

Coastside

COUNTY WATER DISTRICT

Water Financial Plan and Rate Update Study

Final Report / October 2022



October 26, 2022

Mary Rogren
General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

Subject: Water Financial Plan and Rate Update Study Report

Dear Mary Rogren,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Water Financial Plan and Rate Update Study Report for the Coastside County Water District (District).

The major objectives of the study include the following:

- Developing a long-term financial plan that sufficiently funds operating expenses, capital replacement and improvement costs, and prudent reserve balances
- Calculating water rates that fully recover costs to serve customers, while minimizing rate impacts to the extent possible, and promoting affordability for essential needs
- Designing water shortage rates that recover all costs related to drought at each drought stage following the usage reduction guidelines of the District's 2020 Water Shortage Contingency Plan
- Preparing a study report, or administrative record, that clearly and comprehensively explains each step of the rate study process
- Developing water and water shortage rates that are in alignment with cost of service principles and Proposition 218 requirements

The report details the long-term financial plan and proposed rates for the District's water utility. It was a pleasure working with you and your team and we wish to express our gratitude for the support you and the other District staff provided to us during the study.

Sincerely,



Kevin Kostiuk
Project Director



Nancy Phan
Project Manager



Lindsay Roth
Lead Analyst

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1. Executive Summary

1.1. Study Background

In 2022, the Coastside County Water District contracted with Raftelis to conduct a Water Rate Study, which includes the development of a long-term financial plan, proposed water rates, and proposed water shortage rates. The study culminates in two years of water and water shortage rate recommendations based on the results of financial planning exercise and the calculation of water shortage rates based on the most recent Water Shortage Contingency Plan. This Executive Summary outlines the rate proposal and contains a description of the study process, methodology, and recommendations for the District's water rates and water shortage rates.

1.2. Objectives of the Study

The major component and objectives of the study include:

1. Developing a long-term financial plan that meets the water utility's revenue requirements, including operations and maintenance (O&M) expenses and the capital improvement plan (CIP), while adequately funding reserves in accordance with industry best practices and the District's adopted financial practices
2. Developing two years of water rates that align with Proposition 218 requirements and ensure financial sufficiency to fund operating and capital costs over the study period
3. Developing water shortage rates that recover the financial impacts of each drought stage based on the cost of providing service

1.3. Current Rates

The District's current water rates were implemented January 1, 2022 and include a monthly base charge based on meter size, a monthly fire service charge for private fire customers based on fire line size, a tiered quantity charge for single family residential (SFR) customers charged for every hundred cubic feet (ccf) of water used, and a uniform rate for all other customer classes charged for every ccf of water used.

Table 1-1 shows the current monthly base charges by meter size. **Table 1-2** shows the current monthly fire service charges by line size. **Table 1-3** shows the current tiered quantity charges by customer class and monthly tiers.

Table 1-1: Current Monthly Base Charge

	A	B
Line	Meter Size	Current
1	5/8"	\$31.87
2	3/4"	\$47.09
3	1"	\$77.52
4	1 1/2"	\$153.60
5	2"	\$244.91
6	3"	\$534.02
7	4"	\$960.12

Table 1-2: Current Monthly Fire Service Charges

	A	B
Line	Fire Line Size	Current
1	3/4"	\$5.35
2	1"	\$7.13
3	1 1/2"	\$10.70
4	2"	\$14.26
5	3"	\$21.39
6	4"	\$28.52
7	6"	\$42.78
8	8"	\$57.04
9	10"	\$71.30

Table 1-3: Current Quantity Charges

	A	B
Line	Quantity Charges	Current
1	Single Family	
2	Tier 1	\$10.14
3	Tier 2	\$14.83
4	Tier 3	\$17.94
5	Multi-Family	\$13.52
6	Non-Residential	\$14.41

1.4. Process and Approach

Raftelis held several meetings with District staff to discuss and understand objectives, characteristics, and challenges of the District's water and utility to provide the recommendations and results detailed in this report. Raftelis confirmed various assumptions and inputs and used an iterative process to view several scenarios to determine the recommended financial plan and water and water shortage rates. District staff discussed the capital project requirements and capital funding sources over a five-year horizon, which are the primary drivers of the future revenue needs of the utility. Raftelis then proposed a two-year rate schedule based on the adjustments needed as a result of the financial planning process.

The proposed financial plan detailed in this report follows industry standards for long-term financial planning. The financial plan relies on reasonable assumptions based on industry indices, such as general inflation based on the Consumer Price Index (CPI) and input from District staff. Raftelis worked closely with District staff to determine

the most accurate methodology to project future revenues and expenses to reinforce sound fiscal management practices.

The financial plan includes the five-year period between FY 2023 to FY 2027. Each fiscal year begins on July 1 and ends on July 30. For example, FY 2023 is defined as the year beginning on July 1, 2022 and ending on June 30, 2023. The proposed rates were developed for implementation on January 1, 2023 in FY 2023 and in January of the following year.

1.5. Legal Framework¹

1.5.1. CALIFORNIA CONSTITUTION – ARTICLE XIII D, SECTION 6 (PROPOSITION 218)

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of a service to a property (property-related fees and charges) are proportional to, and do not exceed, the cost of providing service. Water service fees and charges are property-related fees and charges subject to the provisions of California Constitution Article XIII D, Section 6 (Proposition 218). The principal requirements, as they relate to public water service fees and charges are as follows:

1. Revenues derived from the fee or charge shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

As stated in the American Water Works Association’s (AWWA) *Principles of Water Rates, Fees, and Charges*, 7th edition (M1 Manual), “water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” Raftelis follows industry standard rate setting methodologies set forth by the AWWA M1 Manual to ensure that the results of this study align with Proposition 218 requirements and create rates that do not exceed the proportionate cost of providing water service.

1.5.2. CALIFORNIA CONSTITUTION – ARTICLE X, SECTION 2

Article X, Section 2 of the California Constitution states the following:

“It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.”

¹Raftelis does not practice law, nor does it provide legal advice. The above discussion provides a general overview of Raftelis’ understanding as rate practitioners and is labeled “legal framework” for literary convenience only. The District should consult with its legal counsel for clarification and/or specific guidance.

Article X, Section 2 of the State Constitution establishes the need to preserve the state’s water supplies and to discourage the waste or unreasonable use of water by encouraging conservation. Public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

In addition, Section 106 of the California Water Code declares that the highest priority use of water is for domestic purposes, with irrigation water secondary. To meet the objectives of Article X, Section 2 and the California Water Code, a water purveyor may utilize its water rate design to incentivize the efficient use of water. The District established tiered water rates (also known as “inclining tier” or “inclining block”) to incentivize customers to use water in an efficient manner. The inclining tier rates (as well as rates for uniform rate classes) need to be based on the proportionate costs incurred to provide water to, and within, each customer class to align with Proposition 218.

Tiered water rate structures, when properly designed and differentiated by customer class, allow a water utility to send conservation price signals to customers while proportionately allocating the costs of service. Due to a necessity in reducing water waste and increasing efficiency, tiered water rates are ubiquitous, especially in relatively water-scarce regions like California. Tiered rates align with the requirements of Proposition 218 if the tiered rates reflect the proportionate cost of providing service *within* each tier.

1.6. Financial Plan Results and Recommendations

1.6.1. FACTORS AFFECTING REVENUE REQUIREMENTS

The following items affect the water utility’s costs and thus its water rates. The utility’s expenses include O&M expenses, capital project costs, debt service, and reserve funding.

- **O&M Funding:** There are a few factors influencing the increase in spending on O&M. First, higher than usual inflation has led to higher O&M costs than were previously planned for under the current water rates. Next, because of recent drought conditions, San Francisco Public Utilities Commission (SFPUC) variable purchased water costs are increasing 16% in FY 2023 and an additional 11% in FY 2024.
- **Capital Funding:** The water utility has approximately \$35.5M in planned capital expenditures from FY 2023 through FY 2027. Planned capital project costs are anticipated to be entirely cash funded through net rate revenues and existing and future reserves in FY 2023 and FY 2024. In FY 2025, the District plans to receive \$7M in debt proceeds to fund most of the CIP in that year, with the remainder and all CIP in FY 2026 and FY 2027 cash funded.
- **Reserve Funding:** Reserve targets are adopted to ensure enough cash on hand to meet routine cash flow needs, provide adequate for planned repairs and replacements (R&R) CIP, navigate emergencies in the event of asset failure or natural disaster, and to protect ratepayers from rate spikes. **Table 1-4** summarizes the District’s current reserve policy.

Table 1-4: Reserve Policy

Line	A Reserve Policy	B Target Policy	C FY 2023 Target
1	Operating	25% of Operating Expenses	\$2,625,543
2	Capital	Average CIP over 5 years	\$7,099,234
3	Debt Service	Annual Debt Service Payments	\$1,094,498
4	Total		\$10,819,276

1.6.2. FINANCIAL PLAN RESULTS

Table 1-6 shows the proposed revenue adjustments that allows the District to maintain financial sufficiency, fund operating and capital expenses, and achieve recommended cash reserves for the water utility. The proposed adjustments apply to the District’s rate revenues, which were projected for future years assuming no growth in customer accounts during the study period. Water demand in FY 2022 represents estimated baseline use for the District’s customers. **Table 1-5** shows the projected water demand and usage from FY 2022 to FY 2027. Demand is expected to drop in FY 2023 as a result of the current drought and incrementally recover to pre-drought demand by FY 2025.

Table 1-5: Projected Water Demand and Usage

Line	A Consumption (ccf)	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Single Family Residential						
2	Tier 1	231,604	226,277	246,642	257,001	257,001	257,001
3	Tier 2	103,832	101,444	110,574	115,218	115,218	115,218
4	Tier 3	53,314	52,088	56,776	59,160	59,160	59,160
5	Multi-Family Residential	39,513	38,604	42,079	43,846	43,846	43,846
6	Non-Residential	324,970	317,496	346,070	360,605	360,605	360,605
7	Total	753,233	735,909	802,140	835,830	835,830	835,830

The proposed revenue adjustments represent the increase to total rate revenues required to recover the water utility’s costs and not the expected impact to each customer class. Revenue adjustments are applied across all charges, classes, and tiers proportional to the current rates.

Table 1-6: Proposed Revenue Adjustments

Line	A Revenue Adjustment	B FY 2023	C FY 2024
1	Effective Month	January	January
2	Percent Adjustment	6.0%	6.0%

Figure 1-1 shows the five-year financial plan for FY 2023 through FY 2027. The stacked bars represent the costs of the water utility: O&M expenses make up most of the water financial plan (dark blue bars). Water supply costs are shown in the light blue bars, rate funded CIP is shown in the gray bars, and debt service is shown in the green bars. Cash to reserves (yellow bars) represents revenue used to contribute to reserve targets and is seen in FY 2025. This means that in all other years of the study, reserves are withdrawn to pay for operating expenses or rate funded capital projects. Current revenues (solid line) equal the projected revenues at the District’s existing water rates and proposed revenues (dotted line) equal the projected revenues with the proposed revenue adjustments in **Table 1-6** applied.

Figure 1-1: Proposed Water Financial Plan

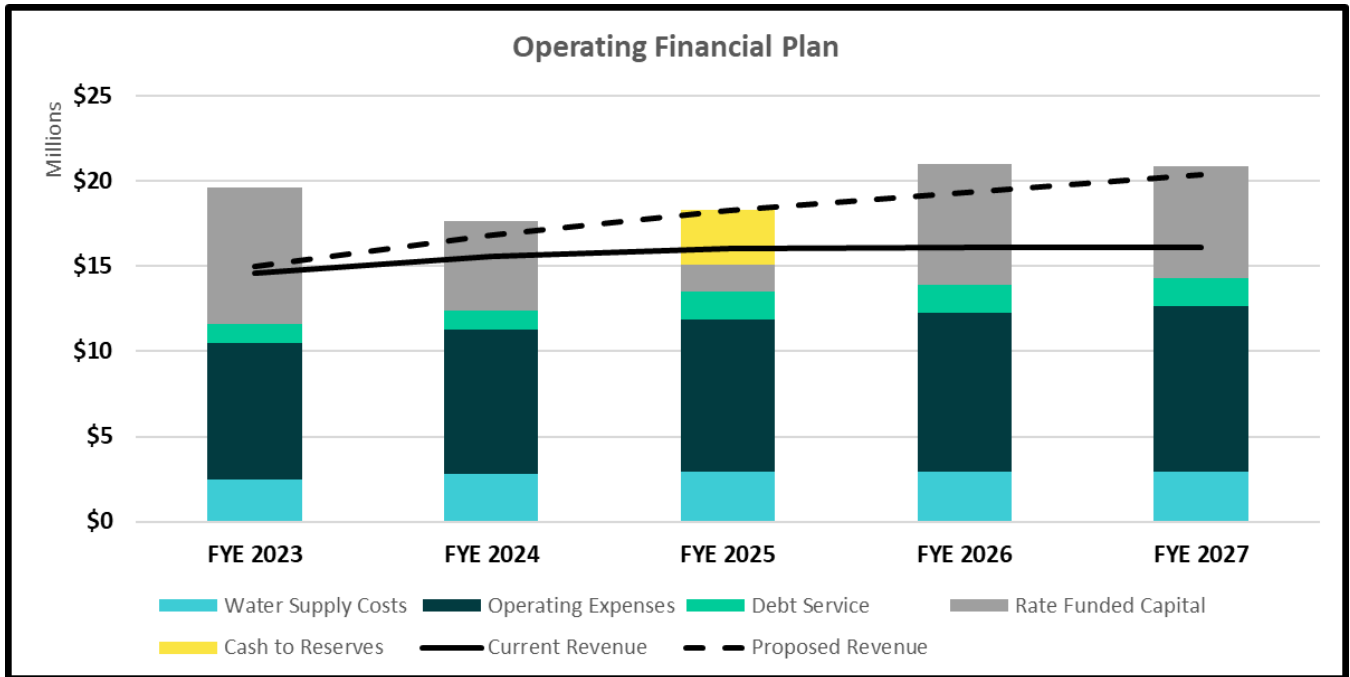


Figure 1-2 shows the combined ending fund balances from FY 2023 to FY 2027. The minimum reserve target (light blue line) is determined based on the recommended reserve policy targets in Table 1-4. The ending fund balances meet or almost meet the reserve targets in all years.

Figure 1-2: Proposed Fund Balances

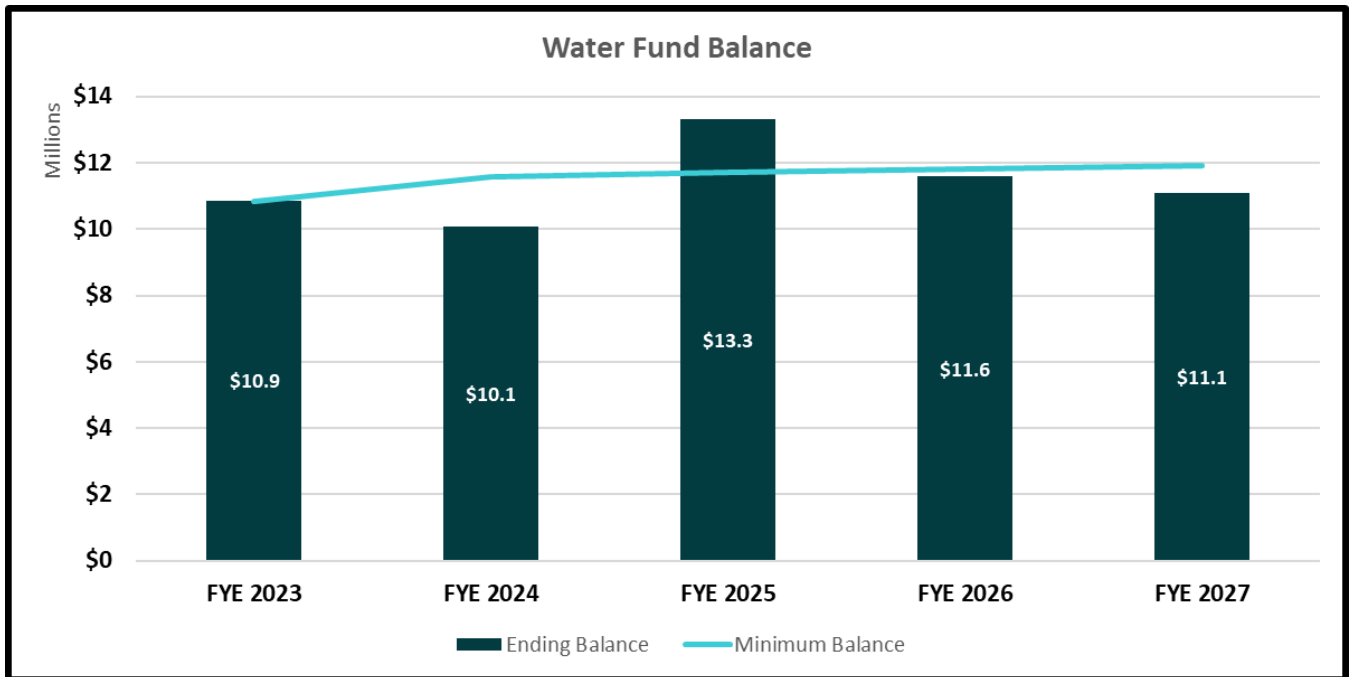
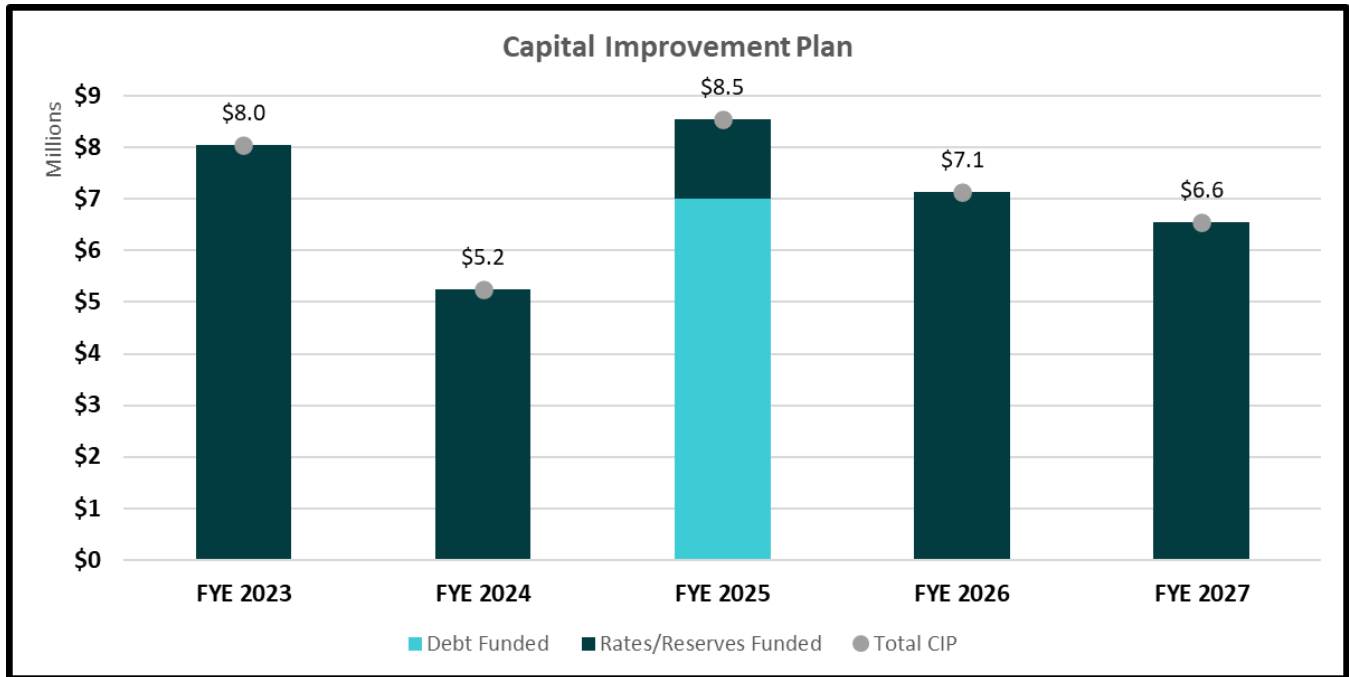


Figure 1-3 shows the five-year CIP expenditures from FY 2023 through FY 2027. All planned CIP expenses in FY 2023, FY 2024, FY 2026, and FY 2027 are anticipated to be entirely cash funded through rate revenues and

existing capital reserves. Most of the CIP expenses for FY 2025 will be funded through \$7M in debt proceeds, with the remaining \$1.5M funded through rate revenues and capital reserves.

Figure 1-3: Planned CIP Expenditures



1.7. Proposed Water Rates

Table 1-7, Table 1-8, and Table 1-9 show the proposed monthly base charges, monthly fire service charges, and quantity charges, respectively, for FY 2023 and FY 2024 based on the above recommendations. The proposed water rates are reflective of an across-the-board increase based on the District’s existing water rate structure, developed in the 2018 Water Cost of Service and Rate Study. Rates for both years are determined based on the corresponding revenue adjustments in Table 1-6.

Table 1-7: Proposed Monthly Base Charges

Line	A Meter Size	B Current FY 2022	C Proposed FY 2023	D Proposed FY 2024
1	5/8"	\$31.87	\$33.78	\$35.81
2	3/4"	\$47.09	\$49.92	\$52.92
3	1"	\$77.52	\$82.17	\$87.10
4	1 1/2"	\$153.60	\$162.82	\$172.59
5	2"	\$244.91	\$259.60	\$275.18
6	3"	\$534.02	\$566.06	\$600.02
7	4"	\$960.12	\$1,017.73	\$1,078.79

Table 1-8: Proposed Monthly Fire Service Charges

	A	B	C	D
Line	Fire Line Size	Current FY 2022	Proposed FY 2023	Proposed FY 2024
1	3/4"	\$5.35	\$5.67	\$6.01
2	1"	\$7.13	\$7.56	\$8.01
3	1 1/2"	\$10.70	\$11.34	\$12.02
4	2"	\$14.26	\$15.12	\$16.03
5	3"	\$21.39	\$22.67	\$24.03
6	4"	\$28.52	\$30.23	\$32.04
7	6"	\$42.78	\$45.35	\$48.07
8	8"	\$57.04	\$60.46	\$64.09
9	10"	\$71.30	\$75.58	\$80.11

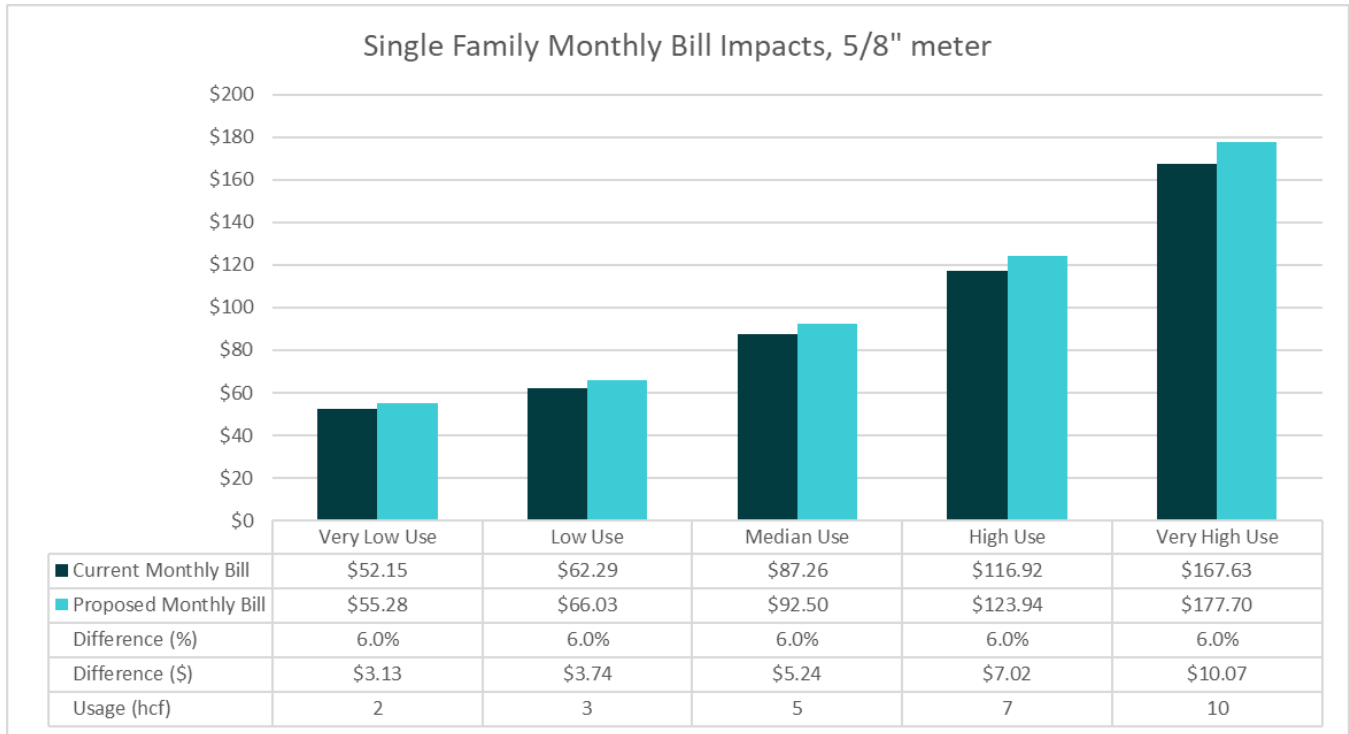
Table 1-9: Proposed Quantity Charges

	A	B	C	D
Line	Customer Class	Current FY 2022	Proposed FY 2023	Proposed FY 2024
1	Single Family			
2	Tier 1	\$10.14	\$10.75	\$11.40
3	Tier 2	\$14.83	\$15.72	\$16.66
4	Tier 3	\$17.94	\$19.02	\$20.16
5	Multi-Family	\$13.52	\$14.33	\$15.19
6	Non-Residential	\$14.41	\$15.27	\$16.19

1.8. Customer Impacts

Figure 1-4 shows the proposed FY 2023 monthly bill impacts for SFR customers at various levels of water usage. The impacts show bills for a 5/8" meter, the most common meter size for SFR customers. Bill increases match the rate adjustment at 6%.

Figure 1-4: Single Family Residential Bill Impacts



1.9. Water Shortage Rates

The District engaged Raftelis to update water shortage rates as part of the Water Rate Study. The District adopted its latest Water Shortage Contingency Plan in June 2021, which details the six drought stages and the corresponding water usage reductions. The resulting water shortage rates align with Proposition 218 requirements and allow the District to reliably recover the necessary revenue to fully fund the water system in times of drought.

The major objectives when developing water shortage rates include:

- Determine water allocations for each customer class during each drought stage based on the 2020 Water Shortage Contingency Plan
- Calculate the financial impacts of reduced water sales and changes to water supply sources
- Evaluate various rate structures to determine the structure best suited to meet the District’s needs
- Develop water shortage rates that recover the financial impacts of each drought stage based on the cost of providing service

1.9.1. PROCESS AND APPROACH

Water shortage rates are governed by the requirements of Proposition 218 and Article X of the California Constitution. The development of the water shortage rates must show the nexus between the costs of providing water service and the rates charged to customers, should maximize the beneficial use of water (often defined as indoor use for health and hygiene), and should encourage conservation.

Water shortage rates are designed to recover lost revenue due to reduction in water use during each stage, to incorporate the potential changes to the District’s water supply sources and their corresponding costs, to align with specific drought stages outlined in the 2020 Water Shortage Contingency Plan, and to provide financial flexibility for the District when declaring drought stages and implementing the appropriate water shortage rates. The

proposed rates are based on the District’s proposed water rates for FY 2023, which will go into effect January 1, 2023.

There are four steps to calculating water shortage rates, which include:

1. Allocating water reductions between various customer classes based on defined drought stages
2. Calculating financial impacts to the District in each stage
3. Determining the most appropriate drought cost recovery mechanism (rate structure)
4. Evaluating financial impacts to customers

District staff provided the Water Shortage Contingency Plan which was adopted in 2021. **Table 1-10** shows the overall reduction targets for the entire water system.

Table 1-10: Drought Stages and Reduction

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Single Family Residential	0%	15%	21%	30%	36%	41%	52%
2	Multi-Family Residential	0%	14%	21%	30%	35%	41%	52%
3	Non-Residential	0%	5%	21%	30%	43%	62%	88%
4								
5	Target Reduction Goal	0%	≤10%	20%	30%	40%	50%	>50%

The water sales by drought stage are calculated using the target reductions developed in the Water Shortage Contingency Plan. **Table 1-11** shows the estimated water sales in ccf for each stage of drought that aligns with the percent reductions shown above in **Table 1-10**. Baseline is defined as the “new normal” water usage, which is approximately equal to the projected water usage in FY 2025.

Table 1-11: Estimated Water Sales by Stage (ccf)

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Total (ccf)	836,842	747,859	661,106	585,790	510,745	417,918	271,709
2	% Reduction	0%	11%	21%	30%	39%	50%	68%

A key step in a water shortage rate study is to calculate the financial implications for the District during a drought. Considerations include:

- How much commodity revenue is expected due to cutbacks?
- How much will this change the District’s water supply mix and the costs associated with each source?
- How will this change the District’s operating costs, if at all?

For the District, the most significant financial consequence is the loss of consumption-based revenue, the severity of which depends on the drought stage. Drought conditions will also require more staff to be hired to handle conservation efforts and respond to an increase in customer service requests. The District will also expect changes to the cost of purchased water from SFPUC. Local sources of water will be reduced in Stage 1 and may be eliminated from the supply mix entirely by Stage 2, which will increase the demand for purchased water and increasing purchased water costs overall through Stage 3. However, by Stage 4, the reduction in demand will decrease the overall purchase cost of water below what it was during baseline conditions, so the cost of water will result in cost savings in Stages 4-6.

Based on direction provided by District staff, the water shortage rates were developed as a uniform percentage increase to the proposed water usage charges for FY 2023, which allows for the ability of customers to change their water bill, encourages conservation, and promotes affordability.

1.9.2. PROPOSED WATER SHORTAGE RATES

Table 1-12 and **Table 1-13** show the proposed water shortage rates by customer class and tier for Stages 1 through 6 for FY 2023 and FY 2024, respectively. The water shortage rates for each stage are calculated based on the proportion of drought costs that need to be recovered in each stage multiplied by the base water usage rates. The water shortage rate methodology is based on the prior January 2022 rate study. Based on Proposition 218 requirements, the resulting water shortage rates are the maximum that the Board of Directors can implement. When officially declaring a drought stage, the Board has the discretion to implement a lower water shortage rate, use reserves to make up for lost revenue, defer capital projects to reduce total expenditures, or a combination of any of these strategies to best meet the needs of the District.

Table 1-12: Proposed FY 2023 Water Shortage Rates (\$/ccf)

Line	A Customer Class	B Stage 1	C Stage 2	D Stage 3	E Stage 4	F Stage 5	G Stage 6
1	Single Family						
2	Tier 1	\$2.47	\$4.37	\$6.14	\$8.52	\$12.85	\$25.42
3	Tier 2	\$3.60	\$6.39	\$8.98	\$12.46	\$18.79	\$37.16
4	Tier 3	\$4.36	\$7.73	\$10.87	\$15.07	\$22.73	\$44.97
5	Multi-Family	\$3.29	\$5.82	\$8.19	\$11.36	\$17.12	\$33.88
6	Non-Residential	\$3.50	\$6.21	\$8.73	\$12.10	\$18.25	\$36.10

Table 1-13: Proposed FY 2024 Water Shortage Rates (\$/ccf)

Line	A Customer Class	B Stage 1	C Stage 2	D Stage 3	E Stage 4	F Stage 5	G Stage 6
1	Single Family						
2	Tier 1	\$2.57	\$4.58	\$6.48	\$9.03	\$13.67	\$27.17
3	Tier 2	\$3.75	\$6.69	\$9.47	\$13.20	\$19.98	\$39.71
4	Tier 3	\$4.53	\$8.10	\$11.46	\$15.97	\$24.18	\$48.05
5	Multi-Family	\$3.42	\$6.10	\$8.64	\$12.03	\$18.22	\$36.20
6	Non-Residential	\$3.64	\$6.50	\$9.21	\$12.83	\$19.42	\$38.59

1.9.3. CUSTOMER IMPACTS

Figure 1-5 through **Figure 1-7** show the bill impacts for a Single Family, Multi-Family, and Non-Residential customer, respectively. Each bill calculation uses the most common meter size and the median usage for that customer class.

The figures demonstrate that when the District’s customers comply with the recommended water usage reductions as defined by the Water Shortage Contingency Plan, the customer’s water bill impact will be significantly smaller than if they did not reduce their water consumption.

Figure 1-5: Single Family Residential Bill Impacts

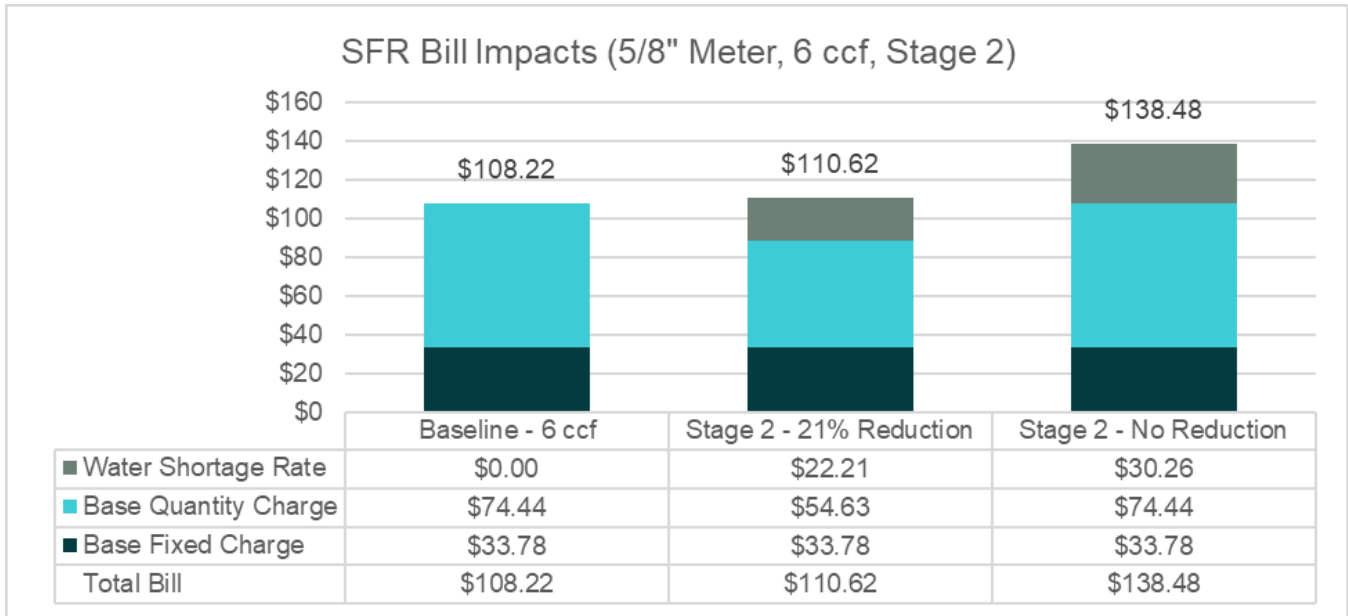


Figure 1-6: Multi-Family Residential Bill Impacts

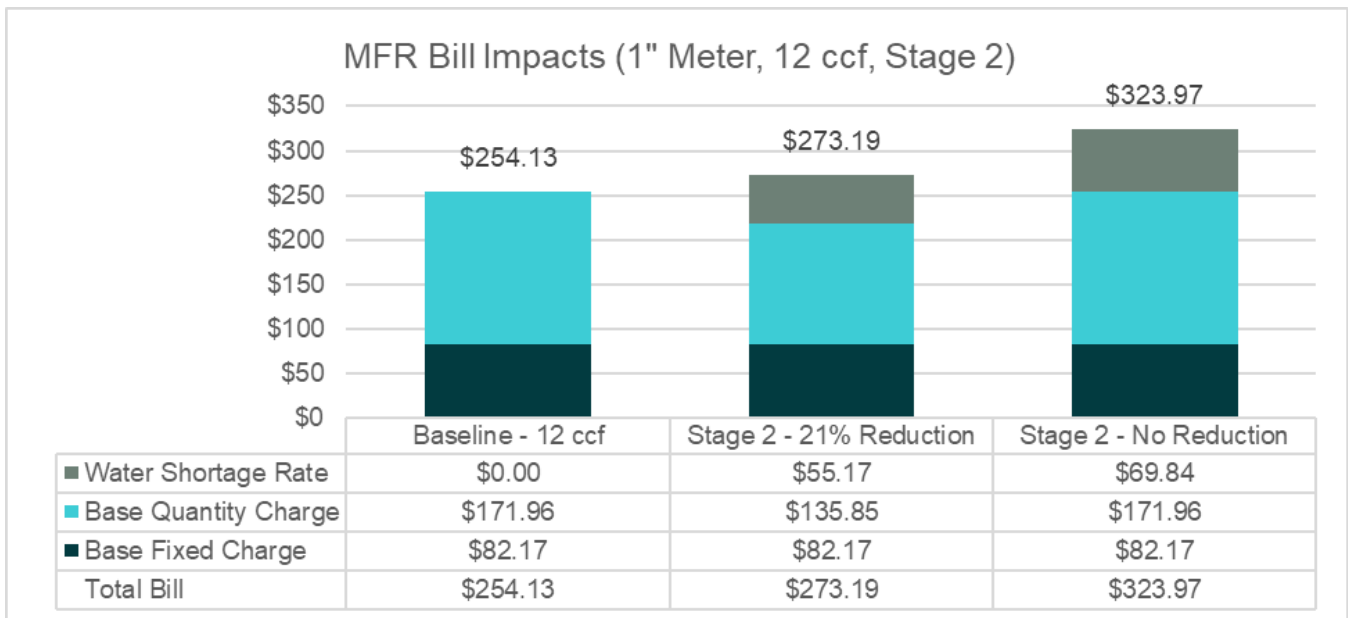
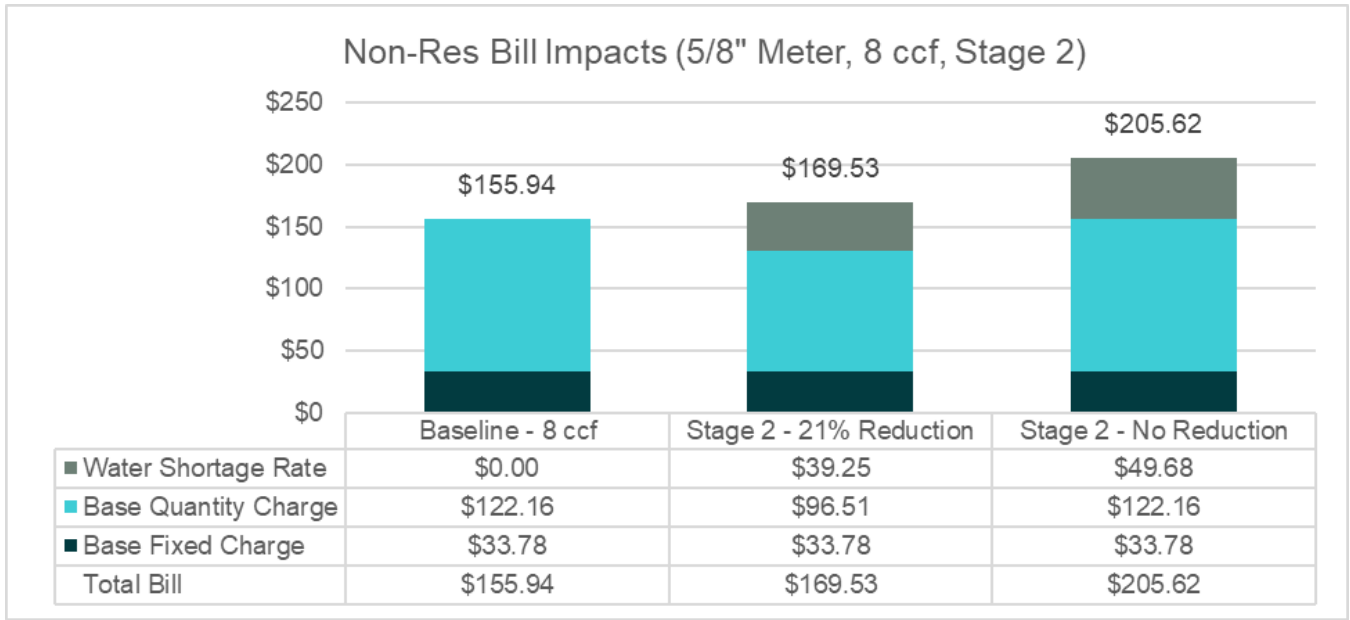


Figure 1-7: Non-Residential Bill Impacts



2. Financial Plan

This section of the report describes the proposed financial plan for the water utility. To develop the financial plan, Raftelis projected annual revenues and expenses, modeled reserve balances, projected capital expenditures, and calculated debt service coverage to estimate the amount of additional rate revenue needed each year. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown.

2.1. Inflationary Assumptions

Inflationary factors are used to escalate the revenue and cost categories across the planning period, which for this study is from FY 2023 to FY 2027. The District's most recent adopted revenue and expense budgets are for FY 2023. Raftelis worked with District staff to escalate individual budget line items according to the appropriate escalation factor. The escalation factors used to project revenues are shown in **Table 2-1**. These factors are based on industry indices, such as general inflation based on CPI, and input from District staff. Inflation factors were increased for FY 2024 because of recent high inflation and were linearly decreased back to historical averages by FY 2027.

Table 2-1: Inflation Factors

Line	A Escalation Factors	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027
1	General	2.7%	5.0%	4.2%	3.5%	2.7%
2	Salary	4.5%	6.5%	5.8%	5.2%	4.5%
3	Benefits	6.0%	6.5%	5.8%	5.2%	4.5%
4	Power	5.0%	6.0%	5.7%	5.3%	5.0%
5	Capital	3.2%	5.0%	4.4%	3.8%	3.2%
6	Interest Income	0.3%	0.9%	0.9%	0.9%	0.9%

2.2. Current Water Rates

The District's current water rates were implemented January 1, 2022 and include a monthly base charge based on meter size, a monthly fire service charge based on fire line size, and a tiered quantity charge for every ccf of water used. **Table 2-2** shows the current monthly base charges by meter size. **Table 2-3** shows the current monthly fire service charges by fire line size. **Table 2-4** shows the current quantity charge by customer class and by monthly tiers.

Table 2-2: Current Monthly Base Charge

Line	A Meter Size	B Current
1	5/8"	\$31.87
2	3/4"	\$47.09
3	1"	\$77.52
4	1 1/2"	\$153.60
5	2"	\$244.91
6	3"	\$534.02
7	4"	\$960.12

Table 2-3: Current Monthly Fire Service Charges

	A	B
Line	Fire Line Size	Current
1	3/4"	\$5.35
2	1"	\$7.13
3	1 1/2"	\$10.70
4	2"	\$14.26
5	3"	\$21.39
6	4"	\$28.52
7	6"	\$42.78
8	8"	\$57.04
9	10"	\$71.30

Table 2-4: Current Quantity Charges

	A	B
Line	Quantity Charges	Current
1	Single Family	
2	Tier 1	\$10.14
3	Tier 2	\$14.83
4	Tier 3	\$17.94
5	Multi-Family	\$13.52
6	Non-Residential	\$14.41

2.3. Customer Accounts and Usage

District Staff provided detailed customer billing data for FY 2022, which included information such as customer class, billed consumption in ccf, and meter size for each of the monthly billing periods. Future usage and accounts were projected based off of FY 2022 data.

Table 2-5 shows the projected meter counts by meter size for the study period. **Table 2-6** shows the projected private fire accounts for the study period. **Table 2-7** shows the projected water demand for the study period. Demand slowly increases from FY 2023 to FY 2025, bouncing back from the current drought conditions. **Table 2-8** shows the resulting projected water usage in ccf by customer class and tier for the study period. We assume no account growth for the study period. There is a projected decrease in demand in FY 2023 recovering to historical demand by FY 2024 as shown in **Table 1-5**.

Table 2-5: Projected Customer Accounts

	A	B	C	D	E	F	G
Line	Customer Accounts	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
1	5/8"	6,114	6,114	6,114	6,114	6,114	6,114
2	3/4"	198	198	198	198	198	198
3	1"	184	184	184	184	184	184
4	1 1/2"	29	29	29	29	29	29
5	2"	34	34	34	34	34	34
6	3"	5	5	5	5	5	5
7	4"	2	2	2	2	2	2
8	Total	6,566	6,566	6,566	6,566	6,566	6,566

Table 2-6: Projected Private Fire Accounts

Line	A Private Fire Accounts	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	3/4"	10	10	10	10	10	10
2	1"	735	735	735	735	735	735
3	1 1/2"	50	50	50	50	50	50
4	2"	89	89	89	89	89	89
5	3"	4	4	4	4	4	4
6	4"	128	128	128	128	128	128
7	6"	62	62	62	62	62	62
8	8"	14	14	14	14	14	14
9	10"	1	1	1	1	1	1
10	Total	1,093	1,093	1,093	1,093	1,093	1,093

Table 2-7: Projected Water Demand

Line	A Projected Water Demand	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027
1	% of FY 2022 Usage	97.7%	109.0%	104.2%	100.0%	100.0%
2	Total Projected Water Sales (MG)	550	600	625	625	625

Table 2-8: Projected Water Usage

Line	A Consumption (ccf)	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Single Family Residential						
2	Tier 1	231,604	226,277	246,642	257,001	257,001	257,001
3	Tier 2	103,832	101,444	110,574	115,218	115,218	115,218
4	Tier 3	53,314	52,088	56,776	59,160	59,160	59,160
5	Multi-Family Residential	39,513	38,604	42,079	43,846	43,846	43,846
6	Non-Residential	324,970	317,496	346,070	360,605	360,605	360,605
7	Total	753,233	735,909	802,140	835,830	835,830	835,830

2.4. Projected Revenues at Current Rates

Rate revenues for FY 2023 through FY 2027 were calculated based on the District's current water rates. The projected annual rate revenues from the monthly base charges are shown in **Table 2-9** and **Table 2-10** shows the projected revenue collected from current quantity charges by customer class. **Table 2-11** shows the total projected revenues including the base charges, fire service charges, and quantity charges.

Table 2-9: Calculated Service Charge Revenue

Line	A Service Charge Revenue	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Base Charge	\$2,762,265	\$2,829,748	\$2,829,748	\$2,829,748	\$2,829,748	\$2,829,748
2	Fire Service Charge	\$168,168	\$172,275	\$172,275	\$172,275	\$172,275	\$172,275
3	Total Service Charge Revenue	\$2,930,432	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023

Table 2-10: Calculated Quantity Charge Revenue

Line	A Quantity Charge Revenue	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Single Family	\$4,715,866	\$4,733,317	\$5,159,316	\$5,376,007	\$5,376,007	\$5,376,007
2	Multi-Family	\$520,013	\$521,929	\$568,902	\$592,796	\$592,796	\$592,796
3	Non-Residential	\$4,558,819	\$4,575,113	\$4,986,873	\$5,196,322	\$5,196,322	\$5,196,322
4	Total Quantity Charge Revenue	\$9,794,698	\$9,830,359	\$10,715,091	\$11,165,125	\$11,165,125	\$11,165,125

Table 2-11: Calculated Water Rate Revenue

Line	A Calculated Rate Revenue	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Service Charge Revenue	\$2,930,432	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023
2	Quantity Charge Revenue	\$9,794,698	\$9,830,359	\$10,715,091	\$11,165,125	\$11,165,125	\$11,165,125
3	Total Calculated Rate Revenue	\$12,725,130	\$12,832,382	\$13,717,114	\$14,167,148	\$14,167,148	\$14,167,148

2.5. Projected Revenues

Table 2-12 shows the utility’s projected revenues for the study period. District staff provided budgeted revenues for FY 2023 (Column B). Water rate revenues (Line 3) are equal to the calculated rate revenues at current rates for FY 2023 and beyond.

Miscellaneous, non-rate revenues are considered other revenue (Lines 5, 7-8) and are inflated using the general escalation factor (**Table 2-1**, Line 1). Interest income (Line 6) is calculated based on the reserve interest rate (**Table 2-1**, Line 6) and projected fund balances.

2.6. Estimated Purchased Water Costs

The District purchases most of its water supply from SFPUC. The water utility’s annual purchased water cost includes an annual fixed charge and a variable rate per ccf of water. **Table 2-13** shows the purchased water cost calculations for the study period. The District estimates 8% water loss for the system (Line 1). Water demand (Line 3) is equal to the total water demand for all customers. The amount of water produced (Line 4) is based on water demand accounting for water loss.

District staff provided current and projected SFPUC fixed and variable water costs for FY 2023 through FY 2027. SFPUC variable water costs (Line 20) are calculated by multiplying the water produced (Line 4) by the variable water cost (Line 16). The annual fixed charge for each year (Line 19) is calculated by multiplying the SFPUC monthly charge (Line 15) by 12.

2.7. Projected O&M Expenses

Table 2-15 summarizes the projected O&M expenses for the study period. District staff provided the adopted budget for FY 2023, which was inflated for future years using the escalation factors (**Table 2-1**). Water purchase costs (Line 1) are equal to the calculated costs (**Table 2-13**) from FY 2023 and beyond.

2.8. Existing Debt Service

Table 2-15 shows the District’s existing debt service. Annual existing debt service payments are \$1.5M annually. The District expects to issue any additional debt to fund capital projects in FY 2025.

2.9. Capital Project Funding

Table 2-16 details the District’s capital improvement plan. District staff provided ten-year CIP based on current year dollars. From FY 2023 onward, CIP costs are inflated using the expense escalation factor for capital (**Table 2-1**, Line 5). The District expects to fully fund its water capital program using cash from rate revenues and reserves in all years except FY 2025, where \$7M of the CIP will be funded through debt proceeds.

Table 2-12: Projected Revenue Summary

Line	A Revenue Summary	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Rate Revenue						
2	Service Charges	\$2,930,432	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023	\$3,002,023
3	Quantity Charges	\$9,794,698	\$9,830,359	\$10,715,091	\$11,165,125	\$11,165,125	\$11,165,125
4	Other Revenue						
5	Fees	\$16,484	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000
6	Interest	\$15,097	\$32,000	\$89,725	\$100,162	\$106,549	\$97,062
7	Taxes	\$1,027,746	\$950,000	\$969,000	\$988,380	\$1,008,148	\$1,028,311
8	Other	\$926,166	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000
9	Total Revenue	\$14,710,624	\$14,624,382	\$15,585,839	\$16,065,690	\$16,091,845	\$16,102,521

Table 2-13: Calculated SFPUC Water Supply Cost

Line	A Water Supply Cost	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Water Loss	8.1%	8.0%	8.0%	8.0%	8.0%	8.0%
2							
3	Water Sales	753,233	735,909	802,140	835,830	835,830	835,830
4	Water Production	819,622	799,901	871,892	908,511	908,511	908,511
5							
6	Water Supply Mix						
7	CCWD Sources	38%	30%	35%	35%	35%	35%
8	SFPUC Sources	62%	70%	65%	65%	65%	65%
9							
10	Water Production & Purchase						
11	CCWD Sources	311,457	239,970	305,162	317,979	317,979	317,979
12	SFPUC Sources	508,166	559,930	566,730	590,532	590,532	590,532
13							
14	Water Supply Costs						
15	SFPUC Fixed Monthly Charge	\$6,782	\$7,264	\$8,054	\$8,054	\$8,054	\$8,071
16	SFPUC Variable Rate (\$/ccf)	\$3.74	\$4.32	\$4.79	\$4.79	\$4.79	\$4.80
17							
18	Calculated Water Costs						
19	SFPUC Fixed Charge	\$81,384	\$87,162	\$96,645	\$96,645	\$96,645	\$96,847
20	SFPUC Variable Charges	\$1,900,540	\$2,418,900	\$2,714,635	\$2,828,650	\$2,828,650	\$2,834,555
21							
22	Total Calculated Water Costs	\$1,981,924	\$2,506,062	\$2,811,280	\$2,925,295	\$2,925,295	\$2,931,402

Table 2-14: Projected O&M Expenses

Line	A Operating Expenditures	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Water Purchases	\$1,981,924	\$2,506,062	\$2,811,280	\$2,925,295	\$2,925,295	\$2,931,402
2	O&M	\$6,988,556	\$7,996,110	\$8,481,698	\$8,967,527	\$9,330,786	\$9,712,036
3	Total Expenditures	\$8,970,480	\$10,502,172	\$11,292,978	\$11,892,822	\$12,256,081	\$12,643,438

Table 2-15: Existing Debt Service Summary

Line	A Existing Debt Service	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Existing Bond-CIEDB 11-099	\$335,669	\$335,508	\$335,343	\$335,173	\$334,998	\$334,819
2	CIEDB 16-111	\$322,895	\$322,417	\$321,923	\$321,412	\$320,883	\$320,337
3	Chase - 2018 Loan (Refunding of 2006B Bonds)	\$435,168	\$436,027	\$437,233	\$432,821	\$432,880	\$437,180
4	First Foundation 2022 Loan	\$0	\$495,510	\$417,501	\$417,434	\$417,365	\$417,295
5	Total Existing Debt	\$1,093,732	\$1,589,462	\$1,512,000	\$1,506,840	\$1,506,127	\$1,509,630

Table 2-16: Projected CIP Summary

Line	A Capital Improvement Plan Summary	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Equipment Purchase & Replacement	\$47,500	\$85,500	\$85,500	\$85,500	\$85,500	\$85,500
2	Facilities & Maintenance	\$152,000	\$180,500	\$142,500	\$142,500	\$142,500	\$142,500
3	Pipeline Projects	\$95,000	\$2,707,500	\$617,500	\$95,000	\$2,470,000	\$3,705,000
4	Pump Stations/Tanks/Wells	\$332,500	\$855,000	\$1,425,000	\$6,270,000	\$2,137,500	\$712,500
5	Water Supply Development	\$285,000	\$380,000	\$1,187,500	\$950,000	\$1,235,000	\$760,000
6	Water Treatment Plants	\$2,755,000	\$3,586,250	\$1,377,500	\$0	\$0	\$0
7	Revised Annual CIP Costs (Additions/Deletions)	\$3,358,250	\$0	\$0	\$0	\$0	\$0
8	Total Projected CIP	\$7,025,250	\$7,794,750	\$4,835,500	\$7,543,000	\$6,070,500	\$5,405,500

2.10. Status Quo Financial Plan

Table 2-17 shows the projected financial plan based on revenues at existing rates with no adjustments, or the “status quo” scenario. Revenues (Lines 1-6) are derived from **Table 2-12**. Note that the revenues from interest income in the status quo scenario is lower due to a decrease in fund balances. O&M expenses (Lines 8-11) are derived from

Table 2-14. Existing debt service (Line 14) and cash funded CIP (Line 19) are derived from **Table 2-15** and **Table 2-16**, respectively.

Net revenue is equal to total revenues (Line 6) less O&M expenses (Line 10). Net cash flow (Line 25) is equal to net revenue less debt service (Line 16) and cash funded CIP (Line 19). Debt coverage (Line 27) is calculated by dividing net revenue by debt service. The water utility will not default on debt coverage during the study period. District staff provided beginning fund balances for FY 2023 (Column B, Line 30). Ending balances (Line 31) are calculated by adding beginning balances to net cash flow. The reserve targets of 25% of annual water O&M expenses are derived from the District’s existing reserve policies. Under the status quo scenario, the water utility as a whole will not meet reserve targets in any year of the study period and fund balances will fall below zero in FY 2026.

Table 2-17: Status Quo Financial Plan

Line	A Financial Plan	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Revenue						
2	Revenue from Rates	\$12,725,130	\$12,832,382	\$13,717,114	\$14,167,148	\$14,167,148	\$14,167,148
3	Additional Revenue	\$0	\$0	\$0	\$0	\$0	\$0
4	Interest Income	\$15,097	\$32,000	\$80,999	\$48,667	\$5,923	\$0
5	Other Revenue	\$1,970,397	\$1,760,000	\$1,779,000	\$1,798,380	\$1,818,148	\$1,838,311
6	Total Revenue	\$14,710,624	\$14,624,382	\$15,577,114	\$16,014,196	\$15,991,219	\$16,005,459
7							
8	Operating Expenditures						
9	Water Purchases	\$1,981,924	\$2,506,062	\$2,811,280	\$2,925,295	\$2,925,295	\$2,931,402
10	O&M	\$6,988,556	\$7,996,110	\$8,481,698	\$8,967,527	\$9,330,786	\$9,712,036
11	Total Operating Expenditures	\$8,970,480	\$10,502,172	\$11,292,978	\$11,892,822	\$12,256,081	\$12,643,438
12							
13	Debt Service						
14	Existing Debt	\$1,093,732	\$1,093,952	\$1,094,498	\$1,089,406	\$1,088,762	\$1,092,335
15	New Proposed Debt	\$0	\$0	\$0	\$0	\$0	\$0
16	Total Debt Service	\$1,093,732	\$1,093,952	\$1,094,498	\$1,089,406	\$1,088,762	\$1,092,335
17							
18	CIP						
19	Rate Funded	\$7,025,250	\$8,044,182	\$5,239,748	\$8,533,233	\$7,128,388	\$6,550,620
20	Debt Funded	\$0	\$0	\$0	\$0	\$0	\$0
21	Total CIP	\$7,025,250	\$8,044,182	\$5,239,748	\$8,533,233	\$7,128,388	\$6,550,620
22							
23	Total Expenses	\$17,089,462	\$19,640,305	\$17,627,224	\$21,515,461	\$20,473,230	\$20,286,394
24							
25	Net Cashflow	(\$2,378,838)	(\$5,015,923)	(\$2,050,111)	(\$5,501,265)	(\$4,482,011)	(\$4,280,935)
26							
27	Calculated Debt Coverage Ratio	525%	377%	391%	378%	343%	308%
28	Required Debt Coverage Ratio	120%	120%	120%	120%	120%	120%
29							
30	Beginning Balance	\$10,000,000	\$15,500,000	\$10,484,077	\$8,433,966	\$2,932,701	(\$1,549,310)
31	Ending Balance	\$7,621,162	\$10,484,077	\$8,433,966	\$2,932,701	(\$1,549,310)	(\$5,830,244)
32	<i>Minimum Target</i>	<i>\$10,435,806</i>	<i>\$10,819,276</i>	<i>\$11,011,885</i>	<i>\$11,161,201</i>	<i>\$11,255,590</i>	<i>\$11,350,132</i>

Figure 2-1 shows the projected status quo financial plan in graphical format. The bars represent the water utility’s cash needs: O&M expenses (dark blue), debt service (green), rate funded capital (gray), and purchased water (light blue). The solid line represents the current revenues, which is below the stacked bars for each year, signifying that the District’s current water revenues are not sufficient to fund its costs.

Figure 2-1: Status Quo Financial Plan – Water

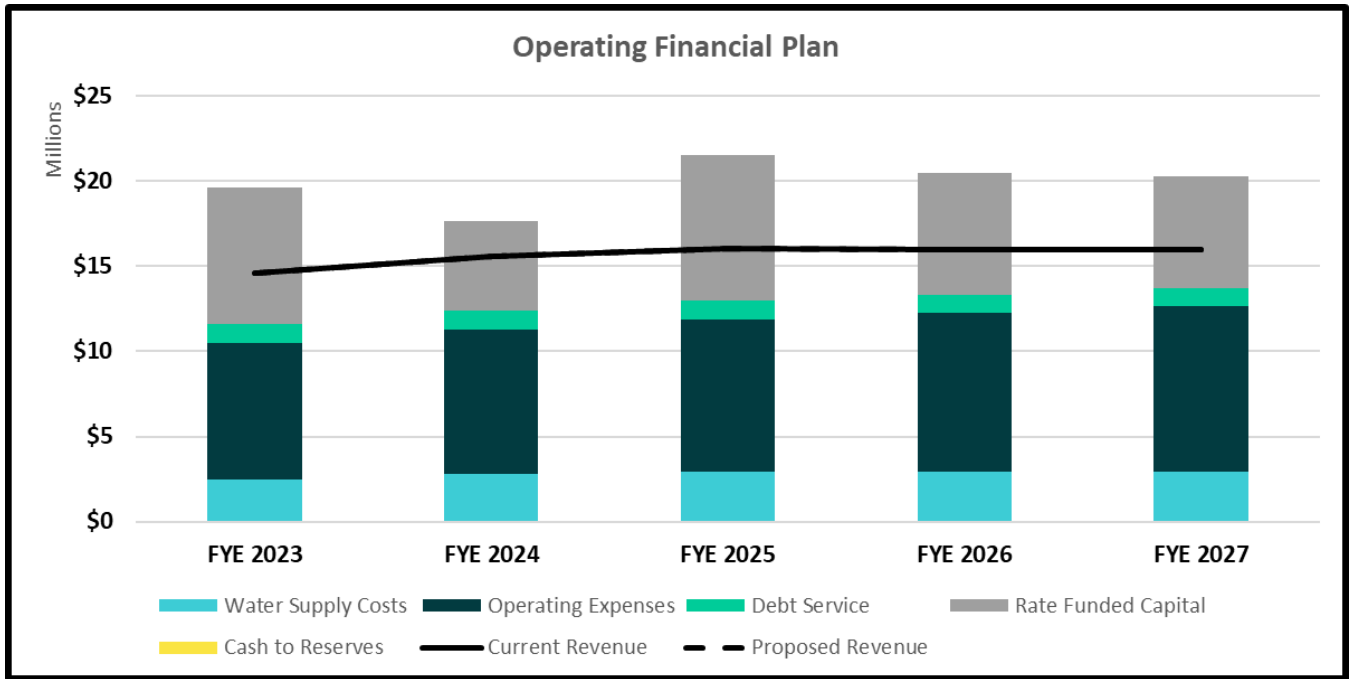


Figure 2-2 shows the projected debt service coverage under the status quo scenario for the study period. The dark blue solid line represents the target debt service coverage of 1.2 and the light blue dashed line represents the calculated debt service coverage. The water utility will not default on debt service coverage during the study period even though fund balances fall far below target.

Figure 2-2: Status Quo Debt Service Coverage

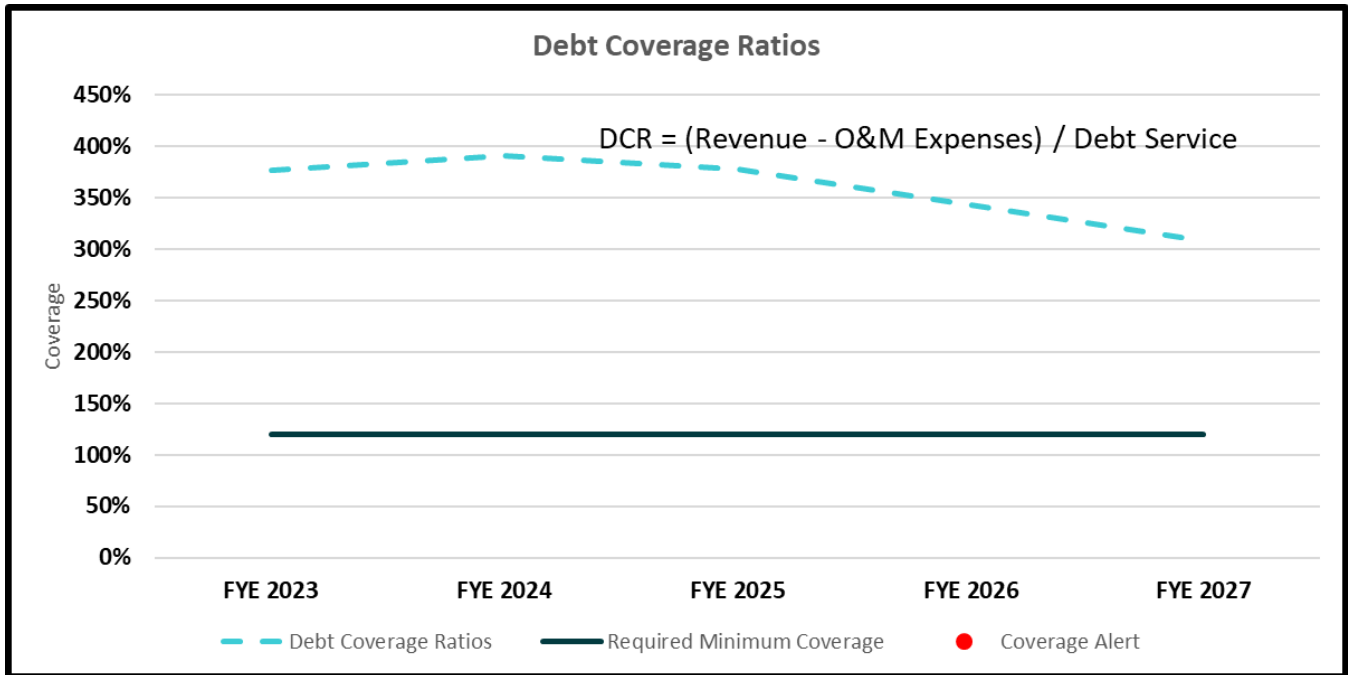
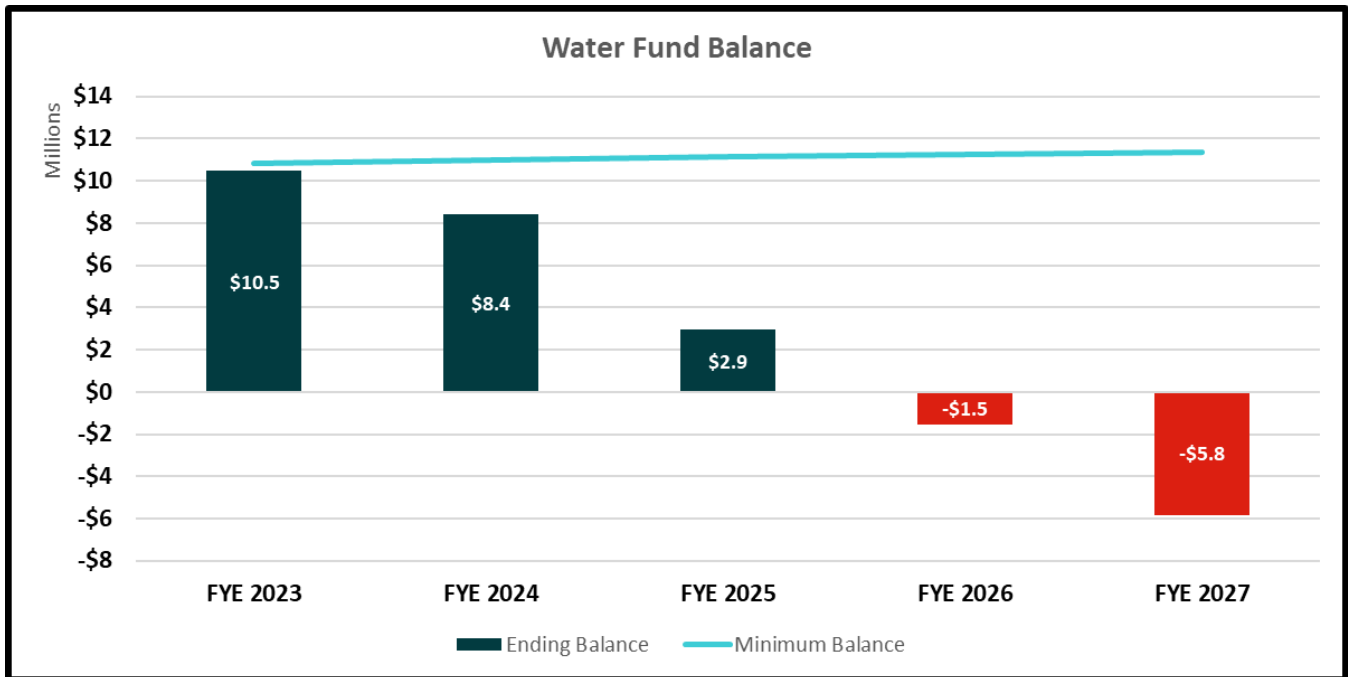


Figure 2-3 shows the projected combined fund balances under the status quo scenario for the study period. The dark blue bars represent the ending balances and the solid light blue line represents the reserve target amounts. The water fund will be under target in every year of the rate study and fall below zero in FY 2026.

Figure 2-3: Status Quo Scenario Fund Balances



2.11. Proposed Financial Plan

Table 2-18 shows the proposed revenue adjustments that allow the District to maintain financial sufficiency, fund operating and capital expenses, and build up cash reserves to achieve target fund balances by the end of the study period. The proposed revenue adjustments represent the increase to total rate revenues required to recover the water utility’s costs and not the expected impact to each customer class. Revenue adjustments in subsequent years are applied across all charges, classes, and tiers proportional to the base year rates developed for FY 2023. The revenue adjustments are effective on January 1 of every year.

Table 2-18: Proposed Revenue Adjustments

	A	B	C
Line	Revenue Adjustment	FY 2023	FY 2024
1	Effective Month	January	January
2	Percent Adjustment	6.0%	6.0%

Table 2-19 shows the projected financial plan with the proposed revenue adjustments in **Table 2-18** applied to the water rate revenues and a proposed debt issuance of \$7M to fund CIP. Revenues from interest income (Line 4) are greater than those shown in the status quo scenario (**Table 2-17**, Line 4) due to additional cash from the proposed adjustments. O&M expenses (Line 11) and debt service (Line 16) are the same as the status quo scenario. Cash funded CIP in FY 2025 (Column E, Line 19) is less than the status quo scenario due to proposed debt proceeds to fund CIP (Column E, Line 20).

Net cash flow (Line 25) is positive in FY 2025 which means that the District will be funding its reserves in those years. Net cash flow is negative for all other years, which means that the District will be drawing down its cash reserves to pay for capital costs. The ending balance (Line 31) will meet or almost meet the reserve target (Line 32) in FY 2023 through FY 2027. Calculated debt service coverage (Line 27) exceeds target debt service coverage (Line 28) in all years through FY 2027.

Table 2-19: Proposed Financial Plan

Line	A Financial Plan	B FY 2022	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Revenue						
2	Revenue from Rates	\$12,725,130	\$12,832,382	\$13,717,114	\$14,167,148	\$14,167,148	\$14,167,148
3	Additional Revenue	\$0	\$384,971	\$1,259,231	\$2,228,606	\$3,212,351	\$4,255,121
4	Interest Income	\$15,097	\$32,000	\$89,725	\$100,162	\$106,549	\$97,062
5	Other Revenue	\$1,970,397	\$1,760,000	\$1,779,000	\$1,798,380	\$1,818,148	\$1,838,311
6	Total Revenue	\$14,710,624	\$15,009,354	\$16,845,070	\$18,294,296	\$19,304,196	\$20,357,642
7							
8	Operating Expenditures						
9	Water Purchases	\$1,981,924	\$2,506,062	\$2,811,280	\$2,925,295	\$2,925,295	\$2,931,402
10	O&M	\$6,988,556	\$7,996,110	\$8,481,698	\$8,967,527	\$9,330,786	\$9,712,036
11	Total Operating Expenditures	\$8,970,480	\$10,502,172	\$11,292,978	\$11,892,822	\$12,256,081	\$12,643,438
12							
13	Debt Service						
14	Existing Debt	\$1,093,732	\$1,093,952	\$1,094,498	\$1,089,406	\$1,088,762	\$1,092,335
15	New Proposed Debt	\$0	\$0	\$0	\$558,999	\$558,999	\$558,999
16	Total Debt Service	\$1,093,732	\$1,093,952	\$1,094,498	\$1,648,405	\$1,647,761	\$1,651,335
17							
18	CIP						
19	Rate Funded	\$7,025,250	\$8,044,182	\$5,239,748	\$1,533,233	\$7,128,388	\$6,550,620
20	Debt Funded	\$0	\$0	\$0	\$7,000,000	\$0	\$0
21	Total CIP	\$7,025,250	\$8,044,182	\$5,239,748	\$8,533,233	\$7,128,388	\$6,550,620
22							
23	Total Expenses	\$17,089,462	\$19,640,305	\$17,627,224	\$15,074,460	\$21,032,229	\$20,845,393
24							
25	Net Cashflow	(\$2,378,838)	(\$4,630,952)	(\$782,154)	\$3,219,836	(\$1,728,033)	(\$487,751)
26							
27	Calculated Debt Coverage Ratio	525%	412%	507%	388%	428%	467%
28	Required Debt Coverage Ratio	120%	120%	120%	120%	120%	120%
29							
30	Beginning Balance	\$10,000,000	\$15,500,000	\$10,869,048	\$10,086,894	\$13,306,730	\$11,578,697
31	Ending Balance	\$7,621,162	\$10,869,048	\$10,086,894	\$13,306,730	\$11,578,697	\$11,090,946
32	<i>Minimum Target</i>	<i>\$10,435,806</i>	<i>\$10,819,276</i>	<i>\$11,570,884</i>	<i>\$11,720,201</i>	<i>\$11,814,589</i>	<i>\$11,909,132</i>

Figure 2-4 shows the projected financial plans with the proposed revenue adjustments. The dotted line represents the proposed revenues with the adjustments applied.

Figure 2-4: Proposed Water Financial Plan

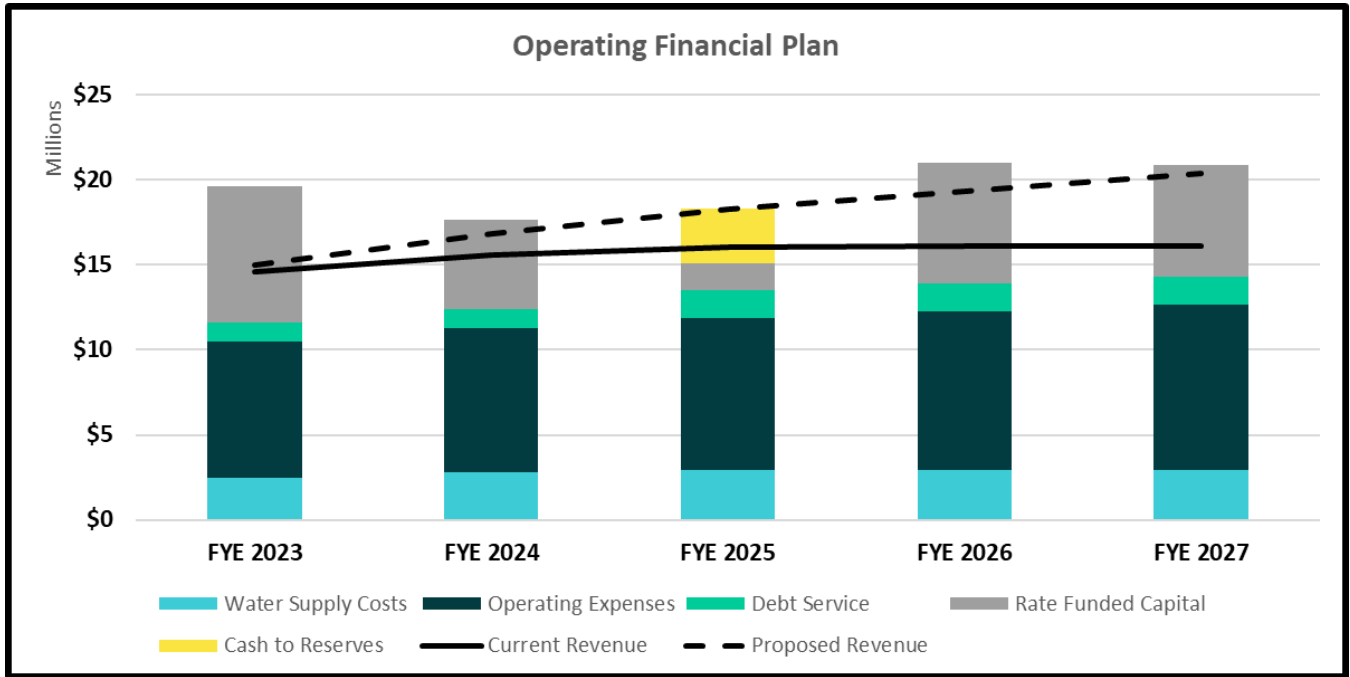


Figure 2-5 shows the projected debt service coverage for the water utility with the proposed adjustments in Table 2-18 applied over the study period. The water utility is expected to meet its debt service coverage target in each year through FY 2027.

Figure 2-5: Proposed Debt Service Coverage

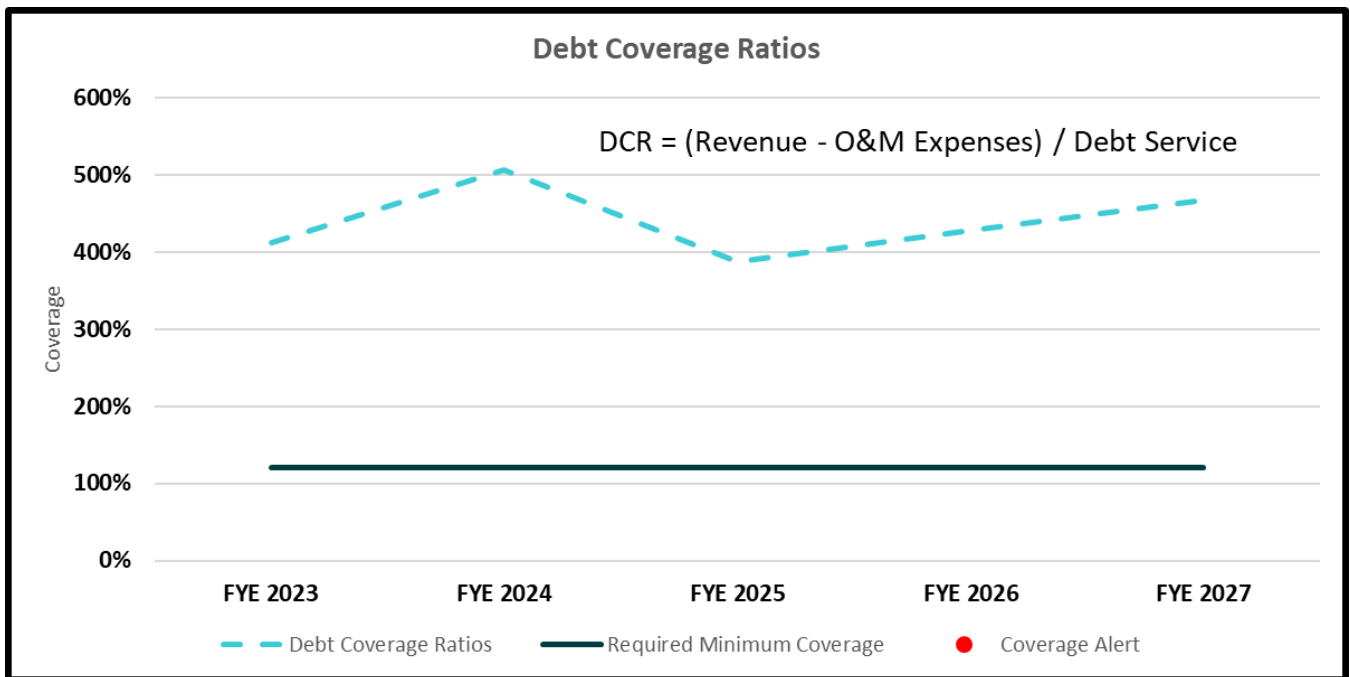
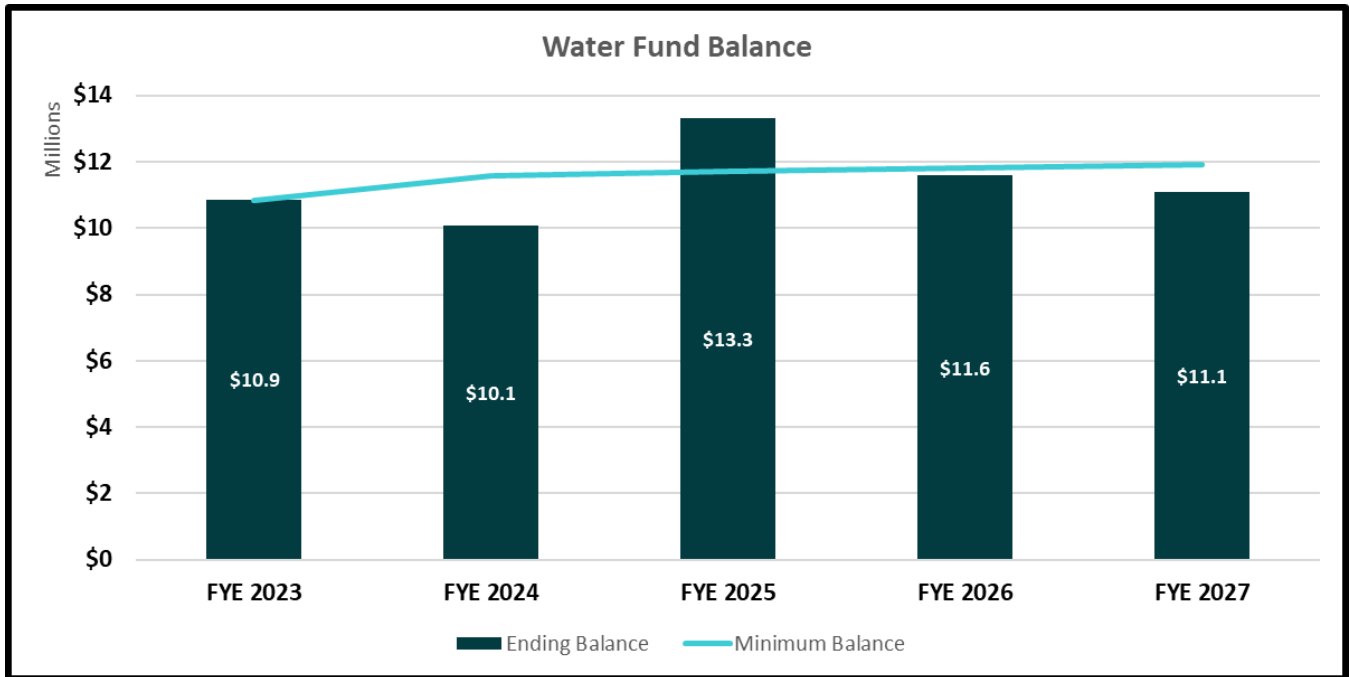


Figure 2-6 shows the projected combined fund balances with the proposed adjustments in Table 2-18 applied over a 5-year period. The District's water fund expected to meet or almost meet its reserve target from FY 2023 through FY 2027.

Figure 2-6: Proposed Ending Fund Balances



3. Proposed Rates

This section of the report details the calculation of the proposed water rates that were developed in the study. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown in this Report. All rates shown in this section are rounded up to the nearest cent.

3.1. Proposed Adjustments

Table 3-1 shows the proposed revenue adjustments from the financial plan. Revenue adjustments in each year are applied across all charges, classes, and tiers proportional to the current rates.

Table 3-1: Proposed Revenue Adjustments

	A	B	C
Line	Revenue Adjustment	FY 2023	FY 2024
1	Effective Month	January	January
2	Percent Adjustment	6.0%	6.0%

3.2. Proposed Rate Schedule

The rates shown in this subsection are increased for FY 2023 and beyond based on the proposed revenue adjustments shown in **Table 3-1**. The proposed water rates are reflective of an across-the-board increase based on the District’s existing water rate structure, developed in the 2018 Water Cost of Service and Rate Study. **Table 3-2** shows the two-year rate schedule for the proposed monthly base charges. **Table 3-3** shows the two-year rate schedule for monthly fire service charges. **Table 3-4** shows the two-year rate schedule for quantity charges.

Table 3-2: Proposed Monthly Base Charges

	A	B	C	D
Line	Meter Size	Current FY 2022	Proposed FY 2023	Proposed FY 2024
1	5/8"	\$31.87	\$33.78	\$35.81
2	3/4"	\$47.09	\$49.92	\$52.92
3	1"	\$77.52	\$82.17	\$87.10
4	1 1/2"	\$153.60	\$162.82	\$172.59
5	2"	\$244.91	\$259.60	\$275.18
6	3"	\$534.02	\$566.06	\$600.02
7	4"	\$960.12	\$1,017.73	\$1,078.79

Table 3-3: Proposed Monthly Fire Service Charges

	A	B	C	D
Line	Fire Line Size	Current FY 2022	Proposed FY 2023	Proposed FY 2024
1	3/4"	\$5.35	\$5.67	\$6.01
2	1"	\$7.13	\$7.56	\$8.01
3	1 1/2"	\$10.70	\$11.34	\$12.02
4	2"	\$14.26	\$15.12	\$16.03
5	3"	\$21.39	\$22.67	\$24.03
6	4"	\$28.52	\$30.23	\$32.04
7	6"	\$42.78	\$45.35	\$48.07
8	8"	\$57.04	\$60.46	\$64.09
9	10"	\$71.30	\$75.58	\$80.11

Table 3-4: Proposed Quantity Charges

	A	B	C	D
Line	Customer Class	Current FY 2022	Proposed FY 2023	Proposed FY 2024
1	Single Family			
2	Tier 1	\$10.14	\$10.75	\$11.40
3	Tier 2	\$14.83	\$15.72	\$16.66
4	Tier 3	\$17.94	\$19.02	\$20.16
5	Multi-Family	\$13.52	\$14.33	\$15.19
6	Non-Residential	\$14.41	\$15.27	\$16.19

3.3. Customer Impacts

Figure 3-1 through Error! Reference source not found. **Figure 3-3** show the impacts for Single Family Residential, Commercial, and Multi-Family Residential customers, respectively. The monthly bills are calculated using the most common meter size for each customer class at various levels of usage.

Figure 3-1: Single Family Residential Bill Impacts

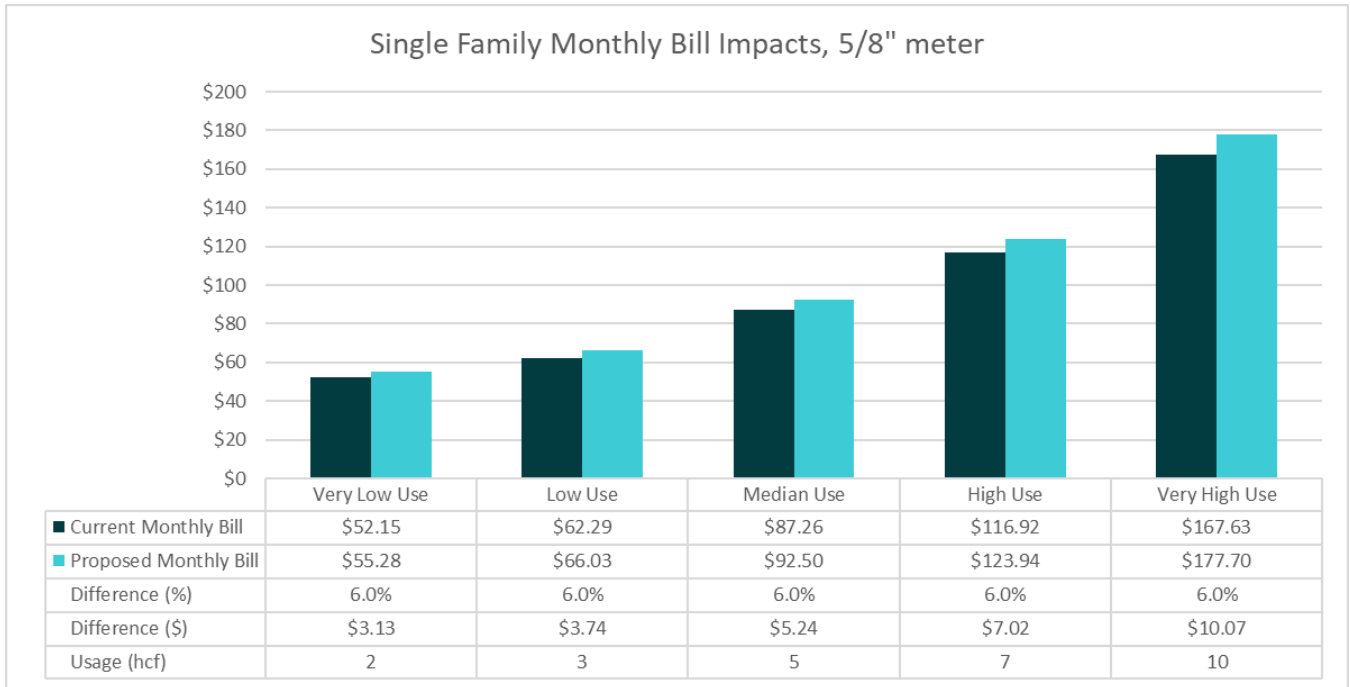


Figure 3-2: Commercial Bill Impacts

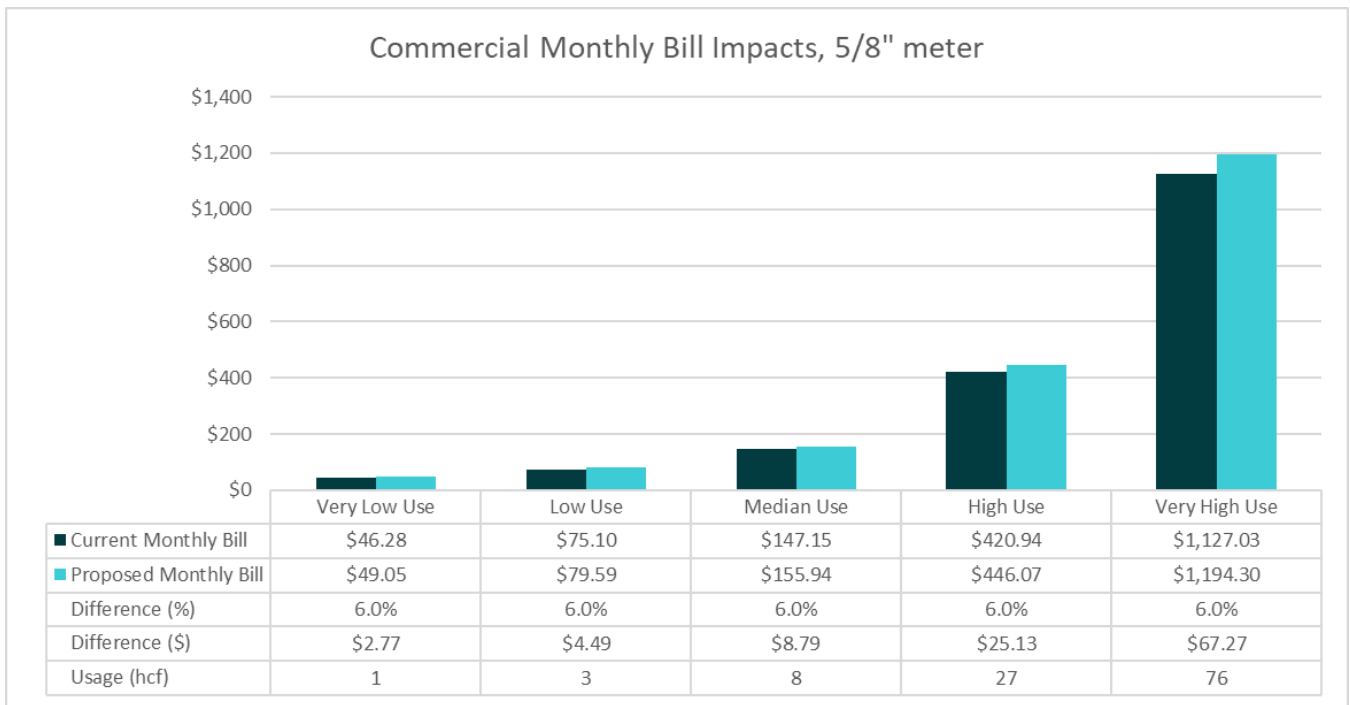
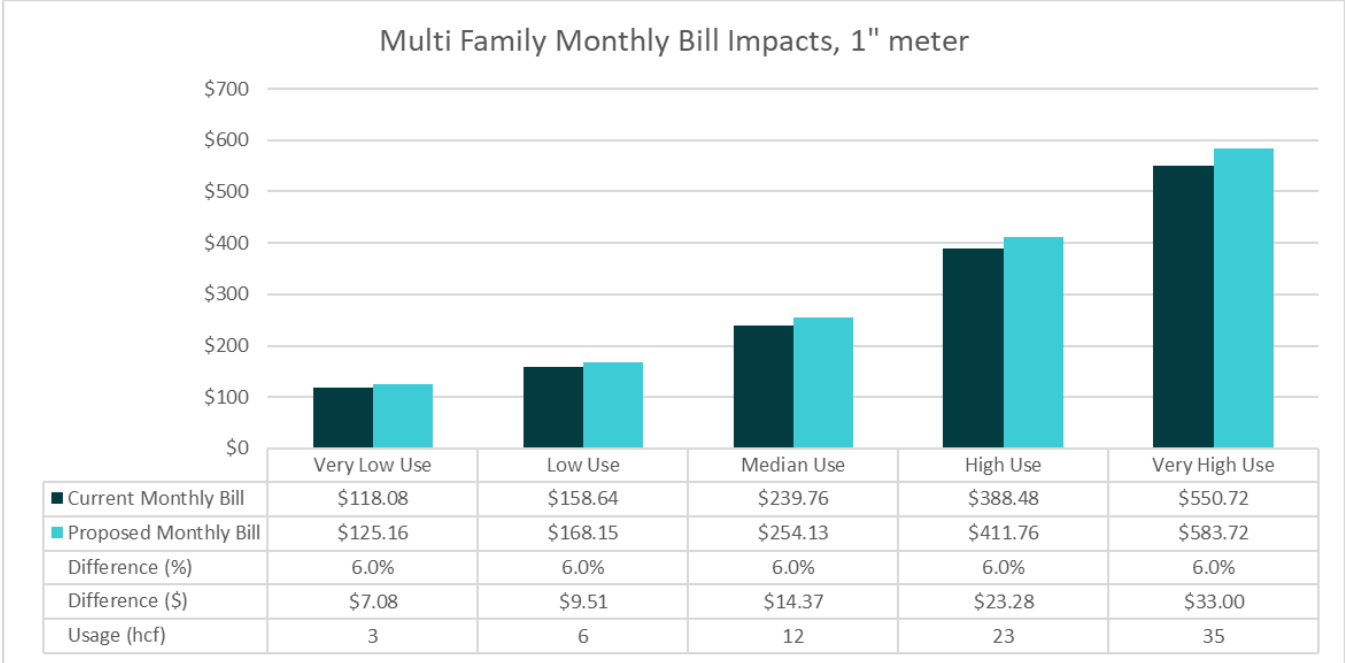


Figure 3-3: Multi-Family Residential Bill Impacts



4. Water Shortage Rates

This section details the methodology used to calculate the District's proposed water shortage rates. Numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers such as summing or multiplying, may not equal the exact results shown in this report.

4.1. Overview

The District engaged Raftelis to update water shortage rates as part of the Water Rate Study. The District adopted its latest Water Shortage Contingency Plan in June of 2021, which details the six drought stages and the corresponding water usage reductions. The resulting water shortage rates align with Proposition 218 requirements and allow the District to reliably recover the necessary revenue to fully fund the water system in times of reduction in water demand. The water shortage rate methodology is based on the prior January 2022 rate study.

The major objectives when developing water shortage rates include:

- Determine water allocations for each customer class during each drought stage based on the 2021 Water Shortage Contingency Plan
- Calculate the financial impacts of reduced water sales and changes to water supply sources
- Evaluate various rate structures to determine the structure best suited to meet the District's needs
- Develop water shortage rates that recover the financial impacts of each drought stage based on the cost of providing service

4.2. Process and Approach

Water shortage rates are governed by the requirements of Proposition 218 and Article X of the California Constitution. The development of water shortage rates must show the nexus between the costs of providing water service and the rates charged to customers, should maximize the beneficial use of water (often defined as indoor use for health and hygiene), and should encourage conservation.

Water shortage rates are designed to recover lost revenue due to reduction in water use during each stage, to incorporate the potential changes to the District's water supply sources and their corresponding costs, to align with specific drought stages outlined in the 2020 Water Shortage Contingency Plan, and to provide financial flexibility for the District when declaring drought stages and implementing the appropriate water shortage rates. The proposed rates are based on the District's proposed water rates for FY 2023, which will go into effect January 1, 2023.

There are four steps to conducting a water shortage rate study, which include:

1. Allocating water reductions between various customer classes based on defined drought stages
2. Calculating financial impacts to the District in each stage
3. Determining the most appropriate drought cost recovery mechanism (rate structure)
4. Evaluating financial impacts to customers

4.3. Drought Allocations and Costs

This subsection details the water usage allocations and financial impacts of each drought stage, which results in the total amount of revenue to be collected from water shortage rates in each stage.

4.3.1. WATER ALLOCATIONS

The first step in the development of water shortage rates involves allocating water usage reductions between the District’s customer classes based on the drought stages defined in the Water Shortage Contingency Plan. **Table 4-1** shows the overall reduction targets for the entire water system and for each customer class.

Table 4-1: Drought Stages and Reduction

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Single Family Residential	0%	15%	21%	30%	36%	41%	52%
2	Multi-Family Residential	0%	14%	21%	30%	35%	41%	52%
3	Non-Residential	0%	5%	21%	30%	43%	62%	88%
4								
5	Target Reduction Goal	0%	≤10%	20%	30%	40%	50%	>50%

Water usage by customer class for each drought stage is calculated once the water reductions are determined. **Table 4-2** shows the estimated water usage in ccf for each stage of drought that align with the percent reduction targets for the system (**Table 4-1**). Baseline use (Column B) is equal to the estimated water demand determined as the “new normal” based on FY 2025 usage, as directed by District Staff. The percent reduction from Baseline (Line 8) is the difference between the total usage in Stages 1 through 6 compared to the Baseline scenario. Note that the percent reduction from Baseline is about equal to the target reduction for the system. The usage reductions for Single Family Residential customers are assumed to reduce from the highest tiers first, which provides the most conservative revenue projections and shows the prioritization for beneficial water use for indoor health and hygiene based on the guidance in Article X of the California Constitution.

Table 4-2: Estimated Water Usage by Stage

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Single Family Residential							
2	Tier 1	257,312	257,312	257,312	257,312	257,312	254,822	207,313
3	Tier 2	115,357	109,804	83,890	45,019	19,105	0	0
4	Tier 3	59,232	0	0	0	0	0	0
5	Multi-Family Residential	43,899	37,753	34,680	30,729	28,534	25,900	21,072
6	Non-Residential	361,042	342,990	285,223	252,729	205,794	137,196	43,325
7	Total (ccf)	836,842	747,859	661,106	585,790	510,745	417,918	271,709
8	% Reduction from Baseline	0%	11%	21%	30%	39%	50%	68%

4.3.2. FINANCIAL IMPACTS

The next step is to determine the financial impacts to the District during each stage of drought. The cost implications of drought consider the following:

- Lost commodity charge revenue due to water usage reductions in each drought stage
- Potential changes to operating costs, which include water supply sources and their associated costs

For the District, the most significant financial consequence is the loss of consumption-based revenue, the severity of which depends on the drought stage. Drought conditions will also require more staff to be hired to handle conservation efforts and respond to an increase in customer service requests. Additionally, water shortage conditions impact the District’s access to local water sources, which necessitates purchasing more expensive imported water from SFPUC to meet customer demands.

Table 4-3 shows the quantity charge revenue for Stages 1 through 6 compared to baseline excluding revenues collected from allotment usage. This is calculated based on the proposed FY 2023 commodity charges (**Table 3-4**) multiplied by the estimated water usage by drought stage for each customer class (**Table 4-2**). The difference in commodity charge revenue (Line 9) is equal to the difference between the Baseline revenue and the estimated revenue for Stages 1 through 6, which represents the amount of lost quantity charge revenue in each stage.

Table 4-4 shows the additional staffing costs associated with each stage of drought. Additional staff are required to manage a combination of increased water conservation efforts and customer service requirements.

Table 4-5 shows the percentage of water supplied by local water and imported water from SFPUC. A significant portion of demand is met using local water during normal conditions. However, under water shortage conditions, the availability of local water is reduced. Beginning in Stage 2, local water sources are depleted, and the District is fully reliant on imported water from SFPUC.

Table 4-6 shows the water produced from both sources during each stage of water shortage. Water demand (Line 1) is equal to the total estimated water usage for all classes in each stage (**Table 4-2**, Line 7). Water production (Line 3) is equal to water demand plus a portion of system water loss (Line 2). The amount of water produced from each source is based on the percentages from **Table 4-5**.

Although total water production in Stages 1 through 3 is less than Baseline, the amount of water purchased from SFPUC in those stages is greater than the amount purchased in the Baseline scenario due to the shifts in water supply availability by source. The District is expected to purchase less water from SFPUC in Stages 4 through 6 compared to the Baseline scenario.

Table 4-7 shows the estimated water purchase costs from SFPUC for each water shortage stage. The District purchases raw water from SFPUC, which is reflected in the variable rate per ccf of water (Line 1). The amount of water purchased (Line 3) is based on the amount of water produced from SFPUC (**Table 4-6**, Line 6). The water purchase costs (Line 4) are calculated by multiplying the variable rate by the amount of water purchased. The difference in water purchase costs (Line 6) is equal to the difference between the water purchase costs from SFPUC in Stages 1 through 6 compared to the Baseline scenario.

Table 4-8 shows the total cost of drought at Stages 1 through 6, which includes the lost commodity revenue (**Table 4-3**, Line 9), one-time increases to operating costs (**Table 4-4**, Line 1), and changes to SFPUC water purchase costs (**Table 4-7**, Line 6).

Table 4-3: Expected Revenue Loss by Stage

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Single Family Residential							
2	Tier 1	\$2,766,106	\$2,766,106	\$2,766,106	\$2,766,106	\$2,766,106	\$2,739,336	\$2,228,612
3	Tier 2	\$1,813,419	\$1,726,120	\$1,318,751	\$707,697	\$300,327	\$0	\$0
4	Tier 3	\$1,126,591	\$0	\$0	\$0	\$0	\$0	\$0
5	Multi-Family Residential	\$629,072	\$541,002	\$496,967	\$440,351	\$408,897	\$371,153	\$301,955
6	Non-Residential	\$5,513,110	\$5,237,455	\$4,355,357	\$3,859,177	\$3,142,473	\$2,094,982	\$661,573
7	Total	\$11,848,298	\$10,270,684	\$8,937,181	\$7,773,331	\$6,617,803	\$5,205,470	\$3,192,140
8								
9	Change in Quantity Charge Revenue		(\$1,577,615)	(\$2,911,117)	(\$4,074,968)	(\$5,230,495)	(\$6,642,828)	(\$8,656,159)
10	Difference (%)	-13%	-25%	-34%	-44%	-56%	-73%	-73%

Table 4-4: Additional O&M Costs by Stage

Line	A One Time Expenses	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Conservation Outreach	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

Table 4-5: Water Supply Sources

Line	A Water Supply Mix	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	CCWD Sources	38%	10%	0%	0%	0%	0%	0%
2	SFPUC Sources	62%	90%	100%	100%	100%	100%	100%

Table 4-6: Water Production by Source

Line	A Water Production/Purchase	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Water Demand (ccf)	836,842	747,859	661,106	585,790	510,745	417,918	271,709
2	System Water Loss	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
3	Water Production (ccf)	909,611	812,891	718,593	636,728	555,158	454,259	295,336
4								
5	CCWD Sources	345,652	81,289	0	0	0	0	0
6	SFPUC Sources	563,959	731,601	718,593	636,728	555,158	454,259	295,336
7	Total Production (ccf)	909,611	812,891	718,593	636,728	555,158	454,259	295,336

Table 4-7: SFPUC Water Purchase Costs

Line	A Water Purchase Costs	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	SFPUC Variable Rate (\$/ccf)	\$4.32	\$4.32	\$4.32	\$4.32	\$4.32	\$4.32	\$4.32
2								
3	Water Purchased (ccf)	909,611	812,891	718,593	636,728	555,158	454,259	295,336
4	Water Purchase Costs from SFPUC	\$2,436,303	\$3,160,518	\$3,104,322	\$2,750,665	\$2,398,282	\$1,962,399	\$1,275,852
5								
6	Difference in Water Purchase Costs		\$724,215	\$668,019	\$314,362	(\$38,021)	(\$473,904)	(\$1,160,451)

Table 4-8: Total Drought Costs by Stage

Line	A Drought Revenue Requirement	B Stage 1	C Stage 2	D Stage 3	E Stage 4	F Stage 5	G Stage 6
1	Lost Revenue	\$1,577,615	\$2,911,117	\$4,074,968	\$5,230,495	\$6,642,828	\$8,656,159
2	Water Purchases	\$724,215	\$668,019	\$314,362	(\$38,021)	(\$473,904)	(\$1,160,451)
3	One Time Expenses	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
4	Total	\$2,351,830	\$3,629,136	\$4,439,329	\$5,242,474	\$6,218,924	\$7,545,708

4.4. Water Shortage Rates

The next step after determining the drought costs by stage is evaluating the drought cost recovery mechanism, or water shortage rate structure, that best meets the needs of the District and its customers. Based on direction provided by District staff, the water shortage rates were developed as a proportional commodity charge increase to the proposed commodity charges for FY 2023, which allows for the ability of customers to change their water bill, encourages conservation, and promotes affordability.

4.4.1. PROPOSED WATER SHORTAGE RATES

Table 4-9 shows the water shortage rate percentage calculation. This is calculated by dividing the total drought cost (Line 2) by the total expected commodity revenue (Line 1). This water shortage rate percentage is then multiplied with the proposed FY 2023 commodity rates (**Table 3-4**) to obtain the proposed water shortage rates shown in **Table 4-10**. The water shortage rates for FY 2024 are shown in **Table 4-11**. It is important to note that the water shortage rates are rounded to the nearest cent and therefore may not match hand calculations.

Table 4-9: Water Shortage Rate Percentage Calculation

Line	A	B	C	D	E	F	G	H
		Baseline	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
1	Expected Revenue	\$11,848,298	\$10,270,684	\$8,937,181	\$7,773,331	\$6,617,803	\$5,205,470	\$3,192,140
2	Total Drought Cost		\$2,351,830	\$3,629,136	\$4,439,329	\$5,242,474	\$6,218,924	\$7,545,708
3	% Increase		23%	41%	57%	79%	119%	236%

Table 4-10: Proposed FY 2023 Water Shortage Rates

Line	A	B	C	D	E	F	G	H
	Customer Class	Baseline	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
1	Drought Increase (%)		23%	41%	57%	79%	119%	236%
2								
3	Proposed Water Shortage Rates							
4	Single Family							
5	Tier 1	\$0.00	\$2.47	\$4.37	\$6.14	\$8.52	\$12.85	\$25.42
6	Tier 2	\$0.00	\$3.60	\$6.39	\$8.98	\$12.46	\$18.79	\$37.16
7	Tier 3	\$0.00	\$4.36	\$7.73	\$10.87	\$15.07	\$22.73	\$44.97
8	Multi-Family	\$0.00	\$3.29	\$5.82	\$8.19	\$11.36	\$17.12	\$33.88
9	Non-Residential	\$0.00	\$3.50	\$6.21	\$8.73	\$12.10	\$18.25	\$36.10
10								
11	Combined Quantity Rates							
12	Single Family							
13	Tier 1	\$10.75	\$13.22	\$15.12	\$16.89	\$19.27	\$23.60	\$36.17
14	Tier 2	\$15.72	\$19.32	\$22.11	\$24.70	\$28.18	\$34.51	\$52.88
15	Tier 3	\$19.02	\$23.38	\$26.75	\$29.89	\$34.09	\$41.75	\$63.99
16	Multi-Family	\$14.33	\$17.62	\$20.15	\$22.52	\$25.69	\$31.45	\$48.21
17	Non-Residential	\$15.27	\$18.77	\$21.48	\$24.00	\$27.37	\$33.52	\$51.37

Table 4-11: Proposed FY 2024 Water Shortage Rates

Line	A Customer Class	B Baseline	C Stage 1	D Stage 2	E Stage 3	F Stage 4	G Stage 5	H Stage 6
1	Drought Increase (%)		23%	41%	57%	79%	119%	236%
2								
3	Proposed Water Shortage Rates							
4	Single Family							
5	Tier 1	\$0.00	\$2.57	\$4.58	\$6.48	\$9.03	\$13.67	\$27.17
6	Tier 2	\$0.00	\$3.75	\$6.69	\$9.47	\$13.20	\$19.98	\$39.71
7	Tier 3	\$0.00	\$4.53	\$8.10	\$11.46	\$15.97	\$24.18	\$48.05
8	Multi-Family	\$0.00	\$3.42	\$6.10	\$8.64	\$12.03	\$18.22	\$36.20
9	Non-Residential	\$0.00	\$3.64	\$6.50	\$9.21	\$12.83	\$19.42	\$38.59
10								
11	Combined Quantity Rates							
12	Single Family							
13	Tier 1	\$11.40	\$13.97	\$15.98	\$17.88	\$20.43	\$25.07	\$38.57
14	Tier 2	\$16.66	\$20.41	\$23.35	\$26.13	\$29.86	\$36.64	\$56.37
15	Tier 3	\$20.16	\$24.69	\$28.26	\$31.62	\$36.13	\$44.34	\$68.21
16	Multi-Family	\$15.19	\$18.61	\$21.29	\$23.83	\$27.22	\$33.41	\$51.39
17	Non-Residential	\$16.19	\$19.83	\$22.69	\$25.40	\$29.02	\$35.61	\$54.78

4.4.2. CUSTOMER IMPACTS

Figure 4-1 through Figure 4-3 show the bill impacts at Stage 2 water shortage for Single Family, Multi-Family, and Non-Residential customers, respectively. Each graph shows bills using the most common meter size and the median usage for that customer class.

The figures show the impacts in each stage based on the components of the customer bill, which includes the base charge by meter size, the quantity charge per ccf of use, and the water shortage rate per ccf of use. The base charge by meter size does not change based on drought stages or water usage. The three stacked bars in each figure show the difference between the baseline scenario (no drought), the drought scenario with commensurate reduction in water use (meaning the customer reduces their water based on the declared drought stage), and the drought scenario without reduction in water use (meaning the customer does not reduce their water use even when a drought stage has been declared).

The figures demonstrate that when the District’s customers comply with the recommended water usage reductions as defined by the Water Shortage Contingency Plan, the customer’s water bill impact will be significantly smaller than if they did not reduce their water consumption.

Figure 4-1: Single Family Residential Bill Impacts

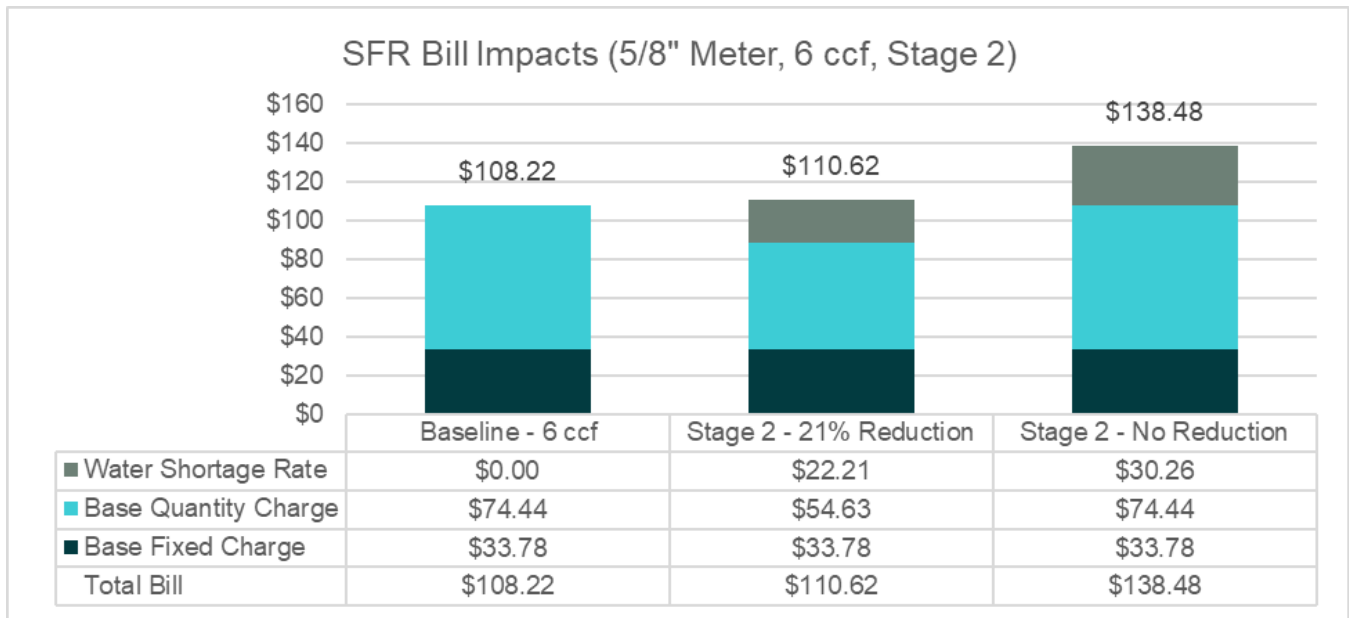


Figure 4-2: Multi-Family Residential Bill Impacts

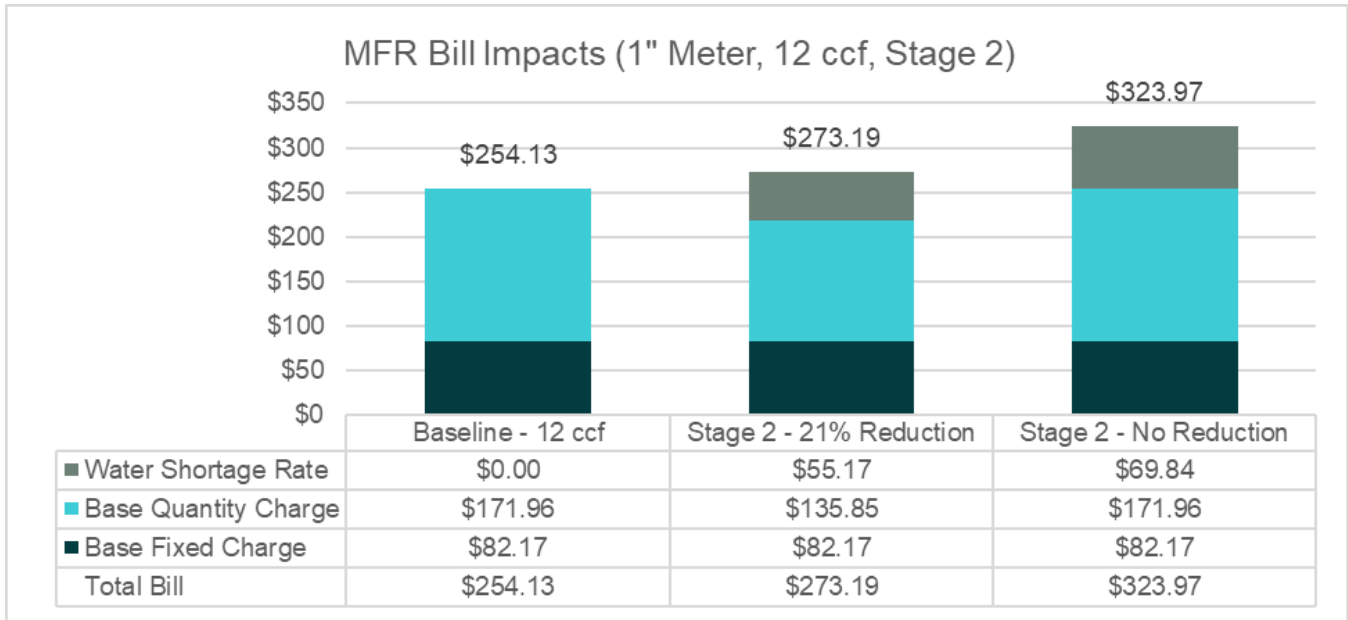


Figure 4-3: Commercial Bill Impacts

