RELATED AGENCIES

23. SAN FRANCISCO PUBLIC UTILITIES COMMISSION

TYPE AND EXTENT OF SERVICES

The San Francisco Public Utilities Commission (SFPUC) is a department of the City and County of San Francisco that provides water, wastewater and municipal power services to the City of San Francisco. Under contractual agreements, 26 wholesale water agencies in Alameda, San Mateo, and Santa Clara Counties also purchase water supplies from the SFPUC. The 26 wholesale customers comprise the Bay Area Water Supply and Conservation Agency (BAWSCA). The SFPUC's existing water supplies are from the Hetch Hetchy System and the Local Bay Area Watersheds (San Mateo Creek, Pilarcitos Creek and Alameda Creek Watersheds). The SFPUC's Water System Improvement Program (WSIP) currently underway will have a significant impact on the water purveyors and rate payers within the system's service area, providing greater reliability as well as long-term cost increases.

The SFPUC is not subject to the authority of Santa Clara LAFCO, and no determinations have been included in this review. The information is provided in order to provide a comprehensive overview of the water resources of Santa Clara County. SFPUC was last reviewed in 2005 as part of the Countywide Water Service Review.

SFPUC wholesale customers in Santa Clara County include: 1) City of Milpitas, 2) City of Mountain View, 3) City of Palo Alto, 4) City of San Jose, 5) City of Santa Clara, 6) City of Sunnyvale, 7) Purissima Hills Water District, and 8) Stanford University.

Regional Capital Improvement Plan

In May 2002, the SFPUC approved a $3.6-billion Water System Improvement Program (WSIP) to repair, replace and seismically upgrade the system's infrastructure. Approximately $715 million was designated for local projects within the City and County of San Francisco; the majority, $2.9 billion, was for regional projects. The cost for the local projects within San Francisco will be paid by retail customers within San Francisco; the cost for the regional projects will be borne by retail customers in San Francisco as well as the 26 water wholesalers within the three counties. The magnitude of this program and its potential impact on regional water service led to four legislative actions.

First, Assembly Bill (AB) 2058 (Papan) established the Bay Area Water Supply and Conservation Agency (BAWSCA) in 2003. This agency is the successor to the former Bay Area Water Users Association and its 27-member Board of Directors includes a representative from each of the water wholesalers. BAWSCA is the only entity with the authority to directly represent the interest of the water agencies that purchase water from San Francisco on a wholesale basis. As such, it provides crucial oversight on SFPUC water

service facilities jointly with other local public agencies or on its own to carry out the agency's purposes.

The second piece of legislation, Senate Bill (SB) 1879 (Speier) established the San Francisco Bay Area Regional Water System Financing Authority. The Authority is a regional organization with the power to raise money, if needed, to finance the regional system improvements. BAWSCA provides administrative support to the authority.

The State Legislature passed a third piece of legislation, AB 1823 (Papan) in response to increasing concern over accountability and schedule for the regional projects. AB 1823 requires the SFPUC to submit annual progress reports to the State Department of Health Services, Seismic Safety Commission, and Joint Legislative Audit Committee on the implementation of its capital improvement program. The legislation also requires SFPUC to provide prompt notification of any changes in the scope and/or schedule of capital projects.

Lastly, AB 2437 (Ruskin) amended AB 1823 and was passed in July of 2008. This act extended State oversight of the SFPUC's WSIP from December 31, 2010 to January 1, 2015 and requires San Francisco to identify in its annual progress report, any project that is behind schedule, and, for each project identified, to describe its plan and timeline for making up the delay or adopting a revised implementation schedule. The bill also updates the name of the State Department of Health Services to California Department of Public Health (DPH).

ACCOUNTABILITY AND GOVERNANCE

The SFPUC governing body consists of five members, nominated by the Mayor of San Francisco and approved by the Board of Supervisors. Their responsibility is to provide operational oversight in areas such as rates and charges for services, approval of contracts, and organizational policy.

SFPUC meets on the second and fourth Tuesdays of each month. The meetings are held in City Hall at 1:30 p.m., unless otherwise noticed. Coverage of the meetings can be seen live via streaming video.

POPULATION AND PROJECTED GROWTH

SFPUC estimates that there were 856,095 residents in its retail service area. In addition, its wholesale customers serve approximately 1.75 million residents. SFPUC projects that the population within its retail service area will increase by approximately 12 percent by 2035, and the population served by its wholesale customers will increase by 21 percent over the next 25 years.

FINANCING

The Water Enterprise accounts for the activities of SFPUC's water utility operations and is engaged in the distribution of water to the City and certain suburban areas. The enterprise recovers costs of service through user fees. Service to wholesale customers is provided pursuant to the 25-year Water Supply Agreement which establishes the basis for determining the costs of wholesale service.

SFPUC charges wholesale customers a flat monthly meter charge and a rate based on usage. In FY 10-11, wholesale customers paid a rate of $1.90 per 100 cubic feet (ccf). For FY 11-12, SFPUC raised its rates to $2.63 per ccf. Additional rate increases are anticipated over the next 10 years. The increases are attributed to SFPUC's significant $4.3 billion capital improvement program intended to make its water system more reliable in the event of an earthquake or other disaster.

In addition, SFPUC initiated an environmental enhancement surcharge (EES) for agency purchases of water in excess of their allotted amount. The surcharge is to be in effect beginning in FY 11-12 through FY 17-18. The EES is based on each agencies' water use in million gallons per day. If the entire Hetch Hetchy regional system uses more than 265 mgd, then those agencies over their supply assurance will pay a surcharge based on a rate of $850,000 per mgd over the supply assurance.

Water System Improvement Program

The WSIP program budget and schedule were originally adopted by the SFPUC on March 1, 2003. The original program cost was $3.6 billion. The scope of the program was changed significantly following the adoption of Levels of Service (LOS) goals in early 2005. The program changes were so substantial that the program was renamed the WSIP and a new program budget, known as the "baseline budget" of $4.3 billion, was adopted on November 29, 2005. Since then, the WSIP budget has been revised twice, in 2007 and 2009.

The approved December 2007 revised budget adopted in February 2008 increased the budget to $4.392 billion, a $49.16 million variance. This increase was due to the need to compensate for the additional resources needed to address real estate requirements (land acquisition and encroachment removal) and complete delivery activities (program management, project management and environmental review/permitting/mitigation).

The approved June 2009 revised budget, which was adopted in July 2009, increased the budget to $4.6 billion, a $194 million variance. Significant cost increases in two projects, the Harry Tracy Water Treatment Plant Long Term Improvements Project (+ $183 million) and the Calaveras Dam Replacement Project (+ $102 million), account for the overall budget increase.

As of February 5, 2011, the forecasted cost for the regional program is $4.442 billion, which indicates that cumulatively the projects are anticipated to be $175 million under budget.

To date, $4.586 billion has been appropriated for the WSIP and the program has expended or encumbered approximately $2.9 billion through March 21, 2011.

During the last few years, the WSIP has benefited from a very favorable bidding climate due to the limited amount of infrastructure work advertised in the last few years. Since 2005, the WSIP has realized $364 million or 19 percent in savings for awarded construction contract work (awarded contracts lower than total amount budgeted for that work). Although there have been significant savings with construction contracts, the program has encountered a number of challenges in the field which have resulted in project cost increases. For instance, construction of some improvements has been impacted by differing site conditions, archeological discoveries and contaminated soil and groundwater.

The SFPUC projects the Wholesale Revenue Requirement to grow from $188.8 million in fiscal year 2011-12 to $311.9 million in fiscal year 2017-18 when debt service impacts are fully realized. Of that $123.1 million increase, over 78 percent is a result of debt service associated with WSIP.

WATER SUPPLY

A majority of the SFPUC's water supply comes from the Hetch Hetchy watershed (85 percent) with a majority of the remainder coming from the Alameda and Peninsula watersheds. SFPUC makes minimal use of groundwater in the Castlewood and Sunol areas within its retail service area. SFPUC does not presently make use of recycled water, but plans to initiate use of recycled water by 2015.

The Hetch Hetchy watershed, an area located in Yosemite National Park, provides approximately 85 percent of San Francisco's total water needs. Spring snowmelt runs down the Tuolumne River and fills Hetch Hetchy, the largest reservoir in the Hetch Hetchy water system. This surface water in the Hetch Hetchy Reservoir is treated, but not filtered because it is of such high quality.

Together the Alameda and Peninsula watersheds produce about 15 percent of the total water supply. The Alameda watershed, located in Alameda and Santa Clara Counties, contributes surface water supplies captured and stored in two reservoirs—Calaveras and San Antonio. The Peninsula watershed in San Mateo County contributes surface water supplies captured and stored in lower and upper Crystal Springs and San Andreas Reservoirs and in two smaller reservoirs (Pilarcitos and Stone Dam). The six reservoirs in the Alameda and Peninsula watersheds capture rain and local runoff. Some also store Hetch Hetchy water for use by San Francisco. These local water sources are treated and filtered before delivery.

Two turnouts from the South Bay Aqueduct of the California State Water Project can supply limited supplemental water to the regional water system. The SFPUC, however, currently does not possess entitlements to water from the State Water Project.

The amount of water available to the SFPUC is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River. Due to these constraints, the SFPUC is very dependent on reservoir storage to maximize the reliability of its water supplies. More importantly, reservoir storage provides water supply carry-over capability. During dry years, the SFPUC has a very small share of Tuolumne River runoff available and the local Bay Area watersheds produce very little water. Reservoir storage is critical during drought cycles because it enables the SFPUC to carry-over water supply from wet years to dry years.

Deliveries from the regional water system watersheds are limited to an average annual flow of 265 million gallons per day (mgd) through 2018. As a decision on future water deliveries beyond 2018 has not yet been made, the 2010 UWMP assumes that the 265 mgd supply limitation extends to 2035.

Drought Allocations

In July 2009, in conjunction with the "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County" (WSA), the wholesale customers in Santa Clara County, along with other wholesale customers and the City and County of San Francisco adopted a Water Shortage Allocation Plan (WSAP) to allocate water from the regional water system during system-wide shortages of up to 20 percent (the "Tier One Plan"). The Tier One Plan replaced the prior Interim WSAP, adopted in 2000. The Tier One Plan also allows for voluntary transfers of shortage allocations between SFPUC and any wholesale customer and between wholesale customers themselves. In addition, water "banked" by a wholesale customer, through greater than required reductions in usage, may also be transferred.

Tier One Drought Allocations

The Tier One Plan, which allocates water between San Francisco and the wholesale customers collectively, distributes water based on the level of shortage shown in Figure 23-1 as follows:

Figure 23-1: Distribution of Water Based on Level of System-wide Reduction

Level of System-Wide Reduction in Water Use Required	Share of Available Water After Reduction	
	SFPUC Share	Wholesale Customer's Share
0%	30.6%	69.4%
5% or less	35.5%	64.5%
6% through 10%	36.0%	64.0%
11% through 15%	37.0%	63.0%
16% through 20%	37.5%	62.5%

Source: BAWSCA, *Long-term Reliable Water Supply Strategy Phase I Scoping Report*, p. ES-1.

Tier Two Drought Allocations

The wholesale customers have negotiated and adopted the "Tier Two Plan," the second component of the WSAP which allocates the collective wholesale customer share among each of the 26 wholesale customers. This Tier Two allocation is based on a formula that takes multiple factors into account for each wholesale customer, including:

- Individual Supply Guarantee;
- Seasonal use of all available water supplies; and
- Residential per capita use.

The Tier Two Plan requires that the allocation factors be calculated by BAWSCA each year in preparation for a potential water shortage emergency. The Tier Two Plan will expire in 2018 unless extended by the wholesale customers.

WATER DEMAND

Approximately one-third of SFPUC delivered water goes to retail customers in San Francisco, while wholesale deliveries to 26 suburban agencies in Alameda, Santa Clara, and San Mateo counties comprise the other two-thirds. Of the 26 Wholesale Customers, 14 derive 100 percent of their water from SFPUC.

Water use within San Francisco is currently below historic consumption. Both the total consumption and the per capita use of water have been on a general decline in San Francisco since the mid-1970s. Many factors have contributed to this reduction in water use, including significant changes to the mix of industrial and commercial businesses and their associated water demand, and the general characteristics of water use by San Francisco water customers. In particular, the severe droughts of 1976-77 and 1987-92, changes in plumbing codes, and conservation programs (either voluntarily embraced by

residents and businesses or mandated by San Francisco), have apparently affected water demands.

In 2010, total SFPUC retail water use was 77.7 mgd. Results of the water demand forecasts show that SFPUC's in-City retail water demand will only slightly increase, even though the household population in San Francisco is expected to increase by nearly 12 percent for the same period (2010 through 2035). The projected increase in in-City retail water demands is due to estimated growth in business and industry, which will translate into a commensurate increase in water use. The expected increase in water use in the non-residential sector, however, is expected to be partially balanced by decreases in water use in the residential sector.

In 2010, SFPUC supplied 149.5 million gallons per day to its wholesale customers. For the purposes of the supply and demand comparisons in the SFPUC's UWMP, it is assumed that the present 265 mgd supply limitation extends beyond 2018. Projected Wholesale Customer demands have been limited to 184 mgd. Prior to 2018, this 184 mgd includes the demands of San Jose and Santa Clara. After 2018, subject to the process requirements for interruption or reduction of supply provided in the WSA, the SFPUC will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by SFPUC, as to whether to make San Jose and Santa Clara permanent customers of the regional water system.

Based on analysis of supply availability during drought years, SFPUC has determined that at current delivery levels, the SFPUC regional water system can be expected to experience up to a 25 percent shortage 15 to 20 percent of the time during multiple-year drought sequences. Therefore, SFPUC is faced with the necessity to develop a long-term strategy to accommodate or rectify the potential of future water shortages throughout its wholesale and retail operations. In order to mitigate the impact of any long-term drought scenario, SFPUC is using the WSIP to secure water supply during these periods, and limit any shortage to less than 20 percent of normal year supply.

WATER INFRASTRUCTURE AND FACILITIES

The SFPUC water system consists of over 280 miles of pipeline, over 60 miles of tunnels, 11 reservoirs, 5 pump stations, and 2 water treatment plants located outside the City (the regional water system) and over 1,250 miles of pipeline, 12 reservoirs, 9 storage tanks, and 17 pump stations 1 located within the city limits (the in-City distribution system).

SFPUC's main water source is the Hetch Hetchy Reservoir. Water is delivered through a 167-mile gravity fed system to customers in Alameda, Santa Clara, San Mateo and San Francisco counties. The system was constructed in the 1920's with the first water deliveries occurring in 1934. The system crosses three major earthquake faults and includes concrete and earthen dams, tunnels, reservoirs, and four major pipelines connecting the East Bay to the Peninsula (two cross the San Francisco Bay near the Dumbarton Bridge and two extend around the bay edge through portions of southern

Alameda County, northern Santa Clara County and into San Mateo County). The age of the system, the geography, and the lack of capital improvements over the years has caused increasing concern about the integrity of the system and its reliability in the event of a major earthquake or other natural disaster.

The Alameda System includes two reservoirs, San Antonio Reservoir and Calaveras Reservoir, which collect water from the upper Alameda and San Antonio Creek watersheds in Alameda County plus conveyance facilities connecting the Hetch Hetchy System and Alameda water sources to the Peninsula System. The Sunol Valley Water Treatment Plant (SVWTP) filters and disinfects water supplied from San Antonio and Calaveras Reservoirs. The Peninsula System includes conveyance facilities connecting the regional system to the in-City distribution system and to other SFPUC customers on the Peninsula. The Harry Tracy Water Treatment Plant (HTWTP) filters and disinfects water supplied from Crystal Springs and San Andreas Reservoirs before it is delivered to the Peninsula customers and the in-City distribution system.

WSIP Update

Since 2005, significant progress has been made on the WSIP with only 16 of the 86 projects yet to reach construction. As of February 5, 2011, construction is ongoing on almost $2 billion worth of projects and construction will be initiated on three additional projects worth nearly $900 million within the first half of the year. Currently the WSIP is 39 percent complete (based on expenditures to date) with 44 of the program's 86 projects being completed. A total of 60 construction contracts have been awarded between 2005 and 2011 with a total value of $1.6 billion.

As of February 5, 2011, of the 46 WSIP regional projects, 15 projects with a total value of $183 million, are in close out or have been completed. Eighteen regional projects with a total value of $36 million are currently in construction and three regional projects with a total value of $876 million are in the bid and award phase, just a few month away from entering construction. Only two projects remain in the planning phase and four projects remain in the design phase with total values of $36 million and $202 million, respectively. Of the six projects that have yet to reach construction, four are seismic reliability projects. Finally, four projects with a total value of $379 million are in multiple phases. The current projected completion date for the WSIP regional program is December 2015.

AB 1823 mentions nine specific projects to be completed as part of the capital improvement program. Significant progress has been made on the implementation of those projects. The status of these projects as of February2011 is shown in Figure 23-2.

Figure 23-2: AB 1823 Project Status

Project Listed in AB1823	Corresponding WSIP Project	Forecasted Substantial Completion	Overall Status**
Irvington Tunnel Alternative	New Irvington Tunnel	04-16-14	Construction
Crystal Springs Pump Station & Pipelines	CS-SA Transmission Upgrade	06-07-13	Construction
BDPL 1 & 2 – Repair of Caissons/Pipe Bridge	BDPL Reliability Upgrade – Pipeline (BDPL No. 5)	East Bay: 12-09-11 Peninsula: 02-11-12	Construction
	BDPL Reliability Upgrade – Tunnel (Bay Tunnel)	03-02-15	Construction
BDPL Pipeline Upgrades at Hayward Fault	Seismic Upgrade of BDPL Nos. 3 & 4	04-18-14	Bid & Award (NTP: March 2012)
Calaveras Fault Crossing Upgrade	Alameda Siphon #4	09-01-11	Construction
Crystal Springs Bypass Pipeline	New Crystal Springs Bypass Tunnel	05-27-11	Construction
BDPL Cross Connections 3 & 4	BDPL Nos. 3 & 4 Crossovers	08/15/12	Construction
Conveyance Capacity West of Irvington Tunnel	San Joaquin Pipeline (SJPL) System	Contract A: 11-27-11 Contract B: 09-18-12 Contract C: 06-09-13	Contract A: Construction Contract B: Construction Contract C: Bid & Award
Calaveras Dam Seismic Improvements	Calaveras Dam Replacement	05-01-15	Bid & Award (NTP: August 2011)

WSIP Schedule

The overall program completion date adopted as part of the November 2005 Baseline Schedule was June 2014. That schedule was based on the extent of project and program definition available at the time. The current forecast for the Regional Program completion date is December 2015, which is consistent with the Approved June 2009 schedule. The SFPUC will seek approval from SFPUC for a revised WSIP budget and schedule in July 2011.