

Chapter 6 Implementation and Funding

6.1 Overview

Under the ESA, HCP implementation begins when the Implementing Agreement (IA) is executed, and the Section 10(a)(1)(B) incidental take permit is issued. SFPUC is also applying for a Section 2081(b) permit for two state-listed species (California tiger salamander and Alameda whipsnake). The SFPUC is responsible for implementing the HCP. Implementation of the HCP requires approval of the IA by the SFPUC and the San Francisco Board of Supervisors.

This chapter describes the overall implementation policies of the HCP, including SFPUC implementation responsibilities, land acquisition, reporting, an overview of the cost to implement the HCP, and the source of funding to meet those costs.

6.2 Implementation

HCP implementation will be overseen by the SFPUC Natural Resources and Lands Management Division (NRLMD), with day-to-day tasks managed by NRLMD staff and consultants (see below for anticipated SFPUC staffing and resource needs). The SFPUC NRLMD staff includes scientists, administrators, and other natural resource specialists that carry out planning and design, habitat restoration, monitoring, adaptive management programs, and periodic coordination with and reporting to regulatory agencies.

This chapter will also describe how the SFPUC will inform the public of the progress of HCP implementation. Unless otherwise stated, all obligations and responsibilities described in this chapter rest with the SFPUC.

6.2.1 Implementation Responsibilities

SFPUC Staff

The SFPUC NRLMD will oversee HCP implementation and will retain all program records. NRLMD will assign HCP implementation responsibilities to various staff to form a functional unit to carry out this program. The specific individuals responsible for implementing the HCP include an HCP administrator,

field supervisors, field crews, and SFPUC or contract biologists. The roles of these individuals are described briefly below. SFPUC's organizational structure and the specific roles and responsibilities of staff are expected to grow and change over time to ensure the efficient implementation of the HCP.

HCP Administrator

The HCP administrator will manage the implementation of the HCP and will oversee the work of NRLMD staff and consultants responsible for implementing the conservation strategy, including monitoring, reporting, and adaptive management. The following list provides an example of the support the HCP administrator will provide and/or oversee:

- answer internal HCP-related questions;
- coordinate wildlife and plant survey with supervising biologists;
- serve as a point of contact for USFWS, NMFS, and CDFG for HCP-related issues;
- coordinate audit activities for compliance with the HCP;
- evaluate the effectiveness of the program;
- prepare reports documenting HCP compliance;
- develop and maintaining annual budgets and work plans;
- develop site-specific management plans under the conservation strategy;
- design and implement habitat enhancement and restoration and manage the affected areas in an adaptive-management framework;
- conduct periodic mapping of the study area to update the land-cover calculations;
- coordinate and communicate with local land-management agencies;
- maintain monitoring and survey-data reports and archives, including monitoring results, in an annual report;
- coordinate HCP and related training program(s) for SFPUC staff;
- overseeing land-management activities in an adaptive-management framework (see additional detail below), either independently or in partnership with other organizations; and,
- assure that mitigation and conservation measures are being implemented up front and that impacts do not exceed mitigation as described in the conservation strategy.

GIS/Database Maintenance and Compliance Tracking/ GIS Manager

A GIS Manager and SFPUC GIS staff will utilize GIS and other database systems to collect, store, and utilize spatial data necessary for HCP implementation. Compliance monitoring will be addressed in part through the GIS/database system. The SFPUC will track implementation of covered activities; planning and other survey requirements; and implementation of all conservation measures to demonstrate compliance with the terms and conditions of the HCP permit. To track compliance, the SFPUC will maintain the following baseline data:

- Descriptions of conservation agreements, lands acquired in fee title, interagency memoranda of agreement, or any other agreements entered into for the purposes of protecting, enhancing, or restoring covered species habitat, including the acreage and location of these sites.
- The location, extent, and timing of impacts on land cover and jurisdictional wetlands and waters.
- The location, extent, and timing of implementation of all other conservation measures (e.g., construction of basking sites, plant-conservation actions,).

The comprehensive data repository for compliance tracking will be operating within 8 months of HCP permit issuance. The data will also be linked to supporting information documenting HCP compliance. These reports and other data will be stored and archived electronically whenever possible.

Field Supervisors

SFPUC's field supervisors will ensure that field crews are trained in implementing the terms of the HCP. The field supervisors also will be responsible for requesting surveys, if needed, and ensuring compliance during activities. They will ensure that all appropriate field crews receive training to implement the terms of the HCP. The field supervisor also will be responsible for annual forecasting of covered operations and maintenance activities.

Field Crews

The SFPUC employs heavy equipment operators, laborers, utility plumbers, carpenters, electricians, and other trades in its Water Supply and Treatment Division. The NRLMD employs field supervisors who oversee the work of watershed keepers, seasonal watershed workers, the East Bay Conservation Corps, grazing tenants (who may be required to improve pond infrastructure and fencing as part of the AWHCP) as well as contractors. SFPUC's field crews will implement the HCP by attending environmental training and adhering to the AMMs specified for each job.

Supervising Biologist

Oversight of restoration and monitoring activities will be performed by a supervising biologist whose duties include overseeing biological and technical staff performing field work, providing logistical support, and ensuring that all work helps fulfill the biological goals and objectives of the HCP.

Biologists

AMM and survey implementation will be performed by SFPUC biologists, or hired contractors, who work on the ground to evaluate compliance with state and federal regulations; establish monitoring and reference sites, keep detailed and accurate field and analytical records; use an information-management system to track, control and report as necessary to achieve the goals of the site-specific restoration plans and the goals and objectives of the conservation strategy.

Community Liaison

An SFPUC community liaison will work with organizations, agencies and members of the public, interested in preservation and conservation of the Alameda Watershed, such as the Alameda Creek Fisheries Restoration Workgroup to involve students and other volunteers in stewardship and research projects in the watershed.

Financial and Contracting Analyst

An SFPUC financial and contracting analyst will assist with budgeting and contracting necessary to conduct land acquisition, restoration design, and baseline survey work as part of the HCP.

Hydrologist

An SFPUC hydrologist will assist with planning and implementation of habitat enhancement and habitat restoration and help to evaluate the impact of water levels and storm flows associated with these efforts.

Real Estate Specialist

An SFPUC real-estate specialist will research land-acquisition opportunities (fee title or conservation easement) and negotiate with private landowners to acquire mitigation lands in fee title or conservation easements. The real estate specialist will also negotiate joint acquisitions or conservation easements in partnership with other organizations.

Watershed Planners

An SFPUC senior watershed planner will be needed to complete the program administration and training duties noted in the HCP and to supervise the efforts of the watershed planners.

An SFPUC watershed planner will coordinate habitat restoration and creation design projects and will assist the Senior Watershed Planner with the administration, reporting and training duties noted in the HCP.

Watershed Forester

The Watershed Forester will assist with planning and implementation of habitat enhancement and habitat restoration and provide analysis of efforts to protect water quality, reduce the risk of fire, protect reservoir storage capacity, create ecological reserves, maintain wildlife preserves, monitor wildlife and conduct flood and erosion control. The Watershed Forester is a Registered Professional Forester licensed by the State of California to fulfill the State's requirement for management of wildland resources and watersheds.

Regulatory Agencies

USFWS, NMFS, and CDFG are the regulatory agencies that issue the federal and state permits for incidental take and regulate implementation of the HCP. The successful execution of the conservation strategy—including those management actions, monitoring, and reporting that are part of the HCP—requires coordination between the SFPUC and the regulatory agencies.

The regulatory agencies will receive annual reports concerning HCP implementation and how the SFPUC is complying with the terms of the permits. If necessary the SFPUC will seek guidance from the regulatory agencies.

Public

Public input is an important part of HCP implementation and can help the SFPUC garner and ensure continued support of the HCP throughout its implementation. The SFPUC will work with existing organizations and agencies, such as the Alameda Creek Alliance, Alameda Creek Fisheries Restoration Workgroup, and the East Bay chapter of the California Native Plant Society, to solicit input from stakeholders with interest in HCP implementation. The SFPUC will utilize the web site to provide key program information, reports, and contact information, as well as to register for project updates via a program list serve. The SFPUC HCP implementation staff will present an annual update to the Commission, noticing all interested parties, to provide status updates and solicit input on HCP implementation. All data and reports associated with the

monitoring program for this HCP will be available to the public, with the exception of reports documenting surveys on private lands considered for acquisition but not yet acquired by the SFPUC.

Consultants and Contractors

Consultants will be retained to meet any technical or scientific needs that cannot be effectively or efficiently addressed through in-house staff due to insufficient expertise or availability as determined by the SFPUC. It is expected that consultants will be utilized more heavily during the early stages of HCP implementation, becoming less necessary as the bulk of habitat restoration and creation projects have been planned and implementation initiated. Contractors may be needed for construction tasks requiring specialized skills or the use of heavy equipment, such as restoration grading, restoration planting, and water-well construction. Additionally, some work may be performed by grazing lessees including, for example, watershed pond improvements.

6.2.2 Land Acquisition

If land acquisition or easements are necessary for purposes of implementing the HCP, SFPUC will consult with both USFWS, CDFG, and if applicable, NMFS, to survey and rank potential compensation lands following the criteria listed below. SFPUC may purchase high-quality land (e.g., predominantly native or unimproved land) to support the covered species and place conservation easements or deed restrictions on these lands. Sites will be selected to maximize habitat values.

The SFPUC will hold title to compensation lands or easements it purchases and will oversee cooperative agreements with other land management entities or tenants that own and/or manage land for the SFPUC as part of the HCP (e.g., grazing lessees).

The following characteristics are considered desirable attributes of the conservation lands:

- demonstrated species use;
- overall habitat suitability and quality;
- proximity to other compensation lands or mitigation banks;
- proximity to other important habitats (e.g., wetlands, riparian areas) that may not be a target of compensation efforts; and
- minimum of past site disturbance or high capability of restoration from disturbance.

USFWS, CDFG, and NMFS, if applicable, will work with SFPUC and their acquisition partners to ensure appropriate parcels are identified.

Easements on Existing SFPUC Lands

Conservation easements/deed restrictions will be made on existing SFPUC lands at specific mitigation sites. Once mitigation sites have been finalized and approved, the conservation easement rights/deed restrictions shall be assigned by the SFPUC to a CDFG-approved third party who shall guarantee that the mitigation site will remain and be managed by the SFPUC as required for mitigation, in perpetuity.

6.2.3 Reporting

The HCP Administrator will oversee the preparation of the Annual Reports over the term of the HCP that document permit compliance and implementation of the conservation strategy. The Annual Reports will summarize the previous calendar year's implementation activities and be completed by May following the reporting year. No annual report shall be required for the first partial year. Annual Reports will require synthesis of data and reporting on important trends such as land acquisition and habitat restoration. A due date of May will allow time for the data from the previous year to be assembled and presented in a clear and concise format.

Annual Reports will be submitted to designated representatives of USFWS, CDFG, and NMFS and will be available to the public through the HCP web site. These agencies will use results presented in the Annual Reports, as well as other available information and any additional monitoring reports produced under the conservation strategy, to assess success of the HCP in meeting the biological goals and objectives and to formulate recommendations to the SFPUC for HCP implementation in subsequent years.

The goals of the Annual Report include the following:

- Providing the information and data necessary for the SFPUC to demonstrate to CDFG, USFWS, NMFS, and the public that the HCP is being implemented properly and as anticipated.
- Disclosing any problems with HCP implementation so they can be corrected.
- Documenting issues with HCP implementation that may require consultation with CDFG, NMFS, and USFWS.
- Identifying administrative or minor changes to HCP components required to increase the success of conservation measures.

At a minimum, annual reports should include the following information:

- A description of all covered activities implemented during the reporting period and the acreage impacted by natural community type.
- A description of all HCP natural community protection and enhancement/restoration actions implemented during the reporting period.

- A year-to-date summary of the extent of land cover types protected, enhanced, restored, or created.
- A cumulative summary of impacts and conservation for all land cover types (i.e., from the start of the permit term).
- A description of the monitoring undertaken during the reporting period and a summary of monitoring results.
- A description of any actions taken or expected regarding changed circumstances, including remedial actions.
- A description of the adaptive management process utilized during the reporting period.
- A description of all HCP research undertaken during the reporting period; a summary of research results; and a description of integration with monitoring, assessment, and compliance elements.
- An assessment of the efficacy of habitat enhancement/creation/restoration methods in achieving performance objectives and recommended changes to improve the efficacy of the methods.
- An assessment of the appropriateness of performance indicators and objectives based on the results of effectiveness monitoring, and recommended changes to performance indicators and objectives.
- A summary of any administrative changes, minor modifications, or major amendments proposed or approved during the reporting year.

6.3 Cost to Implement HCP

The cost to implement the HCP is estimated at approximately \$21 million over the 30-year permit term, in 2011 dollars. These costs are divided into four categories:

- Program Implementation and Training;
- Conservation Actions
- Monitoring and Adaptive Management; and,
- Avoidance and Minimization Measures, including Surveys.

The methods and estimates of capital and annual operations and/or maintenance costs associated with these program elements are summarized in **Table 6-1** and described below.

6.3.1 Program Implementation and Training

The SFPUC staff that will administer this work are described in greater detail above in Section 6.1. Program implementation involves ongoing or yearly costs

associated with staff time for coordination, meeting with agencies, reporting, and management of watershed operations in relation to the HCP. Program implementation also includes up-front or one-time costs associated with systematic changes to SFPUC's biological project management and tracking systems. These changes will require that SFPUC's environmental-awareness training be extended and will require specific project management and training tracking. SFPUC staff attendance at an expanded environmental-awareness training class or program is included as part of the budget of the pre-implementation budget and is not assessed herein.

Implementation and training costs include the following:

- HCP staff time (coordination, reporting, agency meetings);
- development of training materials;
- database maintenance; and
- new materials and resources associated with the HCP.

Implementation and training costs are estimated to be, on average \$30,000 per year over the life of the permit term. Program implementation costs are estimated to be, on average \$170,000 per year over the life of the permit term. Some program implementation costs will be necessary beyond the permit term.

The implementation staff and other direct costs presented in **Table 6-2** will be necessary to complete implementation work described above, management of the effectiveness monitoring and species specific surveys described below, and related effort associated with administering the HCP.

6.3.2 Conservation Actions

Habitat Restoration and Enhancement

Habitat enhancement includes a variety of activities intended to preserve and enhance the habitat value of the study area for covered species. These activities include prescribed burns, fencing of riparian areas, feral pig control, invasive species control, pond enhancements, and installing drains for bullfrog control. Habitat restoration and enhancement costs will include costs for project design and implementation. Project design will include the preparation of monitoring and adaptive management plans for specific sites. The land-cover types that would be restored or enhanced under the HCP are annual grassland, woodland, riparian, ponds and wetlands, streams, and serpentine grassland. The cost per acre for restoring or enhancing each land-cover type includes, but is not limited to, site preparation; direct seeding; growing container stock; harvesting cuttings in the field; field planting; planting materials (e.g., mulch); earthmoving; constructing water control structures, if needed; and irrigation system construction and maintenance, if needed. The cost is developed for each 5-year period based on the area of each land-cover type that is estimated to be restored during that period (to take efficiencies of scale into account).

For the sake of estimating costs contractor estimates were used for each 5-year period. Specific costs for contractors and capital costs associated with planned habitat enhancement and restoration projects are a part of the cost summary.

In addition to the design and implementation costs, it is possible that existing positions within the NRLMD such as the Range Manager would be needed to oversee habitat enhancement and restoration projects over time. Other natural resource specialists from NRLMD such as the hydrologist, biologists, planners, and foresters may also be needed to assist with planning and implementation of habitat enhancement and habitat restoration. In addition, a GIS technician would be needed to maintain and update a GIS database to map ESZs and track impacts and compensation actions in the study area. The staff presented in **Table 6-3** will be necessary to complete the habitat enhancement and restoration work associated with the HCP.

As noted above, SFPUC will coordinate habitat restoration and creation project design. For the purposes of the cost estimate, it was assumed that the bulk of habitat restoration and enhancement projects will be completed during the first ten years of the permit term. By the end of the permit term, all restoration, and enhancement, projects must be completed (although they may not have yet reached performance standards), so planning and design costs are needed only in the permit term. In addition, all restoration and enhancement management plans will have been written.

Annual habitat restoration/enhancement maintenance costs are estimated to be, on average, approximately \$143,000 during the permit term. Incremental (5-year) habitat restoration and enhancement costs are estimated at approximately \$6,000 on an annualized basis and include the elements noted below.

- The cost of restoring or enhancing each required land-cover type.
- Costs for using SFPUC workers and contractors to conduct habitat restoration/enhancement work.
- Costs associated with the habitat restoration/enhancement employees (e.g., salaries, benefits, office equipment, vehicles and fuel, and travel).
- Environmental compliance that will be needed during implementation for certain land management and restoration activities.

Land Acquisition

Fee title and conservation easement land acquisitions are estimated to occur during the first ten years of the permit term, in order to allow the SFPUC to mitigate in advance of impacts and to keep acquisition costs down. The acreage of land acquisition required to implement the HCP will depend on the amount of habitat enhancement, restoration, and creation that occurs on the SFPUC's current or acquired lands, and on the amount of credit the SFPUC chooses to purchase in mitigation banks.

Based on the effects analysis and proposed mitigation, SFPUC would acquire approximately 12 acres of Diablan sage brush, (see Chapter 4 and **Table 5-4**). Impacts to Diablan sage scrub will be mitigated through acquisition or purchase of mitigation bank credits. Average value for mitigation land with appropriate land-cover types will likely be lower than that of mitigation banks, with similar total costs once the transaction costs, including title searches, inspections, legal assistance, title insurance, commissions, and land surveys were included. If the costs are higher than a mitigation bank, SFPUC would acquire habitat through a mitigation bank.

Similarly, the cost estimate assumed that mitigation lands and easements, either purchased or presently owned by SFPUC, also would be comparable in price and would require some form of long-term operation and maintenance (including biological resource evaluation). The cost of operation and maintenance of these lands would be met under an agreement between the SFPUC and regulatory agencies. Activities supported by an endowment may include, but are not limited to, minor biological surveys, patrolling, fence repair, controlled burning, and controlling exotic plants.

To ensure that cost estimates do not understate actual costs, and to reflect the limited number of easement sales in this area, all estimates were on acquisition in fee title. Fee title land values were estimated at \$7,000 per acre, based on a review of comparable sales and input from SFPUC staff. This estimated cost is based on the assumption that a substantial portion of land acquired for the HCP would be steep, and lacking in and relatively remote from existing infrastructure, rendering it less suitable for development and less expensive. Actual sales prices of individual properties will vary considerably around this average.

Real estate transaction costs were included as part of the cost of land acquisition. Real estate transaction costs were estimated for fee-title and easement purchases. The transaction costs were estimated as 22% of the fee-title or easement purchase cost based on the Center for Natural Lands Management PAR software estimates. The transaction costs included title searches, inspections, legal assistance, title insurance, commissions, land surveys and planning surveys to assess properties prior to land acquisition.

The estimate for management of newly acquired land, including the cost of surveys, patrols, maintenance, and fencing, was \$60 per acre. These expenses would be offset by an estimated \$10 per acre in revenue from grazing leases. Total costs associated with land acquisition are estimated to be \$60,000.

Purchase of Mitigation Credits

The SFPUC will attempt to meet all mitigation obligations on existing SFPUC lands (i.e., habitat enhancement and restoration) and on lands acquired by SFPUC. However, the SFPUC may choose to purchase mitigation credits if there are insufficient opportunities to mitigate for impacts within the SFPUC-owned portion of the watershed, as described in the Conservation Strategy. Should the

purchase of mitigation credits be desirable (in lieu of mitigation on SFPUC lands), it will come from the same budget allocated for habitat restoration and enhancement.

6.3.3 Monitoring and Adaptive Management

Monitoring and adaptive management are described fully in Chapter 5.

Monitoring and adaptive management costs cover the following items.

- Planning, conducting, analyzing, and reporting of covered species, including baseline and ongoing monitoring.
- Planning, conducting, analyzing, and reporting on monitoring the effectiveness of conservation measures and habitat restoration/creation projects.
- Conducting species-specific actions including baseline, status, and trends surveys during each of the first ten years of the permit period and then every five years thereafter until the end of the permit period.
- Monitoring design of habitat enhancement and restoration projects; and
- Planning new management approaches to respond to unanticipated threats to covered species and their habitats

SFPUC employees conducting monitoring and adaptive management will plan, coordinate, and report on HCP monitoring and contractors will likely collect monitoring data. The cost for office space, shared office equipment, GIS and database equipment, and insurance for monitoring, research, and adaptive management employees is included under the program administration cost category.

Survey costs will be highest in Years 1–3 of the HCP when baseline surveys will be conducted. In subsequent years, surveys will be limited to pre-activity surveys and updates to the baseline surveys to be conducted once every 5 years. In addition, periodic surveys to document changes in land cover types due to disturbances from wildfire or invasive species are included. For the purposes of the cost estimate, baseline surveys will be conducted primarily by contractors.

Contractor costs for collecting monitoring data are based on the estimated number of hours per acre required for each type of monitoring, the area that will be covered by each type of monitoring in each 5-year period, and the cost per hour for contracting biologists to conduct the monitoring (the cost per hour includes travel costs for the contractors).

Monitoring and adaptive management costs are estimated to be \$7,040,000 over the thirty-year permit term with baseline surveys requiring greater up-front costs during the first three years of implementation as the baseline for species is established. The costs for effectiveness monitoring and status-and-trend

monitoring will also decrease over time, in accordance with the monitoring schedule proposed in Chapter 5. Some monitoring and adaptive management tasks will be required in perpetuity. These costs beyond the permit term are expected to be approximately \$10,000/year. It should be noted, that some monitoring costs (such as monitoring for fish) will be shared with program costs associated with SFPUC's Bioregional Habitat Restoration and implementation of the Calaveras Rebuild Project Adaptive Management Program.

Remedial Measures

Remedial measures are estimated to be, on average, approximately 5% of the cost of monitoring and adaptive management measures or approximately \$5,000 annually during the permit term¹.

Remedial measure costs are a result of an undesirable species response to changed circumstances or the failure to meet performance standards (see Chapter 7, *Assurances and Alternatives*, for a description of all changed circumstances and remedial measures). Remedial measure costs for created or restored land cover types are calculated on the basis of the percentage of each restored or created land cover type that may require remedial measures in each 5-year period and the cost per acre for restoration/creation of the land cover types.

See **Table 6-4** which summarizes the costs of these monitoring and adaptive management measures over the life of the permit period.

6.3.4 Avoidance and Minimization Measures, including Related Surveys

Survey Costs

The HCP requires pre-activity surveys for certain activities (as specified in Chapter 5 and **Table 5-4**). A Biologist II and a Supervising Biologist with the support of a Hydrologist would be needed to implement the pre-activity surveys. These two biologists would have a number of HCP-related duties, of which pre-activity surveys would be one. Other duties, discussed in the chapter, include conducting training for SFPUC staff and contractors on avoidance and minimization measures, coordinating with contractors on restoration and enhancement project design and implementation. The cost estimate proposed herein used the staff presented in **Table 6-5** as a basis for estimating the survey effort associated with the HCP.

¹ Remedial costs would be incurred at irregular intervals, but much less frequently than annually.

Avoidance and Minimization Measures

Many of the AMMs included in this HCP are already practiced by the SFPUC. However, implementation of the HCP will add new AMMs to those already in use. The cost of AMMs that are currently practiced by the SFPUC and the cost of new AMMs were both included in the estimate of HCP implementation costs. Implementation of new and existing AMMs will include training for SFPUC staff and contractors. Training would be conducted by SFPUC biologists. As discussed above, 25% of an FTE Biologist II, 25% of a Supervisor Biologist, 25% of a Hydrologist, and 5% of a Range Manager would be needed for HCP implementation in order to conduct training and to fulfill other functions noted above. Implementation of new AMMs will require additional staff time, and may delay projects to allow for necessary surveys to be completed.

Avoidance and minimization costs were based on the need for additional biologist time, either for a staff biologist or a contractor, and estimated AMM implementation frequencies. AMMs will need to be implemented on various schedules depending on the activity size, the survey size, and the likelihood that covered species habitat is present. On average, the SFPUC estimated these costs at approximately \$110,000 per year.

6.4 Funding Assurances

The SFPUC is solvent and is fully able to fund all costs of the HCP, including program administration, mitigation, monitoring and adaptive management and remedial measures.

[Note to Reader: The mechanism for SFPUC funding is currently being explored and will be finalized shortly and incorporated into the HCP.]

Table 6-1. HCP Implementation Costs Summary

HCP Implementation Costs Summary

Cost Element by Category	Total Estimate
Program implementation and training	\$6,060,000
Conservation actions	\$6,190,000
Monitoring and adaptive management	\$7,040,000
Avoidance and minimization measures, including surveys	\$3,290,000
Sub-Total	\$22,580,000
Contingency (20%)	\$4,516,000
Total	\$27,096,000

Notes:
Total Present value estimate in 2011 dollars.
Cost estimating accuracy: +25% / -25%.

Table 6-2. Program Implementation and Training Cost Summary

Position	Total Cost	Assumption
Senior Watershed Planner	\$4,320,000	1 FTE—to administer implementation of the HCP.
Clerical Worker	\$540,000	25% FTE—Provide administrative support to HCP administrator.
Financial and Contracting Specialist	\$110,000	12.5% of an FTE—Assist with budgeting and contracting during first 10 years of HCP when the bulk of land acquisition, restoration design, and baseline survey work will be conducted.
Real Estate Specialist	\$360,000	10 % of an FTE—Negotiate joint acquisitions or conservation easements in partnership with other organizations.
Community Liaison	\$490,000	30% of an FTE—to work with organizations, agencies and members of the public, interested in preservation and conservation of the watershed.
Other Direct Costs	\$140,000	HCP implementation and training costs including HCP Admin time, development of training materials, database management, and new materials and resources associated with the HCP.
Total:	\$5,960,000	

Notes:

Costs based on total present value to 2011 and 30-year term except for Financial and Contracting Specialist which is for a 10-year term and the Community Liaison is for a 15-year term; Estimating accuracy is +25%, -25%.

Table 6-3. Conservation Actions Cost Summary

Position	Total Cost	Assumption
Field Supervisors	\$1,080,000	50% FTE for Years 1 to 10 and 0.25 FTE for Years 11 to 30 to oversee habitat enhancement and restoration projects over time.
Biologist	\$1,030,000	25% FTE to assist with planning and implementation of habitat enhancement and habitat restoration.
Hydrologist	\$1,070,000	25% FTE to assist with planning and implementation of habitat enhancement and habitat restoration.
Watershed Planner	\$220,000	25% FTE to assist with planning and implementation of habitat enhancement and habitat restoration for the first 10 years.
Watershed Forester	\$220,000	25% FTE to assist with planning and implementation of habitat enhancement and habitat restoration for the first 10 years.
GIS Manager	\$670,000	20% FTE to maintain and update a GIS database to map ESZs and track impacts and compensation actions in the study area.
Contractors	\$1,840,000	To support SFPUC staff with construction of planned habitat enhancement and restoration projects.
Other Direct Costs	\$60,000	Land acquisitions associated with the conservation measures.
Total	\$6,190,000	

Notes:

Total costs based on present value to 2011 and 30 year term; Estimating accuracy is +25%/-25%.

Table 6-4. Monitoring and Adaptive Management Cost Summary

Position	Total Cost	Assumption
Other Direct Costs	\$7,040,000	Consultant/contractor costs for effectiveness monitoring and baseline, status, and trends surveys.
Total	\$7,040,000	

Notes:

SFPUC staff support and management costs included in Program Implementation and Training **Table 6-2**;

Costs based on present value to 2011 and 30 year term; Estimating accuracy is +25%/-25%.

Table 6-5. Avoidance and Minimization Efforts Cost Summary

Position	Total Cost	Assumption
Supervising Biologist	\$1,000,000	0.25 FTE to implement the HCP surveys and avoidance and minimization measures including coordinating with contractors and conducting training on these measures for SFPUC staff and contractors.
Biologist II	\$830,000	0.25 FTE to conduct pre-activity surveys, conducting training for SFPUC staff and contractors on the avoidance and minimization measures, for example.
Field Supervisor	\$170,000	0.05 FTE to assist with HCP implementation and training.
Hydrologist	\$1,030,000	0.25 FTE to assist with implementation of the avoidance and minimization measures.
Other Direct Costs	\$260,000	Consultant/contractor costs for survey support and/or software improvements.
Total	\$3,290,000	

Notes:

Costs based on present value to 2011 and 30 year term; Estimating accuracy is +25%/-25%.