Introduction

The Watershed and Environmental Improvement Program (WEIP) is at the 5th year of implementation. Annual reports have been posted for public review and discussion since implementation began in the FY05/06 fiscal year, and these reports have focused on accounting for the progress made during implementation the previous year, while generally outlining priorities for future years.

This report will provide the background and purpose of the WEIP, highlight accomplishments during the first 5 years of implementation, and outline priorities moving forward for the Commission to consider as part of the FY11/12 and FY12/13 budget process. Based on Commission direction, annual work plans and budgets will be updated, and then revisited annually with the Commission.

Background and Purpose

The SFPUC initiated the WEIP in FY05/06, 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...".

During public workshops focused on Water System Improvement Program (WSIP) level of service objectives in 2005, the Bay Area Water Stewards and others suggested that some of the WSIP bond funds be set aside to implement projects as described in the Measure A language, 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 description adopted by the Commission on November 29, 2005. At that meeting, the Commission stated its intent to provide $50 million over the next 10 years for the SFPUC to more proactively manage, protect and restore environmental resources critical to or affected by SFPUC operations (see Attachment 1 - SFPUC Water System Map), and that $20 million of this total would be provided from WSIP Measure A bond funds. The additional $30 million was directed to come from the operating budget, approximately $3 million annually.

At the November 29, 2005 Commission meeting, the Water Enterprise was asked to prepare additional information for the Commission's consideration as part of the FY06/07 budget process related to WEIP implementation. Since then, SFPUC staff have met approximately every 6 months with the Bay Area Water Stewards and provided updates to the Commission at their request to account for progress during WEIP implementation.

The investment of $50 million to meet WEIP objectives over 10 years is a considerable effort to improve SFPUC management of natural resources that affect or are affected by operation of the
water supply system. However, the Water Enterprise anticipates that the WEIP will continue, albeit at some lesser expenditure, beyond this initial 10 year time frame - and that during this first 10 years additional performance measures will be developed to track the return on these investments in addition to the expenditure of funds. As a public water utility, and a manager of thousands of acres of public land, it’s in the interest of the SFPUC to protect, maintain, and restore natural resources - particularly species listed under federal or state law as threatened or endangered - in order to minimize regulatory risk that could affect the 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, cost-effective strategy to meet the objectives of the Water Enterprise Environmental Stewardship Policy.

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, and prioritizes the protection and/or restoration of these lands.

The goals and objectives described below were developed in coordination with the Bay Area Water Stewards, and are posted on the SFPUC public website.

**Goal**

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

**Objectives**

- Manage watershed activities and resources to protect source water quality, native species and their habitat and identify critical watershed lands, key ecosystem restoration needs and restoration priorities.
- Protect/restore terrestrial species/habitats.
- Protect/restore water quality/stream health.
- Protect/restore aquatic species/habitat.
- 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 collaborations 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.

**WEIP Priorities**

The highest priority for the WEIP is to permanently protect watershed lands through conservation easements and/or fee title purchase of property from willing landowners. Priority areas include lands that drain directly into SFPUC reservoirs and low lying floodplains along creeks and rivers affected by SFPUC operations.

Outreach and education is another high priority for the WEIP. The SFPUC is developing new environmental education programs and facilities to educate the public about the SFPUC water system and natural resource stewardship. The SFPUC will also explore supporting existing environmental education programs throughout its watershed areas.

Habitat restoration and enhancement is also a WEIP priority. Additional specific restoration projects will be identified once the mitigation requirements for the WSIP and the Alameda Watershed Habitat Conservation Plan (HCP) have been finalized.

**WEIP Priorities by Watershed**

• **Upper Tuolumne River (O'Shaughnessy Dam to Don Pedro Reservoir)** (See Attachment 2, Tuolumne River Watershed Map)
  - Fund collaborative studies and monitoring partnerships as part of the Upper Tuolumne River Ecosystem Project, including Cherry Creek and Eleanor Creek.
  - Support outreach and education programs

• **Lower Tuolumne River (Below Don Pedro Reservoir)** (See Attachment 2, Tuolumne River Watershed Map)
  - Protection of low lying floodplain areas through permanent conservation easements and/or fee title purchase of the property from willing landowners
  - Support outreach and education programs
  - Instream and riparian habitat restoration

• **Alameda Watershed** (See Attachment 3, Alameda Creek Watershed Map)
  - Watershed protection through purchase of permanent conservation easements and/or fee title purchase of property from willing landowners
  - Support outreach and education programs
  - Habitat restoration

• **Peninsula Watershed** (See Attachment 4, Peninsula Watershed Map)
  - Fund collaborative studies and projects to support the restoration of threatened and endangered species
  - Support outreach and education programs
Protection of low lying floodplain areas through permanent conservation easements and/or fee title purchase of the property from willing landowners

**SFPUC owned properties within San Francisco** (See Attachment 5, Lake Merced Map)
- The SFPUC owns a number of properties in the City and County of San Francisco including Lake Merced and Laguna Honda. These properties have unique habitats and conservation challenges. The SFPUC is working with stakeholders to determine roles and responsibilities for managing these properties and to develop a strategy to protect the natural resources.

**WEIP Accomplishments – the first five years (FY05/06-FY09/10)**

- **WEIP Coordinator** - The SFPUC hired the WEIP Coordinator in June 2007. Initial tasks accomplished include:
  - Developed WEIP overview, including guidelines and criteria for identifying and prioritizing WEIP projects annually;
  - Provided a flow chart outlining funding options for WEIP, WSIP mitigation, and Alameda Watershed HCP projects;
  - Maintains and updates the 10 year WEIP spending plan;
  - Developed the initial recommendations for WEIP projects to be considered for funding for FY 07/08 and FY 08/09; and
  - Set up WEIP public web page.

**Upper Tuolumne River**

- **Upper Tuolumne River Ecosystem Project** - Subsequent to adoption of the Water Enterprise Environmental Stewardship Policy, the SFPUC initiated the Upper Tuolumne River Ecosystem Project with the goal of conducting a set of long-term, collaborative, science-based investigations designed to:
  - Characterize historical and current river ecosystem conditions;
  - Assess the relationship between the historical and current river conditions and Hetch Hetchy Project operations; and
  - Develop environmental flow and other recommendations for improving ecosystem conditions.

The study area includes reaches of the Upper Tuolumne River mainstem and major tributaries regulated by the Hetch Hetchy Project, from O'Shaughnessy Dam to Don Pedro Reservoir, Cherry Creek downstream of Cherry Dam, and Eleanor Creek downstream of Eleanor Dam. Primary “Partner Agencies” in the project are Yosemite National Park, Stanislaus National Forest, and the U.S. Fish and Wildlife Service. The SFPUC and Partner Agencies also meet regularly with the Upper Tuolumne River Stakeholder Group to provide updates and receive input from Stakeholder Group participants.
As part of this process, the SFPUC has provided funds to support the National Park Service staff to implement aspects of the Upper Tuolumne River Ecosystem Project within Yosemite National Park.

The first phase of the project was completed in 2007. In this phase, the SFPUC compiled and reviewed available information for the project area, completed initial hydrologic analyses and field surveys in project reaches, developed an initial description of the river ecosystem, and recommended monitoring actions for project reaches. Links to the two reports generated as part of the first phase of the project are provided below.

http://sfwater.org/detail.cfm/MC_ID/20/MSC_ID/418/MTO_ID/692/C_ID/3308

http://sfwater.org/detail.cfm/MC_ID/20/MSC_ID/418/MTO_ID/692/C_ID/3358

Phase II of the project, which will recommend flow releases from O’Shaughnessy Dam and propose a long-term adaptive management and monitoring strategy for the mainstem Tuolumne River downstream of O’Shaughnessy Dam, began in 2008. Since 2008, the SFPUC and the Partner Agencies have conducted three years of surveys based on experimental releases, and are developing temperature and other models to support flow recommendations and resource management priorities in the project reach. Ongoing work for this phase includes:

- Amphibian surveys
- Fisheries surveys
- Experimental releases
- Sediment transport monitoring and modeling
- Temperature monitoring and modeling

A draft study report, including proposed flow recommendations and an adaptive management and monitoring plan for the reach, will be presented to the Commission in early 2011.

**Lower Tuolumne River**

- *Dos Rios Ranch Acquisition* – On September 28, 2010 the Commission approved a Funding Agreement with River Partners to provide $2,000,000 for acquisition of the Dos Rios Ranch. The acquisition of Dos Rios Ranch will result in permanent land conservation and habitat preservation of 1,603 acres and 6 miles of river frontage.
Alameda Watershed

- **Calaveras Reservoir and San Antonio Reservoir Hypolimnetic Oxygenation System (HOS)** - The installation of the HOS facilities has improved the water quality conditions in the reservoirs by increasing the oxygen concentration in the deepest part of the reservoirs, thus limiting nutrient release from the sediments to the water column. The operation of the HOS facilities reduces algal blooms and the unpleasant taste and odors associated with these events, and reduces the need to apply copper sulfate to the reservoirs (which is currently being phased out as a viable alternative to control algae by state and federal regulatory agencies). The increased oxygen concentration also maintains the cold-water habitat in the reservoirs for the landlocked rainbow trout populations.

- **Alameda Creek Watershed Management** - In April 2006, the SFPUC entered into an MOU with members of the Alameda Creek Fisheries Restoration Workgroup to initiate flow studies focused on the restoration of steelhead to Alameda Creek. It is the intent of these flow studies to develop strategies that will address state and federal regulatory requirements. This effort contributed to and will build on the instream flow schedule proposed for the Calaveras Dam Replacement Project, as well as the SFPUC Alameda Watershed Habitat Conservation Plan.

- **Niles and Sunol Dam Removal** - In September 2006, the SFPUC completed the removal of the Niles and Sunol Dams. The removal of the dams eliminated two potential barriers to steelhead migration in Alameda Creek, and is an important component of the steelhead restoration effort in the Alameda Creek Watershed.

- **Arroyo de la Laguna Restoration** - In Fall 2006, the SFPUC partnered with the Natural Resources Conservation Service (NRCS), the Alameda County Resource Conservation District (ACRCD), Alameda County, Zone 7 Water Agency and the Alameda County Water District to implement a demonstration streambank stabilization project along a 1,000-foot section of the Arroyo de la Laguna between Pleasanton and Sunol, a half-mile south of the Verona Road Bridge. The project was designed to reduce erosion, establish native vegetation, and improve riparian habitat.
Sustainable Agriculture Education - 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. To date SAGE has developed a management plan for the AgPark and sub-leased the 18 acres to five organic farming partners.

Sunol AgPark Curriculum - The SFPUC is funding the development of a 4th - 8th grade curriculum through SAGE utilizing the Sunol AgPark. The curriculum will focus on natural resource stewardship, as well as the agricultural, natural, and cultural resources of the Sunol Valley.
- **Alameda Watershed Weed Survey** - In Summer 2008, the SFPUC completed weed surveys on the Alameda Watershed. An exploratory inventory was conducted to search as many acres as possible in the least amount of time, while still providing basic information needed to guide, the initial development and implementation of a sound non-indigenous plant species (NIPS) management strategy. A total of 2,269 occurrences of 48 NIPS were mapped in the Alameda Watershed comprising 472 acres of total infested area. This information will inform WSIP mitigation planning and the SFPUC Alameda Watershed Habitat Conservation Plan.

- **Alameda Creek Historical Ecology Study** - In partnership with the Alameda County Flood Control and Water Conservation District, the SFPUC is funding a study to understand how the Creek and watershed have changed over time. The information collected will inform restoration efforts and prioritization of projects in the watershed. Results are expected in early 2011, and a final report will be completed by the end of 2011.

- **Alameda Watershed Protection and Conservation Easement Education Project** - The SFPUC approved an MOU with the ACRCD in December 2009 to help implement watershed projects in the Alameda Watershed. A high priority for WEIP is protecting natural resources and water quality in the upper Alameda Creek watershed, and the SFPUC is partnering with the ACRCD and the NRCS to work with willing landowners to meet these objectives by purchasing conservation easements and/or fee title.
• **Niles Gage Weir Assessment** - The Niles Gage Weir, the longest running gage in the Bay Area, is in a state of disrepair and requires additional monitoring, maintenance, and potentially its removal. In March 2009, the SFPUC completed the Assessment of the Niles Gage Weir to determine the structural stability of the weir. The SFPUC will survey the structure twice a year to determine how much, if any, the weir is moving to assess long-term options. The SFPUC also set up an auxiliary gage to duplicate and eventually replace the current USGS station at this location in coordination with the USGS and Alameda County Water District.

• **Alameda Watershed Rare Plant Survey** - In Fall 2009, SFPUC completed a rare plant survey of the SFPUC’s property within the Alameda Watershed. The survey goals were to identify and locate sensitive botanical resources including special-status plant species and locally rare plant species within the Alameda Watershed and to provide baseline information which can be used for future land management decisions, including long-term monitoring and stewardship of the Alameda Watershed’s rare plant populations.

• **Alameda Watershed Rangeland Monitoring** - In Fall 2009, the SFPUC completed plant species composition monitoring on grazed rangelands within the SFPUC’s Alameda Watershed. Plant species composition monitoring is a component of SFPUC’s Rangeland Monitoring Program developed in 2007. The Rangeland Monitoring Program for grazed rangelands in the SFPUC lands was developed to ensure that the specified rangeland uses are in compliance with any applicable land use regulations and any land stewardship goals, objectives, and implementing guidelines. Monitoring results will be used as a guideline for adaptive management by the SFPUC of its Watershed within the designated grazing areas.
**Peninsula Watershed**

- *Peninsula Watershed Weed Survey* - In Summer 2008, the SFPUC completed weed surveys on the Peninsula Watershed. An exploratory inventory was conducted to search as many acres as possible in the least amount of time, while still providing basic information needed to guide the initial development and implementation of a sound non-indigenous plant species (NIPS) management strategy. A total of 3,710 occurrences of 65 NIPS were mapped in the Peninsula Watershed comprising 183 acres of total infested area.

- *Sudden Oak Death Adaptive Management Project* - The Peninsula watershed lands are visibly impacted by Sudden Oak Death (SOD). Through an agreement with the US Forest Service, SFPUC is supporting a UC Berkeley study to monitor the presence and movement of the pathogen that causes SOD, *Phytophthora ramorum*, on Peninsula watershed lands. By late 2008 roughly 80% of bays, 12% of coast live oaks, but few tanoaks were infected with the pathogen. SFPUC and Mid-Peninsula Open Space District are jointly taking action to protect healthy tanoak forests on the Peninsula through a pilot study using AgriFos as a preventative agent, selective bay seedling removals, and implementing best management practices for preventing the spread of the pathogen.

- *Pilarcitos Creek Integrated Watershed Management Plan* - In December 2008 the Pilarcitos Creek Integrated Watershed Management Plan was completed. The SFPUC is currently working on implementing the recommendations listed in the Plan.

- *Southern 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 the CEQA review. The project will extend the Ridge Trail 4.7 miles from Highway 92 south along the western boundary of the Peninsula Watershed.
San Francisco

- **Lake Merced Infrastructure Project** - Completed the construction of upgrades to the stormwater system at the Sunset Circle Parking Lot.

- **Lake Merced Watershed Management Report** - The SFPUC worked with the Lake Merced Taskforce and other stakeholders to complete the Watershed Management Report for Lake Merced. Issues addressed included water levels of the lake, water quality as well as natural resources protection and recreation opportunities.

**WEIP Spending Plan – the next five years (FY10/11-FY14/15)**

The past and future WEIP expenditures are summarized in Attachment 6 (WEIP, Tracking First 10 Years of Implementation), and detail for past and current fiscal year expenditures are provided in Attachment 7 (WEIP Project Expenditures/Encumbrances by Watershed).

The Water Enterprise anticipates that approximately 90% ($18 million) of the Measure A bonds funds ($20 million) will be spent on property acquisition (permanent conservation easements and/or fee title) in the upper Alameda Watershed. The remaining bond funds (10%, or $2 million) will support Planning and Project Management.

The Operations budget funds ($30 million) will be distributed over all the watershed areas. Approximately 50% ($15 million) will be spent in the Alameda Creek Watershed on habitat protection, restoration, and preservation, outreach and education, and public access. Approximately 20% ($6,000,000) will be spent in the Tuolumne River Watershed, and approximately 30% ($9,000,000) will 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, and public access.

This Annual Report will be updated and provided to the Commission every year in December, and staff will continue to meet with BAWS at least twice per year to provide updates on the annual priorities and track expenditures. Water Enterprise staff will 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.
Tuolumne River Watershed Map
Peninsula Watershed Map
Lake Merced Map