San Francisco
Public Utilities Commission

Five-Year Financial Plan

Fiscal Years

2010-11 through 2014-15

April 2010

SFPUC

WATER
WASTEWATER
POWER

SFPUC Background

The San Francisco Public Utilities Commission (SFPUC) is an Enterprise Department of the City and County of San Francisco (CCSF). The SFPUC provides essential service utilities: Water (both regional and local), Wastewater (local collection, treatment and disposal), and Power. The Commission supplies water to 2.5 million people in San Francisco and the San Francisco Bay Area. One-third of the water is supplied directly to retail customers primarily in San Francisco (including residential, industrial and commercial customers), and the remaining two-thirds is supplied to wholesale customers through a long-term Water Supply Agreement. Wastewater services are provided to nearly 1 million people within the City of San Francisco (as well as to three neighboring districts, including the San Mateo Sanitation District, Bayshore Sanitary District, and the City of Brisbane). Power is supplied primarily to municipal customers within the City and County of San Francisco, the San Francisco International Airport and their tenants, and both the Modesto and Turlock Irrigation Districts.

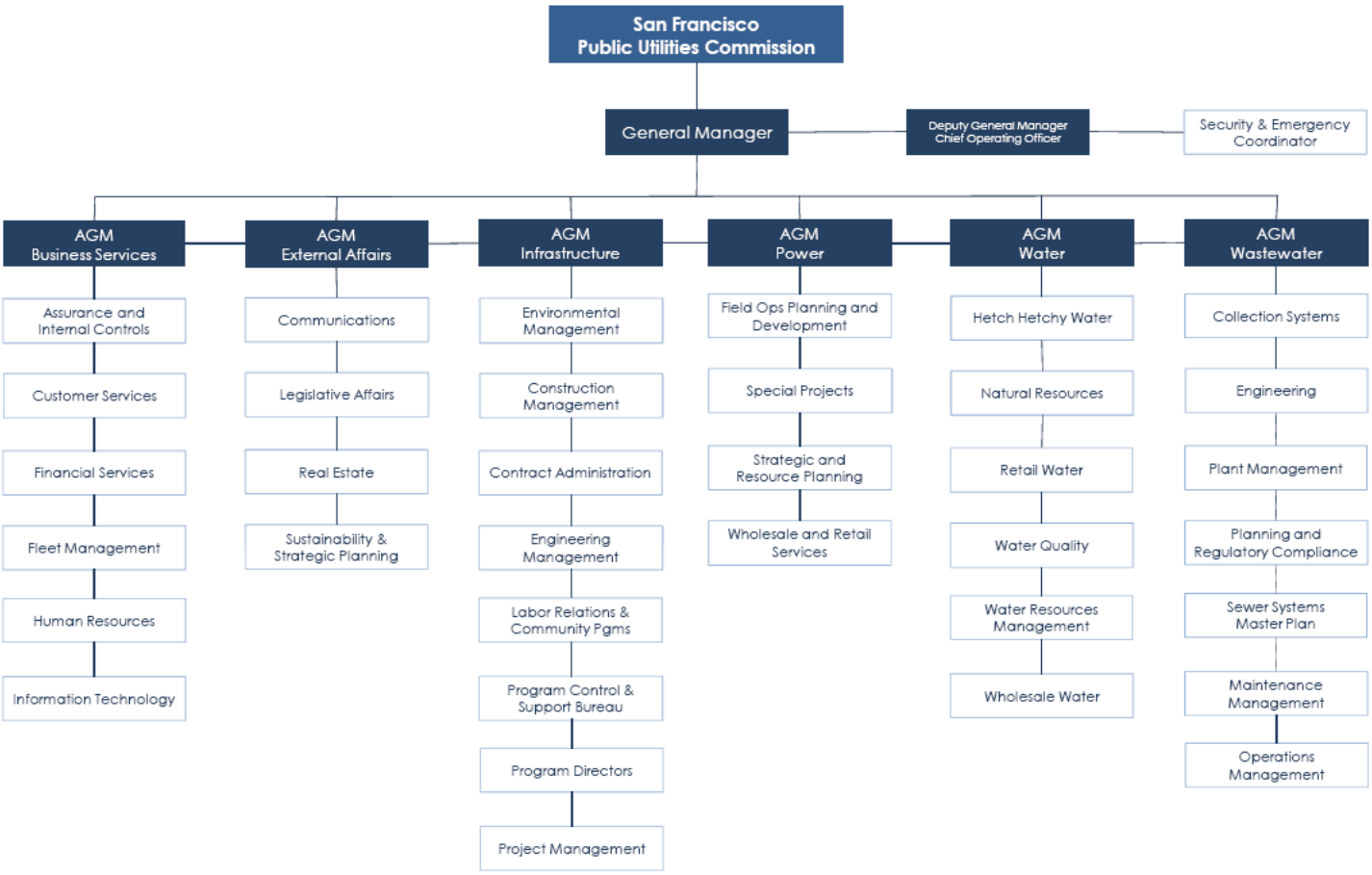
Mission, Vision, and Values

The mission of the SFPUC is to provide our customers with high quality, efficient and reliable water, power and wastewater services in a manner that values environmental and community interests and sustains the resources entrusted to the SFPUC's care.

The SFPUC is a sustainable utility leader, recognized for superior results in service, value, environmental stewardship and innovation. The SFPUC's values include the following:

- Communication: Communicate honestly and openly.
- Equal Opportunity: Provide opportunities to all staff to contribute and reach their potential. To achieve this, the SFPUC must be a learning organization.
- Excellence: Strive for personal and professional excellence, and recognize exemplary performance as the Commission seeks continuous improvement.
- Service: Focus on customer needs and satisfaction.
- Inclusiveness: Provide access and transparency to stakeholders and community members.
- Respect: Understand and appreciate the inherent value of the SFPUC staff, customers and community.
- Safety: Take the health and safety of the SFPUC's employees, customers and communities seriously.
- Stewardship: Be accountable for and responsibly manage and conserve the human, financial and environmental resources entrusted to the SFPUC's care.
- Teamwork: Support a cooperative work environment; the SFPUC team is strengthened by the diversity and contributions of its members.
- Trust: Act with honesty, integrity and fairness.

SFPUC Organization



Structure

The SFPUC is comprised of three Enterprises, the Water Enterprise, Wastewater Enterprise, and the Power Enterprise, which is the largest component of the Hetch Hetchy Water and Power Fund, to provide essential 24/7 service to customers and residents. The Bureaus provide business critical support services and oversight to the Enterprises and are comprised of the Office of the General Manager, Business Services, External Affairs, and Infrastructure. Business Services includes six key functions: Assurance and Internal Controls, Financial Services, Information Technology, Human Resources, Customer Service, and Fleet Management. External Affairs includes four key functions: Communications, Governmental Affairs, Sustainability & Strategic Planning, and Real Estate Services.

Water Enterprise: Infrastructure and Water Conservation

Increased reliability is the highest priority for the Water Enterprise due to aging infrastructure and the need to upgrade seismic strengthening. The infrastructure is not limited to the water supply and delivery infrastructure, but also to the information management infrastructure. Consequently, major focus areas for the Water Enterprise include: progress on the Water System Improvement Program (WSIP); the Advanced Meter Infrastructure system, which allows the Water Enterprise to fully track and monitor demand and usage of water; and the Customer Information System (CIS), which provides current billing, revenue collection, and usage information. Three years of drought have put strain on California water agencies and have made the Water Conservation Program a continued priority for the SFPUC and 2.5 million customers.

Water System Improvement Program (WSIP)

The Water Enterprise is in the construction stage of its $4.6 billion dollar, multi-year program to upgrade the Regional and Local Water Systems. The WSIP will deliver capital improvements that enhance the Enterprise's ability to provide reliable, affordable, high quality drinking water to our 27 wholesale customers and regional retail customers in Alameda, Santa Clara and San Mateo Counties, and to 800,000 retail customers in the San Francisco, in an environmentally sustainable manner. The program is structured to cost effectively meet water quality requirements, improve seismic and delivery reliability, and meet water supply objectives for the year 2030.

Levels of Service Goals for the WSIP include:

- Maintain high water quality
- Reduce vulnerability to earthquakes
- Increase delivery reliability and improve ability to maintain the system
- Meet customer water needs in non-drought and drought periods
- Enhance sustainability in all system activities
- Achieve a cost-effective, fully operational system

The program is on target to achieve an overall completion date of December 2015. The transition of the WSIP's larger regional projects to the construction phase began in early 2009. As of March 6, 2010, of the total 86 WSIP projects (of which 46 are regional and 40 are local), there are 3 regional projects in planning, 8 in design, 2 in bid and award, 13 in construction, and 3 in closeout; 9 regional projects were completed. Out of 40 local projects, there are 17 completed, 8 in construction, 6 in design, 6 in closeout, 1 in planning, and 1 in bid and award.

Advanced Meter Infrastructure System

Over the next three years, the SFPUC is implementing the Advanced Meter Infrastructure System that will largely eliminate manual meter reading field visits, improve customers' access to hourly usage information, facilitate the timely detection of tampering, theft, and leaks, and enhance usage or flow tracking. The estimated total capital cost of this project is $64.1 million, with phase 1 implementation including 57,000 meter replacements through FY 2010-11, and phase 2 implementation replacing 123,000 meter projected completion in February 2012.

Water Conservation

The SFPUC, in partnership with the 27 water agencies that purchase water from the Water Enterprise and that are represented by the Bay Area Water Supply and Conservation Agency (BAWSCA), has requested customers continue voluntary conservation efforts. Last year, these efforts were effective in reducing water consumption by 11 percent.

The SFPUC has been implementing conservation activities for 20 years. Over that time, per capita water use in San Francisco has gone from a peak of over 160 gallons per capita per day (gpcd) to current levels of just under 88.9 gpcd for residential, commercial and industrial, and municipal customers combined. San Francisco residential customers use only 52 gallons per person per day as compared to a statewide residential usage average of 155 gallons per person per day.

While the SFPUC has made great strides in getting our customers to conserve water, additional opportunities are being implemented. Accordingly, the SFPUC's conservation program expenditures have significantly increased over the past three years, including a 60 percent increase in the number of rebates for toilets, washers and other fixtures. Key focus areas over the next two years include increasing water savings in all categories, educating customers, and coordinating conservation programs. The conservation program proposed budget is $8.8 million and $8.9 million for FY 2010-11 and FY 2011-12 respectively.

Looking ahead, the SFPUC's water conservation program will expand even further to ensure we meet the goals of the Phased WSIP Variant to satisfy demands of 10 million gallons a day (mgd) by 2018 through a combination of conservation, groundwater, and recycled water. Recently passed State law also requires urban water agencies to reduce statewide per capita water consumption by twenty percent by 2020.

Sewer System Improvement Program (SSIP)

San Francisco's sewer system is well operated, but is burdened by aging infrastructure and deferred maintenance. The SFPUC's goal for a more sustainable system drives the vision for a new Sewer System Improvement Program (SSIP). The Program evaluates the current treatment and collection system and provides long-term strategies for wastewater and stormwater management. The Program determines present and future needs to ensure reliable service, meeting all regulatory requirements, and identifies future operational and capital programs to meet these needs. Currently in development through a series of public workshops, it is anticipated the SSIP will be formally approved by the Commission in the Fall of 2010. The SSIP objectives include:

- Develop a long-term vision and strategy for the management of the City's wastewater and stormwater;
- Provide a detailed capital planning roadmap for improvements needed;
- Estimate the funds to implement these improvements;
- Address specific challenges facing the system; and
- Maximize system reliability and flexibility.

Hetch Hetchy Power, Clean and Renewable

Hetch Hetchy Power relies on power generation at the Hetch Hetchy Water and Power hydroelectric powerhouses, solar generation, and third-party purchases, to deliver low-cost, reliable electricity to its customers. In accordance with requirements of City policies and directives relating to renewable energy and goals to reduce greenhouse gases, Hetch Hetchy Power continuously researches, develops, and implements new electricity generation resources to

provide clean, local generation where it is needed; and ensures reliable power services. This includes both renewable energy projects and strengthening local electric reliability. Hetch Hetchy Power has entered into a Power Purchase Agreement and a corresponding lease for the deployment of solar energy at Sunset Reservoir. Other sites are also being examined for larger scale development of solar energy at SFPUC-owned land at Tesla and Sunol. The model for development is long-term power purchase agreements, where the Power Enterprise agrees to purchase power and the developer designs, permits, installs, owns and operates the system, thereby minimizing the Enterprise's upfront capital costs. Also, design-build photovoltaic (PV) projects underway include City Hall (part of the Sustainable Energy District), and Davies Symphony Hall.

Energy efficiency investments are an important component of an electric utility's portfolio. Energy efficiency reduces facility operating costs and electric bills for customers, improves system functionality, and reduces the environmental impact of energy use. Hetch Hetchy Power's FY 2010-11 and FY 2011-12 budgets are proposed to include $5.9 million and $6.9 million respectively in energy efficiency programs targeting the City's General Fund departments, including the planning, design, and construction of a green energy district in Civic Center, and implementation of energy efficiency projects (lighting, heating, and ventilation, energy management system and demand response projects). The GoSolarSF Program was developed by the San Francisco Solar Task Force to encourage the installation of photovoltaic systems on residents and businesses within the City. The GoSolarSF solar incentive program was approved by the Commission in January 2008. The Board of Supervisors passed ordinances establishing a long-term Solar Energy Incentive Program and a Solar Energy Incentive Pilot Program in June 2008. The program was launched on July 1, 2008. The San Francisco GoSolarSF Incentive Program as proposed is budgeted at $5 million annually in FY 2010-11 and FY2011-12.

Infrastructure Improvements Require Rate Increases

As water and wastewater infrastructure age, reliability and service levels deteriorate. In response, the SFPUC initiated the Water System Improvement Program (WSIP) and the Sewer System Improvements. To fund these large infrastructure programs, the SFPUC approved annual retail water increases of 15.0 percent, 15.0 percent, 12.5 percent, 12.5 percent, and 6.5 percent for FY 2009-10 through FY 2013-14 and a projected 10.0 percent increase may be needed, depending on water consumption, for FY 2014-15. Wastewater rates have also been approved to increase 7.0 percent, 7.0 percent, 5.0 percent, 5.0 percent, and 5.0 percent for FY 2009-10 thorough FY 2013-14 with an 11.5 percent increase projected in FY 2014-15. **Projected rate increases are needed almost exclusively for capital asset debt service, as other operating costs are project to be held level or constrained to 3 percent inflationary growth over the financial plan period.** Additionally, the plan includes cash-funded capital growth of approximately 5 percent annually.

Asset Management Planning and Improved Performance

The SFPUC is embarking on a long-term effort to improve the management of it capital assets. This effort is aimed at identifying and evaluating capital, repair and replacement (R&R), and maintenance needs. The plan includes development of asset management objectives, standards, policies and procedures. It focuses on continuous assessment of work processes to identify improvement opportunities, develop recommendations, and improve asset performance. In FY 2010-11, $1 million is proposed for Asset Management. Early asset management efforts are being focused on: the upgrade to Maximo 7.1, the latest version of the SFPUC's computerized maintenance management system; integrating Maximo and Geographic Information System (GIS) data with asset financial data; standardizing inventory control procedures; establishing budget policy for R&R projects; and developing a coordinated approach for the replacement of local water and wastewater pipes.

Sustainability Planning

Consistent with the requirements of San Francisco City Charter, section 8B.123 (A) (3), the SFPUC has completed a comprehensive Sustainability Plan. The Plan was published in December 2008 and is available on the SFPUC website. Plan creation was the result of a three-year effort undertaken through a collaborative process involving the leadership, staff and stakeholders of the SFPUC.

The Plan provides a baseline assessment that scores the SFPUC's performance and sets out specific strategies and initiatives, with targets to begin improving sustainability performance in priority areas. The Plan sets in motion this integrated, systematic and long-term approach to sustainability at the SFPUC, whereby the SFPUC will continue to track and monitor performance, assess results, implement a useful reporting protocol, and take needed actions to improve strategic management and decision-making.

SFPUC Strategic Plan

San Francisco Charter Section 8B.123 requires the 10-Year Capital and Financial Plans of the SFPUC, as well as a Long-Term Strategic Plan. The Strategic Plan was created as a result of extensive goal setting and planning sessions. The Strategic Plan is a performance matrix designed to be used among senior managers to chart progress on four key goals:

- Provide High Quality Services
- Promote a Green and Sustainable City
- Expand Outreach and Communications
- Invest in People and Communities

These four key goals are then put into operation through strategies that have further required actions for each strategy and measures for determining the level of implementation and performance results. The following summarizes SFPUC Goals and Strategies.

Goal: Provide High Quality Services

Strategies	Action	Measures
Ensure effective water and wastewater quality monitoring and maintenance of permits	▪ Manage California Department of Public Health permit	▪ Numbers of violations; completion of water quality study update
	▪ Manage wastewater discharge permits	▪ Number of violations
	▪ Treasure Island National Pollutant Discharge Elimination System permit	▪ Adopted by State Water Resources Control Board
	▪ New Oceanside National Pollutant Discharge Elimination System permit	▪ Adopted by State Water Resources Control Board
	▪ Biosolids Land Application in Solano County	▪ Adopted by Solano County Supervisors
Build WSIP on schedule	▪ Planning Design; Construction; Closeout; Completion	▪ Quarterly report shows on-time performance
	▪ Coordinate/secure Board of Supervisor and other approvals for WSIP projects	▪ All approvals secured
	▪ Awarding of critical professional service contracts	▪ Meeting schedules within engineering estimates
Prepare Sewer System Improvement Program	▪ Complete written Draft Report	▪ Complete written Draft Report
	▪ EIR in progress for the Digester/Solids Handling facility	▪ EIR in progress for the Digester/Solids Handling facility
Optimize resources to meet municipal power needs	▪ Keep apprised of and manage within electric regulatory marketplace changes	▪ No penalties imposed by California ISO; Forecast of Purchase of Power accurate
	▪ Meet developer schedules for electric infrastructure and service needs	▪ Construct infrastructure on time; Forecast of Customer Demand accurate
	▪ Develop/procure renewable resources	▪ Increase development/procurement in step with load increase
	▪ Identify and implement energy efficiency improvements and demand reduction program	▪ Municipal load decrease or reduction in anticipated load
	▪ Identify and maintain streetlight portfolio	▪ SFPUC and Board of Supervisors approval of pedestrian and street lighting policy
	▪ Continue to improve baseline metering technology and Meter Data Management functionality	▪ Positive California ISO audits of Verification, Edit, Estimation and Meter Data Management Agent functionality
Maintain capital plant assets	▪ Annually update 10-Year Capital Plan for use in budget preparation	▪ Updated Capital Plan completed on time
	▪ Develop and implement asset management control program	▪ Percent of assets managed under an Asset Management Plan
Update emergency plan; communicate plan and train personnel regarding their role as Disaster Service Workers	▪ Offer mandatory Service Disaster Service Worker training to new and existing SFPUC employees	▪ Number of employees who complete Disaster Service Worker training
	▪ Development of SFPUC tabletop exercises	▪ Number of tabletop exercises executed
	▪ Ensure appropriate executive staff have completed TEEX disaster training courses	▪ Number of executive staff who have completed TEEX disaster training
	▪ Task Orders for EOP/Field Operations Guide and Water Quality Emergency Response Plan Trainings	▪ Completion of Task Order and issuance of Notice to Proceed; Issuance of RFP

Goal: Promote a Green and Sustainable City

Strategies	Action	Measures
Increase water efficiency and recycle usage	▪ New recycled water plant at Golden Gate park; agreement with Daly City; build recycled water plants	▪ Environment review on schedule; community outreach
	▪ Promote Green Water efforts; groundwater and recycled water development, WUCA, water conservation, bottled water ban	▪ Water conservation programs such as toilet retrofits and rebate programs
	▪ Implement Green ordinance/moving forward with "gray water" usage	▪ Create local guidelines and standards with Department of Building Inspection
	▪ Develop and promote Third Annual "Water Saving Hero" water conservation campaign	▪ Create messages for billboards, cable TV, radio, print and transit ads
	▪ Secure approval for "Retrofit on Resale" legislation	▪ Stakeholder and Board of Supervisors' support for approved legislation
Promote energy efficiency and conservation	▪ Promote Green Power efforts: GoSolarSF and municipal solar development, CCA, energy efficiency, LED streetlights	▪ Rollout LED streetlight project in FY2010-11 and FY2011-12
	▪ Launch Municipal Energy Efficiency Campaign	▪ Create outreach materials/tools; Percent of power saved
	▪ Procure and install smart electric meters at Hunters Point, Treasure Island/Yerba Buena Island, other redevelopment areas	▪ Meters procured 2010; meters installed 2011 for Hunters Point
Avoid wastewater flows	▪ Promote Green Wastewater efforts: SFGreasecycle, biofuel creation, low impact development, rainwater harvesting	▪ Implement Low Impact Design programs
	▪ Secure approval for "FOG" and "Construction Site Runoff Control" ordinances	▪ Stakeholder and Board of Supervisors' support for approved legislation
Coordinate and publicize green efforts	▪ Promote/Coordinate Civic Center Sustainability District and Platinum Level SFPUC Headquarters	▪ Build new SFPUC Headquarters
	▪ Inter Agency Outreach/Education	▪ Presentations to government and water agencies
	▪ Publicize all of the SFPUC's greening efforts	▪ Create/implement press releases and conferences; radio, print and transit ads/materials; social media materials; public outreach events

Goal: Expand Outreach and Communications

Strategies	Action	Measures
Develop branding plan	▪ Develop new name, logo and core branding	▪ Employee/Commission support for new name, logo, core branding
Develop water/wastewater rate package	▪ Education/Public Outreach for 2009/2010 Rate Settling package	▪ Stakeholder and Board of Supervisors support for approved rate package

Goal: Invest in People and Communities

Strategies	Action	Measures
Recruit and retain highly qualified people	▪ Create centralized, accessible list of professional organization websites to ensure announcements are reaching targets	▪ Validate list on a yearly basis; perform yearly research to identify new organizations
	▪ Implement On-Boarding software to facilitate hiring process	▪ Survey new employees to determine level of engagement upon hiring
	▪ Launch satisfaction survey	▪ Create baseline data that will drive Human Resources decisions
Facilitate employee's development for internal and external promotion	▪ Create a forum in senior management to define the leadership qualities the SFPUC seeks	▪ Create a vision statement for leadership that is adopted SFPUC-wide
	▪ Provide *case study* leadership training for SFPUC employees	▪ Ensure that at least 50% of senior managers and supervisors attend leadership training, and 50% of non-supervisorial staff attend general leadership training
	▪ Launch e-learning in conjunction with training needs assessment	▪ Monitoring attendance in additional course offerings listed through Learning Management System (LMS)
Ensure employees have clear expectations for performance and understand appraisal process	▪ Offer training to managers regarding effective performance appraisals usage and completion	▪ Employee engagement surveys indicating higher rate of satisfaction; higher number of completed performance evaluations
	▪ Ensure managers complete appraisals as required	▪ Number of employees for whom scheduled performance appraisals were completed
	▪ Acquire updated performance appraisal forms with the City's Department of Human Resources	▪ 90% of managers using the correct forms
Ensure the well-being and continued professional development of staff	▪ Provide high value educational opportunities for employees	▪ Percent of employees who receive at least eight hours of job related training per year
	▪ Recognize employee contributions and ensure satisfaction	▪ Percent of employees who rate the SFPUC as a good place to work
	▪ Facilitate employees' development for internal and external promotion	▪ Percent of employees who receive internal or external promotions

WATER ENTERPRISE

Background

The Water Enterprise of the San Francisco Public Utilities Commission operates as an effective, reliable supplier of water and hydroelectric power while managing resources in a sustainable manner.

Some 2.5 million people in the Bay Area rely on water supplied by the Water Enterprise to meet their daily water needs, making the SFPUC the third largest municipal water agency in California. From the Hetch Hetchy Reservoir, situated in a designated wilderness area inside Yosemite National Park, a system of reservoirs, tunnels, pipelines, and treatment plants, the Water Enterprise delivers water to San Francisco and 27 wholesale water agencies in San Mateo, Alameda, and Santa Clara Counties. This system is most unique in at least two respects. Firstly, the water delivered from high in the Sierra mountains is among the cleanest drinking water supplies in the nation; and secondly, the physical system for delivering this water to the Bay Area is almost entirely gravity driven, requiring almost no fossil fuel consumption at a time when global climate change has become a compelling concern.

The SFPUC's regional water supply system draws approximately 85 percent of its water from the Upper Tuolumne River watershed. The remaining water supply is drawn from local surface waters in the Alameda Creek and Peninsula watersheds. This Regional Water System consists of over 280 miles of pipelines, sixty miles of tunnels, eleven reservoirs, five pump stations and two water treatment plants.

In addition, the Water Enterprise manages generation of clean affordable hydroelectric power at O'Shaughnessy Dam which typically meets almost all of the City and County of San Francisco's annual municipal needs. While the Hetch Hetchy system operates under a "water first" policy, the average 1,600 gigawatt hours of electricity generated at Hetch Hetchy supplants other energy sources that might contribute to climate change.

Revenues

Water Enterprise customers are grouped into Retail and Wholesale service categories. The Retail customer category is further divided into City and Suburban customers. Customers within each category are grouped into revenue classes based on their service characteristics. The Wholesale customer category consists of only one revenue class – suburban resale with long-term contract. Total revenues are projected to grow from $277.9 million in FY 2009-10 to $525.0 million by FY 2014-15.

- Retail water sales are projected to increase from $129.6 million in FY 2009-10 to $226.6 million over the five-year period. This increase assumes a 0.53 percent growth in annual billed consumption, which is the projected rate of population growth in the area.
- Wholesale water sales, representing about half of the Enterprise revenues and two-thirds of water deliveries, are forecast to increase revenues from $131.7 million in FY 2009-10 to $275.2 million over the period. This increase assumes a 0.83 percent annual growth in consumption, which is the projected rate of population growth in the area.
- Other income includes interest income on fund balances along with rents and other miscellaneous fees. These revenues are assumed average $20 to $24 million over the next five years and are mainly derived from interest earnings on fund balances, rents and permit fees for secondary uses of its watershed lands and pipeline rights-of-way.

Rates and Charges

The SFPUC approved 5-years of retail customer rates in May of 2009 for FY 2009-10 through FY 2013-14. Average retail water rates increases of 15.0 percent in both FY 2009-10 and FY 2010-11, 12.5 percent in both FY 2011-12 and FY 2012-13 and 6.5 percent in FY 2013-14 are reflected as previously adopted. The final year in the five-year plan includes a projected 10.0 percent increase in FY 2014-15. This projected rate change will be preceded by a Charter-required independent rate study which occurs at least every five years. Wholesale water rates are managed through a 25-year Water Supply Agreement (WSA) and are approved annually by the SFPUC. Approved FY 2009-10 and FY 2010-11 wholesale water rates increase 15.7 percent and 15.2 percent respectively, with projected subsequent rate increases of 10.2 percent, 29.2 percent, 5.3 percent and 12.6 percent during FY 2011-12 through FY 2014-15 respectively. These rate changes are necessary to continue funding vital capital improvements for the WSIP along with providing resources for the annual Repair and Replacement program.

Expenditures

The Plan includes a 3.0 percent annual growth assumption for operations and maintenance costs and a 5.0 percent annual escalation in revenue-funded capital costs on average.

The annual operating budget includes operation and maintenance costs, debt service on revenue bonds used to finance capital improvements, and repair and replacement costs funded from current revenues. While operations and maintenance costs are currently the largest component of the Water Enterprise's expenses (70.0 percent), by FY 2014-15 their proportion to total expense will drop to 39.6 percent and debt service costs will be the largest (50.9 percent). Total expenditures are increasing from $277.9 million to $516.2 million by FY 2014-15.

- Operations and maintenance costs include salaries and fringe benefits, material and supplies, power and energy, and services of the other City Departments including SFPUC Bureaus. The cost of operating the water system in FY 2010-11 is projected to be $188.9 million; increasing to $204.2 million by FY 2014-15. The operation and maintenance expense forecast shown in this report does not include any incremental costs associated with WSIP projects other than the 3.0 percent annual growth assumption. In addition, the forecast assumes there will be no changes in regulations or operating procedures that could impact operating expenses.
- Debt service costs includes principal and interest payments on revenue bonds used to finance system improvements. Future debt service cost projections assume the issuance of new debt to fund WSIP projects. The plan reflects debt service costs increasing from $70.2 million in FY 2009-10 to $262.5 million by FY 2014-15. The bond issuance schedule is based on the December 2009 WSIP spending plan. However, the actual timing and size of bond sales may differ.
- Revenue-funded capital project spending is expected to average $50.7 million annually over the five-year period. Projects include minor construction projects, major maintenance and rehabilitation projects, planning studies, and preliminary engineering analysis for major capital improvements.

Capital Financing Plan

The Capital Financing Plan largely assumes debt financing of capital needs over the next ten-year period. The WSIP will require approximately $4.6 billion in total financing for the program, authorized by the voters under Propositions A and E in November 2002.

The Plan assumes a financing strategy that utilizes short-term financing via the existing Commercial Paper (CP) program to calibrate financing needs with project spending. Long-term (30-year) 5.0 percent fixed rate debt issuance is assumed to periodically refund the CP program. The CP program facilitates short-term financing typically at lower interest rates than longer term debt, which minimizes costs. The authorized CP program for the Water Enterprise is $500.0 million. $824.0 million in bonds were issued in support of the WSIP during the summer of 2009, with additional quarterly bond issues for the next two years planned for the remainder of the capital program funding.

Financial Ratios

It is the financial objective of the SFPUC to maintain a minimum revenue bond coverage ratio of 1.25 times on an indenture basis and 1.00 times on a current operations basis, which does not include fund balance. Over the five-year period, the indenture coverage ranges from 1.37 to 1.70 times coverage. On a current basis, the coverage ratio ranges from 1.22 to 1.79 times coverage, well above the 1.00 minimum threshold.

Fund Balance and Reserves

The Five-Year Financial Plan indicates that the Water Enterprise ending fund balance will increase from $34.0 million in FY 2009-10 to $96.2 million in FY 2014-15. This growth is largely attributed to rate increases over the period in support of debt service coverage for new WSIP-related debt that will be issued over the next two years. As a proportion of operating expense, fund balance is increasing from approximately 17.5 percent (2.1 months of expense) in FY 2009-10 to 47.1 percent (5.7 months of expense) by FY 2014-15. The projected reserve levels comply with the SFPUC Fund Balance Policy.

Five-Year Financial Plan

WATER ENTERPRISE Description ($millions)	FYE 2010 Q2 Forecast	FYE 2011	FYE 2012	FYE 2013	FYE 2014	FYE 2015
Beginning Operating Fund Balance	56.6	34.0	54.8	61.5	77.6	87.4
Capacity Fee Fund Balance		0.8				
Revenue Sources						
Retail Sales - Base Rates	112.7	130.2	150.5	170.2	192.4	206.0
Retail Sales - Rate Increases	16.9	19.5	18.8	21.3	12.5	20.6
Wholesale Sales - Operating Costs	77.3	79.7	82.1	84.6	87.2	89.9
Wholesale Sales - Capital & Debt	54.4	80.5	95.1	144.6	155.8	185.3
Interest Income	1.3	1.7	3.4	4.2	4.6	5.1
Other Miscellaneous Income	15.3	17.4	18.0	18.0	18.1	18.2
Total Revenue Sources	277.9	329.0	367.9	442.9	470.7	525.0
Uses						
Operations & Maintenance	194.7	188.9	193.1	192.4	198.2	204.2
Debt Service	70.2	78.2	117.8	180.3	205.1	262.5
Capital - Revenue Funded	13.0	42.0	50.3	54.1	57.5	49.5
Total Uses	277.9	309.0	361.2	426.8	460.9	516.2
Net Revenues	(0.0)	20.0	6.7	16.1	9.8	8.8
Ending Fund Balance	34.0	54.8	61.5	77.6	87.4	96.2
Revenue Requirement - Retail	**15.0%**	**15.0%**	**12.5%**	**12.5%**	**6.5%**	**10.0%**
Revenue Requirement - Wholesale	**15.7%**	**15.2%**	**10.2%**	**29.2%**	**5.3%**	**12.6%**
Fund Balance as % of Revenue	12.2%	16.7%	16.7%	17.5%	18.6%	18.3%
Fund Balance as % of Expense	12.2%	17.7%	17.0%	18.2%	19.0%	18.6%
Fund Balance as % of Operating Expense	17.5%	29.0%	31.8%	40.3%	44.1%	47.1%
Debt Service Coverage (Indenture)	1.48	1.70	1.52	1.43	1.43	1.37
Debt Service Coverage Current	1.18	1.79	1.48	1.39	1.33	1.22

Five-Year Capital Plan

The Water Enterprise plans to finance its capital needs with water revenue bonds and on average $50 million of cash funding annually. As the Water System Improvement Program moves into the construction phase, the Water Enterprise will use the annually updated Capital Plan to monitor non-WSIP regional project to ensure that adopted levels of service are maintained. The Capital Plan is updated with the latest information from condition assessments of the performance and remaining useful life of existing assets, master plan updates, reviews of levels of service objectives, and financial data.

By mid-2010, the Water Enterprise expects to complete the conversion to Maximo 7.1, a computerized maintenance management system that will monitor asset inventory, and store condition assessment data and maintenance requirements.

Renewal and Replacement Program

Annual funding for the Water Enterprise's Renewal and Replacement (R&R) program totals approximately $50 million. The proposed R&R program includes investments to keep the water systems operational and in a state of good repair.

- **Water Storage:** Seismic upgrades to existing dams to comply with recommendations from the State Division of Safety of Dams. Upgrades include geotechnical work and installation of monitoring systems, modifications to spillways and outlet structures.
- **Regional Water Watersheds and Right of Way Management:** Improve or protect the water quality and ecological resources that affect or are affected by the operation of the SFPUC water supply system within the Bay Area counties. Projects include repair, replacement, maintenance, construction of roads, fences, or trails that meet these purposes and the planned replacement of three bridges on Alameda Creek to reduce environmental impacts associated with maintenance and allow year-round watershed access.
- **Regional Water Treatment Facilities:** Major upgrades to treatment facilities to achieve a higher level of performance. Projects include chemical dosage upgrades, flow monitoring, valve and pump replacement, chemical handling upgrades, power upgrades, systems to control discharges, process control equipment to meet more stringent drinking water regulations, and seismic improvements. These upgrades are needed to ensure adopted levels of service are maintained in accordance with drinking water quality and environmental criteria.
- **Regional Water Renewal & Replacement and Water Conveyance Facilities:** New, expanded, or upgraded facilities, ground and watershed infrastructure. Projects include pipeline inspections and repairs, pipeline replacement, corrosion control program and pump station upgrades. These upgrades will ensure levels of service are maintained during reduction of planned outages, emergency response, and performance after seismic events.
- **Operations Facilities Upgrades:** Facility upgrades to the Millbrae and Sunol yards which are required to maintain operations and maintenance efficiencies. Projects in Millbrae include replacement of several temporary buildings and buildings that are beyond their useful life, a new maintenance shop, equipment storage building, and internal improvements to the main administration building. Projects in Sunol include replacement structures for the maintenance shops and equipment storage, new fueling center and administration building.

- **Local Water Conveyance & Distribution:** Systematic replacement of existing water distribution mains (8-inch or smaller) over time with ductile iron pipes, along with the construction, replacement, and retrofit of 12-inch or larger water feeder or transmission mains in San Francisco. The Main replacement and retrofit prioritization is based on several factors, including break history, age and soil conditions with an overall goal of replacing pipes older than 100 years in the system.

- **Treasure Island:** On October 1, 1997, concurrent with the operational closure of Treasure Island Naval Station, the City entered into a Cooperative Agreement with the U.S Navy in which the City agreed to take responsibility for caretaker services on Treasure Island and Yerba Buena Island. Since the signing of the agreement, the SFPUC has been providing utility operations and maintenance services to the potable water system. Costs to the Water Enterprise over the ten-year period include a new water pump station in Oakland, the repair of two reservoirs, a new 12-inch water line from Oakland to Treasure Island, and a new chlorine station. These projects will provide a secondary source of potable water and increase water storage capacity on the island.

Capital Program (FY 2010-11 through 2014-15)

The Capital Program proposes more than $1.5 billion in addition to R&R and other investments previously discussed. Some of these key projects are listed below.

- **Advanced Meter Infrastructure.** This program will largely eliminate meter reading field visits, improve customers access to usage information, detect tampering, theft and leaks, and enhance flow profiling. The total estimated cost of this project is $64.1 million. Funding in the plan will be used to replace all customer water meters and build the associated network infrastructure.

- **Water System Improvement Program.** The WSIP is the SFPUC's multi-billion dollar, multi-year capital program to rebuild its water system. The program will enhance the SFPUC's ability to provide reliable, affordable, high-quality water to its 2.5 million customers through environmentally sustainable means. The program cost totals $4.6 billion, including net financing costs of $471.7 million. In April 2010, the Board of Supervisors approved the final $1.65 billion supplemental appropriation to fund the remainder of WSIP through December 2015.

Five-Year Capital Plan

WATER ENTERPRISE Description ($millions)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	5 Year Plan Total
Regional Costs							
Water System Improvement Program	1,912.0	1,448.1	-	-	-	-	1,448.1
Storage	-	0.8	5.0	1.0	5.0	5.0	16.8
Watershed/Right of Way Management	2.0	1.0	3.0	2.5	1.5	0.5	8.5
Treatment Facilities	1.0	4.4	3.4	2.4	2.4	3.9	16.5
Water Conveyance	7.0	2.0	2.0	2.0	2.0	2.9	10.9
Operation Facilities Upgrades	3.7	5.0	6.0	19.0	19.0	3.0	52.0
Regional Total	**1,925.7**	**1,461.3**	**19.4**	**26.9**	**29.9**	**15.3**	**1,552.8**
Local Costs							
Water Conveyance /Distribution	22.3	23.2	24.2	25.1	26.1	27.2	125.8
Water Meter System Enhancement	40.6	5.4	-	-	-	-	5.4
525 Golden Gate Ave	146.9	-	-	-	-	-	-
Facilities Security Project	0.5	-	-	-	-	-	-
Treasure Island	3.8	0.5	6.5	5.8	2.2	-	15.0
Project Close Out	(4.3)	-	-	-	-	-	-
Local Total	**209.8**	**29.1**	**30.7**	**30.9**	**28.3**	**27.2**	**146.2**
Total Regional & Local	**2,135.5**	**1,490.4**	**50.1**	**57.8**	**58.2**	**42.5**	**1,699.0**
Revenues							
Water Revenue Bonds	2,099.5	1,457.7	15.8	21.8	20.4	2.8	1,518.5
Water Revenue	36.0	32.7	34.3	36.0	37.8	39.7	180.5
Total	**2,135.5**	**1,490.4**	**50.1**	**57.8**	**58.2**	**42.5**	**1,699.0**

WASTEWATER ENTERPRISE

Background

Wastewater Enterprise is committed to its mission of safely and cost-effectively managing San Francisco's sewage, stormwater, and biosolids to protect public health and the environment.

The primary responsibility of the Wastewater Enterprise is to protect the public health and the surrounding bay and ocean receiving waters by collecting and treating storm and sanitary flows generated in the service area. This includes 993 miles of combined storm and sanitary collection system pipes, sewer mains, transport/storage boxes, other storage structures and tunnels. San Francisco is the only coastal city in California with a combined sewer system that collects both wastewater and stormwater in the same network of pipes and provides treatment to remove harmful pollutants before discharging into the San Francisco Bay and Pacific Ocean.

Wastewater also implements a Water Pollution Prevention Program that works to keep pollutants from entering the City's sewer system and street storm drains, this includes an industrial and commercial Pre-treatment Program, which monitors individual businesses that have been issued permits to discharge wastewater into the City's sewer system, as well as outreach, education, and a best management practices program for residents, business and governments.

The Water Pollution Control Division operates and maintains the City's 4 water pollution control plants, 24 sewage pumping stations in San Francisco and 47 on Treasure Island, 993 miles of combined sewer, storage and tunnels, 36 combined sewage discharge outfalls and 4 effluent outfalls.

A major focus of the Wastewater Enterprise is the development of the Sewer System Improvement Program (SSIP), a long-term capital plan that provides strategies and policies for the future. The City's last sewer system master plan was developed in 1974 to upgrade the system to meet regulatory requirements which occurred between 1977 and 1997.

Today, San Francisco's sewer system is well operated, but is burdened by aging infrastructure and deferred maintenance. The SFPUC's goal of a more sustainable system drives the vision for the new SSIP, which include the following objectives:

- Develop a long-term vision and strategy for the management of the City's wastewater and stormwater;
- Provide a detailed capital planning roadmap for improvements needed;
- Estimate the funds to implement these improvements;
- Address specific challenges facing the system; and
- Maximize system reliability and flexibility.

The Commission is currently developing service level goals to be associated with the SSIP, and will formally approve a program in the Fall of 2010. It is anticipated that the SSIP will cost $4 to $6 billion over 20 years to upgrade system reliability for current as well as the next generation of users.

Revenues

The Wastewater Enterprise serves a population of approximately 840,000 within San Francisco and adjacent communities. Customers are grouped into two classes - residential and non-residential. Grouping customers with the same or similar wastewater characteristics into classes allows the Enterprise to allocate cost responsibility to each class based on their respective volumes and strengths (i.e. wastewater characteristics).

Within each class, subgroups have been established to facilitate rate analysis and administration. Total sources are expected to increase from $227.5 million to $301.5 million over the five-year period.

- Sewer Service Sales receipts will increase from $210.0 million in FY 2009-10 to $297.3 million by FY 2014-15. The City has adopted sewer service charges for the five-year period FY 2009-10 through FY 2013-14, based on each customer class's proportional use of the sewerage system and to establish a dedicated source of revenues to pay for operating the system.
- Other income is projected to grow from $1.5 million in FY 2010-11 to $4.2 million in FY 2014-15 including interest income on fund balances.

Rates and Charges

Sewer service charges are forecasted to increase Wastewater Enterprise revenues received for wastewater collection and treatment by an average of 7.0 percent in both FY 2009-10 and FY 2010-11, 5.0 percent each year from FY 2011-12 through FY 2013-14, and 11.5 percent during the final year of the period, depending on projected water consumption. These rate changes are needed to fund the Capital Improvement Program to address neighborhood flooding and treatment plant improvements.

Expenditures

The Plan includes a 3.0 percent annual growth assumption for operations and maintenance costs and a 5.0 percent annual escalation in revenue-funded capital costs on average.

The annual operating budget includes operation and maintenance costs, repair and replacement costs for existing equipment and facilities, and debt service on bonds and loans used to finance capital improvements. Total expenditures are forecast to increase approximately 5.0 percent annually over the five-years, from $220.3 million to $281.3 million.

- Operations and maintenance costs related to the operation of the water pollution control system and include personnel costs, material and supplies, treatment chemicals, power and energy, sludge disposal, and services of other City Departments (including the SFPUC Bureaus). The FY 2009-10 operations and maintenance budget is $132.9 million, and will increase to $146.0 million by FY 2014-15. The majority of these costs are independent of the wastewater treatment volume.
- Debt service includes principal and interest payments on revenue bonds and State Revolving Fund loans used to finance system improvements and are projected to increase from $54.7 million to $91.9 million over the five-year period. The increase towards the end of the forecast period results from estimated debt service expense associated with the SSIP, currently under development.
- Revenue-funded capital projects, otherwise known as Renewal and Replacement (R&R), includes major maintenance and routine additions and improvements to sewers, pumping stations, and treatment plants. As a recipient of State and Federal grants under the Clean Water Act, the Enterprise is required to include annual funding for repairs and replacement as a part of its annual revenue requirement. A 1986 Board of Supervisors resolution set the minimum R&R expenditure at $5.0 million and requires the expenditure to increase at least 5.0 percent annually until the amount of the annual contribution reaches $20.0 million. Along with the $30.0 million reserve to accelerate the replacement of aging sewers the annual R&R investment is expected to grow from $41.3 million in FY 2010-11 to $50.3 million in FY 2014-15. As a portion of the R&R program will be debt financed, the revenue-funded portion is projected to increase from $34.0 million to $43.5 million over the five year plan.

Capital Financing Plan

The Capital Financing Plan largely assumes debt financing of capital needs over the next five-year period. The SSIP, currently in development, will require significant debt financing as authorized under Proposition E.

The Plan assumes a strategy that utilizes short-term financing via the existing Commercial Paper (CP) program to calibrate financing needs with project spending. Long-term (30-year) 5.5 percent fixed-rate debt issuance is assumed to periodically refund the CP program. The CP program facilitates short-term financing typically at lower interest rates than longer term debt, which minimizes costs. The authorized CP program for the enterprise is $150.0 million. The Wastewater Enterprise is preparing for an estimated $282.0 million bond sale in the Spring of 2010, with annual sales planned thereafter.

Financial Ratios

It is the financial objective of the SFPUC to maintain a minimum revenue bond coverage ratio of 1.25 times on an indenture basis (including available fund balance) and 1.00 times on a current operations basis, which does not include fund balance. Over the five-year period, the Wastewater Enterprise indenture coverage ranges from 1.87 to 3.68 times coverage. On a current basis, the coverage ratio is projected to extend the 1.00 minimum threshold with a range from 1.25 to 2.90 times coverage.

Fund Balances and Reserves

The Five-Year Financial Plan projects the ending fund balance to increase from $18.6 million in FY 2009-10 to $113.1 million in FY 2014-15. This increase is necessary for debt service coverage purposes, and is funded by rate increases. The new debt service expense during the period is related to funding the enterprise's capital needs. As a percentage of operation and maintenance expense, fund balance is projected to increase from approximately 14.0 percent (1.7 months of expense) in FY 2009-10 to 77.5 percent (9.3 months of operating expenses) by FY 2014-15. The projected reserve levels comply with the SFPUC Fund Balance Policy.

Five-Year Financial Plan

WASTEWATER ENTERPRISE Description ($millions)	FYE 2010 Q2 Forecast	FYE 2011	FYE 2012	FYE 2013	FYE 2014	FYE 2015
Beginning Operating Fund Balance	31.5	18.6	43.8	70.7	82.7	93.0
Capacity Fee Fund Balance		18.1				
Revenue Sources						
Sewer Service Sales - Base Rates	195.3	211.0	226.9	239.5	252.7	266.6
Sewer Service Sales - Rate Increases	14.7	14.8	11.3	12.0	12.6	30.7
Interest Income on Fund Balances	0.7	1.2	2.7	3.0	3.2	3.8
Other Miscellaneous Income	1.5	0.4	0.4	0.4	0.4	0.4
Total Revenue Sources	212.2	227.5	241.4	254.8	269.0	301.5
Uses						
Operations & Maintenance	132.9	131.6	134.9	137.5	141.7	146.0
Debt Service	66.8	54.7	44.0	66.8	75.9	91.9
Capital - Revenue Funded	25.4	34.0	35.7	38.4	41.1	43.5
Total Uses	225.1	220.3	214.5	242.7	258.8	281.3
Net Revenues	(13.0)	7.1	26.9	12.1	10.2	20.2
Ending Fund Balance	18.6	43.8	70.7	82.7	93.0	113.1
Revenue Requirement Impact	**7.0%**	**7.0%**	**5.0%**	**5.0%**	**5.0%**	**11.5%**
Fund Balance as % of Revenue	8.7%	19.1%	29.1%	32.3%	34.4%	37.3%
Fund Balance as % of Expense	8.3%	19.9%	33.0%	34.1%	35.9%	40.2%
Fund Balance as % of Operating Expense	14.0%	33.3%	52.4%	60.2%	65.6%	77.5%
Debt Service Coverage (Indenture)	1.87	2.57	3.68	2.80	2.73	2.62
Debt Service Coverage (Current)	1.25	2.08	2.90	1.88	1.77	1.74

Five-Year Capital Plan

The Five-Year Capital Plan shows total Wastewater project costs of $2.2 billion. Capital investments during the period are in the following areas:

- Sewer System Improvement Program - Planning ($80.9 million);
- Odor Control ($16.7 million);
- Treatment Facilities ($1.4 billion);
- Pump Stations ($10.9 million);
- Sewer/ Collection System ($645.7 million); and
- Treasure Island ($16.3 million)

Renewal and Replacement Program

The recommended renewal investment is estimated to cost $41.4 million in FY 2010-11 and increase to $50.3 million by FY 2014-15. The R&R program includes two major categories: sewer replacements and treatment facilities.

- **Sewer Replacements:** Historically, approximately 4 miles of sewers have been replaced each year at an annual cost of about $12 million. The estimated annual cost for sewer replacement beginning in FY 2010-11 is approximately $31 million, moving toward a goal of 14-17 miles replaced per year. The goal is to accelerate the current 200-year replacement rate until the sewers are replaced once every 100 years. This project helps mitigate future years operating costs by timely maintenance of the Wastewater Collection System.

- **Treatment Facilities:** The treatment plant renewal program includes projects to keep the Wastewater systems operational with the goal of reaching a state of good repair. Projects included planned renewals and replacements at treatment plants and pumping facilities. The estimated annual cost for the treatment plant renewal program is $10.2 million FY 2010-11, increasing to $12.4 million by FY 2014-15.

Capital Program (FY 2010-11 through 2014-15)

The Capital Program proposes investments totaling almost $2.2 billion for capital improvements to the sewer system. The scope of the capital investments includes Sewer Improvement projects to replace/renew old facilities, and maximize the ability of the sewer system to collect and convey wastewater; and aging infrastructure and odor control projects to replace/renew old facilities and maximize control of odors.

- **Wastewater Capital Improvement Program (CIP).** The plan includes $162.3 million in improvements to Wastewater facilities during the next two fiscal years for projects that will become part of the Wastewater Capital Improvement Program. The CIP provides funding for projects that address the most critical needs of our aging wastewater system, improving the capacity of sewer mains, upgrading treatment facilities and reducing wastewater odors.

- **Sewer System Improvement Program (SSIP).** The SSIP program evaluates the current treatment and collection system and provides a long-term strategy for wastewater and stormwater management. This represents a comprehensive planning effort that outlines a long-term strategy for San Francisco's wastewater and stormwater management; addresses specific system deficiencies, aging infrastructure and future operational and renewal and replacement needs; and provides a roadmap for a future capital improvement program (CIP) ensuring reliable service meeting all regulatory

requirements. A portion of the SSIP, mainly planning and preliminary design, is addressed during this forecast period.

The Capital Plan proposes more than $2.2 billion in capital investments focusing on projects in the following categories:

- **Sewer System Improvement Program Planning.** This includes $80.9 million for condition assessments, field studies, facility inspections, alternative evaluation, public outreach and education and planning for the Sewer System Improvement Program.
- **Odor Control.** Totaling $16.7 million, these projects aim to minimize and/or eliminate the odors from our treatment plants and sewer collection system.
- **Treatment Facilities.** The plan proposes $1.4 billion for the planning, design and construction of the Bayside Biosolids (Digester) Project which includes a new digester and solids facility in the southeast area of San Francisco. Improvements at the Southeast, Oceanside and North Point Treatment Plants and associated outfalls will also be addressed.
- **Pump Stations.** Totaling $10.9 million, the projects in this category provide necessary improvements and equipment replacement at the various pump stations in our collection system to ensure operational reliability and odor control.
- **Sewer and Collection System.** Totaling $645.7 million, this includes the Channel Tunnel Project, which will provide needed redundancy for the 66-inch Channel Force Main. The Channel Tunnel would transport dry and wet weather flows from the Channel and North Shore Drainage Basins to the Southeast Treatment Plant. Replacement of aging sewers and mitigation of flood prone areas will also be addressed.
- **Redevelopment of Treasure and Yerba Buena Islands.** On October 1, 1997, concurrent with the operational closure of Treasure Island Naval Station, the City entered into a Cooperative Agreement with the U.S. Navy in which the City agreed to take responsibility for caretaker services on Treasure Island and Yerba Buena Island. As a result of this agreement, the SFPUC provides utility operations and maintenance services for the wastewater and stormwater systems. Costs for the Wastewater Enterprise over the five-year period total $16.3 million and include replacing pumps in 5 storm lift stations throughout Treasure Island, and repair of several sections of the sanitary sewer force main at Treasure Island and Yerba Buena Island that are misaligned and collapsed. This project also provides for the replacement of pumps, upgrades to the electrical and control panels at various Pump Stations, and the retrofit and replacement of the Wastewater Treatment Plant. In the interim, this project consists of replacing major and ancillary equipment within the plant prior to complete failure. Once City ownership is established, a new treatment facility will be designed and constructed.

Five-Year Capital Plan

WASTEWATER ENTERPRISE Description ($millions)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	5 Year Plan Total
Costs							
SSIP Planning	19.0	11.6	10.3	5.7	2.8	1.0	31.4
Low Impact Design Program	-	2.0	3.0	2.3	22.3	4.4	34.0
Biofuel/Alternative Energy Program	-	2.5	3.2	1.3	-	-	7.0
Outfall Inspections	-	3.5	5.0	-	-	-	8.5
Odor Control	6.2	2.7	6.0	1.7	1.7	4.5	16.6
Treatment Facilities	23.6	50.1	72.6	43.7	1,134.3	135.4	1,436.1
Pump Stations	9.0	8.0	-	0.7	0.7	1.5	10.9
Sewer/Collection System	81.5	65.9	87.0	289.9	80.7	122.2	645.7
Treasure Island	2.1	3.0	3.0	1.6	3.1	5.6	16.3
Total	**141.4**	**149.3**	**190.1**	**346.9**	**1,245.7**	**274.4**	**2,206.4**
Revenues							
State Grant	-	20.0	10.0	10.0	-	-	40.0
Wastewater Revenue Bonds	119.8	97.1	144.1	297.7	1,204.7	230.4	1,973.9
Wastewater Revenue	21.6	14.1	33.8	35.5	37.2	39.1	159.7
Other - Capacity Fee	-	18.1	2.2	3.8	3.8	4.9	32.8
Total	**141.4**	**149.3**	**190.1**	**346.9**	**1,245.7**	**274.4**	**2,206.4**

HETCH HETCHY WATER AND POWER

Background

Hetch Hetchy Water and Power (HHWP) provides reliable, high quality water and electric energy to the City and County of San Francisco and other customers, protects watershed resources in cooperation with federal agencies, operates and maintains facilities to a high standard of safety and reliability, and maximizes revenue opportunities within approved levels of risk.

Eighty-five percent of San Francisco's drinking water starts out as snow falling on more than 650 square miles of watershed land in Yosemite National Park and the Stanislaus National Forest. As the snow melts, it collects in Hetch Hetchy's three storage reservoirs. Water flows by gravity through 150 miles of pipelines and tunnels and turns the turbines in 4 hydroelectric powerhouses, generating approximately 1.6 billion kilowatt hours of electricity. Over 160 miles of transmission and distribution lines move the electricity from the powerhouses to the San Francisco Bay Area. The power is used for City and County of San Francisco offices and services, including the Municipal Transit Authority and the San Francisco International Airport. Surplus power is sold to Modesto and Turlock Irrigation Districts and other public agencies.

Hetch Hetchy Water and Power is comprised of two component parts: 1) The Power Enterprise which is wholly contained within the Hetch Hetchy fund; and 2) The Water Enterprise up-country operations and water system.

Hetchy Water operates as an effective, reliable water and power supplier, while managing resources in an environmentally sound manner. Hetchy Water is responsible for the operation, maintenance and improvement of its water and power facilities to a high standard of safety and reliability while meeting regulatory requirements. Hetchy Water distributes high quality water to SFPUC customers while optimizing generation from the hydropower facilities. Hetchy Water also maintains lands and properties consistent with public health and neighborhood concerns.

The core business of Hetchy Power, as a municipal agency, is to provide adequate and reliable supplies of electric power to meet the electricity needs of the City and County of San Francisco's customers, and to satisfy the municipal loads and agricultural pumping demands of the Modesto and Turlock Irrigation Districts, consistent with prescribed contractual obligations and Federal law.

Hetchy Power's portfolio consists of hydroelectric generation, small on-site solar and third party purchases. Consistent with its commitment to the development of cleaner and greener power, and to address environmental concerns and community objectives, Hetchy Power continues to evaluate and expand its existing resource base to include additional renewables, distributed generation, demand management and energy efficiency programs.

As part of its mission and core functions, Hetchy Power aims to provide reliable energy services at reasonable cost to customers, with attention to environmental effects and community concern.

Revenues

Hetch Hetchy Water and Power operates the Hetch Hetchy Reservoir, the main source of water for the Hetch Hetchy system and is responsible for generating, transmitting and distributing electricity to its customers. The enterprise operates and maintains power transmission and generation facilities, buys and sells electric power, provides energy conservation and renewable resource solutions to City Departments and maintains 22,000 City-owned streetlights. Total sources are forecast to increase from $153.2 million in FY 2009-10 to $178.4 million by FY 2014-15.

- Power sale revenues will increase from $90.7 million in FY 2009-10 to $123.6 million by FY 2014-15. Over the period, about two-thirds of power sales will be made to City Departments for municipal use; 20.0 percent to the Modesto and Turlock Irrigation Districts as wholesale customers; and an estimated 10.0 percent to other retail customers.
- Water-related sales are expected to remain flat at $1.5 million over the five years period. Transfers from the Water Enterprise for services provided are projected to average $31 million annually over the period.
- Other miscellaneous income and interest income, will average about $7.0 million per year over the period.

Rates and Charges

Hetch Hetchy Water and Power charges for services relating to the storage and delivery of water, including the supply of electricity to contractual and municipal customers. Transfers from the Water Enterprise are forecast to increase as associated operating and capital costs increase. For power services, customers pay negotiated rates based on customer class. Hetch Hetchy Power has completed a revenue requirement analysis and will complete a formal rate setting process during FY 2010-11.

Expenditures

The Plan includes a 3.0 percent annual growth assumption for operations and maintenance costs and a 5.0 percent annual escalation in revenue-funded capital costs on average.

The annual operating budget includes operation and maintenance costs, repair and replacement costs for existing equipment and facilities, and loans used to finance capital improvements. Operations and maintenance costs are approximately two-thirds of the Hetch Hetchy Water and Power's expenditures with revenue-funded capital the remaining one-third. Total expenditures are projected to increase from $119.6 million to $141.2 million over the period.

- Operations and maintenance costs include labor salaries and fringe benefits, materials and supplies, watershed management costs, power purchases, and services of other City departments (including the SFPUC Bureaus). The FY 2009-10 projection reflects $108.2 million in operation and maintenance costs, increasing to $138.9 million by FY 2014-15.

- Debt service costs include repayment on loans and financing for Clean Renewable Energy Bonds and are increasing from $0.9 million to $2.3 million over the five-year period. Hetch Hetchy Water and Power is developing a financial plan which will allow for future bond-financing to fund its capital needs.

- Revenue-funded capital projects include major maintenance and rebuilding projects associated with the up-country water and power infrastructure. This includes projects associated with the Hetch Hetchy Reservoir and watershed, as well as the nearby power generating and distribution facilities. Annual project spending needs average $97.7 million. However, as the long-range plan indicates, the cumulative effect of ongoing negative net-revenues indicates a depleted fund balance in FY 2012-13. To bridge this projected shortfall, either additional sources of funding must be identified or operating and infrastructure investments reduced. Debt-financing of capital needs maybe one additional source.

Capital Financing Plan

The Hetchy Water and Power Long-Range Financial Plan assumes both revenue and bond financing of its capital needs. Of the $71.2 million capital program in FY 2010-11, $7.1 million (10 percent) are water-related projects and will be bond financed via the Water Enterprise, $6.0 million (8 percent) will be bond financed via Clean Renewable Energy Bonds (CREBS), with the remaining $58.1 million (82 percent) being revenue-funded. A larger proportion of debt-financing of capital needs will be reflected in future revisions to this long-range plan.

Fund Balance and Reserves

In FY 2009-10, fund balance as a proportion of operating expense is approximately 57.9 percent (6.9 months of expense). However, fund balance is projected to be depleted in FY 2012-13, as a result of anticipated revenue-funding for enterprise capital needs. Staff is preparing a Capital Financing Plan to facilitate debt-financing of infrastructure needs. **Absent that funding source or increased Power Sales Revenues, the capital program will need to be reduced in-line with Hetch Hetchy revenues.**

Five-Year Financial Plan

HETCH HETCHY WATERAND POWER Description ($millions)	FYE 2010 Q2 Forecast	FYE 2011	FYE 2012	FYE 2013	FYE 2014	FYE 2015
Beginning Operating Fund Balance	102.5	88.7	58.3	26.0	(15.4)	(69.9)
Revenue Sources						
Power Sales - SF City Departments	60.8	65.9	70.6	71.7	78.9	80.9
Power Sales - Direct & Retail	14.7	17.1	19.4	21.3	23.2	25.3
Power Sales - Districts & WSPP	15.2	16.4	16.0	16.4	16.9	17.4
Water Sales - Upcountry	1.5	1.5	1.5	1.5	1.5	1.5
Water Transfer In	29.7	29.7	30.6	31.6	32.5	33.5
Natural Gas & Steam	15.8	12.9	13.3	13.3	13.3	13.3
Interest Income	1.5	1.9	2.4	1.4	1.0	1.0
Other Misc Income	14.0	5.5	5.5	5.5	5.5	5.5
Total Revenue Sources	153.2	150.9	159.3	162.7	172.8	178.4
Uses						
Operations & Maintenance	108.2	118.7	123.3	127.7	133.4	138.9
Debt Service	0.4	0.9	1.4	1.7	2.0	2.3
Subtotal	108.6	119.6	124.7	129.4	135.4	141.2
Net Revenues Before Capital	44.6	31.3	34.6	33.3	37.5	37.2
Capital and Programmatic Projects	64.9	74.8	84.9	103.8	125.1	120.9
Less: Proceeds from Debt	(6.5)	(13.1)	(18.0)	(29.2)	(33.1)	(32.5)
Total Uses, Net of Debt Proceeds	167.0	181.3	191.6	204.1	227.4	229.6
Net Revenues After Capital	(13.8)	(30.3)	(32.3)	(41.4)	(54.5)	(51.2)
Ending Fund Balance	88.7	58.3	26.0	(15.4)	(69.9)	(121.1)
Fund Balance as % of Revenue	57.9%	38.6%	16.3%	-9.5%	-40.4%	-67.9%
Fund Balance as % of Expense	53.1%	32.2%	13.6%	-7.5%	-30.8%	-52.8%
Fund Balance as % of Operating Expense	82.0%	49.1%	21.1%	-12.1%	-52.4%	-87.2%
Debt Service Coverage (Indenture)	365.19	146.21	81.78	53.75	28.86	0.92
Debt Service Coverage (Current)	122.14	49.48	39.29	38.24	36.64	31.52

Shortfall must be balanced.

Five-Year Capital Plan

Renewal and Replacement Program

The Hetch Hetchy renewal and replacement program is estimated at $337.2 million over the Five-Year Capital Plan. These proposed costs will be financed with a combination of revenue bonds and Enterprise revenues. If revenues are not available, projects will be deferred.

- **Communications and Security Renewals:** $16.5 million includes developing a new microwave communication system by the end of 2011. It also includes installing a multi-fiber communication link from Moccasin to the Powerhouses and Switchyard at Intake as a backup communication system to microwave. This project is resulting from critical communication needs at these remote powerhouses, as well as regulatory and system reliability requirements.
- **Reservoirs and Dams:** $6.5 million over the next five years include project improvements at Priest to address turbidity issues, rehabilitation of the Moccasin Reservoir to address water quality, and improvements to safety and security systems and pumps and valves at Cherry Reservoir.
- **Water Transmission:** $98.8 million during the next five years include projects on the San Joaquin Pipelines rehabilitation, Mountain Tunnel Rehabilitation, Kirkwood Penstock repairs due to slippage and design of a modified drainage system, Holm and Moccasin Reservoir condition assessments, rehabilitation of the O'Shaughnessy Outlet Works to provide for the full use of the spillway (drum gate structure), Coast Range Tunnel assessment, reline and coat Holm Penstock to increase generation efficiency, rehabilitation at Canyon Tunnel Hetch Hetchy Adit plus inspection of the tunnel and rock/sand trap, Moccasin Penstock rehab and repair, and ongoing water system assessments of remaining HHWP facilities.
- **Power Infrastructure:** $147.9 million in investments include projects to repair and replace the Hetch Hetchy power system's exciters, governors, oil circuit breakers, transformers, transmitters, and distribution system. Projects include the Moccasin Powerhouse Generator Rewind, Kirkwood Powerhouse Unit 2 Rewind, Holm Powerhouse Generator Circuit Breaker install, and Step-Up Transformers for the Kirkwood Powerhouse and Moccasin Powerhouse.
- **Facilities, Roads and Right of Way:** $67.5 million for **t**hese projects will support the infrastructure required for the operation and maintenance of both the water delivery and power generation/transmission system portion of the Hetch Hetchy Project. The capital plan includes the design of new roads as well as ongoing road and bridge repairs on the project. It also includes the design, upgrade and construction of existing and new support structures and facilities on the project. This work will encompass major structural renovations and upgrades, lead paint abatement, re-roofing, interior remodels, and remodeling craft work areas and shops. These upgrades will allow Hetchy to meet California Building Code (CBC) requirements, address issues relating to safety and the Americans with Disabilities Act (ADA), energy efficiency, infrastructure, as well as provide leadership in Energy and Environmental Design, and regulatory issues.

Capital Program (FY 2010-11 through 2014-15)

The Hetch Hetchy Water & Power project's capital program is comprised entirely of $151.4 million for the Power Enterprise.

- **Streetlighting.** The enterprise provides power to all of San Francisco's 42,000 streetlights and maintains the 22,000 owned by the City. It also coordinates and funds the maintenance of the 20,000 streetlights owned by Pacific Gas & Electric (PG&E). The SFPUC is in the process of assessing the existing system, focusing on City-owned lights over sixty years old, and preparing a retrofit/replacement program that will include specific strategies for capital recovery and an implementation schedule. The assessments and subsequent construction are estimated to cost $36.4 million over the next five years.

- **Transmission and Distribution (T&D).** Defined as 12 kV service voltages and higher, these projects address the SFPUC's ability to assess and develop City-owned transmission and distribution assets as well as evaluate its reliance on assets owned by a third-party. T&D projects support the SFPUC's responsibility to provide long-term electric reliability options and services for the City. Estimated to cost $10.9 million over the next five years, these projects include the following:

    - $4.0 million condition assessment of existing third-party T&D systems and construction.
    - $3.5 million construction and ownership of new T&D systems where power can be taken at a higher (or primary service) voltage and then stepped down to a lower (or secondary service) voltage.
    - $3.4 million renewal and replacement projects.

- **Generation and Renewables.** To deliver electricity as a commodity to its customers, the Power Enterprise relies on its power purchases from the Hetch Hetchy hydroelectric powerhouses, on-site generation, and third-party purchases. Costs over the next five years are projected at $48.9 million. In accordance with City policies and directives relating to renewable energy and goals to reduce greenhouse gases, the Power Enterprise is continuously researching, developing and implementing new electricity generation resources to provide clean, local generation where it is needed and ensuring reliable power services. Design-build solar PV projects underway include MUNI Ways and Structures, MUNI Woods Coach, Chinatown Public Health, City Hall (part of the sustainable energy district), and Davies Symphony Hall. Wind projects are being planned at Twin Peaks and Crissy field. Additional rooftop solar projects are being planned for SFPUC facilities such as the Millbrae Yard, SFO terminal rooftops and parking facilities, Moscone West, Moscone Ice Skating Rink, Alvarado school among others.

  In accordance with expressed policy by the Mayor and Board of Supervisors, the Power Enterprise is considering an Ocean Power Project to generate renewable energy for use in municipal facilities. The scale of this project is a key determinant of future capital requirements, and is dependent upon sufficient net revenues. This project is estimated to cost $4.4 million over the next five years for project permitting and development work, excluding the capital cost of the project. The SFPUC is examining a number of ways to increase the generation of renewable power. The additional larger amounts of renewable energy may be needed to meet Renewable Portfolio Standards (RPS) for public power, possible RPS standards for municipal loads (if State legislation is enacted for this requirement) and possible renewable needs for Community Choice Aggregation.

  The Power Enterprise has entered into a Power Purchase Agreement and a corresponding lease for the deployment of solar energy at Sunset Reservoir. The project is expected to be in operation by 3rd quarter of 2010. Other sites are also being examined for larger scale development of solar energy at

SFPUC-owned reservoirs and land at Tesla and Sunol. The model for development is straight power purchase agreements, where the Power Enterprise agrees to purchase power and the developer designs, permits, installs, owns and operates the system, thereby minimizing the Enterprise's upfront capital costs. Ownership of the facility could transfer to the City after the developer recovers its costs and earns a reasonable rate of return.

- **Energy Efficiency.** The plan proposes $27.1 million in energy efficiency investments over the next five years. An important component of an electric utility's resource portfolio, energy efficiency investments reduce facility operating costs and electric bills for customers, improve system functionality, and reduce the environmental impact of energy use. Since FY 2002-03, the Energy Efficiency program has achieved 30 million kwh per year, 11 MW peak power reductions, and 241,000 therms per year savings, not including savings from the San Francisco International Airport noted below. In FY 2008-09, the Energy Efficiency program completed 26 energy efficiency projects, saving an estimated 3,035,000 kWh/year (446 kW peak demand). The program also completed projects at the SFPUC Southeast, Northpoint and Oceanside Wastewater Treatment Plants, conducted 36 energy efficiency audits, completed energy efficiency lighting projects at the Hall of Justice, Broadway Tunnel, several police and fire stations, and 18 Port facilities, initiated mechanical system retrofit projects at seven Port facilities and the new Port Tenant Energy Efficiency Services program. The program supported San Francisco International Airport staff in implementing energy efficiency projects with estimated annual savings of 2.9 million kWh per year and 376,000 therms per year. Energy savings goals for the current fiscal year are 3 million kWh per year, 50,000 therms per year, and 500 kW peak demand reductions.
- **Treasure Island.** The Cooperative Agreement discussed previously in the Water Enterprise's R&R Program section also requires the SFPUC to provide utility operations and maintenance services at Treasure and Yerba Buena Islands for the electrical and natural gas utility systems. The SFPUC has developed a work plan for creating a public power utility on each of the islands. The electric redevelopment projects include the replacement of a submarine Cable from Oakland to Treasure Island, a new underground 12-kV Distribution System at Treasure Island, Yerba Buena Island, and a new 115-kV substation in Oakland.

Five-Year Capital Plan

HETCH HETCHY WATER AND POWER Description ($millions)	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	5 Year Plan Total
Hetchy Power							
Streetlight	0.4	10.1	22.1	1.5	1.5	1.2	36.4
Transmission/Distribution	1.0	2.0	2.0	2.2	2.8	1.9	10.9
Renewable/Generation	8.5	11.2	9.2	9.5	9.5	9.5	48.9
Energy Efficiency	10.9	5.9	6.9	5.6	5.1	3.6	27.1
Treasure Island	2.7	1.0	2.9	10.5	9.9	3.8	28.1
Purchase of Property	5.0	-	-	-	-	-	-
Hetchy Power Total	**28.5**	**30.2**	**43.1**	**29.3**	**28.8**	**20.1**	**151.4**
Hetchy Water							
Communications/Misc.	4.0	6.5	5.5	2.5	1.5	0.5	16.5
Reservoirs/Dams	-	-	0.5	2.0	2.0	2.0	6.5
Water Transmission	6.0	5.3	12.0	26.5	27.0	28.0	98.8
Power Infrastructure	17.2	25.8	12.7	24.7	41.6	43.1	147.9
Facilities/Roads/Right of Way	5.7	3.5	7.5	14.5	19.5	22.5	67.5
Hetchy Water Total	**32.9**	**41.1**	**38.2**	**70.2**	**91.6**	**96.1**	**337.2**
Total	**61.3**	**71.2**	**81.3**	**99.5**	**120.3**	**116.2**	**488.5**
Revenues							
Clean Renewable Energy Bonds	-	6.0	4.0	4.0	4.0	4.0	22.0
Revenue Bonds/Joint Water Assets	6.5	7.1	14.0	25.2	29.1	28.5	103.9
Hetch Hetchy Revenue	54.8	58.1	63.3	28.5	28.5	28.5	206.9
Total	**61.3**	**71.2**	**81.3**	**57.7**	**61.6**	**61.0**	**332.8**
(Shortfall)		-	-	(41.8)	(58.7)	(55.2)	(155.7)

Note: Shortfall to be funded with debt financing, additional revenues, and/or deferring expenditures

For further information, please contact:

Charles Perl
Deputy CFO, SFPUC
415-487-5262
cperl@sfwater.org

San Francisco Public Utilities Commission
1155 Market St. 5th Floor
San Francisco, CA 94103