



San Francisco
Water Power Sewer

San Francisco Public Utilities Commission 10-Year Financial Plan

FY 2023-24 to FY 2032-33

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

February 2023

Financial Planning, SFPUC

Table of Contents

Introduction & Executive Summary	3
Financial Management Policies	6
Background	6
Capital Financing Policies	6
Debt Service Coverage Policy.....	6
Capital Financing Policy.....	7
Risk Management Policies	7
Fund Balance Reserve Policy.....	7
Ratepayer Assurance Policy	8
Revenue Forecasts	9
Volumetric Sales Assumptions.....	9
Introduction	9
Drought Assumptions	9
Pandemic Recovery Assumptions	10
Customer Growth Assumptions.....	11
Conservation & Efficiency Assumptions	11
Price Elasticity Assumptions.....	12
Water and Wastewater Sales Projections	12
Hetch Hetchy Power Sales Projections	14
CleanPowerSF Sales Projections	16
Adopted Rate Changes.....	16
Non-Rate Revenues	18
Uses of Funds	19
Operations and Maintenance Expenditure Assumptions.....	19
Capital Expenditure Assumptions	21
10-Year Capital Plans	21
Capital Projects’ Impact on Cash Flow and Rates	22
Capital Financing Expenditure Assumptions.....	23
Annual Cash Expenditures	25
Water Enterprise.....	25

Wastewater Enterprise 26

Hetch Hetchy Water & Power Enterprise 27

CleanPowerSF 28

10-Year Financial Plan 30

Water Enterprise..... 30

Wastewater Enterprise 31

Hetch Hetchy Water and Power 33

CleanPowerSF 33

Affordability 34

 Measuring Utility Affordability 34

 Ensuring Utility Affordability..... 40

Sensitivities 42

 All Enterprises 42

 Alternative Capital Improvement Program Expenditures 42

 Water and Wastewater Enterprises 42

 Timing of Drought Declaration & Recovery 42

 Use of Operational Execution Factors 42

 Power Enterprise 43

 Power Supply Expenditures 43

 Hetch Hetchy Power 43

 Sensitivity to Increased Volume Growth 43

Appendices..... 44

 Appendix A: Water Enterprise 10-Year Financial Plan..... 44

 Appendix B: Wastewater Enterprise 10-Year Financial Plan 45

 Appendix C: Hetch Hetchy Water and Power Enterprise 10-Year Financial Plan 46

 Appendix D: CleanPowerSF 10-Year Financial Plan 47

Introduction & Executive Summary

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 Financial Plan (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 Mayor and Commission policies, goals, and objectives.

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 rate changes. 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.

Utility sales volumes are a major driver of revenues in the SFPUC's current highly volumetric rate schedules. Sales volumes are influenced by many external factors including the pandemic recovery, drought, recession, and long-term trends such as population growth and price elasticity. In general, sales volumes are expected to rebound from the pandemic (in all Enterprises) by FY 2023-24, and from the impact of the drought (in Water and Wastewater) by FY 2025-26 (a two year recovery from the drought ending in FY 2023-24). Faster recoveries to higher sales volumes would allow for lower rate increases in future plans. After that, long-term trends lead to slightly increasing or decreasing sales volumes, depending on the Enterprise. Some potential changes to the rates structure, including policy choices to further decouple revenues from sales volumes, will be discussed during the upcoming 2023 Water & Wastewater Retail rate study, including an extension of the existing drought surcharge and increasing the portion of the Enterprises' revenues collected from fixed monthly charges.

Operating expenditure projections are based on proposed operating and programmatic budgets for FY 2023-24, escalated for the remaining nine years. In Water and Wastewater, "execution factors" are applied to the budgets to reflect the historic percentage of budgets which goes unspent. This improvement to the modelling reduces the need to raise rates for expenditures which do not occur. In Hetch Hetchy Power and CleanPowerSF, operating expenditures have been revised to reflect significant increases in power market prices and delivery charges. Moreover, both business lines have increased their budgeted power supply contingency to cover any unexpected cost overages during the year, reflecting continued energy market dislocation.

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*

Capital expenditures reflect the annual appropriations from the capital plan for revenue-funded projects, and annual principal and interest payments on bonds issued to fund debt-funded projects. The SFPUC's Capital Finance Team forecasts the timing of debt issuance based on spending need, resulting in a lag between budget appropriation and the cash flow need for debt service. Nonetheless, the enormous proposed Capital Improvement Plans, especially in Wastewater, are a major driver of increased costs over the ten years.

Forecasted rates are set to cover all expenses described above and meet all financial policy targets for fund balance reserve and debt service coverage. Rates forecasted in the Plan are subject to change prior to their final approval. The following table shows the projected rate increases for FY 2023-24 and the average rate increase over the 10-year period.

Table 1: Forecasted Rate Changes, FY 2023-24 through FY 2032-33

Enterprise	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 3030	FYE 2031	FYE 2032	FYE 2033	Annual Avg.
Retail Water	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	3.9%
Wholesale Water	11.6%	0.0%	0.0%	0.0%	4.5%	3.6%	2.8%	0.2%	0.5%	2.2%	2.5%
Wastewater	9.0%	9.0%	9.0%	10.0%	10.0%	10.0%	9.0%	9.0%	5.0%	5.0%	8.5%
Hetch Hetchy Power	14.0% ¹	10.0%	9.0%	8.5%	7.0%	6.0%	4.0%	3.0%	3.0%	3.0%	6.7%
CleanPowerSF Generation²	15.0%	0.0%	0.0%	0.0%	-1.0%	-1.0%	-1.0%	0.0%	0.0%	0.0%	1.1%

Significant energy cost increases drive up the short-term power purchase expenses and associated rate outlook for CleanPowerSF and Hetch Hetchy Power, though rate increases are forecasted to be lower in the outer years of the plan. For Wastewater, and to a lesser extent Hetch Hetchy Power, the significant cost increases associated with the capital plan put upward pressure on the rates throughout the ten-year period.

The SFPUC's Financial Plan includes a review of customer utility bill affordability, especially as it relates to the agency's commitment to racial equity. While the proposed Plan meets the Commission's approved affordability level of service goal that the average combined water and wastewater bill remain under 2.5% of Median Household Income, additional metrics are under development to better assess the impact of utility bills on customers and guide the development of programs to address identified need. The proposed Plans balance affordability goals with the need to appropriately fund the utility's

¹ Hetch Hetchy Power rates for FY 2023-24 were approved via Commission Resolution 22-0095. Rates shown are for retail, non-municipal customers.

² CleanPowerSF rate increases shown refer only to the generation portion of the bill. CleanPowerSF customers also pay PG&E delivery charges and fees. A 15.0% rate increase on the generation portion of the bill represents an approximate 5% increase on the total bill of an average residential customer.

operations to maintain long-term financial stability in the face of aging infrastructure, cost uncertainty, climate change, and operational challenges.

Financial Management Policies

Background

The Commission has adopted various policies that set requirements and parameters guiding SFPUC financial activities and decision-making. 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, the policies were revised following a comprehensive study 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. The SFPUC's Financial Policies can be found on its website, at <https://sfpuc.org/about-us/policies-plans/financial-plans-and-policies>.

SFPUC Key Financial Policies

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

The proposed 10-Year Financial Plan is compliant with all SFPUC policies. In particular, rate increases are set to comply with the Debt Service Coverage and Fund Balance Reserve policies to ensure sufficient funds are available to fund the agency's activities. Please refer to the appendices for the specific metric values for each policy for each fiscal year.

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. Debt service ratios higher than 1.00x 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 1.25x annual debt service and; 2) Current Coverage, which includes only current year annual revenues, must equal a minimum of 1.00x 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 1.35x annual debt service** and **Current Coverage shall equal a minimum of 1.10x annual debt service**.

The City's Charter requires the SFPUC to maintain "high bond ratings". Most highly rated bond issuers with ratings in the double-A category (i.e., Aa or AA), have actual debt service coverage levels that exceed these planning levels. For example, based on Medians published by Moody's Investors Service, Aa-rated water and wastewater bond issuers have annual debt service coverage from 1.70x to 2.00x.

Capital Financing Policy

Adopted by the Commission in March 2017, the Capital Financing Policy requires that a minimum ranging between **15 percent to 30 percent 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. On the other hand, pay go funding causes current ratepayers to bear the full cost of projects financed in any one year. Therefore, using revenue funding for recurring infrastructure repair and replacement projects is a prudent and sustainable approach to funding ongoing capital investments. And funding projects that will be built and then used over many years with debt, helps to spread the rate burden to create intergenerational equity. 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 April 2022, the Fund Balance Reserve Policy requires that Water, Wastewater, and Hetch Hetchy Power maintain a Fund Balance Reserve **minimum equal to 90 days cash on hand or 25 percent of annual Operations and Maintenance Expenses** (including programmatic projects, excluding debt service and revenue-funded capital) over the 10-year planning period, while CleanPowerSF is required to maintain an operating reserve fund with a **minimum equal to 150 days cash on hand or 41 percent of annual operating expenditures and a target equal to 180 days cash on hand or 49 percent of annual operating expenditures** (including operations and maintenance and personnel costs in annual funds, as well as power supply costs and related expenditures, but excluding contributions to the reserve fund) over the 10-year planning period.

The SFPUC faces several risks to revenue stability, including multi-year rate setting, economic recession, regulatory changes, 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.

While CleanPowerSF operates under much of the same legal and policy framework as the SFPUC's other utility services, the program is also uniquely reliant on a volatile power supply market and faces competitive pressures that reduce its flexibility for rate increases. Moreover, CleanPowerSF's credit

impacts not only lending terms, but also third-party power supply contracts, a key tool to mitigate market exposure. As such, the Fund Balance Reserve Policy was revised and adopted by the Commission in April 2022 for CleanPowerSF's reserves to be higher than in other utilities. Moreover, if CleanPowerSF's fund balance reserve ends the fiscal year below the target equal to 180 days cash on hand or 49 percent of annual operating expenditures, it must set budgets and rates to build back up to the target within three fiscal years.

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 also ensures operating cost containment, to the extent that costs are determined by the SFPUC. Budget proposals that increase these costs above the level of inflation must be deemed necessary, as they impact prudent use of ratepayer funds. The Policy also ensures this prudent use of ratepayer funds through carrying out asset management in a cost-effective manner and structuring its workforce effectively and efficiently to minimize personnel costs.

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.

Revenue Forecasts

Volumetric Sales Assumptions

Introduction

Because the SFPUC's rate structures are highly volumetric, changes to water and power sales volumes directly impact total revenues. Similarly, billed wastewater volumes are calculated based on metered water usage, so wastewater revenues are driven by changes to water sales.

To mitigate this variability, the SFPUC has begun to change its rate structure somewhat in recent years to decouple changes in volumetric usage from revenues. For example, retail wastewater rates had no fixed component prior to FY 2018-19; over the subsequent four years a small fixed charge was added – with an equivalent reduction in the volumetric charge – that currently recovers 5% of wastewater costs. Of particular note is the addition of the drought surcharge for retail water and wastewater sales volumes, which automatically increases rates by the percentage call for conservation to ensure revenue stability when usage drops during a drought. However, there are downsides to fixed charges. Most notably, when a bill does not vary based on usage, it removes an incentive to conserve, and can make customers feel as if they have no ability to control their costs. These tradeoffs are addressed during the SFPUC's required periodic rate studies, but at this time, accurately forecasting volumetric sales is important to determining the required rate increases.

The below sections discuss some of the factors included in the volumetric forecasts for each enterprise. Generally, the 10-Year Financial Plans take a conservative financial approach by assuming that sales volumes will be on the lower side, which requires higher rate increases to collect the same amount of revenue. This perspective aims to avoid presenting an overly optimistic scenario with unrealistically low rates. Other forecasts developed by the SFPUC may be designed for other purposes – for example, Water's Urban Water Management Plans or Power's Integrated Resource Plans take a conservative supply planning approach by assuming higher growth, avoiding presenting an overly optimistic plan with unrealistically low supply needs. These differences reflect the different purposes of these tools.

Beyond long-term sales volume trends, recent events have made volumetric forecasts particularly challenging. On the water and wastewater side, drought restrictions and rainfall both reduce water consumption, impacting both water sales and billed wastewater volumes. Economic activity is a major variable driving increased or decreased utility usage, with the impact of the COVID-19 pandemic continuing to linger in many sectors in San Francisco.

The proposed 10-Year Financial Plan incorporates all these drivers into a single baseline sales forecast for each Enterprise. During plan development, staff model alternative scenarios with different assumptions to ensure that the proposed schedule of expenditures and rate increase is resilient to a range of outcomes. Some of these are discussed in the "Sensitivities" section below.

Drought Assumptions

In November 2021, the Commission declared a water shortage emergency, calling for a 10 percent voluntary water reduction across its service territory, and increased the call for conservation to 11% in

May 2022. San Francisco’s Water Shortage Contingency Plan dictates how this percentage reduction is shared between retail and wholesale customers; as of today, retail customers are requested to voluntarily conserve water by 5% compared to FY 2019-20 actuals, while wholesale customers are requested to conserve water by 16%.

In accordance with the adopted water and wastewater retail rates, this call for conservation triggered the imposition of a drought surcharge of 5 percent on the volumetric portion of retail water and wastewater rates. The drought surcharge went into effect in April 2022 and will end when the SFPUC rescinds the water shortage emergency declaration. Currently, there are no surcharges or penalties in effect for wholesale water customers.

While it is difficult to tease out the impacts of drought-related conservation from the impacts of the COVID-19 pandemic, retail water customers are currently meeting and exceeding the call for conservation. Wholesale customers collectively are not – through November 2022, wholesale sales were only 10% below FY 2019-20 actuals, rather than their budgeted 16%.

The 10-Year Financial Plan assumes that the drought will last through the end of FY 2023-24, and that customers will continue conserving at their current level (exceeding calls for conservation for retail customers and conserving but not hitting their targets for wholesale). Beginning in FY 2024-25, volumes will begin to rise again, returning to their pre-drought levels over two fiscal years, by the end of FY 2025-26.

Pandemic Recovery Assumptions

Utility usage dropped precipitously during the COVID-19 pandemic. Closed offices and businesses in San Francisco, a commuter-oriented city, meant a lower demand for water, power, and sewer services. Increased residential usage with the shift to working from home only slightly offset these trends. When compared to pre-pandemic averages (March 2018-June 2019), retail water usage during the COVID-19 shelter-in-place orders (March 2020-June 2021) for commercial customers was down 35 percent, municipal customers’ usage decreased by 26 percent, and residential customers had 3 percent higher water usage. Usage by wholesale water customers during this timeframe varied depending on the residential vs. commercial composition of each utility, but was overall 7% higher than during the pre-pandemic period. Total overall Hetchy power loads were down 7 percent as of October 2022 from FY 2018-19, or pre-pandemic levels, and CleanPowerSF commercial loads were down 14 percent as of January 2022.

Usage has gradually increased since June 2021, when the City announced its re-opening from the COVID-19 shelter-in-place order, but growth has been slow and has yet to reach pre-pandemic levels, especially in the non-residential sector. Based on trendlines in time spent away from home and time spent in offices, published in the City’s State of the Reopening reports, the 10-Year Financial Plan forecasts that changes in usage related to COVID will persist through the end of FY 2023-24, at which point usage will return to a “new normal” with some of the observed COVID-related changes lingering. Specifically, for water and wastewater, we forecast that in FY 2024-25, retail residential usage will be 0.75% higher than pre-COVID, commercial will be 8.75% lower, municipal will be 6.5% lower, and wholesale water usage will be 1.75% higher than pre-COVID.

Hetch Hetchy Power sales are mostly to municipal customers, where recovery to pre-pandemic levels has been wide-ranging and uneven. To account for this variation, COVID-related impacts are modelled on an individual department level based on the expected recovery of each individual department. Some customers have already reached or exceeded their pre-pandemic volumes – e.g., San Francisco Unified School District, Port, and cruise ships. For the remainder, tourism-related usage such as convention centers and SFO International Airport is expected to recover more slowly than municipal usage serving San Francisco residents, such as libraries or parks. While the timelines vary for each customer, all Hetch Hetchy sales are forecasted to return to a “new normal” approximately 2 percent below pre-pandemic levels by FY 2023-24 to FY 2025-26, depending on the department’s recovery trend.

Customer Growth Assumptions

In water, wastewater, and CleanPowerSF, only minimal growth in usage is assumed due to population and job growth. For water and wastewater, the 10-Year Plan incorporates the assumed population and job growth assumptions from the SFPUC’s 2020 Urban Water Management Plan and BAWSCA’s 2022 Regional Water Demand & Conservation Study,³ which average around 0.6% annually for retail residential, 0.7% annually for retail commercial, and 0.5% annually for wholesale water during the 10-year period. CleanPowerSF usage is assumed to grow by 0.9% annually on average over the planning period.

Hetch Hetchy Power is expanding its customer base significantly, and this growth is much greater than the other business lines. For conservatism during the next fiscal year, the plan does not assume any new customers come online, even those that are scheduled to start service; however, new residential, commercial, and municipal customers are added to the plan beginning in FY 2024-25. As such, loads grow by an average annual rate of 4.0% over the ten-year planning period. Further details on the specific composition of this growth are described below.

Conservation & Efficiency Assumptions

Beyond conservation associated with the drought, passive conservation from the gradual replacement of fixtures to water-efficient ones required by new plumbing codes is assumed to reduce per capita water usage over time. These assumptions are sourced from the SFPUC’s 2020 Urban Water Management Plan and reduce usage by 0.1%-0.2% annually for different sectors during the 10-year forecast period.

Less information is available regarding conservation’s impact on power usage, and it may be offset by the growth in electric appliances and San Francisco’s mandate that new homes be all-electric (as opposed to using natural gas). This is an area that staff will continue to revisit in coming years to refine the volume forecasts for Hetch Hetchy Power and CleanPowerSF. At this time, the effects of

³ While these growth assumptions are based on water planning documents, it’s important to note that they do not exactly match those forecasts, which start from a “normalized” base year with no drought or economic shocks. Because our forecast begins from FY 2022-23 projections, the growth rate is applied to a much lower base, and therefore results in lower total volumes.

electrification and efficiency gains are expected to roughly equal each other, with no change to usage per customer forecasted as a result.

Price Elasticity Assumptions

Basic supply and demand economics operate under the principal that as the price of a good or service increases, people will purchase less of it. Price elasticity is a measurement of the change in demand for a good or service in relation to changes in its price. Different goods can be more or less elastic, with demand for elastic goods decreasing more rapidly as prices increase and demand for inelastic goods holding more steady as prices change. Utility services are generally assumed to be a fairly inelastic good because they are necessary and do not have a readily available alternative. As such, increases in price typically do not have a significant impact on the amount of the utility volumes customers use. Moreover, San Francisco's water and wastewater usage is already the lowest in the state of California, averaging 38 gallons per person per day for the 12-month period ending December 2022. With usage this low, there is a floor beyond which most households are unable to conserve without drastic reductions to their quality of life.

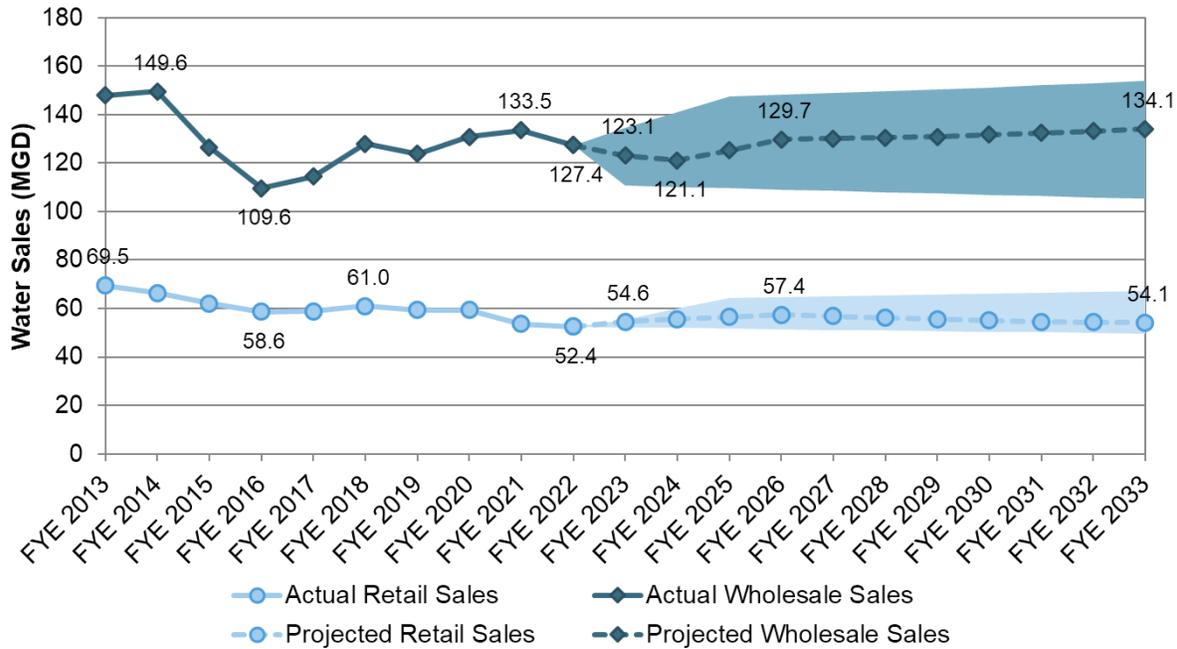
Despite these considerations, it is prudent to assume that the rate increases forecasted in the 10-Year Financial Plan will cause some customers to conserve water. Because most customers pay attention only to their total bill, we are forecasting the impact of price elasticity based on the combined water and wastewater bill increase for an average residential customer. Using data from the SFPUC's 2020 Urban Water Management Plan, we assume that residential users have a price elasticity of -1.8%, commercial usage has a price elasticity of -2%, and municipal usage has a price elasticity of -2.45%. This means, for example, that a 10% increase in the combined water and wastewater retail rates would decrease residential usage by 1.8%.

Again, less information is available on the impact of price elasticity on electricity usage. Moreover, electric rate schedules are much more complex than water and wastewater, with time-of-use periods, seasonality, and multiple rate schedule options for each customer class. Customers may respond to price increases by changing their usage patterns or rate choice rather than reducing total usage. At this time, CleanPowerSF and Hetch Hetchy Power volumetric forecasts do not incorporate price elasticity. We will continue to research this area to improve our forecasts.

Water and Wastewater Sales Projections

Figure 1 shows the historic and forecasted retail and wholesale sales volumes for the prior and future 10 years. Shaded areas around the dashed forecast line reflect upward and downward sensitivities in the sales forecasts. In particular, the upside sensitivity reflects growth up to the levels forecasted in SFPUC's 2020 Urban Water Management Plan and the BAWSCA 2022 Regional Water Demand and Conservation Projections. High and low points in the trendlines are labelled.

Figure 1: Historic and Projected Retail and Wholesale Water Sales Volumes (Millions of Gallons per Day)

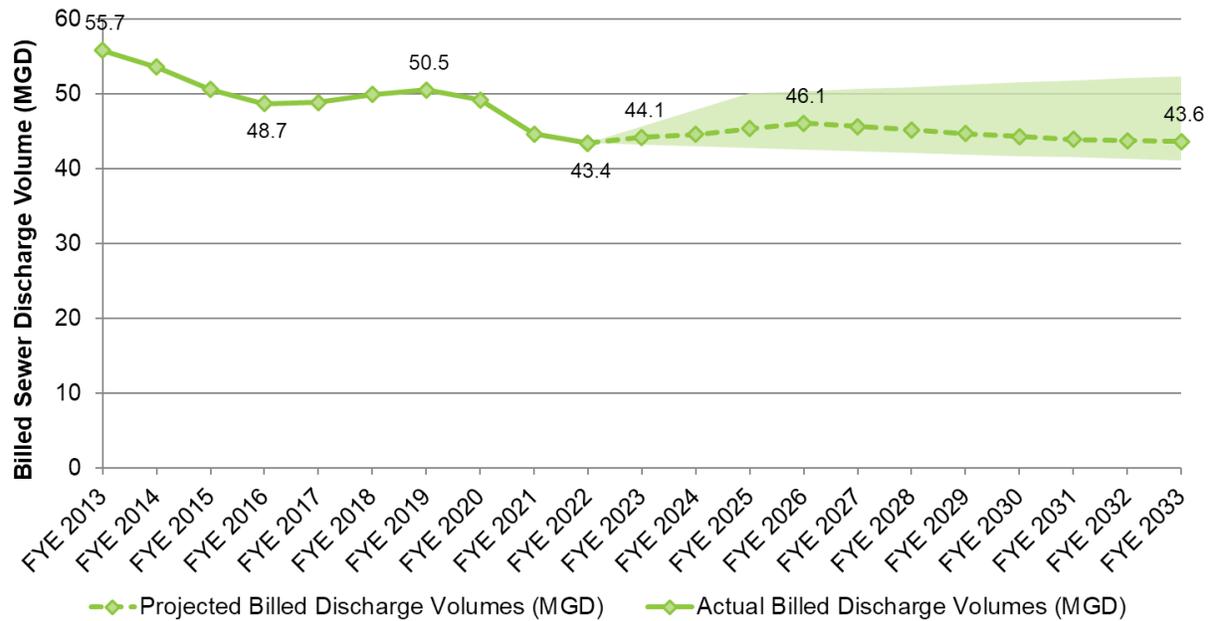


The most striking change to wholesale water sales was the impact of the prior drought beginning in FY 2013-14. After a precipitous drop to an all-time low of 109.6 MGD, usage partially recovered; the smaller impact of the current drought reflects the lower starting point and the fact that the impact of the COVID-19 pandemic is shifting usage up in the more residential suburban wholesale service area. After bottoming out in FY 2023-24, wholesale usage is expected to return to pre-drought normal of 129.7 MGD by FY 2025-26. Over the remainder of the plan, wholesale usage rises slightly, driven by forecasted population growth. Even with this growth, usage during the 10 years remains below the recent peak prior to the last drought.

Retail sales volume variation is lower, reflecting San Franciscan’s low per capita water usage and resultant smaller fluctuations in times of drought. The most notable trend here is the combined impact of the pandemic and recent drought, bringing retail water sales to an all-time low of 52.4 MGD in FY 2021-22. As the impact of both events fade, usage is forecasted to grow to 57.4 MGD in FY 2025-26 before gradually declining through the rest of the 10 years. This long-term trend reflects the impact of price elasticity and passive conservation compensating for assumed job and population growth and is consistent with the observed historic trendline.

Because wastewater sales volumes are based on metered water usage, the forecast of billable wastewater volumes shown in Figure 2 is very similar to that of retail water sales.

Figure 2: Historic and Projected Billed Sewer Discharge Volumes (Millions of Gallons per Day)



Wastewater volumes are forecasted to rebound from their all-time low of 43.4 MGD in FY 2021-22 to 46.1 MGD in FY 2025-26 as the economy recovers from the pandemic and the current drought declaration ends. Volumes then trend downward due to conservation and price elasticity.

[Hetch Hetchy Power Sales Projections](#)

Hetch Hetchy Power volumetric growth is much more significant than the other business lines. Figure 3 shows the historic and forecasted change in Hetch Hetchy Power retail sales volumes over the past and future 10 years.

Figure 3: Historic and Projected Hetch Hetchy Power Retail Sales Volumes (Gigawatt Hours)

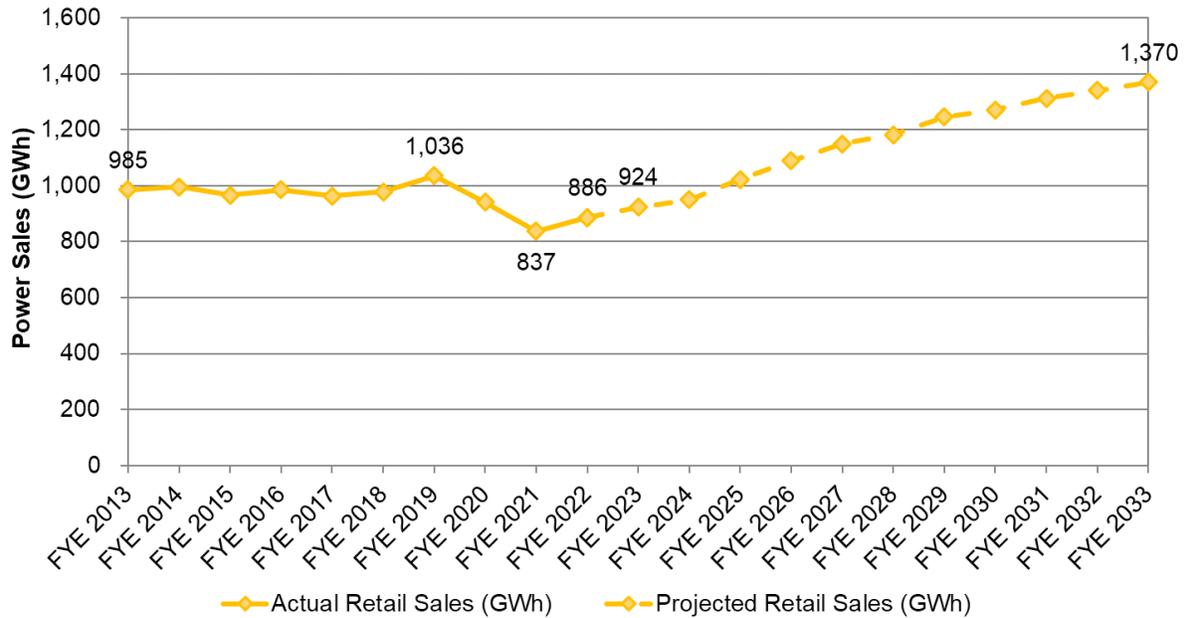


Figure 3 shows the recovery to pre-pandemic levels is complete by FY 2025-26, with sales reaching 1,023 GWh. As described above, existing accounts are not projected to change their usage beyond recovery from the pandemic, so the additional growth shown in Figure 3 represents new facilities planned or under construction.

While this growth is a key component of Power Enterprise’s business plan, it also means that their rates trajectory is dependent on economic growth that may be delayed or never materialize due to possible recession or other factors. With the economic outlook in San Francisco looking precarious and a history of project delays, the Financial Plan incorporates several adjustments for conservatism. First, no new customers are assumed to begin service in the first year of the plan, FY 2023-24, so any new services will represent a positive variance from the adopted budget. This one-year delay means that growth from new customers only begins in FY 2024-25. Second, the financial plan adds a 12-month delay in new customer load assumptions beyond the timeframe forecasted by the initial energizing plan, where Power Enterprise already incorporates the delays from applications for new service energizing. Finally, all new loads are reduced by 10% from the original forecast by Power Enterprise to account for vacancies in residential and commercial buildings as they come online.

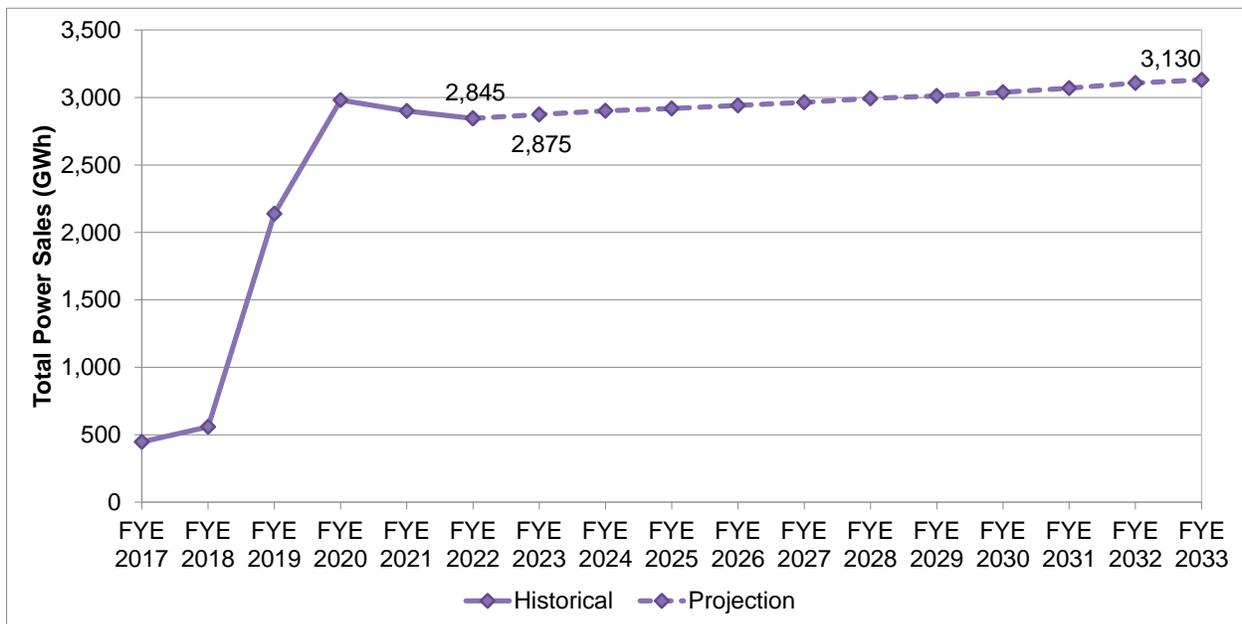
Municipal customer load projections are based on biennial budgets and are updated annually. This Plan update assumes major load growth from new facilities for SFMTA and SFO airport. The SFMTA growth is due to a bus electrification pilot and the central subway station project. Airport loads are expected to grow 3.6 percent annually over the projection period due to load growth from new terminals and associated facilities, and other projects from the airport’s master plan. Another customer expecting moderate load growth is the SFPUC’s Wastewater Enterprise, as construction at its Southeast Wastewater Treatment Plant will increase power consumption.

Retail non-municipal electric load growth is generally associated with large redevelopment projects and related customer growth in the southeastern portion of San Francisco, as well as some “infill” projects throughout the City, particularly affordable housing. Current redevelopment-area customers in the plan include Hunters Point, Treasure Island/Yerba Buena Island, Transbay Transit Center, Alice Griffith, Candlestick, Pier 70, Mission Rock, UCSF, and HOPE SF (Potrero and Sunnydale).

CleanPowerSF Sales Projections

Figure 4 shows the significant growth in CleanPowerSF from its launch in FY 2016-17 through FY 2019-20 as phased enrollment successfully grew the program to its current size. The plan projects loads to increase an average 0.9 percent over the course of the 10 years, reflective of overall growth from electrification, population growth, and other longer term electric trend projections.

Figure 4: Historic and Projected CleanPowerSF Retail Sales Volumes (Gigawatt Hours)



Adopted Rate Changes

The SFPUC has historically adopted multi-year rate packages reflecting a series of rate increases over several years. This improves the certainty of financial planning for both the agency and customers, but reduces the ability to react to changes in costs or volumetric sales. With significant uncertainty in recent times, from the COVID-19 pandemic’s impact on sales volumes to huge fluctuations in the prices in the power supply market, the agency has reduced the time period covered in its rate proposals.

For years in which rates are not already adopted by the Commission, the 10-Year Plan forecasts what rate increases are needed to cover expenditures and comply with financial policies. These projections are presented at the end of this report. The following section describes the status of ongoing rate studies, and already-approved rate increases during the plan period.

Water and Wastewater Rates

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. There were no rate increases in FY 2022-23. The 2023 rate study is currently underway and is expected to be completed in spring 2023, with new rates being adopted and implemented beginning in FY 2023-24. As the study is ongoing, the rates incorporated into this plan are estimated and are subject to change.

Wholesale water rates are set on an annual basis following the process established by contract under the long-term Water Supply Agreement (WSA). Wholesale water rates were flat for six years, from FY 2016-17 through FY 2021-22. In FY 2022-23, rates increased by 15.9%. This pattern of rate change is driven by the mechanics of the WSA, which allowed rates to remain steady due to a true-up balancing account mechanism. Rates for FY 2023-24 will be brought to the Commission in spring 2023.

Power Rates

The 2022 Power Rate Study was completed in Spring 2022, with CleanPowerSF rates for FY 2022-23 and Hetch Hetchy Power rates for FY 2022-23 and FY 2023-24 adopted based on cost of providing service to customers. Rates were adopted accounting for significant volatility in energy markets and supply chain disruptions caused by the pandemic and other environmental factors. This allows the Power Enterprise to reevaluate its revenue requirements on an annual or bi-annual basis. A revised fund balance reserve policy for CleanPowerSF was also adopted during the rate study process to ensure that it set targets to build up adequate reserves for expenditures in the volatile power supply market.

For both business lines, the adopted rates ended the historic practice of following PG&E rates, either directly or at a differential above or below comparable PG&E rates. Instead, power rates change at the beginning of each fiscal year based on the SFPUC's own cost of providing service. This significant improvement allows for more robust financial planning, ensuring the Power Enterprise has the revenues needed to fund its operating and capital needs.

Adopted Hetch Hetchy rate increases completely overhauled Hetch Hetchy's legacy rate structure, and were redesigned to gradually shift the business line towards standardized cost-of-service-based rates for all customer classes. In particular, municipal customers' General Use (GUSE) rates were realigned from the legacy flat rate based on usage to standard customer class rate structures, and incrementally brought up per fiscal year to cost-of-service rates at an effective increase of \$0.03/kWh. The remaining customers' – Retail and Enterprise – rates were rebalanced and increased or decreased to consolidate all non-GUSE customers as retail customers with the same tariffs in FY 2023-24. The rate trajectories of these different customer categories were as follows.

Table 2: Adopted FY 2022-23 and FY 2023-24 Hetch Hetchy Power Rate Increases

Customer Rate Category	FY 2022-23	FY 2023-24
Retail	6.6%	14.0%
Municipal General Use (GUSE)	30.0%	23.3%
Municipal Enterprise	-10.8%	-5.3%

CleanPowerSF's rates for FY 2022-23 decreased by about 11% overall, though individual rate classes had lower or higher changes depending on their specific cost of service.

Non-Rate Revenues

While utility rate revenues compromise the vast majority of each Enterprises' revenues, there are other, smaller non-rate revenues. Assumptions regarding these revenues vary based on the source:

- Interest income is calculated by multiplying an interest rate by the available, unappropriated fund balance in each Enterprise. Interest rates are estimate based on the U.S Treasury yield curve.
- Certain water revenue bonds and the 525 Golden Gate Certificates of Participation receive Federal Build America Bonds Interest subsidies, which provide approximately 35% of the interest cost of the bonds. Forecasts for these revenues are based on the debt service schedules of these bonds.
- Rental revenue from SFPUC-owned properties is provided by the Real Estate Services division, and inflated by the forecasted Consumer Price Index.
- Revenue from miscellaneous fees, including water service installation charges, capacity charges, and permit issuance fees is estimated for the current fiscal year, then inflated by the forecasted Consumer Price Index.
- Revenues designated for capital projects in Hetch Hetchy Power include Distributed Antenna System licensing fees, California Cap & Trade auction revenues, and Low Carbon Fuel Standard credits. These forecasts are developed by Power Enterprise staff.

Non-rate revenues offset a portion of expenditures, and therefore allow for lower rate increases.

Uses of Funds

Operations and Maintenance Expenditure Assumptions

Operations & Maintenance Budget and Escalation

For all Enterprises, operations and maintenance expenses are based on the adopted budget. As the current plan is during the middle of the SFPUC's approved two-year budget, only FY 2023-24 budget numbers are available. To the extent that midcycle revisions to the budget are pending before the Commission, these have been incorporated as well.

The 10-Year Financial Plan for all enterprises assumes an annual 3 percent increase in operations and maintenance expenditures for most expense types. 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. Inflation in fringe benefits, such as retirement, health care, and disability services, is projected at 4.4 percent based on projections of various expense types as listed in the Mayor's 5-year plan for FYE 2021-2025. A small subset of expenses including programmatic expenses, grant programs, and some services of other departments are projected to remain level over the ten-year projection window.

Power Purchases & Delivery Charges

In Power Enterprise, including Hetch Hetchy Power and CleanPowerSF, purchased market power, resource adequacy purchases, and delivery charges such as Transmission Access Charges (TAC) and Wholesale Distribution Tariffs (WDT) vary based on the total customer loads or demand served in a year, as well as the forecasted price of these line items. Forecasts for these expenditures are developed collaboratively by Power Enterprises' Risk Management and Business Analysis team, Retail Services team, Origination and Power Supply team, and Financial Planning. Assumptions regarding load projections are discussed above.

CleanPowerSF's energy portfolio throughout the 10-Year Plan includes potential storage and renewable projects based on its 2022 Integrated Resource Plan, while Hetch Hetchy Power's generation forecast is developed by Hetch Hetchy Water based on weather and asset maintenance projections. Load and energy supply are both assessed against forward energy price projections, which are available via S&P Global's Platts forecasting service and takes into account weather simulations and market impacts such as natural gas supply and demand, and the Russia-Ukraine war. Because the Platts forecasts are updated daily and reflect the volatility of the energy market, contingencies are set to capture some of the higher end energy price projections seen at the time of the plans' development. Prices for other supply categories such as resource adequacy, renewable attributes, delivery charges, and CAISO charges are forecasted based on market broker quotes received by Origination and Power Supply team, third-party forecasts (e.g. Flynn Resource Consultants), or recent historical averages, depending on availability.

Execution Factors

Beginning with this Financial Plan update, the Water and Wastewater plans incorporate "execution factors" on the operating budget, reflecting the fact that the Enterprises historically do not spend the total authorized budget. A review of actual expenditures as a percent of the original budget in fiscal

years 2018-19 through 2021-22 was used to evaluate what percentage of budgeted costs are typically expended. Following the completion of the analysis, staff evaluated the application of various execution factors to apply to projected operating costs. The goal of this exercise was to project future expenses that more closely reflect actual spending, while also incorporating enough contingency for unexpected costs. Table 3 and Table 4 summarize the findings of the budget to actual analysis and the execution factors that have been applied to each forecast year in this 10-year plan.

Table 3. Water Enterprise Budget Execution Analysis and Factors Used to Project Future Expenditures

Expense Type	FYE 2019	FYE 2020	FYE 2021	FYE 2022	Applied
Personnel	98%	95%	99%	95%	98%
Other Non-Personnel Services	102%	97%	84%	69%	95%
Materials, Supplies & Equipment	83%	92%	80%	101%	95%
Services of SFPUC Bureaus	112%	113%	107%	88%	100%
Services of Other Departments	97%	92%	98%	92%	100%
Other Operating Expenses	100%	100%	100%	100%	100%

Table 4. Wastewater Enterprise Budget Execution Analysis and Factors Used to Project Future Expenditures

Expense Type	FYE 2019	FYE 2020	FYE 2021	FYE 2022	Applied
Personnel	93%	94%	93%	88%	95%
Other Non-Personnel Services	107%	112%	83%	118%	100%
Materials, Supplies & Equipment	102%	75%	74%	90%	90%
Services of SFPUC Bureaus	90%	93%	97%	89%	95%
Services of Other Departments	98%	100%	94%	97%	100%
Other Operating Expenses⁴	18%	17%	42%	56%	50%

As these execution factors were created as part of the ongoing 2023 Water & Wastewater retail rates study, Hetch Hetchy Power and CleanPowerSF have not yet incorporated execution factors into their plan. Staff will perform a similar analysis for Power Enterprise for the next plan update.

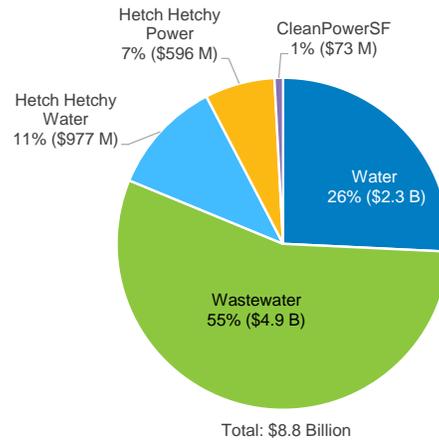
⁴ Category is almost entirely comprised of City Grant Programs, which have historically not been spent. The low execution factor does not have a major impact, however, since the total of this line item is only \$2.6 million in FY 2023-24 out of an overall operating budget of \$210 million.

Capital Expenditure Assumptions

10-Year Capital Plans

The SFPUC adopts a 10-Year Capital Improvement Plan (CIP), which details the specific projects planned for each enterprise the next ten years. 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 CIP funding. For the FY 2023-24 through FY 2032-33 Financial Plan, only the first year (FY 2023-24) is included in the budget appropriation; other years are shown for planning purposes only.

Figure 5: FY 2023-24 to FY 2032-33 10-Year Capital Improvement Plan by Enterprise



In addition to the projects, the CIP also delineates the funding source for each project. Generally, funding is either 1) revenue-funded or “pay-as-you-go,” or 2) debt-funded. How these revenues impact the cash flow in the financial plan is discussed below.

In general, capital expenditures are the primary driver of increased costs in the Financial Plans, particularly for the Wastewater Enterprise. As shown in Figure 5, the total budgeted expenditures across the combined CIPs totals \$8.8 billion, of which over half is for Wastewater Enterprise.

For a detailed discussion of the development of the FY 2023-24 through FY 2032-33 10-Year CIP, including a description of major projects for each Enterprise, please refer to the Capital Plan written report. A brief summary is provided below.

Water Enterprise Capital Improvement Program

The Water Enterprise 10-Year Capital Improvement Plan is \$2.3 billion in total spending, with \$620 million (23 percent) being revenue-funded and \$1.6 billion (77 percent) debt-financed.

The largest projects of the 2024-2033 Water Capital Improvement Plan are new local City Distribution Division (CDD) headquarters (\$343 million), local water pipeline replacements (\$475 million), regional pipeline improvement projects (\$239 million), and the Millbrae Yard upgrade projects (\$224 million).

Wastewater Enterprise Capital Improvement Program

The Wastewater Enterprise 10-Year Capital Improvement Plan is \$4.9 billion in total spending, with \$1.3 billion (27 percent) being revenue-funded and \$3.5 billion (73 percent) debt-financed.

The Wastewater Enterprise continues the Sewer System Improvement Program (SSIP) progress, which makes up \$2.9 billion of the \$4.9 billion Capital Improvement Plan.

Hetch Hetchy Water and Power Capital Improvement Program

All costs associated with water operations within Hetch Hetchy Water and Power are funded by the Water Enterprise, while all operations associated with power operations are funded by Power rates and charges. For joint operations, the Water Enterprise is responsible for 45 percent of operating and capital costs, while the Power Enterprise is responsible for the remaining 55 percent.

Hetch Hetchy Water and Power Capital Improvement Plan is \$977 million in total spending for the Hetchy Water Capital Program and \$596 million for the Power Enterprise Capital Program. Of Hetch Hetchy Water and Power's overall capital spending in both sections, \$196.7 million is funded by Power revenues, \$441.2 million is financed by Water revenue bonds, and \$934.5 million is financed by Power revenue bonds.

The \$1.6 billion Hetch Hetchy Water and Power Capital Improvement Program represents a growing investment over ten years with greater amounts of funds allocated to Power infrastructure. The major projects included in the Power Enterprise Capital Program are SFO Substation Improvements (\$147 million) and Distribution Interface for Redevelopment Projects (\$142 million).

CleanPowerSF Capital Improvement Plan

CleanPowerSF's Capital Improvement Plan includes funding of \$73 million over the next 10 years. 67 percent of CleanPowerSF's CIP is the Local Renewal Energy Program, a \$49 million project over the plan period, with the remainder of \$12 million funding CleanPowerSF Customer Programs. 100 percent of CleanPowerSF's capital plan sources are customer revenues.

Capital Projects' Impact on Cash Flow and Rates

As described above, the funding sources for the CIP are either revenue-funded/pay-as-you-go, or debt-funded. The CIP is a budget document, and therefore lists sources and uses of funds in the year they are appropriated – not necessarily the year they will be spent. Indeed, most capital project expenditures happen over several years, and there is significant unspent appropriation from prior fiscal years in addition to the new appropriation in each CIP. For financial planning purposes, how the capital expenditures impact cash flow depends on whether they are revenue-funded or debt-funded.

Pay-as-you-go funding, as the name implies, requires funds to be available immediately. This may be from a specific revenue source earmarked for capital projects – for example, capacity charges in water and wastewater, or Distributed Antenna System licensing fees in Hetch Hetchy Power. If these dedicated sources are insufficient to cover the total revenue-funded sources, the remainder is appropriated from the Enterprises' annual revenues generated that year. Note that due to the requirements of the City's budget, it does not matter when the expenditures will happen – the funds are appropriated immediately.

Debt-funded capital is much more complex, as the SFPUC's Capital Finance team performs financial engineering to smooth expenditures over many years, reduce interest costs, and take advantage of low-cost grant and loan programs. Debt-funded projects will be eventually funded by a state or federal loan or by the sale of revenue bonds. These loans and bonds require annual principal and interest payments, and revenues are needed only to pay these annual interest payments – not at the time the projects are

appropriated, or even when the expenditures take place. As a result, there is a significant delay between the year of appropriation for a debt-funded project and the year that revenues are needed to pay for it. The following section describes the assumptions for capital financing of debt-funded projects.

Capital Financing Expenditure Assumptions

The SFPUC's Capital Finance team leverages a variety of tools to finance the enterprises' capital programs. These tools help to better align the payment for capital assets to the use of the assets so that current ratepayers are not bearing the full cost of projects that may be used for 40 or more years. In addition, these capital financing products allow for more gradual rate adjustments even when large assets are brought online over a short period.

A variety of capital financing decisions are made each time the SFPUC issues debt to finance capital projects to obtain the optimal interest rates and financing terms, based on prevailing interest rates and interest rate trends, market demand and other considerations. Due to the uncertainty of how each of these factors may change over time, several simplifying assumptions are incorporated in the planning process to project future debt service. However, many of the factors that determine future borrowing costs are beyond the SFPUC's control including interest rates, inflation, federal and state policies and the volatility that has recently marked the global financial markets. There are high levels of uncertainty in projecting future debt service costs given the extended capital project planning horizon; therefore, debt service cost assumptions should be sufficiently conservative to mitigate risk and be reasonable in both historical context and current market expectations. The key assumptions governing new capital financing projections are discussed below.

The SFPUC works with an array of financial and legal advisors on its bond programs. In 2022 the SFPUC also engaged PFM Financial Advisors to provide broad strategic advice in managing the overall bond program, in addition to the transaction advice provided by advisors on individual transactions. As the market enters a period of greatly changed interest rates, the Capital Finance team is adjusting bond issuance strategies accordingly, by reevaluating past approaches, adjusting average life of borrowing, and taking advantage of lower interest costs options like federal and state loans.

Fixed Interest Rates

Fixed-rate debt is a form of borrowing in which the interest rate is determined when the borrowing is made and fixed throughout the life of the debt. Historically, the SFPUC assumed its future fixed-rate debt would carry a 5 percent interest rate for all debt issued in the 10-year planning period. This assumption was lowered two years ago to a graduated interest assumption of 3.75% to 4.50% over the 10-year planning period. In view of Federal Reserve actions to reduce inflation and the resultant interest rate volatility and rapid pace of Federal Reserve interest rate increases experienced beginning in FY22, the SFPUC is returning to a 5 percent interest rate assumption for future long-term financings

Given the SFPUC's success in selling revenue bonds at interest rates considerably lower than the 5 percent assumed rate, these assumptions are appropriate given the interest rate volatility observed in the capital markets in 2021 and 2022. The SFPUC's fixed-rate debt includes fixed-rate revenue bonds, fixed-rate direct loans, and short-term notes (specifically, the 2021A and B Notes with 4-5 year maturities). Fixed-rate revenue bonds typically have long repayment periods and market-rate interest

levels. Fixed-rate direct loans, such as Water Infrastructure Finance and Innovation Act (WIFIA) and State Revolving Fund loans, provide financing at below-market interest rates and over longer terms in some cases. The current plan assumes regular quarterly draws on the SFPUC's two existing WIFIA loans, with interest accruing at the loan rates of 1.45% until the start of repayment. 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 planning assumption.

Variable Interest Rates

Variable-rate debt is a form of debt that carries an interest rate that changes over the life of the debt, 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 because they are marketed to investors based on a shorter period. For example, the commercial paper is typically marketed to investors for 30 to 90 day periods (although they could legally be remarketing for up to 270 days). 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 percent of any enterprise's long-term debt be in variable-rate mode. The Wastewater Enterprise is the only Enterprise that has outstanding long-term variable rate debt, which consists of the 2018 Wastewater Revenue Bonds Series C. Series 2018C was issued in August 2018 has a "soft put" provision requiring that purchasers of the bonds tender or "put" the bonds back to the SFPUC on a date established at the time of issuance (the "put date"). The bonds are then remarketed to new purchasers at interest rates that reflect the length of the new put period and market conditions at the time of the remarketing. These bonds made up 8.6 percent of the Enterprise's outstanding revenue bond portfolio.

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 new CP, a process referred to as "rolling" or "remarketing" the CP. Bank facilities, typically in the form of a letter of credit or liquidity facility, are 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. Commercial paper interest rates are currently assumed to be 3 percent.

Issuance Costs and Capitalized Interest

Bond Issuance costs are projected at 0.25 percent of the par amount of each issuance, plus bond underwriting fees at 0.15 percent of the par amount of each issuance. Issuance costs include underwriting fees, legal fees, financial advisory fees, credit enhancement fees, and other miscellaneous fees typically associated with a bond financing. Other issuance costs include the costs of interim, short-term funding for projects by each enterprise's Commercial Paper Program, such as accrued interest and credit bank and dealer fees associated with outstanding commercial notes. These costs are not treated as part of the bond issuance costs cited above, but instead are fixed costs related to the Commercial Paper Program, and are costs that are added to each bond issuance when it occurs. 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 principle behind capitalized interest is not to pass on capital financing costs to rate payers until the asset is completed and placed into service.

Debt Service Reserve

While the SFPUC has previously issued bonds with Debt Service Reserve Funds – bond proceeds equal to approximately 10% of the par size or a smaller amount as permitted by tax law – more recently the SFPUC has stopped funding such reserves, thereby reducing the size of the bond transactions. New debt issuance projections assume that a debt service reserve fund is not necessary due to the SFPUC’s strong Aa/AA credit quality, which provides sufficient market assurances on debt service repayment. The Water, Wastewater, and Power indentures do not require a debt service reserve be funded and the SFPUC has maintained its high ratings without funding such reserves.

Timing of Debt Issuance

The timing and sizing of debt issuance is typically reflective of the projected financing needs of each enterprise over 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. Timing and issuance amounts are subject to market conditions and actual project spending. Generally the SFPUC’s enterprises first borrow from the commercial paper programs established for each enterprise and when that capacity is exhausted, the commercial paper is refinanced with long term bonds, therefore freeing up the commercial paper capacity again. The proceeds of these future revenue bonds will be used for capital improvements, to retire outstanding commercial paper, to fund capitalized interest, and pay the costs of issuing bonds. Projected bond issuance amounts do not include estimates for future refinancing opportunities, although in actuality the Capital Finance Team is continually exploring opportunities to refinance and reduce debt service costs. The following table shows the assumed par amounts of revenue bond issuances for each enterprise for the Plan.

Table 5: Projected Annual Par Amounts of Revenue Bond Issuance by Enterprise (Million Dollars)

(\$M)	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	Total
Water		\$430		\$439					\$477		\$1,346
Wastewater	\$703		\$990	\$867			\$760			\$760	\$4,080
Power	\$116		\$424			\$372					\$912
Total	\$819	\$430	\$1,414	\$1,306	\$0	\$372	\$760	\$0	\$477	\$760	\$6,338

Annual Cash Expenditures

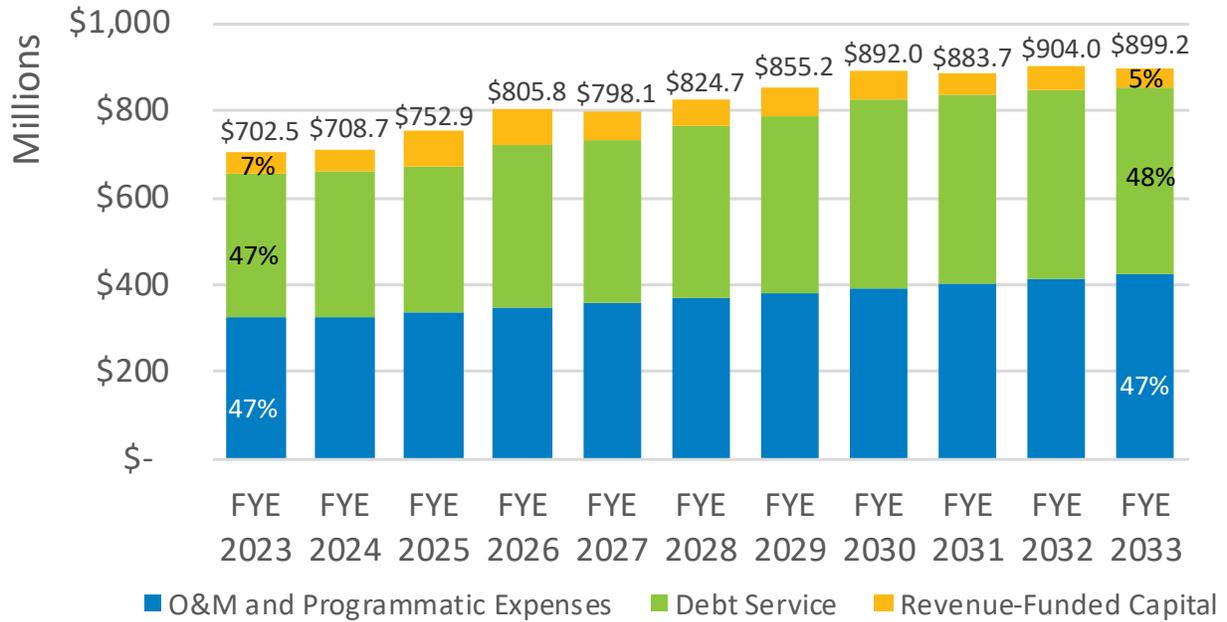
The section below provides a summary of the total cash needs, comprised of the annual operations and maintenance expenses as well as the various forms of capital funding, for each enterprise over the 10-year forecasting period.

Water Enterprise

Water Enterprise expenses are expected to grow from \$702.5 million to \$899.2 million during the 10 years (an average of 2.5 percent per year), as shown in Figure 6. The ratio of the expenditures between

operating and capital remains roughly similar during that timeframe with operating representing just under 50% of annual expenses throughout the 10-year plan forecast horizon.

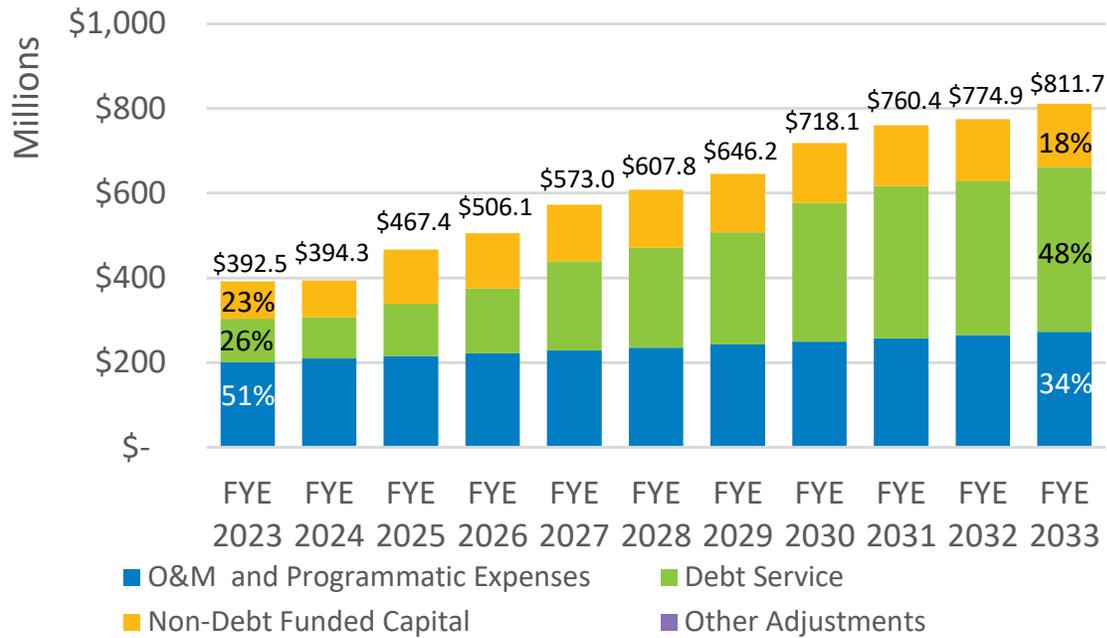
Figure 6: Projected Water Enterprise Annual Expenditures



Wastewater Enterprise

Wastewater annual expenditures more than double from \$392.5 million in the current year to \$811.7 million in FY 2032-33, as Figure 7 shows. This increase is predominantly driven by the growth in debt service, which increases from 26% of annual expenses to 48% by the end of the ten-year period, or from \$102.2 million to \$388.9 million. This is an enormous growth rate, and the most challenging cost trend facing any of the Enterprises.

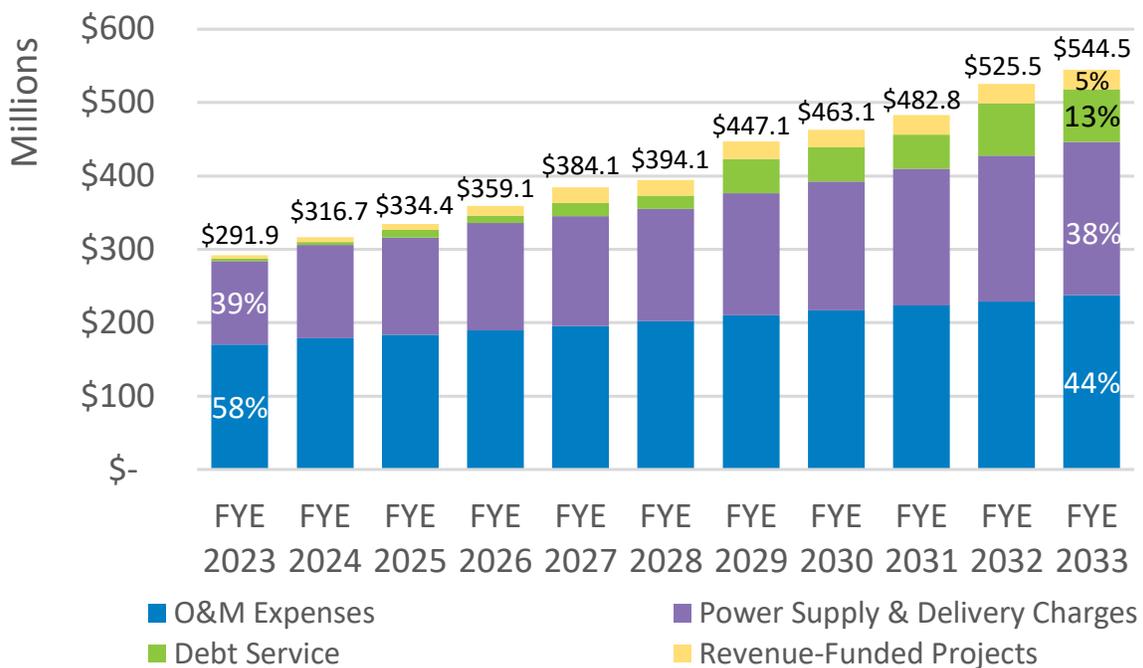
Figure 7: Projected Wastewater Enterprise Annual Expenditures



Hetch Hetchy Water & Power Enterprise

As shown in Figure 8, Hetch Hetchy Water & Power expenditures are forecasted to grow from \$291.9 million to \$544.5 million over the ten years, an average of 6.4% annually.

Figure 8: Projected Hetch Hetchy Power Annual Expenditures



Most of this growth is in purchased power supply and delivery charges (Transmission Access Charges and Wholesale Distribution Tariffs). Though these charges remain the same percentage of the overall budget, they represent the largest increase in any line item, growing by \$95.7M over the ten years.

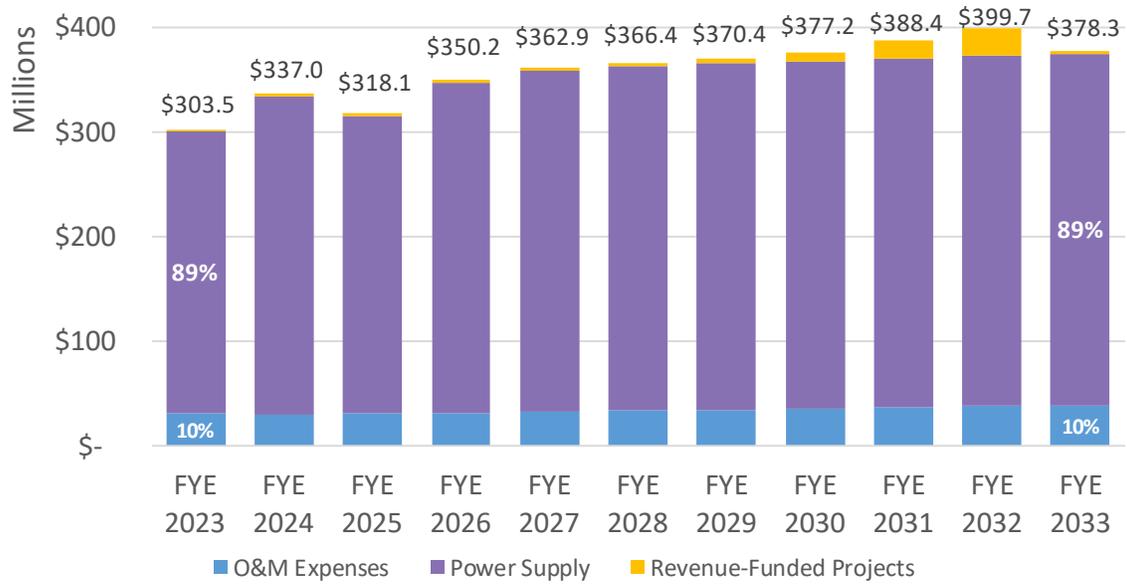
In FY 2022-23, Hetch Hetchy Power is over budget for power supply purchases and delivery charges due to large increases in power market prices and increases in the Wholesale Distribution Tariff (WDT) paid to use PG&E's system. The impact of these changes is hard to overstate. In FY 2020-21, the combined cost of Power Supply & Delivery Charges (which includes purchased power, Transmission Access Charges (TAC), WDT, Resource Adequacy, and related CAISO charges) was \$42.8 million. In FY 2022-23, it is expected to be \$113.2 million – more than doubling in just two years. The Financial Plan has been revised going forward to reflect a “new normal” of higher power market costs, as well as the new methodology for calculating WDT charges. Moreover, to account for the variability in power prices making forecasting prices uncertain, the budgeted contingency for power supply has been increased from \$4 million annually to \$8 million throughout the life of the plan.

These major increases are the primary driver of increased rates, but it's important to note that capital costs are also rising in Hetch Hetchy Power during this same timeframe. In 2018, Proposition A gave Hetch Hetchy Power authority to issue revenue bonds to construct facilities to serve new customers, and these bond issuances, as well as those for existing power assets under the Hetch Hetchy Water Division, mean that debt service grows from just \$4 million annually in FY 2022-23 to \$71.6 million by the last year of the plan.

CleanPowerSF

Figure 9 shows the total annual expenditures for CleanPowerSF for the current and next ten fiscal years. Unlike the other Enterprises, the growth rate is relatively flat, and purchased power supply costs represent almost 90% of the expenditures in every year. As with Hetch Hetchy Power, CleanPowerSF is facing huge increases in its annual power supply costs this fiscal year and has revised the forecasted expenditures to reflect these increased costs. Moreover, because these costs are the main operational expense for CleanPowerSF, the power supply contingency was increased incrementally in the near four years of the plan, to be maintained about 20% of annual power costs in the latter years of the plan to provide a buffer in case prices rise even further.

Figure 9: Projected CleanPowerSF Annual Expenditures



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.

Water Enterprise

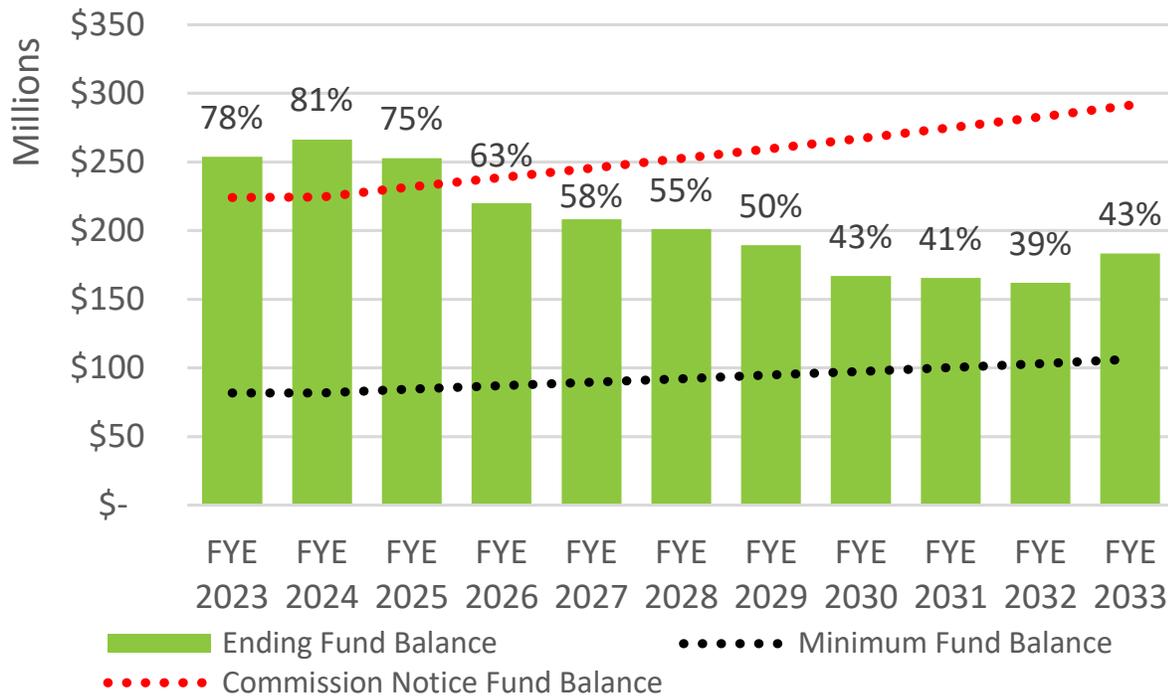
The Water Enterprise’s financial forecast (Appendix A) results in an average annual retail rate increase of 3.9 percent (Table 6) and an average annual rate increase of 2.5 percent for wholesale customers. This compares to both the retail and wholesale average annual rate increases of 2.0 percent and 3.0 percent, respectively, from the previously adopted FY 2022-23 to FY 2031-32 10-Year Financial Plan. A 5.0 percent retail rate increase is projected for the next few years, declining slightly in outer years to levels in line with inflation. Wholesale rates are projected to see a high increase in FY 2023-24 of 11.6 percent, tapering off in the outer years to levels more in line with inflation.

Table 6: Projected Water Enterprise Rate Change

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	Avg. Annual
Retail Rate Change	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	2.0%	3.9%
Wholesale Rate Change	11.6%	0.0%	0.0%	0.0%	4.5%	3.6%	2.8%	0.2%	0.5%	2.2%	2.5%

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 of 90 days or 25 percent of operating and maintenance expenses. In fact, the fund balance is currently higher than the level requiring Commission notice in the Fund Balance Reserve Policy, so the proposed rate plan has lower rate increases in the early years to draw down on these reserves. Figure 10 shows that over the next 10-Years, the Water Enterprise fund balance is projected to drop from a high of 81 percent of operating expenses in FY 2023-24 to a low of 39% in FY 2031-32.

Figure 10: Projected Water Enterprise Ending Fund Balance



The Water Enterprise’s debt service coverage is projected to remain higher than minimum levels required by SFPUC’s Debt Service Coverage Policy of 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 2.00x in FY 2024-25 to a low of 1.51x in FY 2030-31. Current Coverage is projected to range from a high of 1.27x in FY 2023-24 to a low of 1.11x in FY 2029-30.

At 23 percent, the percentage of the Water Enterprise’s CIP funded by revenue is currently within the 15 to 30 percent range required by SFPUC’s Capital Financing Policy.

Wastewater Enterprise

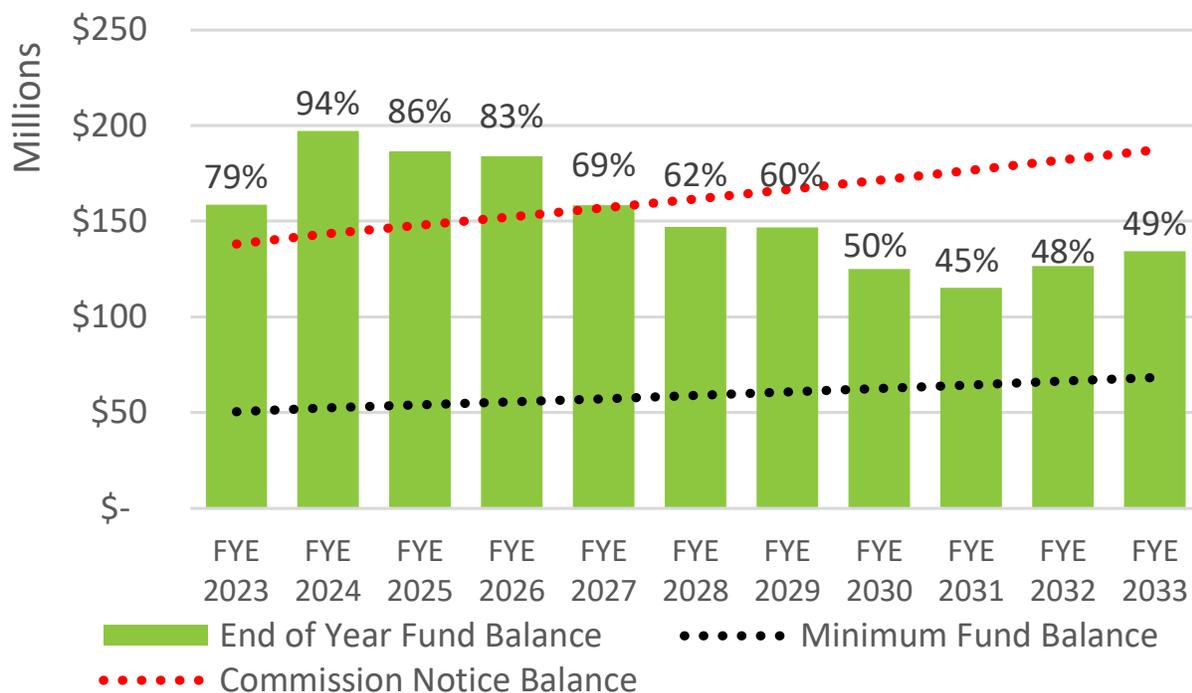
The Wastewater Enterprise’s financial forecast (Appendix B) results in an average annual rate increase of 8.5 percent annually over the Plan (Table 7). The Wastewater financial forecast follows many of the trends from the Water Enterprise, including an overall average annual rate increase that has increased from the 5.2 percent average annual rate increase from the previously adopted FY22 10-Year Financial Plan.

Table 7: Projected Wastewater Enterprise Rate Change

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	Avg. Annual
Retail Rate Change	9.0%	9.0%	9.0%	10.0%	10.0%	10.0%	9.0%	9.0%	5.0%	5.0%	8.5%

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 of 90 days or 25 percent of operating and maintenance expenses. As with Water, the fund balance is currently higher than the level requiring Commission notice in the Fund Balance Reserve Policy. This build-up of reserves was done in anticipation of the major capital expenditures on the horizon, and the current plan relies on use of these reserves to prevent even higher rate increases than those already forecasted. Throughout the 10-year planning period, the Wastewater Enterprise fund balance is projected to range from a high of 94 percent of operating expenses in FY 2023-24 to a low of 45 percent in FY 2030-31, at which point it stabilizes slightly above the minimum level.

Figure 11: Projected Wastewater Enterprise Ending Fund Balance



The Wastewater Enterprise’s debt service coverage is projected to remain significantly higher than minimum levels required by SFPUC’s Debt Service Coverage Policy of 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 3.90x in FY 2023-24 to a low of 1.77x in FY 2030-31. Current Coverage is projected to range from a high of 2.28x in FY 2023-24 to a low of 1.41x 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, and with proactively raising rates to ensure it can afford its sizeable CIP.

The Wastewater Enterprise’s revenue-funding at 27% of the 10-Year Capital Plan is currently within the range required by SFPUC’s Capital Financing Policies of 15 percent to 30 percent of the total capital plan.

Hetch Hetchy Water and Power

The 2022 Power Rates Study informed rate changes in FY 2022-23 and FY 2023-24 for Hetch Hetchy Power. As described above, this included a consolidation of the existing retail and Enterprise municipal rate schedules into a single retail rate, beginning in FY 2023-24. General Use Municipal (GUSE) rates are increasing from their subsidized levels towards cost of service at an effective rate increase of \$0.03/kWh annually. As GUSE rates for a given customer class reach the same levels as retail rates for that class, the GUSE rates are eliminated. By FY 2027-28, all Hetch Hetchy Power customers will be on the same cost-of-service based retail rate schedules. Table 8 shows this consolidation, with both Enterprise and General Use (GUSE) municipal rates being eliminated as these customers are consolidated onto regular retail rate schedules.

Table 8: Adopted () and Projected Hetch Hetchy Power Rate Change*

	FYE 2024*	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	Avg. Annual
Retail Rate Change	14.0%	10.0%	9.0%	8.5%	7.0%	6.0%	4.0%	3.0%	3.0%	3.0%	6.7%
Enterprise Rate Change	-5.3%	-	-	-	-	-	-	-	-	-	N/A
GUSE Rate Change	23.3%	18.9%	15.9%	13.7%	12.1%	-	-	-	-	-	N/A

Hetch Hetchy Power's financial forecast (Appendix C) results in an average annual retail rate increase of 6.7 percent annually over the Plan, with higher increases in the earlier years of the Plan.

Hetch Hetchy Power's fund balance is projected to remain higher than the minimum level required by SFPUC's Fund Balance Reserve Policy of 90 days or 25 percent of operating and maintenance expenses. Throughout the 10-year planning period, fund balance is projected to range from a high of 63 percent of operating expenses in FY 2032-33 to a low of 28 percent in FY 2025-26.

Hetch Hetchy Power's debt service coverage in the Financial Plan is higher than minimum levels required by SFPUC's Debt Service Coverage Policy of 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 25.29x in FY 2023-24 to a low of 4.37x in FY 2031-32. Although Power debt service is relatively low in the near term, large increases in power supply purchases and delivery charges mean that current coverage is the thinnest early on and improves later in the plan. Current Coverage is projected to range from a high of 3.89x in FY 2027-28 to a low of 1.23x in FY 2024-25.

The Enterprise's revenue-funding at 17 percent of the 10-Year Capital Plan is currently within the range required by SFPUC's Capital Financing Policies of 15 percent to 30 percent of the total capital plan.

CleanPowerSF

CleanPowerSF's financial forecast (Appendix D) requires a large rate increase in the first year of the plan to cover increased power supply costs and ensure compliance with the revised Fund Balance Reserve

Policy. After this initial increase, rates are essentially flat, with a miniscule reduction over the remaining years of the Plan.

It's important to note that CleanPowerSF generation rates only reflect a portion of the bill, as CleanPowerSF customers also pay delivery charges and fees to PG&E. So a 15% increase of the generation portion of the bill represents an approximate 5% increase on the overall bill.⁵

Table 9: Projected CleanPowerSF Generation Rate Changes

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	Avg. Annual
Generation Rate Change	15%	0%	0%	0%	-1%	-1%	-1%	0%	0%	0%	1.1%

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 of 90 days or 25 percent of operating and maintenance expenses. Throughout the 10-year planning period, fund balance is projected to range from a high of 65 percent of operating expenses in FY 2029-30 to a low of 31 percent in FY 2023-24.

Affordability

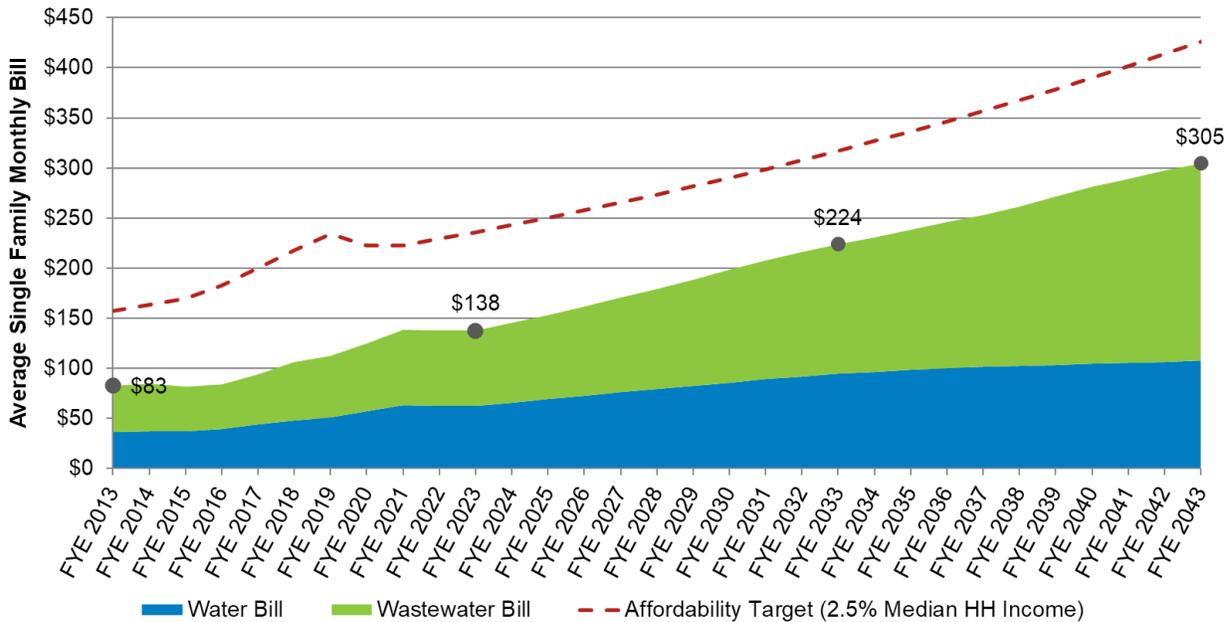
As San Franciscans face the effects of a changing climate, economic stressors and pandemic recovery, the SFPUC is working to place affordability and accessibility at the forefront of strategic planning. As required by the [Ratepayer Assurance Policy](#), the SFPUC’s financial planning and rate-setting must aim to mitigate significant bill impacts on our ratepayers, while balancing the need for efficient, environmentally resilient capital investments and prudent financial planning requirements to cover our cost of service. These goals may at times require tradeoffs and difficult decisions, but the Commission recognizes that its revenue comes from ratepayers. It is critical to transparently report on the impact of our bills on our customers, as well as the efforts our agency is making to address identified affordability.

Measuring Utility Affordability

Historically, the SFPUC’s water and sewer affordability level of service goal target requires the average monthly single family residential water and wastewater bill to be less than 2.5 percent of the Median Household Income (MHI) – denoted in the chart below by the red dashed line. The SFPUC is currently meeting this target, as the average combined water and wastewater monthly bill of \$138 for FY 2021-22 was 1.5 percent of MHI.

⁵ Estimated using 2021 average usage patterns for a residential customer on the default E-TOU-C rate schedule.

Figure 12: Projected Average Single Family Residential Water & Wastewater Bill as a % of Median Household Income⁶



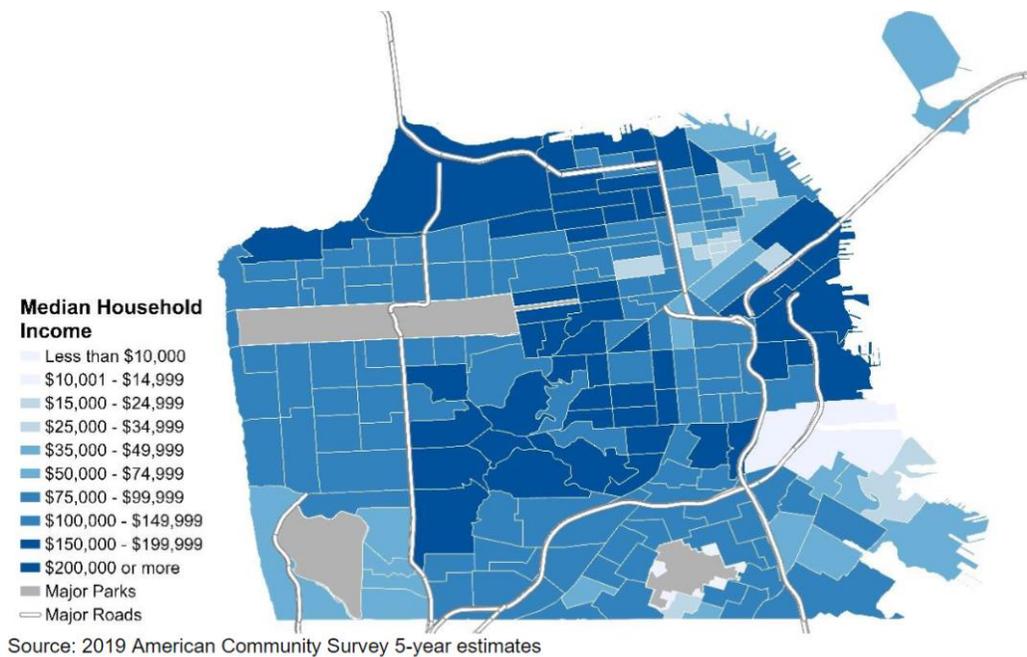
Under the current 10-Year Financial Plan, rate increases during the next 20 years will drive the average bill shown in Figure 12 close to 2 percent of MHI, but still below the 2.5 percent threshold. While these increases do meet the current policy target, recent analysis suggests that this does not accurately reflect the affordability and accessibility of SFPUC bills to the majority of San Franciscans. Over the past two years, the agency has committed to addressing structural inequities and barriers to affording and accessing SFPUC services through its newly established Water, Power, Sewer as Human Rights Working Group, as directed by the Commission’s [2020 Resolution Condemning Systemic Racism and Promoting Racial Justice](#). One of the first initiatives of the Working Group was a research study on the nuances of measuring affordability. Its findings have fueled vital discussions in reimagining equity at the SFPUC, some of which we discuss below.

The main problems with the existing MHI-based metric are 1) it only focuses on average usage by a median household rather than the full distribution of household incomes and utility need in San Francisco, 2) it does not consider the extremely high local cost of living in San Francisco, which means customers have less discretionary income to pay for utilities once housing, transit, childcare, etc. are accounted for, and 3) it does not acknowledge electricity charges paid by Hetch Hetchy Power or CleanPowerSF customers.

⁶ Median Household Income from 5-year 2017-2021 American Community Survey results. Assumes incomes grow by 3% annually during the forecast period. Bills are calculated based on the average single family residential household usage, which is held flat at its current level of 4.70 CCF in FY 2023-24. No changes to the rates structure are included.

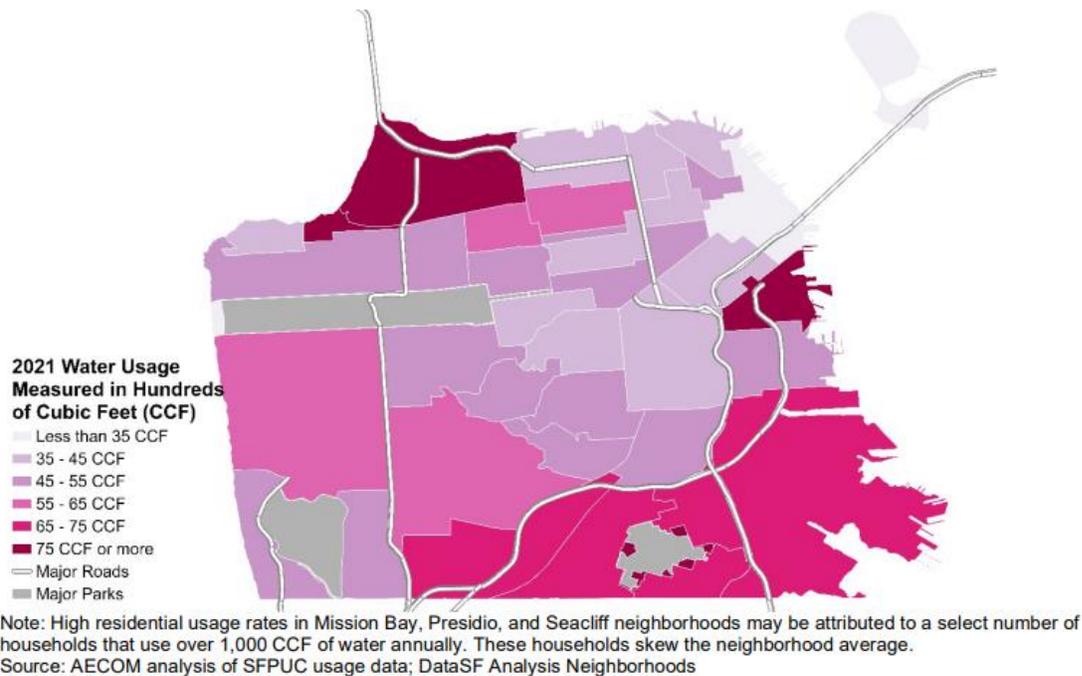
First, San Francisco’s lowest-income neighborhoods (Figure 13) have some of the highest average household water and sewer usage for both multi-family and single-family residences (Figure 14), likely because these same neighborhoods also tend to have larger household sizes. This trend is especially pronounced in southeastern neighborhoods. For example, in 2021, the city-wide average for annual residential water usage was 51 CCF. In Bayview Hunters Point, averages were 71 CCF for single-family units and 73 CCF for multi-family units. Visitation Valley averaged 73 CCF for single-family units and 87 CCF in multi-family units. Both neighborhoods were among the highest average household sizes in San Francisco (SFPUC 2021). Furthermore, 2019 census tracts found that the lowest median household incomes were in Bayview Hunters Point, the Tenderloin, North Beach, Chinatown, Lakeshore, and Visitation Valley neighborhoods.

Figure 13: 2019 Median Household Income by Census Tract⁷



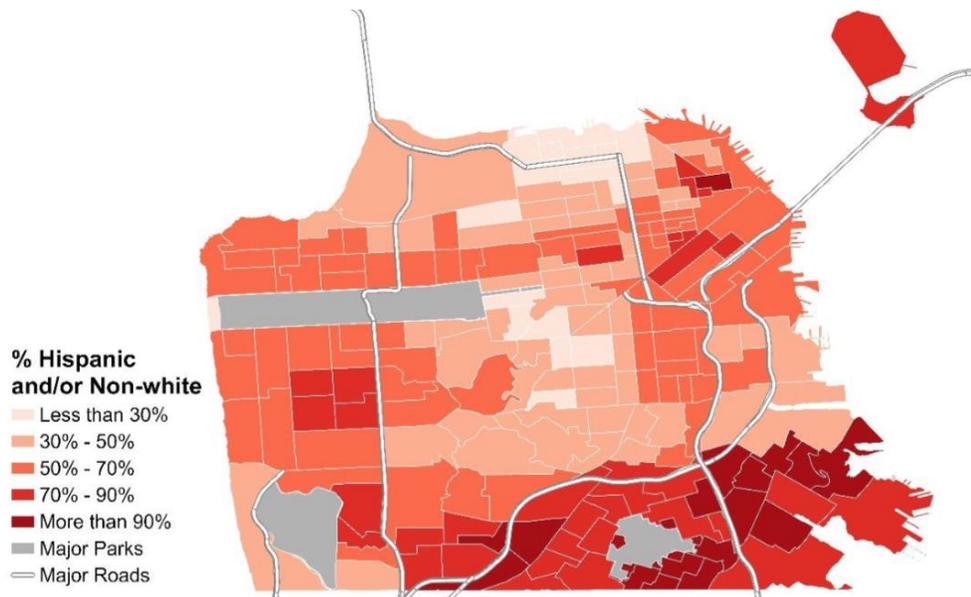
⁷ This and subsequent maps are taken from “The Human Right to Water, Power, and Sanitation in San Francisco: Findings and Recommendations Related to the Affordable, Accessible, and Equitable Provision of SFPUC’s Water, Power, and Sewer Services,” 2022

Figure 14: 2021 Average Annual Water Usage per Household by Neighborhood



As shown in Figure 15, these neighborhoods are also among the highest percentage of non-white households (i.e., Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, two or more races, or Hispanic or Latinx). As a result, the current affordability metric’s focus on a median-income household with average water usage means that the much higher bills paid by Black, Indigenous, and people of color residents with low incomes are not considered when evaluating the burden of SFPUC rates. The current affordability metric does not comply with the SFPUC’s mandate to incorporate racial justice into performance evaluation.

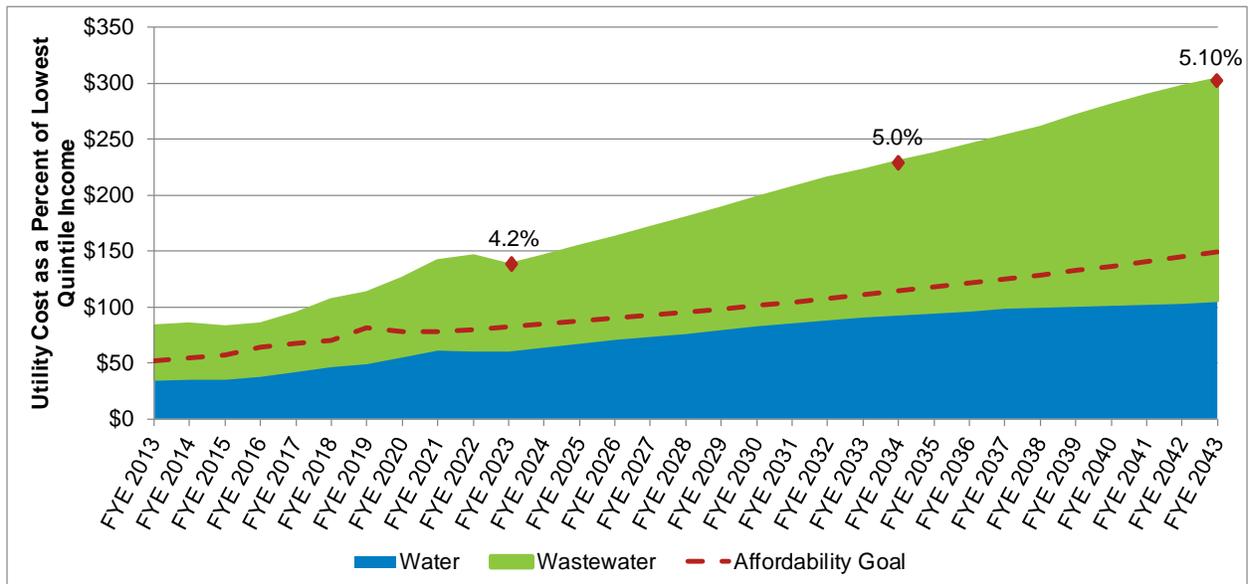
Figure 15: 2019 Percent Hispanic and/or Non-white Population by Census Tract



Note: Non-white population includes people who identify as 2 or more races, in addition to those who identify with one race or ethnicity group alone. Source: 2019 American Community Survey 5-year estimates

While it does not fully address the racial and household size disparities outlined above, a simple measure currently used by the US Environmental Protection Agency to assess affordability recommends measuring the bill as a percent of the lowest quintile income; that is, the household at the 20th percentile of income of all San Franciscans, rather than the median household’s 50th percentile. Doing this reveals that this lower-income household with average usage is currently paying 4.2% of their household income towards their water and wastewater bill, rising to 5.1% in 20 years as shown in Figure 16. This discrepancy between the amount paid and the SFPUC’s existing affordability target is a potential guide to the magnitude of discounts a household would need to receive for their bill to be considered affordable.

Figure 16: Projected Average Single Family Residential Water and Wastewater Bill as a Percent of the Lowest Quintile Income⁸



Second, alternative measurements which consider household sizes and the cost of living in San Francisco indicate that San Francisco ratepayers may be among the most cost burdened of any major metropolitan area. San Francisco’s median household income for 2021 was \$126,187, much higher than the US average of \$69,021.⁹ But after accounting for other essential costs, such as housing, food, healthcare, and taxes, it becomes apparent that households with incomes less than 100% of AMI or the MHI have minimal discretionary funds to pay their utility bills.

For example, almost 20% of San Franciscans are within the 60-80% AMI range. A single-person household earning 60% of AMI with average usage spends less than 2.5% of their total annual income on SFPUC water and sewer bills. But after deducting other essential costs, this same household is left with less than \$8,000 in discretionary income and would then spend 9% of those funds on an average utility bill. Moreover, using available data on essential costs, household sizes of 3 or more in this same income range have no discretionary funds, needing an additional 15% increase in income to pay utility bills. Focusing solely on incomes without grounding them in local cost of living artificially improves the appearance of utility bill affordability.

Finally, the existing metric does not speak to the cost of electricity, either for the full-service Hetch Hetchy Power municipal utility, or for the generation portion of the bill paid by customers of the

⁸ Lowest Quintile Income from 5-year 2017-2021 American Community Survey results. Assumes incomes grow by 3% annually during the forecast period. Bills are calculated based on the average single family residential household usage, which is held flat at its current level of 4.70 CCF in FY 2023-24. No changes to the rates structure are included.

⁹ 5-year 2017-2021 American Community Survey Estimates.

CleanPowerSF Community Choice Aggregator. Improved affordability metrics should include the costs of all SFPUC services.

SFPUC staff are working to develop a recommended alternative to the existing affordability metric that addresses these concerns and expects to bring this to the Commission during 2023. These improved metrics will more transparently assess the impact of SFPUC's rates on all its customers, enabling the Commission to make better decisions regarding the tradeoffs between affordability and the need to steward our utility systems through prudent capital planning.

Ensuring Utility Affordability

Prioritizing affordability and accessibility in our financial planning requires tackling difficult and complex questions. As providers of water, sewer, and power services, the SFPUC acknowledges that these are vital services. Are rates affordable because someone can pay their bill, or are they affordable if some can pay their bill without extraneous sacrifice? For the lowest-income customers, in which BIPOC communities are overrepresented, San Francisco's extremely high cost of living means that paying a utility bill will almost always require difficult sacrifices.

To address these concerns, the SFPUC has begun implementing new programs which direct financial resources to the most burdened customers, especially those who fell into critical financial distress during the pandemic. Over the last two years, the SFPUC 1) streamlined the application process for its bill discount programs to improve participation, and 2) lobbied for the creation of and secured funding from the state COVID-19 arrearage forgiveness programs.

In response to the effects of the pandemic, the agency launched the Temporary Emergency Customer Assistance Program (E-CAP) for residential customers as well as the Emergency Nonprofit and Small Business Assistance Program for commercial customers who lost income due to layoffs, illness, or the shelter-in-place orders. To roll out these emergency programs quickly and ensure eligible customers would apply, SFPUC created an online application that allowed self-certification of eligibility and extensively advertised this new program to customers. This strategy had immediate results: E-CAP quickly enrolled 5,391 residential and 885 commercial customers vs. the approximate 1,000 customers enrolled in the SFPUC's existing low-income CAP program. Based on this success, the SFPUC adopted this streamlined application process for the existing CAP program, reducing the administrative burden on low-income customers and improving the affordability and accessibility of SFPUC services. This 10-Year Financial Plan budgets \$7 million in ongoing annual funding for the water and wastewater CAP program, sourced from non-rate rental revenue, to continue and potentially expand discounts as bills rise.

During the COVID-19 pandemic, the SFPUC did not shut off water or power service for nonpayment. While this policy provided much-needed access to water, power and sanitation services during the pandemic, it meant that many customers accrued significant debts.

From March 2020 to April 2022, the number of water and wastewater accounts with delinquent bills more than 90 days past due jumped from 1,712 to 7,110 for single-family residential customers and almost tripled from 624 to 1,714 for commercial customers. Similarly, CleanPowerSF delinquency

accounts increased by 52% relative to the pre-COVID average, and Hetch Hetchy Power customers in need of COVID-19 arrearage relief reached a total of 744 accounts in 2021.

Without support, these customers faced looming utility shutoffs when the temporary relief ended. SFPUC staff played a key advocacy role in the creation of several state programs to forgive accrued customer debts, and successfully applied for and received some of the largest funding allotments of any municipal utility in the state. Notably, these programs not only paid off customer debts, but also funded both the emergency and regular E-CAP and CAP programs during the pandemic period of March 2020 through June 2021. In early 2022, the California Water and Wastewater Arrearages Payment Program (2021 CWWAPP) granted SFPUC \$7.3 million to pay down accrued arrearages and provide discounts to 15,198 residential and commercial water accounts and \$9.3 million for 13,841 residential and commercial wastewater accounts. Hetch Hetchy Power customers received \$1.3 million and CleanPowerSF customers received a total of \$3.6 million in relief for energy bill arrearages through two rounds of the California Arrearage Payment Program (2021 and 2022 CAPP).

While these actions don't address the full need of customers, they represent concrete steps the agency is taking to better support ratepayers, dismantle barriers to access, increase visibility of our most marginalized communities, and continue to provide affordable and reliable water, sewer, and power services. As this work continues at the SFPUC, we seek input from our stakeholders on how we should develop our approach and deepen our commitment to equity for all San Franciscans.

Sensitivities

All Enterprises

Alternative Capital Improvement Program Expenditures

Capital spending, including revenue-funded capital and debt service on new and existing bonds, is projected to make up 55 percent of the total Water Enterprise expenses and 62 percent of the total Wastewater Enterprise expenses over the next ten years. For Hetch Hetchy Power, capital expenses are only 13 percent of the total expenditures over the ten years, but this rises from 3 percent in FY 2023-24 to 18 percent in FY 2032-33. As capital expenditures are one of the largest cost drivers in the plan, different assumptions regarding capital timing and debt issuance have a major impact on the necessary rate increases.

As described in the FY24-33 SFPUC Capital Plan, multiple versions of the CIP were prepared and compared for deliverability and rate impact. The current adopted CIP reflects staff's best efforts to balance the maintenance of critical infrastructure, while also providing the lowest possible rates to SFPUC customers.

Water and Wastewater Enterprises

Timing of Drought Declaration & Recovery

Since water and wastewater revenues are impacted by volumetric sales, conservation related to the drought reduces revenues. This impact is partially offset by the drought surcharge, which automatically increases rates by the percentage call for conservation. In theory, this means that any conservation is offset by increased rates, with no impact on revenues. However, in practice, customers may exceed the call for conservation, and there is usually a "rebound period" after a drought declaration ends before usage returns to pre-drought levels.

One sensitivity analysis evaluated the sustainability of the proposed financial plans if the current drought emergency order and drought surcharge were removed at the end of FY 2022-23, but customers did not immediately respond to the lifting of drought restrictions and made no changes to their usage from the base case. This scenario results in a rate revenue reduction of \$14.1 million for the Water Enterprise in FY 2024 and \$18.7 million for the Wastewater Enterprise. Under this scenario the Water Enterprise is projected to be able to meet all its financial policy objectives for each fiscal year in the ten-year projection window without any additional rate adjustments. The Wastewater Enterprise, however, fails to meet the operating reserve target, with the fund balance dropping to 79 days of operating costs in FY 2030-31. An additional 1% rate increase in FY 2029-30 would be sufficient to bring the fund balance back in line with the operating reserve policy.

Use of Operational Execution Factors

As mentioned in the "Use of Funds" section of the report, SFPUC is newly applying execution factors to the projected budgetary expenditures. A sensitivity analysis was conducted to evaluate the impact of using these factors on the annual expenses and the projected rate adjustments needed to continue to meet each enterprise financial policy objectives and debt service obligations. Application of these

execution factors results in an \$5.9 million reduction of projected operating costs for the Water Enterprise in FY 2023-24 (1.7% of total operating costs) and \$67.6 million over the next ten years, resulting in 1% reduction to the rate plan in each of FY 2027-28 and FY 2028-29. Similarly, the application of the Wastewater's execution factors results in an \$8 million reduction of projected operating costs in FY 2023-24 (3.7% of total operating costs) and \$92.4 million over the next ten years, resulting in 1% reduction to the rate plan in each of FY 2024-25, FY 2025-26, and FY 2029-30.

While the use of execution factors does not substantially reduce rates, it is one more step to help improve our financial forecasting of rate revenue requirements to keep rates as low as possible for ratepayers.

Power Enterprise

Power Supply Expenditures

The power supply market, and particularly natural gas prices, has seen significant volatility in the last two years due to various external factors, including the war in Ukraine, weather patterns, and supply chain impacts. For both Hetch Hetchy and CleanPowerSF, this uncertainty is a major challenge to financial planning. As discussed above, the budgets for each business line were increased in this version of the plan, and the proposed plans forecast power purchase costs on the higher end of the projections.

The planning process has kept track of forward pricing curves at least weekly in December 2022 and running scenarios with new pricing models. While the proposed budget is conservative, it does not represent the highest possible forecast. In some of the most extreme days, prices increased by 300% or more compared to the prior week's forecast. If such anomalies were to materialize, power supply expenses for Hetch Hetchy Power and CleanPowerSF would increase by about \$28 million and \$67 million respectively over the ten-year planning period.

Hetch Hetchy Power

Sensitivity to Increased Volume Growth

This plan includes many adjustments to expected Hetch Hetchy Power volumetric sales forecasts to account for construction project delays. It is entirely possible volumes could exceed the base case loads, driven by favorable economic recovery and successful project execution. In an upside scenario in which redevelopment and infill projects come online one year sooner than they are in the current plan, power revenues grow by over \$8 million in FY 2023-24, and over \$51 million in the remaining years of the Plan.

Appendices

Appendix A: Water Enterprise 10-Year Financial Plan

(\$M)	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033
Beginning Fund Balance	\$ 284.5	\$ 253.7	\$ 266.3	\$ 252.7	\$ 220.2	\$ 208.5	\$ 201.0	\$ 189.4	\$ 166.9	\$ 165.5	\$ 161.9
Sources											
Total Sources	\$ 671.7	\$ 721.3	\$ 739.2	\$ 773.4	\$ 786.4	\$ 817.3	\$ 843.6	\$ 869.4	\$ 882.4	\$ 900.4	\$ 920.6
Uses											
Operations & Maintenance	277.4	281.6	289.4	297.5	306.0	314.7	323.7	332.9	342.5	352.4	362.6
Hetchy Transfer	49.6	46.0	49.5	51.0	52.6	54.0	55.5	57.2	58.9	60.7	62.7
Debt Service	328.4	333.5	335.4	373.7	374.5	399.4	407.4	434.8	433.1	433.7	427.4
Revenue-Funded Projects	47.1	47.6	78.6	83.6	65.1	56.6	68.6	67.0	49.2	57.2	46.5
Total Uses	\$ 702.5	\$ 708.7	\$ 752.9	\$ 805.8	\$ 798.1	\$ 824.7	\$ 855.2	\$ 892.0	\$ 883.7	\$ 904.0	\$ 899.2
Net Revenues	\$ (30.8)	\$ 12.6	\$ (13.7)	\$ (32.5)	\$ (11.7)	\$ (7.4)	\$ (11.6)	\$ (22.6)	\$ (1.3)	\$ (3.6)	\$ 21.4
Ending Fund Balance	\$ 253.7	\$ 266.3	\$ 252.7	\$ 220.2	\$ 208.5	\$ 201.0	\$ 189.4	\$ 166.9	\$ 165.5	\$ 161.9	\$ 183.3
Rate Increase - Retail	0.0%	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	2.0%
Rate Increase - Wholesale	15.9%	11.6%	0.0%	0.0%	0.0%	4.5%	3.6%	2.8%	0.2%	0.5%	2.2%
Fund Balance as % of Op. Expenses	78%	81%	75%	63%	58%	55%	50%	43%	41%	39%	43%
Debt Service Coverage (Current)	1.27	1.24	1.21	1.15	1.15	1.13	1.15	1.11	1.12	1.13	1.17
Debt Service Coverage (Indenture)	1.73	1.91	2.00	1.83	1.74	1.66	1.64	1.55	1.51	1.52	1.55
Revenue-Funded % of Capital	23%										
Water Sales - Retail (MGD)	54.6	55.5	56.5	57.4	56.8	56.2	55.6	55.1	54.6	54.4	54.1
Water Sales - Wholesale (MGD)	123.1	121.1	125.3	129.7	130.1	130.5	130.9	131.7	132.5	133.2	134.1
Single Family Res. Monthly Average (CCF)	4.8	4.7	4.7	4.8	4.7	4.7	4.6	4.5	4.5	4.4	4.4

Appendix B: Wastewater Enterprise 10-Year Financial Plan

(\$M)	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033
Beginning Fund Balance	\$ 157.8	\$ 158.8	\$ 197.1	\$ 186.4	\$ 184.1	\$ 158.4	\$ 147.1	\$ 146.7	\$ 125.0	\$ 115.3	\$ 126.5
Sources											
Sewer Charges	378.6	418.0	441.1	488.3	532.0	580.7	630.5	681.3	736.2	771.9	805.3
Interest Income	1.6	1.7	2.4	2.3	2.2	2.7	2.5	2.3	2.0	1.8	1.9
Federal Bond Interest Subsidy	4.0	3.9	3.7	3.6	3.4	3.3	3.1	2.9	2.7	2.5	2.3
Other Miscellaneous Income	9.3	9.2	9.4	9.6	9.7	9.7	9.8	9.8	9.9	9.9	10.0
Total Sources	\$ 393.5	\$ 432.7	\$ 456.7	\$ 503.8	\$ 547.4	\$ 596.4	\$ 645.9	\$ 696.3	\$ 750.8	\$ 786.1	\$ 819.5
Uses											
Operations & Maintenance	201.6	209.7	215.9	222.4	229.0	235.9	243.0	250.3	257.8	265.6	273.4
Debt Service	102.2	97.9	123.1	152.9	210.7	236.0	264.8	326.7	358.8	362.7	388.9
Revenue-Funded Projects	88.7	86.7	128.4	130.8	133.3	135.9	138.5	141.1	143.8	146.6	149.4
Total Uses	\$ 392.5	\$ 394.3	\$ 467.4	\$ 506.1	\$ 573.0	\$ 607.8	\$ 646.2	\$ 718.1	\$ 760.4	\$ 774.9	\$ 811.7
Net Revenues	\$ 1.0	\$ 38.4	\$ (10.7)	\$ (2.3)	\$ (25.7)	\$ (11.4)	\$ (0.3)	\$ (21.8)	\$ (9.6)	\$ 11.2	\$ 7.7
Ending Fund Balance	\$ 158.8	\$ 197.1	\$ 186.4	\$ 184.1	\$ 158.4	\$ 147.1	\$ 146.7	\$ 125.0	\$ 115.3	\$ 126.5	\$ 134.3
Retail Rate Increase	0.0%	9.0%	9.0%	9.0%	10.0%	10.0%	10.0%	9.0%	9.0%	5.0%	5.0%
Fund Balance as % of Op. Expenses	79%	94%	86%	83%	69%	62%	60%	50%	45%	48%	49%
Debt Service Coverage (Current)	1.88	2.28	1.96	1.91	1.59	1.60	1.58	1.41	1.42	1.50	1.48
Debt Service Coverage (Indenture)	3.42	3.90	3.56	3.17	2.51	2.30	2.16	1.88	1.77	1.83	1.82
Revenue-Funded % of Capital	27%										
Billed Discharge Volumes (MGD)	44.1	44.5	45.3	46.1	45.6	45.2	44.7	44.3	43.9	43.8	43.6
Average Single Family Residential Bill	\$74	\$81	\$88	\$96	\$105	\$116	\$127	\$139	\$151	\$159	\$167

Appendix C: Hetch Hetchy Water and Power Enterprise 10-Year Financial Plan

(\$M)	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033
Beginning Fund Balance	\$ 136.7	\$ 123.3	\$ 90.4	\$ 77.9	\$ 77.2	\$ 87.4	\$ 119.4	\$ 136.5	\$ 163.0	\$ 198.0	\$ 214.9
Sources											
Power Sales - Retail	155.6	168.2	205.7	242.4	281.1	310.1	346.6	369.9	394.8	416.1	439.6
Power Sales - Wholesale	35.5	31.7	27.2	24.3	19.0	18.4	16.9	16.2	16.2	16.1	15.7
Gas & Steam Sales	21.4	24.7	25.4	26.2	27.0	27.8	28.6	29.5	30.4	31.3	32.2
Water Sales	2.5	2.6	2.7	2.9	3.0	3.1	3.2	3.4	3.5	3.6	3.6
Hetchy Transfer	49.6	46.3	49.7	51.2	52.8	54.2	55.6	57.2	58.8	60.4	62.3
Other Misc Income	13.9	10.5	11.2	11.3	11.5	12.5	13.3	13.5	14.2	14.9	15.2
Total Sources	\$ 278.5	\$ 283.9	\$ 321.9	\$ 358.3	\$ 394.4	\$ 426.2	\$ 464.2	\$ 489.6	\$ 517.8	\$ 542.4	\$ 568.7
Uses											
Power Supply & Delivery Charges	113.2	127.0	132.4	145.9	149.3	153.4	166.2	175.4	186.7	198.8	208.9
Other Operations & Maintenance	170.5	178.9	183.8	189.7	195.8	202.1	210.4	217.0	223.2	228.6	237.6
Debt Service	4.0	3.8	10.5	10.5	18.3	18.0	46.5	46.5	46.5	71.7	71.6
Revenue-Funded Projects	4.3	7.0	7.8	13.0	20.7	20.7	24.1	24.3	26.4	26.4	26.4
Total Uses	\$ 291.9	\$ 316.7	\$ 334.4	\$ 359.1	\$ 384.1	\$ 394.1	\$ 447.1	\$ 463.1	\$ 482.8	\$ 525.5	\$ 544.5
Net Revenues	\$ (13.5)	\$ (32.8)	\$ (12.5)	\$ (0.8)	\$ 10.2	\$ 32.0	\$ 17.1	\$ 26.5	\$ 35.0	\$ 16.8	\$ 24.2
Ending Fund Balance	\$ 123.3	\$ 90.4	\$ 77.9	\$ 77.2	\$ 87.4	\$ 119.4	\$ 136.5	\$ 163.0	\$ 198.0	\$ 214.9	\$ 239.1
Retail Rate Change	6.6%	14.0%	10.0%	9.0%	8.5%	7.0%	6.0%	4.0%	3.0%	3.0%	3.0%
Fund Balance as % of Power Op. Expenses	53%	35%	30%	28%	30%	40%	43%	49%	57%	60%	63%
Debt Service Coverage (Current)	1.16	1.34	1.23	2.11	2.66	3.89	1.87	2.08	2.31	1.59	1.70
Debt Service Coverage (Indenture)	46.49	25.29	9.14	10.40	7.19	9.00	4.46	5.04	5.84	4.37	4.70
Revenue-Funded % of Capital	17%										

Appendix D: CleanPowerSF 10-Year Financial Plan

(\$M)	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033
Beginning Fund Balance	\$ 51.3	\$ 69.4	\$ 102.8	\$ 157.2	\$ 184.5	\$ 205.4	\$ 224.6	\$ 238.6	\$ 241.0	\$ 232.0	\$ 217.5
Sources											
Retail Power Sales	317.9	367.4	369.5	372.3	375.1	375.1	373.5	373.2	376.9	381.6	384.3
Wholesale Power Sales	3.7	1.6	1.3	3.5	6.8	8.6	8.9	4.3	0.4	1.5	1.3
Other Miscellaneous Income	0.0	1.5	1.7	1.7	1.9	1.9	2.0	2.0	2.1	2.2	2.2
Total Sources	\$ 321.6	\$ 370.4	\$ 372.5	\$ 377.5	\$ 383.8	\$ 385.6	\$ 384.4	\$ 379.5	\$ 379.4	\$ 385.2	\$ 387.8
Uses											
Power Supply	270.5	305.3	284.2	315.3	327.1	329.4	332.2	332.2	333.2	335.2	336.0
Other Operations & Maintenance	31.4	30.1	30.9	31.9	32.9	33.9	34.9	36.0	37.1	38.3	39.5
Revenue-Funded Projects	1.6	1.6	2.9	3.0	3.0	3.1	3.3	8.9	18.1	26.3	2.8
Total Uses	\$ 303.5	\$ 337.0	\$ 318.1	\$ 350.2	\$ 362.9	\$ 366.4	\$ 370.4	\$ 377.2	\$ 388.4	\$ 399.7	\$ 378.3
Net Revenues	\$ 18.1	\$ 33.4	\$ 54.4	\$ 27.3	\$ 20.9	\$ 19.2	\$ 14.0	\$ 2.4	\$ (9.0)	\$ (14.5)	\$ 9.5
Ending Fund Balance	\$ 69.4	\$ 102.8	\$ 157.2	\$ 184.5	\$ 205.4	\$ 224.6	\$ 238.6	\$ 241.0	\$ 232.0	\$ 217.5	\$ 227.0
Retail Rates Change	-10.8%	15.0%	0.0%	0.0%	0.0%	-1.0%	-1.0%	-1.0%	0.0%	0.0%	0.0%
Days Cash On Hand	84	112	182	194	208	226	237	239	229	213	221
Fund Balance as % of Op. Expenses	23%	31%	50%	53%	57%	62%	65%	65%	63%	58%	60%
Power Sales (GWh)	2,875	2,902	2,919	2,941	2,964	2,994	3,011	3,039	3,070	3,108	3,130
Avg Residential CPSF Generation Bill	\$ 37	\$ 42	\$ 42	\$ 42	\$ 42	\$ 42	\$ 41	\$ 41	\$ 41	\$ 41	\$ 41