San Francisco Bay Water Quality Improvement Fund
Progress Report, Fall 2010

During the last three decades, there have been notable successes in protecting the environmental health of San Francisco Bay. However, substantial environmental challenges remain. Congress has appropriated $17 million since 2008 to EPA for a competitive grant program that leverages funds to protect and restore San Francisco Bay and its watersheds, known as the San Francisco Bay Water Quality Improvement Fund (SFBWQIF). To date, EPA has supported 28 projects with 37 partners, and leveraged almost $12 million to achieve significant environmental results related to wetlands, water quality, and green development. EPA will prepare progress reports and update our website to share project highlights, promote widespread implementation and publicize the availability of funding opportunities.

WETLAND RESTORATION

The San Francisco Bay Area is host to one of the largest tidal wetlands restoration efforts in the country. The following projects are building on the significant progress of the past two decades to protect what remains and to restore as much as possible of what has been lost.

Protecting Mudflats: *Spartina alterniflora* has been smothering Bay mudflats, a key ecosystem that supports the base of the estuarine food chain with worms, crustaceans, and other invertebrates. SFBWQIF grant funding was a key piece of the multi-agency, multi-year effort to treat more than 150 acres of invasive *Spartina* with herbicides to recover the mudflats. Early results show the return of pickleweed and mudflats which can support the native assemblage of invertebrates, fish, and birds.

Treating Spartina with herbicide in the South Bay.

Connecting Urban Communities with their Creeks: Helping urban communities reconnect with their nearby wetlands and waterways is key to restoring the health of San Francisco Bay. With the California State Parks Foundation, youth from the Bayview Hunters Point community of San Francisco have been propagating and replanting native vegetation at Yosemite Slough and Candlestick Point, as well as leading outreach activities in their community.

Preventing Invasive Species: Biological invasions threaten the integrity of San Francisco Bay ecosystems. The Center for Research on Aquatic Bioinvasions is targeting *Littorina*, an invasive sea snail, because its distribution is currently low. This year scientists found only 17 *Littorina*, making it a likely candidate for eradication.

Propagating native plants at Candlestick Point State Recreation Area Nursery.

Adapting for Climate Change: USGS scientists are studying sediment accumulation at the mudflat and tidal marsh of Corte Madera Creek to help preserve the flood retention benefits those wetlands provide. Results will be incorporated into an adaptive management plan for use by local governments in Marin County and around the Bay to reduce future shoreline flooding, and conserve and restore wetlands.

RESTORING WATER QUALITY

Total Maximum Daily Loads (TMDLs) are analyses of pollutant sources which drive action plans to restore water quality. Implementation of several San Francisco Bay TMDLs and watershed plans is underway for some of the most challenging water quality problems including sediment, mercury, PCBs, and pathogens.

Removing Legacy Pollutants: San Francisco Bay is contaminated with many legacy pollutants, including PCBs and mercury which make their way to the Bay through stormwater runoff and other pathways. Fish and shellfish contaminated with PCBs and mercury pose health risks to both humans and wildlife. Bay Area stormwater agencies are accelerating PCB TMDL implementation in the watersheds surrounding the Bay. The Bay Area Stormwater Management Agencies Association and its partners will address pollutant sources through: (1) cleanup and abatement of contaminated sites; (2) removal of polluted sediment including retrofit of some urban runoff treatment facilities; and (3) risk-reduction program for Bay Area communities that eat Bay-caught fish.

Avocet bird egg being examined for mercury in the Don Edwards National Wildlife Refuge.

Soil sampling at former mercury mine, Santa Clara County.

Cleaning Up Mercury: San Francisco Bay is contaminated by mercury, in part due to mercury mining in the late 1800's in the Guadalupe River watershed of Santa Clara County. Two projects implement the Guadalupe River Watershed Mercury TMDL. High in the watershed in the old mining area, Santa Clara County Parks is removing mercury. In the lower watershed of the South Bay Salt Ponds, USGS is monitoring methylmercury bioaccumulation in water bird eggs.

Restoring the Napa River: The Napa River once supported a healthy salmon and steelhead fishery. Excess sediment from building roads, grazing, agriculture, and urban runoff has filled the Napa River and its tributaries causing a decline in salmon and their habitat. To improve stream habitat conditions and water quality, the California Land Stewardship Institute (CLSI) is working with farmlands and vineyards through the Fish Friendly Farming program. This year, CLSI added frost water conservation to the BMPs required of vineyards to be certified by this program.

Revitalizing Urban Creeks: Many Bay Area streams are impaired by excess sediment. The Urban Creeks Council is providing technical assistance to urban and suburban creek-side landowners in Alameda, Contra Costa, and Marin Counties to decrease sediment loadings from streambank erosion.

A fish-friendly farm with a healthy riparian stream corridor.

Improving Richardson Bay Water Quality: The pathogen TMDL for Richardson Bay identifies human health risks from recreational contact with Bay waters and shellfish harvesting. Sources identified include stormwater runoff, sewer overflows, and failing septic systems associated with houseboats and marinas. Marin County will reduce pathogens from all of these sources by infiltrating stormwater though a restored riparian corridor, improving monitoring of its sewers, and developing an inspection program for sewer laterals related to houseboats and marinas.

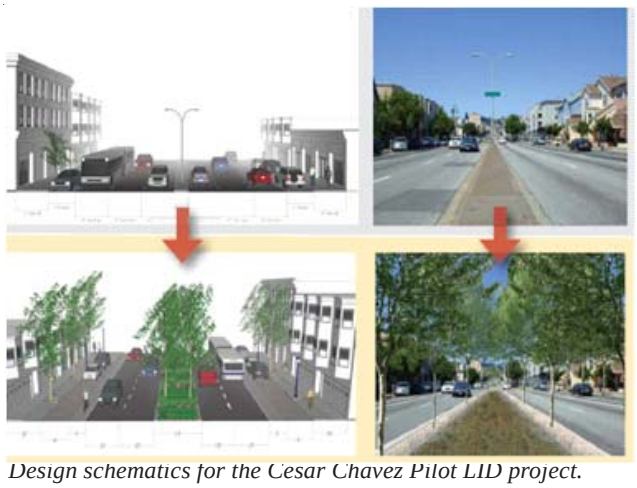
Removing Trash: Trash is a pervasive problem in San Francisco Bay and its watersheds which causes significant impacts to local aquatic life and the Pacific Ocean. Save the Bay's anti-trash campaign resulted in policy changes in various jurisdictions including San Jose's single-use plastic bag ban, Fremont's Styrofoam ordinance, and San Mateo County's polystyrene ordinance and ban on distribution of plastic and paper carryout bags at retail stores in unincorporated areas.

GREENING DEVELOPMENT

Greater linkage between land use and water quality is essential to improve the health of San Francisco Bay. There is growing recognition that green development methods, such as low impact development (LID) which uses natural hydrologic processes to treat polluted runoff, should become common practice. The following projects are helping communities develop the policies and technical expertise necessary to protect and restore San Francisco Bay.

San Francisco Green Streets: San Francisco is implementing LID within its heavily urbanized jurisdiction. The block-long Newcomb Avenue project and the mile-long Cesar Chavez green infrastructure design will feature vegetated stormwater filtration, permeable parking spaces, tree plantings, and traffic calming. These projects will be important showcases to foster broader application of LID in San Francisco and other municipalities.

Fremont and Richmond Stormwater Innovations: The cities of Fremont and Richmond are piloting small and large scale stormwater treatment projects, respectively, in heavily urbanized areas to improve water quality in the Bay. Fremont's tree-well filters and Richmond's pilot diversion of high flows to a treatment plant will demonstrate economically viable and locally feasible LID approaches.



Design schematics for the Cesar Chavez Pilot LID project.

Alameda County Green Solutions: Conversion of impervious to pervious land in urbanized settings is a desirable approach to retain and filter stormwater runoff. Community Conservation Solutions is analyzing potentially suitable public lands in Alameda County to treat small and large volumes of urban runoff by "slowing, sinking, and spreading" it.

LID'ing the Way: Multi-media approaches are needed to share the success of LID projects around the Bay Area. The San Francisco Estuary Partnership has produced several podcasts on "green streets" and LID which can be viewed at http://www.sfestuary.org/podcast/ .

FOR MORE INFORMATION

Visit http://www.epa.gov/region9/water/watershed/sfbaywqfund.html.

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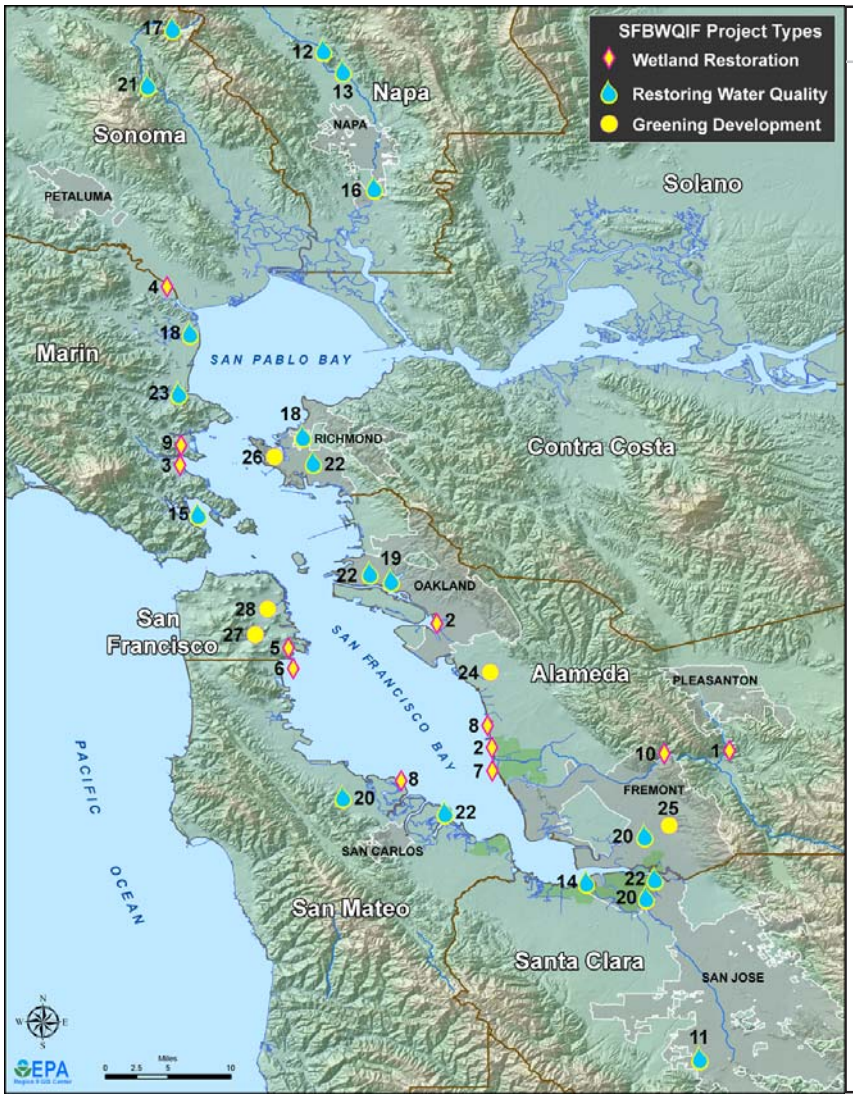
San Francisco Bay Water Quality Improvement Fund Projects, Fall 2010



	Project
1	Stream Management Program for Landowners
2	Shoreline Habitat Restoration
3	Climate Change Adaptation Plan, Corte Madera Wetlands
4	Bahia Restoration & Revegetation Project
5	Yosemite Slough Wetlands Restoration
6	Yosemite Slough Community Involvement Project
7	Invasive Spartina Removal
8	Littorina Eradication Project
9	Eelgrass Habitat Restoration
10	Stonybrook Creek Bank Stabilization
11	Senador Mine Erosion Control
12/13	Implementing Napa Sediment TMDL: Fish Friendly Farming
14	South Bay Salt Ponds Mercury Monitoring Project
15	Implementing Richardson Bay Sediment / Pathogen TMDLs
16	Implementing Napa Sediment / Pathogen TMDLs
17	Implementing Sonoma Sediment / Pathogen TMDLs
18	Bay Area Stream Channel Restoration Design Curves
19	SFEP Public Outreach
20	Keep It Clean- Trash Reduction in the Bay
21	Implementing Sonoma Sediment and Pathogen TMDLs
22	Implementing SF Bay PCB TMDL
23	GIS tracking of TMDL implementation
24	Mapping Impervious Surfaces in Alameda County
25	Fremont Tree Well Filter Project
26	North Richmond Stormwater Diversion Pilot Project
27	Newcomb Avenue LID Model Project
28	Cesar Chavez Street Green Infrastructure Project

SFBWQIF has supported 28 on the ground projects, leveraged nearly $12 million and involved 37 partners.

Many projects take place in several locations. Points represent approximate project locations.

San Francisco Bay Water Quality Improvement Fund Partners

Alameda County Flood Control and Water Conservation District · Association of Bay Area Governments · Bay Conservation and Development Commission · California Coastal Conservancy · California Land Stewardship Institute · California State Parks Foundation · CCPuede · Center for Research on Aquatic Bioinvasions · City and County of San Francisco · City of Fremont · City of Oakland · City of Richmond · City of San Carlos · City of San Jose · Community Conservation Solutions · Contra Costa Flood Control District · Friends of the Urban Forest Marin Audubon Society · Marin County Department of Public Works · Marin Municipal Water District · Napa County Resource Conservation District · North Bay Watershed Association · Plant SF · Resources Legacy Fund · San Francisco Estuary Institute · San Francisco Estuary Partnership · San Francisco Public Utilities Commission · Santa Clara County Parks · Save the Bay · San Francisco Department of Public Works · Sonoma Ecology Center · Southern Sonoma County Resource Conservation District · Urban Creeks Council · Waterways Restoration Institute

EPA will continue to update project successes and funding information on our website:
http://www.epa.gov/region9/water/watershed/sfbaywqfund.html