San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

SFPUC FY 2023-24 to FY 2032-33 10-Year Capital Plan

Adopted February 14, 2023

Contents

1. Executive Summary

The SFPUC's balanced FY 2023-24 to FY 2032-33 capital plan totals $8.8 Billion (B). The first year of the capital plan represents SFPUC's FY 2023-24 capital budget for each of the three enterprises. The Wastewater Enterprise has the largest share of the plan at 55%, followed by Water at 26%, Hetchy Water at 11% and Power (including CleanPowerSF) at 8%. Key projects funded in this capital plan include the completion of the Biosolids Digester Facility Project, the rehabilitation and improvement of Mountain Tunnel, stormwater improvements and flood resistance, assessment of Public Power expansion and repair and replacement of our sewer and water mains throughout the system.

The purpose of capital investments is to extend the useful life of our infrastructure and provide continued reliable and compliant operation of our system. Capital investments are essential for the reliable delivery of clean drinking water, the protection of public health and the environment, including the San Francisco Bay and Pacific Ocean, and the continued delivery of clean energy for municipal services. The SFPUC 10-Year Capital Plan provides an assessment of the agency's capital needs aligned with the Commission's strategic goals, as well as the required investments to meet those needs.

Funding capital expenditures is the most significant portion the SFPUC operating budget. The capital plan is 75% debt funded and 25% revenue funded. Debt service to support capital expenditures as well as revenue-funded (i.e. cash-funded) capital expenditures make up over one third of the total operating budget, a share that is projected to grow to half over the 10-year period.

The table below shows the capital plan by enterprise.

Table 1. FY2023-24 to FY 2032-33 SFPUC Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Uses											
Water	290.0	437.3	443.7	337.4	245.4	118.2	85.3	83.7	80.4	142.6	**2,263.9**
Wastewater	985.5	894.5	818.4	521.1	353.6	280.5	232.7	214.7	253.2	325.2	**4,879.4**
Hetchy-Water	85.9	155.6	152.6	141.6	94.6	99.6	100.0	57.5	47.4	42.3	**976.9**
Hetchy-Local Power	21.5	77.7	92.7	89.1	81.5	55.0	48.8	46.1	43.1	40.0	**595.5**
CleanPowerSF	1.6	2.9	3.0	3.0	3.1	3.3	8.9	18.1	26.3	2.8	**73.0**
Total Uses	**1,384.5**	**1,568.1**	**1,510.3**	**1,092.2**	**778.2**	**556.5**	**475.6**	**420.2**	**450.4**	**552.9**	**8,788.7**
Sources											
Revenue Funded	154.3	217.7	230.5	222.1	216.3	234.6	241.2	237.5	256.4	225.1	**2,235**.6
Debt Funded	1,230.2	1,350.4	1,279.8	870.1	561.9	322.0	234.4	182.7	193.9	327.7	**6,553.1**
Total Sources	**1,384.5**	**1,568.1**	**1,510.3**	**1,092.2**	**778.2**	**556.5**	**475.6**	**420.2**	**450.4**	**552.9**	**8,788.7**

Because the Capital Plan is SFPUC's single largest cost driver, it is the most significant driver of rate growth for our customers. The SFPUC has undertaken an extensive effort to develop a capital budget and 10-year plan that is both **deliverable** and **affordable** to our ratepayers. Staff from across the agency have been working diligently and collaboratively over the last year to build capital plan proposals that are both realistically deliverable and financially prudent.

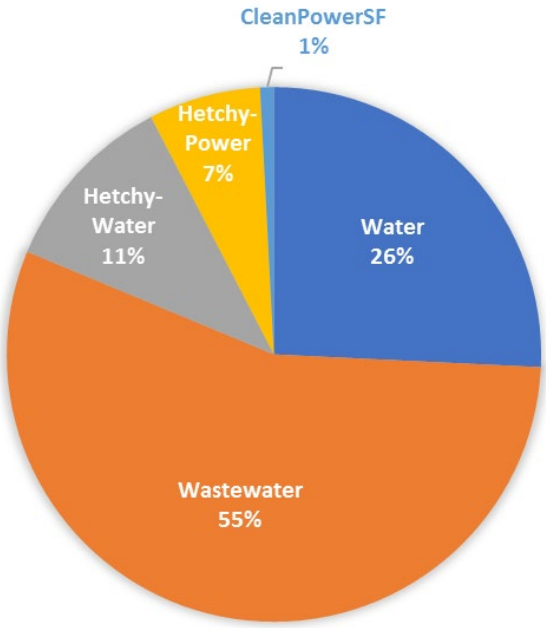


Figure 1. FY2023-24 to FY 2032-33 Capital Plan

During last year's budget process, it became apparent that there had been a past mismatch between capital budgeting and our ability to deliver projects within the planned timeframe, which led to large, unencumbered balances being carried forward from year to year across the agency's project portfolio. We began the task of trying to right-size the capital plan in 2021 but realized that the work needed would take more time than we had available before last year's budget was adopted. We ended up moving forward with a one-year FY 2022-23 capital budget appropriation and a 10-year capital plan that was partially unbalanced, recognizing the further work we needed to do. We committed to bringing a balanced FY 2023-24 budget, and 10-year capital plan to the Commission in February 2023.

This year's balanced budget and capital plan was also developed in the context of several challenges facing the agency. These include ongoing drought coupled with extreme storm events, inflationary pressures, and an unstable economy as we emerge from the pandemic. In addition, we face internal challenges including hiring and retention of staff, and growing capital needs. These factors affect our costs and rates, our customers' ability to pay, and our ability to deliver our capital program. The proposed capital plans and their associated expenditure plans have been incorporated into the SFPUC's 10-year financial plans which project rate adjustments for the Water, Wastewater, and Power enterprises. Over the past ten years, the combined water and wastewater bill has increased over 75%. The financial plans project an increase in the combined water/wastewater bill of 90% over next ten years, underscoring the importance of constraining our capital costs.

Given our commitment to our infrastructure as well as facing these challenges, over the past year the agency refocused on deliverability and affordability. This plan update represents an 11% reduction in total size from last year's proposed expenditures, going from $9.9 B last year to $8.8 B this year. This significant reduction shows the many hard choices and tradeoffs we made as an agency to rethink capital spending, taking into account our ability to spend the money and keep our rate growth affordable in the long term. These choices included reviewing existing project balances to ensure there was a plan in place to spend those funds before new funding was requested, prioritizing projects based on risk metrics, and rightsizing budgets based on delivery capacity. This report includes detailed information about how the capital plan evolved, the process we followed over the past year and the work that remains to continue improving our capital planning and delivery capabilities. This report also details the main projects that are included in this plan, as well as those that were deprioritized to constrain costs.

2. Capital Plan Evolution

During last year's budget process, we began the process of trying to rightsize the capital plan for deliverability and affordability. However, the plan expenditures still grew due to cost increases, expanding scope and identified investment needs. It became clear during the Fall 2021 that a greater effort was needed to complete a developed plan that could realistically deliver capital projects in the timeframe they were budgeted for, taking affordability factors into account. Instead of balancing the capital plan by simply assuming long term rate increases, we took the decision to move forward with an unbalanced 10-Year Capital Plan and only proposed a one-year balanced capital budget for FY 2022-23, as we continued to work on refining our capital planning process. Our commitment to the Commission was to revisit the both the FY 2023-24 capital budget and 10-Year Capital Plan.

FY 2022-23 Capital Plan Update (Last Year)

Last year's Capital Plan had total expenditures (uses) of $9.9 B and total sources of $8.6 B leading to a 13% imbalance. The following table summarizes the entire capital plan.

Table 2. FY2022-23 to FY 2031-32 Capital Plan

$million	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	Total
Uses											
Water	111.2	389.7	489.7	364.2	219.3	121.3	134.6	109.0	102.0	86.9	2,127.9
Wastewater	687.2	953.1	1,014.8	934.4	580.7	455.2	374.0	352.0	353.0	422.6	6,127.0
Hetchy Water	114.9	151.8	203.6	146.3	82.7	70.9	60.5	42.5	59.4	41.8	974.4
Hetchy Power	66.2	32.7	83.1	85.6	85.3	77.9	51.1	45.9	43.2	40.1	611.0
Clean PowerSF	3.7	2.2	1.9	1.9	1.6	1.6	1.6	1.8	20.0	28.3	64.5
Total Uses	**983.3**	**1,529.5**	**1,793.0**	**1,532.5**	**969.6**	**726.8**	**621.7**	**551.2**	**577.7**	**619.7**	**9,905.0**
Sources	**983.3**	**1,276.6**	**1,508.3**	**1,286.6**	**826.3**	**628.0**	**550.4**	**490.6**	**517.2**	**548.1**	**8,615.4**
Surplus/ (Shortage)	**-**	**(252.9)**	**(284.7)**	**(245.9)**	**(143.3)**	**(98.8)**	**(71.3)**	**(60.6)**	**(60.5)**	**(71.6)**	**(1,289.6)**

FY 2023-24 Capital Plan Update (This Year)

This year's *balanced* Capital Plan has total expenditures (uses) of $8.8 B and total sources of $8.8 B. The following table summarizes the entire capital plan, followed by a table for each enterprise.

Table 3. FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Uses											
Water	290.0	437.3	443.7	337.4	245.4	118.2	85.3	83.7	80.4	142.6	**2,263.9**
Wastewater	985.5	894.5	818.4	521.1	353.6	280.5	232.6	214.7	253.2	325.2	**4,879.4**
Hetchy Water	85.9	155.6	152.6	141.6	94.6	99.6	100.0	57.5	47.4	42.3	**976.9**
Hetchy Power	21.5	77.7	92.7	89.1	81.5	55.0	48.8	46.1	43.1	40.0	**595.5**
CleanPowerSF	1.6	2.9	3.0	3.0	3.1	3.3	8.9	18.1	26.3	2.8	**73.0**
Total Uses	**1,384.5**	**1,568.1**	**1,510.3**	**1,092.2**	**778.2**	**556.5**	**475.6**	**420.2**	**450.3**	**552.9**	**8,788.7**
Sources											
Revenue Funded	154.3	217.7	230.5	222.1	216.3	234.6	241.2	237.5	256.4	225.1	**2,235.6**
Debt Funded	1,230.2	1,350.4	1,279.8	870.1	561.9	322.0	234.4	182.7	193.9	327.7	**6,553.1**
Total Sources	**1,384.5**	**1,568.1**	**1,510.3**	**1,092.2**	**778.2**	**556.5**	**475.6**	**420.2**	**450.3**	**552.9**	**8,788.7**

Water

Table 4. Water FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Sources	**290.0**	**437.3**	**443.7**	**337.4**	**245.4**	**118.2**	**85.3**	**83.7**	**80.4**	**142.6**	**2263.9**
Uses											
Water - Regional	181.5	188.0	191.5	176.0	180.0	53.1	26.6	23.5	22.1	92.9	**1,135.3**
Water -Local	108.5	249.3	252.1	161.4	65.4	65.0	58.7	60.2	58.3	49.7	**1,128.6**
Water-Totals	**290.0**	**437.3**	**443.7**	**337.4**	**245.4**	**118.2**	**85.3**	**83.7**	**80.4**	**142.6**	**2,263.9**

Hetch Hetchy Water

Table 5. Hetch Hetchy Water FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Sources	**85.9**	**155.6**	**152.6**	**141.6**	**94.6**	**99.6**	**100.0**	**57.5**	**47.4**	**42.3**	**976.9**
Uses											
Hetchy Water-Water	48.9	59.4	31.1	16.4	5.3	4.7	4.8	4.9	5.0	5.1	**185.6**
Hetchy Water-Power	0.0	32.2	27.1	39.6	14.4	38.9	29.8	11.5	10.3	19.4	**223.3**
Hetchy Water-Joint	37.0	64.0	94.4	85.6	74.9	56.0	65.3	41.1	32.1	17.7	**568.1**
Hetchy Water Total	**85.9**	**155.6**	**152.6**	**141.6**	**94.6**	**99.6**	**100.0**	**57.5**	**47.4**	**42.3**	**976.9**

Wastewater

Table 6. Wastewater FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Sources	**985.5**	**894.5**	**818.4**	**521.1**	**353.6**	**280.5**	**232.7**	**214.7**	**253.2**	**325.2**	**4879.4**
Uses											
SSIP	778.5	676.0	590.2	323.9	151.7	86.7	63.3	40.4	69.3	133.7	**2,913.8**
Non-SSIP	207.0	218.5	228.2	197.2	201.9	193.8	169.3	174.3	183.9	191.5	**1,965.6**
Wastewater Total	**985.5**	**894.5**	**818.4**	**521.1**	**353.6**	**280.5**	**232.7**	**214.7**	**253.2**	**325.2**	**4,879.4**

Hetch Hetchy Power

Table 7. Hetchy Power FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Sources	**21.5**	**77.7**	**92.7**	**89.1**	**81.5**	**55.0**	**48.8**	**46.1**	**43.1**	**40.0**	**595.5**
Uses											
Hetchy Power	21.5	77.7	92.7	89.1	81.5	55.0	48.8	46.1	43.1	40.0	**595.5**
Hetchy Power Total	**21.5**	**77.7**	**92.7**	**89.1**	**81.5**	**55.0**	**48.8**	**46.1**	**43.1**	**40.0**	**595.5**

CleanPowerSF

Table 8. CleanPowerSF FY2023-24 to FY 2032-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Sources	**1.6**	**2.9**	**3.0**	**3.0**	**3.1**	**3.3**	**8.9**	**18.1**	**26.3**	**2.8**	**73.0**
Uses											
CleanPowerSF	1.6	2.9	3.0	3.0	3.1	3.3	8.9	18.1	26.3	2.8	**73.0**
CleanPowerSF Total	**1.6**	**2.9**	**3.0**	**3.0**	**3.1**	**3.3**	**8.9**	**18.1**	**26.3**	**2.8**	**73.0**

10-Year Capital Plan Comparison

The FY 2023-24 Capital Plan update represents an 11% reduction in total size from last year's proposed expenditures, reflecting a decrease from $9.9 B last year to $8.8 B this year. This significant reduction shows the many hard choices we made as an agency to constrain capital spending, taking our ability to spend the money and keep our rate growth affordable in the long term.

The following table shows the capital plan comparison by enterprise:

Table 9. Capital Plan Comparison

$million	Last Year: Uses	This Year: Uses	Difference
Water	2,127.9	2,263.9	**136.0**
Wastewater	6,127.0	4,879.3	**(1,247.6)**
Hetchy-Water	974.4	976.9	**2.5**
Hetchy-Power	611.0	595.5	**(15.5)**
CleanPowerSF	64.5	73.0	**8.5**
Total	**9,905.0**	**8,788.7**	**(1,116.2)**

As you can see from the table, the largest driver of reductions versus last year is the Wastewater Enterprise. Wastewater has the largest share of the capital plan and has also made the biggest reductions in capital requests. Their $1.2 B reduction was driven by decreases including $636 M in the Sewer System Improvement program (SSIP) overall budget, $599 M in Renewal and Replacement Programs, Collection System and Treatment Facilities Projects and $13 M for other Wastewater Facilities Improvement Projects.

In the Water Enterprise, the $136 M increase includes $80 M in the Regional Program of which $70 M is for the Palo Alto Pipeline Replacement Project in FY 2032-33 to be paid by wholesale water customers and $55 M for Local Water Supply ($23 M), Reservoirs ($21 M) and other Local projects ($11 M).

There is a $2.5 M increase to Hetchy Water (up-country Water, Power and Joint asset projects) and a $15.5 M decrease to Hetchy Local Power Projects including a $35 M decrease to Grid Connection Distribution projects, offset by a $20 M increase to other Hetchy Power projects including the Power Asset Acquisition project, $11 M. CleanPowerSF's capital plan increased by $8.5 M to fund the new Disadvantaged Communities and Community Solar Green Tarif Programs.

Although this is a reduction overall, with the exception of Wastewater it is still an increase over the assumed sources in last year's plan that were incorporated into last year's 10-Year Financial Plan and rate projection. Additionally, for Wastewater, because so much of the cost is front- loaded, it will still impact rates due to the near-term cost increases vs last year's assumed sources in the early years of the plan. These source increases to balance this year's plan have been taken into account into the current 10-Year Financial Plan and will be paid for with rate increases impacting the later years of the financial plan with costs smoothed over the 30-year debt term.

3. Budget Context and Hard Choices to Constrain Costs

It is critical the capital budget and capital plan balances the SFPUC's infrastructure and maintenance needs with long term customer affordability and our ability to deliver capital projects. Taken together, these challenges have informed the development of the capital plan and have meant that constraining costs was extremely important. We also recognized that solving the big questions of capital deliverability and affordability will not be done in this budget cycle alone, and is a long term project to align our delivery capacity and investment needs. However, significant progress has been made in this cycle.

Affordability

The Capital Plan is SFPUC's single largest cost driver, and thus the most significant driver of rate growth for our customers. In FY 2023-24, around a third of the total SFPUC operating budget is dedicated to supporting capital expenditures though cash-funded projects as well as paying debt service on debt-funded projects. Over the next ten years, this share is projected to rise to half of the operating budget. This increase is largely driven by the SSIP project in Wastewater, as well as Water's overall capital plan. By enterprise, this increasing share of the budget going to capital is even more stark, as can be seen in table 10, two-thirds of Wastewater's revenue will be going to pay for capital by the end of the ten-year period. Over the past ten years, the combined Water and Wastewater bill has increased by over 75%. The 10-Year Financial Plans project an increase in the combined Water/Wastewater bill of 90% over next ten years, in large part to cover these growing capital costs.

	% Capital FY 2023-24	% Capital FY 2032-33
Water	48%	51%
Wastewater	54%	66%
HHWP	3%	18%

Table 10. Share of operating budget dedicated to capital uses

While this issue is particularly significant for the Water and Wastewater enterprises, power purchases are SFPUC's second largest overall cost driver, which affects Hetch Hetchy Water and Power and CleanPowerSF. Over two-thirds of the combined HHWP and CleanPowerSF budget is dedicated to power purchases. Recently, there have been major increases in power prices, which have approximately tripled between 2020 and 2023. These rising costs are putting major pressure on the Power budget and rates, which must be balanced against their rising capital costs.

Another consideration is the size of the SFPUC's debt portfolio. As of October 1, 2022, SFPUC's outstanding debt was approximately $7.4 B in Bonds, Notes and Commercial Paper and an additional $2 B in executed Federal and State Loans. The 10-Year Capital Plan is approximately 75% debt funded, and as such the 10-Year Financial Plan projects an anticipated additional debt issuance by FY 2022-33 of $6.3 B. Increasing interest rates drive borrowing costs up. Thirty-year debt terms mean our decisions impact ratepayers decades into the future.

This capital plan was developed within the context of several other challenges facing the agency. These challenges include the ongoing drought coupled with extreme storm events, inflationary pressures, and an unstable economy as we emerge from the pandemic. These newer challenges are coupled with the already existing challenge of aging infrastructure in our water, power, and sewer systems as well as increasing regulatory requirements. These challenges put pressure on our revenues and costs, as well as our ratepayers' ability to absorb rate increases.

The Wastewater enterprise also faces risks related to potential regulatory obligations, which would add significant costs. At this time these costs are unknown but could be significant. We need to be prudent in constraining costs now in case we must cover these costs in the future.

Lastly, the Water and Wastewater enterprises are in the midst of a cost of service study, which involves an in-depth analysis of cost drivers and will culminate in a 3-year rate package that will be adopted by the Commission in Spring 2023. This means that there will be increased scrutiny of our rates from our ratepayers and other stakeholders, and it is important that we have done the work make sure our costs of service are fair and affordable.

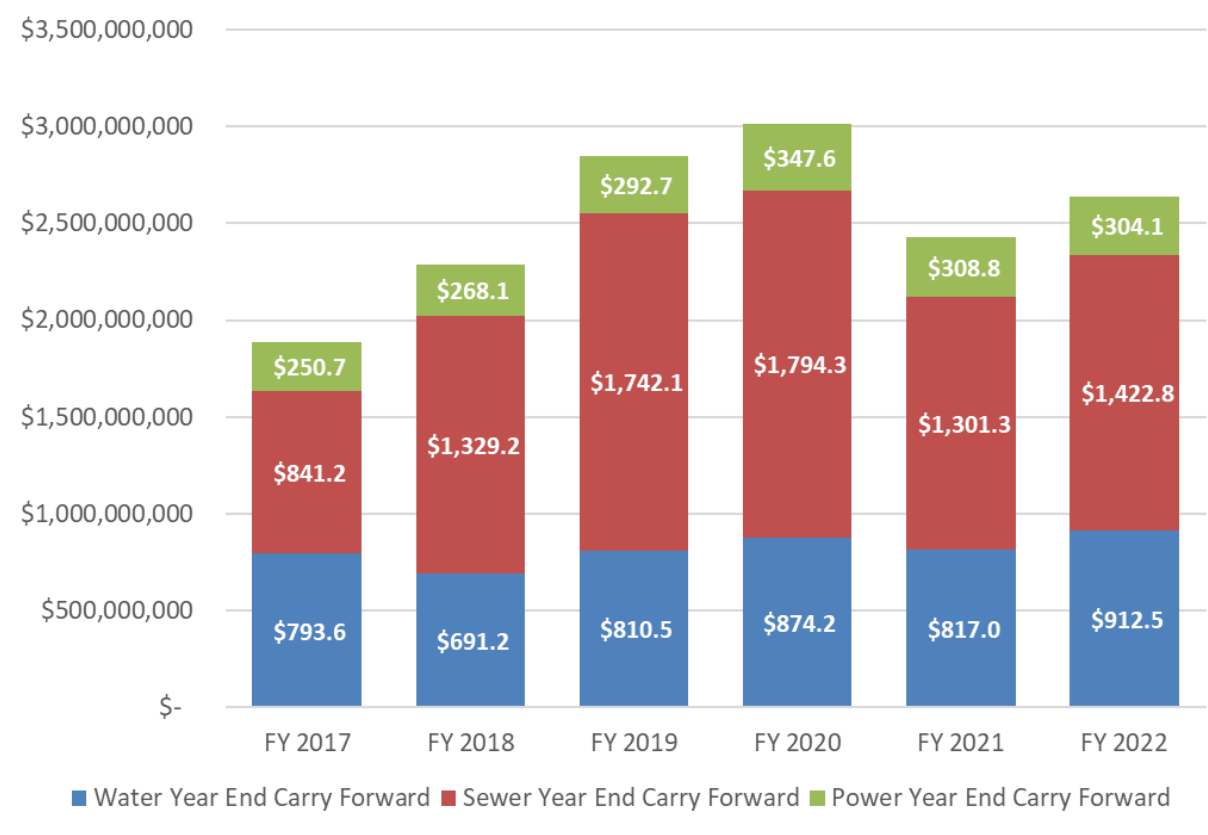
Deliverability

We also face challenges to effectively deliver capital projects as planned. This is driven by factors including staffing shortages, contracting challenges, procurement challenges and delays, and growing capital needs. Many of these challenges were exacerbated during the pandemic. This led to a past mismatch between projected budgets and spending and significant unspent balances which carry forward from year to year and have been growing. At the beginning of FY 2022-23 the SFPUC had a balance of over $2.5 B in appropriated, unencumbered, capital funds. With $918 M being the highest agencywide annual capital spending, this balance represents approximately 2.5x maximum annual spending and an inefficient use of resources. To reduce these balances to a level closer to what is needed to fund projects, we must constrain our capital plans, taking existing project balances into account and set the future budget more closely to what is realistically deliverable in the time period in which it is planned.

Historical analysis of capital spending

To better understand the deliverability of our Capital Plan, the Finance Team conducted an evaluation of each enterprise's capital spending of budgeted funds and the change in total unspent appropriation balances from 2017 through 2022. Figure 2 illustrates the change in unspent appropriations for the Water, Wastewater, and Power enterprises, which have fluctuated from $1.8 B in FY 2017 to over $3 B in FY 2020, and with the exception of FY 2021, have increased steadily year over year. This is mostly driven by the emergence of the large-scale Sewer System Improvement Program in the Wastewater enterprise in recent years, as major capital projects began construction. As of the end of FY 2021-22, the of the total appropriation balance was $2.6 B, with only $1 B encumbered.

Figure 2. Total Unspent Capital Appropriations for the Water, Wastewater, and Power Enterprises from FY 2017 through FY 2022



This trend of increasing appropriation balances indicates that the budget has historically and continues to be in excess of what is deliverable by the enterprises.

At the beginning of the 2022-23 fiscal year, excluding encumbered funds and adding the new appropriation for FY 2022-23, the SFPUC had over $2.5 B unencumbered balance available to spend—but has only spent at most $918 M in any single year. This almost $1.6 B difference represents capital budget inefficiency.

Table 11. Available balance as of July 1, 2022

	Carried forward Balance	FY 2022-23 appropriation	Encumbrances	Total available balance
Water	$719,865,133	$144,021,441	$168,056,114	$695,603,851
Hetchy Water	$265,995,644	$122,592,889	$152,156,049	$236,325,141
Wastewater	$1,477,158,192	$693,852,373	$789,199,041	$1,378,803,717
Hetchy Power	$185,031,671	$71,377,994	$41,838,090	$214,416,431
CleanPowerSF	$3,994,394	$3,727,592	$635,998	$7,082,351
Total	**$2,652,045,034**	**$1,035,572,289**	**$1,151,885,291**	**$2,532,231,491**

Why has this inefficiency occurred? There are several factors, and it is a very complex question to answer. At a high-level, reasons include ambitious planning that does not align with the reality of project timing, resulting in appropriations occurring too early versus the actual project schedule. Furthermore,

complexities in budget and appropriation management make it hard to access funds and understand funding availability. In addition to rightsizing our budget, we are also undertaking a large-scale capital planning and delivery improvement program (discussed in section 11) that will address the internal factors that lead to underspending.

Overly ambitious capital plans and underspending, leading to the accumulation of large (up to $3 B in recent years) carryforwards, creates multiple risks for the enterprises.

Firstly, while we only issue revenue bonds “just in time” for capital spending (which means it does not directly cost us money to have a large unspent appropriation), our capital plans feed into our financial planning models which drive multi-year forward rate setting. Thus, overly ambitious capital plans may place an undue burden on rate payers and causes a risk of over collection which may draw the attention of rate payer groups. A successful Proposition 218 rate challenge could result in the SFPUC refunding revenues. It would also severely damage our reputation with the public, Commission, and Supervisors and may hinder our ability to enact future rate increases.

From a capital finance perspective, our capital plans are a focus of bond credit rating analysts and investors in assessing the credit worthiness and management of the SFPUC. Having overly ambitious capital budgets causes credit analysts to think capital costs will place a greater burden on our resources than is actually the case. And to the extent we do not deliver on our budgets, this could cause external parties to wonder about the appropriate management and oversight of our capital projects. Overly ambitious capital programs are considered a credit negative by rating agencies and may result in lower bond ratings, which could translate into higher interest rates. Debt service is already the SFPUC’s largest cost driver, so increased interest rates would have major impacts on the agency. During the most recent budget process, the Board closely scrutinized our existing bond authorizations and questioned our request for further authority due to the fact we had such high unspent prior appropriations. These issues are gaining attention of both City Hall as well as the ratepayer.

Moreover, while the SFPUC does not issue bonds in anticipation of expenditures, because we use commercial paper first, having budgets which diverge so much from actual expenditures makes it difficult to manage the size of our commercial paper and timing of our bond issuance. For example, if we knew for certain that spending would be slower, we might be able to manage with smaller bank credit facilities on our commercial paper facilities, thus saving money and reducing our overall borrowing costs, especially at a time when borrowing costs are growing in the current rising interest rate environment. Another constraint is the SFPUC’s current $1.5 B commercial paper program has reached its capacity and cannot grow further, both from available banking credit support as well as administrative burden.

Therefore, it is crucial we right size the capital plan, and ensure what we plan for is deliverable in the timeframe it is budgeted.

Capital Project Deliverability Review

The proposed costs in this capital plan went through a rigorous development process to ensure planned expenditures are realistically deliverable within the proposed project schedules. When new capital budgets are proposed, the Infrastructure Division analyzes the deliverability (the ability to implement projects and spend budgets according to the proposed schedules) of the capital programs using both “bottom up” and “top down” approaches. Larger ongoing projects have regularly updated project plans with detailed staffing, contracting, and funding requirements to deliver the project, allowing oversight on alignment of schedules and budgets. In addition, the project controls systems provide data

for verifying each project's schedule and budget performance. The "bottom up" analysis includes a detailed review of the projects' resource plans and spending capability, and adjustment of the budgets and schedules to align with any changes in scope or project constraints. For the "top down" analysis, each functional group within Infrastructure reviews staffing assignments to each project and determines if sufficient staffing and contracting resources are in place to deliver the projects. Finally, Infrastructure prepares a high-level resource estimate of total "full-time equivalent" staff needed to deliver all programs, separated by City staff and consultants, and reviews current staffing levels and vacancies compared to needs. Hiring plans, long-term staffing plans, and contracting plans are updated by Infrastructure management to reflect current and future resource needs.

For Enterprise-managed projects comprising 20-40% of the capital funding, the Enterprises work with Infrastructure to estimate annual funding that may be needed to meet the short-term repair and replacement (R&R) needs during the budget cycle. During past and this years' budget cycles, Infrastructure focused greater attention to the deliverability review for ability to spend down already appropriated funds. The proposed capital budget includes realignment of existing funds instead of new funding requests for many projects to better spend down existing appropriations.

Overall, the deliverability review has brought to light many challenges and resource needs that have impacted deliverability. In general, the findings support that the current programs can be delivered with current staffing and contracting levels, but there is very little contingency built in for risks such as staff turnover, long procurement times, and emergency response needs. In addition, current hiring and retention challenges warrant significant attention to fill existing vacancies and maintain staffing levels. Additional resources would need to be expanded to accommodate any increases in the programs.

During the past year, the Strategy, Innovation and Change bureau within Business Services worked with staff from all sectors to review challenges with the capital program planning and deliverability (as described in the following chapter). It is anticipated that initial short-term improvements to capital budget development processes will be implemented by the next budget cycle, and longer-term improvements will continue to be developed and implemented over the next five years.

Hard Choices to Constrain Costs

In addition to rightsizing the capital budget for deliverability, costs must also be constrained to keep utility bills affordable for our customers. In each enterprise, a thorough prioritization process was undertaken to ensure the proposed capital plan was affordable to all customers.

Wastewater

Wastewater's initial 10-year capital request in September 2022 was $5.9 B, exceeding the sources assumed in the last version of the 10-Year Financial Plan by more than $1 B. The biggest cost driver in Wastewater's capital plan is the Sewer System Improvement Program (SSIP) and the $2.4 B Biosolids Digester Facilities project specifically which has experienced significant cost increases since it began. As this project is in construction, Wastewater 10-year capital plan expenses are heavily weighted in the first few years of the plan with limited flexibility for cost reductions. However, we recognized that hard choices needed to be made to reduce the overall size of the plan and make it affordable. In addition, the Wastewater Enterprise faces significant risks related to potential regulatory action, which could add significant new capital costs in future years. Given that substantial rate increases are already projected, the Executive Team felt it would be prudent to cut back the current plan as much as possible. The Wastewater team worked to reduce this amount by $1 B over the 10-year plan vs the initial request. This was achieved by deferring certain projects outside the 10-year horizon, reducing renewal and

replacement budgets, and modifying delivery strategies for improved efficiencies. More details about the projects that were deprioritized from the plan can be found at section 7. The final plan total of $4.9 B represents a decrease of $1.2 B over the costs assumed in the prior version of the 10-year Financial Plan. Despite a decrease in the plan total, due to increased costs in the early years of the plan, rate increases will be incorporated which will impact the later years of the plan with costs smoothed over the 30-year debt term.

Water

Water's initial 10-year capital request in September 2022 was $2.9 B, exceeding the sources assumed in the last version of the 10-year financial plan by more than $1 B. Finance worked with both the Water team and the project managers for the Water capital program in Infrastructure to reduce this request by $744 M over the planning period. This was achieved by more thoughtfully incorporating existing project balances before adding new funding, cuts to certain projects as well as significant smoothing of large project costs over more years. More details about the projects that were deprioritized from the plan can be found at section 5. The capital plan total of $2.3 B represents an increase of $136 M over the costs assumed in the prior version of the 10-year Financial Plan. This increase will be covered with retail and wholesale rate increases which will impact the later years of the plan with costs smoothed over the 30-year debt term.

It is important to note that both Wastewater and Water's capital plans includes several years that exceed the annual project spending delivered in prior years. This was well considered during the deliverability analysis and was scrutinized by the project managers to ensure the amounts were needed. Given that numerous projects are already in construction, or will soon be in construction, the amounts were considered to be reasonable, as spending is expected to ramp up during the construction phase.

Hetch Hetchy Water

Last year's Hetch Hetchy Water 10-year plan was balanced and the team did not materially increase their request for this year. Based on prior spending, the plan was also deemed to be deliverable. However, this is not to say that hard choices were not made to develop a balanced and deliverable plan. The enterprise is currently transitioning to a risk-based capital planning strategy to prioritize its capital projects. This cycle, Hetch Hetchy Water implemented a prioritization tool using a semi-quantitative risk analysis technique to inform its decisions on which projects to cut and which to fund. The prioritization tool includes a framework to define the likelihood of failure (LoF) and consequences of failure (CoF) scores and thresholds so a consistent scoring system could be applied to both the active and candidate projects. The prioritization tool, as well as discussions with management, was used to cut the initially requested budget of $1.7 B to $977 M in order to balance its capital plan.

Hetch Hetchy Power

The Power and Finance teams worked together to develop a final capital plan that addressed the needs of the enterprise, balanced by constraining rate growth. The Power Enterprise is in a new financial position this year, with their 2022 rate study completed and 2-year rate package adopted in spring 2022. They now can vary rates based on cost of service, and therefore have more flexibility in capital planning. However, power purchase costs have significantly increased which puts pressure on their budget, and must be balanced against increasing capital costs. The Power enterprise's capital plan represents strategic investments in both maintaining existing infrastructure and developing new load growth from both existing and new customers. More details on the projects that are included in the plan and those that were deprioritized can be found at section 8. Based on prior spending, the plan was also

deemed to be deliverable. Their final plan total of $596 M represents a decrease of $16 M over the costs assumed in the prior version of the 10-year Financial Plan.

CleanPowerSF

The CleanPowerSF capital plan totals $73 M over the planning period and doesn't represent a material change from the prior version.

4. Capital Planning Process

Capital Planning and Delivery Program

During the January 2022 budget discussions SFPUC committed to developing a balanced FY 2023-24 Capital Budget and a 10-Year Capital Plan for Commission review and approval in February 2023, informed by several factors including capital project deliverability. This work examined capital planning and deliverability to more closely align the capital planning process with our execution capacity.

Between May-July 2022, staff reviewed the complex SFPUC capital planning and delivery processes which touch almost all SFPUC Enterprises and Bureaus. The assessment included interviews, workshops, data gathering, and initial planning meetings, and has helped catalog the complex requirements for delivering infrastructure improvements which rely on adequate staffing and resources, funding and contracting processes, and dependencies with external organizations, among other factors.

The review revealed that 1) the effort required to develop and implement solutions to adapt capital plans based on deliverability would be a significant undertaking; and 2) it is not enough to improve our capacity to measure deliverability – we must also increase our capacity to execute on projects to match the growing Capital Improvement Plan (CIP). The following timeline was developed based on the initial discovery:

Phase 1: Discovery and planning (May-July 2022)

- Identify problems and define scope / workstreams

Phase 2: Budget development & near-term improvements (July-Dec 2022)

- Deliver / implement new tools to support planning and budgeting
- Update our capital plan and balance the FY 2023-2024 budget

Phase 3: Continuous improvement (2023 onwards)

Between July-August 2022, the Budget, Project Controls and Strategy, Innovation & Change (SIC) teams rolled out enhanced guidance to support the development of a balanced FY 2023-24 Capital Budget and a 10-Year Capital Plan. These interventions were presented as resources for supporting the planning and budget approach led by the Project Controls and Budget teams.

Phase 3 of this initiative was launched in December 2022 to review and continually improve existing processes for developing the CIP and budget in future years. Teams have been assembled to review governance practices across all three enterprises for CIP development, criteria for reviewing capital projects for inclusion in the CIP, current systems, tools and processes for tracking projects and budgets, resource planning and contracting, and our financial policies for funding the CIP. Initial short-term improvements to capital budget development will be implemented by the next budget cycle. Longer-term improvements will continue to be developed and implemented over the next five years.

Budget Process

While SIC was leading the overall *Capital Planning and Delivery Program,* in July 2022 the finance team began preparing for the capital budget and 10-Year Capital Plan development process. The first step was to understand the fiscal outlook for the agency and determine if revenue projections would be changed as we began the process. For Power, the rate study had recently been adopted so rates are fixed through FY 2023-24. For Water and Wastewater, the rate study was underway, with new rates not

to be adopted until early 2023. We also decided that we would not make any volumetric changes in our projection, therefore revenues projections would remain the same as in the February 2022 adopted 10-Year Financial Plan.

Budget Instructions

In August 2022 budget instructions were issued to AGMs of each Enterprise on how to proceed with their capital planning efforts. The overarching goal in the capital budgeting process was to execute a balanced plan that is affordable to the ratepayer in the long term, delivers capital projects in the timeframe they are budgeted for, and meets the asset management needs of the agency.

Based on historic spending analysis, deliverability (ability to spend budgets and deliver projects within the time planned) was the major issue. Therefore, the planning effort focused on developing plans that were realistically deliverable. Also, given no additional revenue was projected, AGMs were instructed to propose capital plans at amounts assumed in the prior version of the 10-Year Financial plan, adopted in February 2022.

Internal deliberations and approval

Beginning in September through mid-November 2022, weekly Budget Steering Committee meetings were held. These meetings were chaired by the Deputy General Manager, AGM of Infrastructure, and the Chief Financial Officer, and attended by the AGMs of each enterprise plus staff. The Steering Committee jointly reviewed the capital plans as they were developed. Discussions included overall financial planning and strategy, project priorities, and ultimately the hard choices we had to make to develop plans that were deliverable and affordable. The final recommendation of the Steering Committee was brought to the General Manager for his review and approval at the end of November.

5. Water Capital Plan

Introduction

The Water Enterprise is responsible for the distribution of high-quality water to customers in San Francisco and three Bay Area counties. The Water Distribution System consists of a number of Regional Water Systems: the Hetch Hetchy System; the Regional Water System (East Bay), Regional Water System (Peninsula/West Bay) and the Local Water distribution which includes an In-City Distribution System.

Hetch Hetchy System: Water is diverted from Hetch Hetchy Reservoir into a series of tunnels and aqueducts from the Sierra Nevada to the San Joaquin Pipelines that cross the San Joaquin Valley to the Coast Range Tunnel which connects to the Alameda system at the Alameda East Portal.

Regional Water System (East Bay): This includes two reservoirs, San Antonio Reservoir and Calaveras Reservoir, which collect water from the upper Alameda and San Antonio Creek watersheds in Alameda County plus conveyance facilities connecting the Hetch Hetchy System and Alameda water sources to the Peninsula System. These conveyance facilities include pipelines known as the Alameda Siphons that connect the Coast Range Tunnel to the Irvington Tunnel.

Regional Water System (Peninsula/West Bay): This includes conveyance facilities connecting the Bay Division Pipelines to the In-City Distribution System and to other SFPUC customers on the Peninsula. Three reservoirs, Crystal Springs, San Andreas, and Pilarcitos collect runoff from the San Mateo Creek and Pilarcitos watersheds. Water from these reservoirs serves all wholesale customers, including the Coastside County Water District.

In-City Distribution System: The City's retail water supply is delivered to the City in several major pipelines that convey water from the Peninsula System. Two pipelines provide water to the eastside of the In-City Distribution System and three pipelines serve the west side of the In-City Distribution System. The "In-City Distribution System" delivers water to homes and businesses in the City.

Capital Plan Summary

In FY 2023-24, the Water Enterprise's capital budget is $290 M, of which $239.6 M or 82.6% is funded by debt and $50.4 M or 17.4% is revenue funded. Debt funding includes local and regional bonds. The majority of the revenue funding is from local and regional water sales revenues.

The adopted capital project costs for the Water Enterprise total approximately $2.3 B over the next ten years. Identified capital needs will be financed with a combination of water revenue bonds and Water Enterprise revenues. Project timelines may be adjusted to match available funding.

Most of the spending is in the first 5 years of the plan averaging approximately $350 M per year. The average spending in the last 5 years, FY 2028-2033 drops to an approximately $102 M per year.

Table 12. Water Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Regional											
Water Treatment Program	153.1	99.7	17.2	16.4	10.4	13.5	3.8	4.2	2.7	2.7	**323.8**
Water Transmission Program	0.0	30.5	86.6	51.2	40.5	19.7	7.0	5.6	8.3	78.2	**327.5**
Water Supply & Storage Program	4.8	29.6	55.3	6.9	31.5	8.6	8.2	7.6	5.2	5.2	**162.9**
Watersheds & Land Management	12.2	1.5	1.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	**17.9**
Communication & Monitoring Program	2.0	4.0	4.4	3.5	2.5	2.5	1.0	1.0	0.8	0.8	**22.2**
Buildings And Grounds Programs	9.1	19.8	19.4	93.3	91.3	5.9	3.7	2.3	2.3	2.3	**249.5**
Long Term Monitoring & Permit Program	0.4	3.0	7.4	4.2	3.6	2.5	2.6	2.3	2.4	3.3	**31.6**
Total Water-Regional	**181.5**	**188.0**	**191.5**	**176.0**	**180.0**	**53.1**	**26.6**	**23.5**	**22.1**	**92.9**	**1,135.3**
Local											
Water Supply Projects	2.3	8.1	15.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	**26.4**
Local Water Conveyance/Distribution System	87.8	101.5	73.5	62.7	58.0	58.9	53.8	55.3	53.7	45.2	**650.5**
Systems Monitoring and Control	3.8	5.8	5.6	0.0	0.0	0.1	0.1	0.1	0.0	0.0	**15.5**
Local Tanks/Reservoir Improvements	10.6	7.6	3.6	2.8	2.4	1.8	0.4	0.4	0.2	0.0	**29.8**
Pump Station improvements	0.9	3.8	1.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	**7.1**
Groundwater Project	0.0	9.2	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	**10.0**
Recycled Water Project	0.0	1.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**2.4**
Automated Meter Reading System	3.1	3.1	3.0	4.8	4.8	4.1	4.2	4.3	4.3	4.3	**40.2**
Buildings & Grounds Improvements - Local	0.0	108.7	147.6	90.0	0.1	0.1	0.1	0.1	0.1	0.1	**346.9**
Total Water-Local	**108.5**	**249.3**	**252.1**	**161.4**	**65.4**	**65.0**	**58.7**	**60.2**	**58.3**	**49.7**	**1,128.6**
Total Uses - Water	**290.0**	**437.3**	**443.7**	**337.4**	**245.4**	**118.2**	**85.3**	**83.7**	**80.4**	**142.6**	**2,263.9**
Revenue Funded	50.4	78.6	83.6	65.1	56.6	68.6	67.0	49.2	57.2	46.5	**622.8**
Debt Funded	239.6	358.7	360.0	272.2	188.8	49.5	18.3	34.5	23.3	96.1	**1,641.1**
Total Sources	**290.0**	**437.3**	**443.7**	**337.4**	**245.4**	**118.2**	**85.3**	**83.7**	**80.4**	**142.6**	**2,263.9**

Key Projects

Regional Water – Regional Water Treatment Program: $323.8 million

This program provides funding for improvements to the major water treatment facilities located at Tesla Portal Ultra-Violet Light Disinfection Facility, Thomas Shaft Chlorination Facility, Sunol Valley Chloramination Facility, Sunol Valley Water Treatment Plant (SVWTP), Pulgas Dechloramination Facility, Harry Tracy Water Treatment Plant (HTWTP), and other locations. Major projects include

SVWTP Ozone project to install ozone treatment facilities as a long-term solution to control taste and odor events encountered in the raw water supply from both the San Antonio and Calaveras Reservoir sources. Other projects include a new polymer feed facility at the SVWTP, and other short-term and long-term improvements at SVWTP to improve regional delivery reliability by addressing various conditions and deficiencies of the SVWTP.

Regional Water – Regional Water Transmission Program: $327.5 million

This program provides upgrades to the Transmission System including pipeline inspection and repairs, pipeline and valve replacements, metering upgrades, corrosion protection, and pump station and vault upgrades. As part of the pipeline improvement program, funding is included to monitor, strengthen, and replace older pipeline to achieve higher level performance and reliability. Funding included for the Crystal Springs Pipeline 2 & 3 Rehabilitation will relocate and replace approximately 1.5 miles of 60-inch diameter pipe into Crystal Springs Road, reline sections of the pipe with cement mortar lining, and upgrade appurtenances to meet current standards.

Regional Water – Regional Water Supply and Storage Program: $162.9 million

This program includes upgrades to reservoir dams and structures to meet State Division of Safety of Dams requirements including geotechnical work, installation of monitoring systems, and major improvements to dam spillways and structures as needed.

The program also includes funding for Alternative Water Supply projects that increase regional water supply diversification and explore alternative methods for expanding water sources including purified water, recycled water and desalination projects. The Daly City Recycled Water Expansion Project will provide recycled water to customers of the Regional Water System and help offset groundwater pumping in the Westside Basin. The Los Vaqueros Reservoir Expansion Project will enlarge the existing reservoir located in northeastern Contra Costa County in order to increase water supply reliability for municipal, industrial, and agricultural customers as well as provide ecosystem benefits to south-of-Delta wildlife refuges and Delta fisheries.

Regional Water – Regional Watersheds and Land Management: $17.9 million

This program supports projects that improve and/or protect the water quality and/or ecological resources impacted by the siting and operation of SFPUC facilities. Projects include the repair, replacement, maintenance, or construction of roads, fences, or trails, the acquisition of easements and/or fee title of properties, and other ecosystem restoration or public access, recreation, and education projects.

Regional Water – Regional Communications and Monitoring Program: $22.2 million

This project will provide much needed redundant emergency communications capability and increased bandwidth for secure data transfer. Specifically, it will build a microwave backbone to link the entire SFPUC regional water system from the O'Shaughnessy Dam site in Yosemite to the rest of the SFPUC sites (San Francisco, San Mateo, Santa Clara, and Alameda counties).

Regional Water – Regional Buildings and Grounds Programs: $249.5 million

This program provides funding for major improvements to the Sunol and Millbrae Yards. Sunol Yard improvements are already complete and included LEED replacement facilities for maintenance shops and equipment storage, a new fueling center and administration building, re-surfacing of the yard, demolition of six dilapidated structures, and on-going renewal and replacement of worn or aging equipment. Millbrae Yard improvements include a new laboratory and office building to update the lab facilities and consolidate staff from the Rollins Road facility, maintenance shop, and equipment storage,

demolition of a large unused abandoned building, a new parking lot, and a new vehicle wash site. The upgrades address occupational safety, reliability, and functional regulatory compliance.

Regional Water- Long Term Monitoring & Permit Program: $31.6 million

The purpose of this program is to meet the long-term monitoring and permit requirements associated with capital projects and the operation and maintenance of the SFPUC water supply system and watershed/right-of-way lands within the Bay Area. Projects with long-term monitoring required by environmental permits include Water System Improvement Program (WSIP) related environmental mitigation and permit requirements (i.e., Bioregional Habitat Mitigation Program) and non-WSIP capital projects.

Local Water – Water Supply Projects: $26.4 million

This program includes planning for local water diversification to explore alternative methods for expanding local water sources. Such sources include the Eastside Water Purification Project and Innovations for San Francisco ratepayers that highlight innovative water supplies and technologies.

Local Water – Local Water Conveyance/Distribution System: $650.5 million

This program includes funding to install, replace and renew distribution system pipelines ($420.9 million) and service connections for the 1,230 miles of drinking water mains in San Francisco to meet customer level of service goals for uninterrupted service. Improvements include replacement, rehabilitation, re-lining, and cathodic protection of all pipe categories to extend or renew pipeline useful life. The program also includes partial funding for new Potable Emergency Firefighting Water System pipelines as well as funding for joint-department City street improvement projects.

The Renew Services Program provides funding to renew assets between the water main and the customer's service connection. This program includes the Lead Component Services Program ($37.8 million) to replace any lead components for the customer’s water service line and the Water Loss Reduction Program to implement of cost-effective and comprehensive strategies to reduce water loss. The GIS distribution system mapping program and the Water Quality Distribution Systems are also included.

Additional projects include the New Services Connection Program, Asset Management Platform, and Town of Sunol Pipeline projects.

Local Water –Systems Monitoring and Control: $15.5 million

Projects include an upgrade to the Customer Service Center System that will modernize current existing technology to optimize business processes aligning with current and future Customer Service needs and increased operational effectiveness. Continued improvements to facilities for controlling and monitoring San Francisco's water distribution system include enhancements to the Supervisory Control and Data Acquisition (SCADA) system for remote monitoring of pressure, flow, and valve position status at key locations throughout the distribution system

Local Water – Local Reservoir and Tanks Improvements: $29.8 million

This program provides long-term funding for renewal and rehabilitation of water storage reservoirs and tanks within the San Francisco Distribution System. Projects included improvements to the Sunset South and University Mound reservoirs and replacement of coatings for roofs and tanks at multiple locations to extend the useful service life of the facilities and to provide for the installation of solar energy panels. Major seismic improvements for the College Hill Reservoir and outlet structure are included, as well as geotechnical improvements for Lombard Reservoir.

Local Water – Pump Station Improvements: $7.1 million
The SFPUC's 12 major water pump stations and seven hydropneumatics tanks that boost pressure within the San Francisco distribution system need ongoing renewal and rehabilitation. This program provides long term funding for renewal and rehabilitation of the water pump stations and hydro-pneumatic tanks that boost water pressure within the distribution system including the automation of the five pump suction valves at Lake Merced Pump Station. The program also includes improvements at the Harding Park Recycled Water Pump Station and the Bay Bridge West Pump Station.

Local Water – Groundwater Project: $10.0 million
Funding for the Lake Merced Water Level Restoration Project includes improvements to the Vista Grande Drainage Basin to address storm related flooding and diverting recycled water from the new Westside Recycled Water facility into Lake Merced to increase and stabilize lake levels.

Local Water – Recycled Water Project: $2.4 million
This program includes all facilities to produce and deliver about 2 million gallons per day (mgd) of recycled water for irrigation use in the western end of San Francisco. The project includes a new recycled water treatment facility consisting of membrane filtration, reverse osmosis, and ultraviolet light disinfection; a 1.1 million gallon storage reservoir; distribution pumping facilities; and 5 to 6 miles of new pipelines.

Local Water – Automated Meter Reading System: $40.2 million
This program provides funding for the ongoing Automated Water Meter Program (AWMP) including meter renewal, replacement, automation, and replacement planning for the entire AWMP System by the end of its 20-year useful life (ending in 2031).

Local Water – Local Buildings and Grounds Improvements: $346.9 million
This program provides funding for capital improvements at City Distribution Division facilities and structures. Projects include yard improvements to address health and safety issues and security, continuing renewal and replacement of aging assets at existing buildings and grounds including vehicle and pedestrian gates, fencing at reservoirs, and exterior lighting improvements at reservoirs and pump stations.

The bulk of the funding is included for a new CDD Headquarters at 2000 Marin to address life safety standards for seismic events, building code requirements and facilities that are past useful life. The 2017 Condition Assessment found all buildings aged, water-damaged, and deficient in meeting seismic, ADA, electrical and other building code standards. Existing facilities include administrative offices, warehouse, shops, materials and equipment storage and vehicle fleet.

Deprioritized Projects
The Water team worked alongside infrastructure to develop a proposed capital plan that was submitted to finance in September 2022. This process included an initial prioritization as well as a deliverability review to ensure the agency had the capacity to realistically deliver it. Water's initial 10-year capital request in September 2022 was $2.9 B, exceeding the costs assumed in the last version of the 10-year financial plan by more than $1 B. Finance worked with both the Water team and the project managers for the Water capital program in Infrastructure to reduce this request by $744 M over the 10-year plan vs the initial request. This was achieved by more thoughtfully incorporating existing project balances before adding new funding, cuts to certain projects as well as significant smoothing of large project

costs over more years. The largest cuts were in the Water Main Replacement Program ($332 M) and the Develop Alternative Water Supplies Program ($221.6 M). Because they were the two largest programs in the capital plan that could be reduced while leaving substantial funding in the programs. Other cuts were distributed across different Water programs so that no single program had to absorb disproportionate cuts.

Table 13. Water project funding reductions during capital planning process

Project Name	Project Objective	Amount Reduced	Amount Remaining	Consequences of this action
SVWTP Long Term Improvements	Improve SVWTP water treatment capability	(28.5M)	-	Deferral of various improvements to the SVWTP, however, there are 3 significant projects at the plant that are commencing in the next two years already
Regional Groundwater Treatment Improvements	Improve Regional GSR Project treatment capability	(31.1M)	3.3 M	Deferral of treatment improvements, limiting/precluding the use six of the thirteen installed wells for this drought year supply project. This will result in an inability to meet the project production goals and result in a shortfall of anticipated supply within the Wholesale Service Area during drought.
Purified Water & Other Supplies	Develop Alternative Water Supplies	(221.6M)	82.7 M	Commission action on the AWS plan is anticipated after July 1, 2023 when we would revisit the level of funding.
Sneath Lane Gate	Construct trail connector on north end of Peninsula watershed	(11.0M)	-	Deferral of this useful Peninsula trail connector project while we focus on completing the Bay Ridge Trail extension project.
Watershed and ROW Protection - Land Acquisition	Acquire privately held important watershed lands if and when they become available	(22.6M)	-	Elimination of funding for land acquisition. If new opportunities arose for acquisition, new appropriations would be needed.
Local Groundwater Treatment Project	Improve Local groundwater project treatment capability	(14.5M)	-	Deferral of treatment project to deal with volatile organic chemicals, limiting the use of three of the six project wells making approximately 50% of anticipated production. This will result in an inability to meet the project production goals and result in a shortfall of anticipated supply within the Retail Service Area.
Local Water Conveyance / Distribution System	Water main replacement	(332.0M)	360.8 M	Beginning in year 5, reduction in annual funding for the program means we would end up achieving 4-6 miles of replacement per year instead of 12.
AWMP Completion (FY21) & Repl. Planning (FY22-26)	Complete automated water meter installation and then begin replacement of older components	(82.1M)	14.7 M	Delays in replacing old meter components will result in lost revenue due to meter aging.
NRLM San Francisco Land Management Facility	Construct facility for arborist crew in San Francisco	(10.3M)	-	Arborist crew will need to work out of CDD facilities that are not adjacent to the properties where the vast majority of the tree work exists resulting in inefficiencies.

Other project needs

Other potential project needs have been identified but are not yet fully ascertained and costs are not certain. These potential future needs were not addressed during this year's capital planning process but

we are including them here in the report as they are important to keep on our radar for future planning. These project needs will be reviewed for potential inclusion in future capital planning cycles.

Table 14. Water projects with potential funding shortfalls not addressed in the capital planning process

Project Name	Project Objective	FY24-33 Proposed Budget	Amount of Future Anticipated Funding Required	Need for Project
Pilarcitos Dam Improvements	Remediation of the embankment dam; outlet structure, outlet tunnel and pipeline; spillway; and other ancillary structures.	30.1M	25-80M	Dam safety issues identified by SFPUC and Division of Safety of Dams need to be remediated.
San Andreas Dam and Facility Improvements	Remediation of the embankment dam; outlet structure, outlet tunnel and pipeline; spillway; and other ancillary structures.	32.2M	23-103M	Dam safety issues identified by SFPUC and Division of Safety of Dams need to be remediated.
Turner Dam and Reservoir Improvements	Remediation of the embankment dam, outlet structure, outlet tunnel and pipeline, spillway, and other ancillary structures.	7.5M	unknown	Dam safety issues identified by SFPUC and Division of Safety of Dams need to be remediated.
Calaveras Reservoir Expansion	Raising the dam, increasing the capacity of outlet structures and spillway, and transmission and pumping needs to bring surplus water to Calaveras Reservoir for storage.	7.5M	214M-2B	Potential Alternative Water Supply Project
Sunset South Basin	Seismically strengthen reservoir roof and other reservoir structural elements.	8M	85-170M	Sunset North Basin Roof and Dam were seismically strengthened in WSIP. Similar work is needed to correct deficiencies in Sunset South Basin.
University Mound South Basin	Seismically strengthen reservoir roof and other reservoir structural elements.	2.4M	53-89M	University Mound North Basin Roof was seismically strengthened in WSIP. Similar work is needed to correct deficiencies in University Mound South Basin.
Stanford Heights Reservoir	Perform geotechnical investigations and stability analysis of embankment; construct improvements if needed.	0.2M	1-12M	Dependent on results of the geotechnical investigations and stability analysis

6. Hetch Hetchy Water Capital Plan

Introduction

The Hetch Hetchy Water division of the Water Enterprise is responsible for operating, maintaining and upgrading the Hetch Hetchy system of assets, which extend from Hetch Hetchy Reservoir in Yosemite National Park to Alameda East Portal (water) and Newark (electrical transmission) in Alameda County. The Hetch Hetchy system provides 85% of the water supply to 2.7 million in-City and regional Bay Area water customers. Additionally, Hetch Hetchy Water generates electricity via several hydro-generation plants to power in-City departments.

Much of the Hetch Hetchy system is at or approaching 100 years old and on average is approximately 135% of its anticipated useful life. Hetch Hetchy Water operates under a “Water First’ policy, which means that operational needs and capital investment decisions are heavily weighted to meet water reliability objectives.

The Hetch Hetchy Water Capital Program includes Water Only (100% Water Costs), up-country Power Only (100% Power Cost) and Joint (45% Water/55% Power costs) for operating, managing, and maintaining the Hetchy Water Infrastructure.

Capital Plan Summary

In FY 2023-24, Hetch Hetchy Water’s capital budget is $85.9 M and is 100 % funded by debt. Of the debt funding, $65.5 M is from water bonds, with the remainder $20.4 M met by power bonds.

The $976.9 million Ten-Year Capital Plan represents a consistent and growing investment over ten years with funds allocated to Hetchy-Water totaling $441.2 M and Hetchy-Power totaling $535.7 M.

Table 15. Hetch Hetchy Water Capital Plan

Hetchy-Water/ $million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Water Infrastructure	48.9	59.4	31.1	16.4	5.3	4.7	4.8	4.9	5.0	5.1	**185.6**
Power Infrastructure	0.0	32.2	27.1	39.6	14.4	38.9	29.8	11.5	10.3	19.4	**223.3**
Joint Projects	37.0	64.0	94.4	85.6	74.9	56.0	65.3	41.1	32.1	17.7	**568.1**
Total Uses - Hetchy Water	**85.9**	**155.6**	**152.6**	**141.6**	**94.6**	**99.6**	**100.0**	**57.5**	**47.4**	**42.3**	**976.9**
Debt Funded	85.9	155.6	152.6	141.6	94.6	99.6	100.0	57.5	47.4	42.3	**976.9**
Total Sources	**85.9**	**155.6**	**152.6**	**141.6**	**94.6**	**99.6**	**100.0**	**57.5**	**47.4**	**42.3**	**976.9**

Key Projects

Water Infrastructure: $185.6 million

The Water Infrastructure program provides capital funding for Renewal & Replacement (R&R) and Large Infrastructure projects on HHWP’s assets that are classified by the Water Supply Agreement (WSA) as Water. The proposed FY23-24 10-Year Capital Plan includes $185.6 M under the Water Infrastructure authority level which is used to fund capital improvements on the San Joaquin Pipelines, Mountain Tunnel, and other water assets.

Power Infrastructure: $223.3 million

The Power Infrastructure program provides capital funding for Renewal & Replacement (R&R) and Large Infrastructure projects on HHWP's assets that are classified by the Water Supply Agreement (WSA) as Power. The proposed FY23-24 10-year Capital Plan includes $223.3 M under the Power Infrastructure authority level which is used to fund capital improvements on the power facilities such as Moccasin Switchyard, Kirkwood Powerhouse, Moccasin Powerhouse, Holm Powerhouse, 115kV and 230kV Transmission Lines, Warnerville Substation, Cherry-Eleanor Pumps, and other power assets.

Joint Infrastructure: $568.1 million

The Joint Infrastructure program provides capital funding for Renewal & Replacement (R&R) and Large Infrastructure projects on Hetch Hetchy Water a's assets that are classified by the Water Supply Agreement (WSA) as Joint. The proposed FY23-24 10-year Capital Plan includes $568.1M under the Joint Infrastructure authority level which is used to fund capital improvements on the joint facilities such as O'Shaughnessy Dam, Canyon Tunnel, Mountain Tunnel, Moccasin Wastewater Treatment Plant, Power Distribution Lines, Cherry Dam, Buildings & Grounds, and other joint assets.

Deprioritized Projects

The Hetchy Water team worked alongside infrastructure to develop a proposed capital plan that was submitted to finance in September 2022. This process included a thorough prioritization analysis as well as a deliverability review to ensure the team had the capacity to realistically deliver the proposed plan. Last year's Hetch Hetchy Water 10-year plan was balanced and the team did not materially increase their request for this year.

Risk-Based Prioritization

HHWP's risk framework for the FY 2023-24 capital planning effort was presented to management and implemented in July 2022 as a prioritization tool. Hetch Hetchy Water then applied the risk framework to all active and candidate projects through a scoring process that was completed by a multi-disciplined team that included Hetch Hetchy Water Operations, Engineering, and Asset Management. The scoring effort documented the assumed failure mode(s), the Consequence of the Failure (CoF), and Likelihood of the Failure (LoF) all of which were used to calculate an overall Risk Score to prioritize projects. The results of the scoring effort were uploaded to Hetch Hetchy Water's PowerBI.

Deliverability Review

HHWP completed multiple efforts to support the deliverability review of the projects included in its draft Capital Plan including: (1) Evaluation of Historical Capital Spending, (2) Quality Assurance Review of Projects, (3) Identification of Projects with Unused Appropriations Greater than $5 M, (4) Detailed Spending Plan for R&R Subprojects, and (5) review and adjustments to project timeline/encumbrance assumptions to more closely tie budget requests with project spending.

Deferred Capital Investments

To deliver a balanced capital plan, Hetch Hetchy Water cut approximately $339 M from its 10-year capital plan during this planning process. In addition to small budget cuts throughout the plan, multiple projects were deferred beyond the 10 years to balance budget limitations with operational priorities. A summary of the significant deferred capital improvements is provided below, including some high-level information regarding the perceived risk of the deferment.

Table 16. Hetch Hetchy Water project funding reductions in the capital planning process

Project Name	Project Objective	Amount Reduced	Amount Remaining	Consequences of this action
Kirkwood Powerhouse Rehabilitation	Rehabilitation of Kirkwood Powerhouse Unit 3, and rehabilitation or replacement of systems in Kirkwood Powerhouse to modernize and improve reliability.	(54.88M)	-	Deferment of this project represents a moderate risk to HHW Operations. HHW can accommodate deferment by ongoing maintenance and R&R work, as well as redundancy provided by Kirkwood Powerhouse Generators Unit 1 and Unit 2. However, long term deferment can lead to potential failure of Kirkwood Powerhouse Generator Unit 3 and associated systems, and reduced power generation and water deliveries.
Intake Switchyard Control Room Upgrade	Replacement/rehabilitation of mechanical and electrical equipment located in the Intake Switchyard Control Room.	(15.42M)	-	Deferment of this project represents a moderate risk to HHW operations due to the age of the assets in the Control Room. Failure could result in the temporary operation of Kirkwood Powerhouse Bypass in order to maintain water deliveries, and would also eliminate all generation from Kirkwood Powerhouse and Holm Powerhouse.
Calaveras Substation Upgrade	Rehabilitate existing electrical infrastructure at Calaveras Substation.	(24.85M)	-	Calaveras Substation has a single transformer and lacks the redundancy required to maintain service to Water System & Treatment Division in the event of a failure or planned outage for maintenance. Failure would potentially impact Water System & Treatment Division facilities, including San Antonio Pump Station, Chlorination Plant, and Sunol Filter Plant. Therefore, we are moving forward with planning for this project in the existing capital budget.
Cherry Dam Spillway and Intake Tower Rehab	Increase spillway capacity to safely pass the updated design flood without overtopping existing embankment dam, and improve the intake tower structure to withstand the design seismic loadings.	(116.86M)	-	Deferment of this project represents a low to moderate risk to HHW operations due to two mitigations: 1) HHW has implemented a Forecast Informed Reservoir Operations operating strategy to manage the reservoir and 2) the approved Cherry Spillway Short Term Improvements project.
Moccasin Water Quality Building	Construction of a replacement water quality laboratory in Moccasin to perform mission-critical microbiological and chemical analyses to support filtration avoidance compliance.	(12.46M)	-	The water quality lab is in poor condition which may eventually impact the Water Quality Division's ability to perform tasks that are required by regulators and essential to HHW Water Operations. In the event the building deteriorates to the point that it can no longer be occupied by Water Quality Division staff, a temporary facility would need to be mobilized to support the required tasks.
Moccasin Yard Improvements Phase II	Construction of a warehouse addition, storage building, truck port, automobile/ machine shop addition, carpentry shop addition, security fence, retaining wall, and other associated works.	(88.92M)	-	Deferment of this project represents a moderate risk to HHW operations. While deferment does not directly impact water or power operations, the project is needed to provide efficient and safe work and storage areas and to meet the current and future operational needs of HHW, as well as bring the buildings into code.
Install Penstock Safe Isolation Valves	Install new isolation valves at or below valve houses to allow safe entry into	(16.08M)	-	Deferment of this project represents a moderate risk to HHW operations. HHW can accommodate deferment by dewatering

	penstocks without dewatering tunnels, in compliance with the SFPUC Safe Pipeline Isolation procedure.			tunnels upstream of the valve houses to provide safe entry per updated safety guidelines.
San Joaquin Pipeline Life Extension Program	Deliver capital improvement projects to sustain the reliability of the San Joaquin Pipeline (SJPL) system that are expected to delay the need for planned large scale replacement for 20 to 60 years.	(9.50M)	48.60M	Reductions in annual funding for this program will result in reduced budget flexibility to complete needed repairs along the San Joaquin Pipeline system.

Other project needs

Other potential project needs have been identified but are not yet fully ascertained and costs are not certain. These potential future needs were not addressed during this year's capital planning process but we are including them here in the report as they are important to keep on our radar for future planning. These project needs will be reviewed for potential inclusion in future capital planning cycles.

Table 17. Hetch Hetchy Water projects with potential funding shortfalls not addressed in the capital planning process

Project Name	Project Objective	FY24-33 Proposed Budget	Amount of Future Anticipated Funding Required	Need for Project
Moccasin Penstock Rehabilitation	Rehabilitation of anchor blocks, penstock coating, penstock saddles, air valves, large-diameter butterfly valves, bifurcation sections, and flow meters. In addition, upgrade of electrical system, power transformers, and the standby generator at West Portal Valve House and of the bulkhead isolation valves in the surge tower.	47.3M	unknown, but potentially $100M	Phased Array Ultrasonic Testing results received after development of the 10-year CIP FY24-33 have indicated the potential need for an expanded scope of work, including replacement of the hammer-forged steel portions of the penstocks. An Alternatives Analysis Report is due by March 2023. Deferment of this project represents a high risk to HHWP Operation's capability to deliver water to the SFPUC customers.
SJPL 1 Rehabilitation and Replacement	Replacement and/or rehabilitation of multiple segments of San Joaquin Pipeline Number 1 that have limited life remaining.	-	307.59M	Deferment of this project represents a high risk to HHWP Operations. HHWP can accommodate deferment during this cycle due to investments under the R&R SJPL Life Extension Program, the proposed SJPL Valve Remote Control and Monitoring project, and redundancy provided by adjacent lines. However, long term deferment can lead to potential failures of San Joaquin Pipeline Number 1 and reduced water deliveries.
Priest Shoreline Erosion Control Protection	Provide erosion protection to the shoreline to reduce frequency of turbidity events and protect water quality.	-	5.38M	Deferment of this project represents a low risk to HHWP Operations. HHWP can accommodate deferment by

				deliveries through the Priest Bypass. However, long term deferment can lead to increased turbidity and a decrease of water quality.
Moccasin to Standiford OPGW Installation	Installation of Optical Ground Wire (OPGW) to serve as the primary communication between Moccasin and the Modesto area.	-	20.73M	Deferment of this project represents a minimal risk to HHWP operations. The new asset would not improve water or power operations, but would improve communication reliability.
230kV Power Transmission Line Rehabilitation	Replace or rehabilitate significant elements (towers, electrical conductors, insulators, switches, relays) to extend the operating life of the system.		303.13M	Deferment of this project represents a moderate risk to HHWP Operations given the age of the transmission lines and towers. A failure of these assets would require bypass operations to maintain water deliveries and would eliminate all generation from Holm Powerhouse and Kirkwood Powerhouse until repaired. This risk is partially mitigated by the ongoing work that is completed under the R&R Transmission Lines Clearance mitigation and R&R Power Transmission Life Extension projects.
115kV Transmission Lines Rehab	Condition Assessments of these assets will be performed over the next two years. Capital projects will be defined by 2026.	TBD	Unknown, but potentially nearing $1B	Deferment of this project represents a high risk to HHWP Operations given the age of the transmission lines and towers. A failure of these assets would require bypass operations to maintain water deliveries and would eliminate all generation from Moccasin Powerhouse until repaired. This risk is partially mitigated by the ongoing work that is completed under the R&R Transmission Lines Clearance mitigation and R&R Power Transmission Life Extension projects.

7. Wastewater Capital Plan

Introduction

The Wastewater Enterprise operates and maintains three wastewater treatment plants, one wet weather facility, 27 pump stations, 1,900 miles of sewer mains and laterals, 216 green infrastructure assets, and 25,000 catch basins to protect public health and the environment. Wastewater facilities process approximately 70 million gallons per day (MDG) of dry weather flows and have 565 mgd of wet weather treatment capacity.

North Point Wet Weather Facility: The North Point Wet Weather Facility has been in operation since 1951. The facility provides primary-level treatment and disinfection of combined sewage collected in the north part of the City during rainstorms. The facility has a treatment capacity of 150 MGD. Treated combined sewage is discharged approximately 800 feet into the San Francisco Bay.

Southeast Treatment Plant: The Southeast Treatment Plant was built in 1952 and has been expanded several times since. The Plant treats an average dry-weather flow of approximately 58 MGD and discharges into the San Francisco Bay through an 810 foot-long pipe. The Plant has a peak wet-weather capacity of 250 MGD which is discharged through both the 810 foot-long pipe into the Bay and an auxiliary wet-weather-only outfall into Islais Creek.

Oceanside Treatment Plant: Completed in 1993, the Oceanside Treatment Plant treats an average dry-weather flow of approximately 16 mgd and has a total capacity of 65 MGD during wet-weather. It treats wastewater from the west side of the City. Treated wastewater is discharged from the plant to the Pacific Ocean through the Southwest Ocean Outfall 4.5 miles offshore.

Treasure Island Treatment Plant: The SFPUC, under a 1997 Cooperative Agreement between the U.S. Navy, agreed to operate and maintain the utility systems at Treasure Island, including the Treasure Island Plant, while the Navy retains ownership of all the utility systems. The Plant provides secondary treatment of wastewater from facilities on Treasure Island and Yerba Buena Island. It serves a population of approximately 2,400 and has a design capacity of 2 MGD.

Pump Stations and Force Mains: The Wastewater Enterprise operates 27 pump stations with capacities ranging from less than 1 MGD to 175 MGD. The system includes three major force mains: North Shore, Channel, and Westside. In addition to these major force mains, there are several smaller force mains (2” in diameter and larger) downstream of pump stations, totaling 7 miles.

Gravity Sewers: Wastewater Enterprise owns, operates, and maintains approximately 800 miles of sewer mains equal or smaller than 36” in diameter (“small diameter sewers”), and nearly 200 miles of major interceptors and tunnels larger than 36” in diameter (“large diameter sewers”). In addition, WWE replaces sewer service laterals with structural deficiencies located on the pipe portion extending from face of curb to the sewer main (“sewer lateral”). There are approximately 160,000 sewer laterals.

Transport/Storage Boxes and Combined Sewer Discharge Structures: Transport/storage boxes capture combined stormwater and sewage as it overflows the sewer system and before it reaches the shoreline of the Bay or Pacific Ocean. The boxes can hold approximately 200 million gallons of stormwater and sewage for later treatment at wastewater treatment plants. The storage boxes completely fill up during the most prolonged intense rainstorms, and water is discharged into either the Bay or Ocean through one of 36 combined sewer discharge structures.

Capital Plan Summary

The Capital plan is organized into the following five categories – Sewer System Improvement Program (SSIP), R&R Treatment Facilities and Collection System, Facilities and Infrastructure Projects and Treasure Island.

In FY 2023-24, the Wastewater Enterprise's capital budget is $985.5 M, of which $890.2 M or 90% is funded by debt and $95.3 M or 10.0% is revenue funded. Debt funding consists of revenue bonds. The majority of the revenue funding is from sewer service charges, with the remainder being from capacity fees.

The Ten-Year Plan for FY 2023-24 through FY2032-33 is $4.879 B and includes the Sewer System Improvement Program at $2.913 B, the Collection System and Treatment Facilities Renewal and Replacement Programs at $1.635 B, the Treasure Island Treatment Plant at $153 M and improvements to other Wastewater Facilities and Infrastructure at $178 M.

Table 18. Wastewater capital plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
SSIP	778.5	676.0	590.2	323.9	151.7	86.7	63.3	40.4	69.3	133.7	**2,913.7**
R&R	95.3	148.7	172.1	170.7	174.0	163.0	165.2	171.5	183.7	191.1	**1,635.4**
Treasure Island	111.7	39.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**152.6**
Wastewater Facilities & Infrastructure	0.0	30.8	54.2	26.5	27.9	30.8	4.1	2.8	0.2	0.5	**177.7**
Total Uses - Wastewater	**985.5**	**894.5**	**818.4**	**521.1**	**353.6**	**280.5**	**232.6**	**214.7**	**253.2**	**325.2**	**4,879.4**
Revenue Funded	95.3	128.4	130.8	133.3	135.9	138.5	141.1	143.8	146.6	149.4	**1,343.1**
Debt Funded	890.2	766.2	687.6	387.8	217.7	142.0	91.5	70.9	106.6	175.8	**3,536.3**
Total Sources	**985.5**	**894.5**	**818.4**	**521.1**	**353.6**	**280.5**	**232.6**	**214.7**	**253.2**	**325.2**	**4,879.4**

Key projects

Collection System Renewal & Replacement (R&R) - Condition Assessment Projects: $192.2 million

This program includes cleaning and inspection of small and large diameter sewers. The results of the inspection program will inform the Small and Large Diameter Sewer Improvements subprograms, and potentially inform major improvements delivered by the Sewer System Improvement Program (SSIP). This project is a part of the on-going data gathering necessary for the Wastewater Enterprise Collection Systems Asset Management Program.

Collection System R&R - Small Diameter Sewer Improvements: $498.6 million

This program maintains the existing functionality of the sewage collection system and includes planned and emergency repairs and replacement of structurally inadequate sewers. Failure of the collection system will reduce the City's ability to handle and dispose of wastewater and stormwater which can lead to public health, safety, and environmental risks, and non-compliance with the State discharge permit. Projects are identified utilizing an asset management approach which factors in physical condition, age, location, risk, public safety, paving schedule, and other factors. This program allows for the renewal and replacement of approximately 15 miles of sewer per year. WWE is shifting focus to utilize more trenchless construction methods for sewer main and lateral R&R, including cured-in-place-lining (CIPP),

pipe bursting, sliplining, and alternative pipe materials. Trenchless construction methods are industry best practice and provide the benefits of substantially lower average cost per mile, shorter construction times per mile, and lower overall disruption to the public from the construction activity. As reflected in the newest 10 year CIP, WWE's goal is to have 50% or more of gravity sewer R&R work done using trenchless construction methods within the next 7 years.

Collection System R&R - Large Diameter Sewer Improvements: $403.3 million

This is a collection of large sewer improvement projects that will rehabilitate and/or replace Large Diameter Sewers (sewers greater than 36-inches in diameter or equivalent diameter) that have the highest risk for failure.

Treatment Facilities R&R: $305.0 million

The Treatment Plant Improvement program helps maintain the capacity and reliable performance of the Wastewater treatment facilities owned and operated by the Wastewater Enterprise. This is a continuing annual program to extend the useful life of Wastewater treatment assets including Discharge Structures, Pump Stations, Force Mains, and Treatment Plants. The projects are prioritized based upon worker health and safety, regulatory compliance, condition assessments, operation staff recommendations, and levels of service formally adopted as part of the SSIP. The completion of projects under the Treatment Facilities R&R Program will increase reliability and efficiency of Wastewater Enterprise facilities and ensure that the performance of the treatment facilities meets the established levels of service.

Treasure Island Wastewater Improvements: $152.6 million

This project provides continued funding for a new tertiary four-million gallon per day wastewater treatment facility for the Treasure Island/Yerba Buena Island service area to replace the existing, aged facility. The objective of the project is to build a new wastewater treatment plant that will provide reliable service for the Treasure Island residents and meet the recycled water demands of the future redevelopment on the island. The new treatment facility will include influent screening, a combined primary/secondary treatment process, sludge thickening and truck load-out, disinfection, odor control, and tertiary treatment.

Ocean Beach Climate Adaptation Project: $130.9 million

This project will develop a comprehensive shoreline management and protection plan in partnership with relevant stakeholders and regulatory agencies and establish a long-term solution to the erosion issues along Ocean Beach. This long-term solution is necessary to protect the integrity of critical wastewater assets that were constructed to protect public health and the environment. These assets include the Lake Merced Transport/Storage facility, the Westside Pump Station, and the Oceanside Treatment Plant, which are threatened by sea level rise and erosion at Ocean Beach.

SSIP Treatment Facilities: $1.7 billion

SSIP treatment facilities projects include the Bayside Biosolids Digester Facility Project in southeast San Francisco; improvements to the liquid treatment at the Southeast Water Pollution Control Plant, the North Point Wet Weather Facility, the North Shore Pump Station and associated outfalls; and improvements to the Oceanside Water Pollution Control Plant, Westside Pump Station, and Westside Force Main.

SSIP Sewer/Collection System: $279.6 million

This program also replaces existing sewers to increase hydraulic capacity, and rehabilitates transportation/storage facilities, combined sewer discharge structures, pump stations, and force mains.

SSIP Stormwater Management and Flood Resilience: $548.9 million

This program includes work on green infrastructure, flood resilience, the Floodwater Management Grant Assistance Program, and the Green Infrastructure Stormwater Management Grant Program. Flood resilience projects manage combined sewer flooding caused by heavy rain through capital improvements, grant programs, financial incentives, Building Code amendments, options for affordable flood insurance, and enhanced coordinated storm response. Green infrastructure construction of permeable surfaces and engineers' subsurface systems sustainably augments the collection system for the management of stormwater flows. The Green Infrastructure Stormwater Management Grant Program incentivizes property owners to construct and maintain green infrastructure on large parcels. These projects support the levels of service goals to minimize flooding, provide benefits to impacted communities, and achieve economic and environmental sustainability. Ancillary benefits may include reduced energy use (reduced pumping and treatment), potable water conservation, groundwater recharge, and improved community aesthetics.

Side Stream Treatment Removal Project: $15 million

Project to provide near term interim progress on nutrient removal during the next 6 to 7 years at Southeast Treatment Plant. Following completion of the Biosolids Digester Facility Project, a separate capital project would be created to provide long term nutrient removal. The costs and timing of that permanent facility is not established yet. The interim side stream nutrient removal facility will treat highly concentrated flow from current centrifuge dewatering facility. The treated flow/effluent from this planned facility will return to upstream existing liquid treatment train on northside of Southeast Plant prior to discharging to San Francisco Bay through current outfall system

Deprioritized projects

The Wastewater team worked alongside infrastructure to develop a proposed capital plan that was submitted to Finance in September 2022. This process included a prioritization analysis as well as a deliverability review to ensure the team had the capacity to realistically deliver the proposed plan. Wastewater's initial 10-year capital request in September 2022 was $5.9 B, exceeding the costs assumed in the last version of the 10-year financial plan by more than $1 B. The biggest cost driver in Wastewater's capital plan is the SSIP, namely the Biosolids Digester Facility Project which has experienced significant cost increases since it began, and when complete will have cost over $2.3 B. This project is already in construction phase with a contractor in place and money being spent. Thus, the costs in Wastewater 10-year plan are heavily weighted in the first few years of the plan with limited room for cuts. However, we recognized that hard choices needed to be made to reduce the overall size of the plan and make it affordable. In addition, the Wastewater Enterprise faces significant risks related to potential regulatory obligations, which would add significant new capital costs in future years. Given that substantial rate increases are already projected, the executive team felt it would be prudent to cut back the current plan as much as possible. The Wastewater team worked to reduce this amount by $1 B over the 10-year plan vs the initial request. This was achieved by deferring certain projects outside the 10-year horizon, reducing renewal and replacement budgets, and modifying delivery strategies for improved efficiencies.

Process for prioritization

We consider there to be significant limitations to defer projects or scopes when the projects are already in construction and/or have been committed to regulators. Accordingly, these projects were not considered in the efforts to reduce the Wastewater Capital Plan budget. We identified other projects in the Capital Plan for budget reductions if they met any of the following criteria:

- Project provides a system enhancement (e.g., stormwater management, seismic protection), and has not started
- Project covers design and construction phases only, and can be deferred until the preceding "Phase 1" assessment and planning project is completed
- Project does not address a high-risk reliability, safety, or regulatory issue and has not started
- Project has had deliverability challenges (e.g., staffing, contracting, partnerships)
- We then applied one of the following budget reduction strategies to the deprioritized projects:
- Delay project start (and complete immediate needs through R&R program, as needed)
- Defer project outside of 10-year horizon (and complete immediate needs through R&R program, as needed)
- Reduce R&R funding
- Modify delivery strategy for improved efficiencies

The final step was to then assess what risk profile changes were presented by the removal of the projects from the current 10-Year Capital Plan, both individually and in total. These risk categories are similar to the categories used for Wastewater Enterprise's overall capital program prioritization approach and include staff safety impacts, increased risk of regulatory violations, reduced system reliability, lower customer service reliability, and excessive volatility in annual spending, delivery resources (internal staffing levels) and rates.

The following table summarizes the projects that were reduced or not included in the final version of the plan.

Table 19: Projects deprioritized from Wastewater's Capital Plan proposal, $ million

Deprioritized Treatment Plant Projects

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Action	Consequence of this action
R&R Treatment Plant Improvements	State of good repair, health and safety	(116.6 M)	305 M	Reduced funding	This results in a higher risk to worker health and safety, service disruptions, permit violations, and lower system reliability.
Southeast Plant					
Pipe Gallery (SEP 960) Rehab	State of good repair	-	14.6 M	Delayed project start	Starting project in year 4 instead of year 1 results in a higher risk to worker health and safety and lower system reliability.
Aeration Tank (SEP 200) Rehab – Design and Construction	State of good repair	(62.2 M)	-	Deferred project outside of 10-year horizon, until condition assessment and planning are completed (in another project funded in the CIP) and used to define the project's design and construction needs.	There is a risk that the design and construction of the aeration tank rehab cannot be funded in the 10-year CIP due to budget limitations.
North Point Facility					
Sedimentation Tanks (NPF 040/041) Flushing System	Operational enhancement	(12.7 M)	-	Deferred project outside of 10-year horizon	At present, the sedimentation tanks are manually flushed with hoses after a wet weather event. Delaying this project prolongs the manual, labor-

					intensive, and less efficient operational practice.
Oceanside Plant					
OSP Condition Improvement Projects - Part 3	State of good repair, health and safety	(24.6 M)	-	Deferred project outside of 10-year horizon	This results in a higher risk to worker health and safety, service disruptions, and lower system reliability.
Admin Bldg (OSP 930) Seismic Retrofit	Seismic protection	(12.7 M)	-	Deferred project outside of 10-year horizon	This results in greater vulnerability to earthquakes, which poses a higher risk to worker health and safety, and service disruptions.
Pretreat. & Solids Bldg (OSP 011) Struct. & Seismic Retrofit	Seismic protection	(15.3 M)	-	Deferred project outside of 10-year horizon	
Primary Clarifier (OSP 042) Structural & Seismic Retrofit	Seismic protection	(46.6 M)	-	Deferred project outside of 10-year horizon	
Westside FM Reliability Project - DESIGN & CONSTRUCTION	Operational reliability (redundancy)	(46 M)	42.8M	Deferred $45M of construction encumbrance by 1 year	None
Grit Removal (OSP 011) Upgrades - DESIGN & CONSTRUCTION	Process improvement	(19 M)	-	Deferred project outside of 10-year horizon, until planning is completed (in another project currently funded by the CIP) and used to define the project's design and construction needs.	There is a risk that the design and construction of the grit removal upgrades cannot be funded in the 10-year CIP due to budget limitations.

Deprioritized Pump Station and Force Main Projects

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Action	Consequence of this action
Channel FM Reliability Project	State of good repair	(190 M)	-	Deferred project outside of 10-year horizon	This results in a higher risk to service disruptions and lower system reliability. The Channel Force Main, part of the Bayside Collection System, transports 64% of the City's entire wastewater flows.
Berry St PS Improvements	State of good repair	(11.5 M)	-	Deferred project outside of 10-year horizon	This results in a higher risk to service disruptions and lower system reliability.
Channel PS Improvements	State of good repair	(32.4 M)	-	Deferred project outside of 10-year horizon	This results in a higher risk to service disruptions and lower system reliability.

Deprioritized Gravity Sewer Projects

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Action	Consequence of this action
R&R Sewer Improvements – Small Diameter	Repair and replace sewer mains (≤36-inch dia.	(135.4 M)	498.6 M	Expanded application of trenchless construction technology for small diameter sewers Repurposed a portion of funding allocated for full block main replacement	Beginning in FY25-26, reduction in annual funding for the program; instead of improving 15 miles per year, the projected target would be 13.5 miles per year. From FY 26-27 to FY30-31, the reduced target is 9.8

				to focus on sewer main spot repair. Reduced projected open-cut sewer replacement targets	miles for five years. This results in a higher probability of breakages, an increased risk of service disruptions, lower system reliability, and potential regulatory challenges. The shift from open cut to trenchless construction may impact the bidding environment and contracting community.
R&R Sewer Improvements – Large Diameter	Rehab sewer mains >36-inch dia.)	(67 M)	403.3 M	Reduced sewer rehab targets	Beginning in FY28-29, reduction in annual funding for the program; instead of improving 1.5 to 1.75 miles per year, the projected target would be 1.2 to 1.4 miles per year. This results in a higher probability of breakages, increase risk of service disruptions, and lower system reliability.
Kansas and Marin Streets Sewer Improvements	Increase wet weather flow conveyance to meet LOS storm	(23.3 M)	-	Deferred project until Alternatives Analysis is completed.	The LOS storm will not be met for this project area until project implementation. There is a risk that this project cannot be funded in the 10-year CIP due to budget limitations.

Deprioritized Stormwater and Flood Management Projects

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Action	Consequence of this action
Green Infrastructure					
Regional School/Park: Lincoln High School	Manage stormwater in the LOS storm through green infrastructure	(10.7 M)	-	Deferred project outside of 10-year horizon	The project deferral delays stormwater management in the area and co-benefits associated with implementing green infrastructure.
Streetscape Synergy Projects: Bayside	Manage stormwater in the LOS storm through green infrastructure	(48.6 M)	-	Deferred project outside of 10-year horizon	The project deferral delays stormwater management in the area and co-benefits associated with implementing green infrastructure. There is a risk that project funding would not be available when streetscape opportunities arise from other City Departments.
Streetscape Synergy Projects: Westside	Manage stormwater in the LOS storm through green infrastructure	(14.6 M)	-	Deferred project outside of 10-year horizon	The project deferral delays stormwater management in the area and co-benefits associated with implementing green infrastructure. There is a risk that project funding would not be available when streetscape opportunities arise from other City Departments.
Twin Peaks: Sutro Reservoir	Manage stormwater	(28.4 M)	-	Deferred project outside of 10-year horizon	The project deferral delays stormwater management in

Stormwater Space	in the LOS storm through green infrastructure				the area and co-benefits associated with implementing green infrastructure.
Flood Resilience					
Ocean and Urbano Pipe Enhancement	Flood management in the LOS storm	(50.3 M)	-	Deferred project outside of 10-year horizon	The area will continue to experience flood risks in the LOS storm until the project is completed. The community that this project serves has been vocal about their desires for a project, and deferring the project outside the next decade may impact public perception.
Gough Pipe Enhancement	Flood management in the LOS storm	(21.6 M)	-	Deferred project outside of 10-year horizon	The area will continue to experience flood risks in the LOS storm until the project is completed.

Other Deprioritized Projects

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Action	Consequence of this action
CSD Structure Rehab & Upgrades - Part 2	State of good repair	(25.2 M)	-	Deferred project outside of 10-year horizon	This results in a higher risk to service disruptions and lower system reliability.

8. Hetch Hetchy Power Capital Plan

Introduction

The Power capital program includes renewable generation and energy efficiency projects, solar at SFPUC and other City facilities, the Streetlight Repair and Replacement program and Transmission and Distribution projects consistent with the City's goal establishing the SFPUC as the exclusive electrical services provider to existing and new City facilities and development/redevelopment projects.

Capital Plan Summary

In FY 2023-24, the Hetch Hetchy Enterprise's capital budget is $21.5 M, of which $14.5 M or 65% is funded by debt and $7.0 M or 35.0 % is revenue funded. Revenue funding includes Power operating revenue, Distributed Antenna System, Low Carbon Fuel Standards and Power Cap and Trade revenue.

The $595.5 M Power Ten-Year Capital Plan represents a consistent and growing investment over ten years with funded by Power bonds $398.8 M and revenues $196.7 M.

Table 20: Hetch Hetchy Power Capital Plan

Hetchy Power/ $million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
Transmission/ Distribution	9.1	67.7	82.9	79.3	71.9	45.4	39.2	36.5	33.4	30.3	**495.7**
Streetlights	2.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	**37.2**
Renewable/ Generation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	**10.0**
Energy Efficiency	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	**10.0**
PG&E Acq	7.6	4.2	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	**42.7**
Total- Hetchy Power	**21.5**	**77.7**	**92.7**	**89.1**	**81.5**	**55.0**	**48.8**	**46.1**	**43.1**	**40.0**	**595.5**
Revenue Funded	7.0	7.8	13.0	20.7	20.7	24.1	24.3	26.4	26.4	26.4	**196.7**
Debt Funded	14.5	69.9	79.6	68.4	60.9	30.9	24.6	19.8	16.7	13.6	**398.8**
Total Sources	**21.5**	**77.7**	**92.7**	**89.1**	**81.5**	**55.0**	**48.8**	**46.1**	**43.1**	**40.0**	**595.5**

Key Projects

Transmission & Distribution Program: $495.7 million

These projects are consistent with San Francisco Administrative Code Section 99.3 establishing the SFPUC's role as the exclusive electric service provider for existing and new City facilities, and redevelopment and development projects.

SFO Substation Improvements –– This project provides for the SFPUC to serve SFO's anticipated load increase. The project will plan, design, and construct needed upgrades at the substations to provide reliable and redundant service to the airport.

Distribution Interface Redevelopment Projects - This project provides for the design and construction of new electric distribution systems and facilities for the SFPUC to provide electric services to various new developments within San Francisco. The project will consider the use and implementation of proven and new and emerging technologies. Beneficial technologies will be identified, researched, and

analyzed, prior to making a proposal for any implementation on the project, where ratepayer benefit is demonstrated.

Customer Programs projects- The SFPUC provides a variety of energy programs to Hetch Hetchy Power customers that incentive energy efficiency, distributed energy resources, and building and transportation electrification. These programs benefit our customers through providing technical and financial support to install new energy technologies designed to accelerate the transition towards a net zero carbon future, in alignment with the City's climate action goals. This budget funds staff time and consulting resources for developing and implementing programs, as well as the incentives paid out to the customers.

Alice Griffith/Candlestick Point - This project provides for the second phase of development at Hunters Point Shipyard, Candlestick Point, and the Alice Griffith Housing Complex. The Development Team comprised of the Office of Community Investment and Infrastructure and Developer will pay for the installation of the infrastructure and substructure required for the new 12-kV underground electrical distribution system. The SFPUC as the electric utility provider will install the conductors in the conduits, transformers, switches, and metering equipment required for the electric distribution system.

Grid Connections - Project to connect customers to SFPUC owned and operated distribution and transmission infrastructure. Hetchy Power has identified a number of customers along the Bay Corridor and current SFPUC grid customers to be connected to our systems including, The Shipyard, 2000 Marin, 1990 Newcomb, UCSF block 34, Wastewater Facilities; in addition to providing for the interconnections and other customers throughout the City.

Streetlights: $37.2 million

Hetchy provides power to all of San Francisco's 44,528 streetlights, maintains the 25,509 streetlights owned by the City, and funds the maintenance of the 19,019 streetlights owned by Pacific Gas & Electric Company (PG&E). Street lighting area improvements, the conversion of high voltage series loop circuits into multiple standard voltage service and Lighting Emitting Diode (LED) lighting, holiday and festivity pole use, assessments to determine the severity of pole deterioration, streetlight pole rehabilitation, and replacement of poles are all funded through this program.

Energy Efficiency: $10.0 million

Energy efficiency improvements reduce facility operating costs and electric bills for customers, improve system functionality, and reduce the environmental impact of energy use. This program funds energy efficiency investments in City facilities covering the planning, design, and construction of "direct install" projects, as well as technical assistance and project assistance for departments utilizing their own capital funds. Energy retrofits include lighting, heating and ventilation, retro-commissioning, and energy management systems projects. The SFPUC performs three to five energy efficiency projects each year. The budget funds efficiency projects in municipal facilities for departments such as Police, Real Estate, Recreation and Parks, SFMTA, Yerba Buena Center, and Fine Arts. Planned funding for lighting and mechanical system efficiency upgrades are consistent with state policies that place emphasis on energy efficiency and that support greenhouse gas reduction.

Renewable/Generation Power: $10.0 million

In accordance with City policies and directives to increase renewable energy and reduce greenhouse gases, Hetchy Power is continuously developing and implementing new renewable generation resources. Projects focus on small to mid-sized municipal facilities including solar photovoltaic, energy storage, biogas fuel cells, EV charging, micro-grid, and other renewable energy projects. The power

generated from the Renewable/Generation Power projects will offset on-site power need at each project location.

Alternative Transmission Project: $42.7 million

The Public Power Expansion Project funds financial, technical, regulatory, and legal analysis and City staff time toward assessment of acquiring PG&E's electrical assets, preparing to execute the possible transaction, and readying the SFPUC for operation of the acquired system. This work is on-going. We have completed a number of analyses and continue to refine the work and perform further analyses. We are also working through the Valuation proceeding at CPUC and the CEQA EIR process.

Deprioritized Projects

The Power and Finance teams worked together to put together a final plan that addressed the needs of the enterprise, balanced by constraining rate growth. Power is in a new position this year, with their rate study completed and 2-year rate package adopted in Spring 2022. They now have the ability to vary rates based on cost of service, and therefore have more flexibility in capital planning. However, Power's plan final represents strategic investments in both maintaining existing infrastructure and developing new load growth from both existing and new customers.

Power focused on maintaining funding for projects that had been approved and prioritized by the Executive Team and the Commission in the prior capital plan, as well as projects that rely on restricted outside revenue sources (e.g., streetlights, renewables, and cap and trade capital projects) that cannot otherwise be spent on other projects. Cuts and de-prioritization were focused on distribution services, where revenues from the sale of power are utilized. Such cuts limit revenue the Power Enterprise and Hetchy Water and Power will have in the future, as the associated projects typically connect new customers or allow increased sales to existing customers.

To determine which cuts to distribution services projects would have the least impact on project execution, Power conducted a review of the deliverability of our existing capital plan. Project managers reviewed their existing project balances, updated their spending projections, and made the reductions that they determined would have the lowest impact on project execution. Generally, de-prioritized projects are at earlier stages of planning and electrification deadlines. However, there are projects that are critically needed to meet City priorities on decarbonization and housing that due to Power's funding constraints remain deprioritized in the current capital plan. Power has a study underway with a third-party consultant in advance of the next year's capital planning process to provide more rigorous prioritization criteria and conduct high level planning.

The following table summarizes the projects that were reduced or not included in the final version of the plan.

Table 21: Projects deprioritized from Hetchy Power's Capital Plan proposal, $ million

Project Name	Project objective	Amount reduced	Amount remaining in CIP	Consequence of this action
Redevelopment	Funds four large redevelopment projects in active construction (Mission Rock, Pier 70, and HopeSF Sunnydale and Potrero) and three smaller redevelopment projects in initial planning phases (India Basin, Balboa Reservoir, Visitacion Valley).	(55.5M)	141.6M	The lack of funding for the beginning of each phase compromises the SFPUC's commitment to serve and jeopardizes our ability to connect new customers.

	Each project under construction has gone through the city's entitlement process and commitment to serve from SFPUC through Disposition and Development Agreements, Interagency Coordination Agreements, Electric Service Agreements. The funds support the construction of SFPUC-owned distribution systems. Each project is constructed in multiple phases and over several years. Our funding need is timed to the developer's schedule. Funding is needed to cover high up-front construction costs to ensure timing for vertical development.			
Intervening Facilities	To interconnect SFPUC's customers to PG&E's grid and wheel Hetchy Power over PG&E's lines.	(11.0M)	105.5M	Due to updated construction timelines, we can delay this $11M for one year. The $11M is approximately the PUC contribution for six low-voltage connection projects.
Grid Connections	To interconnect SFPUC's customers to SFPUC's grid.	(7.6M)	19.3M	Delays in the electrification of SFPUC Power's customers' projects, including affordable housing and the Water Enterprise. Purchase of material and labor would have to be deferred until funding becomes available. Due to the long lead time, we need to start ordering materials as soon as possible to have a good inventory level to support planned connections to customers.
Transportation Decarbonization for the SF Port (Substation)	To implement the City's Climate Action Plan and serve the Port's tenant projected load increases. By 2026, the California Air Resource Board requires that all ferry service under 3 nautical miles be zero emissions. To meet this requirement, WETA, the Water Emergency Transportation Authority, must electrify their fleet within the next few years. In addition, the Port of San Francisco expects their tenants to utilize more electric power within the next 20 years, including for electric vehicle charging.	(146.7M)	-	If SFPUC does not fund this project, WETA and the Port tenants would have to apply to Hetchy Power for individual services, which would be served through the PG&E wholesale distribution tariff (WDT), or WETA and the Port tenants would become PG&E retail customers.
Decarbonization of the Civic Center	To support the City's goal of fuel switching from natural gas to electric	(130.0M)	-	The City will be unable to meet its Climate Action

Steam Loop	– especially for City buildings in the Civic Center Historic District in which the existing buildings are space constrained.			Plan commitments and switch away from fossil fuel heating, or the service would be provided by PG&E.
Treasure Island/Yerba Buena Island Resiliency (Oakland Port 25kV)	To provide sufficient power to Treasure Island/Yerba Buena Island.	(112.3M)	-	SFPUC will be unable to transmit sufficient power over the existing wires by 2028, and we will be unable to meet our obligations to serve customers unless we initiate this project as soon as possible.
Municipal Electrification Program	To implement the City's Climate Action Plan and support our municipal customers to transition away from fossil fuel.	(7.5M)	-	The City will be unable to meet its Climate Action Plan commitments. Failure to fund this project will prevent Power from participating in MTA's transportation decarbonization program. Further, Power will not be able to support our municipal customers who are required to replace gas appliances with electric as required by updated Chapter 7 requirements.
Mobile Substations and Emergency Response	To have a mobile substation ready in the event of switchgear damage or if there are immediate construction or emergency power needs.	(4.7M)	-	Risk of extended outages remains unmitigated. This can be delayed in order to fund more urgent priorities.

9. CleanPowerSF Capital Plan

Introduction

A program of the San Francisco Public Utilities Commission, CleanPowerSF is a local solution to the climate crisis, offering renewable, affordable and accessible energy to our community. We empower residents and businesses to choose a more sustainable future. CleanPowerSF buys electricity from sources such as wind and solar, and that electricity is delivered to homes via PG&E's existing poles and wires.

Management of CleanPowerSF's financial business functions include developing and maintaining long-range capital and financial plans. The Capital Plan will evaluate opportunities for local renewable energy development in San Francisco city-owned and regional sites and other opportunities in and near San Francisco.

Capital Plan Summary

CleanPowerSF's capital budget is $1.6 M in FY 2023-24 and is funded by revenue and Disadvantaged Community and Green Tariff Solar Programs funding.

The CleanPowerSF 10-Year Capital Plan for FY 2023-24 through FY 2032-33 is $73 M, all of which $60.8 M is funded by CleanPowerSF revenues and $12.2 M by Disadvantaged Community and Green Tariff Solar Programs funding. CleanPowerSF does not expect to rely on debt to fund its current Capital Improvement Program between FY 2023-24 and FY 2032-33.

Table 22: CleanPowerSF FY2023-33 Capital Plan

$million	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33	Total
CleanPower SF Capital	0.8	1.9	1.9	1.8	1.8	2.0	7.6	16.8	24.9	1.4	**60.8**
DAC Solar Program	0.8	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	**12.2**
Total Uses	**1.6**	**2.9**	**3.0**	**3.0**	**3.1**	**3.3**	**8.9**	**18.1**	**26.3**	**2.8**	**73.0**
Revenue Funded	1.6	2.9	3.0	3.0	3.1	3.3	8.9	18.1	26.3	2.8	**73.0**
Total Sources	**1.6**	**2.9**	**3.0**	**3.0**	**3.1**	**3.3**	**8.9**	**18.1**	**26.3**	**2.8**	**73.0**

Key Projects

Local Renewable Energy Program: $48.8 million

This program will fund the development of new renewable energy (solar photovoltaic) and battery storage projects on select SFPUC sites. The project is structured around six major phases, including: Planning, Request for Proposals, Construction and Commissioning, Power Purchase Agreement, Asset Management, and Project Buyout. The initial renewable energy facilities developed under this program would be structured as power purchase agreements (PPA) with third parties that would develop and operate the projects for an initial period of time. The PPAs would include a buy-out option for the City.

Customer Programs: $12.1 million

This program funds the development and implementation of programs that incentivize CleanPowerSF customers to invest in new clean energy technologies that can reduce their energy costs and further San Francisco's decarbonization goals. Incentives will be available for residents and businesses investing in new clean and efficient equipment like solar power generating equipment, battery storage, electrical vehicle chargers and electric heat pump water heating.

Disadvantaged Community and Green Tariff Solar Programs: $12.2 million

The California Public Utilities Commission created the DAC Green Tariff and Community Solar Green Tariff programs to increase renewable energy produced and consumed within Disadvantaged Communities. By offering these programs, CleanPowerSF will be able to provide participating customers 100% renewable energy at a 20% discount. These programs will be funded by revenues from PG&E's sale of carbon dioxide allowances under the State's Cap and Trade program and the Public Purpose Program Charge, which is collected from all PG&E retail customers, including those that receive generation service from CleanPowerSF.

10. Affordability

Capital expenditures are the SFPUC's biggest cost driver and thus the most important driver of rate increases for our customers. Over the past ten years, the combined Water and Wastewater bill has increased by over 75%. The 10 Year Financial Plans project an increase in the combined Water/Wastewater bill of 90% over next ten years.

In addition to the cost constraining measures detailed in this report, staff have made great strides to mitigate against harsh bill impacts on our ratepayers, including expanding customer assistance programs. In addition, the Finance team partnered with External Affairs to initiate a study on affordability. A consultant was procured to survey the suite of affordability metrics that are used by our peer agencies to help us identify the processes that can best illustrate the financial burden of rates on customers across the SFPUC service area. The SFPUC's current metric for assessing affordability uses Median Household Income, which does not account for the cost of living in San Francisco. Furthermore, the SFPUC's current metric target of 2.5% was not selected based on rigorous data analysis, so alternative metrics researched by the consultant are being looked into. Additionally, the Finance Team is investigating key performance indicators that are used by ratings agencies to establish bond ratings to help us better understand how our plans may impact future borrowing terms. As we hone in on the most appropriate customer affordability and utility financial performance KPIs, the Finance team plans to incorporate these metrics into the 10-Year Financial Plan model to provide a more complete picture of the impacts of our capital finance scenario planning and to inform future rate-setting and customer assistance program discount design.

This process is still in its early stages so there are not any definitive spending thresholds based on affordability at this point in time. Over the coming months, the Finance team will be continuing to evaluate the affordability metrics and present a recommended policy on affordability to the commission for adoptions, aiming to have this complete during 2023.

To learn more about how the SFPUC is placing affordability at the forefront of its mission, please refer to the 10-Year Financial Plan.

11. Next Steps

Deliverability work and capital planning process work is a long-term project that we know we cannot solve in one budget cycle. This year's process will bring in guidance on some internal deliverability factors and we will continue to refine the deliverability review approach as we move into to the next 2-year budget cycle. In turn, we will continue to review the long-term capital needs for our water, power and sewer systems and look for innovative strategies to reduce costs in line with ratepayer affordability while still meeting the asset replacement needs for our facilities.

The short-term goal for Phases 1 and 2 of the Capital Planning and Delivery Program was to develop a balanced FY 23-24 Capital Budget and 10-year Capital Plan informed by project deliverability and ratepayer affordability factors by December 2022.

The long-term goals in focus for Phase 3 are to:

- Build a unified approach for capital project planning, prioritization and decision making across SFPUC
- Improve our ability to assess deliverability for project planning and budgeting
- Develop solutions to key deliverability issues to increase our capacity to execute on projects

These objectives seek to improve, modernize, and unify the SFPUC's Capital Planning approach - one of the most fundamental strategic activities of the SFPUC and its biggest cost driver. The goal to unify includes some nuance – to unify as much as possible our systems, governance, and processes to enable more informed decision making, while allowing for variation in prioritization criteria to account for the differing demands on each enterprise.

Given the broad scope, this program will likely span at least five years to include at least two full budget development cycles which occur every other year. Also, given the existing workload of SFPUC staff, it will be important to identify what can be accomplished in time and in support of the next two-year budget cycle in 2023; and what can be accomplished in subsequent years.

It is important to mention however, that given the many internal and external factors that impact project execution, building the tools and capacity to measure deliverability consistently and effectively – and embed this practice within our agency long-term -- will require a dedicated, continuous, cross-functional effort. It may also be very difficult to develop an approach that accounts for all factors. Long term, it will be important to balance deliverability reviews with an analysis of spending patterns and use both inputs to refine the CIP, while ensuring we invest in the capital improvement needs of our facilities.