



SFPUC 10-YEAR FINANCIAL PLAN

FY 2020-21 to FY 2029-30

Abstract

A discussion of key policies, strategic goals, and assumptions that guide the 10-Year Plan.

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Financial Planning, SFPUC

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Introduction

The SFPUC is a department of the City and County of San Francisco and is responsible for utility services associated with operating and maintaining three enterprises: the Water Enterprise, the Wastewater Enterprise, and the Power Enterprise, which includes Hetch Hetchy Water and Power and CleanPowerSF. The San Francisco Public Utilities Commission (“SFPUC”) prepares an annual 10-Year Financial Plan Update (“Plan”) as required by the City and County of San Francisco Charter Section 8B.123. The Plan provides a long-range view of the resulting utility rates required of each enterprise. Additionally, the Plan is a summary of projected revenues, expenditures, fund balances, and financial ratios for each SFPUC enterprise over a rolling 10-year period. These long-term projections are updated annually, subject to change and provide an important snapshot of each enterprise’s financial health. The Plan projections are based on key assumptions reflecting current Board of Supervisors and Commission policies, goals, and objectives.

Key Terms

Revenue requirements: an estimated amount of net additional revenue required to cover operating, capital, and reserve expenses in a given year, after assuming existing revenues

Financial ratios: metrics that assess whether an enterprise has sufficient resources to meet debt service coverage and fund balance reserve requirements

A key objective of the Plan is to promote SFPUC’s Strategic Plan goal of Financial Sustainability by estimating future revenue requirements and financial ratios while providing a view of resulting rates. Consolidating these key financial indicators into the 10-Year Plan serves to inform the SFPUC’s long-term planning decisions, such as the biennial operating and capital budgets, long-range capital planning and capital financing strategies.

Mission and Strategic Goals

SFPUC’s mission is to provide customers with high-quality, efficient, and reliable water, power, and, wastewater services in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care. To ensure the agency has adequate resources to achieve this mission, each enterprise’s operating and capital budget is developed with long-term strategic goals and objectives detailed in SFPUC’s 2020 Strategic Plan:

Financial Management Policies

Background

The Commission has adopted various policies that set requirements and parameters guiding SFPUC financial activities. These policies demonstrate to ratepayers, credit markets, investors and rating agencies that SFPUC is committed to financial sustainability and prudent stewardship of resources. The primary purpose of these policies is to ensure each enterprise retains sufficient funds for future infrastructure needs, replacement of aging facilities, bond reserves, and various operating expenses in a manner that mitigates unexpected rate changes. In 2017, a

SFPUC KEY FINANCIAL POLICIES

- ✓ Debt Service Coverage Policy
- ✓ Capital Financing Policy
- ✓ Fund Balance Reserve Policy
- ✓ Ratepayer Assurance Policy

comprehensive study was undertaken to evaluate, strengthen, and clarify SFPUC's Financial Policies. Financial Policies are particularly important for long-term planning related to capital financing and risk management.

Capital Financing Policies

Debt Service Coverage Policy

Adopted by the Commission in March 2017, the Debt Service Coverage Policy requires the SFPUC to maintain higher debt service coverage ratios than those required to meet a bond's minimum indenture requirements. Debt service coverage ratios measure annual net revenues as a fraction of annual debt service. For example, a debt service ratio of 1.00x means that an issuer generates exactly enough in net revenues to pay its debt service obligations, with no excess funds left over. Debt service ratios higher than 1.0x indicate the issuer has additional debt capacity.

Pursuant to covenants with bondholders, enterprise revenues pledged for debt service repayment must meet minimum requirements for two different coverage ratios: 1) Indenture Coverage, which includes the Enterprise's unrestricted fund balance in net revenues, must equal a minimum of 1.25 x annual debt service and; 2) Current Coverage, which includes only current year annual revenues, must equal a minimum of 1.00 x annual debt service. The unrestricted fund balance included in Indenture Coverage includes funds available to minimize risk, not meant to be used for debt repayment. Current Coverage, a more standardized measurement used by rating agencies, is therefore a better indicator of the agency's ability to pay its debt service obligations.

Financial policies that impose higher standards than the minimum indenture requirements are essential to ensuring SFPUC maintains access to low-cost capital and retains financial flexibility to manage unanticipated economic impacts. Therefore, the Debt Service Coverage policy requires each SFPUC enterprise to adopt budgets, rates and financial plans that generate net revenues such that **Indenture Coverage shall equal a minimum of 1.35 x annual debt service** and **Current Coverage shall equal a minimum of 1.10 x annual debt service**.

Capital Financing Policy

Adopted by the Commission in March 2017, the Capital Financing Policy requires that a minimum ranging between **15% to 30% of each enterprise's capital budget be revenue-funded** (or "pay-as-you-go" funded) over the 10-year planning period. Unlike debt financing, use of revenue minimizes financial costs and does not impose significant debt burdens on future ratepayers. Therefore, using revenue funding for recurring infrastructure repair and replacement projects is a prudent and sustainable approach to funding ongoing capital investments. The appropriate mix of revenue versus debt financing varies based on the capital investment lifecycle of each enterprise.

Risk Management Policies

Fund Balance Reserve Policy

Adopted by the Commission in February 2017, the Fund Balance Reserve Policy requires that each enterprise Fund Balance Reserve maintain a **minimum amount of 90 days or 25% of annual Operations and Maintenance Expenses** (including programmatic projects, excluding debt service and revenue-funded capital) over the 10-year planning period.

The SFPUC faces several risks to revenue stability, including multi-year rate packages, weather variability, drought, and highly volumetric rates. To ensure SFPUC can manage these risks and reduce susceptibility to emergency rate increases, each enterprise adopts budgets and establishes rates such that a reserve of undesignated fund balances provides sufficient capacity to bridge shortfalls in cash flow and cover unanticipated expenditures.

Ratepayer Assurance Policy

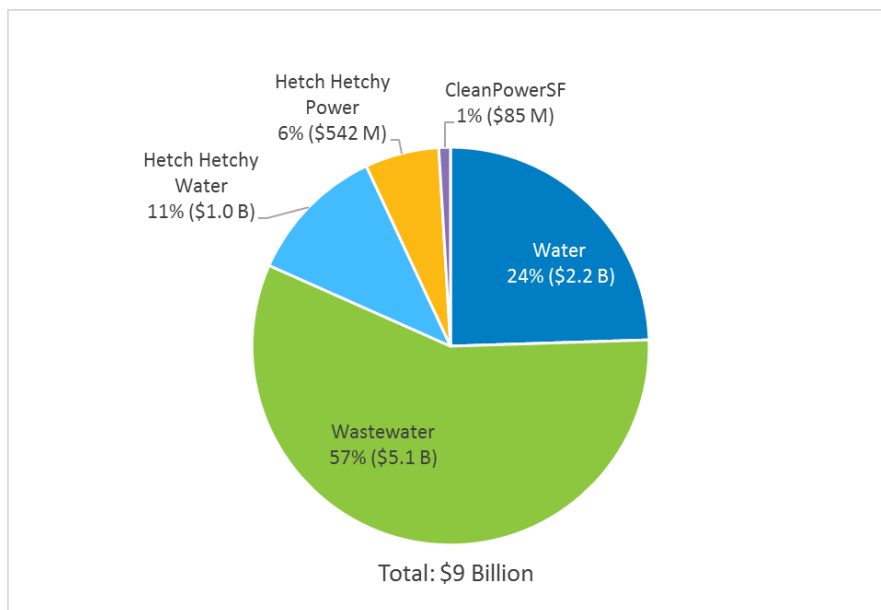
Adopted by the Commission in February 2012 and revised in 2017, the Ratepayer Assurance Policy establishes SFPUC’s guiding principles for prudent use of ratepayer funds, establishment of rates and charges, and transparency in budgeting and rate-setting processes. Prudent use of ratepayer funds ensures accountability to ratepayers regarding SFPUC’s mission statement, asset and personnel management, operating cost containment, and social and environmental stewardship. The Ratepayer Assurance Policy reinforces SFPUC’s commitment to developing rates and charges that are affordable, predictable, easy to understand, based on cost of service, and that generate sufficient revenue for full cost recovery.

Capital Improvement Plan

Each enterprise has a 10-Year Capital Improvement Plan (CIP) that forecasts multi-billion-dollar capital investments over the next 10 years. Capital investments are essential to providing safe and reliable drinking water, protecting public health and the environment, and delivering clean energy for municipal services. These investments make the overall utility system more reliable and resilient in the face of earthquakes, sea-level rise, droughts, and other unexpected changes.

Capital expenditures are a significant portion of the SFPUC budget. For the FY 2020-21 and FY 2021-22 biennial budget, the Water Enterprise has a Capital Improvement Plan that is 30% revenue-funded and 70% debt-financed. The Wastewater Enterprise’s Capital Improvement Plan is 74% debt-financed and 26% revenue-funded. The Power Enterprise has the highest percentage of debt-financing, with 89% of its CIP debt-financed and 11% revenue-funded.

Graph A: SFPUC 10-Year Total CIPs FY 2020-21 to FY 2029-30



Every year, the CIPs are updated to reflect the capital priorities of each enterprise over the next 10-year horizon. Every other year, a biennial budget is adopted, which includes the adoption and appropriation of two years of funding for the CIP. Capital programs are intended to support capital investments for defined Level of Service goals in each enterprise,

such as the implementation of local hire, job training, and job creation programs to benefit local communities.

Water Enterprise Capital Improvement Program

The Water Enterprise 10-Year Capital Improvement Plan is \$2.2 billion in total spending, with 30% (or \$653.9 million) being revenue-funded while 70% (or \$1.5 billion) is debt-financed.

FY 2021-30 Water Capital Improvement Plan

The Water Plan is devoting an additional \$131.1 million to the Regional Water Treatment Program, focusing on water purification, recycling projects and dam upgrades. In June of 2019, both the Moccasin Dam and the Calaveras Dam finished repairs and replacements. The Moccasin Dam finished emergency repairs after several severe storms occurred in March of 2018 that caused serious damage to the Reservoir. Calaveras underwent construction to replace the previous 93-year old dam that was no longer seismically safe. The total spending of the Water Enterprise significantly increased from last year's plan by \$479.4 million, mostly due to the aforementioned dam upgrades and an additional \$350 million dedicated for the new City Distribution Division Headquarters located at 2000 Marin.

Wastewater Enterprise Capital Improvement Program

The Wastewater Enterprise 10-Year Capital Improvement Plan is \$5.1 billion in total spending, with 26% (or \$1.3 billion) being revenue-funded while 74% (or \$3.8 billion) is debt-financed.

FY 2021-30 Wastewater Capital Improvement Plan

The Wastewater Enterprise continues SSIP progress. Overall, the Wastewater 10-Year Capital Plan decreased a total of \$469.3 million in comparison to the last 10-Year Capital Plan, which is mostly a function of timing and the move of project spending beyond the current 10-Year Plan view, which ends in FY 2029-30. Projects which increased in funding during the 10-year period include the expansion of the Renewal and Replacement programs.

Hetch Hetchy Water and Power Capital Improvement Program

The Hetch Hetchy Water and Power Enterprise ("Hetchy Enterprise") is responsible for providing reliable, high quality water and electric energy to the City and other customers. Hetchy Power consists of in-City power operations and all power utility wholesale and retail transactions. Hetchy Water operates, maintains, and improves water and power facilities, smaller dams and reservoirs, water transmission systems, power generation facilities, and power transmission assets all located in the upcountry (Sierra Nevada mountains and foothills).

Due to the merging of many water and power operations, it is not always clear how to distinguish between the Water Enterprise and "Hetch Hetchy Water" under the Power Enterprise. It is important to understand for the purposes of this Plan, however, that these joint assets are financially separate. All costs associated with water operations under the Hetchy Enterprise are covered by the Water Enterprise, while all operations associated with power are covered by the Power Enterprise. The Water Enterprise is responsible for 45 percent of operating and capital costs, while the Power Enterprise is responsible for the remaining 55 percent.

The Hetchy Enterprise's CIP is divided into two sections based on operations:

1. The Power Enterprise Capital Program undertakes projects both within the City of San Francisco as well as upcountry and is financed by Power revenues, and Power revenue bonds. The Power CIP includes the renewable generation and energy efficiency projects critical to attain greenhouse gas reductions and begin climate change mitigation. Also, there are transmission and distribution projects consistent with the City's goal of establishing the SFPUC role as the electric service provider to City facilities and development projects.
2. The Hetchy Water Capital Program is financed by Water revenue bonds, Power revenue bonds and Power revenues. The Hetchy Water CIP includes Water Infrastructure, Power Infrastructure, and joint Water (45%) and Power (55%) projects that are located upcountry and managed by Hetchy Water.

The Hetchy Enterprise Capital Improvement Plan is \$1.02 billion in total spending for the Hetchy Water Capital Program and \$542.45 million for the Power Enterprise Capital Program. Of the Hetchy Enterprise's overall capital spending in both sections, \$176.8 million is funded by Power revenues, \$545.2 million is financed by Water revenue bonds, and \$844.6 million is financed by Power revenue bonds.

[FY 2021-30 Hetchy Capital Plan](#)

The \$1.56 billion Hetchy Enterprise Capital Improvement Program represents a growing investment over ten years with greater amounts of funds allocated to Power infrastructure. The Plan includes increased overall funding for upcountry water infrastructure by \$115.17 million, totaling to \$1.02 billion, and for downcountry power by \$171.13 million, totaling to \$542.45 million. The Plan includes increased funding for the Mountain Tunnel Improvement Project, long term improvements to the Mocassin Dam, and overall increases to the downcountry distribution retail services.

CleanPowerSF Capital Improvement Plan

CleanPowerSF's first Capital Improvement Plan includes funding of \$75.8 million over the next 10 years, making up a very small share, 1%, of the SFPUC's total \$9 billion plan. 73% of CleanPowerSF's CIP is made up of the Local Renewal Energy Program, a \$62.5 million project over the course of the current iteration of the Plan, with the remainder of \$13.2 million almost entirely going towards CleanPowerSF Customer Programs. 100% of CleanPowerSF's capital sources are projected to be revenue-funded.

[Forecasting Assumptions](#)

The 10-Year Financial Plan projections are based on key assumptions that reflect current Board of Supervisors and Commission policies, goals, and objectives. In general, SFPUC ensures that the Plan conforms with Commission-approved policies and that it incorporates current Operating Budgets, Capital Budgets, and CIP updates. Other critical forecasting assumptions can be divided into the Sources side of the Plans which are primarily revenues from utility sales, and the Uses side of the Plans which are expenditures. The Uses side of the Plans are primarily comprised of operations and maintenance expenditures and capital related expenditures which are further subdivided debt service and revenue funded capital expenses.

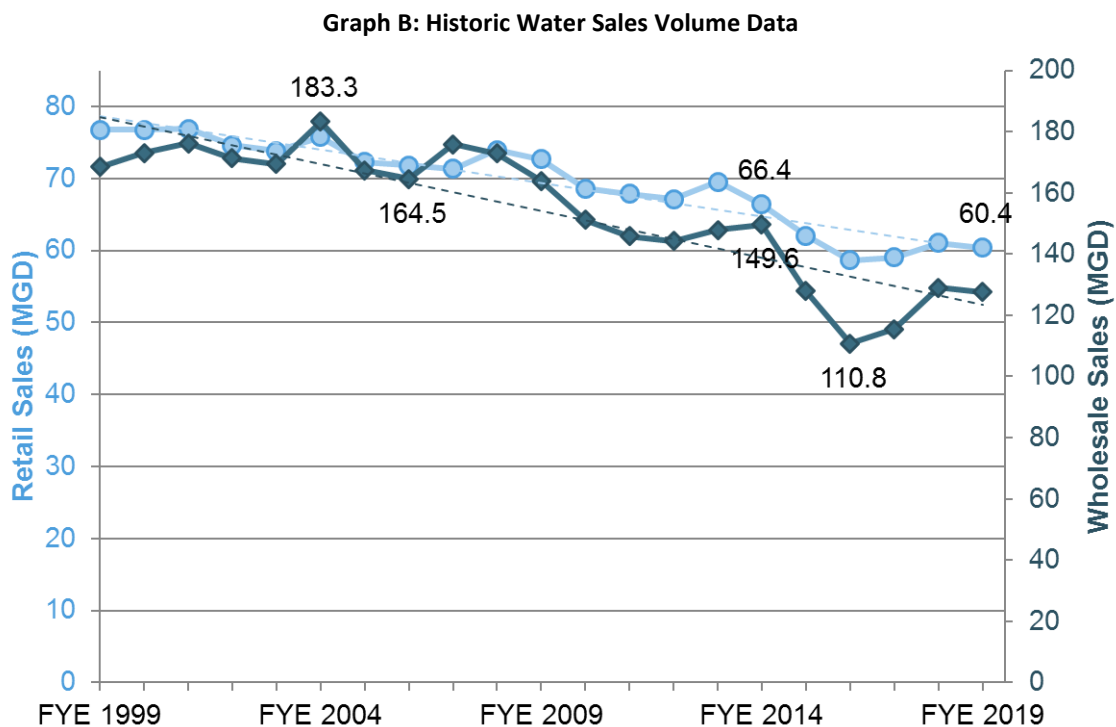
Sources of Funds

Water and Wastewater Sales Projections

The Water Enterprise and Wastewater Enterprise revenue projections are primarily driven by water and wastewater sales projections. These sales projections are dependent upon forecasted volumes of water and wastewater delivered to SFPUC customers over the 10-year planning period and the adopted and projected rates applied to those volumes. The SFPUC water and wastewater sales volumes projections used here are for the purposes of financial planning. These projections are informed by historic sales volume data and serve to provide a conservative basis for financial planning purposes. Additionally, while these financial planning volumes projections are informed by historic sales volumes data, past performance is not indicative of future results, however, is the most prudent financial planning volume projection to utilize. Water and wastewater retail rates have been approved by the Commission in four-year intervals, with the last four year rate package adoption in 2018.

Slight Decrease in Volumetric Projections

The 10-Year Financial Plan assumes a 0.5% average annual decrease in water and wastewater volumes. This slight decrease in projected volumes reflects a change in approach to water and wastewater demand projections from prior Plans. Previously, the SFPUC has forecasted flat water and wastewater volumes for financial planning purposes. The slight downward trend forecast is based on historic water sales data that reflects a downward trend in actual water volumes over the past 20 years (see Graph B). Various external events have materially contributed to declining water volumes including the Great Recession and subsequent slow economic recovery, changing plumbing codes, and water conservation patterns continuing from the recent drought.



Since SFPUC assumes wastewater volumes to be a fixed percentage of water volumes (i.e. “flow factor”), a downward trend in water volumes suggests a comparable downward trend in wastewater volumes. The Plan’s base case model incorporates these considerations in an updated 0.5% average annual decrease in water and wastewater sales volumes throughout the 10-year planning period.

This Plan’s base case volume projections are financially conservative and supports financial sustainability in that one can better understand the necessary rate increases to support operating and capital investment decisions made today. In contrast to the base case, this report discusses resulting rate impacts as a result of water and wastewater volume sensitivity scenarios.

Annual Rate Increases

Adopted rates for retail customers are applied to volumetric assumptions through FY 2021-22. Per City Charter, the SFPUC conducts a retail cost of service study for each enterprise at least every five years. The most recent cost of service study for water and wastewater was completed in 2018 and was the basis for four years of retail water and wastewater rates that were adopted by the Commission for FY 2018-19 through FY 2021-22. Projected retail water and wastewater rates increases after FY 2021-22 are based on the average revenue requirement increases needed, incorporating the 0.5% annual sales volume decreases in the base case Plan, to balance the need to meet future enterprise revenue requirements and slightly exceed minimum financial ratios that support financial sustainability.

Hetch Hetchy Power Sales Projections

The Hetch Hetchy Water and Power Enterprise (“Hetchy Enterprise”) revenue projections are primarily driven by power sales. These sales projections are dependent on forecasted volumetric electric loads and the projected electric rates applied to those loads. Fundamentally, the 10-Year Financial Plan takes a conservative approach to power sales projections by including any existing loads in the FY 2020-21 and FY 2021-22 budget years with increased loads after FY 2020-21 and FY 2021-22 based on conservative forecasts.

Power Load Growth Projections

Municipal power load projections are based on biennial budgets and are updated annually. Municipal customers except SFO Airport, representing half of the municipal power load, assumes no electric load growth over the 10-year planning period. Airport load growth is, on average, projected to grow 3% annually over the next 10 years. The Airport’s projected load growth is related to construction of a new terminal and associated facilities.

The Plan previously assumed some new retail power customer loads associated with former PG&E customers that transferred and became Hetch Hetchy Power Customers. These transfer loads were only included in the Plan once the customer entered a control contract with SFPUC. Other than this small addition of committed customers over the next few years, future loads associated with new transfer customers are projected flat over the 10-year planning period. Only existing customers are assumed moving forward.

Retail electric load growth is also associated with redevelopment area customer growth in the southeastern portion of San Francisco. This growth includes City-controlled entities and areas managed by the City’s former redevelopment agency which are SFPUC power customers. Load forecasts are based on construction schedules of the various projects. Current redevelopment area customers include

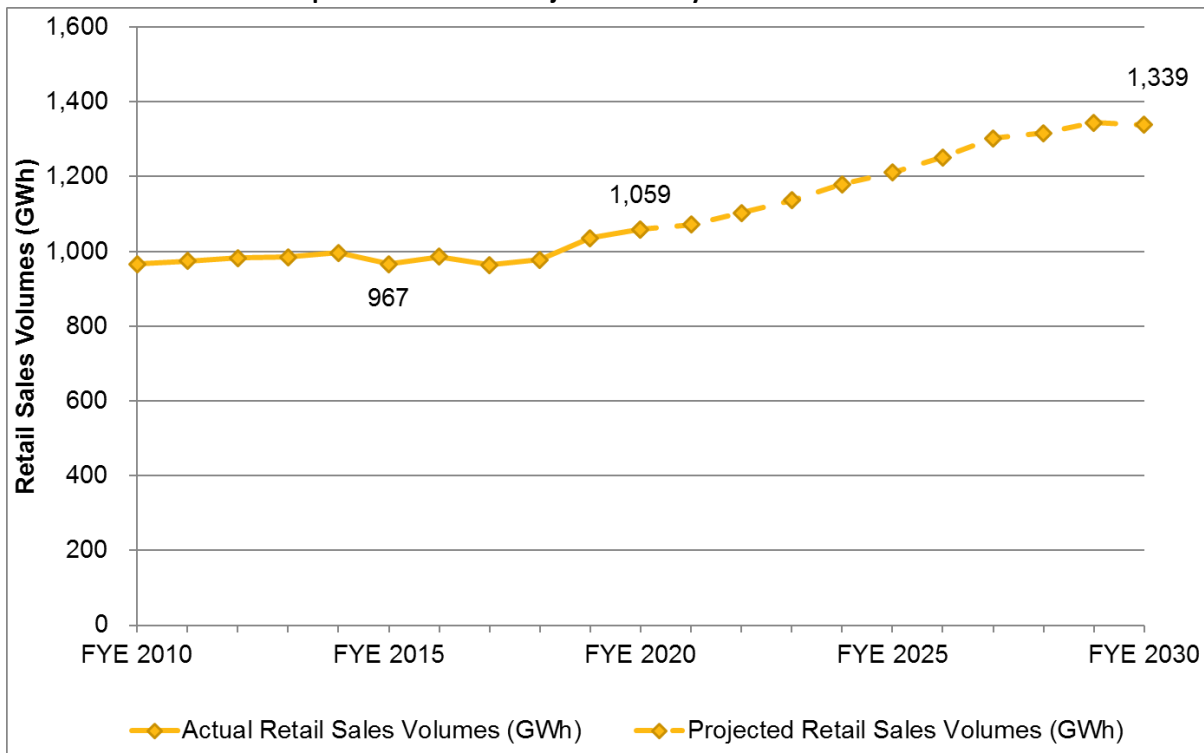
Hunters Point, Transbay Transit Center, Alice Griffith, Candlestick, Treasure Island/Yerba Buena Island, Pier 70, and HOPE SF (Potrero and Sunnydale).

Annual Power Rate Increases

Adopted rates for distinct customer classes are applied to electric load assumptions through FY 2019-20. The approved power rates as segmented by customer class include: General Use Municipal Electric (GUSE), enterprise municipal, and retail residential and commercial rates. Per City Charter, the SFPUC conducts a cost of service study for the Power Enterprise at least every five years. The last power cost of service study was completed in 2016 and provided an underlying rationale for Power Enterprise rates. GUSE rates are currently set below the cost of service but are projected to gradually increase and eventually reach the cost of service over time. GUSE rates are adopted for two years in the biennial budget cycle and have been adopted through FY 2019-2020. These GUSE rates are assumed to increase by 1 cent per kWh each year over the planning period. The next power cost of service study is scheduled to take place in FY 2020-21, and will result in recommendations that may affect power rates thereafter.

Enterprise Rates, which are paid by certain municipal customers, are consistent with comparable PG&E rates. Retail residential and commercial rates are currently set to be 10% below equivalent PG&E rates. Both Enterprise rates and retail rates are assumed to increase 3% annually over the 10-year projection period (see Graph C) because PG&E rates increase, on average, about 3% each year. The assumed rate increase is consistent with the historical actual rate increases observed over a five-year history.

Graph C: Historic and Projected Hetchy Power Sales Volumes



CleanPowerSF Sales Projections

CleanPowerSF sales projections are a function of projected electric loads and projected rates applied to those loads over the planning period. The sales projection in the 10 Year Financial Plan includes an incidental load growth of 0.5% per year but no additional customer enrollments.

Rate Changes

The 10 Year Financial Plan assumes no new customers and a rate change on March 2020 of approximately generation rates down 4%, PCIA up 20%, and a 1% generation rate discount. Subsequent rate changes are assumed each January starting January 2021.

Uses of Funds

Operating and Maintenance Expenditure Assumptions

The 10-Year Financial Plan for all enterprises assumes an annual 3% increase in operating and maintenance expenditures. This assumed annual increase represents a proxy for the long-term average annual rate of inflation, as well as an assumption for increased operation and program spending.

Operating and maintenance expenditures are primarily spent on salaries and fringe benefits for operating, administrative, and support personnel at the SFPUC and other City departments. Generally, these labor and fringe benefits make up a large part of budgeted expenses. In FY 2019-20, labor and fringe benefits were 34% of Water Enterprise, 40% of Wastewater Enterprise, 38% of Hetchy Enterprise, and 6% of CleanPowerSF budgeted expenses respectively. A significant portion of operating and maintenance expenditures for the Hetchy Enterprise and CleanPowerSF are purchases of power and related charges. These power purchases make up 41% of FY 2019-20 budgeted expenses for the Hetchy Enterprise and 83% for CleanPowerSF.

Capital Financing Expenditure Assumptions

A variety of capital financing decisions are made each time the SFPUC issues debt to finance capital projects and a number of similar assumptions are incorporated in the planning process to project future debt service. The key assumptions governing new capital financing projections are discussed below.

Debt service expenses in FY 2020-21 make up 37% of Water Enterprise expenses, 21% of Wastewater Enterprise expenses and 2% of Hetchy Enterprise expenses. These expenses are projected to grow over the planning period given the increasing cost of capital programs and the increased funding of these programs with long term debt.

Fixed- Interest Rates

Fixed-rate debt is a form of debt wherein the interest rate is fixed throughout the life of the debt. SFPUC assumes its fixed-rate debt to have a 5% interest rate for future debt financing. This assumption is based on the ten-year historical average of a municipal interest rate index.

The SFPUC's fixed-rate debt includes fixed-rate revenue bonds, fixed-rate direct loans, and short-term Notes. Fixed-rate revenue bonds typically have long repayment periods and market-rate interest levels. Fixed-rate direct loans, such as WIFIA and State Revolving Fund loans, provide financing at below-market interest rates and, in some cases, over longer terms. The current plan assumes one lump sum WIFIA loan disbursement in FY 2024-25. BANs are small short-term bonds that have fixed market interest rates and are often issued in advance of larger long-term bonds. The SFPUC assumes all long-

term fixed-rate debt, including WIFIA loans, to be amortized over a 30-year term. While 40-year debt will be considered, 30 years represents a more conservative assumption.

Variable Interest Rates

Variable-rate debt is a form of debt wherein the interest rate changes depending on market conditions throughout the life of the debt.

The SFPUC's variable-rate debt includes variable-rate revenue bonds and Commercial Paper. Variable rate bonds typically have long repayment periods and generally provide financing at lower costs than fixed-rate bonds. All variable-rate bonds are assumed to be amortized over a 25-year term. To mitigate interest rate risk and ensure financial sustainability, SFPUC's debt management policies stipulate that no more than 25% of any enterprise's long-term debt be in variable-rate mode. The Wastewater Enterprise is the only Enterprise that has long-term variable rate debt outstanding and it makes up 11% of the Enterprise's debt portfolio as of FY 2018-19.

Commercial Paper ("CP") is a form of short-term variable-rate debt that is refunded by revenue bonds. While CP has a maturity of 270 days or less, principal payments on maturing CP are usually funded by issuing a subsequent CP—a process referred to as "rolling" or "remarketing" the CP. Bank credit, typically in the form of a letter of credit or liquidity facility, is used to guarantee that funds are available to pay investors at each maturity in the unlikely event of a failed remarketing or inability of the SFPUC to fulfill CP repayment. Short-term debt interest rate is currently assumed to be 2% and is projected to reflect a 4% historical trend over the next three years.

Issuance Costs and Capitalized Interest

The Issuance costs is projected at 2% of the par amount and annual fees are based upon current fees escalated over the plan period. Issuance costs includes underwriting fees, legal fees, financial advisory fees, credit enhancement fees, and other miscellaneous fees typically associated with a bond financing. This assumption also includes the costs of short-term funding for projects by the Commercial Paper program. The projections assume that interest during project construction is funded out of debt proceeds for a period of 30 months (called "capitalized interest"). The fundamental principal behind capitalized interest is to not pass on capital financing costs to rate payers until the project is completed and placed into service.

Debt Service Reserve

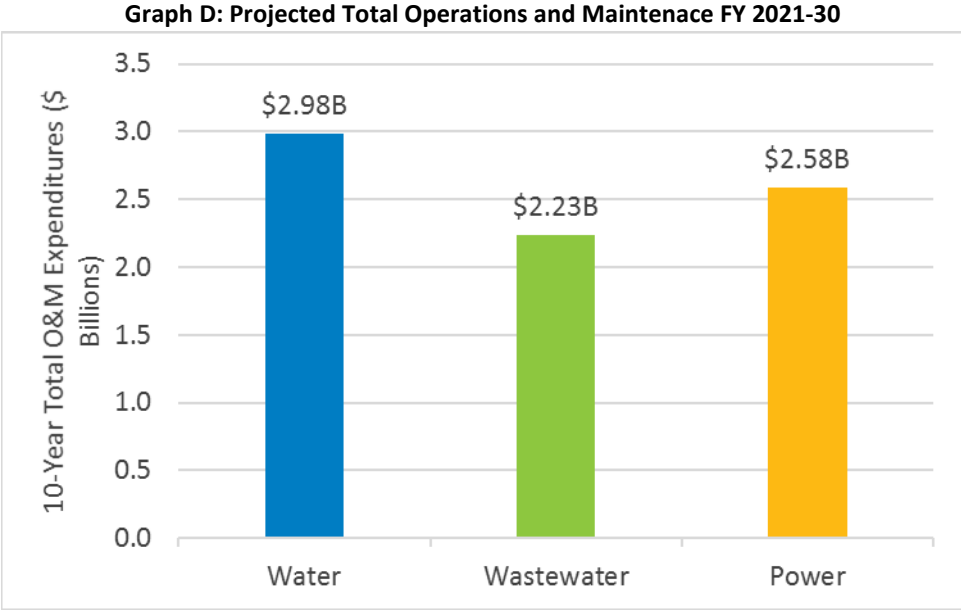
New debt issuances do not include funds for a debt service reserve fund because the strong AA credit quality of the SFPUC provides sufficient market assurances on debt service repayment. The Water, Wastewater, and Power indentures do not require a debt service reserve be funded.

Timing of Debt Issuance

The timing and cadence of debt issuance is typically reflective of the known financing needs of each enterprise over the first two-year period in the 10-Year Financial Plans. The debt issuance schedule reflects coordination with the needs of capital project managers and the reality of contract bidding and execution. The balance of authorized and unissued debt that is identified in the 10-Year Capital Plan is modeled in the Plan to be issued in the second and third years after appropriation and in equal 50% tranches.

10-Year Financial Plan

The 10-Year Financial Plan provides a view of resulting enterprise revenue requirements and forecasts annual sources and uses of funds over the 10-year planning period. Sources are projected operating revenue streams such as water, wastewater, and power sales, as well as non-operating and capital revenues such as state and federal grants or general obligation bonds from the City. Uses are projected expenses such as operations and maintenance, debt service, and revenue-funded projects. These cash flow projections help each enterprise evaluate its performance on various financial sustainability metrics established in SFPUC’s Financial Management Policies, including fund balance reserve levels, debt service coverage, and revenue-funded capital. Graph D displays the total operations and maintenance expenditures for each enterprise over the course of the 10 Year Plan.



Water Enterprise

The Water Enterprise’s financial forecast (Appendix A) results in an average annual retail rate increase of 5.9% annually over the Plan (Chart A) and an average annual rate increase of 5% for wholesale customers. Adopted retail rate increases through FY 2021-22 are on average 7.9%, while projected annual rate changes decline to 5.4% for subsequent years of the Plan, reflecting slower expenditure growth. Wholesale rates are not projected to increase until FY 2022-23 as the SFPUC plans to use the wholesale balancing account to keep wholesale rates stable.

Chart A: Adopted and Projected Water Enterprise Rate Increases

	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	Average Annual
Rate Increase - Retail	7.8%	7.9%	8.0%	7.0%	6.0%	6.0%	4.0%	4.0%	4.0%	4.0%	5.9%
Rate Increase - Wholesale	0.0%	0.0%	8.0%	6.1%	13.4%	4.9%	2.1%	5.4%	6.6%	3.4%	5.0%

Based on the Plan, the Water Enterprise’s fund balance reserve is projected to remain higher than the minimum level required by SFPUC’s Fund Balance Reserve Policy— 90 days or 25% of operating and maintenance expenses. Over the next 10 years, the Water Enterprise fund balance is projected to range

from a high of 63% of operating expenses in FY 2020-21 to a low of 26% in FY 2025-26. Maintaining higher levels of fund balance reserves provides the Water Enterprise flexibility to fund expenses using reserves instead of annual revenues and explains the negative annual net revenues projected over the next 10 years.

The Water Enterprise’s debt service coverage is projected to remain higher than minimum levels required by SFPUC’s Debt Service Coverage Policy—1.35x annual debt service for Indenture Coverage and 1.10x for Current Coverage. Over the next 10 years, Indenture Coverage is projected to range from a high of 1.80x in FY 2020-21 to a low of 1.40x in FY 2026-27. Current Coverage is projected to range from a high of 1.18x in FY 2025-26, FY 2026-27, and FY 2027-28 to a low of 1.11x in FY 2020-21. These debt service coverage levels provide additional assurance of financial flexibility and are markers of credit strength.

These higher levels of debt service coverage reflect that even as the need for capital financing increases, the Water Enterprise ensures financial sustainability by maintaining a large share of revenue-funded capital projects. The SFPUC aims to fund annual repair and replacement projects with revenues. The Water Enterprise’s revenue-funding is currently higher than minimum levels required by SFPUC’s Capital Financing Policies— 15% to 30% of the enterprise’s capital budget. Over the next 10 years, revenue-funding is projected to be on average 30% of the capital budget for the Water Enterprise.

Wastewater Enterprise

The Wastewater Enterprise’s financial forecast (Appendix B) results in an average annual rate increase of 7.5% annually over the Plan (Chart B). The Wastewater financial forecast follows many of the trends from the Water Enterprise, including an overall gradual increase in total wastewater charges over the 10-year period, primarily driven by annual rate increases. Adopted rate increases are 8% through FY 2021-22, while projected annual rate changes decline to 7.4% for subsequent years of the Plan.

Chart B: Adopted and Projected Wastewater Enterprise Rate Increases

	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	Average Annual
Retail Rate Increase	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	6.0%	6.0%	7.5%

Over the next 10 years, the Wastewater Enterprise’s fund balance reserve is projected to remain higher than the minimum level required by SFPUC’s Fund Balance Reserve Policy— 90 days or 25% of operating and maintenance expenses. Throughout the 10-year planning period, the Wastewater Enterprise fund balance is projected to range from a high of 108% of operating expenses in FY 2024-25 to a low of 36% in FY 2029-30. These fund balance reserve levels are unusually high because the Wastewater Enterprise had lower capital expenditures than projected in recent years as SSIP projects were delayed. The built-up fund balance will be used over time to fund future capital plans. Maintaining high levels of fund balance reserves gives the Wastewater Enterprise flexibility to fund expenses using reserves increasing rates further and explains the negative annual net revenues projected over the planning period.

The Wastewater Enterprise’s debt service coverage is projected to remain significantly higher than minimum levels required by SFPUC’s Debt Service Coverage Policy—1.35x annual debt service for Indenture Coverage and 1.10x for Current Coverage. Over the next 10 years, Indenture Coverage is projected to range from a high of 4.72x in FY 2020-21 to a low of 1.82x in FY 2029-30. Current Coverage is projected to range from a high of 2.49x in FY 2023-24 to a low of 1.40x in FY 2029-30.

These high levels of debt service coverage reflect that even as capital financing needs increase, the Wastewater Enterprise promotes financial sustainability by maintaining a significant share of its capital project financing with revenues. The Wastewater Enterprise’s amount of revenue-funding is currently within the range required by SFPUC’s Capital Financing Policies— 15% to 30% of the enterprise’s capital budget. Over the next 10 years, revenue-funding is projected to be on average 26% of the capital budget for the Wastewater Enterprise.

Hetch Hetchy Water and Power Enterprise

The financial forecast for the Hetch Hetchy Water and Power Enterprise (“Hetchy Enterprise”) (Appendix C) includes an average annual General Use Municipal Electric rate increase of 8.6% annually over the Plan (Chart C). The financial forecast projects an overall increase in power sales revenues over the 10-year period, primarily driven by customer load growth and annual rate increases.

Chart C: Adopted and Projected General Use Municipal Electric Rate Increases

	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	Average Annual
General Use Municipal Electric Rate Increase	12.7%	11.3%	10.1%	9.2%	8.4%	7.8%	7.2%	6.7%	6.3%	5.9%	8.6%

The Hetchy Enterprise’s fund balance is projected to remain higher than the minimum level required by SFPUC’s Fund Balance Reserve Policy— 90 days or 25% of operating and maintenance expenses. Over the next ten years, the Hetchy Enterprise’s fund balance reserve is projected average 34% of expenditures over the ten year period.

The Hetchy Enterprise’s debt service coverage is currently higher than minimum levels required by SFPUC’s Debt Service Coverage Policy—1.35x annual debt service for Indenture Coverage and 1.10x for Current Coverage. Over the next ten year, Indenture Coverage is projected to average 14.5x while Current Coverage is projected to average 3.2x over the projection period. .

These high levels of debt service coverage reflect that even as the need for capital financing increases, the Hetchy Enterprise encourages financial sustainability by maintaining a share of revenue-funded capital projects. The Hetchy Enterprise’s amount of revenue-funding is currently within the range required by SFPUC’s Capital Financing Policies— 15% to 30% of the enterprise’s capital budget. Over the next 10 years, revenue-funding is projected to be on average 17% of the capital budget for the Hetchy Enterprise. Incorporated into this Plan are the following: WSA Amendments, which shift power to water financing, as well as Proposition A power bond financing authority.

CleanPowerSF

After significant customer base expansion in FY 2018-19 and FY2019-20, the resulting ten year forecast shows maintenance and stability of power revenues. This a function of the Program having completed major phases of customer enrollment and the assumption of annual rate increases. The financial forecast for CleanPowerSF (Appendix D) projects fund balance to remain higher than the minimum level required by SFPUC’s Fund Balance Reserve Policy— 90 days or 25% of operating and maintenance expenses.

Sensitivities

Water and Wastewater Enterprises

Long-range financial forecasts, such as those used in the 10-Year Plan, can be difficult as a variety of scenarios can impact forecast accuracy. Drought, recessions, flooding, and various other factors can all lead to varying water sales volumes. To account for potential scenarios, this Plan reflects an upwards sensitivity of 0.5% average annual increases from the projected total volumes for FY 2019-20. It is important for the SFPUC to account for a wide range of scenarios to ensure prudence in financial planning, conservative rate projections and the promotion of financial sustainability.

The base case scenario models a 0.5% average annual decline in sales volumes from projected total volumes in FY2019-20 and is used as a benchmark for financial projections. The base case scenario uses historical trends to model conservative rate impact projections.

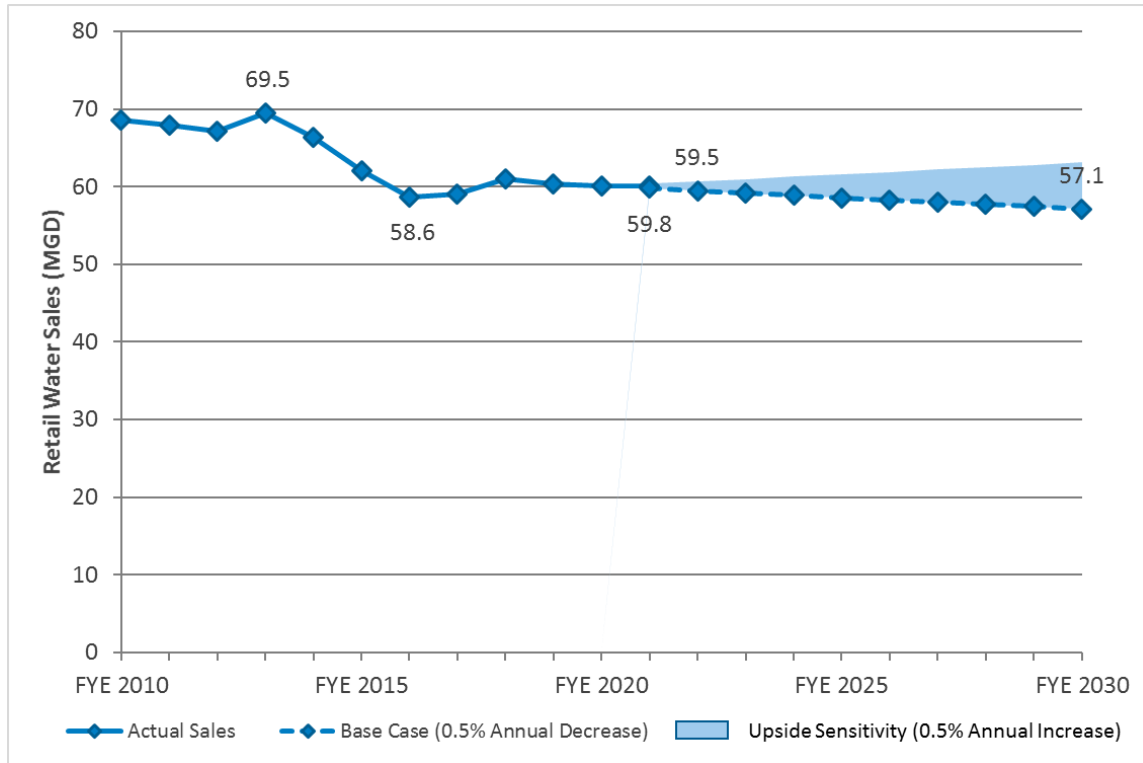
Upside Scenario

The upside sensitivity scenario holds all other variables constant while assuming an average 0.5% average annual increase from the projected total volumes sold for FY 2019-20. In order to ensure financial prudence for many possible scenarios, the Plan includes an upward sensitivity model for both retail volumes (shown below). Graph E shows the upward sensitivity scenario of a 0.5% average annual increase from projected total volumes sold for FY 2019-20.

Holding all things equal, the resulting retail water rate change, to achieve a similar base case fund balance target as a percentage of expenditures in FY 2029-30, is an average annual rate change of 4.9% over the ten years. Or one percent lower than the base case scenario average annual rate change of 5.9% over the same period.

Holding all things equal, the resulting wastewater rate change, to achieve a similar base case fund balance target as a percentage of expenditures in FY 2029-30, is an average annual rate change of 6.5% over the ten years. Or one percent lower than the base case scenario average annual rate change of 7.5% over the same period.

Graph E: Water Retail Sales Sensitivity(MGD)



Hetch Hetchy Water and Power Enterprise

The 10 Year Financial Plan base case assumes no new redevelopment customers in the first two years (FY 2020-21 and FY 2021-22) and assumes no new transfer customers throughout the course of the 10-Year Plan. The Plan assumes general use municipal rate rise by \$0.01 per year. Enterprise rates are modeled as PG&E’s October 2019 tariff rates escalated by 3% per year starting July 2020 (FY 2020-21).

Power Upside Scenario

The upside scenario assumes two new redevelopment customers starting FY 2022-23, which is a revenue impact of an additional \$100 million over the course of the 10 Year Financial Plan.

Power Downside Scenario 1

This downside scenario reduces one large customer account’s load forecast by 2% over the Plan. There is some near-term instability that may influence the accuracy of projections for FY 2020-21 and FY 2021-22. While the longer-term projection is still appropriate, a 2% reduction serves as a good conservative estimate for a possible downside scenario. The effect of this 2% loss in revenues is \$14 million.

CleanPowerSF

CleanPowerSF’s sensitivities examine several likely scenarios related to changes in the customer base, electric vehicle (EV) usage, and PG&E generation rates. Unlike the sensitivity scenarios of the Water and Wastewater Enterprises which could result in rate changes, CleanPowerSF’s scenarios are more relevant to resulting revenue impact. The base case for CleanPowerSF assumes a generic 0.5% load growth per

year. The following sensitivity scenarios were modeled for CleanPowerSF while holding all else equal with the base case of the Plan.

CleanPowerSF Upside Scenario 1

There are thirty-four customers on E20 rates who have not been enrolled into the program, who are estimated to have a combined annual load of around 690 GWh. CleanPowerSF is currently looking into enrolling these customers later this year. An upside scenario where CleanPowerSF enrolls the remaining E20 customers would result in roughly an additional \$518 million total revenues over the base case 10-Year Financial Plan, assuming the same rate growth assumptions in the base case.

CleanPowerSF Upside Scenario 2

This sensitivity assumes the 2030 goals outlined in the EV Roadmap for San Francisco from the Mayor's EV Working Group dated June 2019 are achieved. Revenue associated with EVs is a function of new electric demand specific to EVs and the projected rates applied to those EV charging electricity sales. For purposes of this forecast, the EV loads have been divided into residential EV load, and non-residential EV load depending on the use case and end use customer using CleanPowerSF residential and commercial load ratios. Electric generation rates for EV charging are projected to increase at an annual rate of 3% starting in FY 2020-21. The upside revenue from this scenario is \$231 million over the base case 10-Year Financial Plan.

Conclusion

The 10-Year Financial Plan provides insight into each enterprise's financial health through outlining projected revenues, expenditures, fund balances, and financial ratios at the SFPUC. To ensure financial stability, one of SFPUC's Strategic Plan goals, this Plan estimates future revenue requirements so as to identify necessary utility rates. Through balancing capital financing with larger revenue-funded shares, the SFPUC strives to minimize future financial hardship.

The Plan for 2020-21 to 2029-30 highlights the large capital improvements that makeup huge portions of all three enterprise expenditures. The financial health of the Wastewater Enterprise is particularly significant in this iteration of the Plan as SSIP continues moving forward. Dam safety, water supply diversification and the continued challenge of keeping up with demand and growing infrastructure needs in the Water Enterprise also heavily inform this version of the 10-Year Financial Plan update. The SFPUC will continue to lead innovative and sustainable financial strategies while addressing these challenges. The SFPUC will continue to work to ensure these issues are addressed in ways that align with the department's mission and core values.

Appendices

Appendix A: Water Enterprise 10-Year Financial Forecast- Base Case

(\$M)	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Beginning Fund Balance	\$ 223.5	\$ 198.0	\$ 169.9	\$ 144.1	\$ 118.0	\$ 102.5	\$ 92.7	\$ 101.0	\$ 125.7	\$ 136.7
Sources										
Retail Water Sales	319.3	343.0	368.9	393.0	414.8	437.9	453.4	469.6	486.3	503.6
Wholesale Water Sales	258.4	257.1	274.2	290.8	325.0	340.9	347.0	363.7	384.7	396.4
Other Miscellaneous Income	216.5	64.8	64.7	64.7	64.6	64.7	65.0	65.8	67.1	67.9
Total Sources	\$ 794.1	\$ 665.0	\$ 707.8	\$ 748.5	\$ 804.4	\$ 843.4	\$ 865.5	\$ 899.0	\$ 938.1	\$ 967.9
Uses										
Operations & Maintenance	267.7	269.8	278.6	285.7	296.3	305.1	313.6	321.2	328.6	337.9
Hetchy Transfer	47.3	48.6	47.6	49.1	50.6	52.1	53.7	55.2	56.8	58.5
Debt Service	304.1	317.7	342.9	368.9	397.5	414.6	425.9	444.4	472.8	503.9
Revenue-Funded Projects	202.2	58.6	67.1	73.6	78.6	83.6	65.1	56.6	72.3	63.3
Total Uses	\$ 821.3	\$ 694.7	\$ 736.2	\$ 777.2	\$ 823.0	\$ 855.4	\$ 858.3	\$ 877.5	\$ 930.5	\$ 963.5
Net Revenues	\$ (27.2)	\$ (29.7)	\$ (28.4)	\$ (28.8)	\$ (18.5)	\$ (11.9)	\$ 7.2	\$ 21.6	\$ 7.6	\$ 4.4
Ending Fund Balance	\$ 198.0	\$ 169.9	\$ 144.1	\$ 118.0	\$ 102.5	\$ 92.7	\$ 101.0	\$ 125.7	\$ 136.7	\$ 144.0
Rate Increase - Retail	7.8%	7.9%	8.0%	7.0%	6.0%	6.0%	4.0%	4.0%	4.0%	4.0%
Rate Increase - Wholesale	0.0%	0.0%	8.0%	6.1%	13.4%	4.9%	2.1%	5.4%	6.6%	3.4%
Fund Balance as % of Op. Expenses	63%	53%	44%	35%	30%	26%	28%	33%	35%	36%
Debt Service Coverage (Current)	1.11	1.12	1.12	1.13	1.16	1.18	1.18	1.18	1.17	1.14
Debt Service Coverage (Indenture)	1.80	1.71	1.62	1.52	1.46	1.43	1.40	1.41	1.44	1.41
Revenue-Funded % of Capital	30%									

Appendix B: Wastewater Enterprise 10-Year Financial Forecast – Base Case

(\$M)	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Beginning Fund Balance	\$ 203.8	\$ 188.4	\$ 183.7	\$ 187.9	\$ 212.9	\$ 237.5	\$ 232.0	\$ 204.2	\$ 169.7	\$ 130.3
Sources										
Sewer Charges	367.7	395.1	424.5	456.0	490.0	526.8	566.2	602.9	635.8	670.7
Interest Income	5.1	4.7	4.5	4.7	5.3	6.1	5.9	5.2	4.5	3.5
Federal Bond Interest Subsidy	4.5	4.0	4.0	3.9	3.7	3.6	3.4	3.2	3.1	2.9
Other Miscellaneous Income	10.5	10.1	10.6	10.7	10.8	10.8	10.9	11.0	11.1	11.2
Total Sources	\$ 387.9	\$ 413.9	\$ 443.6	\$ 475.2	\$ 509.8	\$ 547.3	\$ 586.5	\$ 622.4	\$ 654.6	\$ 688.2
Uses										
Operations & Maintenance	195.2	201.9	207.7	213.5	219.5	225.7	232.1	238.7	245.5	252.5
Debt Service	84.3	91.2	103.4	105.9	132.3	191.2	243.7	277.2	304.6	339.2
Revenue-Funded Projects	123.7	125.6	128.4	130.8	133.3	135.9	138.5	141.1	143.8	146.6
Total Uses	\$ 403.2	\$ 418.7	\$ 439.4	\$ 450.2	\$ 485.2	\$ 552.8	\$ 614.3	\$ 656.9	\$ 693.9	\$ 738.2
Net Revenues	\$ (15.3)	\$ (4.8)	\$ 4.2	\$ 25.0	\$ 24.7	\$ (5.5)	\$ (27.8)	\$ (34.6)	\$ (39.3)	\$ (50.0)
Ending Fund Balance	\$ 188.4	\$ 183.7	\$ 187.9	\$ 212.9	\$ 237.5	\$ 232.0	\$ 204.2	\$ 169.7	\$ 130.3	\$ 80.4
Retail Rate Increase	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	6.0%	6.0%
Fund Balance as % of Op. Expenses	97%	91%	90%	100%	108%	103%	88%	71%	53%	32%
Debt Service Coverage (Current)	2.31	2.34	2.30	2.49	2.20	1.79	1.60	1.51	1.45	1.38
Debt Service Coverage (Indenture)	4.72	4.41	4.07	4.26	3.81	3.11	2.65	2.31	2.05	1.79
Revenue-Funded % of Capital	26%									

Appendix C: Hetch Hetchy Water and Power Enterprise 10-Year Financial Forecast – Base Case

(\$M)	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Beginning Fund Balance	\$ 43.6	\$ 55.8	\$ 69.1	\$ 65.9	\$ 69.6	\$ 67.4	\$ 65.3	\$ 71.1	\$ 72.0	\$ 72.1
Sources										
Power Sales - Municipal General Fund Ra	32.2	36.3	40.1	43.8	47.4	51.1	54.8	58.5	62.2	65.9
Power Sales - Municipal Enterprise Rates	101.7	106.0	111.1	118.0	124.8	132.0	139.8	145.0	151.3	154.8
Power Sales - Retail	15.1	16.4	18.2	22.8	25.8	30.1	34.7	36.4	39.7	40.8
Power Sales - Wholesale	15.3	15.0	14.5	13.8	13.3	12.8	12.7	12.9	13.1	13.2
Gas & Steam Sales	11.2	11.6	11.9	12.3	12.6	13.0	13.4	13.8	14.2	14.6
Water Sales	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Hetchy Transfer	47.3	48.6	47.6	49.2	50.7	52.3	54.0	55.7	57.5	59.3
Other Misc Income	14.1	12.1	11.0	11.2	11.5	11.8	12.0	12.4	12.8	13.1
Total Sources	\$ 237.3	\$ 246.4	\$ 254.8	\$ 271.4	\$ 286.6	\$ 303.6	\$ 321.9	\$ 335.2	\$ 351.3	\$ 362.3
Uses										
Operations & Maintenance	216.8	224.4	232.9	242.3	252.2	263.1	268.6	279.6	288.3	297.2
Debt Service	4.2	4.1	4.1	4.3	15.6	21.5	26.4	33.8	41.9	49.4
Revenue-Funded Projects	4.1	4.7	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Uses	\$ 225.1	\$ 233.1	\$ 257.9	\$ 267.6	\$ 288.8	\$ 305.7	\$ 316.0	\$ 334.4	\$ 351.2	\$ 367.7
Net Revenues	\$ 12.2	\$ 13.3	\$ (3.2)	\$ 3.7	\$ (2.3)	\$ (2.1)	\$ 5.9	\$ 0.8	\$ 0.1	\$ (5.4)
Ending Fund Balance	\$ 55.8	\$ 69.1	\$ 65.9	\$ 69.6	\$ 67.4	\$ 65.3	\$ 71.1	\$ 72.0	\$ 72.1	\$ 66.7
Fund Balance as % of Power Op. Expen	33%	40%	36%	36%	34%	31%	34%	32%	32%	28%
Debt Service Coverage (Current)	4.15	5.14	5.44	6.74	2.21	1.88	2.02	1.64	1.50	1.31
Debt Service Coverage (Indenture)	23.85	29.94	35.51	28.82	7.12	5.25	4.66	3.82	3.24	2.79
Revenue-Funded % of Capital	17%									

Appendix D: CleanPowerSF 10-Year Financial Forecast- Base Case

(\$M)	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Beginning Fund Balance	\$ 55.6	\$ 66.7	\$ 68.3	\$ 68.5	\$ 78.7	\$ 94.8	\$ 119.0	\$ 148.1	\$ 179.4	\$ 195.0
Sources										
Power Sales	227.2	231.6	239.7	248.0	256.6	265.6	274.8	284.4	294.3	304.5
Interest Earnings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Sources	\$ 227.2	\$ 231.6	\$ 239.7	\$ 248.0	\$ 256.6	\$ 265.6	\$ 274.8	\$ 284.4	\$ 294.3	\$ 304.5
Uses										
Supply	187.2	200.2	207.7	205.3	207.2	210.1	214.0	220.5	227.2	234.1
Operating Costs	26.6	26.7	27.4	28.1	28.8	29.5	30.3	31.1	31.9	32.7
Debt Service	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revenue-Funded Projects	2.3	3.0	4.5	4.4	4.6	1.7	1.5	1.6	19.5	42.7
Total Uses	\$ 216.0	\$ 230.0	\$ 239.5	\$ 237.7	\$ 240.6	\$ 241.3	\$ 245.7	\$ 253.1	\$ 278.6	\$ 309.5
Net Revenues	\$ 11.1	\$ 1.6	\$ 0.1	\$ 10.3	\$ 16.0	\$ 24.2	\$ 29.1	\$ 31.3	\$ 15.7	\$ (5.0)
Ending Fund Balance	\$ 66.7	\$ 68.3	\$ 68.5	\$ 78.7	\$ 94.8	\$ 119.0	\$ 148.1	\$ 179.4	\$ 195.0	\$ 190.0
Fund Balance as % of Operating Expenses	31%	30%	29%	34%	40%	50%	61%	71%	75%	71%
Revenue-Funded % of Capital	100%									