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found in the 1940's near the vicinity of Calaveras Dam. The Berkeley kangaroo rat should be added to the list of species present and assessments of the population (including genetic analyses) should be performed. A survey protocol for Berkeley kangaroo rat should be developed in concert with DFG and the U. S. Fish and Wildlife Service (USFWS). The SFPUC should conduct comprehensive surveys to determine conclusively whether the species is present in the area. If detected, the SFPUC should consider the impacts of covered activities on the Berkeley kangaroo rat. If shown to still exist, the species would likely be a candidate for emergency Federal listing."

Any impacts to the Berkeley kangaroo rat or suitable habitat for the species should be considered significant and should be avoided due to the rarity of this species.

San Joaquin Kit Fox

The DPEIR discusses potential impacts to the San Joaquin kit fox in the San Joaquin region, but fails to consider potential impacts in the Sunol Valley region. As noted in the DPEIR, a kit fox was seen near the former Sunol Dam site in 2006, suggesting "a small population may be reestablishing itself in the area." Any kit fox in the Sunol region would be very significant, since this would be the western-most population of the species. Any impacts to the kit fox or suitable habitat for the species should be considered significant and should be avoided due to the rarity of this species.

Calaveras Reservoir Species

The DPEIR analysis of the potential impacts to special-status species at Calaveras Reservoir (page 5.4.6-1) omits impacts to landlocked steelhead/rainbow trout, California red-legged frog, California tiger salamander, and Alameda whipsnake during construction of the new dam. The impacts on rainbow trout could be particularly significant – the *Final Conceptual Engineering Report* for the Calaveras Dam Project mentions the potential for evacuating the reservoir to deadpool elevation, in other words nearly draining the reservoir, which could devastate the Calaveras Reservoir trout population. The DPEIR fails to discuss the impacts of the construction of Calaveras Reservoir on rainbow trout in the reservoir and Arroyo Hondo (page 5.4.5-1). The CDFG has also raised the issue of maintaining fish passage and connectivity between the reservoir and Arroyo Hondo so that trout can migrate into and out of Arroyo Hondo.

**MITIGATIONS PROPOSED FOR SIGNIFICANT IMPACTS TO SPECIAL-STATUS SPECIES AND HABITATS ARE INADEQUATE**

Alameda Diversion Dam Operation

The WSIP proposes to operate the Alameda Diversion Dam to divert almost all of the late fall, winter and spring stream flows from upper Alameda Creek. Aside from the questionable legality of this plan, the DPEIR acknowledges that this would nearly

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eliminate low and moderate (1 to 650 cfs) flows in Alameda Creek downstream of the diversion dam that currently occur when the diversion gates are closed, and substantially reduce many higher (greater than 650 cfs) flows. The DPEIR categorizes this as a significant and unavoidable impact. We concur that the impact would be significant but the impact is clearly avoidable if the SFPUC removes the diversion dam or operates it in a lawful manner that protects fish and wildlife downstream of the dam.

The proposed operation of the diversion dam would be to divert all but 1 cfs of flow when the gates are open up to a flow of 650 cfs. Diverting the entire stream flow (except 1 cfs) and cutting the frequency of peak flows during December through May will clearly affect downstream fish passage, fish rearing, amphibian populations, and stream temperatures. The SFPUC has bypassed most flows past the diversion dam since 2002, and trout and aquatic resources below the diversion dam are dependent upon these natural stream flows.

The DPEIR acknowledges that:

"under the WSIP, there is no requirement for maintaining minimum instream flows within Alameda Creek at the diversion dam to support fishery habitat downstream of the dam. The proposed diversion of most Alameda Creek flows below 650 cfs would result in a significant change in hydrologic conditions in Alameda Creek downstream of the diversion dam when compared to existing conditions. Diversion of most or all flows during the late winter and spring months could adversely affect the ability of resident rainbow trout to spawn and for eggs to successfully incubate in this reach. The diversion dam is equipped with control gates but does not include a positive barrier fish screen or other protective device that would exclude trout or other fish from being entrained through the diversion structure into Calaveras Reservoir. Trout and other fish species inhabit Alameda Creek upstream of the diversion dam and may be diverted from the creek into the reservoir under the WSIP, preventing fish passage to downstream reaches of Alameda Creek. Passage through the diversion dam, however, has the potential to result in increased stress, physical abrasion, and vulnerability of fish to predation mortality within the reservoir, and other potentially adverse effects. Passage of fish over the diversion dam downstream in Alameda Creek may also result in stress and potential injury to trout and other fish species."

The DPEIR proposes the following mitigations for operation of the Alameda Creek Diversion Dam (Measure 5.4.1-2):

"The SFPUC 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

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winter and spring flows in Alameda Creek below the diversion dam. This measure reinforces the way the SFPUC generally operates the diversion tunnel now: that diversion gates are closed in the spring once desired Calaveras Reservoir storage have been reached. However, at times additional flows have been diverted from Alameda Creek after reservoir storage levels have been achieved such that the "excess" water has subsequently been released from the reservoir to maintain the appropriate water level. This measure would formalize Alameda Creek diversion procedures to maintain flows in Alameda Creek to the extent they are not needed to achieve required reservoir storage. This measure would reduce the flow reduction impact but not to a level that is less than significant."

This is a ridiculous mitigation measure, essentially promising to not divert the remainder of stream flows that are not diverted. Bypassing stream flows based solely on whether or not they are needed for water supply, without regard for the instream flow needs of downstream fish and wildlife is not an adequate mitigation measure. The DPEIR maintains that "after implementation of the WSIP, flow in this 2.85-mile reach of Alameda Creek below the diversion dam would approximate conditions experienced between 1935 and 2001." The DPEIR provides no information that the dam was operated legally or in a manner that adequately protected fish and wildlife during this period.

The mitigation measures also include Measure 5.4.5-3b, Diversion Restrictions or Fish Screens:

"If, after 10 years of monitoring results for Measure 5.4.5-3a, Minimum Flows for Resident Trout in Alameda Creek, indicate that the measure does not sustain the resident trout population in Alameda Creek below the diversion dam, then the SFPUC shall also implement additional measures as follows: either implement seasonal restrictions on Alameda Creek diversions to Calaveras Reservoir to protect the downstream resident trout fishery during the critical spawning period (December 1 through April 30) or install and operate a fish passage barrier to "screen" the diversion facility (screening could consist of a behavioral barrier, such as electrical or sound barrier that deters fish, or a physical barrier – such as a screen facility)."

This mitigation measure is also inadequate, since it promises to continue to illegally divert Alameda creek stream flow for another decade, without necessarily bypassing flows sufficient to keep fish and wildlife downstream in good condition during that decade. Similarly, if the diversion tunnel is currently injuring or harming fish, it legally needs to be screened now, not in 10 years. The DPEIR acknowledges that Fish and Game Code Section 5980 contains requirements for an intake screen or other suitable method for avoiding and minimizing fish entrainment at the Alameda Creek Diversion Dam. The DPEIR also acknowledges that the Diversion Dam could block migration to any migrating steelhead that travel upstream of the Little Yosemite area. This would be a significant (and illegal) impact that is not mitigated in the WSIP. If and when steelhead

trout migrate upstream to the Little Yosemite and the diversion dam, the SFPUC has an obligation to ensure adequate stream flow, and a fish ladder or dam removal for fish passage at that time.

Minimum Flows for Resident Trout

The DPEIR fails to consider impacts and include adequate mitigations for resident fish.

The DPEIR contains mitigation measure 5.4.5-3a:

"The SFPUC shall develop and carry out as part of the implementation of the Calaveras Dam Replacement (SV-2) project, an operational plan to implement minimum stream flows when precipitation generates runoff into the creek below the diversion dam to the Calaveras Creek confluence from December 1 through April 30 to support resident trout spawning and egg incubation. This is the period when winter precipitation typically would produce flows for spawning and egg incubation. The operational 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. Minimum flow requirements to support resident trout spawning and egg incubation vary depending on stream reach conditions. Although site-specific studies are needed to determine an appropriate minimum flow requirement for each specific creek reach, based on the general size and characteristics of the Alameda Creek channel immediately downstream of the diversion structure it has been suggested that a minimum flow on the order of 10 cfs may be needed to support trout spawning and egg incubation. The SFPUC's Natural Resources Division will complete the site-specific studies needed to determine the appropriate minimum stream flow for this reach of the creek; studies may show that the minimum flow requirement is more or less than 10 cfs. This minimum flow requirement would be met when precipitation would naturally generate runoff in the creek (below the diversion dam) under unimpaired conditions between December 1 and April 30. When precipitation generates runoff in the creek, the SFPUC shall provide for bypass of flow up to the required minimum flow amount. The operational plan will allow for adapting minimum flow amounts to support resident trout spawning and egg incubation based on the monitoring results and best available scientific information."

This mitigation measure is likely inadequate to mitigate for the impacts of Calaveras Dam and the Alameda Diversion Dam on steelhead trout, Pacific lamprey, and chinook salmon, as it is targeting flows for resident trout, and does not provide for adequate flows for in-migration or out-migration of anadromous fish.

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The DPEIR also seems to suggest that adequate flows for resident trout may not be implemented until after 10 years of monitoring. There is information indicating that the SFPUC may not currently be keeping resident trout below Calaveras Reservoir in good condition. The SFPUC has conducted annual monitoring since 1998 of Alameda Creek fisheries in a study reach including Calaveras Creek below Calaveras Dam, and Alameda Creek from the confluence with Calaveras Creek downstream to the Sunol Valley Water Treatment Plant. SFPUC monitoring data from 1998-2004 shows that observations of resident rainbow trout in this study reach have declined dramatically: 55 trout were observed in 1998; 5 trout in 1999; 5 trout in 2000; 3 trout in 2001; 1 trout in 2002; 2 trout in 2003; and 0 trout in 2004. The DPEIR does not contain adequate information to determine whether the 10 cfs proposed to support trout spawning and egg incubation will be sufficient. The DPEIR does not specify which stream reaches will have 10 cfs and which time of year. 10 cfs of cold water during summer that reaches areas where trout are rearing will provide more significant benefit than 10 cfs released during winter storms.

The DPEIR claims this measure “addresses the decrease in flow below the diversion dam that would occur under the WSIP as a result of re-instituting flow diversions to Calaveras Reservoir once the dam is replaced...and the loss of fish from the lower creek system that would result from fish entrainment through the unscreened diversion tunnel to Calaveras Reservoir.” This measure does not address the impacts to rainbow trout and steelhead in Alameda Creek between the diversion dam and the Calaveras Creek confluence.

The DPEIR promises 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 5.4.6-3, Operational Procedures for Calaveras Dam Releases:

“During project-level CEQA review on the Calaveras Dam Replacement project (SV-2), the SFPUC will develop operational procedures for managing planned releases from Calaveras Dam to minimize habitat impacts on amphibians, their egg masses, and tadpoles. The goal of such releases, apart from benefits to fish, is to mimic a more natural pattern of hydrology regime as much as possible. The procedures will specify the minimum amount and frequency of planned releases and the rate of the increase and decrease of any individual release event. One of the specific goals of such releases would be to reduce the risk of mortality to breeding amphibians. Such operational procedures will be developed prior to completion of construction of the Calaveras Dam Replacement project. In addition, instream flow releases required under CDFG agreement with SFPUC (see Table 5.4.1-9) would begin upon completion of construction.”

There is no evidence that the 1997 MOU flows are adequate to maintain rainbow trout or native amphibians such as the California red-legged frog or foothill yellow-legged frog that inhabit stream reaches below SFPUC dams. The potential releases under measure



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5.4.6-3 would begin no earlier than 10 years after the construction of Calaveras Dam. What if the resident trout population below the SFPUC dams is extirpated by then? Mimicking the natural hydrograph will potentially benefit native stream amphibians, but again this measure is delayed 10 years.

Fishes

For all the reasons discussed above, the DPEIR contains inadequate or no mitigation measures for potential significant impacts of the construction and operation of WSIP projects on steelhead trout, chinook salmon or Pacific lamprey.

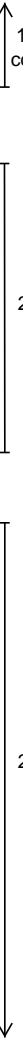
Mitigation measures for fishes (mitigation measure F1) should include: fencing cattle out of all spawning habitat in fish-bearing streams (lower Arroyo Hondo Creek and lower San Antonio and Indian Creeks above the reservoirs, and Alameda Creek below the reservoirs) to protect trout redds, spawning habitat and riparian vegetation; eradicating introduced bass from Calaveras and San Antonio Reservoirs to reduce predation on the small landlocked trout populations in the reservoirs; and increasing the dissolved oxygen content in Calaveras and San Antonio Reservoirs to provide adequate habitat for reservoir trout (the current dissolved oxygen levels are aimed at drinking water quality standards and are not necessarily adequate for cold water fish).

Butterflies

The proposed mitigations for listed butterfly species (mitigation measure I.3) states that “suitable habitat for Bay checkerspot and callippe silverspot butterflies will be avoided.” “Suitable habitat” needs to be defined as any area with host plants or the ability to support host plants. As mentioned above, the Alameda Creek watershed contains fragmented, but nonetheless significant, potential habitat for these species. The DPEIR does not include mitigation measures for the potential impacts of dust from construction activities or roads – according to the U.S. Fish and Wildlife Service, adult and early larval stages of these butterflies are susceptible to mortality from dust.

Burrowing Owl

The proposed mitigations for western burrowing owls include passive relocation (mitigation measure B.3). For most passive relocations of burrowing owls conducted in California there is no way of knowing where the evicted owls go or whether they are able to breed successfully in other areas. The SFPUC mitigations should include monitoring of the areas where owls are evicted to determine the success of any passive relocation. Passive relocation of owls can work if the birds are moved short distances (i.e. under 5 miles) and the habitat they are moved to is managed for them. Burrowing owls should never be translocated or forced to move to unprotected private property. Predators must also be taken into consideration - if owls are moved from an area where they have only been exposed to feral cats, red-tailed hawks and northern harriers, they will probably do poorly if moved to an area with coyotes or red foxes. The SFPUC should commit to monitoring and managing habitat for moved owls and purchasing replacement habitat if



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moved owls do not successfully breed.

San Joaquin Kit Fox

The proposed mitigations for the San Joaquin kit fox include a provision that "limited destruction of potential dens may be allowed" if they are not currently in use. For the reasons discussed above, there should be no destruction of any potential kit fox dens allowed in the Sunol Valley region.

Mitigation Ratios

Mitigation for impacts to wetlands and aquatic resources should be at a greater than 1:1 replacement ratio for created wetlands, since created wetlands rarely have the same habitat value and function as natural wetlands.

Any impacts that have the potential to extirpate a local population of a special-status species (such as the kit fox or Berkeley kangaroo rat), affect essential breeding or migration habitat, or destroy or degrade designated critical habitat for a listed species should be mitigated at a much higher ratio than 1:1.

Habitat Reserve Program

As discussed in the ACA's August 28, 2007 letter to the SFPUC regarding the proposed Habitat Reserve Program, the reliance on mitigations proposed in the HRP may be inadequate to mitigate for potentially significant impacts to special-status species in the Sunol Valley for several reasons:

- The acreage of habitat protection proposed under the HRP is not sufficient to mitigate for the impacts to biological resources and habitat contemplated in the WSIP;
- The HRP includes very little protection of at-risk habitat for affected species through acquisition of or conservation easements on high biological value private land at risk of development;
- The HRP attempts to give the SFPUC mitigation credit for land management activities that should already be required to protect endangered and sensitive species, or are good management practices that should already be employed by the SFPUC as good stewardship of our public lands; and
- The HRP proposes conservation easements on public lands that are already owned by the SFPUC, of questionable benefit to sensitive species since these lands should be at no risk of development or mismanagement.

**THE DPEIR CONTAINS INSUFFICIENT INFORMATION TO CLAIM MITIGATIONS WILL REDUCE IMPACTS TO LESS THAN SIGNIFICANT**

As noted in the CDFG comment letter to the SFPUC on the Calaveras Dam Project dated November 22, 2005, the SFPUC needs to provide information as part of the environmental review process that will allow the public and regulatory agencies to

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determine if impacts have been properly assessed and if mitigations are adequate.

The DPEIR fails to provide information on the following issues raised by the CDFG two years ago:

- A habitat-based stream assessment for Calaveras, Arroyo Hondo, and Alameda Creeks, done at a seasonally appropriate time period that incorporates habitat and life history criteria of species which may be impacted by the Calaveras Dam Project.
- A hydrologic study to determine the amount of water that is needed to support steelhead trout through critical reaches under various water year conditions within the reaches affected by the Calaveras Dam Project, specifically the reach of Alameda Creek from Alameda Creek Diversion Dam downstream to Alameda Creek's confluence with Arroyo de la Laguna.
- A specific proposal to provide minimum bypass flows for both Calaveras Dam and the Alameda Creek Diversion Dam for maintenance of habitat for fish and other aquatic species, taking into account current and projected water operation scenarios of the SFPUC's regional water system.
- An analysis of current and projected operational scenarios for Calaveras Reservoir and their impacts to the existing population of land-locked steelhead trout that utilize Calaveras Reservoir and Arroyo Hondo throughout various stage of the steelhead trout's life cycle. This study should include a plan to preserve the existing population of steelhead trout during interim operations (preconstruction) and post construction operations of Calaveras Dam. The concerns to be addressed include the following:
  - a) Maintain fish passage 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.
  - b) Maintain channel integrity (maintain active channel / minimize delta / maximize hydrological connectivity) of Arroyo Hondo.
  - c) Maintain physical carrying capacity for trout in Calaveras Reservoir during the summer and fall period by keeping water elevations as high as possible.
  - d) Maintain adequate water temperatures and dissolved oxygen for trout in the reservoir throughout the summer and fall periods. The concentration of dissolved oxygen in reservoirs is often the limiting factor for trout survival in San Francisco Bay Area reservoirs. DFG recommends targeting a specific dissolved oxygen concentration of 7 mg/L so as to minimize impacts to landlocked steelhead especially during times of lowered surface water elevation (current operations as per DSOD requirements).
  - e) Provide flow releases to the stream channel below Calaveras Reservoir dam to encourage riparian vegetation growth, invertebrate productivity, adequate dissolved oxygen, low water temperatures, and provide some rearing habitat for juvenile steelhead trout and spawning adult steelhead trout.
  - f) Eliminate or minimize the loss of adult and juvenile trout from Alameda Creek through the Alameda Creek Diversion Dam.
  - g) Determine how operation and interim operation of Calaveras Reservoir could alter the operation of San Antonio Reservoir and result in adverse conditions for the adfluvial trout population in San Antonio Reservoir. DFG recommends that impacts to fisheries

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upstream and downstream of San Antonio Reservoir be avoided as much as possible. If avoidance is not possible, impacts should be minimized and mitigated.

- A mitigation plan that assesses the potential impacts of the SFPUC’s proposal to rebuild Calaveras Dam with a wider core that would accommodate enlargement of the dam in the future. The NOP states that although the “SFPUC does not reasonably foresee the need for a larger dam beyond one that restores the reservoir’s historic capacity; the dam would be designed to allow potential future reuse of dam components without requiring otherwise more extensive dam removal and rebuilding if an enlargement were ever undertaken in the future.” DFG recommends that the Calaveras Reservoir dam not be built to accommodate future size increases based on DFG’s concern that future increases of the dam’s surface water elevation could potentially extirpate the adfluvial population of steelhead trout as well as that of the foothill yellow-legged frogs. Raising the surface water elevation will likely also have serious impacts to the California red-legged frog, CTS, foothill yellow-legged frog, western pond turtle, Alameda whipsnake, Calliope silverspot butterfly, and a number of other special status plants and animals.
- A specific plan to screen as per DFG screening criteria at the new intake tower/adit(s) at Calaveras Reservoir and at the intake of the diversion at the Alameda Creek Diversion Dam so as to be in compliance with Fish and Game Code Section 6100.
- A specific plan to provide fish passage at the new Calaveras Reservoir dam and the Alameda Creek Diversion Dam so as to be in compliance with Fish and Game Code Sections 5901.

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**THE DPEIR RELIES UPON SPECULATIVE MITIGATIONS FOR SIGNIFICANT IMPACTS TO SPECIAL-STATUS SPECIES**

It is speculative to rely upon the proposed Habitat Reserve Program speculative to mitigate for impacts to special-status species and habitat, since the amount and quality of habitat to be acquired and preserved is not yet defined, nor is it assigned to specific WSIP impacts.

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The DPEIR discusses possible future flows to support rainbow/steelhead trout. The DPEIR references the flows studies being conducted by the Alameda Creek Fisheries Restoration Workgroup. At this point these are just studies, not a commitment on the part of SFPUC to provide adequate flows for steelhead or resident trout. Similarly, SFPUC plans to incorporate flow strategies into its Alameda Watershed Habitat Conservation Plan are speculative at this point.

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**The DPEIR fails to adequately consider water recycling and conservation alternatives**

The DPEIR claims it is not feasible for the WSIP to meet 2030 purchase requests with reasonably foreseeable water conservation, recycled water and groundwater projects. The DPEIR underestimates the potential for water conservation and recycling, as numerous other municipalities have shown that an aggressive conservation and recycling program is possible. The proposed levels of water conservation (4%) and recycling (3%) in the DPEIR are unreasonably low.

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Also, there is a discrepancy between the conservation and recycling goals set by the SFPUC and its wholesale customers in the Bay Area Water Users Association (BAWSCA). The BAWSCA Water Supply Master Plan from 2000 requires that wholesale customers employ their best efforts to use all sources of water owned or controlled by them, including groundwater. The SFPUC has identified numerous conservation, recycling, and groundwater possibilities that are available to wholesale customers, but the DPEIR does not adequately analyze these alternatives.

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cont.

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Action for a Sustainable Earth  
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September 28, 2007

Paul Maltzer, Environmental Review Officer  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103  
via email: wsip.peir.comments@gmail.com

Dear Mr. Maltzer,

On behalf of the Board of Directors, staff and members of Acterra I write this letter in regard to the SFPUC Water System Improvement Program Draft Programmatic Environmental Impact Report (PEIR). Acterra provides solution-oriented environmental services, including an integrated climate change response program, to members in the BAWSCA service area.

While we strongly support the seismic upgrade of the Hetch Hetchy water system, we find the PEIR flawed in fundamental ways.

First, and most important is the unnecessary coupling of seismic upgrades with diversion of water from the Tuolumne River. The SFPUC is attempting to link a "mother and apple pie issue" with a highly controversial plan to divert water from a federally-designated Wild and Scenic River. Clearly the plan is to force through a massive diversion of fresh water under cover of public safety. We believe that public policy decisions should be made based on the merits of the proposal, rather than riding on the coat tails of un-related proposals.

Public comments and the position of BAWSCA (The Almanac, Sept. 26, 2007, p.23) clearly indicate a desire to refine and improve the environmental impact analysis of the seismic upgrade portion of the PEIR, and to de-couple water demand and water supply issues from the water system improvement projects.

Hence, we strongly support the alternatives identified in the DPEIR that protect the Tuolumne River from new diversions. Requiring 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.

Second, there are a number of flawed analyses concerning projected water demand, and the impact of water diversion on the Tuolumne River. Most alarming, we note the absence of any discussion of the impact of climate change on the Tuolumne river watershed. The State of California predicts that global warming could reduce the Sierra snowpack by 5% by 2030 and as much as 33% by 2060. Climate change will have a significant impact on all of California's water supply. These changes will include variation in the seasonality of precipitation (e.g. winter drought, extreme rainfall events/flooding, etc.), changes in precipitation amounts and intensity, and attendant changes on riparian ecology. These changes will further stress riparian ecosystems, especially those like the Tuolumne that are already impacted by human activities. Additionally, regional impacts of climate change will force alteration of water-use patterns, specifically in agriculture and urban outdoor water use. None of these impacts are taken into consideration in the PEIR, let alone an analysis of the obvious serious ecological consequences of increased diversion **coupled to** climate change.

In sum, any serious analysis of the future water demand to be met by increased diversion of the Tuolumne river into the Hetch Hetchy system must use: robust models for projecting water demand; improved analysis of the capacity of water conservation, water use efficiency and recycling to reduce demand in the face of growth; improved analysis of the upper watershed, and serious consideration of the impacts of climate change on the water supply and ecology of the Tuolumne river.

Hence Acterra strongly encourages the SFPUC to drop Tuolumne river diversion from the seismic upgrade projects and to re-visit water demand issues at a later date when a serious analysis can be done independently of the much needed, time-critical system improvements. Continued insistence on coupling these unrelated issues will un-necessarily delay the seismic improvements.

Sincerely,

David T. Smernoff, Ph.D.  
Board Vice-President

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Diana Sokolove &lt;wsip.peir.comments@gmail.com&gt;

## Draft PEIR

Steve Lawrence <splawrence@sbcglobal.net>  
To: wsip.peir.comments@gmail.com

Fri, Aug 17, 2007 at 6:51 PM

Comments concerning the Draft PEIR for WSIP:

1. In section 2.4.3 it is asserted that a schedule complying with AB 1823 was submitted in or by March 2003. I do not believe so. The schedule does not show completion by 2010 of half of the capital program's projects in dollar terms.
2. The Fig. 3.6 Preliminary Construction Schedule is odd, and out-of-date. Jobs that have long been combined are shown separately: example: Advanced Disinfection + Tesla Portal Disinfection; also, Additional 40 + SVWTP Treated Water Res. Jobs that are large are not shown: University Mound, Crystal Springs #2, Alameda Siphon #4, Crystal Springs Bypass Tunnel, as examples. Moreover, the schedule is fanciful; there is very little chance that all the work shown as starting in 2009 will start then, and no chance that all that is shown finishing by 2011 and 2012 will be substantially complete then. For this program SFPUC has never kept a schedule, and it certainly cannot keep this one. Why is it "Preliminary", and why is it sourced 2006? Is it trying to not be current? Perhaps; it shows Crystal Springs - San Andreas Transmission as completing in 2013 when the 5/07 CER shows the job completing March 2015, fifteen months later. So the schedule that is presented is not the latest or best schedule, rather it is obsolete; why? What else in the Draft PEIR is intentionally stale?
3. Desalination plant. Does the Draft PEIR say what electricity to run the plant would cost per kWh? It is estimated that 7500 kWh per million gallons would be required at Pittsburgh as water is less saline. One hopes that this estimate is made in realization that the plant will need to start production when fresh water flows ebb, so saline content will increase when the plant is needed; also saline content will rise as global warming swamps the Bay. I would like to see recognition of the foregoing in the document. Also, it would be nice to see a comparison of GWGs, Hetch Hetchy water vs desal water, so that the decision makers and public can compare both dollar and environmental cost. Does the plant run 24/7? Must it run and draw juice during peak demand times, when electricity is most expensive (hot days July and August, say 4:00 pm)? Or does it produce its water at night when juice may be cheaper, and when night surplus capacity obviates the need for new plant? Unfortunately, peak water demand will likely occur during hot July/August days, but water storage may allow plant production to avoid times of peak electricity demand (and cost)—one hopes.
4. Throughout, the Draft PEIR analyzes the past 82 years. But it seems likely that the climate is changing, warming. Picking how it will change is not possible with consensus; any choice would be criticized. Still, choosing to ignore climate change is picking an unlikely—and benign—basis for analysis. Might express recognition of the conundrum improve the decision-makers' full consideration?
5. Has global warming been considered? It seems likely to raise demand for water in 2030, especially in the service area where air conditioning, landscaping and fires may take more water.
6. Does water consumption rise during epidemics such as flu, SARs, bird flu or bioterror? We have not had such for a long period, but prudent planning may call for a factor of safety.
7. What would the facilities needed for the alternative called Lower Tuolumne Diversion cost? What is the elevation for the intake, and is it at risk of Delta flooding? Would choosing this alternative, compared to the preferred alternative, mean losing hydropower (thereby boosting global warming gas emissions)?
8. I hope there is a person who can master the complexity found in the Draft PEIR. I hope they sit on the Commission. I find it daunting. Some of the larger charts, especially, do not help this reader; rather they overwhelm.

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Thank you for your hard work producing the document, and for considering these comments.

Steve Lawrence, citizen of San Francisco, and Vice-chair and member of the Citizens Advisory Committee to PUC



Diana Sokolove &lt;wsip.peir.comments@gmail.com&gt;

## Draft PEIR--further comments

Steve Lawrence <splawrence@sbcglobal.net>  
To: wsip.peir.comments@gmail.com

Mon, Oct 15, 2007 at 2:17 PM

Please accept these further questions concerning the Draft PEIR of late June 2007 for WSIP:

1. The preferred option requires buying water from the districts during dry years, 23 mgd. There is no contract for the same. Why is this a wise plan? Won't the districts have SFPUC over a barrel? Didn't PUC promise to expand the system because it was vulnerable to drought? Expanding the system is relying on ourselves. Isn't a preferred option that relies on others for needed water contrary to the will of the voters of 2002?
2. The system is said in the draft PEIR to be "highly dependent upon storage". Yet WSIP eliminated plans for storage. (Sunol Reservoir, an enlarged Calaveras Dam and reservoir, and downsized storage at SVWTP Expansion). How much storage is needed? Is that presented? If not, explain why it is not important to calculate and present how much storage is needed to weather the design drought when the system is "highly dependent upon storage".
3. Under the preferred option SF must conserve 4 mgd more than it will with plumbing code changes; sometimes called "aggressive conservation" or "Package C". Why isn't this set out so that all can see what will be expected? What aggressive conservation efforts will be needed if the preferred option, or modified preferred option, is selected?
4. (Replace my 8/17 item 4 with this, please:) Environmental impacts are examined and analyzed assuming a repeat of precipitation and weather conditions that repeats the historical record, 82 years mostly during the 20th Century. Global warming almost certainly means that the upcoming years will be far less benign. So while rationing would be required only about 10% of the time assuming the old benign climate, and buying water from the districts in about 29% of the years, it seems likely that the future will be less rosy. Why not present a more realistic future? a) Likewise, snow pack will be less, and snow melt faster. Yet doesn't the draft PEIR assume that water will flow into Hetch Hetchy in years ahead as it has in years past? Why is this a good assumption to make?
5. Who pays for Recycled Water? Do the wholesale customers? Why should SF reduce its take from the regional system in order to allow wholesale customers to increase theirs when the cost of recycled water in SF is so high? a) If northern San Mateo County recycled water is used for Harding, will Recycled Water from the WSIP program not be used for Harding? What will be done with that expensively procured capacity then?
6. Does the proposed option take 25 or 27 mgd more from the Tuolumne River? If 27, it seems not to add up: 27 + 10 = 37; 300 - 265 = 35. If 25, well, why use 27 in the Draft PEIR?
7. Exploration of the desalination option won't be completed when a final decision is made whether to go with the preferred option. a) Desal at Pittsburg assumes 7500 kWh per million gallons to make potable product. Explain how the assumed salinity of input water was determined to come to this figure. Surely you increased salinity because when the desal plant is needed, the flow of fresh water will be low. Did you further decrease it for rise in sea levels? b) Where does the electricity for desal come from? From Hetchy power? If not, how much will it cost? If it comes from Hetchy, how is it transmitted to the plant, or can you trade with PG&E, providing power to it where convenient, while PG&E supplies the desal plant? (This adds to 8/17's item 3.)
8. When it is said that 245 mgd average will be taken from the Tuolumne, does that include Tuolumne water purchased from the districts, or is this figure for water taken by the RWS without compensation to the districts? See table 8.5 or 8-5 ff.

Thank you, Steve Lawrence



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CITY & COUNTY OF SAN FRANCISCO  
PLANNING DEPARTMENT  
M.E.A.

September 28, 2007

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

**Re: Tuolumne River Water Diversions**

Dear Mr. Maltzer:

On behalf of California Trout's more than 7,500 members and supporters I am writing to express our deep concern about the San Francisco Public Utilities Commission's plan to take more water from the Tuolumne River. Because the plan fails to adequately identify and address environmental impacts to the River, it is imperative that the Commission undertakes additional studies before finalizing this document.

California Trout supports alternatives that protect the Tuolumne River from new diversions. Requiring greater water conservation, greater efficiency, and greater recycling is the best way to reduce impacts to the Tuolumne River while promoting a sustainable water plan for the Bay Area.

Thank you for your consideration to this request.

Sincerely,

Brian Stranko  
Chief Executive Officer

BS:jsf

October 14, 2007

Paul Maltzer, Environmental Review Officer  
Water System Improvement Program PEIR  
San Francisco Planning Department

Dear Mr. Maltzer:

The California Chapter of Republicans for Environmental Protection (CA REP) is urging the San Francisco Public Utilities Commission (SFPUC) to undertake additional studies of the Tuolumne River before finalizing the PEIR. We believe that the environmental review made by the SFPUC's plan to take 25 million gallons per day more water from the Tuolumne River by 2030 fails to adequately identify and address all of the environmental impacts to the Tuolumne. We urge SFPUC to undertake additional studies of the Tuolumne River before finalizing this document.

Protecting the Tuolumne is not only environmentally sound but also economically sensible. California is world renown for its recreational facilities, thus, enabling the tourism industry to be one of California's leading economic drivers. Taking more water from the Tuolumne will harm important habitat for fish and wildlife, including chinook, salmon, and rainbow trout, degrade world-class recreation opportunities, and worsen San Francisco Bay-Delta water quality. Because of these factors, our rivers, such as the Tuolumne, attract visitors to California, our legendary landmarks, such as Yosemite National park, and the beautiful state parks that surround the Tuolumne.

Further, CA REP supports fiscal responsibility and accountability. While we support the Water System Improvement Program's (WSIP) to upgrade and refit the Hetch Hetchy water system so that it is seismically sound, we believe the water diversion component in the EIR will cause delay to the entire \$4.3 billion project. Unnecessary cost delays coupled with the cost to divert Tuolumne River water will be very expensive. Moreover, water rates in San Francisco are projected to triple by 2015 and will increase significantly in other Bay Area cities, as well. The cost to businesses, such as agriculture, health care, and manufacturing, will be unnecessarily burdensome and have a trickle-down effect with transaction costs being passed to consumers and taxpayers. Therefore, CA REP urges SFPUC to be mindful of the fiscal impacts by not moving forward to divert water from the Tuolumne River.

CA REP supports water conservation, efficiency, and recycling measures. Indeed, we support the alternatives identified in your study that would eliminate the need to divert more water from the Tuolumne by at least 74%. We also support and urge SFPUC to follow best practices of other metropolitan areas, such as Seattle and Los Angeles, especially in the face of rapid population growth.

Requiring more water conservation, efficiency, and recycling is the best way to lessen impacts to the Tuolumne River while promoting a sustainable water solution for the San Francisco Bay Area. The Bay Area is known for its environmental stewardship and leadership, so CA REP hopes SFPUC will take a leadership role in water efficiency and conservation. Therefore, CA REP urges SFPUC to undertake additional studies and consider the preferred alternatives in its initial study so that the Tuolumne River will be protected for future generations.

Sincerely,

Buddy Burke,  
CA REP President

Virginia Chang Kiraly  
CA REP Vice President  
Commissioner, California Commission for Economic Development

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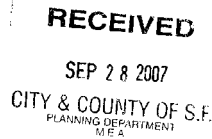
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# California Native Plant Society

2702 K Street, Ste. 1 • Sacramento, CA 95816-5113 • (916)447-2677 • FAX (916)447-2727

September 25, 2007

Mr. Paul Maltzer  
Environmental Review Officer, WSIP PEIR  
San Francisco Planning Department  
1650 Mission  
Street, Suite 400,  
San Francisco, CA 94103  
[wsip.peir.comments@gmail.com](mailto:wsip.peir.comments@gmail.com)



**RE: San Francisco Public Utilities Commission WSIP DEIR**

Dear Mr. Maltzer:

The California Native Plant Society (CNPS) appreciates the opportunity to comment on the *Water System Improvement Project (WSIP DEIR)*. CNPS is a non-profit organization of more than 10,000 professional and amateur botanists, scientists and lay persons distributed in 33 chapters throughout California. The mission of the CNPS is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through science, education, advocacy, horticulture and land stewardship.

The proposed WSIP asks for the removal of an additional 25 million gallons of water per day (mgd) from the already impacted Tuolumne River. This river is an important natural resource which is home to many native plants and animals. Withdrawal from the river would take place in the Sierra Nevada in the upper watershed where it magnifies the primary impacts upon the riparian communities at the source. But the impacts extend to the San Francisco/San Joaquin Delta where freshwater flows are already heavily depleted. The Tuolumne is the largest remaining source of freshwater to the San Joaquin River. There are also impacts across San Joaquin, Alameda, Santa Clara, and San Mateo counties from individual components of the system, and planned water withdrawals from creeks in Alameda and San Mateo counties.

We oppose the withdrawal of additional water because we believe that a concerted effort towards water conservation should precede additional projects which would cause significant environmental impact. We believe it is completely feasible to conserve the equivalent of 38 mgd for 2.4 million people, or about 15 gallons per day per person with education, cooperation and creativity.

Thank you for your consideration of the above comments.

Sincerely,  
  
Amanda Jorgenson  
Executive Director



Dedicated to the preservation of California native flora



**California Native Plant Society**  
East Bay Chapter  
Conservation Committee

October 1, 2007

Paul Maltzer  
Environmental Review Officer  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103-2479

Dear Mr. Maltzer:

The East Bay Chapter of the California Native Plant Society (EBCNPS) appreciates the opportunity to comment upon the Draft Programmatic Environmental Impact Report (PEIR) for the San Francisco Public Utility Commission's Water System Improvement Program (WSIP). These comments are intended to supplement the statements that we made at the public hearing in Fremont on September 18<sup>th</sup>.

The California Native Plant Society (CNPS) is a non-profit organization of more than 10,000 laypersons and professional botanists in 32 chapters across the state. Our mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

While the chief focus of EBCNPS's concerns is upon the impacts that the WSIP will have upon the native flora throughout the system, we are especially concerned with impacts to native flora in Alameda County and with the role that local demand for water by the SFPUC's customers in the East Bay plays in driving the project.

### General Considerations

#### Program Goals and Objectives

We believe that the general WSIP goals of assuring water quality, seismic reliability, delivery reliability, adequate water supply, and sustainability in a cost-effective way to its customers are basic responsibilities of the SFPUC. We believe that these goals are also reasonable and attainable. Many of the *qualitative* system performance objectives listed in Table S.1 are also reasonable steps to achieving the goals of the project.

However, there is a fundamental gap between the qualitative objectives and the quantified assumptions, particularly with respect to the overestimation of the perceived need (as distinct from demand) for water and the underestimation of the capacity of the

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SFPUC and its customers for conserving water. We believe that this gap is created and maintained by a traditional and outmoded approach to solving the problem of water scarcity. In this approach the SFPUC operates as agent in a competing marketplace to get more water for its customers from dwindling supplies of surface flows. What is required is a more forward-thinking perspective whereby the SFPUC acts as steward of a limited supply that must be carefully husbanded.

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The SFPUC has heard repeatedly from the public and from reliable water experts that the best approach to meeting demand is to reassess demand in light of much more intensive conservation efforts. Examples of other major metropolitan water districts in the west that have adopted this approach are available as models, including those mentioned in the Pacific Institute’s Report referenced above.

A more recent example is provided by the Helix Water District of San Diego County which has undertaken 14 innovative conservation measures. Despite a population increase from 1990 of 3.02%, the annual per-capita water use has gone down from 0.19 afpc to 0.18 afpc, a decrease of 4.73%. It appears that the drought of 1990 resulted in permanent changes in water use habits—the actual use in 2000 was lower than that projected in the 1995 Urban Water Management Plan. Since 1990, Helix has been actively implementing the wise water management practices suggested by the California Urban Water Conservation Council and is a signatory to the council’s best management practices (BMPs). Like all agencies that signed on, Helix agreed to implement 14 BMPs and to track progress toward meeting the intent of these goals (Bader, C. 2007. “Drip by Drip.” *Water Efficiency*. Mar-Apr. Forester, Santa Barbara, CA)

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Indeed SFPUC’s own retail customers in the City of San Francisco show a decline in demand of 4.7 mgd, an excellent first step. The assumption that the SFPUC can do better with less underlies all of our comments on the draft PEIR since that issue lies at the crux of analyzing the impacts of the WSIP.

Methodologies, Models, and Supporting Documents

We find that certain methodologies and models that were used to ascertain biological resources, impacts, General Plan compliance, water demand, and mitigation were either flawed or simply the wrong tool. We make general observations in this section and more precise remarks under relevant sections below.

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We also believe that the omission of any attempt to model or estimate global warming and its impacts upon water supplies and future need undermines the credibility of the EIR. Indeed, California Attorney General Jerry Brown has filed a CEQA claim against San Bernardino County for failing to address effects of global warming in its EIR for its General Plan update. (Barbara Schussman, Bingham McCutchen Law Offices, <http://www.bingham.com/Media.aspx?MediaID=4936>). Although it is impossible to know yet the full scope of the impacts of global warming upon the state’s water supplies, the PEIR must make some attempt to include it in its determination of CEQA alternatives. The PEIR makes no reference to the California Water Plan Update 2005 which contains relevant current papers and discussions (see, for instance, “Accounting

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for Climate Change,” Roos, DWR). There are also excellent discussions on conservation and more innovative approaches to achieving efficiency (see “California 2030: An Efficient Future,” Glick and Cooley, Pacific Institute for Studies in Development, and Groves, Pardee RAND Graduate School).

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There is an overall serious imbalance between the degree to which water demand and water flows have been painstakingly researched and documented and the relative lack of detail in identifying, documenting, and addressing impacts, especially to biological resources. There are dozens of charts, maps, and tables with data presented on water flows, variants, and scenarios, but only several tables and maps, and an incomprehensibly small bibliography on biological resources. There is one vegetation map per project region each of which has very general plant community information from the California Gap Analysis. There is no information from the Manual of California Vegetation (Sawyer and Keeler-Wolf, 1995) which contains the most recent classification of plant communities in the state.

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There is also an imbalance in terms of general time frames and time scales used to make determinations. For instance, hydrological data from many decades (80+ years) are used to determine drought conditions, water flows, etc. in an effort to predict future drought conditions up to 2030. Yet, other than some few data on fish populations, there are no historical data presented to show the impacts upon the various watersheds and loss of habitat and species populations that have resulted from impoundment and withdrawal of water over the past century. The hydrological database is a readily available source of information, probably because water has been a commodity which has been bought and sold, while wildlife and plant resources have not been subject to such close accounting. Nonetheless, there are studies available that indicate a significant decline in riparian species from the loss of riparian habitat over the course of the past century (see The Manual of California Vegetation, Sawyer and Keeler-Wolf, 1995 for a discussion of riparian plant communities in California, and “The Riparian Bird Conservation Plan,” California Partners in Flight and the Riparian Habitat Joint Venture, 2000). In place of relevant data, the PEIR makes broad sweeping statements about the massive alterations wrought in the environment from Hetch Hetchy to the Bay from water diversions and then dismisses the subject as outside the scope of the document.

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Although there are a bewildering number of pages to the EIR, in some cases, the information has not been presented concisely enough to make clear determinations about the important conclusions to be drawn or the information is separated into different volumes. For instance, in the discussion of the various CEQA alternatives listed, it is impossible to get a clear understanding of the differences in impacts upon fish and riparian habitat that each alternative would have in the Alameda Creek watershed without having to go back to the chapter in which each particular reach of the creeks is identified. A second example is Table 3.12 that displays construction and operations assumptions in which reference is made under Existing Land Use to crossing the Cargill salt ponds with a portion of the Bay Division project. It’s not clear whether this pipeline/tunnel has any portion above ground on protected public lands. It’s therefore impossible to determine what the specific impacts to wetland habitat and species would be and what permits

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would then be required. This information then turns up in a separate volume in Table C-6 in Appendix C.

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Finally, given the array of programs that the SFPUC will be administering on its lands including HCPs for both the Peninsula and Alameda Creek watersheds, the Habitat Reserve Program throughout the entire WSIP system, various watershed management plans, and the watershed environment improvement program (WEIP), there is ample opportunity for the SFPUC to work at cross purposes, lose information, or simply overburden itself with the task of coordination. It appears that already important information on biological resources concerning plant species has not been incorporated despite it having been submitted three years ago. We are attaching Dianne Lake's letter to the SFPUC (July, 2004) in which she addresses omissions of CEQA-protected plants from the scoping for the Alameda HCP. We suggest that the SFPUC undertake coordination of these efforts at the earliest possible date, that all biological resources be cross-referenced so that each project or program is working off of the same database, and that the public be included in discussions of how these programs will interface.

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**Specific Considerations**

Water Demand and Patterns of Growth in East Bay Cities

As part of its attempts to address water demand as a function of growth and development, the PEIR refers to the General Plans of the cities in the SFPUC's service area. In the East Bay, those cities include Hayward, Newark, Union City, and Fremont. The last three are customers of the Alameda County Water District, a wholesale customer of the SFPUC. Together the increase in purchase requests from these four cities accounts for a fifth of the total 2030 purchase estimates of the SFPUC's Wholesale Service Area. The PEIR briefly reviews the growth trends and policies for each city by looking at population and employment projections and the General Plans that have been adopted to guide each city's growth. In so doing, the PEIR attempts to find the "goodness of fit" between each city's growth projections, its plans and policies to guide that growth, and its projected water demand. The aim is to rectify the overall purchase requests from each wholesale customer.

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Hayward

None of these four cities has passed a growth ordinance. The City of Hayward is the SFPUC's largest wholesale water customer. Its water purchases for FY 2001/2002 were 17.61 mgd, and its 2030 purchase estimates are 27.95, an increase of 10.34 mgd, the largest proportional as well as absolute increase of all the wholesale customers. The increase in demand is based largely on the assumption of development in the Hayward hills of big, upscale "view" homes. These homes are built on larger lots with more extensive landscaping that requires more water than older homes on smaller lots. Irrigation for landscaping is one water use that can be tremendously pared down with proper planning and implementation. Since these homes constitute a sector not yet fully built and therefore subject to planning requirements, the City could cap water use for irrigation purposes or impose a strict tier system for water rates.

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Although the PEIR does not mention this, the hills above Hayward are part of the High Hazard Zone for Wildfire. As such, residents of these homes can be required by local fire departments to manage vegetation up to 100 feet from their homes and other structures according to recent state legislation. Wise water planning on the part of the City could involve requiring low water-use and fire-safe landscaping as part of new development. Although it is beyond our scope to assess the relative preparedness of Hayward's water supply in the event of a WUI fire, it is worth noting that one of the fundamental reasons that the 1991 Tunnel Fire in the Oakland Hills escaped control by firefighters was the failure of the water supply system. A second documented factor was the absence of fire-safe landscaping around homes. An important part of determining the growth footprint of new hills developments is forecasting the actual water needs of the area as distinct from the demand for water.

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Alameda County Water District

The Alameda County Water District (ACWD), serving the cities of Newark, Fremont, and Union City, gets a portion of its water from the SFPUC, a portion from groundwater sources in the lower part of Alameda Creek, and 40% of its water from the Delta. This past summer, the California Department of Water Resources temporarily turned off the pumps that move water from the Delta to ACWD and other water agencies throughout the state to protect the endangered Delta smelt. Although pumping has resumed, it's clear that there will be repeated legal challenges to water diversions around the Delta. The Summer, 2007 newsletter to the ACWD's customers contained an article about a recent analysis of Delta issues by the Public Policy Institute of California. The report recommended five different alternatives, two of which would reduce Delta water to cities and farms. The ACWD wrote, "As we have recently experienced with the shutdown of Delta pumps, any solution that is based on reducing Delta exports would have immediate and significant impacts to the local economy and health and well-being of families and businesses in the Tri-City area." In the same newsletter there were helpful "tips" on saving water, but no imperative or requirement to conserve. The ACWD is in a good position, with the help of the SFPUC, to shift from simply supplying water to its Tri-City customers to instituting a coordinated plan for recycling water in these three cities as a way to reduce its dependence upon the uncertainties of Delta water.

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Fremont

In analyzing Fremont's growth patterns, the PEIR refers to "goals related to growth management articulated in the 2003 Fremont General Plan Land Use Element [which] include conservation of the city's open space resources (Goal LU4) and protection of "sensitive hill face and uses in the remainder of the hill area" consistent with the area's character and environmental constraints (Goal LU6)" (E.4-2). Interestingly, the Fremont City Council also recently endorsed the Ahwahnee Principles for Resource-efficient Communities, a set of principles designed to help local governments plan for smart growth. However, despite these good intentions, the City of Fremont is actively pursuing locating the Oakland A's new proposed baseball stadium in its own open space land, despite the zoning in its General Plan and the specific Ahwahnee Regional Principle

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that recommends locating large public facilities such as museums and stadiums in the urban core to minimize the impacts to open space, traffic and air quality. As yet, there are no projected figures for water demand for the stadium and the residential community that has been proposed to accompany it. It is unlikely that the enormous water requirements of such a facility were factored into the water purchase estimates of Fremont since plans for the stadium were only announced this past year. However, the stadium is a highly visible example of the gap between the language of intent of a General Plan and its implementation by city government.

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Conservation Choices

It is nearly impossible to make sense of portion of the PEIR regarding the method by which the SFPUC attempted to ascertain willingness on the part of its wholesale customers to reduce demand through various conservation measures. It is understandable that each wholesale customer will have different end users with differing needs for water. However, without knowing the specific reasons why certain customers chose to embrace or reject any of the Programs (A,B,or C) or the rationale for the particular composition of each of these programs, it is impossible to assess a customer's commitment to water conservation.

15

A better approach would be to begin by requiring all BAWSCA members to endorse the Ahwahnee Water Principles of 2005 which are designed to help local governments envision and implement more sustainable water use practices. The Local Government Commission (LGC), a non-profit organization that assists local government agencies to deal effectively with large resource questions, has helped municipalities all over the country to plan for water needs so that each city doesn't reinvent the wheel. With 28 wholesale customers in close proximity to each other, the SFPUC is in a prime position to encourage a more systematic approach to conservation on the part of its customers.

Mitigation of Growth-inducing Impacts

The PEIR is required to identify growth-inducing impacts of the WSIP and to mitigate them. Again, the PEIR uses locally derived information to buttress its position that the project itself is not inherently growth-inducing, that local governments are in good control of their own growth, and that they are appropriately mitigating for the impacts of development. In this case, the PEIR makes use of the method of examining several EIRs from local (Bay Area) large-scale developments to see whether the EIRs identify and mitigate for impacts. One example cited from this very small sample is the One Quarry Road Residential Project in Brisbane. It's not clear from the project description in the PEIR whether the project is still being proposed despite being rejected by Brisbane voters in an election last year or whether the voters ultimately prevailed in defeating the project— whatever the case, it's an odd example to use to show that cities are reconciling large-scale projects with their General Plans or instituting adequate mitigations for them. Projects that incur such formidable opposition that they end up on a ballot and are defeated by local voters are rarely shining examples of environmentally suitable projects. A far better metric to use to determine how well a city complies with its General Plan would be to review the number of times that amendments and zoning changes have been

16

made to accommodate development or to inquire whether the city planning department is familiar with the California Natural Diversity Database as a resource incorporated into planning decisions.

16 cont.

Alternative Analysis of Water Demand in the SFPUC

The Pacific Institute, a non-profit organization that "provides research and policy analysis on threats to environmental, equitable, and economic sustainability" prepared a report, "From the Tuolumne to the Tap: Pursuing a Sustainable Water Solution for the Bay Area" that analyzes in depth the assumptions that drive the SFPUC's approach to analyzing water demand. EBCNPS endorses their findings. These six recommendations are:

1. Re-evaluate the projections of future water demand and conservation potential in light of flaws and inaccuracies in the studies.
2. Conduct a study to determine the maximum technical potential for conservation and efficiency savings within the SFPUC service territory.
3. Meet any additional water demand through increased investment in conservation, efficiency, and recycling.
4. Target future conservation efforts and recycling development in the areas of projected new demand growth, especially outdoor uses.
5. Pursue a new water sales agreement that will cap the sale of water from the Tuolumne River at current levels and encourage conservation, efficiency, and recycling.
6. Adopt policy to reduce diversions from the Tuolumne River over time.

17

Biological Resources

Basic Description

The PEIR Executive Summary refers on page 3-81 to the method by which the potential for sensitive plant species will be assessed in the project level EIRs: *The biologist would carry out a site survey by walking or driving over the project site, as appropriate, to note the general resources and whether any habitat for special status species is present. The biologist would then document the survey with a brief letter report or memo, setting forth the date of the visit, whether habitat for special status species is present, providing a map of description showing where sensitive areas exist within the site, and identifying any appropriate avoidance measures.*

18

This approach is inadequate in several ways: first, this level of survey should be conducted for the PEIR, not just the later project-level EIRs, in each of its project areas. Since extensive previous documents have already been prepared for the Alameda Watershed Management (WMP) and scoping for the HCP both of which included public comment, it is odd that the SFPUC still does not have a large database for the natural resources in the Alameda Creek watershed. The SFPUC may wish to review documents prepared for the East Bay Municipal Utility District in the mid 1990's by Dr. Robert Stebbins in which detailed priority lists were created to track and study various indicator

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12.4-19

and keystone species in its East Bay lands as a means to assessing the health of the watershed. Assuming the WSIP PEIR is certified, there will be huge momentum to approve each individual project. If sensitive status species exist, their presence should be used to influence the design of the WSIP as a system, not just for individual projects.

18  
cont.

Second, the type of initial screening process to determine the potential for special status species of plants is entirely inadequate. Instead, focused floristic surveys at several times during the growing season and preferably over several years must be conducted to determine with any degree of reliability whether special status plants exist.

19

Currently, the description and depiction of what CEQA-protected plants are to be found on Alameda Creek watershed lands and on the Bay Division portion of the project are inadequate. Table 5.4.6-2 (Potential for Occurrence of Key Special-Status Plants and Plant Species of Concern in the WSIP Alameda Program Area) does not include all CEQA-protected plants that have the potential for occurrence in the watershed. The PEIR does not include reference to Dianne Lake's database of locally rare, significant, and unusual plant species in Alameda County though many of these are protected by CEQA. We are attaching a list of those plants along with a letter submitted to the SFPUC for its scoping process for its Alameda Creek Watershed Habitat Conservation Plan (see discussion above).

20

In addition, we include a letter from EBCNPS to the Alameda County Board of Supervisors regarding its moratorium on development along creeks in unincorporated areas of the county. This letter lists those creeks, including Alameda Creek, San Antonio Creek, Arroyo de Laguna, and their tributaries, that have the potential for sensitive status plant species and communities. It also references Todd Keeler-Wolf's recommendation that plant community surveys be performed along those specific creeks. The moratorium is still in place and should be referenced in the PEIR along with the Alameda County's *Specific Plan: Riparian Areas Flood Plain Zoning* (Alameda County Planning Department).

21

Figure 4.6-1a depicts the habitat types in the WSIP study area including the Sunol Valley and Bay Division project areas. Its source is the California Gap Analysis Project, 2005. The Gap Analysis is not a sufficiently fine filter for purposes of analyzing impact. The map does not depict the detail described in the narrative portions in which 6 sensitive plant communities are identified. We do not agree with the PEIR's conclusion that the remnant areas are too small to be mapped for a programmatic document (but could be mapped in a project-level EIR) since the document also concludes that there are significant impacts of the WSIP to these communities.

22

Impacts

As mentioned above, without current data from plant surveys using appropriate protocols, the PEIR cannot determine what the plant resources are in the project area. It follows that it is also therefore impossible to determine the true level of impacts.

23

A second problem in the approach to the analysis is the derivation of the level of significance of impact. SFPUC has not formally adopted significance standards for impacts related to biological resources. Instead there are qualitative criteria which are not fully measurable. These qualitative criteria are based on assumptions of substantiality which in turn are based upon three principal components (see PEIR pp 4.6-37-38):

23

magnitude and duration of the impact (substantial/not substantial)  
uniqueness of the affected resource (rarity)  
susceptibility of the affected resource to disturbance

24

Without quantified baseline data, no meaningful conclusions may be drawn about impacts. We recommend that focused surveys be initiated, that all sensitive plant communities be fully mapped according to currently accepted protocols, and that all CEQA-protected plants be surveyed and mapped. Appropriate levels of impact can then be determined along with proper mitigations.

25

A third problem with analysis of impacts derives from the time scales used. At various points in the PEIR the time scales vary according to whether water supply data are being analyzed for adequacy or whether biological resources are being considered for impact. On page 5.4.1-17, under Approach to Analysis, the document states with respect to impacts upon the Alameda Creek watershed:

26

*For the purpose of impact analysis, CEQA Guidelines Section 15125 (a) considers the existing conditions baseline to be those conditions in existence at the time the environmental review is initiated, as marked by issuance of the notice of preparation (NOP). For the WSIP, the existing baseline used for the impact analysis reflects the range of hydrologic conditions that have resulted since the DSOD restrictions were imposed in December 2001 and continued through issuance of the NOP in 2005, and which are expected to continue until such time that a restored reservoir begins refilling. This PEIR does not use the historical range of hydrologic conditions that existed prior to the DSOD restriction as the basis of impact analysis of the WSIP impacts on stream flow. And from an accompanying footnote: ...this environmental setting will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant.*

27

By utilizing the relatively brief time period during which the Calaveras Reservoir has been at less than capacity, the PEIR can frame the context of impact in such a way as to minimize the finding of impact. However, in terms of restoration of habitat and mitigation, it makes more sense to view impacts over a longer period of time, particularly with plant communities such as woodlands.

28

As a result of these problems in the approach to analysis as described above, the PEIR can draw certain conclusions about the lack of significance of an impact. For instance, on page 5.4.6-22 under Impact 5.4.6-4: Effects on riparian habitat and related biological resources along Alameda Creek, from the confluence with Calaveras Creek to the confluence with San Antonio Creek:

29



*Sensitive riparian communities in this section of Alameda Creek include sycamore alluvial woodland, Central Coast arroyo willow riparian forest, valley oak woodland, and white alder riparian forest. The WSIP would substantially reduce winter flows compared to those under existing conditions (they would be similar to, by slightly muted from, flows in the reach directly below the diversion dam). The change in flows would have no effect on woodland communities; for stand regeneration, sycamore woodland requires flows similar to unimpaired flows. The slight reduction in flows (as it relates to stand regeneration for willow and alder riparian forest) would be offset by increased summer flows under the 1997 MOU. Sustained winter and summer minimum flows could facilitate the conversion of existing riparian habitats, such as sycamore alluvial woodland and valley oak woodland, to alder-and willow-dominated habitats, but the extent of this potential impact would be small. Overall, these impacts would offset one another; as a result the impact on sensitive habitats would be less than significant, and no mitigation measures would be required.*

26 cont.

The conversion of the rare sycamore alluvial woodland community cannot be considered to be an insignificant impact. In this manner, the PEIR’s findings of level of significance of impacts must be seriously questioned.

Mitigations

EBCNPS has already submitted detailed comments on the SFPUC’s Habitat Reserve Program (HRP), the chief mitigation measure for the WSIP. As we mentioned in those comments, it is impossible to assess the adequacy of the mitigations in advance of a more detailed description of the exact nature of the biological resources and the presumed impact upon them.

27

CEQA Alternatives

EBCNPS does not endorse any of the CEQA alternatives described in the PEIR since we believe the fundamental analysis of water supply and demand is flawed.

28

Instead, we recommend that the draft PEIR be re-circulated. Given the problems in methodology that our letter outlines, we believe that the conditions apply under which CEQA guidelines require a lead agency to re-circulate an EIR. CEQA Guidelines Section 15088.5 requires that a lead agency re-circulate an EIR when significant new information is added to the EIR after public notice for public review of the Draft EIR, but prior to certification. “Information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of meaningful opportunity to comment upon a substantial adverse environmental effect of the project, or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project proponents have declined to implement. “Significant new information” requiring re-circulation includes, for example, a disclosure showing that:

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1. a new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;
2. a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;
3. a feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project proponents decline to adopt it; and/or
4. the draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

29 cont.

We look forward to commenting further as individual project-level EIRs for the WSIP are released. Please do not hesitate to call (510-849-1409) if you have any questions.

Sincerely,

Laura Baker  
Conservation Committee Chair  
East Bay Chapter of the California Native Plant Society

Attachment to CNPS COMMENTS  
ON WSCP PEIR

## California Native Plant Society

East Bay Chapter

1657 Rollins Rd., Berkeley, CA 94705

July 19, 2004

Alameda Watershed HCP  
Land and Resources Management Section  
San Francisco Public Utilities Commission  
1657 Rollins Rd.  
Burlingame, CA 94010

Dear Director,

The Conservation Committee of the East Bay Chapter of the California Native Plant Society (CNPS) has reviewed the list of special status plant species proposed for coverage in the Alameda Watershed Habitat Conservation Plan (AW HCP) of the San Francisco Public Utilities Commission (SFPUC). We have also reviewed the evaluation criteria used to determine the list, and the checklist of plant species observed in the Alameda Watershed HCP study area compiled by Jones & Stokes in May and June of 2003.

CNPS is devoted to preserving the native flora and habitat of California and, as such, we are pleased to see the efforts thus far towards protecting the native flora and habitat on SFPUC lands in Alameda County.

However, we also feel that the current effort does not go far enough.

Three plant species listed as rare statewide by CNPS that are known from the watershed are not included in the list of protected species nor on the evaluation list: *Legenere limosa* (CNPS List 1B) occurs in Ohlone Regional Wilderness; *Monardella antonina* ssp. *antonina* (CNPS List 3) occurs at two sites in Sunol Regional Wilderness; *Lessingia hololeuca* (CNPS List 3) is known historically (1940) from Calaveras Reservoir.

In addition, *Campanula exigua*, *Malacothamnus hallii* and *Lessingia micradenia* var. *glabrata* (all CNPS List 1B) were on the evaluation list but were rejected as being out of range. However, *Campanula exigua* was vouchered in Sunol Regional Wilderness in 1973. *Malacothamnus hallii* may have been known historically (1878) from Calaveras Reservoir (voucher site is unclear). In 2002 specimens of *Lessingia nemaclada* were found in Ohlone Regional Wilderness with some characters similar to *L. micradenia* var. *glabrata*. Hybrids of the two species have been found elsewhere and could occur in the Alameda watershed. Thus, these three species should be added to the list of species proposed for coverage.

 Dedicated to the preservation of California native flora

Attachment to CNPS COMMENTS  
ON WSCP PEIR

CNPS List 4 species are not included in your evaluation list and several occur in the Alameda Watershed, either on SFPUC lands or on adjacent lands owned by the East Bay Regional Park District (EBRPD) within the watershed. CNPS List 4 plants are generally of limited distribution in California and most are locally rare as well. As such, they qualify for inclusion in the AW HCP under the criteria listed at the end of the evaluation list in Appendix E and in step 2 of the March 20 2003 memo "Draft Covered Species Criteria" which refer to plants that are "unlisted and not rare but the covered activities may affect a substantial portion of the species' range or important habitat for this species." List 4 species that are known to occur in the Alameda Watershed area are: *Acauthomlintha lanceolata*, *Calochortus umbellatus*, *Clarkia concinna* ssp. *automixa*, *Eriogonum umbellatum* var. *bahiflorum*, *Eriophyllum jepsonii*, *Gallium andrewsii* var. *gatense*, *Linanthus acicularis*, and *Linanthus ambiguus*. Of these, only *Linanthus ambiguus* is currently known to occur in the HCP study area, the rest being on EBRPD lands, but habitat is present for them in the HCP study area and thus there is a strong potential for them to occur there and they should be included in the HCP plan.

There is also no mention of rare or significant plant communities proposed for coverage. Several communities considered as rare or threatened by the California Department of Fish and Game (CDFG) occur on the watershed, including Sycamore Alluvial Woodland, perennial native grasslands, serpentine communities, and willow riparian woodlands.

In addition, we are very concerned that no mention is made of, nor protection proposed for, locally rare species. The East Bay Chapter of CNPS has been tracking the native flora of Alameda and Contra Costa Counties for many years and has developed a ranking system that assesses local native plants by their rarity or endangerment in the two-county area.\* Plants with a ranking of A1, A2, or A1x (occurring in only five or less places in Alameda and Contra Costa Counties) are afforded protection under the California Environmental Quality Act (CEQA) in sections 15380 and 15125(a) which address species of local concern and place special emphasis on environmental resources that are rare or unique to a region.

A table is attached of state and locally rare species that are known to occur either currently or historically in the Alameda Watershed. Of the 162 species in this table, only three are included on your list of special status species proposed for coverage under the AW HCP: *Helianthella castanea*, *Monardella villosa* var. *globosa*, and *Streptarthus albifusus* ssp. *perampemus*.

Thirty-seven of the species in the table are known to occur on SFPUC land managed by the SFPUC, and 19 occur on SFPUC land leased to the EBRPD within the HCP study area. One hundred eighteen species occur on lands owned by the EBRPD that are outside of the study area but within the Alameda watershed.

The table is an updated version of a list of CEQA protected plants occurring on San Francisco Water District lands in Alameda County that was sent to Michael Carlin, Director of Planning at the SFPUC on March 5, 2003 by Tony Morosco, then president of

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cont.

Attachment to COMMENTS BY CNPS  
ON WSIP PEIR

the East Bay Chapter of CNPS, and also on June 14, 2003 to Cheryl Davis, the Acting Assistant General Manager of Operations at the SFPUC and to Jon Ballestros at the Roberts Group as part of our original comments on the HCP. According to the description in Chapter 3.3.2 of sources used to determine the special-status plant species to be covered by the HCP, this list was not consulted. Nor was the publication *Unusual and Significant Plants of Alameda and Contra Costa Counties* by Dianne Lake (6<sup>th</sup> edition, 2001, CNPS, East Bay Chapter) which lists the state and locally rare plant species that are found in the two-county area.

Locally rare species are highly important because they often represent range limits and disjunct populations, often indicating somewhat different or stronger genetic makeup. These peripheral and isolated populations can be the only hope for the continuation of a species in the event of catastrophic events that can wipe out large populations at a time through climatic and geological shifts or the spread of contagious pathogens from one plant to another in areas where a plant is more common and populations are in close proximity to each other. Earthquakes, flooding, exotic weed and insect invasions, and other events have demonstrated the vulnerability of many of our native plants countless times in countless places. It has also been demonstrated many times that peripheral populations are the last to disappear when a species begins to decline where it is more common, again indicating that peripheral and isolated populations may have some genetic variations that make them less vulnerable to pathogens and other types of attacks.

In addition, these isolated populations can often indicate the presence of special features where they occur that are not present in other seemingly similar habitats. Geological variations, microclimates, limited pollinator distributions, water tables and water flow patterns, etc. are some of the factors that can contribute to the presence of these isolated populations. By preserving these populations, we can learn more about the ecology and interactions of their habitats and the processes that control species survival and species decline. It is important to remember that organisms in a habitat or environment depend on each other in many ways, some of which science has not yet discovered. Removal of even one organism can have a domino effect that can result in ecological disaster in an area.

Thus, the preservation of these populations of locally rare species is of the utmost importance.

In an area where so many locally rare species occur, protection, as well as further study of those populations, is highly important. Since the purpose of a Habitat Conservation Plan is to protect important habitats in an area, the locations of both state and locally rare plants must be determined through further field surveys and research, and protection must be afforded to them in the AW HCP.

Finally, although we realize that the plant checklist provided in Appendix B was compiled from surveys conducted only in May and June of 2003 and therefore is necessarily incomplete, we would like to alert the SFPUC and Jones & Stokes to the presence of the following additional plant species known to currently occur in the

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cont.

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Attachment to COMMENTS BY CNPS  
ON WSIP PEIR

Alameda Watershed study area: *Athyrium felix-femina*, *Perideridia californica*, *Artemisia dracunculus*, *Mentha arvensis*, *Mentha pulegium*, *Stachys pycnantha*, *Plantago major*, *Rumex conglomeratus*, *Rumex salicifolius* var. *denticulatus*, *Clematis lasiantha*, *Rhamnus ilicifolia*, *Rubus discolor*, *Salix laevigata*, *Salix exigua*, *Cordylanthus pilosus*, *Mimulus cardinalis*, *Carex nudata*, *Carex senta*, *Eleocharis acicularis*, *Scirpus acutus* var. *occidentalis*, *Scirpus cernuus*, *Juncus xiphioides*, *Calochortus argillosus*, *Melica imperfecta*, and *Halimolobos cylindrica*.

Thank you for the opportunity to comment on this portion of your HCP, and we wish you well as you pursue this worthy endeavor.

Sincerely,

Dianne Lake  
diannelake@yahoo.com  
Conservation Committee Member and Unusual Plants Coordinator  
California Native Plant Society, East Bay Chapter  
PO Box 5597, Elmwood Station  
Berkeley, CA 94705

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cont.

\*The CNPS East Bay Chapter ranking system is as follows (the 162 species referred to in the text are all ranked as \*A, A1, A1x or A2):

- \*A1, \*A2: Statewide listed rare plants occurring in Alameda and Contra Costa Counties
- A1: Plants occurring in 2 regions or less in Alameda and Contra Costa Counties
- A1x: Plants presumed extirpated from Alameda and Contra Costa Counties
- A2: Plants occurring in 3 to 5 regions here, or otherwise threatened
- B: Plants occurring in 6 to 9 regions here, or otherwise threatened
- C: A Watch List - species occurring in more than 10 regions here, but with potential threats

Attachment to CNPS COMMENTS ON WSIP PEIR

Rare, Unusual and Significant Plants of the SFPUC Watershed in Alameda County  
 Rare Statewide or Protected under CEQA as Locally Significant or Unique  
 CNPS, East Bay Chapter, 2004  
 (Note: Statewide rare plants are listed in upper case)

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
ACANTHOMINTHA LANCEOLATA	*A1	OhnP, SunIOh, SunIP			X	Chaparral; Serpentine	State CNPS List 4
Agoseris spargioides ssp. spargioides	A1	OhnP			X	Forest; Grassland; Scrub; Sand or Sandstone	
Allium amplexens (?)	A2	(OhnP-ID?)			X	Dry Open Slopes; Serpentine; Woodland; Misc. habitats	
Allium bolanderi var. bolanderi	A1	OhnP			X	Chaparral; Serpentine; Woodland	
Allophylum divaricatum	A2	OhnP			X	Chaparral; Sand or Sandstone; Woodland	
Anisocarpus radioides (?) (Madia radioides in Jepson Manual)	A1	(SunIP-ID?)		?	?	Forest; Redwood Forest; Woodland	
Antirrhinum multiflorum	A1	(Nls-Loc?), SunIOh	?		X	Burns; Gravel; Rock, Tallus or Scree	Only current known site in East Bay
Aquilegia eximia (A. formosa is more common)	A2	SFWDSunI	X			Serpentine	
Arabis breweri var. breweri	A1	SunIOh			X	Rock, Tallus or Scree; Serpentine	
Artemisia dracunculus	A1	AlsOksV, SunIF, SunIMg, SnAntoRsvr	X		X	Misc. habitats	
Asclepias speciosa	A1	SunIP	X			Misc. habitats	
Astragalus didymocarpus var. didymocarpus (A. gambelianus is more common)	A1	SunIP		X		Grassland	
Calamagrostis nutkanaensis (?)	A1x	(SunMg-ID?)			X	Coastal Strand; Freshwater Marsh; Forest; Redwood Forest	

30 cont.

Attachment to CNPS COMMENTS ON WSIP PEIR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
CALOCHORTUS UMBELLATUS	*A2	SunIP			X	Chaparral; Scrub; Woodland	State CNPS List 4
Calycadenia truncata	A2	OhnP, SFWDAr, SunIP	X		X	Rock, Tallus or Scree; Scrub	
Calystegia malacophylla ssp. pedicellata	A2	SunIP			X	Chaparral; Scrub; Serpentine	
Camissonia graciliflora	A2	OhnP			X	Dry Open Slopes; Grassland; Scrub; Woodland	
Camissonia intermedia	A2	SunIP			X	Burns; Scrub	
Camissonia strigulosa	A1	OhnP			X	Grassland; Sand or Sandstone	Only current known site in East Bay
CAMPANULA EXIGUA	*A2	SunIP			X	Chaparral; Rock, Tallus or Scree; Serpentine	State CNPS List 1B. Evaluation list indicates this is out of range but it was vouchered at Sunol in 1973
Carex heteroneura var. heteroneura	A1	MsnPk			X	Forest; Grassland; Rock, Tallus or Scree	Only current known site in East Bay
Carex nebrascensis	A2	SFWDSunI	X			Misc. Wetlands	
Carex nudata	A2	(Nls-1972), SunIP	X	X		Rock, Tallus or Scree; Riparian; Sand or Sandstone areas	
Carex ovalis	A1	OhnP			X	Misc. Wetlands	Only current known site in East Bay
Carex senta	A2	AlsOksV	X			Riparian areas; Misc. Wetlands	
Cercis occidentalis	A1	SFWDSunI, (SunAr-1866)	X			Chaparral; Dry Open Slopes; Riparian; Woodland	
Cheilanthes covillei	A2	OhnP, (SunIP-1970)			X	Rock, Tallus or Scree	
Cheilanthes intertexta	A2	OhnP			X	Rock, Tallus or Scree	
Chorizanthe membranacea	A2	OhnP, SunIP	X		X	Chaparral; Dry Open Slopes; Grassland; Woodland; Misc. habitats	

Attachment to CNPS COMMENTS ON WISIP PEIR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
<i>Chorizanthe polygonoides</i> var. <i>polygonoides</i>	A1	OhnP			X	Grassland, Sand or Sandstone	Only current known site in East Bay
<i>Chrysothamnus nauseosus</i> ssp. <i>mohavensis</i>	A2	OhnP, SunIOh			X	Scrub	
CLARKIA CONCINNA SSP. AUTOMIXA (ssp. <i>concinna</i> is more common)	*A1	(Nls-1938), OhnP, PlsmRdg	?		X	Woodlands	State CNPS List 4
<i>Clarkia purpurea</i> ssp. <i>viminea</i> (ssp. <i>quadrivulnera</i> is more common)	A2	(Nls-1972)	?			Misc. habitats	
<i>Claytonia gypsophiloides</i>	A2	OhnP			X	Rock, Tallus or Scree; Serpentine	
<i>Collinsia bartsiifolia</i> var. <i>dauidsonii</i> (?)	A1	(OhnP-ID7)			X	Sand or Sandstone	
<i>Collinsia bartsiifolia</i> var. unknown	A1	SunIOh, SunIP			X	Sand or Sandstone	
<i>Collinsia parviflora</i>	A2	OhnP, PlsmRdg			X	Misc. habitats	
<i>Cordylanthus rigidus</i> ssp. <i>rigidus</i>	A1	SunIP		X		Chaparral; Forest; Woodland	
<i>Cornus glabrata</i>	A1	(PlsmRdg - ID?), (SunIT-1972)	?		X	Riparian	
<i>Crocidium multicaule</i> (?)	A1	(OhnP-ID7)			X	Grassland; Sand or Sandstone; Woodland	
<i>Cryptantha decipiens</i>	A1	(OhnP-ID7), SFWDAr	X		X	Grassland; Scrub; Sand or Sandstone	
<i>Cuscuta californica</i> var. <i>californica</i>	A1	SFWDSunI, SunIP	X		X	Chaparral; Grassland; Misc. habitats	
<i>Delphinium californicum</i> ssp. <i>californicum</i>	A2	MssnPk, OhnP, SunIP			X	Chaparral	
<i>Draba cuneifolia</i> var. <i>integrifolia</i>	A1	SunIF, SunIMg			X	Misc. habitats	Only current known sites in East Bay
<i>Elastine californica</i>	A1	OhnP			X	Freshwater Marsh	

Attachment to COMMENTS BY CNPS ON WISIP PEIR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
<i>Eleocharis parlatii</i>	A2	AlsCksV, MssnPk	X		X	Sand or Sandstone; Misc. Wetlands	
<i>Elymus stebbinsii</i>	A2	SunIP			X	Chaparral; Dry Open Slopes; Forest	
<i>Epilobium torreyi</i>	A2	OhnPAr, (SunIP-ID7)			X	Riparian	
<i>Eriogonum reductus</i> var. <i>angustatum</i>	A1	SunIP		X		Rock, Tallus or Scree; Sand or Sandstone areas; Woodlands	Only current known site in Alameda County. Recently found in northern Santa Clara County on SFPUC property
<i>Eriogonum angulosum</i>	A2	(Nls-1888), SunIP	?		X	Sand or Sandstone; Misc. habitats	
<i>Eriogonum fasciculatum</i> var. <i>foliosum</i>	A1	SunIMg			X	Dry Open Slopes	
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	A1	SunIMg			X	Dry Open Slopes; Dry Washes; Scrub	
<i>Eriogonum luteolum</i> var. <i>luteolum</i>	A2	OhnP			X	Gravel; Sand or Sandstone; Serpentine	
ERIOGONUM TRUNCATUM (historical-1940)	*A1x	(Nls-1888)	?			Chaparral; Grassland; Sand or Sandstone; Misc. habitats	State CNPS List 1A
ERIOGONUM UMBELLATUM VAR. BAHIIFORME	*A2	(Nls-1888), OhnP	?		X	Rock, Tallus or Scree; Serpentine	State CNPS List 4
ERIOGONUM JEPSONII	*A2	SunIP			X	Chaparral; Serpentine; Woodland	State CNPS List 4
<i>Eryngium castrense</i>	A1	OhnPAr			X	Freshwater Marsh; Vernal Pools; Misc. Wetlands	Only current known site in Alameda County
<i>Festuca elmeri</i>	A2	(Nls-1972), SnAnioRsvr	X			Riparian	
GALIAM ANDREWSII SSP. GATENSE	*A2	OhnPAr, OhnP			X	Chaparral; Serpentine; Woodland	State CNPS List 4
<i>Galium trifidum</i> var. <i>pacificum</i>	A2	SunIP			X	Misc. Wetlands	Only current known site in Alameda County

Attachment to Comment 64 CNPS ON WSIP PERLR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property			Habitat	Comments
			On SFPUC Property	Property Leased by EBRPD	On EBRPD Property		
<i>Gilia achilleifolia</i> ssp. <i>achilleifolia</i> (ssp. <i>multicaulis</i> is more common)	A2	MsnPk, (Nls-1938), OhnP, SunIOh, SunIP, (SunIT-1925)	?		X	Misc. habitats	
<i>Glyceria occidentalis</i>	A2	OhnP, PistaRdg			X	Misc. Wetlands	
<i>Gnaphalium canescens</i> ssp. <i>microcephalum</i>	A2	Nls, SunIF	?		X	Chaparral; Dry Open Slopes	
HELIANTHELLA CASTANEA	*A2	SunIP	X		X	Chaparral; Grassland; Woodland	CNPS List 1B. Already on SFPUC list of species proposed for protection in A/W HCP. Note: Plants at SunOI are intermediate to <i>Helianthella californica</i>
<i>Heterotheca oregona</i> var. <i>rudis</i>	A1	SunIP		X		Dry Washes; Riparian	Only current known site in Alameda County. Recently found in northern Santa Clara County on SFPUC property
<i>Heterotheca oregona</i> var. <i>scaberrima</i>	A1	Nls, (SunIT-1886), (SunIVy-1916)	?			Dry Washes	
<i>Hoita macrostachya</i>	A2	AlaCkSV, SFWDSunI, SnArnoRsvr, SunIOh, SunIP	X	X	X	Freshwater Marsh; Riparian	
<i>Hordeum jubatum</i>	A2	SunIP			X	Misc. habitats	
<i>Horkelia californica</i> ssp. <i>dissita</i>	A2	OhnP, SFWDPlan	X		X	Riparian; Misc. Wetlands	
<i>Hydrocotyle verticillata</i>	A2	AlaCkSV	X			Brackish Marsh	Only current known site in Alameda County
<i>Hydrophyllum occidentale</i>	A2	OhnP			X	Chaparral; Riparian; Woodland; Misc. habitats	
<i>Hypericum formosum</i> var. <i>scouleri</i>	A1	(Nls-1905)	?			Freshwater Marsh; Riparian	
<i>Idashoa scapigera</i>	A1	OhnP			X	Misc. Wetlands	Only current known site in East Bay

Attachment to CNPS COMMENTS ON WSIP PERLR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property			Habitat	Comments
			On SFPUC Property	Property Leased by EBRPD	On EBRPD Property		
<i>Isopyrum occidentale</i>	A1	OhnP			X	Chaparral; Forest; Woodland	Only current known site in East Bay
<i>Juncus ensifolius</i> (?)	A1	(SunIP-ID?)			X	Misc. Wetlands	
<i>Keckiella corymbosa</i>	A1	OhnP, SFWD	X		X	Rock, Talus or Scree	
<i>Lasthenia glaberrima</i>	A2	SFWDSunI				Vernal Pools; Misc. Wetlands	
LATHYRUS JEPSONII VAR. JEPSONII (?)	*A2	(Nls-1970-ID)	?			Brackish Marsh; Freshwater Marsh	State CNPS List 1B. Habitat doesn't seem likely - most sites are in delta area. Voucher should be examined
<i>Layia chrysanthenoides</i>	A1	SunIP		X		Grassland	
<i>Layia gaillardoides</i>	A2	SunIP	X			Scrub; Woodland	
<i>Leersia oryzoides</i>	A1	Nls	?			Freshwater Marsh; Riparian; Misc. Wetlands	
LEGENERE LIMOSA	*A1	OhnP			X	Vernal Pools; Misc. Wetlands	State CNPS List 1B. Only current known site in East Bay
<i>Leptochloa fascicularis</i>	A2	SunIP				Misc. Wetlands	Only current known site in Alameda County
<i>Lessingia filaginifolia</i> var. <i>filaginifolia</i> (var. <i>californica</i> is more common)	A2	(Nls-1969), PistaRdg, SunIP	X		X	Grassland; Scrub; Woodland	
LESSINGIA HOLOLEUCA (historical-1940)	*A1x	(ClvmsRsvr-1940)	X			Grassland; Serpentine	State CNPS List 3
<i>Lessingia nemaclada</i>	A1	OhnP			X	Dry Open Slopes; Rock, Talus or Scree; Woodland; Misc. habitats	Only current known site in East Bay
<i>Lewisia rediviva</i> var. <i>rediviva</i>	A2	OhnP			X	Rock, Talus or Scree; Serpentine	
<i>Lirnanthes douglasii</i> ssp. <i>douglasii</i>	A1	SunIOh			X	Vernal Pools; Misc. Wetlands	Only current known site in East Bay, but may not be a natural site
<i>Limosella scutalis</i>	A2	OhnP, PistaRdg			X	Misc. Wetlands	

Attachment to CNPS COMMENTS ON WSIP PEST

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
LINANANTHUS ACICULARIS	*A1	PlataRdg			X	Chaparral; Grassland; Woodland	State CNPS List 4
LINANANTHUS AMBIGUUS	*A2	OhlnP, SFWD/SunI, SunIP	X		X	Grassland; Serpentine	State CNPS List 4
Linanthus dichotomus	A2	OhlnP, SFWD/Ar, SunIP	X		X	Gravel; Rock, Talus or Scree; Sand or Sandstone; Serpentine	
Lithophragma parviflorum var. parviflorum	A2	OhlnP			X	Misc. habitats	
Lomatium nudicaule	A2	OhlnP, SFWD/Ar	X		X	Rock, Talus or Scree; Woodlands	
Lotus strigosus	A1	(Nls-1972), SunIP	?		X	Chaparral; Scrub	
Ludwigia peploides ssp. peploides	A2	(Nls-1972)	?			Freshwater Marsh; Riparian; Misc. Wetlands	
Lupinus bicolor var. tridentatus (var. umbellatus is more common)	A1	(Nls-1904)	?			Misc. habitats	
Lycopus americanus (?)	A1	(SunIP-ID?)			X	Freshwater Marsh; Riparian	
Lythrum californicum	A2	MssnPk, (Nls-1972)	?		X	Misc. Wetlands	
Madia anomala	A1	(SunIP-1970)		X		Grassland	
MALACOTHAMNIUS HALLII (?) (M. fasciculatus in Jepson Manual)	*A1	(ChvrRcvr-1878, Loc7)	X			Chaparral	State CNPS List 1B
Mentzelia affinis	A2	SunIMg, SunIP			X	Grassland; Sand or Sandstone; Woodland	
Mentzelia laevicaulis (historical-1969)	A1x	(Nls-1969)	?			Dry Washes; Rock, Talus or Scree; Sand or Sandstone	
Mentzelia thudleyi	A2	Nls, OhlnP, SFWD/Ar, SunIP	X		X	Rock, Talus or Scree; Scrub; Woodlands	

Attachment to CNPS COMMENTS ON WSIP PEST

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property	On SFPUC Property Leased by EBRPD	On EBRPD Property	Habitat	Comments
MICROPUS AMPHIBOLUS(?)	*A1	(PlataRdg-ID?)			X	Dry Open Slopes; Grassland; Rock, Talus or Scree	State CNPS List 3
Microseris elegans	A2	SunIP			X	Grassland; Vernal Pools	Only current known site in Alameda County
Mimulus douglasii	A2	OhlnP			X	Chaparral; Gravel; Rock, Talus or Scree; Serpentine; Woodland	
Mimulus pilosus	A2	AlaCKSV, (Nls-1967), SunIOh, SunIP	X	X	X	Dry Washes; Gravel; Riparian; Sand or Sandstone	
Minuartia pusilla	A2	OhlnP			X	Chaparral; Forest	
Mirabilis californica	A1	MssnPk			X	Chaparral; Dry Open Slopes; Dry Washes; Grassland; Rock, Talus or Scree; Sand or Sandstone; Woodland	
Moehringia macrophylla	A1	OhlnP			X	Forest; Rock, Talus or Scree; Serpentine; Woodland	Only current known site in Alameda County
MONARDELLA ANTONINA SSP. ANTONINA	*A1	SunIP, SunIMg			X	Chaparral; Rock, Talus or Scree; Woodland	State CNPS List 3. Only current known sites in Alameda County
MONARDELLA VILLOSA SSP. GLOBOSA (ssp. villosa is more common)	*A2	SunIP			X	Chaparral; Woodland	State CNPS List 1B. Already on SFPUC list of species proposed for protection in A.W. RCP
Navaretia intertexta ssp. intertexta	A1	OhlnP			X	Vernal Pools; Misc. Wetlands	Only current known site in Alameda County
Nicotiana quadrivalvis	A2	SunIP		X		Dry Open Slopes; Dry Washes	
Orobanchaceae vasiflora	A2	SunIP		X		Forest; Woodland	
Oxalis albicans ssp. pilosa	A2	(Nls-1968)	?			Chaparral; Grassland; Scrub	
Papaver californicum	A2	(SunIP-1987 but not seen since)		X		Burns; Woodland	

Attachment to CNPS COMMENTS ON WSIP PEIR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property			Habitat	Comments
			On SFPUC Property	Leased by ERRPD	On ERRPD Property		
<i>Pectocarya ponicillata</i>	A1	SunMg			X	Misc. habitats	Only current known site in Alameda County
<i>Pectocarya pusilla</i>	A2	MasnPk, OhnP, SunMg, SunIP			X	Grassland; Woodland; Misc. habitats	
<i>Penstemon canthifolius</i>	A2	SFWDAr, SunMg	X		X	Chaparral; Sand or Sandstone; Woodland	
<i>Penstemon heterophyllus</i> var. <i>purdyi</i>	A2	SFWDAr				Chaparral; Forest; Grassland	
<i>Perideridia californica</i>	A2	SaAntoRsvr, SunOh, SunIP	X	X	X	Riparian	
<i>Phacelia breweri</i>	A2	OhnP, (SunIP-ID?)			X	Chaparral; Rock, Tallus or Scree; Woodland	
<i>Phacelia divaricata</i>	A2	OhnP, SFWDAr	X		X	Chaparral; Grassland; Woodland	
<i>Phacelia malvifolia</i>	A2	OhnP, SunIP			X	Gravel; Sand or Sandstone	
<i>Phacelia ramosissima</i> var. <i>ramosissima</i>	A1	OhnP	X		X	Dry Open Slopes; Dry Washes; Grassland; Misc. habitats	
<i>Phacelia ruttanii</i>	A1	(SunOh-1971)			X	Rock, Tallus or Scree	
<i>Phacelia tanacetifolia</i>	A2	(Nls-1904)	?			Gravel; Sand or Sandstone	
<i>Pinus coulteri</i>	A2	OhnP, OhnP, SunIP			X	Chaparral; Forest	
<i>Plagiobothrys tenellus</i>	A2	OhnP			X	Misc. habitats	
<i>Plectritis congesta</i>	A2	MasnPk			X	Coastal Bluff; Woodland	
<i>Pleuropogon californicus</i>	A2	OhnP			X	Riparian areas; Misc. Wetlands	
<i>Psilocarpus tenellus</i> var. <i>globiferus</i> (?) (var. <i>tenellus</i> is more common)	A1	FlataRdg-ID?			X	Wetlands	
<i>Quercus chrysolepis</i> var. <i>nana</i>	A2	OhnP			X	Chaparral; Scrub	
<i>Quercus durata</i> var. <i>durata</i>	A2	SunIP			X	Chaparral; Serpentine	
<i>Quercus palmeri</i>	A1	SunMg			X	Rock, Tallus or Scree	
<i>Ribes aureum</i> var. <i>gracillimum</i>	A1	(Nls-1894)	?			Riparian areas; Misc. habitats	
<i>Ribes speciosum</i>	A1	MasnPk			X	Chaparral; Scrub	

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Attachment to CNPS COMMENTS ON WSIP PEIR

Species Name	CNPS East Bay Rank	Locations on Alameda Watershed	On SFPUC Property			Habitat	Comments
			On SFPUC Property	Leased by ERRPD	On ERRPD Property		
<i>Rorippa curvisiliqua</i>	A2	SunIP			X	Freshwater Marsh	
<i>Rumex maritimus</i>	A2	SunIP			X	Brackish Marsh; Salt Marsh	
<i>Rumex salicifolius</i> var. <i>denticulatus</i>	A2	OhnP, SFWDSunl, SaAntoRsvr, SunOh	X	X	X	Misc. Wetlands	
<i>Salix melanopsis</i>	A1	Nls, (SunVy-1916)	?			Riparian	Only current known site in East Bay
<i>Scutellaria siphocampyloides</i>	A1	OhnP, SunOh, (SunIP-1970)		X	X	Riparian areas; Misc. habitats	
<i>Senecio flaccidus</i> var. <i>douglasii</i>	A2	OhnP, SFWDSunl, SunIP, (SunVy-1916)	X		X	Dry Washes; Rock, Tallus or Scree; Sand or Sandstone	
<i>Sidalcea diploscypha</i>	A2	OhnP			X	Grassland; Woodland	Only current known site in Alameda County
<i>Silene verecunda</i> ssp. <i>platyota</i>	A2	SunIF			X	Forest; Woodland	
<i>Stachys ajugoides</i> var. <i>ajugoides</i> (var. <i>rigida</i> is more common)	A2	(Nls-1972)	?			Misc. Wetlands	
<i>Stachys bullata</i> (?) (S. <i>ajugoides</i> var. <i>rigida</i> is more common)	A1	(SunIP-ID?)		?	?	Dry Open Slopes; Misc. habitats	
<b>STREPTANTHUS ALBIDUS</b> ssp. <b>PERAMOENUS</b>	*A2	SFWDSunl, SunIP	X		X	Chaparral; Dry Open Slopes; Grassland; Serpentine	State CNPS List 1B. Already on SFPUC list of species proposed for protection in AWRCP
<i>Tonella tenella</i>	A2	OhnP, SunIP		X	X	Riparian areas; Misc. habitats	
<i>Trifolium albopurpureum</i> var. <i>olivaceum</i>	A2	OhnP, SunIP			X	Misc. habitats	
<i>Trifolium barbigerum</i> var. <i>andrewsii</i> (?)	A1	OhnP			X	Misc. habitats	
<i>Trifolium barbigerum</i> var. <i>barbigerum</i>	A2	OhnP, PistaRdg			X	Misc. habitats	
<i>Tytilium ovatum</i> ssp. <i>ovatum</i> (?)	A2	(FlataRdg-ID?)			X	Forest; Redwood Forest	



Attachment to COMMENTS BY CNPS ON WSIP REVISE

Species Name	CNPS Best Bay Rank	Locations on Alameda Watershed	On SFPUC Property		On SFPUC Property		Habitat	Comments
			On SFPUC Property	Leased by EBRFD	On EBRFD Property	Leased by EBRFD		
<i>Trisetum canescens</i>	A2	(CivraRd-1964)	X				Forest; Misc. habitats	
<i>Tropidocarpum gracile</i>	A2	(SunIP-1970)		X			Alkali areas; Grassland	
<i>Viola douglasii</i>	A1	OhlnP				X	Grassland; Riparian; Serpentine	
<i>Viola purpurea</i> ssp. <i>purpurea</i>	A2	OhlnP, SunIP				X	Chaparral; Scrub; Woodland	
<i>Viola purpurea</i> ssp. <i>quercetorum</i>	A2	OhlnP				X	Grassland; Scrub	
<i>Viola sheltonii</i>	A2	OhlnP				X	Woodlands	
<i>Vulpia microstachys</i> var. <i>confusa</i> (var. <i>pauciflora</i> is more common)	A2	SunIP				X	Dry Open Slopes; Grassland; Sand or Sandstone; Scrub	

NOTE: Plant species followed by "(?)" have taxonomic or distribution problems and it is not clear if they occur here.

Dates indicated for historical species refer to last known record in the Alameda-Contra Costa Counties area.

**Explanation of Ranks**

**\*A1 or \*A2:** Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies or by the state level of CNPS.

**A1x:** Species previously known from Alameda or Contra Costa Counties, but now believed to have been extirpated, and no longer occurring here.

**A1:** Species currently known from 2 or less regions in Alameda and Contra Costa Counties.

**A2:** Species currently known from 3 to 5 regions in the two counties, or, if more, meeting other important criteria such as small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

**Explanation of Location Site Codes**

AlaCRSv - Alameda Creek in Sunol Valley, between Geary Rd. and San Antonio Reservoir

CivraRd - Calaveras Rd. from Geary Rd. to Alameda/Santa Clara boundary

CivraRsvr - Calaveras Reservoir or nearby

MesaPk - Mission Peak Regional Park

Nls - Niles Canyon (Note: Specific sites are unknown for most of these species and it is not clear if they occur on SFPUC property or not)

Attachment to COMMENTS ON WSIP REVISE

**Explanation of Location Site Codes (cont.)**

OhlnAr - Ohlone Area near Ohlone Regional Wilderness

OhlnP - Ohlone Regional Wilderness

PlataRdg - Pleasanton Ridge Regional Park

SFWDAr - San Francisco Water District Property in Alameda County

SFWDPlata - San Francisco Water District Property near Pleasanton Ridge

SFWDSunl - San Francisco Water District Property near Sunol Regional Wilderness

SanAntoRsvr - San Antonio Reservoir or nearby

SunlAr - Sunol area (unknown if refers to town, park, or valley)

SunlP - Sunol Regional Wilderness - Flag Hill

SunlMg - Sunol Regional Wilderness - Maguire Peaks

SunlOh - Sunol Regional Wilderness - Camp Ohlone area

SunlP - Sunol Regional Wilderness

SunlT - Town of Sunol

SunlVy - Sunol Valley

Attachment to CNPS Comments on WSIP PEIR

## California Native Plant Society

East Bay Chapter

P.O. Box 10000, Berkeley, CA 94701

May 4, 2006

Alameda County Board of Supervisors  
1221 Oak Street  
Oakland, CA 94607

RE: Support for the proposed moratorium on development in riparian areas in Alameda County - Board of Supervisors meeting on May 4, 2006 - Item #16.

Dear Esteemed Alameda County Supervisors:

The East Bay Chapter of CNPS (EBCNPS) thanks to Board of Supervisors for hearing our comments regarding the proposed moratorium on creek development in the unincorporated areas of Alameda County. The California Native Plant Society is a non-profit organization of more than 10,000 laypersons, professional botanists, and academics organized into 32 chapters throughout California. The Society's mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

Our goal is to provide science-based information on the ecological significance of the existing streams and associated riparian corridors, highlighting the fact that the ecological significance of these stream systems is born from the connectivity between the active channel (blue-line stream), the riparian area, and their associated floodplains<sup>1</sup>. The protection of these significant areas requires a policy that will encompass and protect the entire stream system as initially promulgated and agreed upon in the Draft Environmental Impact Report (DEIR) entitled *Specific Plan: Riparian Areas Flood Plain Zoning*, written by the Alameda County Planning Department.

EBCNPS is concerned with the lack of regulatory compliance with the DEIR and the repercussions that may ensue due to the County's non-compliance. The DEIR outlines a three step process by which active channels (streams) and their associated riparian areas and vegetation, and the floodplain. These areas are to be prioritized, studied, and finally areas are to be designated as significant areas on the "Assessors Blocks" books. This plan was certified by the Alameda County Board of Supervisors on November 4<sup>th</sup>, 1976.

EBCNPS would like to present known ecological information supporting the ecological significance of 13 of the 29 creeks listed in the abovementioned certified DEIR. The following creeks have known to have significant ecological value which may include 1) rare vegetation communities, 2) federally protected species, or 3) species

<sup>1</sup> Robert J. Naiman, Henri Decamps, and Michael Pollock. 1993. The Role of Riparian Corridors in Maintaining Regional Biodiversity. *Ecological Applications*, (3) 2, pp. 209-212

12.4-29

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Attachment to CNPS Comments on WSIP PEIR

## California Native Plant Society

protected under CEQA<sup>2</sup>. Although precise surveys and designations are the responsibility of the county, the CNPS vegetation team, led by California Department of Fish and Game biologist Todd Keeler-Wolf, has determined the need for surveys as prescribed in the DEIR of 1976. Todd Keeler-Wolf is the author of definitive methods for vegetation community identification<sup>3</sup> that have been adopted and/or utilized by California State Parks and the National Park Service among others, and his expertise in this area is well recognized. Creeks are listed in alphabetic order within the three designations of concern promulgated by CNPS: Creeks and riparian areas with known significant ecological value with regulatory protection, Creeks and riparian areas with high probability of having ecological significance and regulatory protection, and Creeks and riparian areas which require surveying in order to determine their ecological significance (CNPS does not have enough information to comment on these creeks).

### Creeks and riparian areas with known significant ecological value with regulatory protection

**Alameda Creek** - Alameda creek is a high priority, particularly upstream from the gravel mines near the Hwy 680 crossing. A large stand of sycamores occurs between the gravel pits and Welch Creek Rd. Good riparian and associated upland watershed vegetation and habitat up Welch Creek and other tributaries of Alameda creek above the gravel pits and into Sual Regional Wilderness. This includes the Sycamore grove along San Antonio Creek both above and below San Antonio Dam. The portion of Alameda creek meandering through the Sual area and Niles Canyon is of particular interest for Unusual and Significant species.

**Altamont Creek** - This drainage has some interesting springs and seeps with alkaline vegetation that is quite unusual for Alameda Co. Definitely some other wetland features exist in the vicinity of Brushy Peak (Brushy Creek drainage etc.). This drainage and Arroyo las Positas should be treated collectively here due to their hydrological and ecological connectivity. This drainage supports an abundance of Alkali vegetation communities and *Atriplex* spp. such as *A. depressa* and *A. joaquiniana* as well as *Centromadia parryi* ssp. *condonii*. Areas of vegetation communities dominated by *Allenrolfea occidentalis* are also present.

**Arroyo Mocho** - A fine stand of sycamores on exists in the lower reaches of the stream. Excellent watershed values and good riparian in upper reaches above junction of del Valle Rd and Mines Road make this is one of the most biodiverse watersheds in Alameda Co. Serpentine soils and associated flora of the Mines Road portion of this drainage are especially sensitive for reasons of both serpentine communities and species.

**Arroyo las Positas** - Please see comments on Altamont Creek and its associated flora. Additionally, potential areas of vernal pools (vernal pool associates) may be present

<sup>2</sup> Lake, Dianna. 2004. *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*. Seventh Edition. East Bay Chapter, California Native Plant Society, Sacramento, CA.

<sup>3</sup> Sawyer, John O. and Todd Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, CA

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outside of the top-of-bank of this drainage, especially in areas of private land that haven't been surveyed.

**Arroyo del Valle** - Near south Livermore this drainage supports a large grove of *Platanus racemosa* (a sensitive natural community<sup>3</sup>). A majority of this community is located within Sycamore Grove Park and is protected but a small amount of this community may extend outside of the park. Although sycamore grove below the dam has suffered as a result of summer release from the reservoir, the sycamore stand at Sycamore Grove park is still viable and much of the drainage above the Reservoir ranging south to Eylar Mountain is diverse and largely unspoiled.

**Collier Canyon** - Much private, un-surveyed land exists there they may support species found within the riparian corridor. Suitable habitat for alkaline vegetation communities and CEQA-protected species such as *Centromadia* spp. and *Atriplex* spp. are present.

**Corral Hollow Creek** - Interesting riparian and northern range limits of several species including Desert Olive (*Frosteria pubescens*) along this creek. This creek is probably the best example of an "east-side" San Joaquin River tributary in the county. Additionally, its tributaries are key here for Unusual and Significant species of both plants and animals (notably reptiles).

**Tassajara Creek** - The upper drainage in Contra Costa Co. is a high quality stream system. Riparian woodland is present in the lower portion (constituted of oaks and willows). However, probably heavy fragmentation and development pressure affects this creek. Also, alkaline sensitive natural communities and special status species here such as *Centromadia* spp. and *Atriplex* spp. are present.

**Creeks and riparian areas with areas ecological significance with regulatory protection requiring more inventory and study of specific significant plants and communities**

Collier Creek  
Crow Creek  
Cull Creek  
Palomares Creek  
San Leandro Creek  
Sinbad Creek

**Creeks and riparian areas which require surveying in order to determine their ecological significance (CNPS does not have enough information to comment on these creeks)**

Alamo Creek  
Arroyo de la Laguna  
Arroyo Seco  
Castro-Kelly Creek

31  
cont.

Attachment to CNPS COMMENTS ON NSIP PER

## California Native Plant Society

Castro Creek  
Cametano Creek  
Chabot Creek  
Collier Canyon Creek  
Cottonwood Creek  
Dublin Creek  
Eden Creek  
Hollis Canyon Creek  
Martin Canyon Creek  
San Lorenzo Creek  
Sulphur Creek  
Ward Creek

In addition to providing known information about creek habitats, a second list of CEQA-protected plant species for thirteen (13) of the listed creeks: *Alameda, Altamont, Arroyo Mochó, Arroyo las Positas, Arroyo del Valle, Collier Canyon, Corral Hollow, Cull, Palomares, San Leandro, San Lorenzo, Sinbad, and Ward*. Please find these lists attached as appendices to the end of this document. Creek lists are organized alphabetically.

EBCNPS recommends that the County of Alameda Board of Supervisors adopt the presented moratorium on development in all areas delineated and described in the DEIR of 1976. EBCNPS recommends that the moratorium be enacted with the following conditions: a) the moratorium will restrict any new development in the areas delineated by the adopted DEIR: blue-line, riparian, and floodplain areas, and b) the moratorium be enacted for an indefinite period of time until Alameda county comes under compliance. Until further study can be conducted, and the adopted plan be enacted, the County of Alameda is in a state of non-compliance which may result in serious repercussions for both the environment and the people it serves.

Thank you for the opportunity to participate in this important proceeding and helping Alameda County maintain its commitment to environmental sustainability. If you have any questions, please contact me at (510) 734-0335

Sincerely,

Lech Naumovich  
Conservation Analyst  
California Native Plant Society  
East Bay Chapter

31  
cont.

Attachment to Comments by CNPS ON WSIP P&IR  
**California Native Plant Society**

**Rare and Unusual Plants of Alameda Creek**  
 (Statewide Rare Plants in Upper Case)

East Bay Rank	Species	
A1	<i>Anemone multiflorum</i>	
A2	<i>Agrostis eximia</i> (A. formosa is more common)	
A1	<i>Artemisia discunculus</i>	
A2	<i>Carex nebrascensis</i>	
A2	<i>Carex nudata</i>	
A2	<i>Carex senta</i>	
A1	<i>Ceris occidentalis</i>	
A2	<i>Chrysanthemum nauseosum</i> ssp. mohavensis	
*A1	<b>CLARKIA CONCINNA SSP. AUTOMIXA</b> (ssp. concinna is more common)	
A2	<i>Clarkia purpurea</i> ssp. viminea (ssp. quadrivulnera is more common)	
A1	<i>Codrus glabrata</i>	
A2	<i>Cuscuta californica</i> var. californica	
A2	<i>Elychis parishii</i>	
A1	<i>Eriogon reductus</i> var. angustatus	
A2	<i>Eriogon angulosum</i>	
A2	<i>Eriogon bacculatum</i> var. foliosum	
*A1	<b>ERIOGONUM TRUNCATUM</b>	31
*A2	<b>ERIOGONUM UMBELLATUM VAR. BAHIFORME</b>	cont.
A2	<i>Festuca elmeri</i>	
A2	<i>Gnaphalium canescens</i> ssp. microcephalum	
*A2	<b>HELIANTHUS CASTANEA</b>	
A1	<i>Hesperis prozona</i> var. rudis	
A1	<i>Hesperis prozona</i> var. scaberrima	
A2	<i>Holcus macrostachya</i>	
A2	<i>Hydrocotyle verticillata</i>	
A1	<i>Hydrocotyle formosum</i> var. scouleri	
*A2	<b>JUGLANS CALIFORNICA VAR. HINDSII</b>	
*A2	<b>LATHYRUS JEPSONII VAR. JEPSONII</b>	
A2	<i>Lespedeza oryzoides</i>	
A1	<i>Linanthus douglasii</i> ssp. douglasii	
*A2	<b>LINANTHUS AMBIGUUS</b>	
A2	<i>Lotus strigosus</i>	
A1	<i>Lotus bicolor</i> var. tridentatus (var. umbellatus is more common)	
A1x	<i>Mentzelia laeviculis</i>	
A2	<i>Mentzelia lindleyi</i>	
A2	<i>Nicotiana pilosus</i>	
A2	<i>Nicotiana quadrivalvis</i>	
A2	<i>Oreocampe villicola</i>	
A2	<i>Oxalis albicaulis</i> ssp. pilosa	
A2	<i>Parthenocissis californica</i>	
A2	<i>Phacelia tanacetifolia</i>	
A2	<i>Pinus coulteri</i>	
A2	<i>Polygonum hydropiperoides</i>	
A1	<i>Ribes aureum</i> var. gracillimum	
A2	<i>Rorippa curvisiliqua</i>	

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Attachment to Comments by CNPS ON WSIP P&IR  
**California Native Plant Society**

A2	<i>Ranunc maculatus</i>	
A2	<i>Ranunc salsifolius</i> var. denticulatus	
A1	<i>Sally melanosopsis</i>	
A1	<i>Scutellaria alphocampyloides</i>	
A2	<i>Senecio flaccidus</i> var. douglasii	31
A1	<i>Spergularia erectum</i> ssp. stoloniferum	cont.
A2	<i>Stachys albigoides</i> var. albigoides (var. rigida is more common)	
*A2	<b>STREPTANTHUS ALBIDUS SSP. PERAMOENUS</b>	
A2	<i>Tonella tenuis</i>	

Attachment to CNPS Comments on WSIP PEIR  
**California Native Plant Society**

Rare and Unusual Plants of Arroyo Mocho  
 (Statewide Rare Plants in Upper Case)

East Bay Rank	Species	
*A2	ACANTHOMINTHA LANCEOLATA	
A1	Achnatherum lemmonii	
A2	Allium amplexans	
A1	Allium bolanderi var. bolanderi	
*A1	ALLIUM SHARSMITHAE	
A2	Allophyllum divaricatum	
A1	Arctostaphylos multiflorum	
A2	Aquilegia eximia (A. formosa is more common)	
A1	Artemisia dracunculoides	
*A1	ASTRAGALUS BREWERI	
A1?	Astragalus oxyphyllus?(A. asymmetricus is more common)	
*A1	BALSAMORHIZA MACROLEPIS VAR. MACROLEPIS	
A2	Berberis aquifolium var. dicyota	
A1	Calochortus invenustus	
A2	Chrysanthemum truncatum	
A2	Chytocarpus malacophylla ssp. pedicellata	
A2	Chytocarpus graciliflora	
A2	Cinetus nudus	
A2	Crotalaria spaldingii ssp. martinii	31
A2	Crotalaria lucodermis	cont.
A1	Chaenactis labriuscula var. glabriuscula	
A1	Chaenactis labriuscula var. megacephala	
A2	Chaenactis covillei	
A2	Chaenactis intortexta	
A2	Chrysanthemum newaeosus ssp. mohavensis	
*A1	CIRSIUM BONTINALE VAR. CAMPYLON	
*A1	CLARKIA BREWERI	
A2	Clarkia modesta	
A2	Clypeola gypsophilloides	
A2	Collinsia parviflora	
*A1	COREOPSIS HAMILTONII	
A1	Cotula glabrata	
A1	Crotidium multicaule	
A1	Crotinia cleveandii	
A2	Crotinia torreyana	
A2	Delphinium californicum ssp. californicum	
*A1	DELPHINIUM CALIFORNICUM SSP. INTERIUS	
*A1	DELPHINIUM GYPSOPHILUM SSP. GYPSOPHILUM	
A1	Delphinium parryi ssp. parryi	
A1	Delphinium pinnata ssp. menziesii	
A2	Dicentra chrysantha	
A2	Eleocharis parishii	
A2	Eriogonum luteolum var. luteolum	
*A2	ERIOPHYLLUM JEPSONII	
A2	Echastoliza caespitosa	
A2	Festuca ciliaris	
A2	Fortiiera pubescens	

12.4-32

Attachment to CNPS Comments on WSIP PEIR  
**California Native Plant Society**

*A2	FRITILLARIA AGRESTIS	
*A1	FRITILLARIA FALCATA	
A1	Garrya condonii	
A1	Garrya fremontii	
A1?	Helianthella californica var. californica(?)	
A1	Heterotheca orgona var. scaberrima	
A2	Hicoria macrostachya	
A1	Holopogon filipes	
A2	Hydrophyllum occidentale	
A1	Isopyrum stipitatum	
A2	Koeberlinia breviflora var. breviflora	
A2	Layia galioides	
A1x	Lepidospartum squamatum (historical-1933)	
A2	Lewisia rediviva var. rediviva	
*A2	LINANTHUS AMBIGUUS	
A2	Linanthus dichotomus	
A2	Lithophragma parviflorum var. parviflorum	
A2	Lomatium caruifolium var. caruifolium	
A2	Lomatium nudicaule	
A1	Lobelia crassifolia var. crassifolia	
A1	Lupinus bicolor var. tridentatus (var. umbellatus is more common)	
A2	Mimulus lindleyi	
A2	Mimulus campestris	31
A1?	Mimulus arctosaceus(?)	cont.
A1	Mimulus bolanderi	
A2	Mimulus douglasii	
A2	Mimulus douglasii	
A1?	Mimulus flexibundus(?)	
A1	Mimulus kollogii	
A2	Mimulus pilosus	
A2	Mimulus pilosus	
A1	Mimulus ranianii	
*A1	MONARDELLA ANTONINA SSP. ANTONINA	
A2	Nicotiana quadrivalvis	
A2	Orbanche bulbosa	
A1	Pedicularis californicum	
A2	Pedicularis californica	
A2	Phacelia breweri	
A2	Phacelia divaricata	
A1x	Phacelia egana	
A2	Phacelia malvifolia	
A2	Phacelia ramosissima var. ramosissima	
A1	Phacelia ranianii	
A2	Phacelia tanacetifolia	
A2	Pinus coulteri	
A2	Plagiobothrys tenellus	
A2	Quercus durata var. durata	
A1	Ribes aureum var. gracillimum	
A2	Ribes quercetorum	
A2	Rumex salicifolius var. denticulatus	
A1	Salix breweri	
A1	Scirpus kolobopsis	
A1	Scutellaria aphocampyloides	



Diana Sokolove <wsip.peir.comments@gmail.com>

Attachment to CAPS COMMENTS ON WSIP PEIR  
**California Native Plant Society**

**CNPS-Santa Clara Valley response to draft PEIR**

Kevin Bryant <mtngreen17@verizon.net>  
 To: wsip.peir.comments@gmail.com

Mon, Oct 1, 2007 at 4:10 PM

A2	Senecio flaccidus var. douglasii	
A1?	Stachys bullata (?)(S. ajugoides var. rigida is more common)	
A1	Streptanthus breweri var. breweri	
A1	Stylocline gaphaloides	
A2	Tonella tenella	31
A1	Viola douglasii	cont.
A2	Viola purpurea ssp. quercetorum	
A2	Viola sheltonii	
A2	Vulpia microstachys var. confusa (var. pauciflora is more common)	
A1	Zizidenus venosus var. venosus (Z. fremontii is more common)	

October 1, 2007

Paul Maltzer, Environmental Review Officer

San Francisco Planning Department

1650 Mission Street, Suite 400

San Francisco, CA 94103

Re: SFPUC Water System Improvement Program ("WSIP"), Program EIR

Dear Mr. Maltzer,

I am writing to you on behalf of the Santa Clara Valley Chapter of the California Native Plant Society. We represent a diverse cross section of citizens concerned about the conservation, protection and restoration of native plants and their habitat in this state. We have reviewed the draft PEIR ("the Plan") issued by your department, and have several concerns about it.

Inadequate Level of Detail

From an overall perspective, we find the PEIR lacking sufficient detail and analysis to be able to support its own conclusions of the future needs of the regional water system, the environmental impact of the proposed projects, and what it proposes to be as appropriate mitigation measures. In many instances, the Plan acknowledges its possible lack of sufficient detail or completeness, and indicates that a subsequent Project

12.4-33

Report will be complete, addressing all concerns.

specifically identify the mitigations anticipated, and verify their status as new mitigations, or if piggybacking or in any way related to a pre-existing mitigation, what the new mitigation effort is arising from this Plan.

There are twenty-two WSIP Facility Improvement Projects listed in Table S.2. As of the final date of the public comment period for this PEIR, the SFPUC has only published NOPs/EIRs for nine of the Projects. The Plan's lack of detail and reliance on Project EIRs that are unavailable to the public at this time, make it impossible for the public to determine the validity of the impact analysis and its related mitigation measures provided in the Plan. We urge the SFPUC to timely publish all twenty-two projects, so they can be analyzed together, in a more coherent context. We also request that the commission provide local work sessions for each project, in the geographical areas affected by the projects.

01  
cont.

Several of the mitigations presented lack any detail as to what the mitigation would be. A few examples cited below from Table S.4 exemplify this:

Measure 4.6-1a, Wetlands Assessment

"Wetland scientist will determine whether wetlands could be affected...and if so, perform a wetland delineation and develop mitigation."

Flawed Analysis of Demand Needs and Underestimate of Conservation Measures

We share the goals stated in Table S.1, and recognize the merit of maintaining high water quality and delivery reliability, providing for seismic and structural reliability, sustainable and cost effectiveness, and meeting customer needs. But, we are troubled by the analysis offered regarding the water supply needs and measures to meet them.

02

Measure 4.6-3b, Standard Mitigation Measures for Key Special-Status Plants and Animals

"Implement measures to reduce impacts on key special-status species."

We do not believe that adequate consideration has been given to conservation measures. The PEIR substantially overestimates water demand in Santa Clara County because of faulty assumptions and flawed data sources. The total population of users is a biased and uses an invalid sampling method, resulting in an overstatement of future needs. The analysis also fails to take into consideration the reductions in demand achievable by conservation. We endorse the critiques of the demand analysis by the Pacific Institute [1] and the Loma Prieta Chapter of the Sierra Club. If this Plan is implemented as proposed it will have a substantial growth-inducing effect on Santa Clara County resulting in increased pressure on open space and demand for services and infrastructure, which are in no way covered by the proposed mitigations. We strongly urge that this PEIR be re-drafted reflecting more realistic projections of growth needs and conservation potential based on the findings cited above of the Pacific Institute.

03

The HRP described its efforts in its NOP as the "coordinated and consolidated approach to compensate for habitat impacts" resulting from this Plan. Where, for example would the HRP's seventy-five acres of serpentine grassland be found? Would this be an acquisition of new land? The Santa Clara County HCP/NCCP is proposing acquiring thousands of acres of serpentine grassland in their county as mitigation for takes of serpentine endemics. How will this affect any contemplated acquisition?

The information on site impacts is equally vague. There is better data currently available from several sources which should be included and analyzed in the DEIR. Data is being developed by the Upland Habitat Goals project of the Bay Area Open Space Council which should be consulted. In the area of the Calaveras Reservoir data from the CNDDDB show a population of most beautiful jewelflower (*Streptanthus albidus* ssp. *peramoenus*) in the Arroyo Hondo, (R. Preston, 2003). The habitat for the callippe silverstreak butterfly, the Johnny-jump-up (*Viola pedunculata*) larval plant was mapped by R. Arnold (ca 2005) and provided to the SFPUC.

Insufficient Impact Analysis and Mitigation Measures

Mitigations to compensate for the WSIP are proposed, by the Habitat Reserve Program [2] ("HRP") to take place in advance of actual analysis of impacts. And these have insufficient site specific data on which sound decisions can be made.

04

Diversion of 25 million gallons per day from the Tuolumne River

Data on impacts at specific sites must be presented and analyzed and mitigations designed which are appropriate and adequate to the expected project consequences. The information for both mitigations and impacts is far too sketchy for this document. It is not clear from the Plan where some of these mitigations would be, or if they are feasible, or perhaps already completed by some other agency. The Plan should

05

We do not support this measure. The impact on the Tuolumne River is not sufficiently known to offer a diversion plan of 25 million gallons per day. There has not been a comprehensive study of the Tuolumne River in over fifteen years, and several sections of the proposed diversion lack strong scientific documentation. While the SFPUC began a study of the impact on the Tuolumne River in 2006, several years of study are required to provide sufficient data and analysis of the impact. Absent further information as to the environmental impact of this substantial change to the Tuolumne River, we find the Plan deficient.

12.4-34

04  
cont.

05

In total, our organization believes that this proposed DEIR is fundamentally flawed for the reasons cited above. We think that the cumulative impact of the twenty-two WSIP projects will be staggering, significantly more environmentally harmful in the aggregate than this Plan envisions. In the attached Appendix A, we have identified several specific deficiencies in this Plan. We do not consider this an exhaustive list, but merely representative of the many inadequacies of the Plan. We urge your department to reject this Plan as it is currently drafted and send it back to the SFPUC for significant revisions.

06

Regards,

Kevin Bryant

President, Santa Clara Valley Chapter

California Native Plant Society

Cc: Pacific Institute

Sierra Club, Loma Prieta Chapter

Appendix A

Specific Examples of Matters of Concern

I. Inadequate Level of Detail

a. Calaveras Dam Replacement, though deferred due to land and water rights negotiation, is included as integral part of PEIR and Habitat Reserve Program but, without specifics on extensive excavation of Calaveras Creek and watershed, its proposed advance mitigation compounds cumulative impacts to vegetative habitat.

07

b. Pilarcitos Creek's emergency diversions to San Andreas and Crystal Springs Reservoirs are not detailed as to sustainable stream flows needed for 947-acre California endangered and federally threatened Marbled murrelet critical habitat.

08

c. This PEIR in legend on Figure 5.7-4 PP-1a states "Peninsula Watershed Habitat Conservation Plan (sub-project of Alameda WMP)" which is only reference to a doubling up on biological resource evaluation in two

09

distinctly different watershed that has not been mentioned before in scoping documents or in Peninsula WMP. Is this an accurate statement of plans for an 'under the radar' environmental review?

09 cont.

II. Flawed analysis of Demand Needs and Under Estimate of Conservation Measures

a. There appears to be bias in data sources used in 'demand needs' analysis, and with an invalid sampling of total population users it overstates future water needs.

10

b. Figure S.3 Annual Average Historical and Projected Future Customer Purchase Requests illustrates this critical difference between water usage by SFPUC Retail Water Customers and Wholesale Water Customers

11

c. Lack of substantiation of need for water use increases seems evident in requests by Alameda County Water District, Hayward, City of Santa Clara, Milpitas, City of San Jose (North), and City of East Palo Alto, where recycled water is readily available for anticipated shoreline development. Reduced water treatment plant outflows would result in less salt marsh conversion, and more in 40 mgd increase.

12

d. Upstream conservation capabilities exist for Stanford University who requests a 76% increase and Purissima Hills Water District a 51% increase. Purissima Hills Water District with 2100 connections is credited in PEIR with 94,555 residences in its 2000 sphere of influence, when it services part of Town population of 7902.

13

III. Insufficient Impact Analysis and Mitigation Measures

a. CEQA Law and Guidelines #15126 requires that all phases of a project must be considered when evaluating its impact on the environment and this includes c.) mitigation measures proposed to minimize the significant effects.

14

b. Cumulative Impacts, Mandatory Findings of Significance and Tiering are CEQA constraints that are not satisfactorily adhered to in this all-encompassing project.

15

c. In particular this entire PEIR is predicated on diversion of 25 mgd of Tuolumne River water from its upper watershed which may, as seen in 'Significant Effects' of CEQA "conflict with adopted plans and goals of community where it is located and interfere substantially with movement of any resident or migrating fish or wildlife species". The Tuolumne and San Joaquin Rivers have plans.

16

<sup>14</sup> A Review of the San Francisco Public Utilities Commission's Retail and Wholesale Customer Water Demand Projections (2007).

12.4-35



Paul Maltzer  
Environmental Review Officer  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103-2479

October 15, 2007

**RECEIVED**

OCT 18 2007

CITY & COUNTY OF S.F.  
PLANNING DEPARTMENT  
M E R

Dear Mr. Maltzer,

In consideration of the extension of response time for comments upon the San Francisco Public Utility Commission's Water System Improvement Program (WSIP) Draft Programmatic Environmental Impact Report (PEIR), please accept an addendum to my attachment to the California Native Plant Society, Santa Clara Valley Chapter's letter of October 1, 2007, in regards substantive concerns of inadequacy in the PEIR.

~ A plan to increase Calaveras Reservoir capacity with the Calaveras Dam Replacement the PEIR states on page 9-118 has been rejected by SFPUC due to time constraints in satisfying DSOD requirements, but is dam replacement height to be at a level that will accommodate this future enlarged reservoir and if so, when can public input be made? Then, if present reservoir level is to remain, why are not sediment basins incorporated around Calaveras Reservoir (as exist on Crystal Springs and San Andreas Reservoirs) to extend life of reservoir capacity and create sites for feasible wetlands mitigation? Proposed mitigation associated with Calaveras Dam in regards recontouring streams, removing instream grade structures and natural (erosion controlling) habitats such as Coyote Bush, is to be geomorphologically engineered on existing stream flow data? Revegetation of restored stream channels based on historic hydrology is not proposed?

01

~ Pilarcitos Creek and Pilarcitos Reservoir impacts due to diversions to Crystal Springs and San Andreas Reservoirs are evaluated as less than significant without addressing environmental degradation of the 947-acre critical habitat of the Marbled murrelet, a California endangered and federally threatened species. This small seabird feeds at sea but nests "inland in mature conifer forests with open-crown canopies such as Douglas fir, western hemlock, Sitka spruce, coastal redwood, and mountain hemlock forests". Pilarcitos Creek flows through length of this critical habitat between Pilarcitos Lake and Stone Dam so can alteration, diminution or seasonal cessation of this streamflow so degrade health of the conifer forest as to impact critical Marbled murrelet habitat? Can PEIR provide model of data on amounts and timing of Pilarcitos flow diversions? Is there an evaluation of impacts to Half Moon Bay's groundwater basin as a result of upstream Pilarcitos Creek diversions? In drought will this cause saltwater intrusion? As treated water is stored in Crystal Springs and San Andreas Reservoirs, will transfer of this water to Pilarcitos Reservoir, as reserve, affect water quality to a degree that might impact critical habitat, native grasses and wetlands or special status species?

02

~ Is PEIR legend on Figure 5,7-4 PP-1a accurate when it states "Peninsula Watershed Habitat Conservation Plan (sub-project of Alameda WMP)"? Not only are these two watersheds distant geographically, but they are distinctly different biological regions. What mention of this is referenced in Peninsula Watershed Management Plan DEIR?

03

Much of Peninsula Watershed is a designated California Department of Fish & Game Refuge and as such qualifies for special level of conservation practices and protection. Surrounded by State, County and Open Space District parkland it provides continuity of wildlife corridor and high caliber vegetative habitat which needs to be accurately surveyed or its integrity will be diminished if not lost. Please reference the grassland vegetation designations as detailed by Toni Corelli, Rare Plant Botanist, in comment on this PEIR and with supporting maps and California Native Species Field Survey of Lessingia arachnoidea occurring throughout serpentine bunchgrass grassland between Crystal Springs Reservoir and #280. If this area is slated for high disturbance, could grassland specialists of our Native Plant Society collect seeds or salvage plantings? Can this PEIR confirm where mitigation serpentine grassland acreage is to be found? Will SFPUC provide alternatives to joining Peninsula and Alameda watershed HCP's?

04

~ Then, analysis of cumulative impacts resulting from increased water supply should include San Francisco Bay saltmarsh conversion from increased sewage plant outflow, an increase in flood hazards (from development runoff from impervious surfaces) to low lying and shoreline communities, and a loss of open space? Growth inducement potential in foothills and in higher density shoreline development would acerbate both these scenarios, as would predicted effect of global warming on rising Bay tide levels? Is State Department of Water Resources review mandated for evaluation of base data?

08

~ Recycled water use is way behind projections in areas such as North San Jose and East Palo Alto should place that as an option before considering use of groundwater.

09

~ In Volume 4 of 5, Page 6-5 SFPUC Construction Methods 8. Biological Resources: mentions that the biologist would carry out a site survey by walking or driving over project site to note general resources and presence of habitat for special status species. Is this survey protocol acceptable to California Department of Fish & Game? We do urge SFPUC to conduct surveys on foot and over a representative period of seasons and in wet and dry years. If they cannot conduct scientific surveys due to lack of staff or cost of consultants CNPS might field volunteers to assist project site assessment. As so much of terrain to be impacted by this Hetch Hetchy upgrade is pristine or at least so long undisturbed as to be an exceptional biological resource, could special BMP's be mandated for cleaning of boots and any construction equipment for project? Can special BMP's be instituted to reduce all possible introduction of invasives?

05

~ Costs of alternate water supply sources such as desalination are almost prohibitive and when factored into general public's water bill (if caused by waste and careless consumption by privileged citizenry) can cause undue hardship. San Francisco's City Charter has as mandate (2) Establish equitable rates sufficient to meet and maintain operation, maintenance and financial health of the system: (7) Develop and implement a comprehensive set of environmental justice guidelines for use in connection with its operation and projects in the city. When San Francisco citizens approved bond money to upgrade SFPUC Hetch Hetchy system didn't they intend to receive equitable rates?

10

City Charter mandate (4) is to 'Protect and manage lands and natural resources used By SFPUC to provide utility services consistent with applicable laws in an environmentally sustainable manner.' Please take this mandate to heart and do not 'go lite' on evaluating impacts to biological resources. If time permitted I could cite many instances in the PEIR which do not fully reflect anticipated impacts to these resources.

11

~ In regards Crystal Springs Reservoir, modified operation to manage inundation levels, as discussed in Section 5.5, it is preferred alternative if reservoir levels are adjusted to preserve the oak woodland habitat (as achieved prior to 1983) and not drown wetlands and request analysis of cumulative impacts of 'treated reservoir' waters on vegetation. Where would oak woodland mitigation acreage be reserved and will it be one for one? What impact will raised water levels have on sediment basins sited around reservoirs?

06

SFPUC lands provide, to a large degree, a last frontier of unimpacted natural habitat. Please avail yourselves of all possible private volunteer assistance in preserving some vestige of this original California landscape.

12

~ Flawed analysis of Demand Needs and Under Estimate of Conservation Measures is a critical element of PEIR and support data for assumptions must be given reevaluation? Please review legislative mandates that show water conservation is a State level issue; AB325, AB1881, and AB2717 clearly support 'water smart landscapes' for California.

07

Thank you for your kind consideration of these concerns.

*Libby Lucas*  
Libby Lucas, Conservation  
Santa Clara Valley Chapter  
California Native Plant Society  
174 Yerba Santa Ave., Los Altos, CA 94022

~ Communities listed as requesting sizable water supply increases should be questioned for some substantiation of need and for documentation of water conservation efforts. Can data for these water supply requests be forwarded to State for verification? This is a consideration not only in regards to submitted landscape plans and ordinances, but State Water Resources has base data on public and private wells permitted in area.

~ Upstream conservation reservoirs and underground water tanks are essential elements of SFPUC facilities but shouldn't emphasis be placed on customers and water retail contractors incorporating these backup supply capabilities into their community plans?

12.4-37

Willis L. Jepson Chapter  
California Native Plant Society  
Serving Solano County

SI\_CNPS-WLJ



October 1, 2007

Mr. Paul Maltzer  
Environmental Review Officer, WSIP PEIR  
San Francisco Planning Department  
1650 Mission Street, Suite 400,  
San Francisco, CA 94103  
[wsip.peir.comments@gmail.com](mailto:wsip.peir.comments@gmail.com)

**RE: San Francisco Public Utilities Commission WSIP DEIR**

Dear Mr. Maltzer:

The Willis L. Jepson Chapter of the California Native Plant Society (Solano County) appreciates the opportunity to comment on the *Water System Improvement Project (WSIP DEIR)*. The California Native Plant Society (CNPS) is a non-profit organization of more than 10,000 laypersons, professional, and academic botanists organized into 32 chapters throughout California. The mission of the CNPS is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

The proposed WSIP asks for the removal of an additional 25 million gallons of water per day (mgd) from the already impacted Tuolumne River. This river is an important natural resource which is home to many native plants and animals. Withdrawal from the river would take place in the Sierra Nevada in the upper watershed where it magnifies the primary impacts upon the riparian communities at the source. But the impacts extend to the San Francisco/ San Joaquin Delta where freshwater flows are already heavily depleted. Further reductions in flow through the Delta have the potential to further destabilize this fragile ecosystem which has already been severely impacted. The Tuolumne is the largest remaining source of freshwater to the San Joaquin River. There are also impacts across San Joaquin, Alameda, Santa Clara, and San Mateo counties from individual components of the system, and planned water withdrawals from creeks in Alameda and San Mateo counties.

We oppose the withdrawal of additional water because we believe that a concerted effort towards water conservation should precede additional projects which would cause significant environmental impact. We believe it is completely feasible to conserve the equivalent of 38 mgd for 2.4 million people, or about 15 gallons per day per person with education, cooperation and creativity.

Thank you for your consideration of the above comments.

Sincerely,

Tedmund J. Swiecki, Ph.D.  
Conservation Committee Co-Chair  
Willis L. Jepson Chapter, California Native Plant Society  
[phytosphere@phytosphere.com](mailto:phytosphere@phytosphere.com)

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02

Mail - SFPUC Environmental Review of Tuolome River

Page 1 of 1

SI\_CRS



Diana Sokolove <[wsip.peir.comments@gmail.com](mailto:wsip.peir.comments@gmail.com)>

## SFPUC Environmental Review of Tuolome River

1 message

Meredith Wingate <[mwingate@resource-solutions.org](mailto:mwingate@resource-solutions.org)>

Wed, Sep 26, 2007 at 3:46 PM

To: [wsip.peir.comments@gmail.com](mailto:wsip.peir.comments@gmail.com)

Cc: Jake.McGoldrick@sfgov.org, gavin.newsom@sfgov.org, Brad Drda <[bradrd@gmail.com](mailto:bradrd@gmail.com)>


Hello,

Please find attached my letter to Mr. Paul Maltzer, Environmental Review Officer at the San Francisco Planning Department regarding environmental review of the San Francisco Public Utilities Commission's plan to take more water from the Tuolumne River.

Thx,

Meredith Wingate  
Director Clean Energy Policy Design and Implementation Program  
Center for Resource Solutions  
Ph: 415/561-2107  
[mwingate@resource-solutions.org](mailto:mwingate@resource-solutions.org)  
[www.resource-solutions.org](http://www.resource-solutions.org)

[CRS: Celebrating a Decade of Environmental Innovation](#)

 **ltr tuolome.doc**  
35K

September 26, 2007

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

Sincerely,

Meredith Wingate  
Brad Drda  
233 18<sup>th</sup> Ave.  
San Francisco, CA 94121

CC:  
Supervisor Jake McGoldrick  
Mayor Gavin Newsom

Dear Mr. Maltzer:

Your environmental review of the San Francisco Public Utilities Commission's plan to take more water from the Tuolumne River fails to adequately identify and address all of the environmental impacts to the River. I urge you to undertake additional studies before finalizing this document.

01

The Tuolumne River supports a diverse biological community and as the largest of three major tributaries to the San Joaquin River, the Tuolumne River contributes much-needed freshwater to the San Francisco Bay-Delta. About 60% of the Tuolumne River is already diverted for urban and rural uses, and increasing diversion will do further harm to the River. As part of its Water System Improvement Program (WSIP), the San Francisco Public Utilities Commission (SFPUC) has proposed diverting an additional 25 million gallons of water per day from the Tuolumne River.

02

Water conservation and efficiency measures are the cheapest, easiest, and least destructive ways to meet demand and extend supply. The SFPUC's "preferred alternative" ignores conservation, efficiency, and recycling measures that their own studies found could eliminate the need to divert more water from the Tuolumne by at least 74%. Per capita water use is projected to increase for wholesale customers, indicating they lack effective conservation programs.

03

Decreasing reliance on the Tuolumne is critical not only for protecting the health of the River, but also for preparing for the future uncertainty of the Sierra snowpack as a result of global warming. By pursuing a plan to divert additional water from the Tuolumne River, the SFPUC risks delaying their capital program, causing cost overruns and failing to increase the reliability of the water supply.

04

**Recommendations**

The SFPUC should re-evaluate its projections for future water demand and conservation potential in light of flaws and inaccuracies in their studies. You should conduct a study to determine the maximum technical potential for conservation and efficiency savings within the SFPUC service territory. Any additional demand should be met through increased investment in conservation, efficiency, and recycling. The SFPUC should adopt a policy of reducing diversions from the Tuolumne River over time. A comprehensive watershed study should be completed to adequately assess the environmental impacts of the WSIP. I support the alternatives identified in your draft document that protect the Tuolumne River from new diversions. Only by ensuring that healthy amounts of water continue to flow into the Tuolumne River can we protect this irreplaceable natural treasure.

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Diana Sokolove <wsip.peir.comments@gmail.com>

Comments from CSERC

Brenda Whited <brendaw@cserc.org>  
To: wsip.peir.comments@gmail.com

Mon, Sep 10, 2007 at 11:35 AM

Central Sierra Environmental Resource Center  
P.O. Box 396  
Twain Harte, CA 95383

September 10, 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,

We at the Central Sierra Environmental Resource Center (CSERC) would like to emphasize our position in agreement with the views of the Tuolumne River Trust regarding the proposed Water System Improvement Program by the San Francisco Public Utilities Commission. We concur with the Tuolumne River Trust that there are immeasurable benefits to both wildlife and recreation in leaving the water in the Tuolumne River.

01

The Aggressive Conservation/Water Recycling and Local Groundwater Alternative is an excellent plan that should precede any additional diversion of water from the Tuolumne River. San Francisco lags behind other major metropolitan areas in water conservation, and with increased water conservation and recycling, San Francisco could potentially reduce consumption of water from the Tuolumne River rather than increase consumption. We encourage the SFPUC and citizens of San Francisco and surrounding counties to implement these conservation efforts before further degrading the already sensitive Tuolumne River habitat.

02

Thank you for taking the time to consider our comments. Feel free to contact CSERC if you have any further questions.

Sincerely,

Brenda Whited  
Staff Biologist

12.4-40



CLEAN WATER ACTION

October 1, 2007

Bill Wycko, Environmental Review Officer  
San Francisco Planning Department  
1650 Mission Street, Ste. 400  
San Francisco, CA 94103  
VIA FACSIMILE: (415) 558-6409

Re: WSIP Draft PEIR Comments – Case # 2005.0159E

Dear Mr. Wycko:

On behalf of Clean Water Action, I would like to add the following comments to those submitted in conjunction with Tuolumne River Trust and the Sierra Club.

Our organization submitted scoping questions in October 2005 which have not been adequately addressed in this document, specifically;

**There has been insufficient analysis of the ability of the program to meet current and foreseeable regulations.** The Stage 2 Disinfection Byproducts Rule, adopted concurrently with the Long Term 2 Enhanced Surface Water Treatment Rule, is neither mentioned nor analyzed in the document. If no system changes will be required to meet the new rule, that determination and the justification for it should be included in this document. However, the level of disinfection byproducts currently found in the system is not sufficiently low to warrant an assumption of compliance with the Phase 2 Rule.

01

**The impact of increased discharge to San Francisco Bay is not evaluated.** Most of the increased demand is projected to occur in the South Bay. Because there is less scouring and mixing in this portion of the Bay, water quality is already compromised to such an extent that current regulations require tertiary treatment of all discharges. The increased pollutant loading that can be anticipated as a result of the additional demand should be analyzed in this document.

02

Thank you for allowing us the opportunity to comment on this document.

Sincerely,

Jennifer Clary  
Water Policy Analyst



District 3 Democratic Club  
P.O. Box 330512  
San Francisco, CA 94133  
d3dc@hotmail.com

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RECEIVED AT CPC HEARING 9-20-07  
2008-0159E  
WATER SYSTEM IMPROVEMENT PROGRAM  
(SERRANO)



10/3/07

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

SI\_EcoCtr

RECEIVED  
OCT 09 2007  
CITY & COUNTY OF SAN FRANCISCO  
PLANNING DEPARTMENT

HEARINGS ON DRAFT PROGRAM EIR ON SFPUC WATER SYSTEM  
IMPROVEMENT PROGRAM

Thursday, September 20, 2007  
City Hall, Room 400

COMMISSIONERS, Tony Gantner, President, District Three Democratic Club.

Our Club is deeply concerned about any action taken by the PUC that would allow more water to be diverted from the Tuolumne River. We believe that: The Rights of the Environment are Equal to Human and Civil Rights, and that Compassion for the Environment is as Compassion for our Fellow Human Beings.

Within that belief system, the proposed diversions--on their face--are presumptively harmful to fisheries and sensitive riparian habitat. It is our understanding that the draft EIR released by the PUC does not properly identify and address the impacts of taking more water from the Tuolumne, and that such diversions would be for customers outside of San Francisco. We realize that growth projections for the Bay Area over the next generation are pressuring the PUC to allow these increased diversions--but the rights of--and compassion for--the environment must be acknowledged. There must be limits to growth's impact on the environment--conservation and recycling are one solution. In this City which can rightly be called the cradle of environmentalism, do not betray your heritage--the Tuolumne fisheries are as much entitled to healthy ecosystems as each of you is entitled to live in a clean and green urban environment.

Thank you.

Your environmental review of the San Francisco Public Utilities Commission's plan to take more water from the Tuolumne River fails to adequately identify and address all of the environmental impacts to the River. We urge you to undertake additional studies before finalizing this document. Only by ensuring that healthy amounts of water continue to flow into the Tuolumne River can we protect this irreplaceable natural treasure.

The Ecology Center is a membership-based ecological resource for the East Bay. One of our many functions is to bring pioneering sustainable living projects, such as the water-recycling greywater system at the Berkeley Eco House, to our members and the public as an alternative to increasing consumption.

We support the alternatives identified in your draft document that protect the Tuolumne River from new diversions. Requiring 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.

Conservation and recycling are the way of the future, in water as in other resources. Many other metropolitan areas have been able to reduce their water consumption even while growing, but the SFPUC projects Bay Area water demand to increase. The SFPUC's own studies found that conservation, efficiency, and recycling measures could reduce the need to divert more water from the Tuolumne.

Clearly the Bay Area could take advantage of more opportunities for water conservation and recycling than it does currently. Since water conservation and efficiency measures are the cheapest, easiest, and least destructive ways to meet demand and extend supply, conservation and development of recycling strategies is the only sensible route for meeting Bay Area water needs.

Sincerely,

Martin Bourque  
Executive Director  
(510) 548-2220 X 234

ENVIRONMENT · COMMUNITY · JUSTICE  
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telephone: 510.548.3333 fax: 510.548.2240 bfm@ecologycenter.org

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October 1, 2007

Mr. Paul Maltzer, Environmental Review Officer  
 San Francisco Planning Department  
 1650 Mission St., Suite 400  
 San Francisco, CA 94103.

Re: Environmental Defense comments regarding the Draft Program Environmental Impact Report on the San Francisco Public Utilities Commission's Water System Improvement Program

Dear Mr. Maltzer:

Environmental Defense appreciates the opportunity to comment on the Draft Program Environmental Impact Report (PEIR) for the San Francisco Public Utilities Commission's (SFPUC) Water System Improvement Program (WSIP).

The WSIP is a comprehensive program with two stated interrelated but distinct goals: (1) to repair and modernize the SFPUC's aging and seismically vulnerable infrastructure, and (2) to develop additional water supplies to meet anticipated future demands in the SFPUC service area.

Environmental Defense fully supports the timely completion of projects necessary to repair existing infrastructure and protect the SFPUC's water supply system from earthquakes or other disasters. These projects are critical to ensure the reliable delivery of water supplies to Bay Area communities and should be completed as soon as possible.

The appropriate formulation of additions to the SFPUC's water supply portfolio that meets anticipated future needs is less clear. Fortunately, future needs are developed gradually and the program to meet them need not be fully developed at this time.

Environmental Defense recommends that the Planning Commission pursue such a two-tiered approach that accommodates timely completion of infrastructure repair projects and a thoughtful deliberate approach to a water supply portfolio that meets anticipated future demand.

The remainder of these comments will focus on aspects of the SFPUC's water supply portfolio that should be considered, including not only items analyzed in the Draft PEIR but others as well.

Diversions from the Tuolumne River

The alternatives considered in the Draft PEIR include up to 35 million gallons per day in increased diversions from the lower Tuolumne River to the San Francisco Bay Area. While the

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ED Comments on Draft PEIR for SFPUC Water Supply Improvement Program  
 October 1, 2007  
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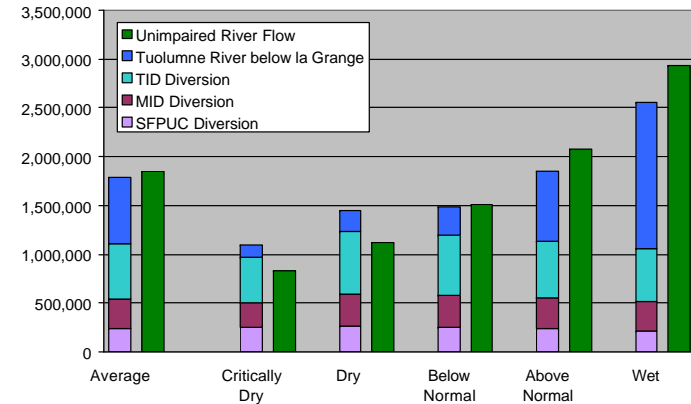
proposed increase might be considered only a small portion of overall Tuolumne flows, Environmental Defense believes that it is time to put water back into California's rivers and streams, especially those in the Central Valley and Bay Delta watershed, rather than take more water out.

Figure 1 below provides a graphical view of how Tuolumne River flows are managed, reflecting operations of the Turlock and Modesto Irrigation Districts and of the San Francisco Public Utilities Commission (under its "Unconstrained" alternative). Note that while the lower river retains 38% of its flows on average, in dry and critically dry years it retains only 14% and 12%, respectively, of its natural flow.

Environmental Defense concurs with the Draft PEIR that further dewatering the lower Tuolumne River would cause further harm to the river's health and make it more difficult for the river to support naturally reproducing Chinook salmon.

03 cont.

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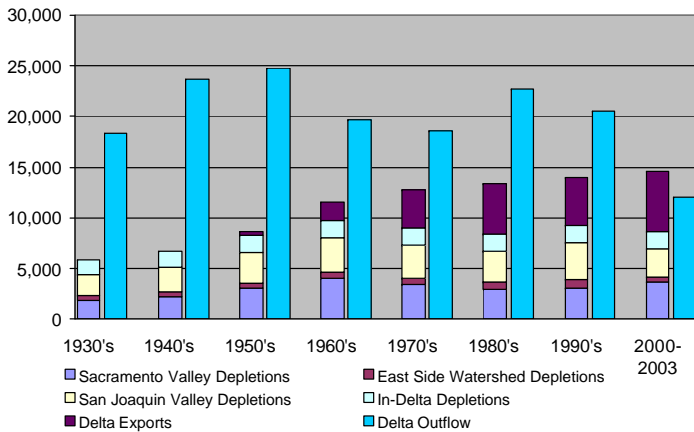


Additional diversions of water from the lower Tuolumne River would have impacts on the lower San Joaquin River and Bay-Delta estuary as well. The Delta's woes are well known, including the federal court ruling in late August that restricts exports at the State and federal pumps to prevent the extinction of Delta smelt. These new export restrictions are entirely due to increased flow requirements on two reaches of the lower San Joaquin River, specifically Old and Middle Rivers.

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If the Tuolumne River is further depleted, so too will be the lower San Joaquin River. Either Delta smelt and other pelagic fish will suffer, or State and federal contractors will be forced to give up water to accommodate the additional diversions on the Tuolumne River.

Figure 2 provides an overview of how development of water supplies in the Bay-Delta and Central Valley Watershed has increased over time. Environmental Defense believes it is time to reverse this trend and leave more, not less, water in our rivers.



Accordingly, Environmental Defense is pleased that the Bay Area Water Supply and Conservation Association has chosen to pursue an approach that would invest in agricultural conservation in the Central Valley. BAWSCA's plan would more than offset incremental diversions to meet demand in the Bay Area, allowing additional flows to be managed for the benefit of the lower river<sup>1</sup>. There is precedent for similar arrangements in other parts of California, including mechanisms for verifying that reduced consumptive use actually takes place. Such a program would meet anticipated needs in the Bay Area and improve conditions in the lower Tuolumne River and Bay-Delta as well.

<sup>1</sup> This approach is outlined in BAWSCA's staff memorandum, September 14, 2007. The memorandum and Environmental Defense's letter of support for this approach are attached.

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Lower Tuolumne Diversion

Environmental Defense supports the alternative considered in the PEIR that would install a diversion point on the lower Tuolumne River just above its confluence with the San Joaquin River, from which water would be diverted into the San Joaquin Pipelines. Such a diversion point would provide two principle benefits. First, it would increase flows and provide benefits to the health of the lower Tuolumne River. Second, it would provide the SFPUC important physical access to the lower Tuolumne River that would be indispensable in case access to its diversion point at Early Intake were rendered inoperable for any reason.

Such a diversion would need to be constructed so that it does not entrain fish. Presumably, a "gallery" under the river could be designed for this purpose. Additionally, this water would likely need to be filtered, either before being put into the San Joaquin Pipelines, or at the existing plant in Sunol. While it is understandable that the SFPUC may prefer not to add filtration capacity, doing so would add a level of water supply reliability that may well justify the cost.

Connection to the California Aqueduct

The Draft PEIR, in part citing the desire to avoid filtration, failed to consider a connection to the California Aqueduct (or Delta-Mendota Canal). The PEIR did consider, as described above, a lower Tuolumne River diversion point that would likely require filtration.

What makes sense, in terms of increased flexibility, is a filtration plant near the confluence of the Tuolumne and San Joaquin Rivers, which is also near the California Aqueduct. Combined, these facilities would add important diversity to the SFPUC system, which could, under some scenarios, avoid interruption of water supplies to 2.4 million people in San Francisco and other Bay Area communities.

To be clear, a physical connection to the California Aqueduct might only be used under emergency circumstances. It might never be used. There is no reason that the SFPUC should not rely on the high quality Tuolumne River for its imported water supply. The suggestion to connect the SFPUC to the California Aqueduct is not intended to mean that the SFPUC would rely on Delta supplies. It is a suggestion that the SFPUC could prevent potentially critical water supply outages by installing the physical capacity, along with institutional agreements with other parties as necessary, to access Delta supplies as backup in case Tuolumne supplies are not available or adequate.

Conservation / Water Use Efficiency

Environmental Defense supports aggressive urban water conservation programs. We have not closely followed the details of recent discussions of what is "feasible" within the SFPUC retail and wholesale service territories, but believe that the definition of feasibility should include the consideration that conserved water supplies help to protect the natural environment. We believe

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ED Comments on Draft PEIR for SFPUC Water Supply Improvement Program  
October 1, 2007  
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the discussion of how much urban conservation is desirable should be continued as a water supply portfolio is developed.

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cont.

Groundwater

We believe the SFPUC should pursue increased use of groundwater in dry years, as described in various PEIR alternatives.

11

Desalination

The Draft PEIR considers desalination as a potential source of water in two different ways: (1) a plant to be built near the beach in San Francisco and operated every year, and (2) a plant that would be co-owned with other Bay Area water agencies and used only in dry years. Environmental Defense believes both ideas are worthy of consideration and should be more fully developed but strongly cautions that desalination brings significant challenges as well. First, any project must address issues including the entrainment of fish and wildlife along with voluminous brine disposal considerations. Second, while desalination technology is improving, the energy needs are still significant and must be considered in light of California's commitment to reduce greenhouse gas emissions as specified by AB32. The cost of any desalination plant should reflect a plan to provide either energy through renewable resources or full mitigation for emissions incurred by its energy use.

12

Alameda Creek and Calaveras Dam

Environmental Defense supports replacement of Calaveras Reservoir to its design capacity of 97,000 acre-feet.

13

Environmental Defense supports restoration of steelhead trout in Alameda Creek. We believe that steelhead restoration will be best achieved if the Alameda Diversion Dam is removed and fishery flows, without downstream recapture, are incorporated in the operating criteria of the rebuilt Calaveras Reservoir.

14

Thank you for the opportunity to comment on the Draft PEIR. We look forward to continuing to work with the San Francisco Planning Department and the Public Utilities Commission to find ways to provide a reliable supply of high quality water to Bay Area communities as we protect and restore our natural environment.

Spreck Rosekrans  
Senior Analyst

September 18, 2007

Ms. Rosalie O'Mahony  
Chair, BAWSCA Board of Directors  
155 Bovet Road, Suite 302  
San Mateo, California 94402

Re: Water Supply Objectives

Dear Ms. O'Mahony:

Environmental Defense has reviewed the staff memorandum, September 14, 2007, titled "Presentation and Discussion of Proposed BAWSCA Comments on Draft PEIR for Water Supply Improvement Program".

We concur with BAWSCA staff in two important respects.

First, we agree that it is urgent to complete improvements to aging and seismically vulnerable infrastructure as soon as possible.

Second, we are pleased and encouraged that BAWSCA has identified investments in agricultural conservation as a way to provide water supply for its members while increasing flows in the lower Tuolumne River. This is essentially the approach Environmental Defense laid out as far back as 1983 when we published "Trading Conservation Investments for Water". We believe this plan, if properly implemented, presents a cost-effective way to provide water to the urban Bay Area, improve on-farm conservation, and benefit not only the lower Tuolumne River but the lower San Joaquin River and Bay-Delta as well.

15

As BAWSCA pursues opportunities to improve agricultural conservation, we trust it will aggressively pursue conservation among its urban customers as well. In addition, while the plan may improve conditions on the lower river, we continue to have an interest in finding ways both to restore Hetch Hetchy Valley in Yosemite National Park and to protect the stretch of the river between Hetch Hetchy and Don Pedro Reservoir.

16

We look forward to working with BAWSCA in this and other efforts to improve our environment while providing reliable water supplies to California's cities and farms.

Sincerely,

Spreck Rosekrans  
Senior Analyst

12.4-44

**TO:** Board of Directors, BAWSCA

**FROM:** Art Jensen, General Manager  
Ray McDevitt, Legal Counsel

**DATE:** September 14, 2007

**RE: Presentation and Discussion of Proposed BAWSCA Comments on Draft PEIR for Water Supply Improvement Program**

On June 29, the San Francisco Planning Department released for public review a five-volume draft of the Program Environmental Impact Report (PEIR) on the SFPUC's Water Supply Improvement Program (WSIP). Comments are due by October 1. BAWSCA staff, working with consultants, have carefully reviewed the lengthy and detailed draft PEIR. We have worked closely with the Technical Advisory Committee (TAC), comprising staff from each of BAWSCA's members, to develop a coordinated response.

The purpose of this report is to provide BAWSCA's Directors a summary of our analysis of the draft and our approach to preparing comments on it. The September 20<sup>th</sup> board meeting will include presentations and discussion of key concepts included in our comments to obtain board direction prior to finalizing and submitting written comments on the PEIR.

SUMMARY OF ANALYSIS AND PROPOSED COMMENTS

**The Draft PEIR Meets the Legal Requirements of CEQA**

The draft PEIR is a conscientious effort to satisfy CEQA requirements for Program EIRs. It provides a clear description of the program (the WSIP), the environmental impacts it is likely to cause, ways to mitigate the impacts identified where possible, and a range of alternatives to the program as formulated by the SFPUC, including an "environmentally superior alternative." It is an objective document prepared by competent professionals in a variety of disciplines. While it is not perfect by any means, there are no fundamental or pervasive flaws. In our view, it satisfies the standard for EIRs established by California courts.

**Basic Aims of BAWSCA's Comments**

BAWSCA comments on the draft PEIR will, of course, point out errors in the document. But they will go beyond that to proactively supplement the draft's treatment of important topics which are given less emphasis or analysis than we think they deserve. BAWSCA's comments will:

1. Refocus attention on the underlying reason for the WSIP – the protection of 2.5 million people from the human and economic catastrophe that would result from a 30-60 day interruption of water after a major earthquake.

2. Provide additional facts that demonstrate BAWSCA members' success in developing diverse portfolios of water supply sources, their customers' frugal use of water compared to the rest of California, and their plans for future increased efficiency in the use of potable water supplies.
3. Support the "Environmentally Superior Alternative" and encourage the SF Planning Department to expand the description of the alternative in the final PEIR. The core of this alternative – that the Bay Area support agricultural water conservation efforts in the Tuolumne River Basin itself - has the prospect of satisfying a broad range of environmental and economic goals and warrants more detailed analysis.

**Organization of BAWSCA's Comments**

1. BAWSCA will focus on the regional picture. Individual agencies will provide specific information on water use within their service areas, including current and planned-for conservation and development of alternate sources; projected growth in population, jobs, and water use; and the impact of curtailed water deliveries during drought in their communities.
2. BAWSCA comments will be separated into two sections. Section One will address three broad themes, while Section Two will contain detailed comments to correct, clarify, or expand the treatment of specific issues on a section-by-section basis.

**Main Themes in BAWSCA's Comments**

1. It is urgent to complete the rehabilitation of the regional system as soon as possible.

The draft PEIR is surprisingly thin on the basic reason for the WSIP: to protect public health and safety and the economic well-being for 2.5 million existing residents and over 31,000 businesses in the counties of Alameda, Santa Clara, San Mateo and San Francisco. BAWSCA will review the Bay Area's exposure to seismic hazards, the USGS estimated probability of a major earthquake by 2030, the regional water system's heightened risks (key facilities directly on or over faults, old, history of poor maintenance) the SFPUC's forecast of facilities likely to fail in a major earthquake, and the public health, safety and economic consequences of an extended (30-60 day) lack of water to the metropolitan area.

2. Most alternatives to the WSIP discussed in the PEIR have serious defects.

- No Project. With this alternative, the metropolitan area remains at risk of the system's catastrophic failure in an earthquake, as well as more of frequent outages due to failures of aging components.
- No More Water for Wholesale Customers. The draft PEIR states that this alternative is intended to limit growth in the BAWSCA service area and thereby avoid the environmental impacts associated with growth (traffic, air pollution, etc.). The BAWSCA response will be twofold. First, this tactic is not likely to succeed in achieving its goal, since BAWSCA agencies may secure water from other sources

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(with their own environmental consequences) or add people and jobs as contemplated in their general plans without additional water supplies. Second, if growth in the BAWSCA service area is prevented or delayed in this manner, the environmental consequences would be worse. Growth would simply be deflected to the periphery of the Bay Area or into the Central Valley -- with more severe impacts on air quality, carbon emissions, and water use. "Smart growth" of the kind now encouraged by communities in the already urbanized Bay Area core (i.e., the BAWSCA service area) is environmentally preferable to diffuse growth on agricultural lands at the fringes of the region or even beyond.

- **Aggressive Conservation and Recycling.** The draft PEIR recognizes that it is not feasible to meet all of the region's projected growth in demand through 2030 solely from intensified conservation, building more recycled water plants, and pumping more groundwater within the BAWSCA service area. It also recognizes the environmental impacts of such a strategy. One such impact that deserves further attention is the impact that "hardening" demand through conservation has on a community's ability to further reduce water use during a drought. The draft recognizes that this alternative would require more severe (25% systemwide) rationing during droughts and that this would occur much more often. BAWSCA will address the environmental and economic harm that a 25% systemwide reduction would have and recommend that the final PEIR clarify how a 25% system-wide reduction would be applied to San Francisco retail customers as compared to wholesale customer agencies. The comments will also explain why a goal of 10% maximum systemwide rationing (included in the draft PEIR as a "variant") is economically and environmentally preferable.

3. The "Environmentally Superior Alternative" holds promise and should be more thoroughly analyzed in the final PEIR.

This alternative assumes a more realistic goal of achieving an additional 5 mgd in water conservation or recycling in BAWSCA service area by 2030. The centerpiece of this alternative is for Bay Area communities to support water efficiency initiatives in the agricultural areas adjacent to the Tuolumne River itself – specifically Modesto Irrigation District (MID) and Turlock Irrigation District (TID). MID and TID together divert about 50% of the average flow of the river at New Don Pedro, whereas San Francisco and BAWSCA combined use is only about 12%. (And even the additional demand forecast for 2030 represents only a 1.6% increase in total Tuolumne River diversions.)

BAWSCA, with the assistance of experts in agricultural irrigation and natural resource economics, has identified opportunities for saving considerable amounts of water in the MID/TID area at considerably less cost than comparable efforts in the Bay Area, where major investments in water efficiency have already been made. In fact, it may be possible to support water efficiency measures in the MID/TID service areas that would more than offset incremental San Francisco diversions necessary to meet gradually increasing Bay Area demand. These additional savings could then be committed to provide water at the times and in the quantities most beneficial for salmon in the lower Tuolumne River. The alternative could be further improved by the new water agreement

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allowing BAWSCA agencies to freely exchange water entitlements among themselves. This alternative offers the prospect of (1) allowing Bay Area communities continued access to high quality drinking water, (2) not only maintaining, but increasing, flows in the lower Tuolumne River, and (3) supporting growers in their efforts to keep prime agricultural land in production.

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cont.

CONCLUSION

We look forward to reviewing these points with the board, answering questions and providing further background to our proposal that BAWSCA endorse the Environmentally Superior Alternative.



September 22, 2007

September 18, 2007

Ms. Rosalie O'Mahony  
Chair, BAWSCA Board of Directors  
155 Bovet Road, Suite 302  
San Mateo, California 94402

Re: Water Supply Objectives

Dear Ms. O'Mahony:

Environmental Defense has reviewed the staff memorandum, September 14, 2007, titled "Presentation and Discussion of Proposed BAWSCA Comments on Draft PEIR for Water Supply Improvement Program".

We concur with BAWSCA staff in two important respects.

First, we agree that it is urgent to complete improvements to aging and seismically vulnerable infrastructure as soon as possible.

Second, we are pleased and encouraged that BAWSCA has identified investments in agricultural conservation as a way to provide water supply for its members while increasing flows in the lower Tuolumne River. This is essentially the approach Environmental Defense laid out as far back as 1983 when we published "Trading Conservation Investments for Water". We believe this plan, if properly implemented, presents a cost-effective way to provide water to the urban Bay Area, improve on-farm conservation, and benefit not only the lower Tuolumne River but the lower San Joaquin River and Bay-Delta as well.

As BAWSCA pursues opportunities to improve agricultural conservation, we trust it will aggressively pursue conservation among its urban customers as well. In addition, while the plan may improve conditions on the lower river, we continue to have an interest in finding ways both to restore Hetch Hetchy Valley in Yosemite National Park and to protect the stretch of the river between Hetch Hetchy and Don Pedro Reservoir.

We look forward to working with BAWSCA in this and other efforts to improve our environment while providing reliable water supplies to California's cities and farms.

Sincerely,

Spreck Rosekrans  
Senior Analyst

Paul Maltzer,  
Environmental Review Officer  
Water System Improvement Program PEIR  
San Francisco Planning Department  
1660 Mission Street, Suite 500  
San Francisco, CA 94103-2414

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CITY & COUNTY OF S.F.  
PLANNING DEPARTMENT  
M E A

Dear Mr Maltzer,

I am writing on behalf of Greenpeace to express our concern with the current plan as laid out by the SFPUC to divert an additional 25 million gallons of water from the Tuolumne River every day. The SFPUC already diverts one third of the River's water. In total we divert 60% of the Tuolumne's water for urban and rural usage. Diverting more of the water will have a serious impact on wildlife, the surrounding ecosystems and the Bay Area Delta that relies on the Tuolumne for freshwater.

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The modeling used to determine the anticipated increase in water demand by the Draft Program Environmental Impact Report (PEIR) is flawed thus inflating projected future needs. Additionally the PEIR fails to properly identify and address all of the impacts of taking more water from the Tuolumne River due to the fact that it lacks an adequate and current baseline study of the Upper Tuolumne River. The PEIR also fails to address the impact climate change will have on precipitation in the Tuolumne River basin. Additional studies should be undertaken before finalizing the PEIR.

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Conservation and environmental awareness are values that the Bay Area prizes. However when it comes to water usage we are not doing enough. Metropolitan areas such as Seattle and Los Angeles have managed to reduce their water demand in the face of growth. The draft PEIR identifies conservation measures and Greenpeace supports those measures. Conservation, efficiency and recycling are the best way to provide for the needs of the Bay Area in a sustainable manner while protecting this vital resource and a California treasure from further diversions.

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Sincerely,

Krikor Didonian  
Greenpeace

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SI\_KSWC



Diana Sokolove <wsip.peir.comments@gmail.com>

## Water System Improvement Program

Joseph Vaile <joseph@kswild.org>  
To: wsip.peir.comments@gmail.com

Thu, Sep 27, 2007 at 10:59 AM

September 29, 2007

Mr. Paul Malzer  
Environmental Review Officer, WSIP PEIR  
1650 Mission Street, Suite 400  
San Francisco, CA 94103

Re: Draft Program Environmental Impact Report, WSIP

Dear Mr. Malzer:

I am writing to you as Conservation Chairperson on behalf of the Golden West Women Flyfishers, a 25 year old angling club with a long history of supporting conservation, environmental and educational efforts. We have approximately 125 members in Northern California. Please accept these comments for the record on the Draft Program EIR.

We strongly object to the increased diversions from the Tuolumne River which is enduring more than a 60% diversion rate since it would put this wonderful fishery at great risk. I have personally fished many sections of the river, from the Poopenaut Valley to the area above the Don Pedro Reservoir as well as the lower Tuolumne. We are currently working hard to restore and protect the threatened Central Valley Steelhead which reside below La Grange dam and also to provide adequate flows for the Fall Run Chinook salmon which are at an extremely low population level due to low water flows. To divert more water out of this beleaguered river, which is designated as Wild and Scenic, would do great harm to these fish.

We urge reassessment of water needs in the future and consideration of increased water conservation and efficiency of usage.

Thank you for your consideration,

  
Cindy Charles  
Conservation Chair  
Golden West Women Flyfishers

Dear Mr. Maltzer:

Many of our members and supporters are frequent visitors to both the Tuolumne River and the great City of San Francisco. We are concerned that your environmental review of the San Francisco Public Utilities Commission's plan to take more water from the Tuolumne River fails to adequately identify and address all of the environmental impacts to the River. We urge you to undertake additional studies before finalizing this document.

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We support the alternatives identified in your draft document that protect the Tuolumne River from new diversions. Requiring 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.

02

Only by ensuring that healthy amounts of water continue to flow into the Tuolumne River can we protect this irreplaceable natural treasure.

Sincerely,

/s/ Joseph Vaile

Joseph Vaile  
Campaign Director  
Klamath-Siskiyou Wildlands Center  
POB 102 Ashland OR 97520  
p: 541-488-5789  
<http://www.kswild.org>

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CITY & COUNTY OF S.F.  
PLANNING DEPARTMENT  
M.E.A.

SI\_MenloBP

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J. W. Skow  
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OUR FILE NO. 347919-6

December 12, 2007

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

**Re: Draft Program EIR for the San Francisco Public Utilities System Water System Improvement Program**

Dear Mr. Maltzer:

We are writing in response to the Draft Environmental Impact Report ("DEIR") for the proposed San Francisco Public Utility Commission ("SFPUC") Water System Improvement Program ("WSIP"). We represent Menlo Business Park LLC, owner of a business park in Menlo Park, California, which likely will be affected by the construction activities that are planned as part of the Bay Division Pipeline Reliability Upgrade Project (the "Project") portion of the WSIP. Project impacts of particular concern include traffic, parking, and public safety. It is our understanding that the SFPUC will address these issues in project-level environmental review and we are submitting comments to the Project EIR team under separate cover. We want to share these concerns with the Program EIR team as well in the event the SFPUC elects to include analyses or mitigation in the WSIP EIR.

Background

Menlo Business Park LLC ("MBP") is the owner of Menlo Business Park, a 50-acre/15 building complex located east of the 101 Freeway in the City of Menlo Park, California (see attached map). MBP provides high quality, modern industrial and research and development facilities in a planned campus environment with landscaping, on-site parking, and very high standards of tenant service. Current tenants include Boise-Cascade (Office Max), United Parcel Service, PPD Discovery, DepoMed and a variety of high technology and biotech firms. The property has also served as corporate headquarters for two of the Peninsula's success stories, Cisco Systems, which outgrew the MBP facility and Guidant, which was purchased by Johnson & Johnson.

In 1983, the predecessor of MBP, Dumbarton Distribution Center, purchased from the City and County of San Francisco ("CCSF") multiple easements on CCSF land directly adjacent to the business park. MBP and its tenants use these easements for, among other things, parking, ingress, egress, and landscaping. It is our understanding that the Bay Division Pipeline Reliability Upgrade Project will involve excavating and installing a new water transmission pipeline in the easement area. The goal of MBP is to avoid or minimize any adverse Project-related impacts to MBP or its tenants.



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Page Two

Comments

MBP understands that the nature of a "program" EIR on a project program of this scale is inherently general, and we wish to bring to your attention specific concerns of MBP related to the Bay Division Pipeline Reliability Upgrade Project that are not addressed in the WSIP DEIR. We ask that the SFPUC address these issues in the "project-level" environmental review. Specifically we are concerned about: (1) the disruption of traffic circulation and pedestrian access at and in the vicinity of Menlo Business Park, (2) the displacement of parking at Menlo Business Park and street parking in the vicinity of Menlo Business Park, and (3) the logistics of returning the construction work areas at Menlo Business Park to pre-Project conditions.

Traffic and Circulation

As recognized by the Department in the WSIP DEIR, the Bay Division Pipeline Reliability Upgrade Project is located in an urbanized area making the "open-cut trench" method of construction likely to result in significant impacts on traffic operations.<sup>1</sup> The WSIP DEIR traffic analysis appropriately considers the impact to regional transportation. Equally significant, however, are the localized traffic and circulation issues. At Menlo Business Park, Project construction activities may disrupt or block access to driveways and streets, and access to buildings. MBP is concerned about the Project-impacts on Menlo Business Park facilities and operations, and on the operations of MBP tenants. Many MBP tenants have regular shipments of equipment, supplies, hazardous materials and products from their buildings and require continuous access to their properties. MBP is also concerned that the construction activities could interfere with the ability of emergency response providers (e.g., police, fire and ambulance) to access the MBP facilities. As noted above, some MBP tenants use or handle hazardous materials in their operations and it is important that emergency response providers are able to access each of the buildings in the event of fire or other emergency. Finally, MBP is concerned about potential safety hazards if employees or customers need to walk through a construction work area or from remote off-site parking areas.

WSIP DEIR Mitigation Measure 4.8-1a states that SFPUC construction contractors will prepare a traffic control plan to "minimize traffic and on-street parking impacts on any streets affected by construction of the proposed program."<sup>2</sup> Measure 4.8-1a goes on to state that elements of this plan *could* include using steel trench plates to maintain access to driveways and private roads.<sup>3</sup> While MBP supports the development of traffic control plans to reduce potential Project impacts, it is unable to assess the effectiveness of the mitigation measure without more specific discussion of the particular plan elements and/or without appropriate performance standards. We ask that the Draft EIR for the Bay Division Pipeline Reliability Upgrade Project include traffic analyses and mitigation to assure continuous access to

<sup>1</sup> Draft Environmental Impact Report for the San Francisco Public Utilities Commission's Water System Improvement Program ("DEIR WSIP") 4.8-13  
<sup>2</sup> DEIR WSIP 6-30.  
<sup>3</sup> DEIR WSIP 6-30

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Page Three

private properties when construction crews are not actively constructing the underground pipeline.<sup>4</sup> We understand that this level of analysis may be more appropriately addressed in the project-level EIR and we want to ensure that this analysis will in fact take place.

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Parking

In addition to restricting ingress and egress to Menlo Business Park, the Project activities may affect tenant access to parking at Menlo Business Park. Multiple MBP tenants currently utilize parking facilities located in the CCSF easement area. Excavating this area is likely to reduce temporarily the number of parking spots at Menlo Business Park, and cause MBP tenants and patrons to park in adjacent or nearby parking facilities (if available) or on surrounding streets. The Project activities may also disrupt customer patronage to tenant businesses and could present a safety hazard to pedestrians. The parking analysis in the WSIP DEIR focuses primarily on the impacts to public parking on city streets and does not address impaired parking on-site, and the direct and indirect impacts of the on-site parking dislocation.

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It is not clear from the Project NOP if this impact will be addressed in the Project DEIR. Because parking lots could be effectively blocked during construction and portions may be temporarily unusable, the Project DEIR should assess these impacts and include mitigation, including coordination with MBP and individual business owners. Through such advance planning and related construction scheduling, it may be possible to reduce or avoid many potential adverse impacts. For example, it may be possible to develop and implement shared-parking arrangements among the impacted businesses or to otherwise make arrangements for alternative parking within a reasonable safe walking distance, or to coordinate the construction schedule so as to prevent disrupting the businesses operations.

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Property Condition

The WSIP DEIR also does not specifically address the logistics of post-construction restoration work. The SFPUC Standard Construction Measures specifies that "upon project completion, the construction contractor will return the SFPUC project site to its general condition before construction, including re-grading of the site and re-vegetation of disturbed areas."<sup>5</sup> The timeline on this site restoration work is unclear. It is our hope that the trench will be backfilled and graded so that it can be re-paved and back in use by the tenants as soon as possible.

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<sup>4</sup> Similar language was included in the EIR prepared by the California Public Utilities Commission for Pacific Gas & Electric Company's Jefferson-Martin Transmission Project. "At all times shall provide the ability to quickly lay a temporary steel plate trench bridge upon requires to ensure driveway access to business and residences and shall provide continuous access to properties when not actively construction the underground cable alignment. If trench stability could be compromised by this, the construction contractor may defer a request for access to the soonest possible time until the stability of the trench has been assured, provided 48 hrs of notice given to property owner." (PG&E Jefferson-Martin 230 kV Transmission Project Final EIR, Mitigation Measure L-7a (p. D 2-35)).

<sup>5</sup> DEIR WSIP 3-82.

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December 12, 2007  
Page Four

Again, we understand that the WSIP DEIR is a program-level analysis and that the Department may intend to address these issues in the project-level DEIR. Thank you for the opportunity to comment on the WSIP DEIR. We look forward to working with you on this project.

09

Very truly yours,

DLA Piper US LLP

J. Wesley Skow

Admitted to practice in California

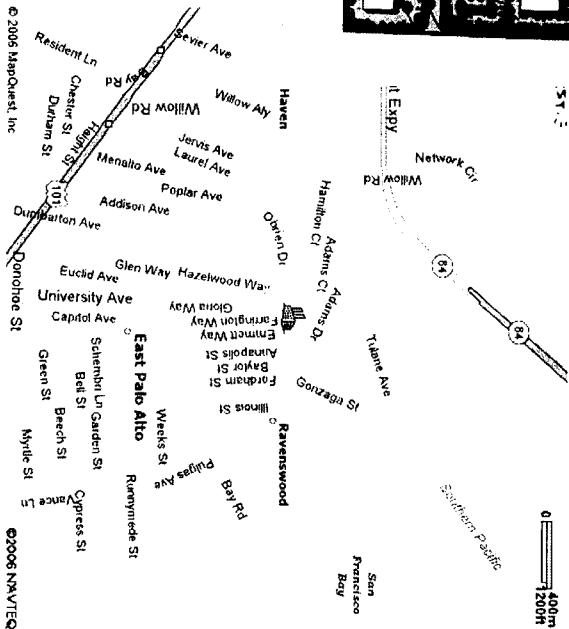
Attachment  
cc: John Tarlton

JWS:pa  
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Menlo Business Park  
Menlo Park, California



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Northern California/Nevada  
Federation of Fly Fishers  
STEELHEAD COMMITTEE



September 23, 2007

Paul Malzer  
Environmental Review Officer, WSIP PEIR  
1650 Mission St., Suite 400  
San Francisco, CA 94103

**Re: Draft Program Environmental Impact Report, WSIP**

Dear Mr. Malzer,

I am the chairman of the Steelhead Committee of the Northern California/Nevada Council of the Federation of Fly Fishers (NCCFFF). The NCCFFF is dedicated to the sport of fly fishing and fish conservation. We have approximately 900 regular members with about 6,000 members in affiliated clubs. I request that you include my written comments for the record on behalf of the NCCFFF Steelhead Committee.

**Tuolumne River Flows**

At a time when salmonid populations in the lower Tuolumne River are at near all time lows because of reduced flows, the WSIP proposes to divert an additional 25 million gallons per day. This means 25 mgd not reaching Don Pedro Reservoir and 25 mgd not available for release to support the already stressed salmon and steelhead populations in the lower Tuolumne.

Fall run Chinook salmon were historically documented to annually exceed 72,000 spawning adults. The 2006 estimate for returning adult Chinook salmon was 625. In the last 50 years, numbers have fluctuated between 45,000 to fewer than 100 individuals, with a steady downward trend. Biologists from California Department of Fish and Game, National Marine Fisheries, and U.S. Fish and Wildlife agree that the numbers of returning adult salmon is strongly correlated to flow volumes in the Tuolumne below the La Grange Dam.

The relationship between flow and fish is clearly stated in a recent letter from Steven A. Edmondson of the National Marine Fisheries Service to the Federal Energy Regulatory Commission regarding the Don Pedro Dam on the Tuolumne River:

*"To date, studies conducted in the Tuolumne River (and in other Central Valley rivers) indicate that as spring flow magnitude and duration increases, the following responses occur: 1) salmon smolt survival increases; 2) water temperature decreases; 3) predation of salmonids decreases; 4) entrainment of salmonids decreases; 5) disease prevalence in salmonids decreases; and 6) both juvenile and adult salmon abundance increases. In addition, emerging science indicates that winter flow magnitude and duration, in addition to spring flow magnitude and duration, is important in determining smolt abundance, which is the primary life history stage influencing adult salmon escapement."*



The Tuolumne River historically supported large runs of sea-run steelhead trout (*O. mykiss*), now listed as threatened under the Federal Endangered Species Act. Present sightings of adult steelhead in the Tuolumne are few and far between. As with the depleted salmon runs, the consensus among agency biologists is that the depressed numbers of steelhead are due to low flows, especially in the summer months. In fact, agency biologists have concluded that existing summer flow regimes in the lower Tuolumne are inadequate for a viable steelhead population.

The DPEIR lists the impact of reduced flows in the lower Tuolumne as *potentially significant*. It goes on to state that the impact may be reduced to *less-than-significant* if SFPUC can reach agreement with the Don Pedro irrigation districts. If agreement with the districts cannot be reached, the DPEIR calls for implementing a Fisheries Habitat Enhancement plan, which supposedly would reduce the negative impact to *less-than-significant* through habitat improvement. As a result of these assumptions, *Table 5.3.6-4 Summary Of Impacts* in the DPEIR includes: "*Impact 5.3.6-4: Effects on fishery resources along the Tuolumne River below La Grange Dam – PSM [Potentially Significant impact, can be mitigated to less than significant].*"

The DPEIR seriously errs in this *PSM* designation. Even if SFPUC can reach an agreement with the irrigation districts, there will still be reduced flows in the lower Tuolumne. The only difference being the deficits will be charged to the irrigation districts rather than SFPUC. As to Fisheries Habitat Enhancement plan, the consensus among agency biologists is that habitat improvement will not be effective without improved river flows.

Three criteria for determining what constitutes a *significant fisheries impact* are presented on page 5.3.6-24 in the DPEIR. Considering the overwhelming scientific evidence which demonstrates the detrimental effects of reduced flows on steelhead and salmon populations, the WSIP for the lower Tuolumne meets all three criteria and therefore should be designated as having a *significant fisheries impact*. The DPEIR should be changed to reflect this.

**San Joaquin River and the Sacramento-San Joaquin Delta**

Just as the WSIP would reduce flows in the Tuolumne River between La Grange Dam and its confluence with the San Joaquin River, it would do the same in the San Joaquin River from the confluence to the Delta. The same adverse impacts of low flow on salmonid populations apply here. The DPEIR again errs when it assigns a *LS* [Less than Significant impact, no mitigation required] designation for this reach of the San Joaquin River. Clearly, the reduced flows and concomitant increase in temperature will adversely affect the movement and survival of salmonid populations.

There is no doubt that the Sacramento/San Joaquin Delta ecosystem is on the brink of collapse, and scientists agree that increased diversions and increased exports of Delta water are the principal causes of this decline. Implementation of the WSIP would result in 25 mgd less water reaching the Delta. This is a negative impact not addressed in the DPEIR.

**Alameda Creek**

A number of fish passage barriers on Alameda Creek have prevented adult steelhead from returning to their spawning grounds in the Alameda Creek watershed. The lowest of these barriers (the BART Weir) effectively blocks passage to any suitable steelhead habitat.

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It now appears that all of the fish passage barriers will be removed by 2010 and steelhead will again have access to the sea and their spawning habitat. The SFPUC, ACWD and ACFCD are to be commended for their efforts to remove these barriers and reestablish steelhead in the Alameda Creek watershed.

The augmented flow schedule below the confluence of Alameda and Calaveras Creeks (Table 5.4.1-9) should be modified to extend the 20 cfs flows through May 15. Such a change will ensure *O. mykiss* spawning and migration success during late spring. This schedule may be modified when the Fisheries Restoration Workgroup flow studies are completed and comprehensive flow strategy is worked out.

The SFPUC is to be commended for its plans to implement a minimum flow plan for Alameda Creek below the diversion dam. When completed, the plan should be made available for public comment.

**In Summary**

The WSIP calls for diverting an additional 25 mgd from the Tuolumne River to help meet projected increases in demand through 2030. There is no doubt that such diversions will severely impact the already stressed steelhead and salmon populations of the Tuolumne and San Joaquin Rivers. While SFPUC is obliged to provide a safe and reliable water supply to citizens of San Francisco, it can do so without harming Tuolumne steelhead and salmon.

The WSIP and DPEIR do not adequately address strategies and conservation measures that could replace the 25 mgd diversions from the Tuolumne River. Some strategies and conservation measures include: water options and price incentives for wholesale customers to reduce their demand; incentives to reduce outdoor water use; and more stringent conservation requirements for wholesale customers.

Thank you for consideration of these comments.

Sincerely,

Dougald Scott, Chair  
NCCFFF Steelhead Committee  
116 Allegro Drive  
Santa Cruz, CA 95060  
831.427.1394

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cont.

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October 1, 2007

Paul Maltzer  
Environmental Review Officer, WSIP PEIR  
1650 Mission St., Suite 400  
San Francisco, CA 94103

Dear Mr. Maltzer,

I serve as President of the Pacific Institute, an independent research institute in Oakland, California. I am writing with selective comments on the San Francisco Public Utility Commission’s Draft Program Environmental Impact Report (PEIR) for the Water System Improvement Program (WSIP). We appreciate your careful consideration of the PEIR.

The SFPUC undertook a WSIP to increase the reliability of the regional water system through improvements with respect to water quality and supply, seismic response, and water delivery. We commend the San Francisco Public Utility Commission (SFPUC) for its efforts to improve seismic and delivery reliability, particularly given the region’s vulnerability to earthquakes and other natural hazards. However, we question the SFPUC’s assertion that “Additional supplies are needed to satisfy current demand in drought years as well as to meet future demand.” Our analysis suggests this fundamental assumption may be incorrect.

In August 2006, the Pacific Institute conducted an independent review of the SFPUC’s demand projections for its wholesale and retail customers. Our report concluded that significant untapped potential exists for reducing water use while providing for population growth and economic development, and that the water planning documents and efforts in the region underestimate this potential. The potential for recycled water to offset potable supplies is also underestimated. More specifically, we found the following:

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- Per-capita demand for the wholesale customers is projected to increase over current (2001) per-capita demand, despite numerous studies that show that substantial cost-effective reductions in per-capita demand are possible with available technologies and policies.
- The analysis of SFPUC retail and wholesale demand does not include price-driven efficiency improvements, despite an estimated quadrupling of the price of water from the SFPUC by 2015.
- Increases in residential demand are largely due to outdoor water use. For the wholesale and retail customers, per-capita outdoor use is projected to increase, indicating that the proposed conservation does not adequately address this use.
- The non-residential sector is responsible for over 80 percent of the projected 2030 demand increase. About 35 percent of that increase is due to outdoor use.
- Future demand for the wholesale customers is not adequately evaluated. The forecasting method has two important errors that can lead to potentially large inaccuracies when forecasting demand: it assumes that the current composition of commercial and industrial businesses within the non-residential sector will not change over time, and it ignores the variability in water use in both quantity and purpose among users in the non-residential sector.
- The wholesale demand study may overestimate future employment, thereby inflating 2030 non-residential demand. Recent data indicates that economic growth in the San Francisco Bay Area has been slower than expected, and consequently, the job outlook for the region has been adjusted downward. A slower economic growth rate reduces projected water demand for the non-residential sector and suggests that the demand forecast should be adjusted according to the most current information available.
- For the wholesale and retail customers combined, the conservation activities proposed in the PEIR reduces 2030 demand by only four percent. Recent water conservation assessments indicate that the conservation potential identified in this demand analysis is too low. For example, SFPUC wholesale customers often fail to implement well-understood efficiency improvements and thereby fail to achieve water-use reductions achieved by utilities elsewhere.

- The potential to expand recycling and reuse of water to meet future demand appears to have been significantly underestimated. These options would further reduce the need to identify new supply sources, such as additional withdrawals from the Tuolumne River.

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We include a copy of this report for your review. Below we provide recommendations for both improving the modeling and assessment efforts and capturing additional conservation and efficiency savings.

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**Recommendations: Modeling and Assessment Efforts**

1. Non-residential demand is an important driver for future demand increases, and as a result, an adequate assessment of future demand and conservation potential is critical. The SFPUC should re-evaluate non-residential demand projections for its wholesale customers using industry-specific economic growth projections, water use, and conservation potential. Initial efforts should be regional in scope or focus on those agencies with high non-residential water use. If the projections from the new analysis differ substantially from those of the Demand Side Management Least-Cost Planning Decision Support System model, detailed analyses should be conducted for each of the wholesale customers.

12

2. As the price of water increases, demand decreases, particularly for non-residential and outdoor uses. Because the SFPUC expects to quadruple the price of water by 2015, the effects of projected water price increases should be integrated into the demand projections. Failing to do so may result in an overestimate of future demand and revenue shortfalls.

13

3. Estimates of the maximum, cost-effective conservation potential should be determined for each measure, major end use, and district or wholesale/retail user. The definition of “cost-effective” must be broadened beyond the utility perspective and should include benefits to consumers and quantification of the value of maintaining ecosystem flows in the Tuolumne River.

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4. Better data are needed on the type of non-residential account and the water use associated with that account. The SFPUC and its wholesale customers must also standardize reporting methods. A focus on outdoor water use is especially needed.

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5. Modeling efforts should include multiple scenarios so as to determine a range of future demand.

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6. A better assessment of the potential for using recycled water for different end uses is needed.

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7. Future studies should include the impact of climate change on projected demand and supply.

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**Recommendations: Conservation Implementation**

1. Each agency should assess what is driving demand growth and measures to reduce that demand. Agencies must take a more pro-active role in identifying ways to reduce demand growth, particularly in new developments.

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2. The SFPUC and its wholesale customers should implement water and wastewater rate structures that encourage water conservation among their customers and fund conservation programs.

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3. All agencies should sign the California Urban Water Conservation Council Memorandum of Understanding and work to meet all applicable Best Management Practices.

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4. SFPUC and the Bay Area Water Supply and Conservation Agency (BAWSCA) should work together to establish more effective regional water conservation and recycling programs.

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5. Institutional mechanisms should be developed to encourage wholesale customers to move more effectively toward efficiency improvements. This can include cross-agency information sharing, consistent conservation programs and targets, economic incentives for demand reductions, conservation pricing for wholesale customers, regular reassessment of program effectiveness and implementation, and improvements in conservation data collection and reporting.

23

6. Serious consideration should be given to capping purchases from the SFPUC at current levels. BAWSCA and the SFPUC should institute financial incentives to encourage conservation efforts and financial disincentives to discourage demand growth. For example, water marketing among the wholesale agencies would allow water saved through conservation efforts by one agency to be sold to another agency, thereby promoting economic efficiency.

24

Thank you again for the opportunity to comment on the Draft PEIR.

Sincerely,



Dr. Peter H. Gleick  
President: Pacific Institute  
Member: U.S. National Academy of Sciences  
Academician: International Water Academy, Oslo, Norway

## APPENDIX A

A Review of the San Francisco Public Utilities  
Commission's Retail and Wholesale Customer  
Water Demand Projections

Pacific Institute

12.4-55

**A Review of the San Francisco Public Utilities  
Commission's Retail and Wholesale Customer Water  
Demand Projections**

**Heather Cooley  
Pacific Institute for Studies in Development,  
Environment, and Security**

**Oakland, California**

**Released July 2007**



Supported by



**Tuolumne River Trust**

And made possible with funding from Water for California

**About the Pacific Institute**

Founded in 1987 and based in Oakland, California, the Pacific Institute for Studies in Development, Environment, and Security is an independent, nonprofit organization that provides research and policy analysis on issues at the intersection of sustainable development, environmental protection, and international security.

The Pacific Institute strives to improve policy through solid research and consistent dialogue with policymakers and action-oriented groups, both domestic and international. By bringing knowledge to power, we hope to protect our natural world, encourage sustainable development, and improve global security. This report comes out of the Institute's Water and Sustainability Program.

More information about the Institute, staff, directors, funders, and programs can be found at [www.pacinst.org](http://www.pacinst.org) and [www.worldwater.org](http://www.worldwater.org).

**A Review of the San Francisco Public Utilities Commission's Retail and Wholesale  
Customer Water Demand Projections**

July 2007

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## Abbreviations and Acronyms

AF: acre-feet  
 ABAG: Association for Bay Area Governments  
 AWWA: American Water Works Association  
 BAWs: Bay Area Water Stewards  
 BAWsCA: Bay Area Water Supply and Conservation Agency  
 BMP: Best Management Practice  
 CUWCC: California Urban Water Conservation Council  
 DSS model: Demand Side Management Least-Cost Planning Decision Support System model  
 E: exempt  
 gpcd: gallons per capita per day  
 gped: gallons per employee per day  
 gpf: gallons per flush  
 mgd: million gallons per day  
 MOU: Memorandum of Understanding  
 NCE: not cost-effective  
 SFPUC: San Francisco Public Utilities Commission  
 UFW: unaccounted-for-water  
 \$/MG: dollars per million gallons  
 WSIP: Water System Improvement Program

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## Introduction

The Pacific Institute is one of the nation’s leading centers for assessing water conservation and efficiency potential. In August 2006, the Tuolumne River Trust asked the Institute to review the San Francisco Public Utilities Commission (SFPUC) wholesale and retail customer water demand projections and the companion reports on water conservation and recycled water as part of an effort to understand the potential for increasing the efficient use of water in the region.<sup>1</sup> This report provides that review and concludes that significant untapped potential exists for reducing water use while providing for population growth and economic development, and that the water planning documents and efforts in the region underestimate this potential.

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The SFPUC, a department of the City and County of San Francisco, provides water, wastewater, and power services to residents of San Francisco County (referred to as the **retail customers**). SFPUC also delivers water to 28 wholesale water agencies located on the San Francisco Peninsula and along the southern East Bay (referred to as the **wholesale customers**). In late 2004, the SFPUC formally initiated a Water System Improvement Program (WSIP) to “increase the reliability of the system with respect to water quality, seismic response, water delivery, and water supply to meet water delivery needs in the service area through the year 2030.”<sup>2</sup> The objective of the water supply component is to fully meet 2030 purchase requests during non-drought years and to provide sufficient water such that water supply would be reduced by a maximum of 20 percent during any one year of a drought.

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To determine 2030 purchase requests, the SFPUC commissioned a series of comprehensive assessments on the water demand, conservation potential, and recycled water potential of its retail and wholesale customers. Based on these studies, demand is projected to increase by 38 million gallons per day (mgd) for the wholesale customers and decline by about 5 mgd for the retail customers. To meet these additional demands,

<sup>1</sup> The Tuolumne River Trust is a non-profit organization dedicated to promoting the stewardship of the Tuolumne River and its tributaries to ensure a healthy watershed.  
<sup>2</sup> SFPUC. 2005. Notice of preparation of an environmental impact report and notice of public scoping meetings. San Francisco, California.

purchases from the SFPUC system are projected to increase 35 mgd by 2030.<sup>3</sup> The SFPUC expects to satisfy this increased demand by relying upon a 25 mgd increase in diversions from the Tuolumne River plus an additional 10 mgd from conservation, water recycling, and groundwater supply programs within the SFPUC retail service area.

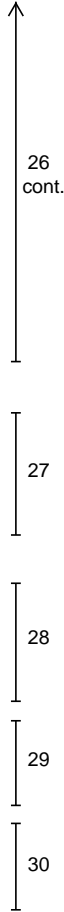
At the request of the San Francisco Board of Supervisors, the SFPUC examined the potential of a regional option that relies only on groundwater, recycled water, and regional conservation measures to offset the projected 35 mgd increase in system demand.<sup>4</sup> This study found that the “high range” yield from these projects is 28 mgd. Because the feasibility of many of these options is unknown, the study concludes that no such regional solution exists.

Our analysis, however, reveals that the wholesale and retail demand studies may significantly overestimate future regional demand for water and underestimate the potential for cost-effective demand management and recycled water and therefore are inadequate. More specifically, we found the following:

- Per-capita demand for the wholesale customers is projected to increase over current (2001) per-capita demand, despite numerous studies that show that substantial cost-effective reductions in per-capita demand are possible with available technologies and policies.
- The analysis of SFPUC retail and wholesale demand does not include price-driven efficiency improvements, despite an estimated quadrupling of the price of water from the SFPUC by 2015.
- Increases in residential demand are largely due to outdoor water use. For the wholesale and retail customers, per-capita outdoor use is projected to increase, indicating that the proposed conservation does not adequately address this use.

<sup>3</sup> SFPUC. 2005. Notice of preparation of an environmental impact report and notice of public scoping meetings. San Francisco, California.

<sup>4</sup> URS Corporation and San Francisco Public Utilities Commission. 2006. Investigation of Regional Water Supply Option No. 4. Technical Memorandum. Prepared for the San Francisco Public Utilities Commission.



- The non-residential sector is responsible for over 80 percent of the projected 2030 demand increase. About 35 percent of that increase is due to outdoor use.
- Future demand for the wholesale customers is not adequately evaluated. The forecasting method has two important errors that can lead to potentially large inaccuracies when forecasting demand: it assumes that the current composition of commercial and industrial businesses within the non-residential sector will not change over time, and it ignores the variability in water use in both quantity and purpose among users in the non-residential sector.
- The wholesale demand study may overestimate future employment, thereby inflating 2030 non-residential demand. Recent data indicates that economic recovery in the San Francisco Bay Area has been slower than expected, and consequently, the job outlook for the region has been adjusted downward. Slower economy reduces projected water demand for the non-residential sector and suggests that the demand forecast should be adjusted according to the most current information available.
- For the wholesale and retail customers combined, the proposed conservation reduces 2030 demand by only four percent. Recent water conservation assessments indicate that the conservation potential identified in the demand analysis is low. For example, SFPUC wholesale customers often fail to implement well-understood efficiency improvements and thereby fail to meet water-use reductions achieved by utilities elsewhere.
- The potential to expand recycling and reuse of water to meet future demand appears to have been significantly underestimated. These options would further reduce the need to identify new supply sources, such as additional withdrawals from the Tuolumne River.

Based on these findings, we conclude that the demand and conservation studies are inadequate and fail to realize efficiency levels achieved elsewhere. While no analysis is perfect, these flawed studies inform purchase estimates that, in turn, form the basis of future long-term water contracts. It is critical that water demand forecasts are based on good data and appropriate assumptions, and that water contracts are written in such a way as to encourage conservation and efficiency improvements. We close our analysis with a



series of recommendations that will improve the modeling and assessment efforts as well as encourage the implementation of cost-effective conservation measures. ↑ 36  
cont.

### Regional Water Agencies

The San Francisco Public Utilities Commission (SFPUC), a department of the City and County of San Francisco, provides water, wastewater, and power services to residents of San Francisco County. In addition, SFPUC provides water to 28 wholesale customers located on the San Francisco peninsula and along the southern East Bay through contractual agreements. A few retail customers are also located in isolated communities in Tuolumne County. Twenty-six of the customers are public (cities and water districts) and two are private utilities (Stanford and California Water Service Co.). In total, SFPUC provides water services to 2.4 million people in San Francisco, San Mateo, Santa Clara, Alameda, and Tuolumne Counties.<sup>5</sup> About 32 percent of the water from the SFPUC system is delivered to retail customers within San Francisco, and the remaining 68 percent goes to wholesale customers and large retail customers outside of San Francisco.<sup>6,7</sup> 37

The Bay Area Water Supply and Conservation Agency (BAWSCA) was created in 2003 to represent the interests of the 28 cities and water agencies that purchase water from the SFPUC. BAWSCA has the authority to coordinate water conservation, supply, and recycling activities; acquire water and make it available on a wholesale basis; finance projects, including regional water system improvements; and build facilities jointly with other public agencies. Thus far, BAWSCA and the SFPUC have coordinated only one project, a pre-rinse spray valve program, but are exploring additional opportunities. Regional partnerships will likely lead to greater cost-effectiveness for some conservation programs. 38

<sup>5</sup> Approximately 1.6 million people are outside the City and County of San Francisco.  
<sup>6</sup> The large retail customers include the San Francisco County Jail, San Francisco International Airport, and Lawrence Livermore National Laboratory.  
<sup>7</sup> URS Corporation. 2004. SFPUC Wholesale Customer Water Demand Projections: Technical Report. Prepared for the San Francisco Public Utilities Commission. Pg 1-2.

### Water Resources

SFPUC retail and wholesale customers depend upon a variety of water sources to meet their needs, including local surface and groundwater; imported water from the SFPUC and the State (via the State Water Project); and recycled water. In FY 2001-2002, water from the SFPUC supplied 70 percent of the wholesale and retail customers needs. This average, however, hides substantial variation among customers. The City of Hayward, for example, received 100 percent of its supply from the SFPUC, whereas the City of Santa Clara received only 16 percent of its supply from the SFPUC.<sup>8</sup> 39

### Current Conservation Programs and Policies

The SFPUC and wholesale agencies participate in a range of ongoing conservation programs, most of which are based on the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). The MOU is a voluntary agreement in which participants implement a set of Best Management Practices (BMPs) with specified implementation schedules and coverage requirements. The SFPUC and 13 of the 28 wholesale customers are signatories of the MOU.<sup>9</sup> 40

Table 1 shows the BMPs implemented by the SFPUC wholesale customers. Those BMPs that target commercial, industrial, and institutional uses, BMPs 5 and 9, show the lowest levels of participation. Metering (BMP 4), residential clothes washer rebates (BMP 6), school education (BMP 8), and conservation pricing (BMP 11) show the highest level of participation. Although agencies may be implementing a BMP, they may not meet the full coverage requirements of that BMP and thus may not be in compliance with the MOU. Additionally, the CUWCC BMPs are the minimum level of conservation that agencies should be implementing and do not, by themselves, indicate that an agency has made a strong commitment to conservation. The BMPs have not been substantially 41  
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<sup>8</sup> URS Corporation. 2004. SFPUC Wholesale Customer Water Demand Projections: Technical Report. Prepared for the San Francisco Public Utilities Commission. Pg. 1-3.  
<sup>9</sup> An additional four wholesale customers are located within the Santa Clara Valley Water District, which is a signatory to the MOU, and participate in the District's conservation programs



updated in many years, and they do not include all cost-effective water efficiency options.

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cont.

BAWSCA and the Santa Clara Valley Water District, which also supplies water to eight SFPUC wholesale customers, are MOU signatories as well and thus implement the CUWCC BMPs among their members. BAWSCA, in particular, implements conservation programs that supplement those programs offered by its member agencies. Table 2 shows the conservation programs offered by BAWSCA, the number of agencies that participate in these programs, and the total amount spent in FY 2005-06. In FY 2005-06, 16 member agencies participated in at least one of BAWSCA's five conservation programs.<sup>10</sup> Nearly 80 percent of the money was spent on washing machine rebates. Although the other programs have been shown to be cost-effective, participation is low. In FY 2006-2007, BAWSCA intends to add two new programs: a cooling tower retrofit program and high-efficiency toilet replacement program.

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The SFPUC implements conservation programs among its retail customers and participates in a number of regional programs. As shown in Table 1, the SFPUC implements all of the BMPs. The SFPUC also coordinates with BAWSCA on implementing a pre-rinse spray valve program and participates in a regional washer rebate program.

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Table 1: Conservation Best Management Practices Implemented by SFPUC Wholesale Customers

Member	BMP 1	BMP 2	BMP 3	BMP 4	BMP 5a	BMP 5b	BMP 6	BMP 7	BMP 8	BMP 9a	BMP 9b	BMP 11	BMP 12	BMP 13	BMP 14
Alameda County Water District	NCE	X	X	X	X	X	X	X	X	X	X	X	X	X	NCE
Brisbane, City of				X			X	X				X		X	
Burlingame, City of	X	X	X	X		X	X	X	X	X	X	X			X
CWS - Bear Gulch District	NCE	X	X	X			X	X	X			X	X	X	X
CWS - Mid Peninsula District	NCE	X	X	X			X	X	X			X	X	X	X
CWS - South San Francisco District	NCE	X	X	X	X		X	X	X			X	X	X	X
Coastside County Water District		X	X	X	X	X	X	X	X		X	X	X	X	X
Daly City, City of	NCE	X	X	X	X	X	X	X	X	X	NCE	X	X	X	NCE
East Palo Alto, City of		X	X	X			X	X	X			X	X		
Estero MID/Foster City			X	X			X	X				X	X	X	X
Guadalupe Valley MID				X			X	X				X	X	X	
Hayward, City of		X	X	X			X	X				X	X	X	X
Hillsborough, Town of				X			X	X				X	X		
Menlo Park, City of			X	X			X	X				X	X	X	
Mid-Peninsula Water District	X	X	X	X			X	X	X			X			
Millbrae, City of	X	X	X	X	X		X	X	X		X	X	X	X	X
Milpitas, City of	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Mountain View, City of	X	X	X	X	X		X	X	X	X	X	X	X	X	X
North Coast County Water District	X	X	X	X			X	X	X			X	X	X	X
Palo Alto, City of	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Purissima Hills Water District	X	X	X	X			X	X				X		X	X
Redwood City, City of	X	X	X	X	X	X	X	X	X		X	X	X		X
San Bruno, City of				X			X	X	X			X			
San Jose, City of (portion of north SJ)	X	X	X	X	X		X	X	X	X	X	X	X	X	X
Santa Clara, City of	X	X	X	X	X		X	X	X	X		X	X	X	X
Skyline County Water District		X	X	X			X		E			X			X
Stanford University	X	X	X	X	X		X	X			X	X	X	X	X
Sunnyvale, City of	X	X	X		X		X	X	X	X		X		X	X
Westborough Water District	X		X	X			X					X	X	X	X
SFPUC Retail	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Note:

NCE = Not Cost Effective; E = Exempt

Sources:

BAWSCA. 2006. Annual Survey: FY 2004-05. San Mateo, California.

SFPUC. 2005. Urban Water Management Plan. San Francisco, California.

**Best Management Practices (BMPs)**

**BMP 1:** Residential Water Surveys

**BMP 2:** Residential Retrofit

**BMP 3:** System Audits, Leaks

**BMP 4:** Metering with Commodity

**BMP 5a:** Large Landscape Audits

**BMP 5b:** Water Budgets

**BMP 6:** Residential Clothes Washer

**BMP 7:** Public Information

**BMP 8:** School Education

**BMP 9a:** Commercial Water Audits

**BMP 9b:** Ultra Low Flow Toilets/Urinals

**BMP 11:** Conservation Pricing

**BMP 12:** Conservation Coordinator

**BMP 13:** Water Waste Prohibition

**BMP 14:** Residential Ultra Low Flow

<sup>10</sup> Sandkulla, N. and B. Pink. 2006. Water Conservation Programs: Annual Report. Bay Area Water Supply and Conservation Agency.

Table 2. BAWSCA Conservation Program Summary

	FY 2005-2006	
	Number of Participating Agencies	Dollars Spent
Washing machine rebates	16	\$404,997
Pre-rinse spray valve replacement	3	\$9,750
School education	6	\$51,671
Landscape audit	4	\$24,720
Landscape Education Classes	BAWSCA wide	\$3,173
Total		\$494,311

Source: Sandkulla, N. and B. Pink. 2006. Water Conservation Programs: Annual Report. Bay Area Water Supply and Conservation Agency. San Mateo, California.

Conservation pricing has been shown to be an effective means of reducing water waste and is included in the CUWCC BMPs (BMP 11). The CUWCC recognizes increasing block rates and uniform volumetric rates as conservation rate structures. By this definition, all of the wholesale customers employ some form of conservation pricing: 17 of the 27 wholesale agencies institute increasing block water rates, by which the unit cost of water increases as the volume consumed increases, and the remaining 10 wholesale agencies use uniform volumetric water rates, by which the *unit cost* of water is independent of the volume consumed.<sup>11,12</sup> Among its wholesale customers, SFPUC charges a uniform volumetric water rate. The SFPUC implements increasing block water rates for all of its retail customers except governmental/institutional and irrigation uses, which have uniform volumetric rates.<sup>13</sup> The SFPUC has also instituted increasing block rates for wastewater for its residential customers, but uniform volumetric wastewater rates for all other customers.

Historically, the price of water has been low, failing to cover the cost of providing water services. These low costs provide a disincentive to water conservation and perpetuate wasteful water use. Increasingly, agencies have realized the importance of appropriate

<sup>11</sup> Report says 27 agencies because information is not provided on Stanford.  
<sup>12</sup> BAWSCA. 2006. Bay Area Water Supply and Conservation Agency Annual Survey: FY 2004-05. San Mateo, California.  
<sup>13</sup> Prior to June 2006, Proposition H prohibited the SFPUC from increasing or restructuring its water rates.

pricing policies. Although uniform rates are considered a form of conservation pricing, increasing block rates are among the most effective ways to encourage water conservation. A recent study on water-rate structures in the southwest United States found that per-capita water use is typically lower in cities with dramatically increasing block rates.<sup>14</sup> Aside from encouraging water-use efficiency, increasing block rates provide a number of other benefits, such as providing water at a lower cost for basic needs and stabilizing revenue for the utility.<sup>15</sup> Other pricing mechanisms, such as seasonal rates or priority pricing, can also effectively reduce water waste. The SFPUC and its wholesale customers should evaluate and implement water and wastewater rate structures that encourage water conservation among all of their customers.

### Water Conservation Projections

The SFPUC commissioned two separate modeling studies on future water demand for its retail and wholesale customers. For the wholesale customers, future water demand with passive (i.e., plumbing codes alone) and active conservation programs was evaluated using the Demand Side Management Least-Cost Planning Decision Support System (DSS) model.<sup>16,17</sup> To forecast 2030 water demand with plumbing codes alone, the DSS model relies on demographic and employment projections, combined with the effects of natural fixture replacement due to the implementation of plumbing codes.

To forecast demand with additional conservation measures for each wholesale customer, an initial set of 75 conservation measures was screened by a committee comprised of personnel from the wholesale customers based on qualitative criteria: technology/market maturity, service area match, customer acceptance/equity, and if better measures are available. The 31 measures that passed the initial screening process were combined to

<sup>14</sup> Western Resource Advocates. 2003. Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest. Boulder, Colorado.  
<sup>15</sup> Western Resource Advocates. 2006. Water Rate Structures in New Mexico: How New Mexico Cities Compare Using This Important Water Use Efficiency Tool. Boulder, Colorado.  
<sup>16</sup> Here, I refer to the natural replacements of fixtures due to plumbing codes as “passive” conservation measures, i.e., these savings occur without any effort on the part of the water utility. Conservation measures that would require additional effort are referred to as “active” programs.  
<sup>17</sup> Maddaus, W., Maddaus, M. 2004. Evaluating Water Conservation Cost-Effectiveness with an End Use Model. Proceedings Water Sources 2004, American Water Works Association.

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avoid duplication and take advantage of economies of scale, a process that resulted in 22 new measures. Ten additional Best Management Practices (BMPs) were added to produce a final set of 32 conservation measures. The DSS model then individually evaluated these 32 measures for each wholesale customer using a cost-benefit analysis from the utility perspective.<sup>18</sup> Conservation measures were combined to form three programs (A, B, and C) with increasing levels of water savings. Each program as a whole was then evaluated with the DSS model to avoid the duplication of costs and benefits. It is important to note that programs differ among wholesale customers. For example, Program A for the Alameda County Water District consists of different conservation measures than Program A for the City of Menlo Park.

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Demand projections for the SFPUC retail customers were analyzed separately and with a different model (the Hannaford model) from that of the wholesale customers. Like the DSS model, the Hannaford model established 2030 baseline conditions that accounted for demographic and employment projections and implementation of the plumbing codes. An initial set of 48 conservation measures were then evaluated according to the costs and benefits of each measure from the “utility” perspective. A customer-utility benefit-cost ratio was also calculated. The initial 48 measures were reduced to 38 measures, which were then put into three packages (Packages A, B, and C). These three packages “represent a range of conservation potential that is considered cost-effective and achievable for long-range planning purposes.”<sup>19</sup> Although the basic structure of the models was similar, treatment of non-residential demand varied significantly; this is discussed in greater detail later in the report (see page 31-38).

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The conservation programs that the SFPUC retail and wholesale customers selected demonstrate a significant difference in their commitment to conservation in terms of the number of conservation measures implemented. For each wholesale customer, Program B, which contained fewer than 10 measures on average, was selected as the recommended program. The total 2030 waters savings for all 27 wholesale customers

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<sup>18</sup> While the community perspective was included in the analysis, this perspective was not used to calculate the cost-efficiency of each measure or program.  
<sup>19</sup> Hannaford, M.A. 2004. City and County of San Francisco Retail Water Demands and Conservation Potential. Prepared for the San Francisco Public Utilities Commission.

was 14.5 mgd. Each wholesale customer was then allowed to pick which measures it deemed feasible, yielding an adjusted Program B with a 2030 total water savings of 13.4 mgd, or four percent less than projected 2030 demand with plumbing codes alone.<sup>20</sup> By contrast, Package C was selected as the recommended program for the SFPUC retail customers. Package C, which the SFPUC believes represents its full conservation potential, consists of 38 measures with an estimated 2030 water savings of 4.5 mgd, or five percent less than projected 2030 demand with plumbing codes alone. Throughout this report, the water use reductions from Program B and Package C for the wholesale and retail customers, respectively, are referred to as the “proposed conservation.”

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A cost-benefit analysis can be conducted from a number of perspectives, which determines the costs and benefits included in the analysis. Both the DSS and Hannaford models assess the economics of the conservation measures and programs from the “utility” perspective. Although community costs and benefits are discussed secondarily, they are not used to evaluate the measures. The utility perspective is based on costs and benefits to the water utility; whereas the community perspective is based on costs and benefits to the water utility *and* customer and can include energy savings, as well as savings from reduced landscape chemical and fertilizer application, less landscape maintenance, and reduced detergent application for dishwashers and washing machines.<sup>21</sup>

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The utility perspective is much narrower than either the customer or community perspectives and misses important water-use efficiency cost savings that make many water-efficiency measures substantially cost-effective. The classic example is the high-efficiency clothes washer, which may not save sufficient water at present to cover their higher initial capital costs (although this is increasingly less true, as their costs come down). Water utilities therefore often view them as inappropriate for water conservation programs. Yet they have substantial energy savings as well, which makes them tremendously cost-effective to the consumer. Environmental benefits from greater instream flow are also likely, although these benefits are difficult to quantify and are rarely included in any economic analyses. When they are included, they typically have

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<sup>20</sup> The wholesale customers, however, are not required to implement these measures; rather, they agreed to reduce their water use by the 13 mgd that the adjusted Program B indicates is possible.  
<sup>21</sup> Vickers, A. 2001. Handbook of Water Use and Conservation. Waterlow Press, Amherst, Massachusetts.

the effect of making efficiency and conservation estimates even more economically attractive.

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## Analysis and Review of Water Demand

### Total Water Demand

Figure 1 shows historic water demand and projected demand to 2030 for the SFPUC retail and wholesale customers. Two estimates for 2030 demand are shown: demand with implementation of plumbing codes alone and with implementation of plumbing codes plus the proposed conservation. The plumbing codes apply to toilets, urinals, showerheads, and faucets. Clothes washers are also included after 2007.

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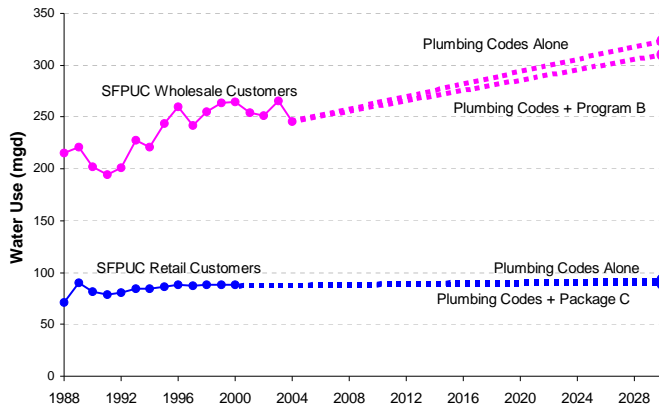


Figure 1: Historic (Solid Line) and Projected (Dotted Line) Demand for the SFPUC Wholesale and Retail Customers.

Figure 1 highlights dissimilar water use trends for the retail and wholesale customers. Water demand for the retail customers has remained relatively constant since 1988. In the future, conservation and efficiency improvements are sufficient to temper water-use increases due to population and economic growth. For the wholesale customers, however, water demand has increased over time. While demand has been fairly stable since 1996, population and economic growth are projected to increase water demand significantly

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cont.

over the next 25 years. Note that water demand increases for the wholesale customers have not been linear, reflecting a range of sometimes conflicting factors that affect water use. A short, drought-induced reduction in water use in the late 1980s and early 1990s, for example, was followed by a rapid increase in water use.

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Table 3 shows current (2001 for the wholesale customers and 2000 for the retail customers) and projected demand for the wholesale and retail customers. Wholesale demand is projected to increase over time due to a projected 19 percent and 31 percent increase in population and employment, respectively. With plumbing codes alone, wholesale demand is expected to reach 323.7 mgd in 2030, or 19 percent above 2001 levels. The proposed conservation moderates this growth slightly, reducing 2030 demand to 310.2 mgd, or four percent less than demand with plumbing codes alone.

For the retail customers, conservation is sufficient to temper water-use increases due to population and economic growth. Retail demand declines slightly (0.2 mgd) between 2000 and 2030 with implementation of plumbing codes alone despite a 12 percent and 25 percent increase in population and employment, respectively. Conservation measures, contained within Package C, reduce 2030 demand by an additional 4.5 mgd, or five percent below levels with plumbing codes alone. In total, water demand is projected to decline by 4.7 mgd between 2000 and 2030.

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Overall demand (both retail and wholesale customers) is projected to increase by 51.2 mgd, or 14 percent, between 2001 and 2030 with implementation of the plumbing codes alone. Additional conservation helps mitigate this increase. With the proposed conservation, system demand is projected to increase by 33.3 mgd, or 9 percent, to 399.1 mgd in 2030.

Table 3 highlights substantial variation in water demand changes among wholesale and retail customers. Demand is projected to increase for most customers, although demand for seven of the 28 wholesale customers will remain constant or even decline. Demand increases for four of the customers (Alameda County Water District, Hayward, Milpitas, and Santa Clara) account for nearly 80 percent of the total demand increase (Table 3).

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These four agencies, however, accounted for only 30 percent of 2001 total water demand, and thus are responsible for a disproportionate amount of 2030 demand growth. ↑ 56  
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Table 3. Current and projected (2030) water demand (mgd) with implementation of plumbing codes alone and plumbing codes plus proposed conservation.

Customer	Current	2030 Plumbing Codes	2030 Plumbing Codes + Proposed Conservation	Demand Change with Proposed Conservation
<b>Alameda County Water District</b>	<b>51.1</b>	<b>59.3</b>	<b>56.1</b>	<b>5.00</b>
Brisbane, City of	0.4	0.9	0.9	0.46
Burlingame, City of	4.8	4.9	4.7	-0.10
CWS - Bear Gulch District	13.4	13.9	12.9	-0.50
CWS - Mid Peninsula District	17.2	18.1	17.3	0.10
CWS - South San Francisco District	8.9	9.9	9.3	0.40
Coastside County Water District	2.6	3.2	3.0	0.40
Daly City, City of	8.7	9.1	8.7	0.00
East Palo Alto, City of	2.5	4.8	4.6	2.10
Esteros MID/Foster City	5.8	6.8	6.8	1.00
Guadalupe Valley MID	0.3	0.8	0.7	0.38
<b>Hayward, City of</b>	<b>19.3</b>	<b>28.7</b>	<b>27.9</b>	<b>8.60</b>
Hillsborough, Town of	3.7	3.9	3.6	-0.10
Los Trancos County Water District	0.1	0.1	0.1	0.03
Menlo Park, City of	4.1	4.7	4.6	0.50
Mid-Peninsula Water District	3.7	3.8	3.7	0.00
Millbrae, City of	3.1	3.3	3.2	0.10
<b>Milpitas, City of</b>	<b>12.0</b>	<b>17.7</b>	<b>17.1</b>	<b>5.10</b>
Mountain View, City of	13.3	14.8	14.5	1.20
North Coast County Water District	3.6	3.8	3.8	0.20
Palo Alto, City of	14.2	14.7	14.1	-0.10
Purissima Hills Water District	2.2	3.3	3.2	1.00
Redwood City, City of	11.9	13.4	12.6	0.70
San Bruno, City of	4.4	4.5	4.3	-0.10
San Jose, City of (portion of north SJ)	5.2	6.5	6.3	1.10
<b>Santa Clara, City of</b>	<b>25.8</b>	<b>33.9</b>	<b>32.8</b>	<b>7.00</b>
Skyline County Water District	0.2	0.3	0.3	0.13
Stanford University	3.9	6.8	6.2	2.30
Sunnyvale, City of	24.8	26.8	26.0	1.20
Westborough Water District	1.0	0.9	0.9	-0.09
SFPUC Wholesale Customer	272.2	323.7	310.2	38.0
SFPUC Retail	93.6	93.4	88.9	-4.70
Total SFPUC System	365.8	417.1	399.1	33.3

Note: "Current" refers to the years 2000 and 2001 for the retail and wholesale customers, respectively. The wholesale customers shown in bold are responsible for nearly 80 percent of the total demand increase. Demand change refers to the difference between current demand and 2030 demand with implementation of the plumbing codes plus the proposed conservation.

**Gross Per-Capita Demand**

Per-capita demand patterns mimic water-use patterns but are more revealing. Figure 2 shows historic and projected gross per-capita demand for the wholesale and retail customers.<sup>22</sup> For the wholesale customers, per-capita demand reached a high of 187 gpcd in the mid-1980s but declined precipitously during the drought of the late 1980s and early 1990s. Like water demand, per-capita demand for the wholesale customers has been relatively constant since 1996. Projected 2030 per-capita demand increases slightly over 2005 levels but is similar to the per-capita estimates in previous years.

For retail customers, gross per-capita demand has declined over time. Per-capita reached a peak of 127 gpcd in 1989 but declined during the drought.<sup>23</sup> Since 1996, per-capita demand has declined steadily. By 2030, per-capita demand is projected to decline to 91 gpcd, nearly 1/2 of the per-capita demand of the wholesale customers. We note that simple comparisons of gross per-capita water demand between the wholesale and retail customers can be misleading because water use is affected by a variety of economic and demographic factors, such as housing type and density and the type of businesses present in a given region. Local climate conditions and water-use efficiency also affect demand.

While per-capita demand comparisons between the SFPUC retail and wholesale customers can be misleading, a comparison of the trends over time, however, is revealing. Since the drought of the late 1980's and early 1990's, per-capita water use has declined for the retail customers but remained constant for the wholesale customers. Thus suggests that water-use efficiency for the retail customers has improved but remains unchanged for the wholesale customers. Projections to 2030 indicate that these efficiency improvements are still not being implemented effectively for the wholesale customers despite the development of numerous technologies and policies to cost-effectively reduce water waste. For example, Seattle Public Utilities successfully reduced per-capita demand from 150 gpcd in 1985 to 105 gpcd in 2004 through higher water rates, plumbing codes,

<sup>22</sup> Gross per-capita demand includes UFW.

<sup>23</sup> Good data is not available for the years 1993 through 1995. Per-capita estimates during these years are likely higher than shown.

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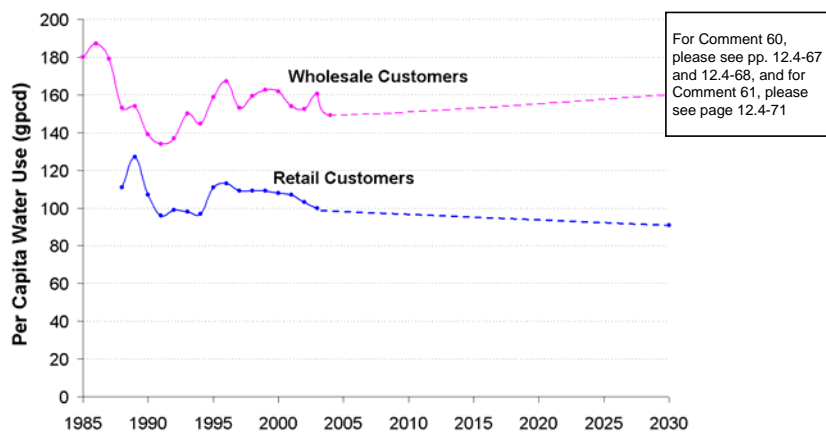
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conservation, and improved system operation.<sup>24</sup> Likewise, East Bay Municipal Utility District reduced per-capita demand from 210 gpcd in 1970 to 155 gpcd in 2005 through a variety of conservation measures.<sup>25</sup>

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For Comment 60, please see pp. 12.4-67 and 12.4-68, and for Comment 61, please see page 12.4-71

Figure 2: Historic (solid line) and Projected (dotted line) Gross Per-Capita Demand with Plumbing Codes Plus Proposed Conservation.

## Analysis and Review of the Wholesale and Retail Customer Demand and Conservation Potential

This section reviews and analyzes the demand and conservation potential for the SFPUC wholesale and retail customers. Our analysis indicates that the proposed conservation programs fail to capture the substantial amount of water savings that are possible, particularly for outdoor and non-residential uses. Demand projections for the SFPUC

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<sup>24</sup> Seattle Public Utilities. 2006. Demographics and Water Use Statistics. Seattle, Washington. [http://www.seattle.gov/util/About\\_SPU/Water\\_System/History\\_&\\_Overview/DEMOGRAPHI\\_200312020\\_908145.asp](http://www.seattle.gov/util/About_SPU/Water_System/History_&_Overview/DEMOGRAPHI_200312020_908145.asp).

<sup>25</sup> East Bay Municipal Utility District. 2005. Water Conservation/Water Recycling Annual Report. Oakland, California.

[http://www.ebmud.com/about\\_ebmud/publications/annual\\_reports/2005\\_wc\\_rw\\_ar.pdf](http://www.ebmud.com/about_ebmud/publications/annual_reports/2005_wc_rw_ar.pdf)

retail and wholesale customers do not include price-driven efficiency improvements, despite an estimated quadrupling of the price of water purchased from the SFPUC by 2015. The conservation savings identified in the analysis are low, in comparison to savings achieved in recent water conservation assessments and in other water districts. For example, a recent Pacific Institute study concludes that existing, cost-effective technologies could reduce California's current (2000) urban demand by nearly 30 percent.<sup>26</sup> As a result, per-capita water use remains high, particularly for the wholesale customers.

### Price-Driven Efficiency

Pricing is an important tool that allows water managers to reduce wasteful water use. The responsiveness of water demand to changes in water price is referred to as the price elasticity of water demand and is commonly expressed as a positive or negative decimal. If the price doubles and water use drops by 20 percent, for example, the price elasticity of water is -0.20. The price-elasticity can vary by region, water use (indoor vs. outdoor), customer type, etc.

A recent survey of price-elasticity factors by the Pacific Institute found that typical California price-elasticities of demand are around -0.20 for single-family homes, -0.10 for multi-family homes, and -0.25 for the non-residential sector.<sup>27,28</sup> Given that the SFPUC projects that price will quadruple over a 12-year period, from \$383 per acre-foot (\$1,177 per million gallons) in 2003 to \$1,603 per acre-foot (\$4,919 per million gallons) in 2015, price will likely be an important driver of conservation in the coming years.<sup>29,30</sup> Neither the SFPUC retail nor wholesale demand analyses, however, consider price-driven efficiency, citing concerns about double-counting conservation savings. While this concern is valid, the projected conservation is so low that double counting is also likely

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<sup>26</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security. Oakland, California.

<sup>27</sup> A price-elasticity of -0.2 means that if price increases by 100 percent, demand would decline by 20 percent.

<sup>28</sup> Gleick, P.H., H. Cooley, and D. Groves. 2005. California Water 2030: An Efficient Future. Pacific Institute for Studies in Development, Environment, and Security. Oakland, California.

<sup>29</sup> Ellen Levin. 2006. Personal Communication. September 22, 2006.

<sup>30</sup> Dollar amounts are in real dollars.

low. A better mechanism is needed to incorporate the effects of price in future demand projections.

Failing to account for price-driven efficiency can create revenue shortfalls. As the price of water goes up, discretionary water use will decline, thereby reducing revenues. Rates must be designed to account for this effect. As noted in a report to the Washington Legislature, "The key to ensuring adequate revenues is anticipation of the potential for a reduction in sales and design of rates based on reduced sales, rather than existing sales."<sup>31</sup>

Overestimating demand can also result in the construction of unnecessary or over-sized facility, further exacerbating revenue concerns.

**Demand Change by Sector**

Figures 3 and 4 show changes in wholesale and retail customer demand between 2000/2001 and 2030 by sector with implementation of the plumbing codes plus the proposed conservation. For the wholesale customers, the total demand increase is 38.0 mgd between 2000 and 2030. The non-residential sector accounts for about two-thirds of that increase, or 24.1 mgd. Over 40 percent of the increase in non-residential demand is due to outdoor use. Residential demand growth, largely due to increases in outdoor water use, accounts for the remaining one-third of total demand growth.

For the retail customers, conservation and efficiency are projected to reduce total demand. With the proposed conservation, 2030 demand for the non-residential sector is 3.1 mgd greater than 2000 demand. All of the projected increase in non-residential demand is due to indoor use. Residential demand and unaccounted-for-water (UFW) decline by 6.5 mgd and 1 mgd, respectively. Thus reductions in residential water demand and UFW are sufficient to offset increases in non-residential demand, and total demand declines by 4.7 mgd.

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<sup>31</sup> Washington Water Utilities Council, Washington State Department of Health, and Economic and Engineering Services, Inc. 1995. Conservation-Oriented Rates for Public Water Systems in Washington. Report to the Legislature. <http://www.mrsc.org/Subjects/Environment/water/doh331-113.pdf>

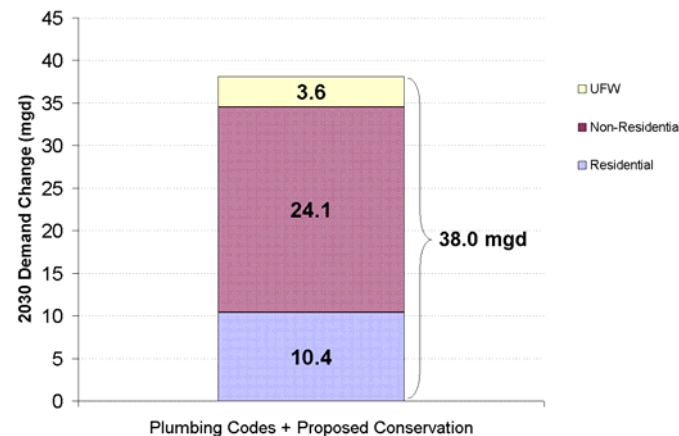


Figure 3: Demand Change between 2001 and 2030 for the wholesale customers by sector.

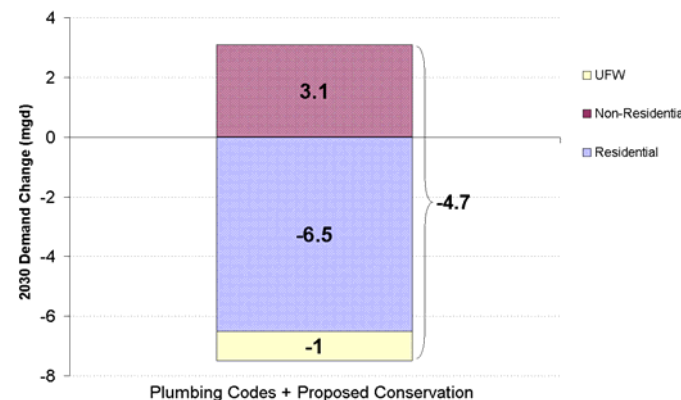


Figure 4. Demand Change between 2000 and 2030 for the retail customers by sector.

## Residential Water Use Projections

### Historic Per-Capita Water Demand

Total residential per-capita water use has been relatively constant since the mid- to late-1980s for both the retail and wholesale customers (Figure 5). Short-term, annual variations are likely a result of climatic variation.<sup>32</sup> Because detailed historic per-capita water-use estimates were not available for the wholesale and retail customers, we are unable to perform a comprehensive analysis of per-capita water use trends over time. For example, we are unable to distinguish single-family from multi-family use. Likewise, we are unable to separate indoor and outdoor use. Despite these limitations, we can draw some general conclusions about residential water use trends over time.

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As shown in Figure 5, total residential per-capita water use has been constant. Since the 1980's, however, indoor per-capita water use has likely declined due to the implementation of plumbing codes and other conservation programs, such as the BMPs. While indoor efficiency improvements could be countered by an increase in the fraction of single-family units, which tend to have higher water-use rates than multi-family units, housing data indicates that the fraction of single-family units was fairly constant between 1990 and 2005 for both the wholesale and retail customers (Table 4). The relative constancy of total residential per-capita water use and fraction of single-family residences suggests that water-use reductions from indoor efficiency improvements were countered by increases in outdoor water use.

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<sup>32</sup> Note that water-use trends for the retail customers are similar but less variable than those of the wholesale customers. Because outdoor water use is a minor component of retail demand, per-capita water use is less sensitive to annual climate variations.

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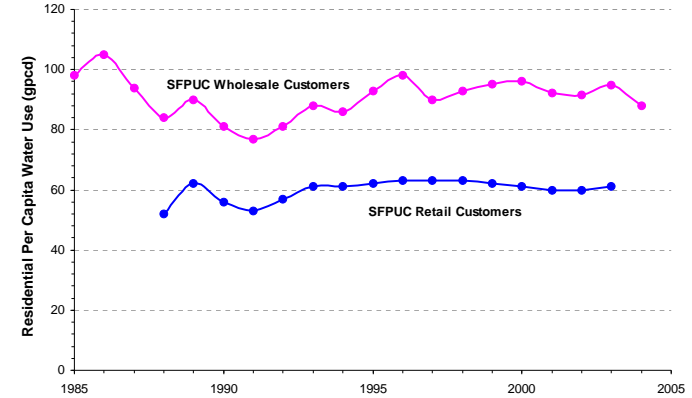


Figure 5. Historic Residential Per-Capita Water Demand for the SFPUC Wholesale and Retail Customers.

Figure 5 also shows that per-capita water demand for the wholesale customers is about 50 percent higher than that of the retail customers, in part due to demographic and climatic differences between the regions. The City and County of San Francisco have a larger fraction of multi-family units, whose residents have fewer fixtures and appliances and as a result, tend to use significantly less water than those living in single-family units (Table 4). Additionally, outdoor water use in the City and County of San Francisco is low due to cool summer temperatures and dense housing with few yards. Both of these factors tend to lower average residential per-capita water use. Differences in water-use efficiency, however, cannot be determined from the historic data but are discussed below.

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Table 4. Percent single-family housing units for the wholesale and retail customers.

	1990	1995	2000	2005
<b>Wholesale Customers</b>	63%	63%	63%	62%
<b>Retail Customers</b>	32%	32%	33%	31%

Note:

The wholesale customer estimate is based on city-wide data for those cities served by the wholesale customers. The estimate for the retail customers is based on data for the City and County of San Francisco.

Sources:

State of California, Department of Finance. 2000. City/County Population and Housing Estimates, 1991-2000, with 1990 Census Counts. Sacramento, California.

State of California, Department of Finance. 2006. E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2006, with 2000 Benchmark. Sacramento, California.

**Projected Per-Capita Water Demand**

Tables 5 and 6 show current and projected per-capita water demand estimates for single-family and multi-family customers, respectively.<sup>33</sup> In 2001, single-family water demand averaged 108 gpcd for the wholesale customers. Note the tremendous variation among wholesale customers; in some areas, per-capita water demand was 300 gpcd due, in large part, to high outdoor water use. The proposed conservation reduces average single-family total water demand by 10 gpcd to 98 gpcd, or by only 9 percent. These savings are from reductions in indoor water use. For most wholesale customers, improvements in outdoor water use are small, and in some areas, outdoor water use is projected to increase. In Hayward, for example, single-family outdoor water use is expected to nearly double, from 22 gpcd in 2001 to 43 gpcd in 2030. Likewise, single-family outdoor water use for the Purissima Hills Water District is projected to increase from 226 gpcd in 2001 to a staggering 332 gpcd in 2030.

For the wholesale customers, water demand reductions are larger for multi-family customers than for single-family customers (Table 6). Nearly all wholesale customers project a reduction in water demand, from an average of 75 gpcd in 2001 to 64 gpcd in 2030, a savings of nearly 15 percent. These savings are due to efficiency improvements

<sup>33</sup> Current is defined as 2001 for the wholesale customers and 2005 for the retail customers.

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in indoor water use, as average outdoor water use is projected to remain constant at 14 gpcd.

Projected single-family and multi-family demand reductions for the retail customers are more substantial than those for the wholesale customers. By 2030, projected single-family water demand is 51 gpcd, a 10 gpcd or 16 percent reduction over 2005 per-capita demand. Demand reductions for the multi-family customers are even greater. Projected multi-family demand is 47 gpcd, an 11 gpcd or 19 percent reduction over 2005 per-capita demand. While projected savings by single-family and multi-family residential retail users results from reductions in indoor water use, outdoor water use remains only a minor component of total use.

**Comparison with Other Conservation Studies**

Recent conservation assessments indicate that there are a substantial number of cost-effective technologies that can drastically reduce residential water demand – both indoor and outdoor – to levels far below those projected for the wholesale and retail customers. For example, a 1997 study by the American Water Works Association (AWWA) found that conservation could reduce indoor water use from 65 gpcd to 45 gpcd for single-family homes, a savings of over 30 percent.<sup>34</sup> The largest reductions were realized by replacing inefficient toilets and clothes washers with more efficient models.

Similarly, a Seattle study found that conservation and efficiency could substantially reduce indoor water use. Installing new, water-efficient fixtures and appliances reduced single-family indoor water use from 64 gpcd to 40 gpcd, a savings of nearly 40 percent, and far below the 2030 levels projected in the SFPUC studies. The largest reductions were achieved by installing efficient toilets and clothes washers. Further, homeowners rated the performance, maintenance, and appearance of the efficient appliances higher than the older appliances.<sup>35</sup>

<sup>34</sup> AWWA WaterWiser. 1997. Residential Water Use Summary – Typical Single Family Home.

<sup>35</sup> Mayer, P.W., W.B. DeOreo, and D.M. Lewis. 2000. Seattle Home Water Conservation Study: The Impacts of High Efficiency Plumbing Fixture Retrofits in Single-Family Homes. Aquacraft, Inc. Water Engineering and Management.

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Table 5: Baseline and Projected Single-Family Residential Per-Capita Water Use Estimates.

Customer	Current			2030		
	Total (gpcd)	Indoor (gpcd)	Outdoor (gpcd)	Total (gpcd)	Indoor (gpcd)	Outdoor (gpcd)
Alameda County Water District	107	72	35	93	58	35
Brisbane, City of	72	63	9	62	53	9
Burlingame, City of	108	70	38	87	53	34
CWS - Bear Gulch District	169	71	98	143	55	88
CWS - Mid Peninsula District	109	72	37	90	55	35
CWS - South San Francisco District	76	63	13	59	47	12
Coastside County Water District	72	60	12	59	48	11
Daly City, City of	65	56	9	54	46	8
East Palo Alto, City of	71	64	7	57	51	6
Estero MID/Foster City	115	78	37	113	74	39
Guadalupe Valley MID	89	67	22	78	56	22
Hayward, City of	83	61	22	114	71	43
Hillsborough, Town of	291	122	169	255	106	149
Los Trancos County Water District	134	52	82	116	47	69
Menlo Park, City of	141	86	55	122	73	49
Mid-Peninsula Water District	106	64	42	90	49	41
Millbrae, City of	94	64	30	78	49	29
Milpitas, City of	87	62	25	93	55	38
Mountain View, City of	109	72	37	95	59	36
North Coast County Water District	76	57	19	66	47	19
Palo Alto, City of	145	83	62	127	67	60
Purissima Hills Water District	311	85	226	412	80	332
Redwood City, City of	103	68	35	87	53	34
San Bruno, City of	79	66	13	61	50	11
San Jose, City of (portion of north SJ)	88	72	16	75	59	16
Santa Clara, City of	126	73	53	123	63	60
Skyline County Water District	118	73	45	97	54	43
Stanford University	-	-	-	-	-	-
Sunnyvale, City of	122	78	44	107	64	43
Westborough Water District	72	66	6	59	53	6
<b>SFPUC Wholesale Customer Weighted Average</b>	<b>108</b>	<b>69</b>	<b>39</b>	<b>98</b>	<b>58</b>	<b>40</b>
<b>SFPUC Retail</b>	<b>61</b>	<b>56</b>	<b>4</b>	<b>51</b>	<b>47</b>	<b>5</b>

Note: The 2030 per-capita estimates include implementation of the plumbing codes plus the proposed conservation. For the wholesale customers, "current" refers to the year 2001. Values for the SFPUC retail customers are for 2005.

Table 6: Baseline and Projected Multi-Family Residential Per-Capita Water Use Estimates.

Customer	Current			2030		
	Total (gpcd)	Indoor (gpcd)	Outdoor (gpcd)	Total (gpcd)	Indoor (gpcd)	Outdoor (gpcd)
Alameda County Water District	78	66	12	65	53	12
Brisbane, City of	50	44	6	41	35	6
Burlingame, City of	77	65	12	63	51	12
CWS - Bear Gulch District	73	63	10	59	49	10
CWS - Mid Peninsula District	68	61	7	50	43	7
CWS - South San Francisco District	62	60	2	48	46	2
Coastside County Water District	66	59	7	56	49	7
Daly City, City of	63	55	8	53	45	8
East Palo Alto, City of	56	50	6	41	36	5
Estero MID/Foster City	86	72	14	76	62	14
Guadalupe Valley MID	-	-	-	-	-	-
Hayward, City of	72	54	18	60	43	17
Hillsborough, Town of	-	-	-	-	-	-
Los Trancos County Water District	-	-	-	-	-	-
Menlo Park, City of	78	60	18	67	49	18
Mid-Peninsula Water District	69	62	7	57	50	7
Millbrae, City of	67	58	9	53	45	8
Milpitas, City of	67	61	6	57	51	6
Mountain View, City of	77	64	13	67	54	13
North Coast County Water District	65	55	10	55	45	10
Palo Alto, City of	96	78	18	80	63	17
Purissima Hills Water District	-	-	-	-	-	-
Redwood City, City of	77	60	17	83	61	22
San Bruno, City of	65	55	10	52	42	10
San Jose, City of (portion of north SJ)	82	69	13	68	55	13
Santa Clara, City of	80	62	18	70	52	18
Skyline County Water District	-	-	-	-	-	-
Stanford University	-	27	12	-	31	9
Sunnyvale, City of	89	69	20	77	57	20
Westborough Water District	61	54	7	50	43	7
<b>SFPUC Wholesale Customer Weighted Average</b>	<b>75</b>	<b>61</b>	<b>14</b>	<b>64</b>	<b>51</b>	<b>14</b>
<b>SFPUC Retail</b>	<b>58</b>	<b>58</b>	<b>0</b>	<b>47</b>	<b>47</b>	<b>0</b>

Note: The 2030 per-capita estimates include implementation of the plumbing codes plus the proposed conservation. For the wholesale customers, "current" refers to the year 2001. Values for the SFPUC retail customers are for 2005.

The savings achieved in the AWWA and Seattle studies are supported by a recent Pacific Institute study, which quantified the potential for water conservation and efficiency improvements in California’s urban water use. The study concludes that existing, cost-effective technologies could reduce California’s current (2000) residential indoor use by 39 percent. Outdoor water-use savings, estimated at 33 percent, are equally impressive and “result from improved management practices, better application of available technology, and changes in landscape design away from water-intensive plants.”<sup>36</sup> Reductions in outdoor water use have the added benefit of improving water-system reliability by reducing both average and peak water demand.

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The modest improvements in outdoor water-use efficiency projected for the wholesale customers indicate that additional attention and effort must be focused on reducing outdoor water use. Studies have shown that a number of outdoor conservation measures are cost-effective and yield substantial water savings, but these measures are rarely well integrated into demand forecasts or actual conservation programs and they appear to be absent here as well. The cities of Austin, Texas and Las Vegas, Nevada offer rebates or direct payments for removing water-intensive grasses and maintaining water use below budgets established by the city.<sup>37</sup> A study conducted by the Irvine Ranch Water District in California, for example, showed that evapotranspiration controllers reduced outdoor water use for large residential users by 24 percent,<sup>38</sup> and the District has run outdoor conservation efficiency programs for many years. The City of Santa Monica offers funding for new or remodeled innovative garden designs that include one or more of the following: native plants, water-efficient plants, water-efficient irrigation systems, stormwater catchment systems, graywater systems, and/or other innovative water-saving features. They note that “Research shows that converting turf and other water-thirsty plants, and traditional, high-volume spray sprinkler irrigation systems to California

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friendly plants and water-efficient irrigation systems, can save up to 80% of water and 60% of maintenance costs.”<sup>39</sup>

In addition, training programs for landscape professionals and application of efficiency technologies have also been shown to provide significant water savings. The Municipal Water District of Orange County initiated a Landscape Performance Certification Program targeting large landscape customers with dedicated irrigation meters in Orange County, California. The program provides technical training sessions to landscape contractors and property managers (includes homeowner associations) and prepares water budgets for all sites owned or managed by the company. Sites are then assessed for compliance with the water budget, and property managers or landscape contractors are awarded a bronze, silver, or gold certification award based on the level of compliance. Companies that achieve certification are promoted with the intention of increasing market opportunities. It is estimated that each customer saves approximately 765 gallons per day on average, a 20 percent reduction of their outdoor water use, at a cost of \$165 per acre-foot – well below the current cost of water and far below the cost of new supply.<sup>40</sup> Educating landscape professionals about native and low-water-use plants and rebates available may also help increase participation in outdoor conservation programs. While results will vary regionally for all outdoor water-efficiency measures, the significant water use in landscaping and the large potential for savings suggest that more aggressive outdoor conservation programs are warranted.

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Recent California legislation may also encourage additional indoor and outdoor water-use efficiency improvements. A bill signed in 2004, AB 2717, directed the CUWCC to convene a task force (the Landscape Task Force) to examine ways to improve the efficiency of new and existing irrigated urban landscapes. The Landscape Task Force compiled a comprehensive list of 43 recommendations that would save an estimated 600,000 to 1,000,000 acre-feet per year at an average cost of \$250 to \$500 per acre-

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<sup>36</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California.” Pacific Institute for Studies in Development, Environment, and Security.  
<sup>37</sup> City of Austin, Texas Water Conservation. 2006. <http://www.ci.austin.tx.us/watercon/landscape.htm>  
<sup>38</sup> Hunt, T. et al. 2001. Residential Weather-Based Irrigation Scheduling: Evidence from the Irvine “ET Controller” Study. Irvine Ranch Water District.  
<http://www.irwd.com/Conservation/FinalETRpt%5B1%5D.pdf>

<sup>39</sup> City of Santa Monica. Grants for Landscaping. 2006. [http://santa-monica.org/epd/news/Landscaping\\_Grant.htm](http://santa-monica.org/epd/news/Landscaping_Grant.htm).  
<sup>40</sup> A&N Technical Services, Inc. 2004. Evaluation of the Landscape Performance Certification Program. Prepared for the Municipal Water District of Orange County, the Metropolitan Water District of Southern California, and the U.S. Bureau of Reclamation, Southern California Area Office.  
[http://www.mwdoc.com/documents/LPC-Evaluation\\_000.pdf](http://www.mwdoc.com/documents/LPC-Evaluation_000.pdf)

foot.<sup>41</sup> A subsequent bill, AB 1881, implements a number of these recommendations, including requiring local agencies to adopt a model ordinance that is at least as effective at conserving water as the updated state model ordinance. The bill also requires the California Energy Commission to adopt performance standards and labeling requirements for landscape irrigation equipment. AB 1881, authored by Assemblyman John Laird and approved by Governor Schwarzenegger in September 2006, will contribute to even greater outdoor efficiency improvements.

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Plumbing code standards have been shown to be extremely effective in reducing demand, and a second bill, vetoed by Governor Schwarzenegger, AB 2496, would have updated the 1991 plumbing code standards for toilets and urinals. AB 2496 called for new plumbing standards to reduce the toilet flush volume from 1.6 gallons per flush (gpf) to 1.3 gpf and the urinal flush volume from 1.0 gpf to no more than 0.5 gpf. These new standards would have reduced 2030 residential and non-residential indoor water use by about 5 percent.<sup>42</sup> In his veto message, the Governor indicated that it was not yet clear that the technology was ready for widespread use. These toilets are already standard in Australia, Japan, and other countries, and it is only a matter of time before these standards are adopted in California.

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### Non-Residential Water Use Projections

For the wholesale and retail customers combined, increases in non-residential water use account for over 80 percent of the total 2030 demand increase. About 35 percent of the projected increase in non-residential demand is due to outdoor use. Because the wholesale customers account for 90 percent of the projected growth in non-residential demand, the following analysis and discussion will focus on those customers.

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Our analysis indicates that the employment assumptions are significantly higher than are likely to materialize and that this assumption alone leads to an overestimate of future

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<sup>41</sup> Landscape Task Force citation. 2005. Water Smart Landscapes for California: AB 2717 Landscape Task Force Findings, Recommendations, & Actions.

<sup>42</sup> Here we assume that all residential and non-residential toilets in the SFPUC service area are 1.6 gpf in 2030, and all urinals are 1.0 gpf (a highly conservative estimate). Replacing these toilets and urinals would reduce 2030 residential and non-residential indoor water use by about five percent.

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water demand. Additionally, the forecasting method is inadequate, failing to recognize differences in water use among customers in the non-residential sector and potential changes in the composition of the non-residential sector over time. The forecasting method for the retail customers provides a better model and should be applied to the wholesale customers. In addition, a substantial fraction of the demand growth is due to outdoor use

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### Employment Projections

Increases in non-residential demand among the wholesale customers are largely driven by large projected increases in employment. In the DSS model, employment is projected to increase by over 31 percent between 2001 and 2030, rising from 1.13 million in 2001 to 1.49 million in 2030. These projections were based on the Association of Bay Area Governments' (ABAG) employment projections, released in 2002.<sup>43</sup> In 2005, however, ABAG revised the employment projections for the 9-county San Francisco Bay Area: "PROJECTIONS 2005 forecasts over 46,000 fewer jobs than Projections 2002. This is a result of the slow pace of job growth in the Bay Area during the early part of the forecast. The pace has been so slow that it has caused ABAG to reduce the long-term job outlook somewhat."<sup>44</sup> For the 9-county area, 46,000 fewer jobs represent only a one or two percent decline; because there is likely substantial regional variation, however, the effect on the wholesale customers is not immediately clear. Nevertheless, this downward revision reduces the projected growth in water demand for the non-residential sector and suggests that the demand forecast should be adjusted according to the most current information available.

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Historical employment data provides further evidence that the employment projections used in the DSS study are extremely high and unlikely to materialize. Figure 6 shows the total number of commercial and industrial accounts for the wholesale customers between 1998 and 2005 and projections to 2030. Like the DSS model, we assume that the average number of users per account is constant, i.e., the number of employees per non-residential

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<sup>43</sup> ABAG produces biennial population and employment projections for the 9-county San Francisco Bay Area. These 9 counties include Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

<sup>44</sup> ABAG. 2005. ABAG Projections 2005: Summary of Findings. <http://planning.abag.ca.gov/currentfcst/summary1.html>

account does not change between 1998 and 2030. During the late 1990's, California's economy was strong, in part due to growth in the Internet sector and related fields; by 1999, the statewide unemployment rate was a low 4.9 percent, the lowest rate in 30 years.<sup>45</sup> Unemployment rates were likely even lower among the SFPUC wholesale customers, many of whom are dependant on computer-related industries. As the dot-com bubble burst in late 2000 through 2001, the region's economy experienced a mild economic downturn, as indicated by a slight dip in Figure 6. Jobs throughout the region recovered more slowly than expected and have been fairly stable since 1998. Because of the slow growth in recent years, the 2030 employment projections assumed in the DSS model are unlikely and should be adjusted. Furthermore, the projected employment growth is substantially greater than the 19 percent projected population growth. While employment growth can exceed population growth, such a large discrepancy is highly unusual given the low unemployment rate in the region. This suggests the need for a re-evaluation with another, more realistic employment projection.

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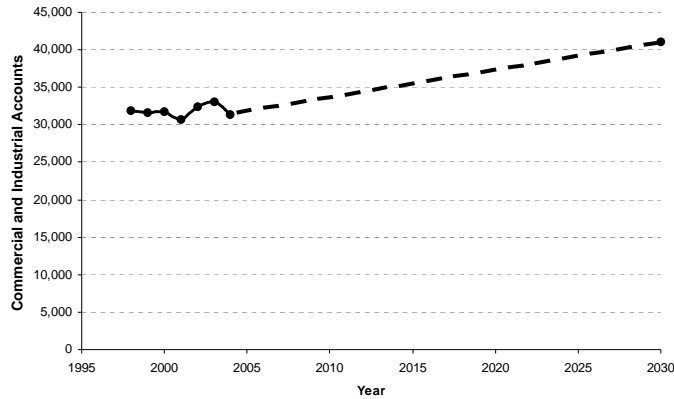


Figure 6: Historic (solid line) and Projected (dashed line) Account Growth for the Wholesale Customers.  
Source: BAWSCA annual surveys from FY 1998-99 to FY 2004-05.

<sup>45</sup> Levy, S. 2000. "The California Economy: Outlook and Issues for the Next Ten Years." In Employment and Health Policies for Californians Over 50. Conference Proceedings. January 2000. [http://ihps.ucsf.edu/conf\\_proc\\_jan2000/](http://ihps.ucsf.edu/conf_proc_jan2000/)

**Non-Residential Forecasting Method**

As described previously, the DSS model relies on employment projections, combined with the implementation of plumbing codes and the proposed conservation measures to forecast future demand. This process as applied to the non-residential sector is described in greater detail below:

1. Base-year (2001) conditions are established
  - **Water Use by Account:** For each wholesale customer, base-year (2001) water use for the commercial and industrial sectors is divided by the number of commercial and industrial accounts, respectively. This yields an estimate of water use per account for the commercial and industrial sectors. If insufficient data is available, the commercial and industrial sectors are combined and one water-use number is calculated.
  - **Users Per Account:** The number of users per account are developed by dividing the base-year (2001) employment figure in each wholesale customer service area by the number of accounts billed in that year (2001).
  - **Fixture models:** Fixture models establish base-year fixture conditions (number of high-volume and low-volume fixtures) according to water usage data and additional water-use and fixture replacement studies. These models integrate plumbing codes over time to establish future fixture conditions.
2. Forecasting future (2030) demand
  - **Employment Growth:** The number of users per account is held constant, allowing projected employment growth to be translated into account growth.
  - **Demand Projections:** The model then forecasts future water use for each wholesale customer based on the account water use (adjusted to reflect plumbing code implementation) and growth in the number of accounts.
  - **Additional Conservation:** Conservation measures were applied by specifying the target user group and end use (e.g., irrigation), market penetration, measure water savings, and measure life.

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This forecasting method is inadequate. It has two important errors which can lead to potentially large inaccuracies when forecasting demand: it assumes that the current composition of commercial and industrial businesses within the non-residential sector will not change over time, and it ignores the variability in water use in both quantity and purpose among users in the non-residential sector. These inadequacies are discussed in greater detail below.

The DSS model applies the economic growth rate to all non-residential accounts equally, thereby assuming that all subsectors grow at the same rate. This is highly unlikely. Table 7 shows the current (2000) and projected employment by subsector for the 9-county San Francisco Bay Area. The sector growth rates vary tremendously. For example, employment in the health and educational services and information subsectors [traditionally lower water-using sectors] is projected to increase by nearly 50 percent. Employment in the agriculture and natural resources and manufacturing and wholesale subsectors [traditionally higher water-using sectors], however, is projected to grow by a more modest four percent and 17 percent, respectively. Because of the differences in the employee growth rate across the region, the composition of the non-residential sector will likely change considerably over time.

Table 7: Current (2000) and Projected Regional Employment by Economic Subsector.

Sector	2000	2030	Change
Ag and Natural Resources	24,470	25,470	4.1%
Construction	231,380	339,350	46.7%
Manufacturing and Wholesale	685,480	798,630	16.5%
Retail	402,670	531,270	31.9%
Transportation and Utilities	177,940	212,970	19.7%
Information	177,440	265,740	49.8%
Financial and Leasing	283,350	411,540	45.2%
Prof. Managerial Services	568,260	780,650	37.4%
Health and Educ. Services	623,590	941,730	51.0%
Arts, Rec., and Other Services	432,440	625,750	44.7%
Government	146,440	187,500	28.0%
Total Jobs	3,753,460	5,120,600	36.4%

Note: Regional projections for Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties.

Source: Association for Bay Area Governments. 2005. ABAG Projections 2005: Current Forecast. <http://planning.abag.ca.gov/currentfcast/regional.html>

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The DSS model also ignores differences in water use among users in the non-residential sector. Water is used in various quantities and for a variety of purposes among customers within the non-residential sector. Table 8 shows water-use coefficients in gallons per employee per day (gped) for various establishments in the non-residential sector. Note the tremendous range in water use. For example, water use in hospitals is about 124 gped whereas water use in hotels is nearly twice that amount. For golf courses, water use is estimated at 7,718 gped. Thus the industries present in a given area strongly influence the water use of the non-residential sector, a finding that is not reflected in the DSS model.

In combination, these omissions can lead to potentially large inaccuracies. Water-use variability among subsectors combined with uncertain changes in the composition of the non-residential sector lead to inaccurate estimates of water use in the non-residential sector. Because total demand growth is driven largely by changes in the non-residential sector, a more accurate, comprehensive analysis based on industry-specific growth and water-use rates should be employed. Such an analysis was performed for the SFPUC retail customers and should be applied to the wholesale customers.

The proposed conservation reduces 2030 non-residential demand by a mere four percent. While a quantitative assessment of the conservation potential in the non-residential sector is beyond the scope of this report, the conservation potential identified for the SFPUC wholesale and retail customers is weak and misses important efficiency opportunities. Although few of the conservation savings are a result of efforts to reduce non-residential demand, other conservation assessments have concluded that the actual conservation potential of the non-residential sector is substantially higher. A recent report by the Pacific Institute finds that existing, cost-effective technologies could reduce California's current (2000) water use for the non-residential sector by 26 percent.<sup>46</sup> Savings vary by industry, but are largest for schools, office buildings, golf courses, retail stores, and restaurants. Recirculating cooling towers, x-ray water recycling units, and restaurant pre-

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<sup>46</sup> Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security. Oakland, California.

rinse spray valves are among a few of the most promising technologies.<sup>47</sup> Similarly, the Santa Clara Valley Water District commissioned a survey of 26 commercial, industrial, and institutional facilities and found that water conservation measures could reduce water use by 38 percent.<sup>48</sup> These studies suggest that additional emphasis should be placed on reducing non-residential water use.

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Table 8: Water Use Coefficients by SIC Code or Establishment Type in the Non-Residential Sector

SIC	Description	gped
806	Hospitals	124
	Office Buildings	127
	Retail	156
357, 36, 38	High Tech	203
34	Fabricated Metals	215
701, 704	Hotels	240
58	Restaurants	265
8219, 9382	Schools	282
721	Laundries	980
201	Meat Processing	1,149
202	Dairy Products	1,568
22	Textiles	1,660
208	Beverages	2,169
203	Preserved Fruits and Vegetables	2,487
262	Paper Mills	5,260
7992	Golf Courses	7,718
263	Paperboard Mills	10,320
261	Pulp Mills	12,590
291	Petroleum Refining	14,676

Note:

gped = gallons per employee per day

Source: Compiled from Appendices E and F in Gleick, P.H., D. Haasz, C. Henges-Jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security. Oakland, California.

<sup>47</sup> Gleick, P.H., D. Haasz, C. Henges-jeck, V. Srinivasan, G. Wolff, K. Cushing, and A. Mann. 2003. Waste Not, Want Not: The Potential for Urban Water Conservation in California." Pacific Institute for Studies in Development, Environment, and Security.

<sup>48</sup> Pollution Prevention International, Inc. 2004. Commercial, Institutional, and Industrial Water Use Survey Program: Final Report. Prepared for the Santa Clara Valley Water District. [http://www.cuwcc.org/uploads/tech\\_docs/CIH2OUse\\_Survey\\_Prgrm\\_Final\\_Rpt\\_04-05-25.pdf](http://www.cuwcc.org/uploads/tech_docs/CIH2OUse_Survey_Prgrm_Final_Rpt_04-05-25.pdf)

## Recycling and Reuse

Water reclamation, or recycling, refers to the process of treating wastewater to make it suitable for reuse. Reclamation can augment water supplies, as well as provide a means to treat wastewater and reduce environmental discharge. From a technical standpoint, wastewater can be treated to drinking water standards. Public perception, however, constrains potable reuse of recycled water, and it is typically reserved for irrigation, commercial and industrial purposes, toilets, and other non-potable uses. These uses, however, can be significant, and substantial fractions of some demands are likely to be met in the future with recycled water. The current and potential use of recycled water for the SFPUC retail and wholesale customers were evaluated separately and are discussed in greater detail below.

The *Wholesale Customer Recycled Water Potential Technical Memorandum* evaluates the current and potential use of recycled water for the SFPUC wholesale customers.<sup>49</sup> According to this study, nine recycled water projects currently (2004) produce 12.6 mgd of water in the wholesale customer service area.<sup>50</sup> This water is used for a number of purposes, including irrigation and commercial end uses and wetland restoration. By 2020, recycled water projects for which wholesale agencies have completed planning studies, secured funding, and have begun or will start construction will provide an additional 6.3 to 7.8 mgd of water. The total recycled water potential for 2020 for SFPUC wholesale customers is estimated to range from 39.6 to 46.0 mgd, of which 8.9 mgd would be used for environmental restoration and the remaining 30.7 to 37.1 mgd would offset potable water use.<sup>51</sup>

The *Recycled Water Master Plan Update* evaluates the current and potential use of recycled water for the SFPUC retail customers.<sup>52</sup> The SFPUC's current use of recycled

<sup>49</sup> Raines, Melton & Carella, Inc. (RMC). 2004. Wholesale Customer Recycled Water Potential Technical Memorandum. Prepared for the San Francisco Public Utilities Commission.

<sup>50</sup> Yield does not include recycled water use within wastewater treatment plants.

<sup>51</sup> The total recycled water project potential was based on summing the yields from the current (2004) projects, the "planned and being implemented" projects, and the "under study or previously studied" projects.

<sup>52</sup> RMC Water and Environment. 2006. City and County of San Francisco Recycled Water Master Plan Update. Prepared for the San Francisco Public Utilities Commission.

water is limited to two golf courses in San Francisco. The report concludes that feasible recycling projects can provide an estimated 11.8 mgd of non-potable water by 2030. The recycled water would be used primarily for irrigation, but also for commercial and industrial uses. Additional opportunities exist, such as using recycled water for residential irrigation or street cleaning/sweeping, but the uses are considered “less feasible” at this time and were not well quantified.

Despite the promising potential of recycled water identified within the SFPUC service area, recycling and reuse will provide only 13 mgd in 2030, or 3 percent of the retail and wholesale customers 2030 water demand (Figure 7). Of this total, the wholesale customers would produce 9 mgd, and the SFPUC would produce 4 mgd. This is only a fraction of the identified potential and is low in comparison to what has been achieved elsewhere (see below). Further, the outdoor and non-residential sectors are driving future demand growth. Recycled water can effectively offset increased freshwater demands for these sectors, highlighting the value of maximizing use of this resource.

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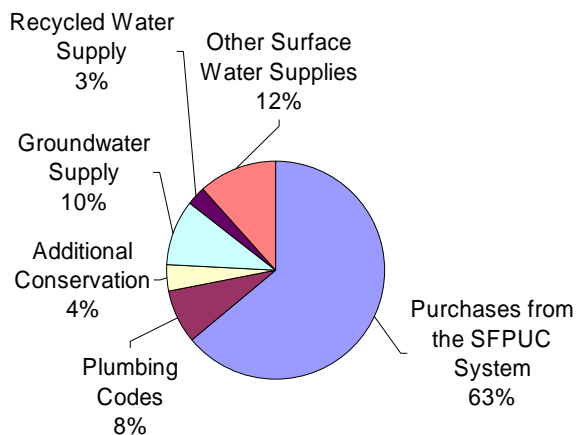


Figure 7: SFPUC Retail and Wholesale Customer 2030 Water Demand and Supply Estimates.

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Implementing recycled water projects is not without challenges, and these challenges must be overcome to realize the full potential of recycled water. Challenges are associated with “securing outside funding necessary to make the project cost-effective, gaining public support, establishing new partnerships, and managing recycled water quality/salinity.”<sup>53</sup> Recycled water, however, has become an increasingly important component of the water-supply portfolios for water districts throughout the United States, suggesting that these challenges can and have been overcome. For example, the Irvine Ranch Water District, in Southern California, currently meets nearly 20 percent of its total demand with recycled water.<sup>54</sup> In 2004, the South Florida Water Management District reused over 25 percent of the total wastewater treated.<sup>55</sup> And more recently, a new residential community in Ventura County, California has decided to use recycled water for all of its landscaping needs at an estimated cost of \$200 per acre-foot.<sup>56</sup> This suggests that significant opportunities exist to increase recycling and reuse throughout the region, effectively lessening the need to identify and develop new water supplies.

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### Conclusions

The SFPUC wholesale and retail demand studies project substantial increases in 2030 water demand, largely from the region’s wholesale customers. To meet these additional demands, purchases from the SFPUC are projected to increase by 35 mgd. The SFPUC relies upon a 25 mgd increase in diversions from the Tuolumne River plus an additional 10 mgd from conservation, water recycling, and groundwater supply programs within the SFPUC retail service area to meet future purchase requests from its retail and wholesale customers.

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Our analysis, however, reveals that current studies may significantly overestimate future regional demand for water and underestimate the potential for cost-effective demand

<sup>53</sup> Raines, Melton & Carella, Inc. (RMC). 2004. Wholesale Customer Recycled Water Potential Technical Memorandum. Prepared for the San Francisco Public Utilities Commission.

<sup>54</sup> Irvine Ranch Water District. 2005. Urban Water Management Plan. <http://www.irwd.com/BusinessCenter/UWMP-2005-F.pdf>

<sup>55</sup> South Florida Water Management District. 2004. Annual Agency Reuse Report.

<http://www.sfwmd.gov/org/wsd/wsconservation/pdfs/reuse/final2004annualreusereport.pdf>

<sup>56</sup> Richards, S. 2006. Community to use reclaimed water. Ventura County-Star. August 15, 2006.



management. A straightforward re-examination of conservation scenarios, using more plausible employment projections, more accurate non-residential water use estimates, and a price-driven conservation component would likely produce a more realistic 2030 demand forecast and identify priority policies for cost-effective efficiency improvements, recycling, and reuse.

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## Pacific Institute Recommendations

### *Modeling and Assessment Efforts*

1. Non-residential demand is an important driver for future demand increases, and as a result, an adequate assessment of future demand and conservation potential is critical. The SFPUC should re-evaluate non-residential demand projections for its wholesale customers using industry-specific economic growth projections, water use, and conservation potential. Initial efforts should be regional in scope or focus on those agencies with high non-residential water use. If the projections from the new analysis differ substantially from those of the DSS model, detailed analyses should be conducted for each of the wholesale customers. 85
2. As the price of water increases, demand decreases, particularly for non-residential and outdoor uses. Because the SFPUC expects to quadruple the price of water by 2015, the effects of projected water price increases should be integrated into the demand projections. Failing to do so may result in an overestimate of future demand and revenue shortfalls. 86
3. Estimates of the maximum, cost-effective conservation potential should be determined for each measure, major end use, and district or wholesale/retail user. The definition of "cost-effective" must be broadened beyond the utility perspective and should include the value of ecosystem flows. 87
4. Better data are needed on the type of non-residential account and the water use associated with that account. The SFPUC and its wholesale customers must also standardize reporting methods. A focus on outdoor water use is especially needed. 88
5. Modeling efforts should include multiple scenarios so as to determine a range of future demand. 89

- 6. A better assessment of the potential for using recycled water for different end uses is needed. 90
- 7. Future studies should include the impact of climate change on projected demand and supply. 91

**Conservation Implementation**

- 1. Each agency should assess what is driving demand growth and measures to reduce that demand. Agencies must take a more pro-active role in identifying ways to reduce demand growth, particularly in new developments. 92
- 2. The SFPUC and its wholesale customers should implement water and wastewater rate structures that encourage water conservation among their customers and fund conservation programs. 93
- 3. All agencies should sign the CUWCC MOU and work to meet all applicable Best Management Practices. 94
- 4. SFPUC and BAWSCA should work together to establish more effective regional water conservation and recycling programs. 95
- 5. Institutional mechanisms should be developed to encourage wholesale customers to move more aggressively toward efficiency improvements. This can include cross-agency information sharing, consistent conservation programs and targets, economic incentives for demand reductions, conservation pricing for wholesale customers, regular reassessment of program effectiveness and implementation, and improvements in conservation data collection and reporting. 96
- 6. Serious consideration should be given to capping purchases from the SFPUC at current levels. BAWSCA and the SFPUC should institute financial incentives to encourage conservation efforts and financial disincentives to discourage demand growth. For example, water marketing among the wholesale agencies would allow 97

water saved through conservation efforts by one agency to be sold to another agency, thereby promoting economic efficiency. 97 cont.

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**PILARCITOS CREEK ADVISORY COMMITTEE**

9/28/2007

San Francisco Planning Department  
Environmental Review Officer  
WSIP PEIR  
1650 Mission Street, Suite 400  
San Francisco, Ca 94103

By email; wsip.peir.comments@gmail.com

Atten; Paul Maltzer,

Mr. Maltzer,

The Pilarcitos Creek Advisory Committee (Committee) is a watershed stakeholder organization made up of various interest groups in Half Moon Bay. The Committee has representatives from the environmental, agricultural, commercial fisheries and restoration communities. Our mission is to restore habitat conditions within the watershed for the native plant and animal communities and the public benefit of enhanced water quality. The Committee was initially established by the Dept of Fish and Game and the Regional Water Quality Control Board (Region 2) in 1993.

SFPUC has been an important stakeholder in our coastal watershed for over 100 years and has been a participant at our Committee meetings.

The initial phase of the Committee's work was to provide local oversight in the development of an initial "Restoration Plan" for the watershed (finalized in 1996). Subsequent to the development of the Plan, our Committee then advocated for projects which were identified in the Plan. Many of those projects have now been completed.

More recently, the SFPUC has been an active partner in a new initiative, an Integrated Watershed Planning Project for the Pilarcitos. This plan, funded by the State of California, is underway with strong support from the SFPUC staff, thru contribution of staff effort and dollar expenditure.

In each step of this decade long progression of steps (which has included agency driven watershed plans, public outreach and formal forums and now a State funded IWMP) there has been a recognition that only by thoughtful management and use of the waters developed within the Pilarcitos basin would we be able to restore and enhance aquatic habitats and "balance" the beneficial uses of the waters of Pilarcitos Creek (which includes domestic, agriculture, cold water fisheries and recreation).

It has been the position of the PCAC that the current system of upper watershed impoundments owned and operated by the SFPUC have reduced opportunities to

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Advocating for a Balance Approach to Restoration Since 1993

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**PILARCITOS CREEK ADVISORY COMMITTEE**

accomplish the goals of "restoration and balance" supported by our Committee and the community at large. ↑ 01 cont.

With that background, the PCAC would like to make the following comments on the PEIR;

1. The PCAC appreciates the clear narrative explanation of the cross basin transfer of Pilarcitos Creek water, through the Coastal Mountains (through tunnels) over into the San Mateo Creek vicinity watersheds (impounded in Crystal Springs Res and others) as written in Vol. 1 Pg 157. The result of this transfer leads to the dewatering of the Pilarcitos Creek below the SFPUC operated Stone Dam during summer months, and the alteration of a winter storm hydrograph in Pilarcitos in the winter. **The PCAC would suggest that the significance of impacts of this cross basin transfer should be more closely analyzed and commented on in the PEIR with regards to the alteration of both winter and summer hydrographs, especially as they relate to the habitat of threatened and endangered species found I the riparian corridor during low summer and fall flows.** 02
2. A combination of statements in the PEIR (for example Vol 3 Pgs 393.394) explain that no intentional releases are made below Stone Dam and the "flow in the creek immediately below the dam consisted only of leakage through the spillway boards and seepage through the dam". Further, the PEIR states that no releases are required to maintain minimum stream flows in Pilarcitos Creek. The PCAC believes these statements conflict with "minimum bypass" requirements of both CDFG and NOAA Fisheries, mandated for the protection of sensitive aquatic species. **The PCAC requests that significant impacts which result from the lack of bypass flows should be analyzed in the PEIR. We believe that the historical failure to maintain minimum flows in no way limits SFPUC's obligation to heed state and federal laws.** 03
3. The Flows in Pilarcitos Creek are further discussed in Vol. 3 pages 403,404. In those paragraphs are described the winter "spills" which occur over Stone Dam into Pilarcitos in the wet months of wet years. This discussion reminds the PCAC of the physical conditions and age of both Pilarcitos Lake and Stone Dam. Each of the structures are over 100 years old. **The PCAC would suggest that the PEIR should look at the significance of impacts if these structures were they to fail (in terms of habitat, property and potential human loss in case of breach).** This issue was brought to our attention in a recent San Mateo County Grand Jury report. 04
4. **The PCAC has significant issue with the "Impact Conclusions" noted in the PEIR** which state, "The WSIP would not alter the character of Pilarcitos Creek immediately below Stone Dam. Flow in the creek immediately below the dam is intermittent under the existing condition and would continue to be intermittent with the WSIP, so no adverse hydrologic effects would occur. With the WSIP, total spills to the creek immediately below Stone Dam would be reduced, but the magnitude of the flows in the lower reaches of the creek would be similar to those under existing conditions. Therefore, adverse impacts on water levels in Pilarcitos Reservoir and

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Advocating for a Balance Approach to Restoration Since 1993



1. The very heart of the environmental issues raised by the WSIP and the PEIR is the preference of SFPUC to meet the alleged increased 35 million gallons a day ("MGD") demand by extracting 25 MGD additional from the Tuolumne River while generating 10 MGD through some combination of conservation, water recycling, and groundwater supply programs. PEIR Section 3.6.1 states that about 4 MGD of the 10 MGD will come from recycled water projects.

SFPUC's Recycled Water Master Plan - March 2006 ("RWMP") can be found at -  
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[http://sfwater.org/detail.cfm/MC\\_ID/13/MSC\\_ID/165/MTO\\_ID/290/C\\_ID/2920](http://sfwater.org/detail.cfm/MC_ID/13/MSC_ID/165/MTO_ID/290/C_ID/2920)

At page ES-7 of the RWMP it says that in San Francisco alone there is the real potential for feasible water recycling to the tune of 11.8 MGD – that's almost 2 MGD more than the EIR says SFPUC plans to develop from the combined resources of conservation, recycling and groundwater throughout the service area.

Then at page ES-10 the RWMP says so-called Phase I of recycled water projects would target only 4.5 MGD of the 11.8 MGD of existing demand. The RWMP continues at page ES-10 simply saying, "The remaining potential demand represents future for expansion of the recycled water system to additional customers that are not planned to be served at this time."

a. Stated bluntly, the RWMP is simply uninformative as to why additional demand is not intended to be served in Phase 1 and when in the future that demand for recycled water will be met. It may be acceptable to some for the RWMP to be so deficient; it is not acceptable for the PEIR to not address those fundamental questions. Recall one of the principles stated above: "An EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." San Francisco's expressed intent to extract 25 MGD from the Tuolumne River is the single largest issue raised by the proposed project. In order for those "who did not participate" in the PEIR's preparation to meaningfully be able to evaluate the consequences of San Francisco's plans for greater extractions from the Tuolumne they must have much more information regarding the alternatives, including the admitted potential for much greater recycling in San Francisco. Only then can the readers of the PEIR determine whether it is reasonable that SF wants to take from the Tuolumne two and one-half times as much water as it and its customers are prepared to generate through conservation, recycling and groundwater resources.

The need for a much more thorough analysis in the PEIR of the potential for water recycling in San Francisco alone is accentuated by San Francisco's astoundingly poor record of water recycling. In connection with a draft of the Recycled Water Master Plan, this commentator submitted a six page comment letter to the SFPUC in November 2005. Below is a paragraph from that letter putting into context San Francisco's water recycling record.

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"p. 22 – Footnote "a." to Table 2-1 references the May 2000 State Water Resources Control Board ("SWRCB") Survey of municipal recycling facilities. It is inexcusable for the draft RWMP to use that reference when it is common knowledge that an updated Survey was released in 2002, and updated in 2003. The draft RWMP "References" (p. 137) acknowledges this fact. It is inexplicable how the preparers of Table 2-1 cite the older Survey. Nonetheless, both Surveys are evidence of the accuracy of the Committee's prior statements that SFPUC exaggerates its commitment to water recycling and is, in fact, light years behind the rest of the state. First, compare the two Surveys. The 2000 Survey shows 234 recycled water facilities with an aggregate capacity of 401,910 acre feet per year ("AFY"). The 2002 Survey shows 278 plants with a capacity of 544,979 AFY; about a 35% increase in capacity over a two to three year period. Second, look at the list of facilities in the 2002 Survey and break it down by County. There are only 7 out of California's 58 counties not represented. San Francisco shows up with one facility – the Southeast plant with an alleged design flow of 85 MGD and an annual capacity of 6066 AFY. The reality is that a few trucks are washed each year at the Southeast plant. Thus, the fact is that there are eight counties in California doing no meaningful water recycling --- Alpine (population-1,210), Modoc (population-9,350), Trinity (population-13,100), Colusa (population-19,450), Glenn (population-26,800), San Benito (population-55,900), Sutter (population-81,900) and San Francisco (population-793,000)."

b. The PEIR needs to better address the question of future water recycling efforts by SFPUC's wholesale customers. PEIR Section 9.2.4 states that future water demand numbers of those customers takes into account their future recycling plans. Much more detail than is found in Table 9-11 needs to be provided so that the decision makers and interested parties can determine whether the wholesale customers, like San Francisco, are only willing to meet a fraction of feasible recycled water demand with actual projects. Only then can the readers of the PEIR determine whether it is reasonable that San Francisco wants to take from the Tuolumne two and one-half times as much water as it and its customers are prepared to generate through conservation, recycling and groundwater resources.

c. Subparagraphs a. and b. above address the need for the PEIR to more adequately and completely analyze water recycling alternatives, so that decision makers and interested parties can meaningfully consider the issues raised by SFPUC's preferred alternative of extracting 25 MGD from the Tuolumne, while only generating 10 MGD through conservation, recycling and groundwater. There is another aspect of the untapped potential for recycling in San Francisco and the service area that ought to be addressed in the PEIR. Section 9(h) of the Raker Act provides that San Francisco may not export from beyond the San Joaquin Valley any more water of the Tuolumne watershed "than, together with the water which it now has or may hereafter acquire, shall be necessary for its beneficial use for domestic and other municipal purposes." One acknowledged water law scholar has suggested that this provision may require San Francisco to develop available local resources, such as recycling and desalination, before looking to the Tuolumne River for additional water. (See Appendix C to Environmental Defense's Paradise Regained: Solutions for Restoring Yosemite's Hetch Hetchy Valley, 2004.) This commentator has not looked for legal authority on the question of whether an environmental impact report need discuss legal obstacles to the completion of a proposed project. However, common sense says that if there are significant

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potential legal obstacles, they ought to be mentioned if there is to be an adequate, complete and good faith effort at full disclosure.

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cont.

2. Chapter 10 of the PEIR lists 20 significant adverse environmental impacts resulting from the project that the PEIR concedes probably can't be eliminated, or reduced to a less-than significant level by other mitigation measures. 20 adverse environmental impacts that can't be fixed is a lot. Why not think bold and add one over-reaching mitigation measure to help soften the blow of the 20 individual problems that can't be fixed? There is case authority under CEQA that says that a governmental entity can satisfy the mitigation requirement by simply making a commitment to study an issue (Sacramento Old City Assn. v. City Council (1991) 229 Cal. App. 3d 1011, 280 Cal. Rptr. 478). That case involved the expansion of the city's convention center and construction of an office building. The EIR discussed several potential measures to mitigate the impacts on traffic and parking. The city did not adopt specific mitigation measures but committed to study the problem and prepare a transportation management plan. The court concluded that the city had "committed itself to mitigating the impacts" and stated that the EIR's consideration, discussion, and analysis of the mitigation measures supported the city's finding that the mitigation measures were "required in, or incorporated into" the project, under section 21081 of CEQA.

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River. Remembering that an essential element of an EIR is "a good faith effort at full disclosure", the PEIR should go further. Have the irrigation districts agreed to such a water transfer? Have they even been asked? Is it not true that representatives of the districts have publicly stated that they don't intend to be involved in such transfers? Again, here as elsewhere, the PEIR must include sufficient detail for the reader to consider meaningfully the issues raised by the project.

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cont.

Respectfully Submitted,

Jerry Cadagan

San Francisco could make a similar commitment to cooperate in the removal of O'Shaughnessey Dam and the restoration of the valley so long as certain conditions were met. A statement of commitment from the SFPUC or San Francisco's Board of Supervisors might read as follows:

06

"It is the policy of the City and County of San Francisco that Yosemite National Park's Hetch Hetchy Valley should be restored, and the reservoir covering the Valley should be removed. Reservoir removal should occur after the water and power currently supplied by the reservoir are fully replaced. Water and Power replacement must take place without any increase in water or power rates or property tax rates for San Francisco residents and businesses; and without any increase in the cost of government to the City of San Francisco. San Francisco elected officials and city employees shall support restoration of Hetch Hetchy Valley, and shall do their best to gain the replacement water and power supplies."

Note that the statement makes it abundantly clear that San Francisco would only support removal of O'Shaughnessey Reservoir if the lost power and water were fully replaced and if there was no additional cost to San Francisco residents and businesses. Stated more bluntly, a "no cost" mitigation option available to San Francisco would be a simple statement of policy that it will not continue to obstinately oppose valley restoration or even study of valley restoration, so long as those efforts result in no harm to San Francisco.

07

3. On page S-8 and elsewhere in the PEIR it is stated without qualification that SFPUC proposes to secure a water transfer with Turlock and/or Modesto Irrigation Districts to provide supplemental dry-year water from The Tuolumne

12.4-81

SF Planning Dept WSIP PEIR initial response at Sept 5, 2007 meeting at Sonora Opera Hall

I am Bob Hackamack, Tech/Engin Chair of Restore HH, home address P O Box 1886, Twain Harte.

It is apparent that the SF Planning Dept and its consultant have put forth significant effort in preparing the PEIR. I complement you. There are minor errors which are understandable. I learned several things that I did not know about the regional system. These are good reference manuals.

I want to explain how the preferred alternate called WSIP is disconnected from reality, but that a combination with alternatives will be a workable and wise solution.

- 1. You correctly stated that John Freeman projected his 1912 plan would ultimately provide 400 mgd of supply from TR, but you failed to say that the SFPUC didn't build the system according to Freeman's plan. Rather, the system was built for maximum hydroelectric profit, which resulted in a drastic reduction of firm yield. (2-36 & 7)

With a simple calculation on your preferred alternative, I find firm yield of HH is 207 mgd, plus 13 mgd from local sources for a sum of 220 mgd during the design drought, with 17% of reduced supply coming from rationing of 45 mgd. This leaves HH Res empty at the end of the 8.5 year design drought. No prudent manager will use that plan, so expect no rationing the first year with 25% rationing thereafter, the same as in past droughts. (2-19, Figure 2.5)

I ask you, why would your BofS agree to a tripling of water rates to pay for this WSIP and now tolerate the PEIR telling the ratepayers they will get a system that plans for up to 25% rationing every 13 or 26 or 41 years? Your rate payers deserve better service for what they are going to be paying. (2-19, Figure 2.5)

- 2. The solution is obvious: Cap diversion from the TR at say 207 mgd and get all total needs above 220 mgd from water efficiency which is a very economical source, plus recycled treated waste water for landscape, and industrial and commercial cooling, groundwater banking inside your service area and by groundwater exchange outside, plus purchase, plus desal of brackish water. Do all those things together and drought rationing will be tiny.

In other words, get busy to cut back from the preset 230 plus mgd so you can reach a sustainable level. At a capped average diversion of 207 you will have lots of entitlement to put into groundwater banking as exchange storage for drought. (S-8, Figure S.4 and SFPUC data for WY 2006)

I favor the options dealing with Aggressive Conservation/Water Recycling and Local Groundwater, plus added groundwater banking and conjunctive, purchase, desal, and lower TR diversion. (S-74 and Chapter 8 & 9)

- 3. To move forward smoothly on this project, you must cap your take from the TR because you are obviously building 46% of the length of the 4<sup>th</sup> barrel that virtually guarantees more river diversion, in spite of SFPUC saying last year that it abandoned the 4<sup>th</sup> barrel because of the cost. (3-49)
- 4. Last, you did not respond adequately to the Raker Act provision I spoke about here in this hall in Oct '05 requiring you to develop all water supplies in your and the wholesale service areas before diverting from the TR, as stated in Sec 9 (h) of the Act. The best you say about developing supplies in your PEIR scoping is "improve use of new water sources". This is totally unacceptable as a goal. The proper goal would be to build a sustainable water supply system for the 21<sup>st</sup> Century as your predecessors did for the 20<sup>th</sup> Century. (Appendix A page 10 Water Supply, fourth bullet)

*Bob Hackamack, P. E.*

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MEMBER ORGANIZATIONS  
Committee for Green Foothills  
Gualadulpe Coyote RCD  
Northern California Council -  
Federation of Fly Fishers  
Santa Clara Valley Audubon Society

# Santa Clara County Creeks Coalition

*Advocates for living streams*

September 28, 2007

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

Dear Mr. Maltzer:

Santa Clara County receives water from the San Francisco Public Utilities Commission's Hetch Hechy pipeline and the Tuolumne River providing relief and diversification of our local water supplies but even so the Santa Clara County Creeks Coalition opposes any increase in diversions from this critically important river.

We also feel that the Draft Program Environmental Impact Report (PEIR) used flawed modeling to determine the anticipated increase in water demand, thus inflating projected future needs. We also feel that it fails to adequately identify and address all of the environmental impacts to the River. Additional studies must be undertaken before finalizing this document.

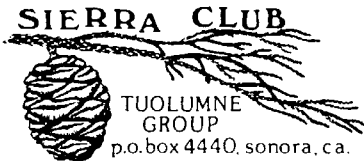
Water conservation and efficiency measures are the cheapest, easiest to implement, and least destructive ways to meet demand and extend water supply. When it comes to water conservation, the Bay Area lags far behind other metropolitan areas such as Seattle and Los Angeles that are reducing water consumption even in the face of growth.

We do support alternatives identified that protect the Tuolumne River from new diversions. Requiring 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.

Only by ensuring that healthy amounts of water continue to flow into the Tuolumne River can we protect this irreplaceable natural treasure.

Sincerely,

Mondy Lariz



Serving Calaveras and Tuolumne Counties

San Francisco Public Utilities Commission

To Whom It May Concern:

The Use of Water from the Tuolumne River for Urban Use.:

The snow pack of the Sierras, much of it located in a Yosemite National Park, is a convenient source of clean water for natural systems, agriculture system and urban systems. Since these systems are interlock by the needs for water, any change in one effect the other. Thus any plan to change water allocations for any systems, requires thought, research and negations that address the overall success of all the systems. To study the environmental change over time, is fundamental to the policy making process. Therefore it is important that scientific baseline studies be started, continued and evaluated over time.

Populations of living things, in natural or urban setting, follow much the same direction toward unchecked growth that is infinite in scope. In nature, the process of natural selection will mold the population to the carrying capacity of the environment as each habitat has a finite capacity. In the urban areas, planning for finite population or usage of finite resources reduces the process of natural selection. Before looking to watershed for more water, it is important to the planning process to look for ways for the San Francisco Public Utilities Commission to find sustainable methods through conservation, the use of modern technology for water monitoring, reusing waste water and efficiency in water use at all levels. Since it is humans and their cultural items that use water, government planning needs to address the finite nature of water and plan construction around these limits.

Blaine Rogers

Blaine Rogers
Tuolumne Group of the Sierra Club
Sonora, Calif.
September 19, 2007

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Co-Chairs
Tom Hart
Vince Hoerigman

October 1, 2007

Bill Wycko
Environmental Review Officer, WSIP PEIR
San Francisco Planning Department
1650 Mission St., Suite 400
San Francisco, CA 94103

Dear Mr. Wycko:

The SPUR Sustainable Development Committee appreciates the opportunity to provide comments on the draft Program Environmental Impact Review (PEIR) of the SFPUC's Water System Improvement Program (WSIP). This document has not been reviewed by the SPUR Board of Directors, and as such does not represent the official position of SPUR. It does represent an effort by the members of the SPUR Sustainable Development committee to provide constructive comment on that substantial document. Our comments are focused on three areas:

- 1. The purpose of the WSIP: seismic reliability
2. Conservation and efficiency modeling
3. Drought and climate change modeling and assumptions.

First, we reassert SPUR's support for the Tuolumne River and the Water System Improvement Program. In 2002, SPUR convened an independent expert "Blue Ribbon Committee" to review the SFPUC Program to Improve Reliability of the Water and Sewer Systems, which on May23, 2002 issued its final report expressing confidence in the work of R. W. Beck on the SFPUC's Capital Improvement Program. Thereafter, on October 1, 2002, SPUR expressed its strong support for Proposition A, the \$ 1.6 billion Hetch Hetchy Water Bond, by vote of its Board of Directors. SPUR's long history of leadership and support for the Tuolumne River and Hetch Hetchy additionally includes the designation of the Tuolumne as a Wild and Scenic River.

SPUR believes that seismic and delivery reliability upgrades to our water system are a public investment priority. In the spirit of this support, we want the final PEIR to be as robust and compelling a document as possible, including recommendations to provide the most stable, reliable water supply to the Bay Area while minimizing significant negative environmental effects on the river and its ecosystems.

1. The purpose of the WSIP: seismic reliability

Recent state and local laws overwhelmingly support improving the reliability of the San Francisco regional water system, including 2002's AB 1823, Measure A, and Measure E. These measures all found that disruptions to the regional water system could have

1 AB 1823 Assembly Bill Chaptered, Wholesale Regional Water System Security and Reliability Act, (California State Assembly and Senate) 2002. Official California Legislative Information, www.leginfo.ca.gov

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... to explore, enjoy, and protect the nation's scenic resources ...



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severe, disastrous impacts on public health and the Bay Area's economy. San Francisco voters authorized, and SPUR strongly supported, the largest bond in the city's history for the SFPUC to restore the system, and amended the city's charter to emphasize a high priority on protecting and repairing the system as quickly as possible. Many of the regional water system's facilities are old—some over 100 years—and were not constructed under modern seismic standards. The SFPUC considers several major facilities to be at high risk of failure from earthquake events on the Hayward, San Andreas, and Calaveras faults.

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Our committee recommends the final PEIR strongly reiterate the primary purpose of the WSIP—to improve the reliability of the water system that serves 2.5 million people in the Bay Area. The urgency of these upgrades and the implementation of the capital program should not be minimized or delayed by any debate over growth and the Bay Area's projected needs in 2030. In this era of world-wide construction cost escalation, we are naturally concerned, as is the SFPUC and the other parties to the system, about cost overruns due to delays, and emphasize that existing public policy stresses quick, efficient seismic retrofitting and delivery reliability as the WSIP's most significant priorities.

**2. Conservation and efficiency modeling**

We recommend more robust implementation of conservation and efficiency measures by both San Francisco's retail customers and the SFPUC's wholesale customers. According to the draft PEIR, wholesale customers projected a 19% increase in population and a 30% increase in the number of jobs. Total water demand, including commercial and industrial uses and driven by increased employment, will only go up only 19% by 2030, reflecting increased water conservation and recycling. Total per capita water demand, including commercial and industrial use, will remain flat in spite of the increased number of jobs. Wholesale customers have committed to implementing a suite of proven water conservation measures in addition to demand reductions due to passive conservation achieved through plumbing codes. Wholesale purchase requests from the regional water system will also be reduced by an increase in water recycling and desalination.

03

San Francisco will also experience growth in population and employment, both which exert additional demands for water. However, San Francisco water demand is expected to decline as much as 11%, in spite of an expected 12% growth in population. This decrease in demand is due to a plan to begin water recycling and increase water conservation in the city.

The SFPUC's preferred alternative to the WSIP, as reviewed in the PEIR, recommends that water be diverted from the Tuolumne River in order to meet the remaining water needs of both retail and wholesale customers in 2030. The draft PEIR also presents an "Environmentally Superior Alternative" that requires water recycling to begin in San Francisco and more water conservation than the wholesale customers have currently committed to implement. SPUR believes this alternative represents a better approach.

12.4-84

We believe San Francisco's WSIP should exceed or meet the California Urban Water Conservation Council Best Management Practices for Water Conservation. We are encouraged that both San Francisco and the wholesale customers evaluated the cost effectiveness potential of water conservation measures beyond those currently listed as Best Management Practices. However, we believe all of the agencies should continuously be improving their water conservation practices.<sup>2</sup> We recommend the final PEIR more fully describe and evaluate the Environmentally Superior Alternative, including the ways this additional level of conservation might be attained.

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cont.

**3. Drought and climate change modeling and assumptions**

The draft PEIR acknowledges that climate change and global warming are a fact. Drought cycles are also a reality in California. We are concerned about the effects of combined forces of drought and climate change on the Hetch Hetchy system. Potential impacts could vary from an unsustainable level of instream flow, to the inability to meet delivery needs. We recommend that the PEIR seriously consider the combined effects of drought and climate variability. Absent a serious evaluation, it cannot be said that global warming will not negatively affect the WSIP.

In the SFPUC design drought model of 8.5 years, approximately 6 years are drought, dry, below-normal or normal-restoring years. With 60% of its water diverted at present, the Tuolumne River is already affected by these types of conditions, and would be at greater risk during an extended drought cycle, which could occur unpredictably due to future climate change. However, the draft PEIR concludes that climate change will have a minimal effect on the river. It states that current models of California water systems do not reflect potential global warming conditions, and that the existing Hetch Hetchy Local Simulation Model, based on 84 years of hydrologic records, is a more accurate predictor of impacts that may occur in the future. The draft concludes that the effects of climate change and global warming will not be measurable until near mid-century, at which time adjustments can be made. Without analyzing the combined and cumulative effects of two potential hydrological scenarios in the future – drought and climate change – the PEIR's conclusion that global warming will not affect the WSIP is unsubstantiated.

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In other California jurisdictions, conservation, flexible management plans and regional strategies have been identified as best management practices in drought and climate risk scenarios. For example, recognizing the challenges and uncertainties of climate change and global warming, the East Bay Municipal Utilities District (East Bay MUD) analyzed and quantified possible climate change and global warming impacts, and developed operation models that included flexible management plans, efficiency and conservation. East Bay MUD became the first water district to join the California Climate Action Registry.

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Following the local leadership of East Bay MUD, we recommend that the PEIR further address the combined effects of climate change and drought cycles to ensure that the

<sup>2</sup> Water conservation is a proven, efficient, reliable approach that is compatible with and supportive of local needs, growth, and development. (Nelson, Barry, Schmitt, Monty, Cohen, Ronnie, Ketabi, Noushin, Wilkinson, Robert, 2007. *In Hot Water, Water Management Strategies to Weather the Effects of Global Warming*, Natural Resources Defense Council, New York, NY)

Tuolumne River and its interconnected ecosystems are not exposed to potential, irreversible harm and damage. This, in turn, would protect water delivery reliability, and the health, safety, environmental, and economic stability of the Bay Area.

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cont.

We believe that climate change should be further examined, but not at the expense of delaying the urgently needed seismic improvements to the regional water system. The PEIR should require that as the WSIP projects move forward, the climate change issues will be rigorously addressed and not merely swept aside for future generations to resolve.

**Conclusion: Sustainability and the draft PEIR**

The San Francisco Bay Area has a worldwide reputation for its strong commitment to sustainability, ecosystem protection, and climate change action.

06

The final PEIR developed for San Francisco's Water System Improvement Program should reinforce what San Francisco has already accomplished. The Environmentally Superior Alternative relies on increased levels of water conservation and recycling that represents a cost-effective strategy for the WSIP to protect the environment and provide growth and development for customers' needs.

Because of the potential risk to the river and its interconnected rivers, streams, delta, and eco-systems, the final PEIR should carefully analyze the effect of additional water loss to the Tuolumne. The final PEIR should evaluate additional opportunities to mitigate or avoid decreased flows in the lower Tuolumne River. Finally, the Bay Area's growing awareness of climate change, and our vulnerability to water being in the wrong places at the wrong time, strongly highlight the need for our water system to be as robust as possible for any future climate scenario.

07

The SPUR Sustainable Development Committee believes that the SFPUC can and should be a model of water leadership in the 21<sup>st</sup> century, and hopes you will receive these comments in that light. SPUR stands ready to support the SFPUC in this endeavor.

Sincerely,

Laura Tam  
Sustainable Development Policy Director  
on behalf of the SPUR Sustainable Development Committee

cc: Diana Sokolove

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September 25, 2007

Mr. Paul Maltzer  
Environmental Review Officer  
Water System Improvement Program DPEIR  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103

Dear Mr. Maltzer:

The State Water Contractors (SWC) submits these comments regarding the Draft Program Environmental Impact Report (DPEIR) for the San Francisco Public Utilities Commission's (SFPUC) Water System Improvement Program (WSIP). As described in the DPEIR, the SFPUC proposes through the WSIP to increase the reliability of the regional water system, which provides drinking water to the City of San Francisco and areas of San Mateo, Santa Clara, Alameda, and Tuolumne Counties. WSIP implementation would provide for additional water supply to serve customers through 2030 as well as construction repairs and improvements to many facilities within the existing SFPUC system.

The SWC is an organization representing 27 of the 29 public water entities<sup>1</sup> that hold contracts with the California Department of Water Resources (DWR) for the delivery of water from the State Water Project (SWP). Collectively, the members of the SWC provide all, or a part, of the water supply delivered to approximately 23 million Californians, roughly two-thirds of the State's population. The members of the SWC provide this water to retailers, who, in turn, serve it to consumers throughout the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California.

The SWP supply delivered through the Sacramento-San Joaquin Delta constitutes a significant portion of the supplies available to SWC members. As a result, the SWC is very interested in matters affecting the quantity and quality of water supplies in the Delta. As described in the DPEIR, implementation of the WSIP would reduce inflow to Don Pedro Reservoir, resulting in reduced reservoir storage. During hydrologically wet periods, more inflow would be required to refill the reservoir storage, resulting in reduced flow in Tuolumne River below La Grange Dam and, as a result, reduced inflow to the Delta from the San Joaquin River. Reduced inflow to the

01

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  - General Manager**  
Terry L. Erlowine

<sup>1</sup> Alameda County Zone 7 Water Agency, Alameda County Water District, Antelope Valley-East Kern Water Agency, Casitas MWD on behalf of the Ventura County Flood Control District, Castaic Lake Water Agency, Central Coast Water Authority on behalf of the Santa Barbara FC&WCD, City of Yuba City, Coachella Valley Water District, County of Kings, Crestline-Lake Arrowhead Water Agency, Desert Water Agency, Dudley Ridge Water District, Empire West-Side Irrigation District, Kern County Water Agency, Littlerock Creek Irrigation District, The Metropolitan Water District of Southern California, Mojave Water Agency, Napa County FC&WCD, Oak Flat Water District, Palmdale Water District, San Bernardino Valley MWD, San Gabriel Valley MWD, San Geronimo Pass Water Agency, San Luis Obispo County FC&WCD, Santa Clara Valley Water District, Solano County Water Agency, and Tulare Lake Basin Water Storage District.



Diana Sokolove <wsip.peir.comments@gmail.com>

Mr. Paul Maltzer  
September 25, 2007  
Page 2

Delta from the San Joaquin River can result in negative impacts to both Delta water quality and the SWP supply.

As shown in Table 5.3.4-4 of the DPEIR, reductions in Tuolumne River flow below La Grange Dam attributable to the WSIP would occur most frequently during the months of January through June in wet and above normal years. Although the flow reductions generally would be less than 200 cfs, there would be several years in which the flow reduction during a single month would exceed 1,000 cfs. A flow reduction of this scale would likely result in significant negative impacts to Delta water quality and/or SWP supply.

Alternatively, the DPEIR identifies the Modified WSIP Alternative as the environmentally superior alternative. The Modified WSIP Alternative would meet the WSIP's objectives while reducing key impacts associated with implementation of the WSIP. As stated on pages 9-78 and 9-79 of the DPEIR, under the Modified WSIP Alternative:

*"...a transfer of conserved water would be acquired for use every year, not only as a dry-year supplement, and doing so would avoid the WSIP impacts on the lower Tuolumne River below La Grange that result from the SFPUC increasing its diversions from the Tuolumne River."*

Due to the likely significant negative impacts associated with implementation of the WSIP described above, the SWC recommends that the SFPUC either (1) adopt the Modified WSIP Alternative as the preferred alternative with appropriate supporting environmental analysis or (2) provide an analysis of WSIP implementation attempting to adjust the timing of Don Pedro Reservoir refill both to reduce the scale of monthly flow reductions in Tuolumne River below La Grange Dam and to coincide with periods of excess conditions in the Delta.

We appreciate your consideration of our comments. If you have any questions, please feel free to contact me at (916) 447-7357.

Sincerely,

Terry L. Erlewine  
General Manager

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PEIR comments

ARTA River Trips <arta@arta.org>  
Reply-To: arta@arta.org  
To: wsip.peir.comments@gmail.com

Mon, Oct 1, 2007 at 12:08 PM

Dear SFPUC –

Attached are my comments on the PEIR for the WSIP. I have also appended them to the bottom of this e-mail in case the attachment doesn't work.

Sincerely submitted,

Stephen Welch

President

Tuolumne River Outfitters Association

12.4-86

October 1, 2007

San Francisco Planning Department

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 comment on the Draft PEIR for San Francisco Public Utilities Commission's Water Service Improvement Plan.

These comments represent the views of the six commercial outfitters who are permitted to conduct whitewater rafting trips on the Tuolumne River between Holm Powerhouse and Don Pedro Reservoir. The viability of our businesses, the quality of our trips and the satisfaction of our guests are all dependent on reliable and adequate flows downstream of SFPUC facilities.

We are opposed to any changes to the system that would or could potentially degrade the quality of our trips. The withdrawal of additional water from the river as described in the WSIP could be detrimental to our businesses however these negative impacts can be mitigated by management and operational decisions outside the WSIP.

For the past several years we have worked together with SFPUC staff to develop a mutual understanding of our respective needs and constraints. During this time, each party has been accommodating and has made adjustments to help the other; power generation has been scheduled to allow for early releases from Holm Powerhouse to facilitate rafting trips and rafting trips have been modified to fit the daily, weekly and seasonal schedules of Hetch Hetchy operations. Great progress has been made and the arrangement seems to be working well; we hope to see this relationship and cooperation continue.

The PEIR describes this relationship and situation accurately; however there are some technical points and specific figures regarding recreational flows that need official clarification. These comments will focus on Section 5.3.8 Recreational and Visual Resources and more specifically on the portions of that section that pertain to whitewater recreation flows.

One of the confusing and misleading premises behind the specific figures in the PEIR has to do with the context of the terms "minimum" and "adequate". The "minimums" we have expressed and that the PEIR cites are based on and influenced by our understanding of the Hetch Hetchy system and of the financial and water supply needs of San Francisco. In the same way that "if SFPUC were to operate solely to meet its own municipal and retail demand for energy or to maximize revenue from power sales, it would generate hydropower during the midday period only"; if we were to operate the system "solely to meet our own recreational needs and to maximize the quality of our trips, we would generate hydropower to produce higher flows, earlier and longer release periods and longer seasons."

Our "minimums" are based on system constraints, Hetch Hetchy operational goals and the SFPUC policy of "water-first"; they represent a "survival" scenario, not an "optimal" scenario. If a restaurant can ONLY obtain four-ounce chicken breasts and cabbage, it will say that four-ounce chicken breasts and cabbage are the minimum ingredients that it needs to provide a meal. But, if patrons prefer eight-ounce chicken breasts and coleslaw, (the "optimal" meal), the prudent restaurant will try to find and provide them. The restaurant may be able to survive on the minimums, but in order to prosper, the restaurant needs to meet the needs of its patrons by offering the optimal meal.

The "minimums" expressed in the PEIR are four-ounce chicken breasts and cabbage; the "optimal" are as follows:

- Volume of water in the river: 1,500 to 2,000 cfs
- Days per week of reliable flows: 7
- Hours per day of reliable flows: 8 (peak flow at Meral's Pool by 7:00 am)
- Weeks per season of reliable flows: 31 (March 15 – October 15)

In terms of the PEIR, the third paragraph on Page 5.3.8-10 should read:

A ~~900-cfs~~ 1,100 cfs flow at Lumsden Campground is the minimum required for whitewater paddleboats and oar boats; a ~~600-cfs~~ 900-cfs flow is the minimum required for kayaks and oar boats, and a ~~1200-cfs~~ 1,500 to 2,000-cfs flow is considered optimal. The commercial outfitters prefer ~~a six-hour~~ an eight-hour release, but a ~~three-hour~~ four-hour release allows them to launch one-, two-, or three-day trips.

Under current operating conditions and during the "core" part of our season (June through August) the "minimum" flows in the stretch of river on which we operate are delivered from the Cherry Lake/Holm Powerhouse side of the system. While changes to the Hetch Hetchy/Kirkwood Powerhouse side of the system could potentially impact us, these impacts, as described in the PEIR, can be mitigated through operational changes and concessions on the Cherry side.

It is our sincere hope and expectation that the current "minimum" flows and the potential for future "optimal" flows will not be jeopardized by the Water System Improvement Plan.

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Sincerely submitted on behalf of the six commercial outfitters on the Tuolumne River (ARTA River Trips, All-Outdoors, OARS, Whitewater Voyages, Sierra Mac and Zephyr Whitewater.

Stephen Welch

President

Tuolumne River Outfitters Association

24000 Casa Loma Road

Groveland, CA 95321

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Diana Sokolove <wsip.peir.comments@gmail.com>

## Water System Improvement Program PEIR

1 message

Amy Meyer <a7w2m@earthlink.net>  
To: wsip.peir.comments@gmail.com

Fri, Sep 28, 2007 at 12:58 PM

September 28, 2007

Paul Maltzer, Environmental Review Officer  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103 via e-mail

Dear Paul:

I was one of the founding members of the Tuolumne River Trust. I became involved in preserving the Tuolumne because of its incredible biological and recreational attributes. We helped designate 70 miles of the river as "Wild and Scenic" in 1984. I understand the need for rehabilitation of the Hetch Hetchy delivery system, but I do not want it to take place at the expense of the Tuolumne River.

The new threat to the Tuolumne is the prospective diversion of more water than it can give up without severely damaging the splendid diversity of its ecological communities—from the free-flowing headwaters in the mountains to its freshwater outflow into San Francisco Bay. More than 60% of the river is already diverted, and the proposed additional diversion would remove another 25,000,000 gallons per day. Considering the threat of global warming and a smaller snow melt than we have enjoyed in recent times, we ought to do everything we can to keep as much water as possible flowing in the river.

01

Other large cities have reduced water consumption. The service area of the Hetch Hetchy system has not utilized all possible methods of conservation and recycling. One conspicuous area ripe for improvement and much more widespread use is the development of "gray water" systems for irrigation.

Scott MacDonald, Assistant General Manager of the SFPUC, said in the September 24, 2007 SF Examiner, "Despite recent water rate increases, San Franciscans still pay lower water rates than most other Bay Area and California cities, including San Diego, Los Angeles, Oakland, Berkeley, Palo Alto and San Jose."

02

It seems to me that the SFPUC's pricing structure does not encourage enough conservation and recycling of water to meet increased water demand. That is where some of the investment in our water system needs to go, and that is what the SFPUC should be emphasizing in order to preserve the flow of the Tuolumne River.

Sincerely yours,  
Amy Meyer

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