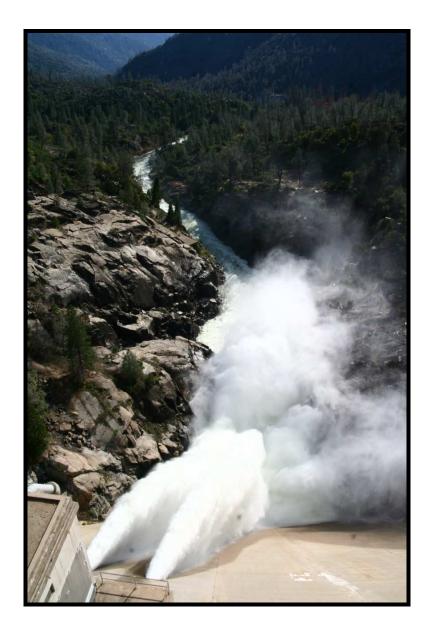
## San Francisco Public Utilities Commission Watershed and Environmental Improvement Program Annual Report FY 2015 - 2016



December 2016



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## Introduction

The goal of the Watershed and Environmental Improvement Program (WEIP) is to proactively manage, protect, and restore environmental resources that affect or are affected by the operation of the SFPUC water supply system. Annual reports are developed for public review and discussion to monitor WEIP implementation. This report describes the background and purpose of the WEIP, highlights accomplishments during the 11th year of implementation (FY 15/16), and outlines future priorities.

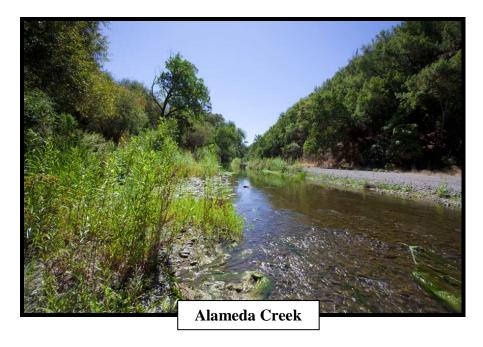
Looking forward, investments to increase public education and recreation opportunities in the Peninsula and Alameda Watersheds are expected to result in significant improvements in the next few years. On the Peninsula Watershed, the priorities are to close gaps in the two existing regional trails that run north/south – the Crystal Springs Regional Trail, operated and maintained by San Mateo County Parks – and the Bay Area Ridge Trail. Important connectors that link these two regional trails and other public lands adjacent to the watershed are also being developed. On the Alameda Watershed, priorities include: working closely with the East Bay Regional Park District and Alameda County to develop a viable trail alignment through Niles Canyon for a public trail to link adjacent public lands; working with partners to fund the purchase of conservation easements; and developing an Education Master Plan to build on the foundation established during the design of the Alameda Creek Watershed Center.

## **Background and Purpose**

The WEIP was initiated in FY 05/06, but the origins of the program go back further in time. When the San Francisco voters approved Measure A on November 5, 2002, it included the following language: "...'improvements' shall mean improvements that will restore, rehabilitate and enhance the ability of the Public Utilities Commission to deliver water to users of the City's water system, such improvements to include, but are not limited to water delivery, seismic improvements, water quality improvements, water supply improvements, and watershed and environmental improvements..."(emphasis added).

During public workshops focused on Water System Improvement Program (WSIP) level of service objectives in 2005, the Bay Area Water Stewards (BAWS), including the Tuolumne River Trust, Alameda Creek Alliance, Clean Water Action, Bay Area Water Supply and Conservation Agency, and the Sierra Club suggested that some of the WSIP bond funds be set aside to implement projects as described in Measure A, and that these investments be in addition to ongoing watershed work, and in addition to required mitigation funds associated with WSIP projects. This discussion culminated in the description of the WEIP included in the WSIP adopted by the Commission on November 29, 2005. At that meeting, the Commission stated its intent to provide \$50 million over the following 10 years for the Water Enterprise to proactively manage, protect, and restore environmental resources that affect or are affected by the operation of the SFPUC water supply system, and that \$20 million of this total would be provided from Measure A bond funds. The additional \$30 million was directed to come from the Water Enterprise operating budget, approximately \$3 million annually. Since then, SFPUC staff have

met regularly with the BAWS and provided annual updates to the Commission to account for progress during WEIP implementation.



The commitment of \$50 million to meet WEIP objectives is a considerable investment to improve management of natural resources that affect or are affected by operation of the SFPUC water supply system. Now in its 11<sup>th</sup> year of implementation, it is clear that more than 10 years will be required to meet this targeted expenditure level, and at the current rate of spending it will take approximately 6 additional years.

The SFPUC has a vested interest in protecting, maintaining, and restoring natural resources - particularly species listed under federal or state law as threatened or endangered - in order to minimize regulatory risk that could affect the SFPUC's ability to meet water supply reliability level of service objectives. The Water Enterprise Environmental Stewardship Policy, adopted by the Commission on June 27, 2006, provides broad guidance to minimize this risk, and the WEIP is an important long-term, landscape-level, ecosystem-based, and cost-effective strategy to assist in meeting these policy objectives.

The Natural Resources and Lands Management Division (NRLM) is responsible for federal and state environmental regulatory compliance related to operation of the SFPUC water supply system and watershed and Right of Way (ROW) lands. The NRLM manages the approximately 60,000 acres of watersheds lands the SFPUC owns in fee, and the 210-miles of ROW, and in coordination with Hetch Hetchy Water and Power and Water Quality Divisions works closely with the Stanislaus National Forest and Yosemite National Park Service in the Tuolumne River Watershed. The NRLM is working to develop specific performance measures to better track the return on previous and future WEIP investments, in addition to tracking the expenditure of funds. The performance measures will be linked to new or modified level of service objectives which are under development by the Water Enterprise.

## **Goal and Objectives**

The goal of the WEIP is to protect and restore lands and natural resources that affect or are affected by the operation of the SFPUC water supply system.

The WEIP objectives include:

- Manage watershed activities and resources to protect source water quality and protect/restore terrestrial and aquatic species and their habitats.
- Protect/restore watershed lands.
- Enhance public awareness of watershed resources, their protection and restoration efforts.
- Maintain up-to-date watershed management plans.
- Foster SFPUC's leadership role in environmental stewardship through collaboration and partnerships with other agencies, input from the scientific community, and public participation.
- Make use of all available science in planning, design and implementation, and include criteria and monitoring to evaluate and report outcomes.
- Distribute funds so that the overall portfolio affords protection across landscapes and ecological targets in the primary watershed regions.
- Develop monitoring and feedback mechanisms to measure progress against performance measures.

The goal and objectives (which were developed in coordination with the Bay Area Water Stewards) are posted on the SFPUC website at <a href="http://sfwater.org/index.aspx?page=487">http://sfwater.org/index.aspx?page=487</a>.

The WEIP includes the comprehensive identification of critical watershed lands and ecosystem restoration needs within the hydrologic boundaries of the Alameda Creek, Peninsula (San Mateo and Pilarcitos Creeks) and Tuolumne River watersheds.

The highest priority for the WEIP is to permanently protect watershed lands through the purchase of conservation easements and/or fee title from willing landowners of property that drains directly into SFPUC reservoirs. The WEIP will also target supporting projects that enhance public awareness and provide education opportunities related to water quality, water supply, conservation, and environmental stewardship issues. These projects include construction of the proposed Alameda Creek Watershed Center and improved public access (e.g., trail connections) and construction of additional related facilities compatible with watershed management plans and policies.

## **Priorities by Watershed**

- Upper Tuolumne River (O'Shaughnessy Dam to Don Pedro Reservoir)
  - Fund collaborative studies and monitoring partnerships as part of the Upper Tuolumne River Ecosystem Program
- Lower Tuolumne River (downstream of Don Pedro Reservoir)
  - Protection of low lying floodplain areas through permanent conservation easements and/or fee title purchase of the property from willing landowners
- Alameda Creek Watershed
  - Watershed protection through purchase of permanent conservation easements and/or fee title purchase of property from willing landowners of land that drains into SFPUC reservoirs
  - Support of public outreach and education programs
  - Habitat restoration focused on native aquatic and terrestrial species

#### • Peninsula Watershed

- Watershed protection through purchase of permanent conservation easements and/or fee title purchase of property from willing landowners of land that drains into SFPUC reservoirs
- Support of public outreach and education programs
- Habitat restoration focused on native aquatic and terrestrial species
- Protection of low lying floodplain areas through permanent conservation easements and/or fee title purchase of the property from willing landowners

## • San Francisco Lands

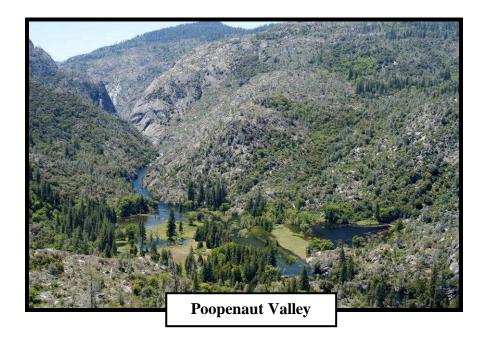
- The SFPUC owns a number of properties in the City and County of San Francisco, including Lake Merced, Twin Peaks, O'Shaughnessy tract, Brotherhood Way and Laguna Honda. These properties have unique habitats and conservation challenges. The SFPUC is working with the San Francisco Recreation and Parks Department and other interested parties to identify specific objectives for managing these properties and to proactively manage these sites to protect natural resources.

## Overview of Accomplishments - FY 15/16

## **Upper Tuolumne River**

## The Upper Tuolumne River Ecosystem Program

While near-term Upper Tuolumne River Ecosystem Program (UTREP) efforts will primarily focus on finalizing and implementing the O'Shaughnessy Dam Instream Flow Management Plan, existing fisheries, wetland, and amphibian monitoring efforts will continue. Large woody debris and sedimentation studies initiated in 2014 to assist in detecting the proximal effects of the Rim Fire on physical aquatic habitats in the Tuolumne River will also continue. The Rim Fire burned approximately 257,000 acres (401 square miles) in the Stanislaus National Forest and Yosemite National Park (YNP) in late 2013, and burned through the entire UTREP study area to varying degrees.

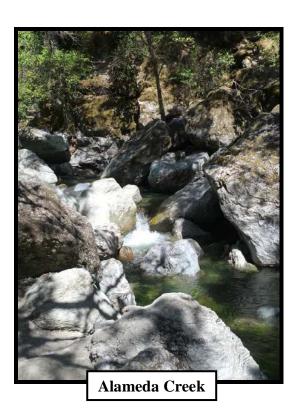


To support the development of the O'Shaughnessy Dam Instream Flow Management Plan, experimental spring snowmelt high flow releases from O'Shaughnessy Dam have been conducted since 2006. These releases have been designed to support YNP Poopenaut Valley wetland studies and SFPUC sediment transport studies. The California drought limited water available for these releases between 2012 and 2015; however, the winter of 2015/2016 provided snowmelt runoff conditions that allowed for a large release from O'Shaughnessy Dam in May 2016. The primary experimental objective of the release focused on removal of large quantities of Rim Fire related fine sediment, sand, and mid-channel riparian vegetation that had accumulated in the mainstem upper Tuolumne River during the drought, likely impairing habitat for rainbow trout and foothill yellow-legged frog. Subsequent sediment surveys after the releases documented the successful removal of much of the sediment and encroaching vegetation. Future UTREP monitoring will track the potential effects of the release on the river ecosystem.

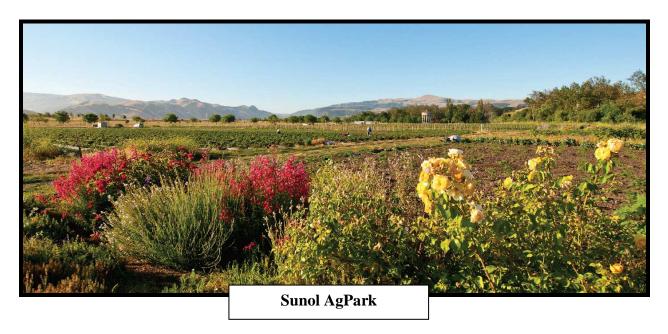
The SFPUC and partner agencies meet regularly with the Upper Tuolumne River Stakeholder Group to provide updates and receive input from participants.

## **Alameda Watershed**

Alameda Creek Fisheries Restoration Workgroup - In April 2006, the SFPUC entered into an MOU with members of the Workgroup to initiate flow studies focused on the restoration of steelhead to Alameda Creek. These flow studies were conducted to develop recommendations that addressed state and federal regulatory requirements and support restoration of steelhead to the watershed. This effort contributed to the instream flow schedule developed for the Calaveras Dam Replacement Project, as well as provided an important part of the foundation for the SFPUC Alameda Watershed Habitat Conservation Plan. The MOU was amended on October 20, 2013 and will expire in December 2016. Workgroup members have agreed to prepare a new MOU to continue these collaborative efforts, which is expected to be prepared for review and consideration in early 2017.



Sunol AgPark - In January 2007, the Commission approved a lease to allow Sustainable Agriculture Education (SAGE) to farm 18 acres of prime agricultural land adjacent to the Sunol Temple. The AgPark is a unique urban edge farm that integrates sustainable agriculture, natural resource stewardship, as well as public education which focuses on the agricultural, natural, and cultural resources of the Sunol Valley. SAGE developed a management plan for the AgPark and sub-leased the 18 acres to organic farming partners. During the term of its lease, SAGE developed and now implements the "Farming in the Watershed" 4<sup>th</sup> - 8<sup>th</sup> grade curriculum which utilizes the AgPark. The SFPUC has provided funding to develop and implement the "Farming in the Watershed" education program as well as the construction of an outdoor structure that provides protection from the elements, making educational programs possible year-round and in all weather conditions.

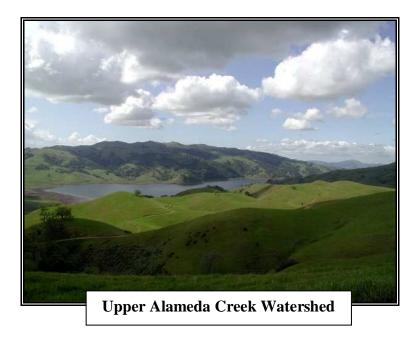


In FY 15/16 approximately 1500 students participated in education programs at the AgPark.

SAGE's lease ends in December 2016, and the Alameda County Resource Conservation District (ACRCD) will take over management of the AgPark under a new lease and management agreement starting in January 2017. The SFPUC will continue to support the operation of the AgPark and coordinate education programs with the proposed Alameda Creek Watershed Center.

<u>Alameda Watershed Protection Project</u> - On December 9, 2008, the SFPUC entered into an MOU with Alameda County Resource Conservation District (ACRCD) to implement watershed protection projects in the upper Alameda Creek watershed. Over the course of the MOU and a subsequent amendment, the SFPUC has continued to work with the ACRCD to inform private landowners in the upper Alameda Creek Watershed about conservation opportunities. The highest priority for WEIP continues to be protecting natural resources and water quality in the Alameda Creek Watershed, including the upper Alameda Creek, Arroyo Hondo and San Antonio watersheds. The SFPUC is partnering with the ACRCD and the Natural Resources Conservation

Service (NRCS) to work with willing landowners to meet these objectives by purchasing conservation easements and/or fee title from willing landowners. As a result of this work, the SFPUC purchased the Olds property in January 2012, an approximately 259 acre parcel in the Alameda Watershed that drains to San Antonio Reservoir. The acquisition of the property not only helps protect water quality, but it also has the potential to provide excellent habitat for the endangered California Tiger Salamander.



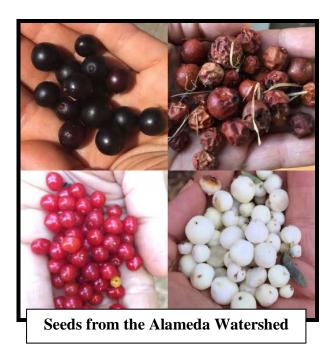
<u>Upper Alameda Creek Watershed Partnership</u> - On July 12, 2011, the SFPUC approved an MOU with the Alameda County Resource Conservation District, the Natural Resources Conservation Service, The Nature Conservancy and the California Rangeland Trust to establish the Upper Alameda Creek Watershed Partnership. The goal of the partnership is to coordinate watershed protection projects in the Mount Hamilton area of the Diablo Range, including the upper Alameda Creek Watershed. This MOU has allowed the SFPUC to better coordinate watershed protection efforts in the upper Alameda Creek Watershed with other organizations that share the common goal of long term protection of this valuable natural resource through conservation easements and fee title acquisitions. This area supports important natural resources including significant native fish, plants and animal populations and supplies source water to Calaveras and San Antonio Reservoirs downstream. This MOU has helped the partners present a unified and cohesive vision to landowners and provide them with a clear understanding of land protection options in the watershed. The Partnership has also helped to facilitate discussions with potential funders in order to leverage existing funds.

The SFPUC, along with The Nature Conservancy and Santa Clara County, participated in the acquisition of the Nolan Ranch, a 1,157-acre parcel of prime habitat in the Mt. Hamilton Range. In May 2012, the SFPUC approved funding toward the acquisition of the ranch and an endowment to fund the monitoring of the conservation easement. The acquisition protects the land from future development through a conservation easement and paves the way for future plans to open up the property to public recreation while protecting water quality.

Several of the partners are currently working together on a watershed protection project that would permanently protect nearly 12,000 acres of land in the upper Alameda Watershed. It is anticipated that this agreement will be finalized in 2017.

Alameda Creek Watershed Center - The SFPUC finalized plans for the construction of the Alameda Creek Watershed Center (Center) in March 2016 as part of the Sunol Yard Long Term Improvements Project, which also includes upgrading existing Water Enterprise Sunol Yard operations and maintenance facilities. The Sunol Yard improvements construction contract was awarded by the Commission in November 2016, and the Center construction contract is scheduled to go out to bid in 2017. Since May 2011, SFPUC staff has met regularly with stakeholders to discuss the project and get input from the community and interested organizations. The Center will include an interpretive exhibit hall, watershed discovery lab to support public education programs, a community gathering space, staff office space and a watershed discovery garden and trail. An Interpretive Master Plan was completed in February 2014 and Phase 1 of the schematic design for the interpretive displays was finalized in June 2014.

As part of the SFPUC's commitment to environmental stewardship of watershed lands, a new temporary one acre nursery facility is being constructed. The primary purpose of the nursery will be to provide a dedicated space to propagate plants for the Alameda Creek Watershed Center, Sunol Yard, and possibly other SFPUC projects. SFPUC biologists have spent the last year collecting seeds of the 80 taxa from the Alameda Watershed that are slated for installation in the projects. It is anticipated that construction of the nursery will be completed in the spring of 2017.



Alameda Creek Watershed Center Education Master Plan - The SFPUC has begun development of an Education Master Plan (Plan) for the Alameda Creek Watershed Center. The Plan will guide the development of education programs at the Center and AgPark, including field trips, classes, workshops, seminars etc. The planning process includes surveying other nearby public education facilities, conducting focus group meetings with K-12 educators and community members and aligning the guidelines to the California state education standards. It is anticipated that the Plan will be completed by May 2017.

## **Peninsula Watershed**

<u>Forest Management Research Partnership (formerly the Sudden Oak Death Adaptive Management Project)</u> - Through an agreement with the US Forest Service, SFPUC is supporting collaboration between the U.C. Berkeley Forest Pathology Lab and other local experts to monitor the presence and movement of *Phytophthora* on Peninsula watershed lands and to develop strategies for managing these species. *Phytophthora*, meaning "plant destroyer", is a genus of fungal-like water molds that can affect several native plant species.

One *Phytophthora* species that has been found to occur on the Peninsula watershed lands is *P. ramorum*, the pathogen that causes Sudden Oak Death (SOD). SOD can kill several species of native California oaks common to the Peninsula watershed, and roughly one-third of the Peninsula watershed is vulnerable to SOD. The research conducted on the Peninsula watershed lands has helped scientists better understand how *P. ramorum* spreads. Its spores are produced during wet, rainy weather in the winter and spring, and while the disease cannot spread from one oak to another, spores splash from California bay trees onto nearby oak trees during spring rainstorms.

Currently, researchers from Phytosphere Research are investigating the use of selective California bay removal to protect a stand of coast live oak near the Pulgas Water Temple and evaluate other stands for possible treatment by bay removal. Since September 2015, no infected trees have been observed among the trees in areas that were treated by bay removal. In contrast, the percentage of untreated control trees with SOD symptoms has continued to increase over time.

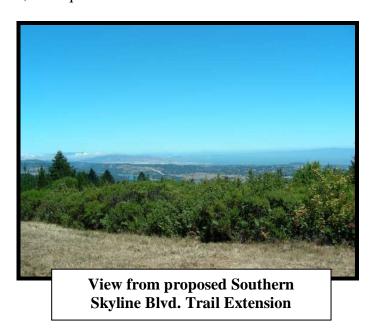
Other *Phytophthora* species that have been found to occur on the Peninsula watershed lands include *P. cinnamomi*, *P. cambivora*, *P. tentaculata* and *P. cactorum*. These species cause rootrots that can kill several tree species, and *P. cinnamomi* and *P. cambivora* have been identified causing mortality in native manzanita species, Pacific madrone, and giant chinquapin in locations around the Bay Area and northern California. Because spores of these species spread through soil, the SFPUC has taken steps to avoid transferring soil from affected sites to new sites. These steps include improving drainage, minimizing road use, and re-surfacing roads within these areas. The SFPUC is also working with other land managers and local experts to research potential eradication methods such as solarization, compost application, and treatment.

Beginning in 2016, SFPUC provided support for education and outreach assistance via the <a href="Phytophthoras in Native Habitats Work Group">Phytophthoras in Native Habitats Work Group</a> and the <a href="Sixth Sudden Oak Death Science">Sixth Sudden Oak Death Science</a> <a href="Symposium">Symposium</a> to improve industry standards, thereby reducing the likelihood that the SFPUC will

receive *Phytophthora* infested plants. The Phytophthoras in Native Habitats Work Group is developing measures needed to ensure that native plant nursery stock and restoration projects do not introduce or contribute to Phytophthora spread; identifying monitoring, management, policy and research needs; conducting education and outreach; and developing a coordinated response to the introduction of *Phytophthoras* in native habitats. The work group has over 20 participating organizations including Midpeninsula Regional Open Space District, the Golden Gate National Recreation Area, the Presidio Trust, the National Park Service, Santa Clara Valley Water District, and the Marin Municipal Water District. Information from this collaborative effort feeds directly into SFPUC watershed management, establishment of the Bioregional Habitat Restoration project sites, and the development of the proposed native plant nursery in Sunol.

<u>Pilarcitos Creek Integrated Watershed Management Plan</u> - In December 2008 the Pilarcitos Creek Integrated Watershed Management Plan (Pilarcitos IWMP) was completed. In January 2011, the SFPUC entered into a 2-year Memorandum of Understanding (MOU) with San Mateo County Resource Conservation District (SMCRCD), Coastside County Water District and Sewer Authority Mid-Coastside to continue to fund the SMCRCD's administration of the Pilarcitos IWMP, and the continuing operation of the Pilarcitos Creek at Half Moon Bay USGS Gauging Station.

SFPUC Southern Skyline Boulevard Ridge Trail Extension (Bay Area Ridge Trail Extension) - The SFPUC received a \$185,000 Grant from the California Coastal Conservancy to plan and design the trail alignment, prepare engineered plans, and conduct environmental review. The proposed project will extend the Ridge Trail on the Peninsula Watershed from Highway 92 south to the Golden Gate National Recreation Area (GGNRA) Phleger Estate along the side of Upper Skyline Blvd. State Highway 35. The proposed 6-mile trail will be multi-modal and provide access to hikers, bikers, and equestrians.



The SFPUC received a construction grant in the amount of \$1,000,000 in May of 2014 from the Metropolitan Transportation Commission Priority Conservation Area Program via the California Coastal Conservancy. The Federal and state environmental review process will be completed in 2017, and construction will occur in 2018.

<u>Fifield-Cahill Ridge Trail</u> - New trailhead improvements at the Cemetery Gate trailhead will provide additional accessible parking and trail event staging enhancements for the Bay Area Ridge Trail. A staging area for participants with parking for vehicles, school buses and equestrian trailers is proposed on Cahill Ridge approximately 1 mile south of Cemetery gate. In addition an ADA accessible trail loop starting at Cemetery gate is proposed. These improvements have been included in the Bay Area Ridge Trail Extension project described above, and will be included in the state environmental review process.

<u>North San Andreas Connector</u> - This trail connection will provide 1.25 miles of new trail from San Mateo County's North San Andreas Trail to GGNRA's Sweeney Ridge property at the Sneath Lane gate (see map, "Planned North San Andreas Connector"). The trail will be multimodal and provide access to hikers, bikers, and equestrians. The design was initiated July 2013 and is expected to be completed by Fall of 2017. Environmental review and final design would follow in 2018, with construction targeted for 2019.



<u>Crystal Springs Regional Trail Construction</u> - In November 2013, the SFPUC approved a Memorandum of Understanding (MOU) with San Mateo County to contribute towards the funding of trail improvements on the Crystal Springs Regional Trail, which is operated and maintained by San Mateo County Parks. The funds were used for the construction of security and watershed fencing for the South of Lower Crystal Springs Dam segment in 2014. This newly constructed trail segment will help close one of the remaining gaps in what will eventually be a 15-mile continuous trail. The South of Dam segment will be open and available to the public after San Mateo County completes construction of the new bridge over Lower Crystal Springs Dam.

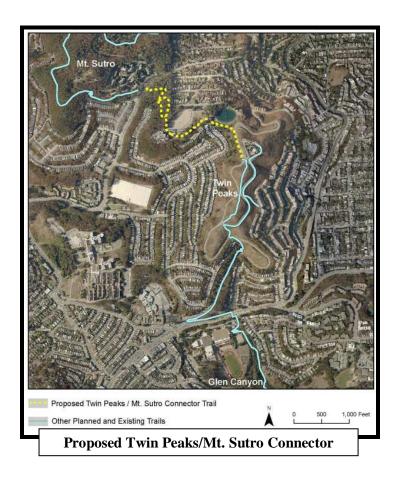
See Attachment 1 for a map of Peninsula Watershed Trails.

Hillsborough chocolate lily - In 2015, NRLMD began supporting conservation efforts for the Hillsborough chocolate lily. Fritillaria biflora var. ineziana is a narrow ranging endemic perennial in the Liliaceae (lily) family only known to occur in the Hillsborough area of San Mateo County. The California Native Plant Society ranks F. biflora var. ineziana as seriously endangered in California and the SFPUC's population of plants near the Crystal Springs Reservoir are the last known population, according to local consulting botanists. As a first measure, seed banking was prioritized to help insure the continued existence of the species. Two years of seed collecting have yield 45% of the seed collection target number for the species.



## **San Francisco Lands**

The SFPUC has continued to work with the San Francisco Recreation and Parks Department (RPD) Natural Areas Program (NAP) to manage Lake Merced and protect its natural resource values under a Memorandum of Understanding approved in July 2013. The SFPUC has also started to work with RPD to protect other SFPUC properties including Twin Peaks, Laguna Honda, the O'Shaughnessy tract and Brotherhood Way. The SFPUC provides funding to RPD NAP to manage these properties and to work with the Bay Area Ridge Trail Council on a proposed trail realignment that will connect Twin Peaks and nearby Mt. Sutro.



## **Tracking WEIP Investments**

The past and future WEIP expenditures are summarized in the table below, and details for past and current fiscal year expenditures are provided in Attachment 2 (WEIP Project Expenditures/Encumbrances by Watershed). The initial \$50 million investment level was not reached in the first 10 years as envisioned, although these funds have all been appropriated.

The Water Enterprise anticipates that approximately 90% (\$18 million) of the Measure A bond funds (\$20 million) dedicated to WEIP will be spent on property acquisition (permanent conservation easements and/or fee title) in the upper Alameda Creek watershed and on education and recreation projects. The remaining bond funds (10% or \$2 million) will support planning and project management.

The operating budget funds (\$30 million) are expected to be distributed over all of the watershed areas. Approximately 50% (\$15 million) is expected to be spent in the Alameda Creek watershed on habitat protection, restoration, preservation, and outreach and education (including public access). Approximately 20% (\$6,000,000) is expected to be spent in the Tuolumne River watershed, and approximately 30% (\$9,000,000) is expected to be spent in the Peninsula Watershed, within San Francisco, and/or the Right of Way focusing on habitat protection, restoration, and preservation, outreach and education (including public access).

To date, bond and operating funds that have contributed to meet WEIP commitments have been expended as follows: Tuolumne River Watershed - \$6,652,814 (31%), Alameda Creek Watershed - \$8,354,800 (38%), Peninsula Watershed and San Francisco - \$5,053,946 (23%), Planning and Project Management - \$1,686,783 (8%).

Watershed and E	nvironmental Improv	ement Program (WEI	<b>(P</b> )
	Tracking Implement	tation	
Funding Source	Estimated expenditures FY 05/06 through FY 16/17	Remaining needed to meet \$50 million commitment	Total
<b>Proposition A Bond Funds</b>	\$17,177,600	\$2,822.400	\$20,000,000
Operations Budget - Revenue Funded Capital (CUW257, CUW264, CUH996)	\$21,624,806	\$8,375,194	\$30,000,000
Total	\$38,802,406	\$11,197,594	\$50,000,000

## **Looking Forward**

The WEIP Annual Report will continue to be updated and provided to the Commission at the end of each calendar year, and NRLM staff will continue to meet with BAWS regularly to provide updates on annual priorities and track expenditures. NRLM staff will also continue to assess ecosystem restoration and land protection needs to ensure that WEIP funds are strategically spent to maximize investments and meet the objectives of the Water Enterprise Environmental Stewardship Policy. Priorities in the next few years include the construction of the Alameda Creek Watershed Education Center and the development of its education programming, the SFPUC Bay Area Ridge Trail Extension, Historical Ecology Study of the Peninsula Watershed, a rare plant survey of the Peninsula Watershed, and potentially a large conservation easement in the upper Alameda Creek Watershed.

#### Attachment 1

**Peninsula Watershed Trail Projects** Bruno San Francisco Bay Planned North San Andreas Connector SFO Millbrae Pacifica Burlingame Crystal Springs Regional Trail Montara Mountain Hillsborough Proposed Whiting Ridge Connector San Mateo Crystal Springs Dam to Hwy 92 Segment Planned Cemetery Gate Trailhead Improvements Planned extension of Ridge Trail Belmont Skylawn Cemetery Trail Planned extension San of Ridge Trail Carlos Legend Trails (mileage on SFPUC property) Existing Access (31.1 miles) SFPUC PWMP 2001 Planned Access (10.5 miles) SFPUC PWMP 2001 Proposed Connector (4.5 miles) GGNRA GMP 2014 Adjacent Open Space Lands SFPUC Land Ownership Hetch Hetchy Peninsula Watershed Regional Water System Trails Services of the San Francisco Public Utilities Commission Natural Resources and Lands Management Division 2 Miles

Author: JGL Date: 1-16-15

Project	Description  Description  Description	WATERSHED FY 06/07   FY 07/08	8 FY 08/09	FV 09/10	FY10/11 F	FY11/12 FY12/13	2)13 FY13/14	FY44/45	FYISHE	6/30/2016
Alameda Creek Watershed										
Notan Banch Adquisition and Conservation Essement	Purchase 1.157 acres in the upper Alameda Cheek Watershed in partnership with TNN and SOC and provide building for an endowment for TNN to monitor the conservation assement on the property.					500 000	5999,817	2=1	23	2=1
AC Watershot Protection Project Conservation Exemple Acquisition	Outreach so paroperly owners regarding purchase of property accounting the parameters of properly owners regarding purchase of properly or conservation easements.		20,000	\$33,878	\$22,662	\$6,760			0.00	000 000
Conservation Easement Education/Facilitation Alameda Creek Walershed Center in Sunol	Educate landowners about conservation easements and assist in developing conservation easements intercretive Master Plan and earbilit design and education program development.	- 200		\$17,585	\$30,426	\$15,165 \$	529,565	\$6,374	\$8,439	\$8,000
2 2	n of the Alameda Creek Watershed Center ucation master plan to quide development									\$4,300,000
Native Plant Nursery SAGE	construct Native plant fursely and conect native seeds and propagate native plants.  Develop implement Sunot Ag Park 4th-8th grade curriculum.	\$0 \$65,000	2005-20	\$43,062	\$46,962	\$89,365	\$65,615 \$65,000	000'\$9\$		\$1,800,000
AgPark Management ACRCD AgPark Management	SAGE and ACRCD work together to transition management of the AgPark from SAGE to ACRCD.  Management of the Sunot AgPark.	- 300		- 80	-8/6	-89	50	200	\$63,498	\$92,951
Rare plant survey	Conduct focused rare plant surveys of the Alameda Watershed Determine the criminal infantity of the web and recommendations and attendables	\$52,000	000	240.000	240.000	0.000.000	2	5		
Alameda Creek Fisheries Restoration Workgroup	Promise of an article of the way and promise to an article of the studies of the	\$0 \$6,662 \$9	\$838 \$22,500	\$82,246	210,000	\$70,000	and'an		•	: 63
Historical Ecology Study Rangeland Monitoring	Partner with ACFC&WCD to fund SFEI to conduct a Historical Ecology study of the AC Watershed collect sortno season species composition data to complete baseline data		\$55,000	\$150,000	\$100,000					
Weed Survey	Conduct non-state plant species inventory and mapping	562,2	86			900-4	200	3000	39.56	
Nites Sung Dam Removal Arroyo de la Laguna Restoration #1	Dam Pemora to provide fish passage Creek bank stabilization	\$0 \$467,8				3.3				
Calaveras Reservoir HOS San Antonio Reservoir HOS	Installation of a Hypolimnetic Oxygenation System (HOS) at Callaveras Reservoir Installation of a Hypolimnetic Oxygenation System (HOS) at San Antonio Reservoir	\$1,381,600 50 \$0 \$68,833 \$182,717	17 \$400,000	\$1,724,113	8/4	-04	-8//	200	600	-63
New Zealand Mud Snall Survey	Conduct surveys in Alameda Creek to determine the presence of the New Zealand Mud Snail Total	\$0 \$2,113,316 \$310,853	53 \$548,500	\$2,070,884	\$239,907	\$1,564,672 \$1,1	\$1,159,322 \$82,000	\$191,034	\$74,312 \$	\$14,901,570
Peninsula Waterahed	Trace a phone of Trace Order sulfs a COURTO is bush about datum the second of Courtons Only Break		020		000 000		000 000		0000000	5400 000
San Mateo thornmint Restoration	Integral a station on a taken of the management of the state of the st				\$100,000	•	070	non'nce	onn'noi e	onn'nnie
Plianotos Creek IWMP	Develop Watershed Management Plan for the Pliandtos Creek Watershed	\$0 \$67,500 \$29,032	132	200			203	3535	95360	5535
Pilarotos Stream Gage Operation Pilarotos IWMP Administration	Provide funding with CCWD and SAM to operate the lower Pilarotios creek Stream Gage.  Provide funding with CCWD and SAM for SMRCD to continue to oversee administration of the IWMP.		- (3)	***	\$20,575	\$7.500			300	36.0
SFPUC Bay Area Ridge Trall Extension	Planning, design and permitting for project alignment.			\$118,692		\$185,000 \$	\$60,000	\$1,436,308	\$545,587	\$500,000
Sheath Lane to N. San Andreas Trail Extension Weed Survey	1.25 miles of new trait from North San Andreas Trait to GGNRA. Sheath Lane gate. Confluir non-daffice plant species invention, and marginal	369	200				\$28,000	\$22,000	\$10,406	60.016
Pulgas Interpretive Signs	Design and install several interpretive signs near the Puigas Temple					5	524,000			-
Crystal Springs Regional Trail	Project funds trail improvements on the Crystal Springs Regional Trail		***	eccie	0000		838	\$300,000	20	2007 500
Fisherical Ecology Study Peninsula Trials Interpretive Master Plan	Instanced Ecology Study of the Perintsial Watersheds Develop Interpretive Master Plan for Interpretive signs along the Fiffeld-Cahill Trail and the planned SSRTE		-			8=	Z=		-3	\$82,500
Native Plant Survey	Conduct non-native plant species inventory and mapping		3.35					- C - C	Ц	\$125,000
		\$0 \$67,500 \$183,989	\$125,000	\$118,632	\$228,075	\$185,000 \$1	\$137,000 \$25,000	\$1,808,308	\$655,333	\$1,235,090
San Francisco Properties		(S)			<u>es</u>	850				CON
Lake Merced Watershed Mahagement Plan	Develop watershed Management Plan for the Lake Merced Watershed Disnance and decides of contrades to elementate certain in the Strucks Distance Distance of	\$0 \$50,000		\$200,000		-				
Laguna Honda Scrub Restoration	Restoration of the native coastal sorub that occurs within a portion of the Laguna Honda reservoir.	3	:3			\$2	\$252,198			
Rec and Park Natural Areas Program	Includes Twin Peaks, Laguna Honda, O'Shaughnessy and Brothemood Way	#250 000 #300 000	2230	4200 000	826	64	6050 100	\$350,000	\$167,191	\$200,000
Upper Tuolumne River (above Don Pedro Reservoir)		000	,,,	\$200,000		78	32,130	000,0004	101,1014	\$200,000
Amphibian Survey Looking Downstream	Conduct amphibian surveys between O'Shaughnessy Dam and park boundary  Conduct a commentancius accessment of the funding and ribarian accessment of the Tribains and ribarian accessment of the Tribains and ribarian accessment.	FUS DECS. ANN	\$40,346 \$112 540	\$50,000	5170 553	\$29,437 \$	\$40,361 \$42,379	540,058	\$41,057	\$43,040
Upper TR Ecosystem Project	A collaborative, science-based effort to improve stewardship of the Upper Tuolumne River		\$215,000	\$215,000					\$215,000	\$215,000
Invasive Plant Treatment Economic Impact of the 2013 Rim Fire on Natural Lands	Comprehensive Himalyan blackberry removal along 6 miles of the Tuloumne River				3482		\$35,357		\$95,446	\$87,483
Lesson Tuckumen Dunce the few Don Bodes December	Total	\$279,001	\$367,886	\$404,628	\$679,553	\$833,367 \$5	\$507,104 \$551,71	\$510,088	\$519,477	\$507,403
Lower Tubilimie Area (Jesiow Lon Pedio Reservoir)  Dos Rios Ranch Acquisition	Provide funding to develop conservation easements and/or acquire property to protect water quality				\$2,000,000	25.3			2.53	2 (50)
Pianning/Project/Natiagement	10,3	De			\$2,000,000				03	
Planning/Project Management	staff time (NR, RES, CAO) to plan, implement and manage WEIP projects	\$5,765		\$153,721	-	\$266,780 \$2	17,100 \$221,640	\$167,981		\$200,000
	AC Wafershed Total	354,800 \$2,755	\$1,201	\$2,351,325	\$3,326,081	-	\$2,272,724 \$880,35	\$3,377,411	\$ 1,582,167	\$17,044,063
	Peninsula Watershed Total	\$3,534,557	XX:-		852	***	8.2	<i>(</i> (3)	9/3=	V/25=
	Upper TR Total	\$4,652,814	3-3	***		***			1-1	1-1
	Total Project Management	\$2,000,000 \$1,686,783	- 33	300	80	-24	-80	- 23	-20	-20
	All WEIP ROR Projects	\$17,680,743	23	200		88-		333.0	9336	
	All WEIP Projects Grand Total	\$21.758 343 * Totals do not include FY	e FY 16/17 est	20	-80	-6.				
						7.		2		