



DIABLO WATER DISTRICT

Water Rate Study

FINAL REPORT / APRIL 4, 2025



April 4, 2025

Mr. Dan Muelrath
General Manager
Diablo Water District
87 Carol Lane
Oakley, CA 94561

Subject: Water Financial Plan and Rate Study Report - FINAL

Dear Mr. Muelrath:

Raftelis is pleased to provide this Water Financial Plan and Rate Study report for Diablo Water District (District) to develop a ten-year financial plan and to establish five years of water rates that are equitable and align with Proposition 218.

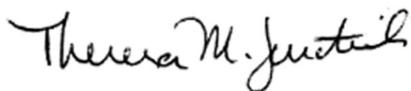
The major objectives of the study include the following:

- Develop a financial plan for the water enterprise to ensure financial sufficiency, meet operation and maintenance (O&M) costs, ensure sufficient funding for capital replacement and refurbishment (R&R) needs, and maintain the financial health of the District
- Review the reserve fund targets
- Perform a cost-of-service analysis to ensure a nexus between proposed rates and the cost of providing services to customers
- Update the rates for the water District
- Design drought surcharge rates for times of declared water shortages

The report summarizes the key findings and recommendations related to the development of the water enterprise financial plan and the development of the updated water rates.

It has been a pleasure working with you, and we thank you and District staff for the support provided during the course of this study.

Sincerely,



Theresa Jurotich, P.E. (KS, WA), PMP
Manager

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1. Executive Summary

1.1. Background of the Study

In 2024, the Diablo Water District (District) engaged Raftelis Financial Consultants (Raftelis) to conduct a Water Rate Study for the District. The study included the development of a ten-year financial plan, a cost-of-service analysis, and the development of proposed water rates for five years beginning in fiscal year (FY) 2026¹. This report provides a detailed explanation of the rate setting process and serves as part of the administrative record of the District's proposed changes to its water rates.

The District has a long history of providing high quality, safe drinking water on demand; that is, when a customer turns on the tap or flushes the toilet, the water flows and is safe to use. Maintaining the service level customers expect requires following recommended preventative maintenance; having sufficient, well-trained staff to perform water utility functions; and timely reinvestment in the water system in the form of capital projects. This rate study helps the District plan for future costs and to recover those costs in an equitable manner. This study made certain assumptions with respect to cost projections and water demands in future years with District staff input.

This executive summary describes the rate study process, methodology, and recommendations for the District's water rates. The District strives to provide high quality, dependable water service to the community while maintaining financial stability, affordability, and adequate levels of investment in infrastructure.

1.2. Objectives of the Study

The major objectives of the study include the following:

- Develop a ten-year financial plan for the District to ensure financial sufficiency, recover O&M costs, ensure sufficient funding for capital projects, and improve the financial health of the District
- Perform a cost-of-service analysis that calculates the cost of serving each customer class
- Develop water rates for FY 2026 through FY 2030 that are fair, equitable, and in proportion to the cost of providing service to the District's water customers
- Design drought surcharge rates for times of declared water shortages

1.3. Study Process and Methodology

Raftelis first developed a financial plan for the District, which established the total revenue adjustments² needed to meet capital investment, operational expenses, and debt service proposed during the study period (FY 2025-FY 2035). Raftelis worked with District staff to refine inputs and provide a recommended financial plan and associated water rates for the District Board's consideration. After developing the financial plan, Raftelis performed a cost-of-service analysis to determine the water rates.

¹ The fiscal year begins on July 1 and runs through June 30. For example, FY 2025 is July 1, 2024, through June 30, 2025.

² Revenue adjustments are defined as additions to gross rate revenues on an annual basis. Actual changes to rates are based on the revenue adjustment, cost-of-service allocations, and rate design.

The water rates presented in this executive summary were developed using cost-of-service principles set forth by the American Water Works Association M1 Manual titled *Principles of Water Rates, Fees and Charges* (AWWA M1 Manual). As stated in AWWA 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 analyze the District’s data, as described below, to ensure this study aligns with Proposition 218 requirements and creates rates that do not exceed the proportionate cost of providing water services.

Throughout this study many tables are rounded and may not sum exactly due to extra decimals not shown for ease of reading.

1.4. Results and Recommendations

1.4.1. Proposed Financial Plan

With the assistance of District staff, Raftelis conducted a status quo cash flow analysis to evaluate whether existing water rates adequately fund the District’s various water-related expenses over the ten-year study period. The analysis projected annual revenues, operation and maintenance expenses, debt service payments, and capital expenditures through FY 2035. Raftelis projects that with no rate increases over the study period, the District will fully deplete its reserves by the end of FY 2028. This projected outcome of depleted reserve funds demonstrates a need for water revenue adjustments now to avoid larger increases later.

Raftelis worked with District staff to develop proposed revenue adjustments over the five-year study period, plus a projection, for informational purposes only, for the last half of the 10-year financial plan (Table 1-1). The proposed water revenue adjustments were selected to ensure the water operating fund has sufficient funds to cover annual expenses, meet debt service requirements, and to build reserves to full target levels during years 6-to-10. The total reserve target includes an operating reserve target of 25 percent of annual operating expenses; a rate stabilization reserve of \$1 million; an emergency reserve starting in FY 2028 at \$500,000 and growing by \$500,000/year until \$3,000,000 is reached; and a capital reserve target of \$1.5 million in FY 2025 and then increasing to \$2 million for FY 2026 – FY 2035. The percentages shown in Table 1-1 are the annual changes in rate revenue required to maintain a financially viable water utility and to fully fund planned capital projects.

Table 1-1: Proposed Revenue Adjustments

Effective Date	Revenue Adjustment
1-Aug-25	7.50%
1-Jul-26	7.25%
1-Jul-27	7.00%
1-Jul-28	7.00%
1-Jul-29	7.00%
1-Jul-30	7.00%
1-Jul-31	7.00%
1-Jul-32	7.00%
1-Jul-33	7.00%
1-Jul-34	7.00%

The following items affect the District’s water utility revenue requirement (i.e., costs) and consequently its water rates. The District’s expenses include O&M expenses, capital expenses, and debt service.

- **Water Purchase Expense:** The District obtains roughly 90 percent of its water supply from the Contra Costa Water District (CCWD). The rate set by the CCWD for water sold to the District is expected to increase by 4.1 percent in FY 2026 and 6.75 percent per year between FY 2027 and FY 2035. Water purchase expenses represented approximately 36 percent of the District water utility’s total operating expenses in FY 2023 (most recent year of actuals).
- **O&M Expenses:** The District’s other O&M expenses are expected to increase at an annual average rate of about 7 percent per year. This is driven, in part, by higher than general inflation on utilities, employee-related costs, and Randal-Bold operating costs, as well as additional staff. These costs account for about 70 percent of non-water purchase O&M costs.
- **Water System Capital Investment:** The District anticipates an average of approximately \$6.4 million (uninflated) in annual capital expenditures. This capital investment includes seismic upgrades to key water system infrastructure, wellhead treatment, annual water main replacement, and other capital projects.

Figure 1-1 shows the proposed ten-year financial plan plus current fiscal year budget. Status Quo revenue is shown by the light teal line. Projected revenue is shown by the black line. Annual expenditures are shown by the columns. Red bars above the X-axis show the net cash to build up the reserves and red bars below the X-axis show withdrawals from reserves to fund costs. Current rates are neither sufficient to cover annual operating and maintenance expenses nor capital-related expenditures. Therefore, revenue adjustments are required to generate sufficient revenue to cover annual operating and maintenance costs, capital projects, and to build reserves over the study period.

Figure 1-1: Proposed Water Financial Plan

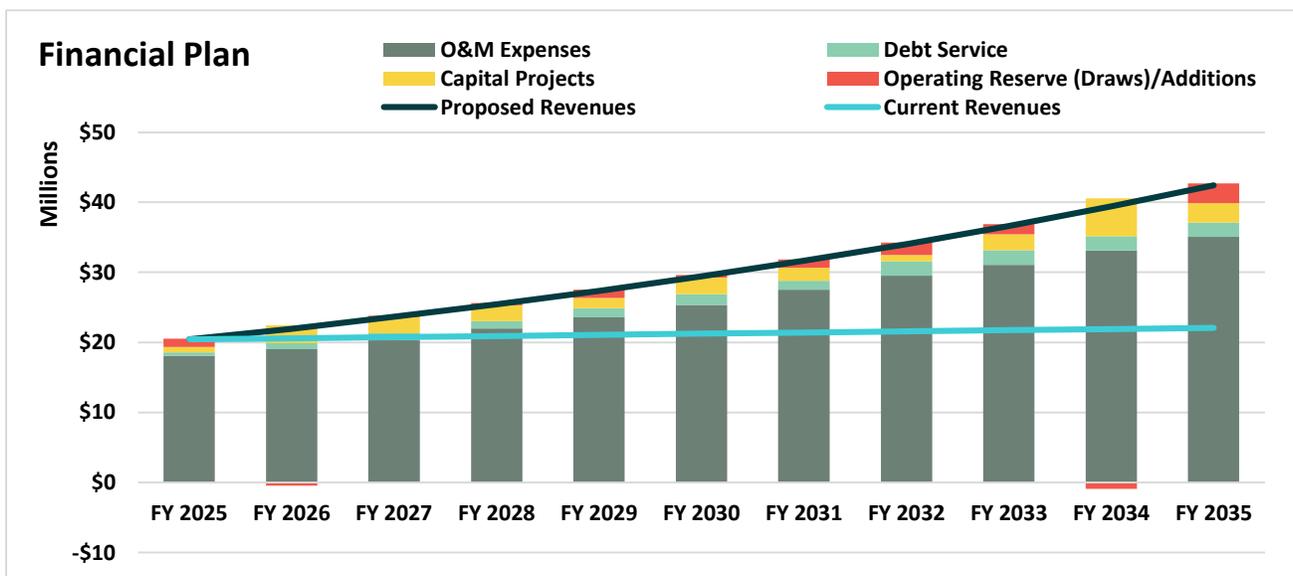


Figure 1-2 shows projected operating and capital ending balances over the study period relative to the District’s total reserve targets under the proposed financial plan. The planned revenue adjustments increase reserves from above the minimum target in FY 2025 to above the full target by the end of FY 2035.

Figure 1-2: Proposed Water Financial Plan – Projected Ending Balances

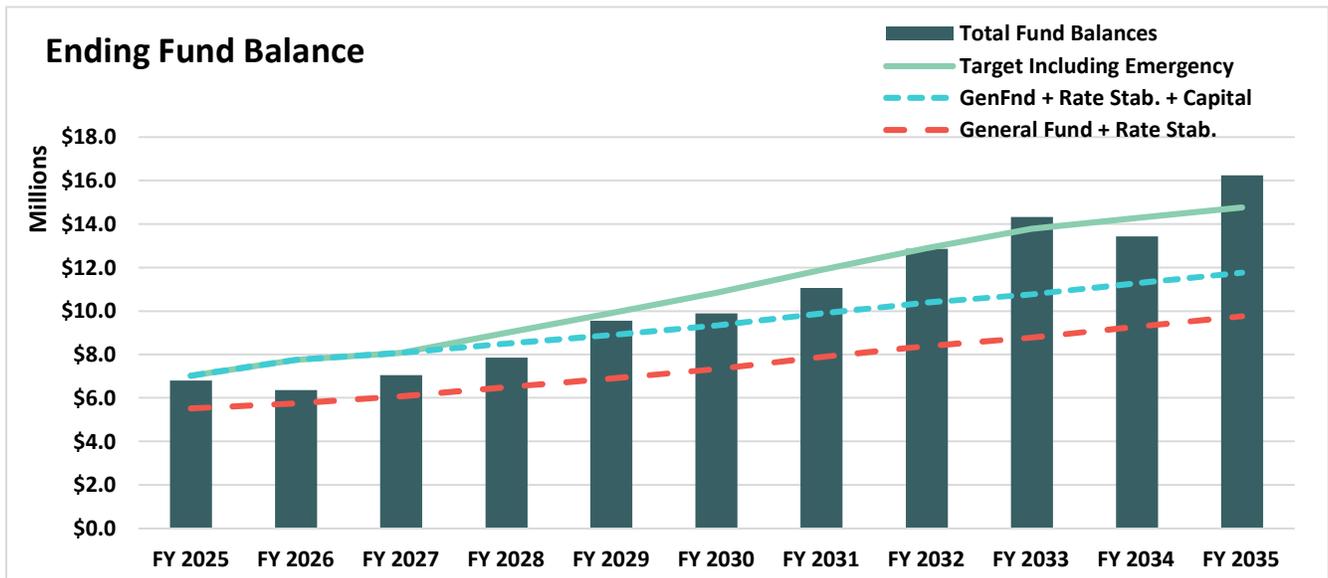


Figure 1-3 shows the proposed capital improvement plan (inflated dollars) and planned funding sources over the study period. Capital projects will be funded through grants, debt, and cash. FY 2032 includes the bulk of the wellhead treatment project.

Figure 1-3: Water Capital Funding Sources

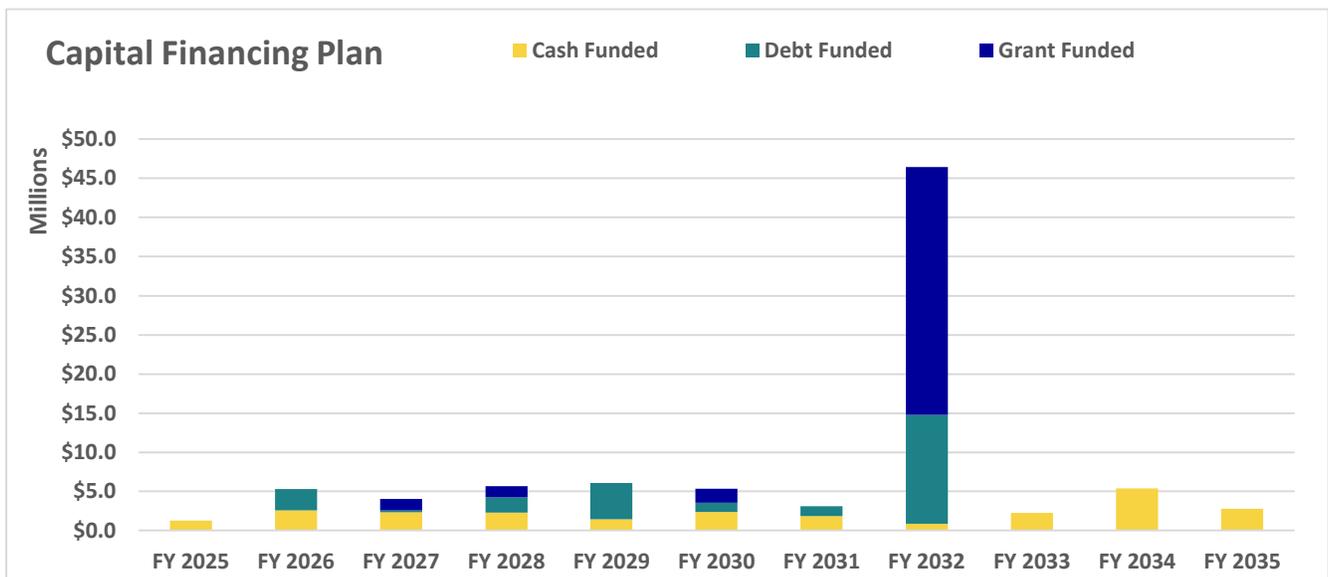
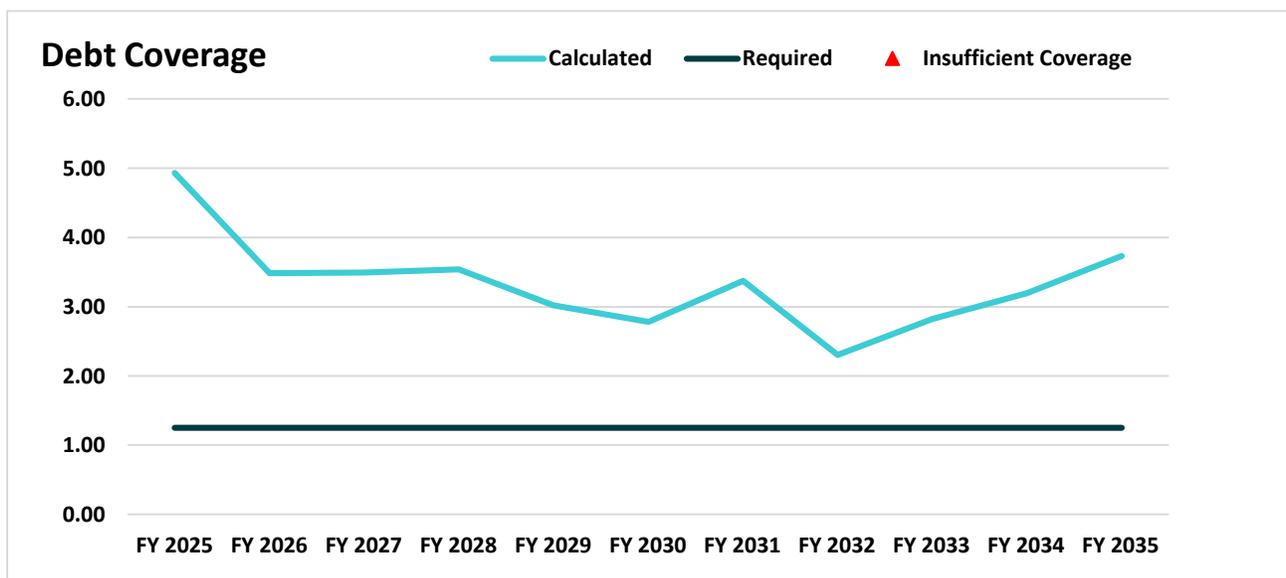


Figure 1-4 shows the projected debt coverage given that the District has existing debt for Fund 01 and anticipates issuing additional debt to help pay for capital improvements. Coverage is expected to be above minimum requirements over the study period.

Figure 1-4: Projected Debt Coverage



1.4.2. Proposed Water Rates

The District’s water rate structure includes a monthly fixed charge based on meter size, a monthly private fire line charge for customers with private fire lines, a monthly backflow device charge, and tiered volumetric rates for all customer classes except multi-family, which has a uniform volumetric rate. The updated water rate structure proposes shifting the first tier of the residential customer class to 6 hcf based on the California water efficiency target of 42 gpcd³ and 3.6 persons per household⁴ and adding in a 4th tier capturing the top 10 percent of usage based on FY 2024 billing data.

Table 1-2 shows the current and proposed monthly service charges. These fixed charges are designed to primarily recover costs that are relatively fixed, such as customer service costs, meter servicing and maintenance costs, as well as costs associated with public fire protection.

Table 1-2: Proposed Monthly Service Charges Through FY 2030, (\$/mo)

Meter Size	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
5/8"x 3/4" & 1" w/Fire	\$23.56	\$24.31	\$26.08	\$27.91	\$29.87	\$31.97
1"	\$58.90	\$60.76	\$65.17	\$69.74	\$74.63	\$79.86
1 1/2"	\$117.80	\$121.52	\$130.34	\$139.47	\$149.24	\$159.69
2"	\$188.48	\$194.43	\$208.53	\$223.13	\$238.75	\$255.47
3"	\$412.30	\$425.32	\$456.16	\$488.10	\$522.27	\$558.83
4"	\$706.80	\$729.11	\$781.98	\$836.72	\$895.30	\$957.98
6"	\$1,590.30	\$1,640.49	\$1,759.43	\$1,882.60	\$2,014.39	\$2,155.40
8"	\$3,298.40	\$3,402.50	\$3,649.19	\$3,904.64	\$4,177.97	\$4,470.43
10"	\$4,947.60	\$5,103.74	\$5,473.77	\$5,856.94	\$6,266.93	\$6,705.62
12"	\$6,243.40	\$6,440.43	\$6,907.37	\$7,390.89	\$7,908.26	\$8,461.84

³ gpcd = gallons per person per day

⁴ Based on the 2023 American Community Survey, 5-year average for Oakley, CA.

Table 1-3 shows the current and proposed monthly private fire charges. These charges are designed to recover the costs associated with providing private fire service including maintaining fire laterals and detector assemblies.

Table 1-3: Proposed Private Fire Line Charges Through FY 2030, (\$/mo)

Detector Device Type	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
4" DCDA	\$46.36	\$104.94	\$112.55	\$120.43	\$128.87	\$137.90
4" RPDA	\$46.36	\$130.66	\$140.14	\$149.95	\$160.45	\$171.69
6" DCDA	\$64.90	\$191.17	\$205.03	\$219.39	\$234.75	\$251.19
6" RPDA	\$64.90	\$217.11	\$232.86	\$249.17	\$266.62	\$285.29
8" DCDA	\$87.17	\$357.87	\$383.82	\$410.69	\$439.44	\$470.21
8" RPDA	\$87.17	\$373.77	\$400.87	\$428.94	\$458.97	\$491.10
10" DCDA	\$113.14	\$572.18	\$613.67	\$656.63	\$702.60	\$751.79
10" RPDA	\$113.14	\$590.00	\$632.78	\$677.08	\$724.48	\$775.20

Note: DCDA = Double Check Detector Assembly, RPDA = Reduced Pressure Detector Assembly

Table 1-4 shows the current and proposed monthly backflow charges. These charges are designed to recover the costs associated with administering and maintaining the backflow devices.

Table 1-4: Proposed Backflow Charges Through FY 2030, (\$/mo)

Detector Device Type	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
3/4" DC or RP	\$6.04	\$7.61	\$8.17	\$8.75	\$9.37	\$10.03
1" DC or RP	\$6.04	\$7.61	\$8.17	\$8.75	\$9.37	\$10.03
1 1/4" DC	\$6.04	\$10.56	\$11.33	\$12.13	\$12.98	\$13.89
1 1/2" RP	\$6.04	\$23.31	\$25.00	\$26.75	\$28.63	\$30.64
2" RP	\$6.04	\$24.42	\$26.20	\$28.04	\$30.01	\$32.12
3" DC	\$11.32	\$39.75	\$42.64	\$45.63	\$48.83	\$52.25
3" RP	\$11.32	\$54.77	\$58.75	\$62.87	\$67.28	\$71.99
4" DC	\$18.87	\$42.12	\$45.18	\$48.35	\$51.74	\$55.37
4" RP	\$18.87	\$62.87	\$67.43	\$72.16	\$77.22	\$82.63
6" DC	\$37.75	\$59.19	\$63.49	\$67.94	\$72.70	\$77.79
6" RP	\$37.75	\$77.14	\$82.74	\$88.54	\$94.74	\$101.38
8" DC	\$60.40	\$110.21	\$118.21	\$126.49	\$135.35	\$144.83
8" RP	\$60.40	\$114.06	\$122.33	\$130.90	\$140.07	\$149.88
10" DC	\$86.83	\$116.35	\$124.79	\$133.53	\$142.88	\$152.89
10" RP	\$86.83	\$140.10	\$150.26	\$160.78	\$172.04	\$184.09

Note: DC = Double Check, RP = Reduced Pressure

Table 1-5 presents the current and proposed volumetric charge assessed per hundred cubic feet (hcf) of water consumed per month. This charge is designed to primarily recover the variable costs associated with operating

the water utility, such as the cost of purchasing water from CCWD as well as costs for delivering water during average demand conditions, system capacity costs, capital projects, and conservation-related costs.

Table 1-5: Proposed Volumetric Charge Rates Through FY 2030, (\$/hcf)

Customer Class & Tier	Current* FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
Residential						
Tier 1: 0-6 hcf	\$3.98	\$4.37	\$4.69	\$5.02	\$5.38	\$5.76
Tier 2: 7-14 hcf	\$6.03	\$6.04	\$6.48	\$6.94	\$7.43	\$7.96
Tier 3: 15 - 22 hcf	\$9.82	\$8.32	\$8.93	\$9.56	\$10.23	\$10.95
Tier 4: > 22 hcf	\$9.82	\$9.91	\$10.63	\$11.38	\$12.18	\$13.04
Multi-Family						
All usage	\$6.01	\$4.39	\$4.71	\$5.04	\$5.40	\$5.78
Non-Residential						
Tier 1: 0-34 hcf	\$5.40	\$4.35	\$4.67	\$5.00	\$5.35	\$5.73
Tier 2: >34 hcf	\$6.91	\$8.00	\$8.58	\$9.19	\$9.84	\$10.53
Irrigation						
Tier 1: 0-113 hcf	\$5.40	\$7.78	\$8.35	\$8.94	\$9.57	\$10.24
Tier 2: >113 hcf	\$7.52	\$11.91	\$12.78	\$13.68	\$14.64	\$15.67
Construction/Hydrant						
Tier 1: 0-115 hcf	\$5.40	\$7.78	\$8.35	\$8.94	\$9.57	\$10.24
Tier 2: >115 hcf	\$7.52	\$11.91	\$12.78	\$13.68	\$14.64	\$15.67

* Current Tier 2 shown is an average rate to account for the different tier size.

1.4.3. Typical Bill

Figure 1-5 shows calculated monthly water bills (which includes the monthly service charge and volumetric charge) for residential customers at different levels of monthly water usage under current FY 2025 rates and proposed FY 2026 rates. The dark teal bars in Figure 1-5 represent monthly water bills under the current rates. The light teal bars show monthly water bills using the proposed FY 2026 rates. The current and proposed monthly bills in Figure 1-5 are calculated assuming a 5/8x3/4-inch meter size. The dollar difference between current and proposed monthly bills at different monthly water use levels is shown in the Difference (\$) row of Figure 1-5. These amounts were selected to give a cross-section of the District customer’s usage patterns. The first column, at 6 hcf/mo of use, indicates use that is wholly contained within the first tier, the second indicates average residential usage (12 hcf/mo), the third shows usage at the 75th percentile (75 percent of bills are at or below 15 hcf/mo), and the fourth column shows usage in the 90th percentile.

Figure 1-5: Residential Bill Comparison at Different Usage (hcf/mo)



1.4.4. Neighboring Agency Comparison

Figure 1-6 shows a comparison of monthly water bills for a residential customer on a 5/8-inch meter using 12 hcf/mo. The comparison shows current FY 2025 rates and adopted or proposed rates for FY 2026.

Figure 1-6: Neighboring Agency Comparison



1.4.5. Drought Surcharge

In periods of drought when water sales are reduced, the District will lose revenue and fail to cover its expenses. Raftelis developed drought surcharges to supplement revenues due to drought by recovering the net revenue loss. The projected losses and revenue shortfall, by reduction level, is shown in Table 1-6. These adjustments are not going into effect now but will remain an option for the Board to initiate should future drought conditions warrant the activation of the Urban Water Shortage Contingency Plan and these surcharges. The percentages shown will be applied to all water usage rates in place through the duration of the shortage.

Table 1-6: Drought Surcharge by Percent Usage Reduction

	FY 2026	0 - 10% Reduction	10 - 20% Reduction	20 - 30% Reduction	30 - 40% Reduction	40 - 50% Reduction
Projected Variable Revenue	\$15,131,788	\$13,439,617	\$12,172,284	\$10,325,356	\$8,605,883	\$6,949,073
Revenue Shortfall		(\$1,692,171)	(\$2,959,504)	(\$4,806,432)	(\$6,525,905)	(\$8,182,715)
Cost Savings		\$755,193	\$1,342,048	\$2,151,769	\$2,925,062	\$3,768,519
Net Revenue Shortfall to be Recovered		(\$936,978)	(\$1,617,456)	(\$2,654,663)	(\$3,600,843)	(\$4,414,196)
% Revenue Shortfall		7%	13%	26%	42%	64%

2. Rate Setting Methodology

This study was conducted using industry-standard principles outlined in the AWWA Manual M1 to apply the District's actual data for analyzing the cost of service and identifying the proportionality of the rate structure. The process and approach Raftelis utilized in the study to determine water rates is informed by the District's policy objectives, the current water system and rates, and the legal requirements in California (namely, Proposition 218). The District's policy objectives provide context but are not utilized to set rates themselves. The resulting financial plan, cost-of-service analysis, and rate design process follows five key steps, outlined below, to determine proposed rates that achieve the District's objectives, meet industry standards, and align with relevant regulations.

1. **Financial Plan - Projections:** The first step is to develop a multi-year financial plan that projects the District's revenues, expenses, capital project financing, annual debt service, and reserve funding. The financial plan is used to determine the revenue adjustments needed for revenues to fully recover system costs.
2. **Financial Plan - Revenue Requirement Determination:** After completing the financial plan, the rate-making process begins by determining the revenue requirement for the test year, also known as the rate-setting year. The test year for this study is FY 2026. The revenue requirement should sufficiently fund the District's operating costs, annual debt service (including coverage requirements), capital expenditures, and reserve funding as projected based on the annual budget estimates.
3. **Cost-of Service-Analysis:** The annual cost of providing water service, or the revenue requirement, is then distributed to customer classes commensurate with their use of and burden on the water system. A cost-of-service analysis involves the following steps:
 - a. Functionalize costs – the different components of the revenue requirement are categorized into functions such as supply, transmission/distribution, storage, customer service, etc.
 - b. Allocate to cost causation components – the functionalized costs are then allocated to cost-causation components such as supply, base delivery, peaking, etc.
 - c. Develop unit costs – unit costs for each cost-causation component are determined using units of service, such as total use, peaking units, equivalent meters, number of customers, etc., for each component.
 - d. Distribute cost components – the cost components are allocated to each customer class using the unit costs in proportion to their demand and burden on the system.

A water cost-of-service analysis also considers both the average water demand and peak demand using best-available data. Peaking, or extra-capacity, costs are incurred during periods of peak consumption, most often coinciding with summer water use and irrigation needs. There are additional capacity-related costs associated with designing, constructing, operating, maintaining, and replacing facilities to meet peak demand. Peak use imposes additional costs on a water utility and are used to determine the cost burden of peaking-related facilities.

4. **Rate Design:** After allocating the revenue requirement to each customer class, the project team designs and calculates rates. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support and optimize the District's policy objectives. Rates also act as a public information tool in communicating these policy objectives to customers. This process also includes a rate impact analysis and sample customer bill impacts.

Additionally, where tiered rates are developed, the project team determines the cost to serve each tier as a sub-class, to ensure a nexus to costs incurred.

5. **Administrative Record Preparation and Rate Adoption:** The final step in a rate study is to develop the administrative record (report) in conjunction with the rate adoption process. This report serves as the administrative record for this study. The administrative record documents the study results and presents the methodologies, rationale, justifications, and calculations used to determine the proposed rates. A thorough and methodological administrative record serves two important functions: maintaining defensibility in a stringent legal environment and communicating the rationale for revenue adjustments and proposed rates to customers and key stakeholders.

Values shown in report tables and figures are rounded to the digit shown. Therefore, any manual reproduction of the calculations shown may not match the precise results displayed in the report.

3. Water System

This section briefly describes the District’s water system and ratepayer base using data provided by the District, as well as growth and inflation assumptions. Raftelis used this information to develop a water rate model in Microsoft Excel to project financial and rate calculations over a study period covering FY 2025 through FY 2035. The District’s fiscal year spans from July 1 through June 30. Projections in future years were generally made based on budgeted FY 2025 data using key assumptions outlined below. All assumptions were discussed with, and reviewed by, District staff to ensure that the District’s unique characteristics were incorporated. Note that most table values shown throughout this report are rounded to the last digit shown and, therefore, may not calculate precisely to the values shown.

3.1. Current Water Rates

The District’s existing rate structure is based on a rate study completed in 2022. The most recent water rate increase went into effect on July 1, 2024, and is shown in Table 3-1. Customers are charged a monthly service fee based on meter size and a volume charge based on the amount of water used within each tier for their respective customer class. The District offers a discount of either 25 percent or 50 percent of the monthly service charge for qualifying low-income customers. The District also charges for private fire line (fire service lateral and detector assembly) and backflow devices. Those charges are shown in Table 3-2. Water sales account for more than 90 percent of District revenues.

Table 3-1: Current Water Rates

Charge Type	Current	Charge Type	Current
Monthly Fixed Charge		Volumetric Charges, \$/hcf	
5/8" x 3/4"	\$23.56	Residential	
1" with Fire	\$23.56	Tier 1: 0-8 hcf	\$3.98
1"	\$58.90	Tier 2: 9-14 hcf	\$6.71
1 1/2"	\$117.80	Tier 3: >14 hcf	\$9.82
2"	\$188.48	Multi-Family	
3"	\$412.30	All Usage	\$6.01
4"	\$706.80	Non-Residential	
6"	\$1,590.30	Tier 1: 0-34 hcf	\$5.40
8"	\$3,298.40	Tier 2: >34 hcf	\$6.91
10"	\$4,947.60	Irrigation	
12"	\$6,243.40	Tier 1: 0-113 hcf	\$5.40
		Tier 2: >113 hcf	\$7.52
		Construction/Hydrant	
		Tier 1: 0-115 hcf	\$5.40
		Tier 2: >115 hcf	\$7.52

Table 3-2: Private Fire Line and Backflow Charges

Charge Type	Current	Charge Type	Current
Fire Service Lateral	\$27.80	Backflow Charge	
Fire Detector Assembly		2" and smaller	\$6.04
3"	\$11.12	3"	\$11.32
4"	\$18.56	4"	\$18.87
6"	\$37.10	6"	\$37.75
8"	\$59.37	8"	\$60.40
10"	\$85.34	10"	\$86.83
12"	\$159.55		

3.2. Number of Accounts and Fire Lines

Customer account growth projections are necessary to estimate water demand and rate revenues over the study period. District staff provided Raftelis with the number of water meters and fire lines by connection size for FY 2022, FY 2023, and FY 2024. District staff also provided the current count of backflow devices by size and type.

The District provides water services to approximately 14,000 connections that serve residential, commercial, and irrigation customers as well as private fire lines. Table 3-3, on the following page, shows the actual number of potable water accounts by meter size for FY 2024 and the projected number of accounts through the study period. Based on discussions with District staff, the number of residential accounts is projected to increase at 1 percent per year. The number of accounts is used to forecast the amount of fixed revenue the District will receive from the monthly meter charge as well as to forecast the annual water use.

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Table 3-3: Water Accounts by Meter Size

Meter Size	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
5/8"x 3/4" & 1" w/Fire	13,451	13,605	13,740	13,876	14,014	14,153
1"	163	163	163	163	163	163
1 1/2"	72	72	72	72	72	72
2"	76	76	76	76	77	77
3"	43	43	43	43	43	43
4"	5	5	5	5	5	5
6"	3	0	0	0	0	0
8"	1	3	3	3	3	3
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
Total	13,814	13,968	14,103	14,239	14,378	14,517
Meter Size	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
5/8"x 3/4" & 1" w/Fire	14,293	14,435	14,578	14,722	14,868	15,015
1"	163	163	163	163	163	163
1 1/2"	72	72	72	72	72	72
2"	77	77	77	77	78	78
3"	43	43	43	43	43	43
4"	5	5	5	5	5	6
6"	0	0	0	0	0	0
8"	3	3	3	3	3	3
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
Total	14,657	14,800	14,943	15,087	15,233	15,381

Table 3-4 shows the number of private fire lines by connection size and detector assembly type for FY 2024 and FY 2025. Raftelis conservatively projected the number of fire lines to remain constant at the FY 2025 number over the study period. Raftelis forecasted the amount of fixed revenue that the District will collect from the fire line fixed charge using the same methods described above for water accounts. For reference: fire lines are separate private sprinkler connections or hydrants that provide additional fire suppression as a standby service.

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Table 3-4: Private Fire Lines by Connection Size & Detector Assembly Type

Connection Size	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
4" DCDA	6	8	8	8	8	8
4" RPDA	0	0	0	0	0	0
6" DCDA	28	26	26	26	26	26
6" RPDA	1	1	1	1	1	1
8" DCDA	40	43	43	43	43	43
8" RPDA	2	1	1	1	1	1
10" DCDA	4	4	4	4	4	4
10" RPDA	3	3	3	3	3	3
Total	84	86	86	86	86	86

Connection Size	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
4" DCDA	8	8	8	8	8	8
4" RPDA	0	0	0	0	0	0
6" DCDA	26	26	26	26	26	26
6" RPDA	1	1	1	1	1	1
8" DCDA	43	43	43	43	43	43
8" RPDA	1	1	1	1	1	1
10" DCDA	4	4	4	4	4	4
10" RPDA	3	3	3	3	3	3
Total	86	86	86	86	86	86

Note: DCDA = Double Check Detector Assembly, RPDA = Reduced Pressure Detector Assembly

Table 3-5 shows the current (FY 2025) number of backflow devices by size and type as provided by District staff. Raftelis forecasted the number of devices to remain constant over the study period.

Table 3-5: Backflow Devices

Device Size & Type	FY 2025	Device Size & Type	FY 2025
3/4" RP	40	4" DC	7
3/4" & 1" DC	3,994	4" RP	11
1" RP	115	6" DC	21
1 1/4" DC	0	6" RP	2
1 1/2" RP	45	8" DC	35
2" RP	81	8" RP	5
3" DC	1	10" DC	4
3" RP	2	10" RP	4
Total		4,367	

Note: DC = Double Check, RP = Reduced Pressure

3.3. Water Use

District staff provided Raftelis with monthly billed water use data for FY 2022, FY 2023, and FY 2024. Water demand projections depend on two key assumptions: new connection growth and water demand per connection. While data showed a downward trend in FY 2022 and FY 2023, FY 2024 showed a slight uptick in total demand. In consultation with District staff, the average usage per account was held constant at the

FY 2024 rate. Therefore, increased water use in subsequent years is driven by the increase in customer accounts. Table 3-6 shows actual and forecasted annual water use by customer class and tier based on the current water rate structure.

Table 3-6: Water Use by Customer Class and Tier (hcf)

Customer	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Residential						
Tier 1	1,041,949	1,052,368	1,062,892	1,073,521	1,084,256	1,095,099
Tier 2	388,325	392,208	396,130	400,092	404,093	408,133
Tier 3	412,903	417,032	421,202	425,414	429,669	433,965
Multi-Family						
All Usage	92,142	93,063	93,994	94,934	95,883	96,842
Non-Residential						
Tier 1	36,429	36,429	36,429	36,429	36,429	36,429
Tier 2	91,314	91,314	91,314	91,314	91,314	91,314
Irrigation						
Tier 1	111,711	111,711	111,711	111,711	111,711	111,711
Tier 2	137,481	137,481	137,481	137,481	137,481	137,481
Construction/Hydrant						
Tier 1	7,120	7,120	7,120	7,120	7,120	7,120
Tier 2	15,833	15,833	15,833	15,833	15,833	15,833
Total, hcf	2,335,207	2,354,560	2,374,107	2,393,849	2,413,789	2,433,928
Customer	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Residential						
Tier 1	1,106,050	1,117,110	1,128,281	1,139,564	1,150,960	1,162,470
Tier 2	412,215	416,337	420,500	424,705	428,952	433,242
Tier 3	438,305	442,688	447,115	451,586	456,102	460,663
Multi-Family						
All Usage	97,811	98,789	99,777	100,774	101,782	102,800
Non-Residential						
Tier 1	36,429	36,429	36,429	36,429	36,429	36,429
Tier 2	91,314	91,314	91,314	91,314	91,314	91,314
Irrigation						
Tier 1	111,711	111,711	111,711	111,711	111,711	111,711
Tier 2	137,481	137,481	137,481	137,481	137,481	137,481
Construction/Hydrant						
Tier 1	7,120	7,120	7,120	7,120	7,120	7,120
Tier 2	15,833	15,833	15,833	15,833	15,833	15,833
Total, hcf	2,454,268	2,474,812	2,495,561	2,516,518	2,537,684	2,559,062

3.4. Inflationary Assumptions

Inflationary assumptions shown in Table 3-7 were used to project O&M expenses beyond the FY 2025 budget. To ensure that future costs are reasonably projected, Raftelis worked with the District to generate assumptions regarding inflationary factors including general and salary inflation and water cost inflation based on historical or anticipated cost increases. Additionally, most of the District’s water supply is purchased

wholesale from the Contra Costa Water District (CCWD). CCWD’s published wholesale water rates were used for FY 2025 and FY 2026 (a 4.1 percent increase). At the District’s direction, the financial plan assumes that CCWD costs will increase by 6.75 percent annually after FY 2026. The District supplements its water supply purchases with groundwater produced by District-owned wells.

Table 3-7: Inflationary Assumptions

Line Item	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030+
General	3.0%	3.0%	3.0%	3.0%	3.0%
Salary	4.0%	4.0%	4.0%	4.0%	4.0%
Benefits	6.0%	6.0%	6.0%	6.0%	6.0%
Utilities	13.0%	13.0%	13.0%	13.0%	13.0%
Capital	5.0%	4.0%	3.0%	3.0%	3.0%
Water Purchase	4.1%	6.75%	6.75%	6.75%	6.75%
Chemicals	7.0%	7.0%	7.0%	7.0%	7.0%
Capital	5.0%	4.0%	3.0%	3.0%	3.0%
Water Purchase	4.1%	6.8%	6.8%	6.8%	6.8%
Randall Bold	6.5%	6.5%	6.5%	6.5%	6.5%

The inflationary factors were applied to the FY 2025 budgeted cost estimates to develop the FY 2026 and subsequent year estimates. Additional periodic adjustments were also made to individual line items like salary and benefits to account for planned additional staffing.

Interest earnings on cash reserves are projected assuming a 2 percent annual interest rate. Rental income is projected to inflate at the general inflation rate. Other miscellaneous revenue is forecast to remain flat.

4. Financial Plan

This section describes the ten-year financial plan. The proposed financial plan is used to determine the overall revenue adjustments and total amount of revenue required from rates. Revenue needs to cover O&M expenses, capital expenses, debt service, and reserve funding. Revenue adjustments represent the average rate-based revenue increase for the District as a whole; rate changes for individual customers will depend on the cost-of-service analysis and rate design.

To develop the financial plan, Raftelis worked with District staff to project annual expenses and revenues, debt service, model reserve balances, and account for planned capital expenditures. This section of the report provides a discussion of projected revenue, O&M expenses, debt service, the capital improvement plan (CIP), reserve funding under existing rates, and the revenue adjustments required to ensure fiscal sustainability. The financial plan starts with current account data and water use as well as current rates to determine if the current rates are adequately meeting the revenue requirements.

4.1. Current Water Rate Revenue

The District's revenues consist of rate revenues, interest earnings on cash reserves, and other miscellaneous revenues. The rate revenue projections shown below assume that current FY 2025 (Table 3-1) rates are effective throughout the study period; and, therefore, represent estimated revenues in the absence of any rate increase. This status quo scenario provides a baseline from which Raftelis evaluates the need for revenue adjustments.

4.1.1. Calculated Water Rate Revenues

Raftelis projected water rate revenues from fixed meter charges, fire line charges, and volume charges for FY 2025 through FY 2035 based on current FY 2025 water rates, the projected number of water meters, projected private fire connections, and projected water use.

The District collects fixed monthly service revenue from its customers based on meter size. Table 4-1 shows projected fixed meter charge revenues under current rates over the study period. Fixed charge revenues are calculated by meter size in each year as follows based on current FY 2025 monthly service rates (from Table 3-1) and the projected number of water meters (from Table 3-3). The following shows an example calculation for a 1" meter. This calculation is repeated for all meter sizes to determine the total fixed charge revenue in each fiscal year throughout the study period. Note that the 5/8x3/4" & 1" w/Fire line includes revenue from customers that receive either a 25 percent discount or a 50 percent discount on the monthly service charge.

$$\text{Annual Fixed Charge Revenue for 1" meter} = \\ [FY\ 2025\ fixed\ monthly\ rate\ 1"\ meter] \times [Number\ of\ 1"\ connections] \times [12\ Bills\ per\ year]$$

Table 4-1: Projected Fixed Charge Revenues Under FY 2025 Rates

Meter Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
5/8"x 3/4" & 1" w/Fire	\$3,830,997	\$3,869,023	\$3,907,332	\$3,946,206	\$3,985,362	\$4,024,802
1"	\$115,223	\$115,237	\$115,251	\$115,266	\$115,281	\$115,295
1 1/2"	\$101,836	\$101,893	\$101,951	\$102,009	\$102,068	\$102,127
2"	\$172,233	\$172,576	\$172,922	\$173,271	\$173,624	\$173,981
3"	\$212,895	\$213,045	\$213,197	\$213,349	\$213,504	\$213,660
4"	\$44,104	\$44,361	\$44,621	\$44,883	\$45,148	\$45,415
6"	\$1,590	\$1,590	\$1,590	\$1,590	\$1,590	\$1,590
8"	\$134,575	\$134,575	\$134,575	\$134,575	\$134,575	\$134,575
10"	\$0	\$0	\$0	\$0	\$0	\$0
12"	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$4,613,453	\$4,652,300	\$4,691,438	\$4,731,149	\$4,771,152	\$4,811,445

Meter Size	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
5/8"x 3/4" & 1" w/Fire	\$4,064,807	\$4,105,094	\$4,145,665	\$4,186,800	\$4,228,219
1"	\$115,310	\$115,326	\$115,341	\$115,356	\$115,372
1 1/2"	\$102,187	\$102,248	\$102,309	\$102,371	\$102,433
2"	\$174,341	\$174,705	\$175,072	\$175,443	\$175,818
3"	\$213,817	\$213,977	\$214,137	\$214,300	\$214,464
4"	\$45,685	\$45,958	\$46,234	\$46,512	\$46,793
6"	\$1,590	\$1,590	\$1,590	\$1,590	\$1,590
8"	\$134,575	\$134,575	\$134,575	\$134,575	\$134,575
10"	\$0	\$0	\$0	\$0	\$0
12"	\$0	\$0	\$0	\$0	\$0
Total	\$4,852,313	\$4,893,472	\$4,934,923	\$4,976,947	\$5,019,264

Projected revenues for private fire line are shown in Table 4-2. Revenues include fire detector assembly charges under existing rates, which are calculated similarly to the fixed meter charge. They also include the uniform, monthly fire line charge that is assessed on these accounts. The estimated revenues under current rates are shown in Table 4-2. Table 4-3 shows the project backflow charge revenue under FY 2025 rates.

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Table 4-2: Projected Private Fire Line Revenue Under FY 2025 Rates

Size & Type	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
4" DCDA	\$1,782	\$1,782	\$1,782	\$1,782	\$1,782	\$1,782
4" RPDA	\$0	\$0	\$0	\$0	\$0	\$0
6" DCDA	\$11,575	\$11,575	\$11,575	\$11,575	\$11,575	\$11,575
6" RPDA	\$445	\$445	\$445	\$445	\$445	\$445
8" DCDA	\$30,635	\$30,635	\$30,635	\$30,635	\$30,635	\$30,635
8" RPDA	\$712	\$712	\$712	\$712	\$712	\$712
10" DCDA	\$4,096	\$4,096	\$4,096	\$4,096	\$4,096	\$4,096
10" RPDA	\$3,072	\$3,072	\$3,072	\$3,072	\$3,072	\$3,072
Fire Lateral	\$28,690	\$28,690	\$28,690	\$28,690	\$28,690	\$28,690
Total	\$81,008	\$81,008	\$81,008	\$81,008	\$81,008	\$81,008

Size & Type	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
4" DCDA	\$1,782	\$1,782	\$1,782	\$1,782	\$1,782
4" RPDA	\$0	\$0	\$0	\$0	\$0
6" DCDA	\$11,575	\$11,575	\$11,575	\$11,575	\$11,575
6" RPDA	\$445	\$445	\$445	\$445	\$445
8" DCDA	\$30,635	\$30,635	\$30,635	\$30,635	\$30,635
8" RPDA	\$712	\$712	\$712	\$712	\$712
10" DCDA	\$4,096	\$4,096	\$4,096	\$4,096	\$4,096
10" RPDA	\$3,072	\$3,072	\$3,072	\$3,072	\$3,072
Fire Lateral	\$28,690	\$28,690	\$28,690	\$28,690	\$28,690
Total	\$81,008	\$81,008	\$81,008	\$81,008	\$81,008

Table 4-3: Projected Backflow Charges Under FY 2025 Rates

Device Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
2" and smaller	\$309,852	\$309,852	\$309,852	\$309,852	\$309,852	\$309,852
3"	\$408	\$408	\$408	\$408	\$408	\$408
4"	\$4,076	\$4,076	\$4,076	\$4,076	\$4,076	\$4,076
6"	\$10,419	\$10,419	\$10,419	\$10,419	\$10,419	\$10,419
8"	\$28,992	\$28,992	\$28,992	\$28,992	\$28,992	\$28,992
10"	\$8,336	\$8,336	\$8,336	\$8,336	\$8,336	\$8,336
Total	\$362,082	\$362,082	\$362,082	\$362,082	\$362,082	\$362,082

Device Size	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
2" and smaller	\$309,852	\$309,852	\$309,852	\$309,852	\$309,852
3"	\$408	\$408	\$408	\$408	\$408
4"	\$4,076	\$4,076	\$4,076	\$4,076	\$4,076
6"	\$10,419	\$10,419	\$10,419	\$10,419	\$10,419
8"	\$28,992	\$28,992	\$28,992	\$28,992	\$28,992
10"	\$8,336	\$8,336	\$8,336	\$8,336	\$8,336
Total	\$362,082	\$362,082	\$362,082	\$362,082	\$362,082

Table 4-4 shows projected volume charge revenues under current rates over the study period. Volume charge revenues are calculated by customer class and tier in each year based on current FY 2025 water rates (Table 3-1) and projected water use (Table 3-6). The following shows an example calculation for a multi-

family customer. This calculation is repeated for all classes and tiers to determine the total volumetric charge revenue in each fiscal year throughout the study period.

$$\text{Multi-Family Volume Charge Revenue} = [\text{Multi-Family FY 2025 rate per hcf}] \times [\text{Multi-Family Water Use in hcf}]$$

Table 4-4: Volumetric Charge Revenue Projections Under FY 2025 Rates

Customer	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Residential						
Tier 1	\$4,188,427	\$4,230,311	\$4,272,614	\$4,315,340	\$4,358,494	\$4,402,078
Tier 2	\$2,631,717	\$2,658,035	\$2,684,615	\$2,711,461	\$2,738,576	\$2,765,961
Tier 3	\$4,095,255	\$4,136,207	\$4,177,569	\$4,219,345	\$4,261,538	\$4,304,154
Multi-Family						
All Usage	\$559,311	\$564,904	\$570,553	\$576,259	\$582,021	\$587,842
Non-Residential						
Tier 1	\$196,717	\$196,717	\$196,717	\$196,717	\$196,717	\$196,717
Tier 2	\$630,980	\$630,980	\$630,980	\$630,980	\$630,980	\$630,980
Irrigation						
Tier 1	\$603,239	\$603,239	\$603,239	\$603,239	\$603,239	\$603,239
Tier 2	\$1,033,857	\$1,033,857	\$1,033,857	\$1,033,857	\$1,033,857	\$1,033,857
Construction/Hydrant						
Tier 1	\$38,448	\$38,448	\$38,448	\$38,448	\$38,448	\$38,448
Tier 2	\$119,064	\$119,064	\$119,064	\$119,064	\$119,064	\$119,064
Total	\$14,097,015	\$14,211,762	\$14,327,656	\$14,444,710	\$14,562,934	\$14,682,340
Customer	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035	
Residential						
Tier 1	\$4,446,099	\$4,490,560	\$4,535,466	\$4,580,820	\$4,626,629	
Tier 2	\$2,793,621	\$2,821,557	\$2,849,773	\$2,878,271	\$2,907,053	
Tier 3	\$4,347,195	\$4,390,667	\$4,434,574	\$4,478,920	\$4,523,709	
Multi-Family						
All Usage	\$593,720	\$599,657	\$605,654	\$611,710	\$617,827	
Non-Residential						
Tier 1	\$196,717	\$196,717	\$196,717	\$196,717	\$196,717	
Tier 2	\$630,980	\$630,980	\$630,980	\$630,980	\$630,980	
Irrigation						
Tier 1	\$603,239	\$603,239	\$603,239	\$603,239	\$603,239	
Tier 2	\$1,033,857	\$1,033,857	\$1,033,857	\$1,033,857	\$1,033,857	
Construction/Hydrant						
Tier 1	\$38,448	\$38,448	\$38,448	\$38,448	\$38,448	
Tier 2	\$119,064	\$119,064	\$119,064	\$119,064	\$119,064	
Total	\$14,802,941	\$14,924,747	\$15,047,771	\$15,172,026	\$15,297,523	

4.1.2. Non-Operating Revenue

In addition to the rate-based revenue, the water utility also has several sources of non-operating revenue shown below in Table 4-5. Non-operating revenues are based on the District’s FY 2025 budget and are not escalated in subsequent years with the exception of rental income (captured in Other Revenue), and interest

income (from investments), which is estimated beginning in FY 2025 based on estimated beginning fund balances, revenues and expenses, and the assumed interest rate.

Table 4-5: Projected Non-Operating Revenue – Status Quo

Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Interest Income - LAIF	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Misc Charges	\$317,000	\$317,080	\$317,163	\$317,250	\$317,340	\$317,433
Other Revenue	\$868,386	\$866,938	\$871,528	\$876,257	\$881,127	\$886,144
Interest Income*	\$113,007	\$108,071	\$63,432	\$0	\$0	\$0
Total Revenues	\$1,373,394	\$1,367,089	\$1,327,123	\$1,268,506	\$1,273,467	\$1,278,577

Line Item	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Misc. Charges	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Other Revenue	\$317,531	\$317,632	\$317,737	\$317,847	\$317,960
Other Revenue	\$891,311	\$896,634	\$902,116	\$907,763	\$913,580
Interest Income	\$0	\$0	\$0	\$0	\$0
Total Revenues	\$1,283,842	\$1,289,266	\$1,294,853	\$1,300,610	\$1,306,541

* Interest Income goes to zero in FY 2028 due to the reserve funds being fully depleted under current rates.

4.2. Water Utility Expenses

The District’s water utility expenses include O&M expenses, capital expenses, and debt service payments.

4.2.1. Total Operations and Maintenance Budget

4.2.1.1. Water Purchase Cost

The District obtains most of its water from CCWD and pays rates established by CCWD for its wholesale water purchases. The District provided Raftelis with its historical monthly purchases, historical 3-year average max. month demand, and historical unit rates. Raftelis obtained the FY 2025 and FY 2026 CCWD rates from CCWD’s website. Based on discussions with District staff, the unit rates are increased at 6.75 percent per year thereafter. The forecast assumes that the District obtains about 90 percent of its water from CCWD and the rest from groundwater wells. Costs associated with pumping groundwater from the District’s wells are included in the summary of O&M expenses in the following subsection. Additionally, the study assumes a 5.8 percent water loss factor, which increases the amount of water supply required to meet demand. This loss factor was generated by comparing the totals of produced and purchased water versus total metered sales for calendar year 2023. Water supply cost projections for FY 2025 – FY 2035 are calculated by multiplying the amount of water purchased from CCWD and estimated 3-year historical max. month demand by the CCWD corresponding wholesale rates and are shown in Table 4-6. Water costs also include a monthly service charge. Since CCWD updates its rates and the 3-year average maximum demand each February, the values shown are effective fiscal year rates and demands.

Table 4-6: Projected Purchased Water Cost Expenses

Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Water Sales, hcf	2,354,560	2,374,107	2,393,849	2,413,789	2,433,928	2,454,268
Total Supply Required, hcf (1)	2,500,048	2,520,803	2,541,765	2,562,937	2,584,320	2,605,917
District Wells, hcf	250,005	252,080	254,176	256,294	258,432	260,592
CCWD, hcf	2,250,044	2,268,723	2,287,588	2,306,643	2,325,888	2,345,326
CCWD Purchases, kgal	1,683,145	1,697,118	1,711,231	1,725,484	1,739,881	1,754,421
Est. Max Month Demand, kgal (2)	18,918	18,690	18,801	18,803	18,765	18,790
Service Charge, \$/mo (2)	\$9.37	\$10.01	\$10.53	\$11.24	\$12.00	\$12.81
Demand Charge, \$/max mo kgal (2)	\$4.01	\$4.17	\$4.39	\$4.69	\$5.00	\$5.34
Volume Charge, \$/kgal (2)	\$2.85	\$3.01	\$3.16	\$3.37	\$3.60	\$3.84
Total CCWD Costs	\$5,705,018	\$6,037,343	\$6,397,915	\$6,877,828	\$7,391,742	\$7,948,136
Line Item	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035	
Water Sales, hcf	2,474,812	2,495,561	2,516,518	2,537,684	2,559,062	
Total Supply Required, hcf (1)	2,627,730	2,649,762	2,672,013	2,694,488	2,717,187	
District Wells, hcf	262,773	264,976	267,201	269,449	271,719	
CCWD, hcf	2,364,957	2,384,786	2,404,812	2,425,039	2,445,468	
CCWD Purchases, kgal	1,769,106	1,783,939	1,798,920	1,814,050	1,829,332	
Est. Max Month Demand, kgal (2)	18,786	18,780	18,785	18,784	18,783	
Service Charge, \$/mo (2)	\$13.67	\$14.59	\$15.58	\$16.63	\$17.75	
Demand Charge, \$/max mo kgal (2)	\$5.70	\$6.09	\$6.50	\$6.94	\$7.40	
Volume Charge, \$/kgal (2)	\$4.10	\$4.38	\$4.68	\$4.99	\$5.33	
Total CCWD Costs	\$8,544,613	\$9,185,955	\$9,876,443	\$10,618,504	\$11,416,627	

(1) Includes water loss

(2) Effective fiscal year since CCWD updates rates and max demand in February of each year.

4.2.1.2. Pass-Through Rates

California Government Code Section 53756 allows for pass-through adjustments for unforeseen increases in wholesale water costs. Based on discussions with District staff, the financial plan assumes that wholesale water rates will increase by 6.75 percent per year from FY 2027 through the duration of the study period. Should the costs of wholesale water exceed the estimated increase due to drought conditions or for any other reason, the District may choose to pass-through any wholesale water rate increases imposed on the District by CCWD that are greater than the average annual increase already included in the financial plan assumptions.

4.2.1.3. Operating and Maintenance Expenses

The District provided Raftelis with its water utility budget for FY 2025 as well as timing for periodic expenditures and planned increases in staffing. Raftelis used the escalation percentages shown in Table 3-7 to project expenses for the financial plan. A summary of the District's projected O&M budget is shown by fiscal year in Table 4-7. Note that water supply costs from Table 4-6 are included in Dept. 00 – District line item in Table 4-7.

Table 4-7: Projected O&M Expenses

Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Dept. 00 - District	\$7,154,805	\$7,919,610	\$8,118,229	\$8,455,234	\$9,080,180	\$9,637,403
Dept. 01 - Corpyard	\$619,748	\$567,993	\$592,385	\$617,994	\$644,899	\$673,182
Dept. 02 - Transmission & Distribution	\$2,729,836	\$2,617,420	\$2,731,434	\$3,038,193	\$3,003,527	\$3,164,245
Dept. 03 - Customer	\$2,041,569	\$2,110,130	\$2,234,748	\$2,311,084	\$2,447,084	\$2,532,067
Dept. 04 - Office	\$333,300	\$306,724	\$302,329	\$314,016	\$326,395	\$356,918
Dept. 05 - Administrative	\$1,452,526	\$1,511,785	\$1,573,629	\$1,638,180	\$1,705,563	\$1,775,911
Dept. 08 - Stonecreek Well	\$225,800	\$111,789	\$125,136	\$140,254	\$157,386	\$176,808
Dept. 09 - Glen Park Well	\$179,100	\$196,116	\$221,224	\$249,736	\$282,122	\$318,918
Dept. 10 - Delta Coves	\$28,550	\$26,739	\$28,930	\$31,347	\$34,017	\$36,970
Dept. 11 - Backflow	\$80,000	\$82,400	\$84,872	\$87,418	\$90,041	\$92,742
Dept. 12 - Reservoirs	\$43,000	\$37,627	\$39,379	\$41,271	\$43,318	\$45,540
Dept. 13 - Retirees	\$140,100	\$148,506	\$157,416	\$166,861	\$176,873	\$187,485
Dept. 14 - RBWTP	\$2,889,009	\$3,076,914	\$3,277,041	\$3,490,185	\$3,717,191	\$3,958,963
Dept. 16 - Blending Facility	\$110,750	\$116,492	\$115,543	\$121,828	\$128,524	\$135,663
Dept. 24 - Southpark Well	\$46,500	\$50,776	\$55,574	\$60,963	\$67,023	\$73,844
Fund02 Transfer to Fund01	\$0	\$9,286	\$19,575	\$30,950	\$43,499	\$57,321
Additional Staffing Needs	\$0	\$136,018	\$607,725	\$1,209,499	\$1,647,152	\$2,122,699
Total	\$18,074,592	\$19,026,326	\$20,285,169	\$22,005,012	\$23,594,794	\$25,346,680

Line Item	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Dept. 00 - District	\$10,345,500	\$11,172,530	\$11,687,083	\$12,448,343	\$13,386,161
Dept. 01 - Corpyard	\$702,934	\$734,254	\$767,248	\$802,035	\$838,738
Dept. 02 - Transmission & Distribution	\$3,490,630	\$3,493,309	\$3,662,094	\$4,064,624	\$4,063,463
Dept. 03 - Customer	\$2,680,565	\$2,775,168	\$2,937,396	\$3,042,701	\$3,220,020
Dept. 04 - Office	\$374,388	\$368,365	\$384,238	\$401,215	\$419,410
Dept. 05 - Administrative	\$1,849,365	\$1,926,071	\$2,006,183	\$2,089,862	\$2,177,278
Dept. 08 - Stonecreek Well	\$198,836	\$223,826	\$252,188	\$284,386	\$320,913
Dept. 09 - Glen Park Well	\$360,733	\$408,261	\$462,294	\$523,733	\$593,535
Dept. 10 - Delta Coves	\$40,239	\$43,862	\$47,883	\$52,349	\$57,309
Dept. 11 - Backflow	\$95,524	\$98,390	\$101,342	\$104,382	\$107,513
Dept. 12 - Reservoirs	\$47,957	\$50,594	\$53,476	\$56,636	\$60,106
Dept. 13 - Retirees	\$198,735	\$210,659	\$223,298	\$236,696	\$250,898
Dept. 14 - RBWTP	\$4,216,459	\$4,490,704	\$4,782,786	\$5,093,865	\$5,425,177
Dept. 16 - Blending Facility	\$143,275	\$151,397	\$160,066	\$169,322	\$179,196
Dept. 24 - Southpark Well	\$81,529	\$90,196	\$99,977	\$111,025	\$123,499
Fund02 Transfer to Fund01	\$72,519	\$89,204	\$107,497	\$127,526	\$149,429
Additional Staffing Needs	\$2,638,805	\$3,198,314	\$3,346,806	\$3,502,472	\$3,665,671
Total	\$27,537,993	\$29,525,103	\$31,081,854	\$33,111,171	\$35,038,318

4.2.2. Capital Expenses

Projected capital improvement plan costs in the financial plan were provided by District staff through FY 2035. Individual CIP project costs are shown in Table 4-8 and were escalated 5 percent in FY 2026, 4 percent in FY 2027, and 3 percent per year thereafter based on recent increases in, and projected estimates of, construction cost inflation.

Table 4-8: Projected Capital Improvement Plan Costs Through FY 2035

Projects	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
R1 Seismic Upgrades	\$0	\$0	\$0	\$2,500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
R1 Exterior Repaint	\$0	\$0	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
R2 Seismic Upgrades	\$0	\$100,000	\$1,560,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electric Trucks	\$150,000	\$450,000	\$450,000	\$75,000	\$75,000	\$75,000	\$0	\$0	\$0	\$0	\$0
SCADA Server and Software Upgrades	\$88,100	\$0	\$0	\$0	\$0	\$250,000	\$250,000	\$0	\$0	\$0	\$0
Emergency Response Trailer	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Parallel R2/R3 pipeline	\$0	\$0	\$125,000	\$0	\$0	\$2,125,000	\$0	\$0	\$0	\$0	\$0
Water Main & Service Line R&R Program	\$0	\$0	\$0	\$0	\$0	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
RBWTP Capital Improvements	\$811,336	\$939,472	\$575,858	\$663,276	\$500,564	\$698,000	\$698,000	\$698,000	\$698,000	\$698,000	\$698,000
New Backhoe	\$0	\$0	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0
New Dumptruck	\$0	\$0	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0
Vertical Asset Replacement											
Blending Facility	\$110,247	\$213,198	\$95,107	\$28,073	\$0	\$62,195	\$131,269	\$0	\$1,755	\$0	\$60,249
Corporation Yard	\$74,094	\$338,779	\$0	\$0	\$0	\$0	\$179,131	\$22,551	\$0	\$723,988	\$23,104
Delta Coves Chemical Feed Facility	\$0	\$0	\$0	\$0	\$144,217	\$0	\$0	\$0	\$0	\$176,437	\$0
Glen Park Well	\$0	\$44,369	\$0	\$37,823	\$0	\$0	\$0	\$0	\$0	\$0	\$72,150
Randall Bold WTP PS	\$11,388	\$0	\$0	\$291,476	\$0	\$0	\$0	\$0	\$44,142	\$0	\$0
Reservoir 2 & 3 Site	\$0	\$0	\$0	\$0	\$111,021	\$0	\$0	\$0	\$0	\$1,442,337	\$62,400
Stonecreek Well	\$49,523	\$74,945	\$0	\$0	\$0	\$0	\$48,269	\$0	\$0	\$0	\$72,150
Southpark Well (M24)	\$0	\$0	\$200,000	\$0	\$0	\$0	\$239,744	\$0	\$28,073	\$0	\$60,249
Wellhead Treatment	\$0	\$250,000	\$250,000	\$500,000	\$4,000,000	\$0	\$0	\$35,000,000	\$0	\$0	\$0
Generator Corp Yard	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Generator Well	\$0	\$350,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Generator RBWTP	\$0	\$750,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Solar R2/R3 - additional funds	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fuel Farm	\$0	\$500,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total, Uninflated	\$1,294,688	\$5,060,763	\$3,255,965	\$4,595,648	\$4,830,802	\$4,510,195	\$2,546,413	\$36,720,551	\$1,771,970	\$4,040,762	\$2,048,302
Total, Inflated	\$1,294,688	\$5,313,801	\$3,555,514	\$5,169,001	\$5,596,498	\$5,381,826	\$3,129,683	\$46,485,548	\$2,310,481	\$5,426,833	\$2,833,443

4.2.3. Existing Debt Service

The water utility’s outstanding debt service payments related to its various debt issues covered by Fund 01 are shown in Table 4-9. Two of the certificates of participation (COP) are expected to be retired in FY 2030.

Table 4-9: Existing Fund 01 Debt Service

Debt	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
2019 CoP - 2014 Refinance	\$149,155	\$150,190	\$148,120	\$148,810	\$149,270	\$149,500
2022 CoP - 2013 Refinance	\$106,121	\$106,540	\$106,623	\$106,859	\$106,520	\$106,100
2022 CoP - Corp Yard & Solar Project	\$242,556	\$242,650	\$242,593	\$242,883	\$243,001	\$242,948
Total	\$497,831	\$499,380	\$497,336	\$498,552	\$498,791	\$498,548

Line Item	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
2019 CoP - 2014 Refinance	\$0	\$0	\$0	\$0	\$0
2022 CoP - 2013 Refinance	\$0	\$0	\$0	\$0	\$0
2022 CoP - Corp Yard & Solar Project	\$242,724	\$242,828	\$242,742	\$242,965	\$242,978
Total	\$242,724	\$242,828	\$242,742	\$242,965	\$242,978

4.2.4. Proposed New Debt Service

The District anticipates issuing new debt to pay for some capital improvements during the study period, including annual water main improvements and the wellhead treatment project. The estimated total debt proceeds are \$25.9 million. For planning purposes and based on discussions with District staff, the terms for debt issued in FY 2026 are 10 years, 5 percent interest, and an issuance cost of 1.5 percent of the debt issue. Terms for debt issued in FY 2027 are 20 years, 3.5 percent interest, and 1.5 percent issuance cost. Terms for debt issued after FY 2027 are 25 years, 3.5 percent interest, and 1.5 percent issuance cost. As the timing and

cost of the projects become more certain, the District should work with its financial advisor to determine the size, timing, and terms of any bond issue or loan.

Table 4-10: Proposed Total Debt Service

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Existing	\$497,831	\$499,380	\$497,336	\$498,552	\$498,791	\$498,548
New	\$0	\$358,931	\$515,294	\$515,294	\$800,739	\$1,027,925
Total	\$497,831	\$858,311	\$1,012,630	\$1,013,846	\$1,299,530	\$1,526,473
	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035	
Existing	\$242,724	\$242,828	\$242,742	\$242,965	\$242,978	
New	\$1,027,925	\$1,807,712	\$1,807,712	\$1,807,712	\$1,807,712	
Total	\$1,270,648	\$2,050,540	\$2,050,454	\$2,050,677	\$2,050,691	

4.3. Financial Policies

4.3.1. Debt Coverage Requirements

The District must meet or exceed a debt coverage requirement of 125 percent. Debt coverage is calculated by dividing net operating revenues by total debt service in each fiscal year.

4.3.2. Reserve Policies

Reserve policies provide guidelines for sound financial management with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. These risks may include fiscal emergencies, declared water shortages, asset failure, and natural disasters, among others. Adequate cash reserves are required to meet ongoing operating, capital, and debt service requirements. The District has the following reserve policies:

- Operating reserve: The operating reserve is used primarily to meet ongoing cash flow requirements. The District’s operating reserve target level equals 25 percent of annual operating expenses.
- Rate stabilization reserve: The rate stabilization reserve is used during periods of short-term revenue shortages due to economic recession, drought, or other causes to alleviate the need to quickly implement substantial rate increases. The District’s target is \$1 million.
- Capital reserve: The capital reserve is used to cover any unexpected and unplanned infrastructure repairs and replacements not included in the CIP budget. The District’s capital reserve target is \$1.5 million in FY 2025 and \$2 million thereafter.
- Emergency reserve: The current reserve target is \$5,000,000. However, the District plans to reduce that target to \$3,000,000 to lessen future rate increase impacts, as well as phase-in reaching the target. The emergency reserve targets start in FY 2028 at \$500,000 and grow by \$500,000/year until the revised target level of \$3,000,000 is reached.

4.4. Existing Financial Plan – No Revenue Adjustments

To evaluate the need for revenue adjustments (i.e., increases to gross rate revenues), Raftelis first developed a status quo financial plan. The status quo financial plan assumes that current rates remain unchanged over the study period. Table 4-11 combines projected water rate revenues (from Table 4-1, Table 4-2, Table 4-3, and Table 4-4), non-operating revenues (from Table 4-5), O&M expenses (from Table 4-7), debt service (from

Table 4-9 and Table 4-10), and rate-funded capital costs to generate operating cash flow projections under the status quo. In the absence of any revenue adjustments, the water fund will fail to generate sufficient revenue to recover O&M expenses and debt service, and net cash generation becomes increasingly negative in subsequent years.

Under the status-quo financial plan, reserves are projected to fall below target by the end of FY 2026. Debt coverage is projected to fall below the required ratio in FY 2027. The status quo financial plan is insufficient to meet the water fund’s financial needs over the study period. This demonstrates a clear need for revenue adjustments over the study period to increase rate revenues and ensure financial sustainability.

Table 4-11: Water Fund Operating Cashflow – Status Quo Financial Plan

No.	Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
1	Beginning Operating Balance	\$5,126,955	\$6,286,795	\$4,628,418	\$1,778,187	-\$2,632,682	-\$7,913,454
	Revenues						
2	Under Existing Rates	\$19,153,558	\$19,307,152	\$19,462,184	\$19,618,949	\$19,777,175	\$19,936,875
3	Proposed Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
4	Interest Income - LAIF	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
5	Misc Charges	\$317,000	\$317,080	\$317,163	\$317,250	\$317,340	\$317,433
6	Other Revenue	\$868,386	\$866,938	\$871,528	\$876,257	\$881,127	\$886,144
7	Interest Income*	\$113,007	\$108,071	\$63,432	\$0	\$0	\$0
8	Total Revenues	\$20,526,951	\$20,674,241	\$20,789,307	\$20,887,455	\$21,050,642	\$21,215,453
9	Operating Expenses	\$18,074,592	\$18,905,656	\$20,285,169	\$22,005,012	\$23,594,794	\$25,346,680
10	Net Operating Revenue	\$2,452,359	\$1,768,585	\$504,138	-\$1,117,557	-\$2,544,152	-\$4,131,227
	Debt Service						
11	Existing	\$497,831	\$499,380	\$497,336	\$498,552	\$498,791	\$498,548
12	Proposed	\$0	\$358,931	\$515,294	\$515,294	\$800,739	\$1,027,925
13	Total Debt Service	\$497,831	\$858,311	\$1,012,630	\$1,013,846	\$1,299,530	\$1,526,473
14	Rate Funded Capital	\$794,688	\$2,568,650	\$2,341,740	\$2,279,466	\$1,437,091	\$2,363,071
15	Net Cashflow	\$1,159,840	-\$1,658,376	-\$2,850,232	-\$4,410,868	-\$5,280,773	-\$8,020,771
16	Ending Balance	\$6,286,795	\$4,628,418	\$1,778,187	-\$2,632,682	-\$7,913,454	-\$15,934,225
17	Minimum Target Reserve	\$5,518,648	\$5,726,414	\$6,071,292	\$6,501,253	\$6,898,698	\$7,336,670
18	Projected Debt Coverage	4.93	2.06	0.50	-1.10	-1.96	-2.71
19	Required Debt Coverage	1.25	1.25	1.25	1.25	1.25	1.25

* Interest Income goes to zero in FY 2028 due to the reserve funds being fully depleted under current rates.

4.5. Proposed Financial Plan and Revenue Adjustments

The proposed revenue adjustments help ensure adequate revenue to fund operating, debt service, and capital expenses as well as meet debt coverage requirements and reserve targets. The financial plan modeling assumes the first revenue adjustment occurs on August 1, 2025. The proposed revenue adjustments, along with a few draws on reserves, will enable the District to meet operating costs and to execute the planned capital program. Table 4-12 shows the proposed revenue adjustments for the rate-setting period. Adjustments beyond the 5-year rate setting period are shown for informational purposes only.

Table 4-12: Proposed Revenue Adjustments

Effective Date	Revenue Adjustment
1-Aug-25	7.50%
1-Jul-26	7.25%
1-Jul-27	7.00%
1-Jul-28	7.00%
1-Jul-29	7.00%
1-Jul-30	7.00%
1-Jul-31	7.00%
1-Jul-32	7.00%
1-Jul-33	7.00%
1-Jul-34	7.00%

Table 4-13 shows the cash flow detail through the study period. Line 8 shows total revenue, which is the sum of revenue from current rates (Line 2), additional rate revenue resulting from the proposed revenue adjustments (Line 3), and other revenues (Lines 4-7). Operating expenses are shown in Lines 9-25. Line 27 shows net operating revenue, which is calculated by subtracting operating expenses (Line 26) from total revenue (Line 8). Line 30 shows total debt service. Line 31 shows capital expenditures to be funded through rates during the study period. Line 32 is the annual surplus/(deficit) and equals net operating revenue (Line 27) less the sum of debt (Line 30) and capital (Line 31). A positive value indicates an addition to the reserve balance and a negative value indicates a withdrawal from reserves.

Ending balances for the operating fund in Line 33 are determined by summing the starting balance in Line 1 and the net cash change in Line 32. The District provided the starting balance for FY 2025. The ending fund balance is projected to be at or above the minimum reserve level (operating + rate stabilization, Line 34) from FY 2026 through FY 2035.

Debt service coverage (Line 35) is calculated by dividing net operating revenue (Line 27) by total debt service (Line 30) and is expected to stay above the minimum coverage requirement ratio of 1.25 over the study period.

Table 4-14 summarizes the capital sources and uses of funds. The District plans to use a mix of cash, debt, and grants to fund its capital program. The ending balance is projected to reach the desired target level in FY 2029.

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Table 4-13: Projected Water Utility Operating Cashflow Detail

No.	Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
1	Beginning Operating Balance	\$5,126,955	\$6,286,795	\$5,847,182	\$6,027,589	\$6,322,834	\$7,507,656	\$7,860,978	\$9,017,368	\$10,819,674	\$12,282,971	\$11,393,576
Revenues												
2	Under Existing Rates	\$19,153,558	\$19,307,152	\$19,462,184	\$19,618,949	\$19,777,175	\$19,936,875	\$20,098,343	\$20,261,309	\$20,425,784	\$20,592,063	\$20,759,877
3	Proposed Revenue Adjustments	\$0	\$1,327,367	\$2,976,498	\$4,583,833	\$6,328,659	\$8,221,928	\$10,275,597	\$12,502,332	\$14,915,894	\$17,531,376	\$20,364,635
4	Interest Income - LAIF	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
5	Misc Charges	\$317,000	\$317,080	\$317,163	\$317,250	\$317,340	\$317,433	\$317,531	\$317,632	\$317,737	\$317,847	\$317,960
6	Other Revenue	\$868,386	\$866,938	\$871,528	\$876,257	\$881,127	\$886,144	\$891,311	\$896,634	\$902,116	\$907,763	\$913,580
7	Interest Income	\$113,007	\$120,138	\$117,572	\$122,281	\$136,936	\$152,165	\$167,112	\$196,406	\$228,739	\$234,421	\$253,366
8	Total Revenues	\$20,526,951	\$22,013,675	\$23,819,945	\$25,593,569	\$27,516,237	\$29,589,545	\$31,824,895	\$34,249,312	\$36,865,270	\$39,658,470	\$42,684,418
Operating Expenses												
9	Dept. 00 - District	\$7,154,805	\$7,919,610	\$8,118,229	\$8,455,234	\$9,080,180	\$9,637,403	\$10,345,500	\$11,172,530	\$11,687,083	\$12,448,343	\$13,386,161
10	Dept. 01 - Corpyard	\$619,748	\$567,993	\$592,385	\$617,994	\$644,899	\$673,182	\$702,934	\$734,254	\$767,248	\$802,035	\$838,738
11	Dept. 02 - Transmission & Distribution	\$2,729,836	\$2,617,420	\$2,731,434	\$3,038,193	\$3,003,527	\$3,164,245	\$3,490,630	\$3,493,309	\$3,662,094	\$4,064,624	\$4,063,463
12	Dept. 03 - Customer	\$2,041,569	\$2,110,130	\$2,234,748	\$2,311,084	\$2,447,084	\$2,532,067	\$2,680,565	\$2,775,168	\$2,937,396	\$3,042,701	\$3,220,020
13	Dept. 04 - Office	\$333,300	\$306,724	\$302,329	\$314,016	\$326,395	\$356,918	\$374,388	\$368,365	\$384,238	\$401,215	\$419,410
14	Dept. 05 - Administrative	\$1,452,526	\$1,511,785	\$1,573,629	\$1,638,180	\$1,705,563	\$1,775,911	\$1,849,365	\$1,926,071	\$2,006,183	\$2,089,862	\$2,177,278
15	Dept. 08 - Stonecreek Well	\$225,800	\$111,789	\$125,136	\$140,254	\$157,386	\$176,808	\$198,836	\$223,826	\$252,188	\$284,386	\$320,913
16	Dept. 09 - Glen Park Well	\$179,100	\$196,116	\$221,224	\$249,736	\$282,122	\$318,918	\$360,733	\$408,261	\$462,294	\$523,733	\$593,535
17	Dept. 10 - Delta Coves	\$28,550	\$26,739	\$28,930	\$31,347	\$34,017	\$36,970	\$40,239	\$43,862	\$47,883	\$52,349	\$57,309
18	Dept. 11 - Backflow	\$80,000	\$82,400	\$84,872	\$87,418	\$90,041	\$92,742	\$95,524	\$98,390	\$101,342	\$104,382	\$107,513
19	Dept. 12 - Reservoirs	\$43,000	\$37,627	\$39,379	\$41,271	\$43,318	\$45,540	\$47,957	\$50,594	\$53,476	\$56,636	\$60,106
20	Dept. 13 - Retirees	\$140,100	\$148,506	\$157,416	\$166,861	\$176,873	\$187,485	\$198,735	\$210,659	\$223,298	\$236,696	\$250,898
21	Dept. 14 - RBWTP	\$2,889,009	\$3,076,914	\$3,277,041	\$3,490,185	\$3,717,191	\$3,958,963	\$4,216,459	\$4,490,704	\$4,782,786	\$5,093,865	\$5,425,177
22	Dept. 16 - Blending Facility	\$110,750	\$116,492	\$115,543	\$121,828	\$128,524	\$135,663	\$143,275	\$151,397	\$160,066	\$169,322	\$179,196
23	Dept. 24 - Southpark Well	\$46,500	\$50,776	\$55,574	\$60,963	\$67,023	\$73,844	\$81,529	\$90,196	\$99,977	\$111,025	\$123,499
24	Fund02 Transfer to Fund01	\$0	\$9,286	\$19,575	\$30,950	\$43,499	\$57,321	\$72,519	\$89,204	\$107,497	\$127,526	\$149,429
25	Additional Staffing Needs	\$0	\$136,018	\$607,725	\$1,209,499	\$1,647,152	\$2,122,699	\$2,638,805	\$3,198,314	\$3,346,806	\$3,502,472	\$3,665,671
26	Total Operating	\$18,074,592	\$19,026,326	\$20,285,169	\$22,005,012	\$23,594,794	\$25,346,680	\$27,537,993	\$29,525,103	\$31,081,854	\$33,111,171	\$35,038,318
27	Net Revenues	\$2,452,359	\$2,987,349	\$3,534,776	\$3,588,557	\$3,921,443	\$4,242,866	\$4,286,902	\$4,724,210	\$5,783,416	\$6,547,299	\$7,646,101
Debt Service												
28	Existing	\$497,831	\$499,380	\$497,336	\$498,552	\$498,791	\$498,548	\$242,724	\$242,828	\$242,742	\$242,965	\$242,978
29	Proposed	\$0	\$358,931	\$515,294	\$515,294	\$800,739	\$1,027,925	\$1,027,925	\$1,807,712	\$1,807,712	\$1,807,712	\$1,807,712
30	Total Debt Service	\$497,831	\$858,311	\$1,012,630	\$1,013,846	\$1,299,530	\$1,526,473	\$1,270,648	\$2,050,540	\$2,050,454	\$2,050,677	\$2,050,691
31	Rate Funded Capital	\$794,688	\$2,568,650	\$2,341,740	\$2,279,466	\$1,437,091	\$2,363,071	\$1,859,864	\$871,363	\$2,269,664	\$5,386,017	\$2,792,626
32	Annual Surplus (Deficit)	\$1,159,840	-\$439,612	\$180,406	\$295,246	\$1,184,822	\$353,322	\$1,156,390	\$1,802,306	\$1,463,297	-\$889,395	\$2,802,784
33	Ending Operating Balance	\$6,286,795	\$5,847,182	\$6,027,589	\$6,322,834	\$7,507,656	\$7,860,978	\$9,017,368	\$10,819,674	\$12,282,971	\$11,393,576	\$14,196,360
34	<i>Minimum Operating Reserve Target</i>	<i>\$5,518,648</i>	<i>\$5,756,581</i>	<i>\$6,071,292</i>	<i>\$6,501,253</i>	<i>\$6,898,698</i>	<i>\$7,336,670</i>	<i>\$7,884,498</i>	<i>\$8,381,276</i>	<i>\$8,770,464</i>	<i>\$9,277,793</i>	<i>\$9,759,579</i>
35	Debt Coverage	4.93	3.48	3.49	3.54	3.02	2.78	3.37	2.30	2.82	3.19	3.73

Table 4-14: Projected Capital Sources and Uses of Funds

Line Item	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035
Beginning Capital Balance	\$1,000,000	\$515,152	\$510,254	\$1,015,255	\$1,525,407	\$2,035,610	\$2,040,764	\$2,040,816	\$2,040,816	\$2,040,816	\$2,040,816
Sources											
Rate Funded	\$794,688	\$2,568,650	\$2,341,740	\$2,279,466	\$1,437,091	\$2,363,071	\$1,859,864	\$871,363	\$2,269,664	\$5,386,017	\$2,792,626
Grant Funded	\$0	\$0	\$1,482,900	\$1,405,950	\$0	\$1,789,887	\$0	\$31,648,182	\$0	\$0	\$0
Debt Funded	\$0	\$2,730,000	\$220,620	\$1,968,330	\$4,634,000	\$1,193,258	\$1,229,056	\$13,925,186	\$0	\$0	\$0
Interest Income	\$15,152	\$10,254	\$15,255	\$25,407	\$35,610	\$40,764	\$40,816	\$40,816	\$40,816	\$40,816	\$40,816
Total Sources	\$809,840	\$5,308,904	\$4,060,515	\$5,679,153	\$6,106,701	\$5,386,979	\$3,129,735	\$46,485,548	\$2,310,481	\$5,426,833	\$2,833,443
Uses											
Capital	\$1,294,688	\$5,313,801	\$3,555,514	\$5,169,001	\$5,596,498	\$5,381,826	\$3,129,683	\$46,485,548	\$2,310,481	\$5,426,833	\$2,833,443
Total Uses	\$1,294,688	\$5,313,801	\$3,555,514	\$5,169,001	\$5,596,498	\$5,381,826	\$3,129,683	\$46,485,548	\$2,310,481	\$5,426,833	\$2,833,443
Ending Balance	\$515,152	\$510,254	\$1,015,255	\$1,525,407	\$2,035,610	\$2,040,764	\$2,040,816	\$2,040,816	\$2,040,816	\$2,040,816	\$2,040,816
<i>Desired Capital Reserve Target</i>	<i>\$1,500,000</i>	<i>\$2,000,000</i>	<i>\$2,000,000</i>	<i>\$2,000,000</i>	<i>\$2,000,000</i>						

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The next four figures display the proposed study period financial plan in graphical form. Figure 4-1 illustrates the financial plan, which compares existing and proposed revenues with projected expenses. The expenses include O&M (including water supply costs), debt service, cash-funded capital projects, and reserve funding. Expenses are represented by the stacked bars. Total projected revenues at existing and proposed rates are shown by the teal and black lines, respectively. Figure 4-1 shows that projected revenue from existing rates (teal line) would fail to generate sufficient revenue to fund projected expenses over the study period. But revenue from proposed revenue adjustments (black line) with a few draws on reserves, keeps pace with forecasted annual expenditures.

Figure 4-1: Proposed Financial Plan

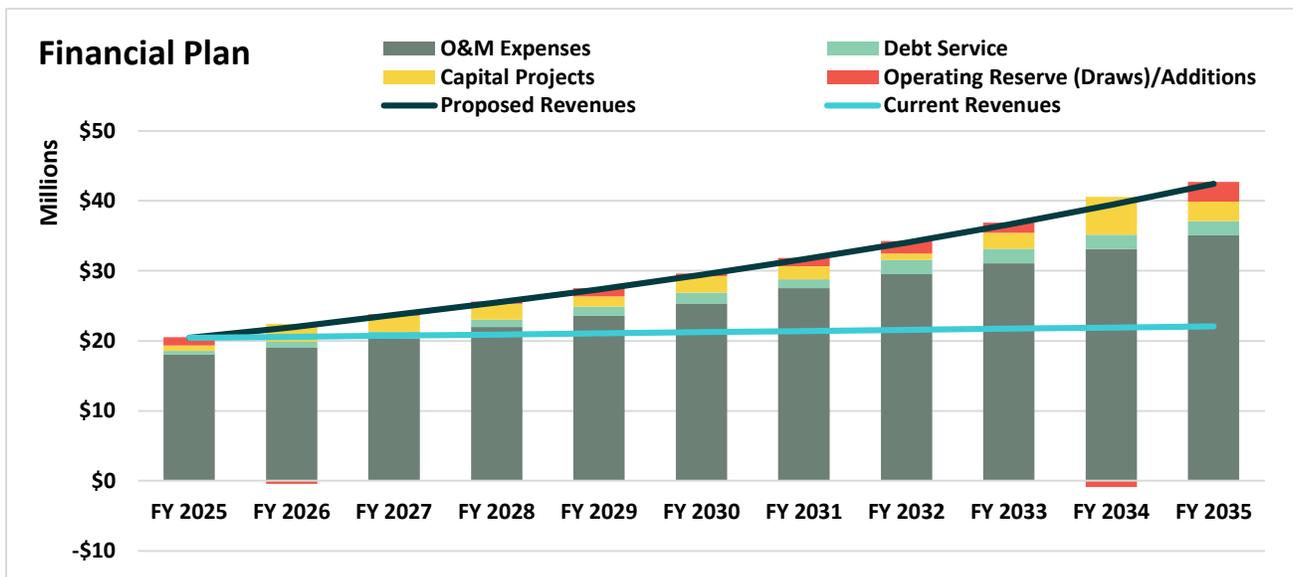


Figure 4-2 summarizes projected CIP expenditures (inflated) by funding source. Capital is anticipated to be funded with cash, grants, and debt. FY 2032 includes the bulk of the wellhead treatment project.

Figure 4-2: Projected CIP and Funding Sources

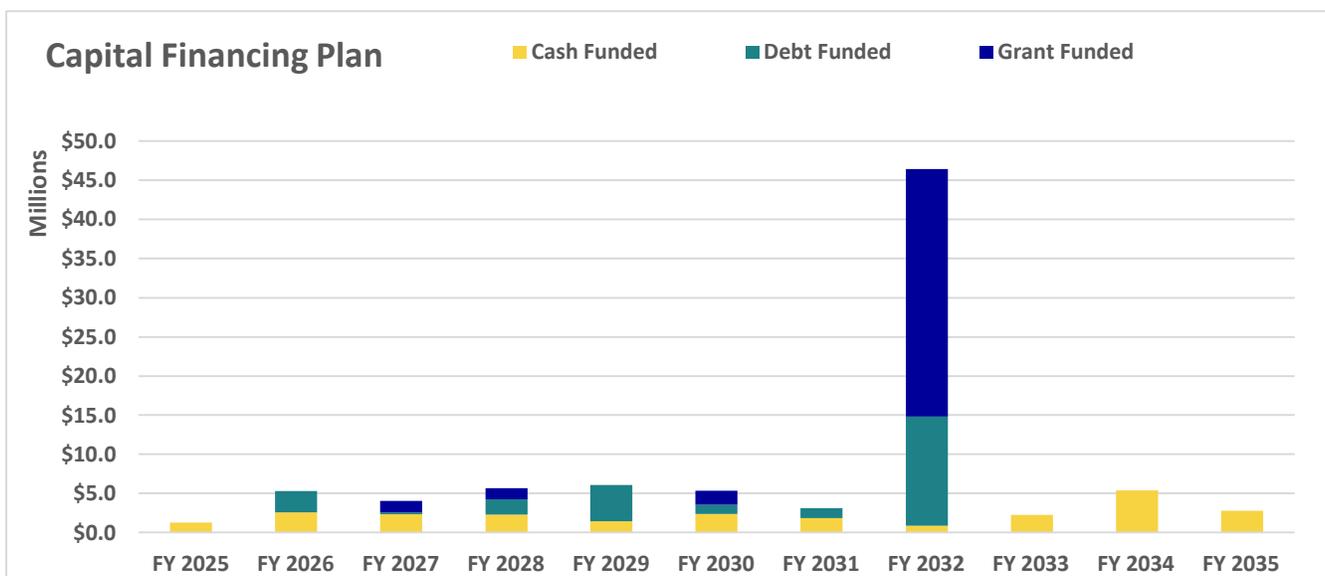


Figure 4-3 shows projected debt service coverage in blue versus the minimum required in grey. Figure 4-3 demonstrates that with the proposed annual revenue adjustments, the debt coverage requirement is exceeded throughout the study period.

Figure 4-3: Projected Debt Coverage

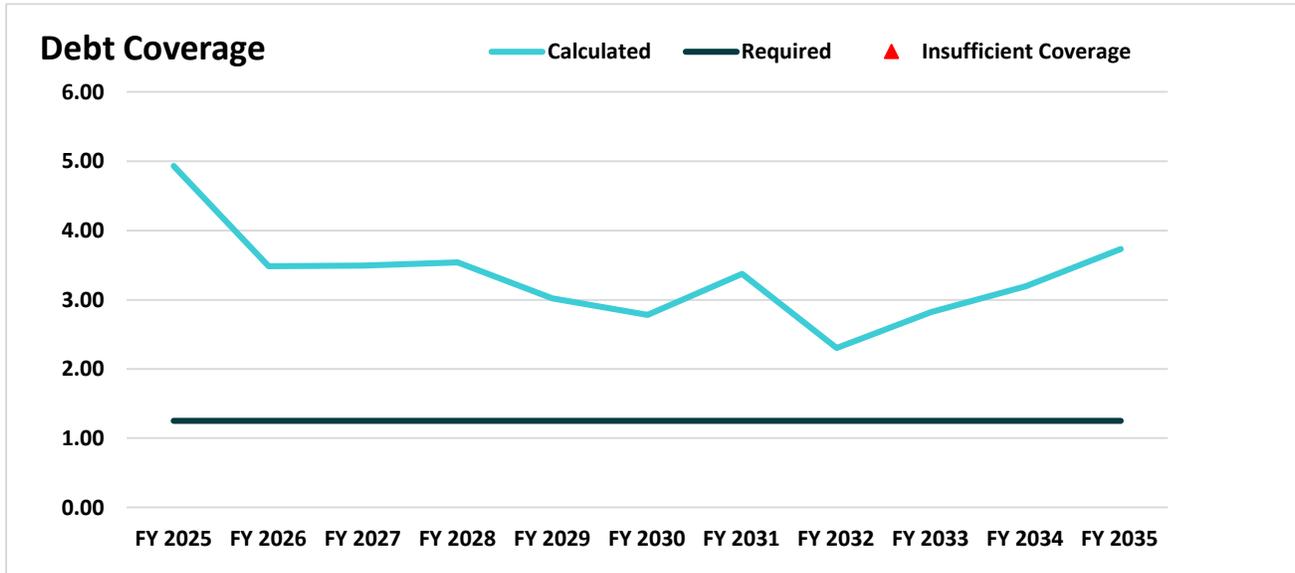
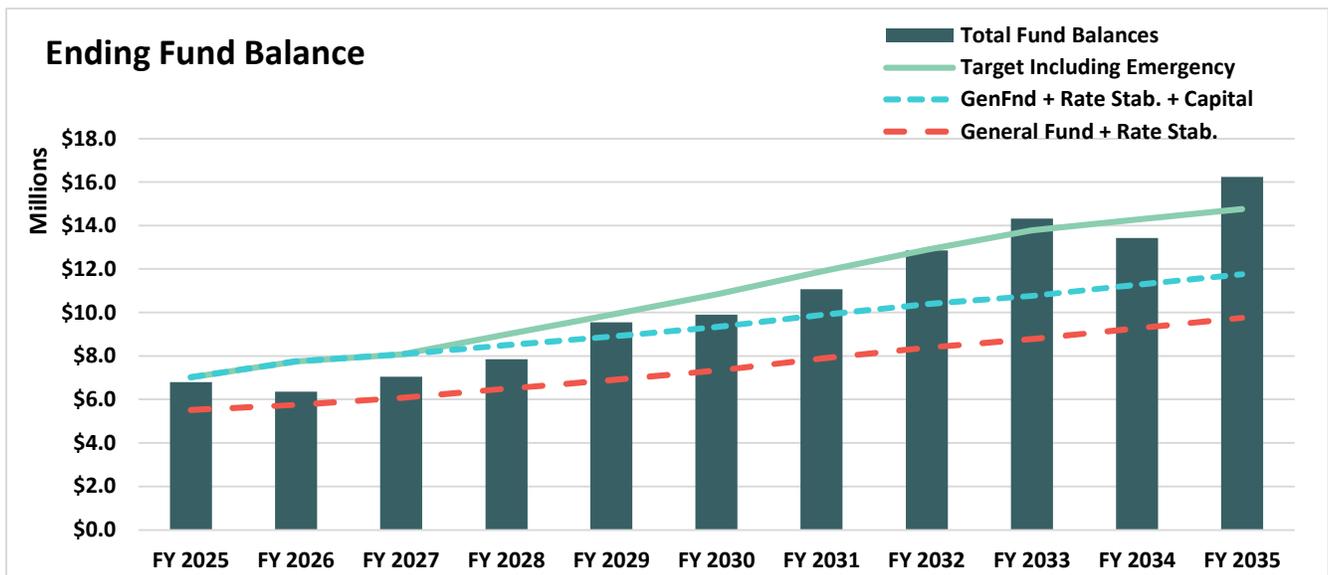


Figure 4-4 displays the water utility’s projected yearly ending balance (bars). The minimum reserve target (operating plus rate stabilization) is shown by the dashed, red line. The next reserve level adds in the capital reserve target and is shown by the dashed, blue line. The total desired reserve target adds in the emergency reserve and is shown by the green line. Figure 4-4 demonstrates that under the proposed financial plan, the fund balance gradually increases over time, meeting the total desired reserve target in FY 2033 and FY 2035.

Figure 4-4: Total Reserve Ending Balance



5. Cost-of-Service Analysis

5.1. Methodology

The principles and methodology of a cost-of-service analysis were described in Section 1.3 and are detailed in this sub-section. The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. A cost-of-service analysis involves the following:

1. **Identify Test Year Revenue Requirements.** The total revenue requirement each year is determined in the financial plan. For the cost-of-service analysis, FY2026 is used as the test year.
2. **Functionalize costs.** Examples of functions are supply, treatment, transmission, distribution, storage, fire service, meter servicing, and customer billing and collection.
3. **Allocate functionalized costs to cost components.** Cost components include variable supply, base delivery, maximum day, maximum hour, conservation, public fire protection, backflow device, meter service, and customer servicing and billing costs.
4. **Develop unit costs** for each cost component using appropriate units of service.
5. **Distribute the cost components.** Distribute costs using unit costs to customer classes in proportion to their demands and burdens on the water system. This is described in the M1 Manual published by AWWA.

A cost-of-service analysis considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands). Peaking costs are costs that are incurred during peak times of consumption. Additional costs are associated with designing, constructing, operating, and maintaining facilities to meet peak demands. These peak demand costs need to be allocated to those customers whose water usage patterns generate additional costs for the utility. In other words, as demonstrated by the District's data, not all customer classes and not all customers share the same responsibility for peaking-related costs.

The first step in the cost-of-service analysis is to determine the revenue required from rates for a test year. After determining a utility's revenue requirement, the next step in a cost-of-service analysis is to functionalize costs. The functionalization of costs allows us to better allocate to the cost causation components (plainly, cost components). Organizing the costs in terms of end function allows direct correlation between the cost component and the rate, coupling the cost incurred by the utility to the demand and burden that the customer places on the utility's system and water resources. The costs incurred are generally responsive to the specific service requirements or cost drivers imposed on the system and its water resources by its customers. The functions for the cost-of-service analysis include:

- Water Supply - costs related to producing and/or purchasing water supply
- Treatment - cost of treating water to drinking water quality
- Transmission and Distribution (T&D) - cost associated with operating, maintaining, and building of pipes, pumps, mains, etc.
- Storage - cost associated with storing treated water
- Meters - costs associated with meter service, maintenance, and replacement
- Public Fire Protection – costs associated with fire hydrants including maintenance and replacement

- Customer Service and Billing - costs associated with meter reading, billing, and addressing customer questions
- Conservation – costs associated with addressing questions from high-use residential customers
- Fire Detector Assembly – costs associated with the testing, maintenance and future replacement of the assembly and meter
- Fire Service Lateral – costs associated with the future replacement of the service line
- Backflow – costs associated with maintaining the backflow devices
- General & Administration - costs associated with the administration of the water system or those costs that are general in nature and allocated to direct cost components pro rata

The functionalized costs are then allocated to the cost components⁵. The cost components include:

- **Supply** costs directly associated with the “Supply” function.
- **Base Delivery** costs vary with the total quantity of water used within the water system under average daily conditions. These costs may include treatment, transmission and distribution facilities, storage costs, and capital costs associated with serving customers at a consistent, or average, rate of use.
- **Peaking** costs are divided into maximum day and maximum hour demand. The maximum day demand is the maximum amount of water used in a single day in a year. The maximum hour demand is the maximum usage in an hour on the maximum usage day. Different facilities, such as storage and distribution facilities and infrastructure, and the capital and O&M costs associated with those facilities, are designed to meet the peak demands placed on the system by customers. Therefore, extra capacity costs include the O&M and capital costs associated with meeting peak customer demands greater than the average rate of use.
- **Customer Service** costs are those directly associated with serving customers, irrespective of the amount of water used, and generally include meter reading, bill generation, accounting, customer service, and collection expenses.
- **Meter** costs include maintenance and capital costs related to water meters and associated services. Costs incurred are generally proportional to the size of the water meter.
- **Fire Protection** are costs of providing public and private fire protection services. They include both direct and indirect capital and maintenance costs for fire hydrants and private fire connections, as well as indirect costs for storage and distribution of water as these facilities and infrastructure must be upsized to meet fire flow demand.
- **Backflow** costs are associated with maintaining and replacing the backflow devices
- **Conservation** costs are associated with the District's water conservation efforts, which comprise customer support to the top tier residential water users.

This method of functionalizing costs is consistent with the AWWA M1 Manual and is widely used in the water industry to perform cost-of-service analyses.

⁵ This study uses the base-extra capacity methodology set forth in the M1 Manual for functionalizing and allocating costs.

5.2. Cost-of-Service Calculations

5.2.1. Revenue Requirement Determination

Table 5-1 shows the net revenue requirement from rates for FY 2026, the test year (Column C, Line 13). The total shown in Column C is equal to the cost of service to be recovered through rates. The O&M revenue requirement includes costs directly related to supply, treatment, and transmission and distribution of water, as well as routine maintenance of system facilities. The capital-related revenue requirements include costs directly related to funding the capital program and the associated debt service obligations. Raftelis calculated the revenue requirement using FY 2026 expenses. The rate revenue requirement is adjusted for revenue offsets from other sources and for other adjustments. The total revenue requirement is the amount that fixed and commodity rates are designed to collect.

The total revenue requirement shown in Line 4 is equal to operating expenses (Table 4-7) and capital-related expenses (Table 4-10 and Line 31 of Table 4-13). Revenues from other sources, totaled in Line 9, comprise miscellaneous and other revenues and interest income (Table 4-13 Lines 4-7) and reduce the total revenue required from rates. The transfer to(from) cash balance (Line 10) equals the net cash change in FY 2026, which represents the amount by which reserves are decreasing during the test year. The annualized increase (Line 11) reflects that the FY 2026 revenue adjustment occurs one month into the fiscal year and is used to annualize the rates for an entire fiscal year. To arrive at total revenue requirements, we add revenue offsets (shown as negative values in the table) and adjustments to the subtotal revenue requirement. This total is the amount that monthly meter service charges, private fire charges, backflow charges, and volume charges are designed to collect.

Table 5-1: FY 2026 Revenue Requirement Determination

No.	Revenue Requirement - FY 2026	Operating (A)	Capital-Related (B)	Total (C)
Revenue Requirements				
1	O&M Expenses	\$19,026,326		\$19,026,326
2	Debt Service		\$858,311	\$858,311
3	Rate Funded CIP		\$2,568,650	\$2,568,650
4	Subtotal - Revenue Requirements	\$19,026,326	\$3,426,961	\$22,453,287
Revenue Offsets				
5	Interest Income - LAIF	-\$75,000		-\$75,000
6	Misc Charges	-\$317,080		-\$317,080
7	Other Revenue	-\$866,938		-\$866,938
8	Interest Income	-\$120,138		-\$120,138
9	Subtotal - Revenue Offsets	-\$1,379,156	\$0	-\$1,379,156
Adjustments				
10	Transfers to(from) Cash Balance	-\$439,612		-\$439,612
11	Adjustment to Annualize Rate Increase	\$120,670		\$120,670
12	Total - Adjustments	-\$318,942	\$0	-\$318,942
13	Total Costs to be Recovered from Rates	\$17,328,227	\$3,426,961	\$20,755,188

5.2.2. Peaking Factors

A significant portion of the water system costs are based on the peaking characteristics of the different customer classes. A water system is designed to meet different requirements, including average water demands, extra-capacity/peak demands, and fire flow requirements. Peaking costs are divided into maximum day (Max Day) and maximum hour (Max Hour) demand. The Max Day demand is the maximum amount of water used in a single day over a full year. The Max Hour demand is the maximum use in an hour on the Max Day. For example, storage and treatment components of the water system are designed to handle Max Day requirements while the distribution system is designed for Max Hour demands.

Table 5-2 shows the system-wide peaking factors used to derive the cost component allocation bases for base delivery (average daily demand delivery), max day, and max hour costs. Raftelis utilized max day and max hour factors based on hourly AMI data and annual billing data. Base Delivery use is considered average daily demand over one year, which is normalized to a factor of 1.00 (Column A, Line 1). The max day factor (Column A, Line 2) is the non-coincident maximum day usage for each customer class from the AMI data divided by the annual average daily use. The max hour factor (Column A, Line 3) is the maximum hour usage on each class’s maximum day from the AMI data (converted to a daily amount by multiplying by 24 hours in a day) divided by the annual average daily use.

Table 5-2: System-wide Peaking Factors and Allocation to Cost-causation Components

No.	Description	Systemwide Peaking Factor (A)	Base Delivery (B)	Max Day (C)	Peak Hour (D)
1	Base	1.00	100.0%		
2	Max Day	1.50	66.7%	33.3%	
3	Peak Hour	2.60	38.5%	19.2%	42.3%

The allocation bases (Columns B, C, and D) are calculated using the equations outlined below. Columns are represented in these equations as letters and rows are represented as numbers. For example, Column C, Line 2 is shown as C2.

The max day allocations are calculated as follows:

$$\text{Base (B2)} = A1 / A2 \times 100\%$$

$$\text{Max Day (C2)} = 100\% - B2$$

The peak hour allocations are calculated as follows:

$$\text{Base (B3)} = A1 / A3 \times 100\%$$

$$\text{Max Day (C3)} = (A2 - A1) / A3 \times 100\%$$

$$\text{Peak Hour (D3)} = 100\% - B3 - C3$$

5.2.3. Allocation of Expenses to Cost Causation Components

After functionalizing expenses, the next step is to allocate the functionalized expenses to cost-causation components. Table 5-3 shows the allocation basis for the water utility’s O&M and capital-related costs. The top row shows the cost-causation components. The allocation basis for each functional category is shown in Column A. Most functional categories are allocated entirely to the cost causation component. However, at the

District’s direction, customer service (CS) and billing costs are allocated 100 percent to the meter function to align more closely with the District’s past practice. The allocation basis for functional categories not allocated entirely to a single cost causation component is as follows:

- Functional categories allocated based on Max Day demand:** Storage and treatment are designed to accommodate maximum day water demand. Therefore, all Storage costs are allocated to the Base Delivery and Max Day cost causation components based on the Max Day allocation from Table 5-2. At District staff direction, Treatment costs have been allocated 50 percent to Base and 50 percent to Max Day. While the treatment plant/equipment is sized to meet peak day demands, the plant is currently being used at 50 percent of capacity. However, the assets required to support peak day now and in the future are experiencing required repair and rehabilitation costs now. Also, when peak day demands occur, additional pumps are required, which increases the PG&E peaking charges that are otherwise minimized during average day demands. The Supply function also has a max day component since the District’s wholesale water purchase cost includes a demand charge.
- Functional categories allocated based on Max Hour demand:** Transmission and distribution infrastructure is designed to accommodate maximum hour water demand; therefore, all T&D costs are allocated to the Base Delivery, Max Day, and Max Hour cost causation components based on the Max Hour allocation from Table 5-2.

Table 5-3: Allocation of Functions to Cost-Causation Components

Functional Allocation	Rationale (A)	Supply (B)	Base-Delivery (C)	Max Day (D)	Max Hour (E)	Meters (F)	Public Fire (G)	Conser- vation (H)	Fire DA (I)	Fire Srvc Lateral (J)	Backflow Charge (K)	General (L)	Total (M)
Supply	Supply & Max Day	85.3%		14.7%									100%
Treatment	Max Day		50.0%	50.0%									100%
T&D	Max Hour		38.5%	19.2%	42.3%								100%
Storage	Max Day		66.7%	33.3%									100%
Meters	Meters					100.0%							100%
Public Fire	Fire						100.0%						100%
CS/Billing	Billing					100.0%							100%
Conservation	Conservation							100.0%					100%
Fire Detr. Assembly	Fire DA								100.0%				100%
Fire Srvc Lateral	Fire SL									100.0%			100%
Backflow Charge	BF Charge										100.0%		100%
General & Admin	General											100.0%	100%

5.2.4. Functionalization of O&M Expenses

After determining the revenue requirement and systemwide peaking allocation basis, the next step of the cost-of-service analysis is to allocate O&M expenses and capital assets to functional categories. With assistance and input from District staff, Raftelis functionalized the water utility’s projected O&M budget for the test year on a line-item basis. Each line item was assigned to one of the functional categories listed at the beginning of Section 5. Table 5-4 shows a summary of the functionalization of the District’s O&M expenses.

Functionalizing O&M expenses allows Raftelis to follow the principles of rate-setting theory in which the end goal is to allocate the District’s O&M expenses to cost-causation components and ultimately to user classes.

Table 5-4: FY 2026 O&M Expenses by Functional Category

Function	Amount	Percentage
Supply	\$6,361,381	33.4%
Treatment	\$3,299,721	17.3%
T&D	\$2,036,889	10.7%
Storage	\$63,862	0.3%
Meters	\$1,381,800	7.3%
Public Fire	\$74,900	0.4%
CS/Billing	\$1,355,577	7.1%
Conservation	\$311,556	1.6%
Fire Detr. Assembly	\$85,067	0.4%
Fire Srvc Lateral	\$34,204	0.2%
Backflow Charge	\$510,701	2.7%
General & Admin	\$3,510,667	18.5%
Total	\$19,026,326	100%

The O&M costs by function (Table 5-4) are multiplied by the percentages shown in Table 5-3 to determine the dollar amount to be allocated to each cost-causation component in Columns A-K of Table 5-5. The second to last line of the table shows the allocation of the O&M expenses into the cost-causation components. Additionally, the allocation of costs excluding fire detector assembly (Fire DA), fire service lateral, and backflow are shown in the last line.

Table 5-5: Allocation of O&M Expenses to Cost-Causation Components

Operating Expenses	Supply (A)	Base-Delivery (B)	Max Day (C)	Max Hour (D)	Meters (E)	Public Fire (F)	Conser- vation (G)	Fire DA (H)	Fire Srvc Lateral (I)	Backflow Charge (J)	General (K)	Total (L)
Supply	\$5,425,868	\$0	\$935,513	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,361,381
Treatment	\$0	\$1,649,861	\$1,649,861	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,299,721
T&D	\$0	\$784,536	\$391,760	\$860,593	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,036,889
Storage	\$0	\$42,593	\$21,269	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$63,862
Meters	\$0	\$0	\$0	\$0	\$1,381,800	\$0	\$0	\$0	\$0	\$0	\$0	\$1,381,800
Public Fire	\$0	\$0	\$0	\$0	\$0	\$74,900	\$0	\$0	\$0	\$0	\$0	\$74,900
CS/Billing	\$0	\$0	\$0	\$0	\$1,355,577	\$0	\$0	\$0	\$0	\$0	\$0	\$1,355,577
Conservation	\$0	\$0	\$0	\$0	\$0	\$0	\$311,556	\$0	\$0	\$0	\$0	\$311,556
Fire DA	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$85,067	\$0	\$0	\$0	\$85,067
Fire Srvc Lateral	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$34,204	\$0	\$0	\$34,204
Backflow Charge	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$510,701	\$0	\$510,701
General & Admin	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,510,667	\$3,510,667
Total	\$5,425,868	\$2,476,990	\$2,998,403	\$860,593	\$2,737,377	\$74,900	\$311,556	\$85,067	\$34,204	\$510,701	\$3,510,667	\$19,026,326
Allocation	28.5%	13.0%	15.8%	4.5%	14.4%	0.4%	1.6%	0.4%	0.2%	2.7%	18.5%	100%
Allocation Excl. (1)	29.5%	13.5%	16.3%	4.7%	14.9%	0.4%	1.7%	0.0%	0.0%	0.0%	19.1%	100%

(1) Excluding fire detector assembly, fire service lateral, and backflow.

5.2.5. Functionalization of Assets

Capital assets are utilized in the cost-of-service analysis to allocate the capital revenue requirement to the various cost causation components. The distribution of short-term CIP project costs can be heavily weighted to specific cost causation components based on the type of projects. Use of short-term plans to allocate capital costs may cause rates to fluctuate and result in customer confusion. The overall water asset base, however, is considerably stable in the long term, and therefore, is more representative of long-term capital investment in the District’s water system. Thus, functionalized capital assets are used to allocate capital costs. This

distribution of costs allows the allocation of capital-related expenses to the cost-causation components previously defined in this section.

Raftelis was provided an asset list for the District’s water utility for FY 2024 that included the original cost of each individual asset. Raftelis assigned each listed asset to a functional category and calculated the value of each asset using the replacement cost less depreciation (RCLD) valuation method using the Engineering News-Record’s San Francisco Cost Construction Index (CCI) to account for capital cost inflation. Table 5-6 shows a summary of water utility assets by functional category and then by cost component using the allocations shown in Table 5-3. The capital-related expenses shown in Line 13, Column B of Table 5-1 are allocated to the cost component categories using the allocation percents shown in Table 5-6.

Table 5-6: Current Asset Value by Functional Category

Function	Asset Value RCLD	Rationale	Supply	Base-Delivery	Max Day	Max Hour	Public Fire	General
Supply	\$11,039,029	Supply & Max Day	\$9,415,614	\$0	\$1,623,415	\$0	\$0	\$0
Treatment	\$20,673,994	Max Day	\$0	\$10,336,997	\$10,336,997	\$0	\$0	\$0
T&D	\$57,375,691	Max Hour	\$0	\$22,099,051	\$11,035,212	\$24,241,427	\$0	\$0
Storage	\$5,114,987	Max Day	\$0	\$3,411,464	\$1,703,523	\$0	\$0	\$0
Public Fire	\$86,133	Fire	\$0	\$0	\$0	\$0	\$86,133	\$0
General & Admin	\$9,616,458	General	\$0	\$0	\$0	\$0	\$0	\$9,616,458
Total	\$103,906,291		\$9,415,614	\$35,847,513	\$24,699,147	\$24,241,427	\$86,133	\$9,616,458
Allocation	100.0%		9.1%	34.5%	23.8%	23.3%	0.1%	9.3%

5.2.6. Allocation of Capital Expenses to Cost-Causation Components

Table 5-7 shows the allocation of capital-related expenses to the cost causation components using the allocation percentages shown in Table 5-6. The capital-related net revenue requirements in Table 5-1 Column B are multiplied by those percentages to allocate capital-related costs to the cost centers.

Table 5-7: Allocation of Capital Expenses to Cost-Causation Components

Cost Center	Allocation	Capital-Related
Supply	9.1%	\$310,539
Base-Delivery	34.5%	\$1,182,296
Max Day	23.8%	\$814,609
Max Hour	23.3%	\$799,513
Public Fire	0.1%	\$2,841
General	9.3%	\$317,163
Total	100.0%	\$3,426,961

5.2.7. Equivalent Meters and Devices

Equivalent meters (EMs) are used to allocate meter-related costs. Larger meters can impose both greater average and peak demands on the system and are more expensive to install, maintain, and replace than smaller meters. This study uses a hydraulic capacity (capacity) ratio to calculate equivalent meters. The capacity ratio is based on meter hydraulic capacity and is calculated to represent the potential demand on the water system compared to the base meter size. A ratio of hydraulic capacity is calculated by dividing the capacity of a meter at a given size by the base meter capacity using the maximum safe operating flow rates in gallons per minute

(gpm). Consistent with previous studies, the base meter used in the study is the 5/8x3/4" meter. Meters that are upsized to 1" due to fire requirements are treated like 5/8x3/4" meters, consistent with previous studies.

Table 5-8 shows the meter capacity and capacity ratio for each meter size. The capacity in gpm is based on the safe operating flow rates provided in the AWWA Manual M1. The capacity ratios (Column C) are calculated by dividing the capacity in gpm (Column B) for each meter size (Column A) by the capacity in gpm for the 5/8"x3/4" & 1" w/Fire meter (Column B, Line 1). Meter counts (Column D) at each size are multiplied by the capacity ratio (Column C) to arrive at the total number of equivalent meters (Column E). Column E shows the estimated equivalent meters based on the capacity ratio.

Table 5-8: Equivalent Meters

No.	Meter Size (A)	Capacity (gpm) (B)	AWWA Ratio (C)	No. of Meters (D)	Equivalent Meters (E)
1	5/8"x 3/4" & 1" w/Fire	20	1.00	13,740	13,740
2	1"	50	2.50	163	408
3	1 1/2"	100	5.00	72	360
4	2"	160	8.00	76	610
5	3"	350	17.50	43	754
6	4"	600	30.00	5	157
7	6"	1,350	67.50	0	6
8	8"	2,800	140.00	3	476
9	10"	4,200	210.00	0	0
10	12"	5,300	265.00	0	0
11	Total			14,103	16,511

Raftelis determined equivalencies for fire service laterals, fire detector assemblies, and backflow devices based on detailed cost information provided by District staff. The cost ratios, number of laterals, detector assemblies, and backflow devices along with the associated equivalences are shown in Table 5-9 (lateral), Table 5-10 (detector assembly), and Table 5-11 (backflow).

Table 5-9: Equivalent Fire Service Lateral

No.	Lateral Size (A)	Cost Ratio (B)	No. Connections (C)	No. Equivalent Connections (D)
1	4"	1.00	8	8
2	6"	1.15	26	30
3	8"	1.35	43	58
4	10"	1.74	4	7
5	Total		86	111

Table 5-10: Equivalent Fire Detector Assemblies

No.	Detector Size (A)	Cost Ratio (B)	No. Detectors (C)	No. of Equivalent Detectors (D)
1	4" DCDA	1.00	8	8
2	4" RPDA	1.60	0	0
3	6" DCDA	1.30	26	34
4	6" RPDA	1.91	1	2
5	8" DCDA	2.29	43	98
6	8" RPDA	2.66	1	3
7	10" DCDA	2.85	4	11
8	Total		86	166

Note: DCDA = Double Check Detector Assembly, RPDA = Reduced Pressure Detector Assembly

Table 5-11: Equivalent Backflow Devices

No.	Device Size (A)	Cost Ratio (B)	No. Devices (C)	No. of Equivalent Devices (D)
1	3/4" DC	1.00	0	0
2	3/4" RP	1.00	40	40
3	1" DC	1.00	3,994	3,994
4	1" RP	1.00	115	115
5	1 1/4" DC	1.39	0	0
6	1 1/2" RP	3.07	45	138
7	2" RP	3.21	81	260
8	3" DC	5.23	1	5
9	3" RP	7.20	2	14
10	4" DC	5.54	7	39
11	4" RP	8.27	11	91
12	6" DC	7.78	21	163
13	6" RP	10.15	2	20
14	8" DC	14.49	35	507
15	8" RP	15.00	5	75
16	10" DC	15.30	4	61
17	10" RP	18.43	4	74
18	Total		4,367	5,597

5.2.8. Allocation of Public and Private Fire Protection Costs

Water systems provide two types of fire protection: public fire protection for firefighting (i.e., fire hydrants) and private fire protection (i.e., fire lines for private structures with sprinkler systems for fire suppression and private fire hydrants). Raftelis performed a fire demand analysis to determine the share of fire protection costs allocated to public versus private fire protection. The District provided Raftelis with a count of fire hydrants. The number of private fire connections is shown in Table 3-4.

Table 5-12 shows the calculation of equivalent fire demand associated with public hydrants and private fire lines. Each connection size has a fire flow demand factor similar to the hydraulic capacity factor of a water

meter. The diameter of the connection (in inches) is raised to the 2.63 power to determine the relative fire flow capacity factor (Column A)⁶. Hydrants are presumed to have one 4.5-inch opening. The equivalent capacity ratio (Column B) takes the relative flow capacity factor at each fire line size divided by the 4-inch flow capacity (Line 1, Column A) to establish each connection on an equivalent basis. The equivalent capacity ratio is multiplied by the number of hydrants (Column C) or connections (Column D) at each size and summed to calculate the equivalent number of hydrants (Column C, Line 8) and connections (Column D, Line 8). Line 9 shows the proportional share of equivalent fire connections between public (Column C) and private (Column D).

Table 5-12: Equivalent Fire Connections

No.	Fire Line Size	Relative Flow Capacity (A)	Equivalent Capacity Ratio (B)	Public Fire Hydrants (C)	Private Fire Connections (D)
1	4" DCDA	38.32	1.00	0	8
2	6" DCDA	111.31	2.90	0	26
3	8" DCDA	237.21	6.19	0	43
4	10" DCDA	426.58	11.13	0	4
5	10" RPDA	426.58	11.13	0	3
6	Hydrants	52.23	1.36	1,754	0
7	Total			1,754	84
8	Equivalent No. of Connections			2,391	437
9	Proportional Share			85%	15%

Table 5-13 shows the max day and max hour extra capacity requirements based on fire flow information in the District's 2020 Facility Plan, Section 7.3. The information in Table 5-12 and Table 5-13 is used to determine the amount of max day and max hour demand due to fire flow. The flow rates (Column A) and durations (Column B) are converted to hcf per day to determine max day and max hour requirements⁷.

Table 5-13: Fire Service Share of Peaking Requirements

No.	Category	Max Fire Flow (gpm) (A)	Duration (hrs) (B)	Max Day Fire Flow (hcf/day) (C)	Max Hour Fire Flow (hcf/day) (D)
1	0-3,600 (no auto fire sprinkler)	1,000	1	80	1,925
2	3,601 & greater (no auto fire sprinkler)	1,500	2	241	2,888
3	Total			321	4,813

5.2.9. Unit Costs of Service

The end goal of a cost-of-service analysis is to distribute the revenue requirement to each customer class. Raftelis calculated unit costs for each cost component by assessing the total water demand, meter count, or equivalent service units. Table 5-14 shows the units of service for each customer class and tier.

⁶ Hazen-Williams equation and AWWA Manual M1

⁷ For example, the residential max day fire flow = A1 * 60 min/hr * B1 * 1hcf/748gal and the max hour fire flow = A1 * 60 min/hr * 24hr/day * 1hcf/748gal.

Column A shows the projected test year annual usage by customer class and tier. Usage in Tier 4 of the residential class has been reduced by 5 percent as an estimate of conservation demands. Column B shows the average daily use, which is the annual use divided by 365 days.

Max day and max hour extra capacity requirements are used to allocate Extra Capacity costs based on customer class-specific water use patterns during peak demand periods. Max Day Total Capacity (Column D) is the Average Daily Use (Column B) multiplied by the Max Day Capacity Factor (Column C). Max Day Extra Capacity (Column E) is the difference between the Max Day Total Capacity (Column D) and the Average Daily Use (Column B). Max Hour Total Capacity (Column G) is the Average Daily Use (Column B) multiplied by the Max Hour Capacity Factor (Column F). Max Hour Extra Capacity (Column H) is the difference between the Max Hour Total Capacity (Column G) and the Max Day Total Capacity (Column D).

Line 18 in Table 5-14, shows public fire. Public fire Max Day Total Capacity is equal to Max Day Fire Flow (Table 5-13, Column C, Line 3) multiplied by public fire’s proportional share of fire connections (Table 5-12, Column C, Line 9). Public fire Max Day Extra Capacity is the same as its total capacity. Public fire Max Hour Total Capacity is equal to Max Hour Fire Flow (Table 5-13, Column D, Line 3) multiplied by public fire’s proportional share of fire connections (Table 5-12, Column C, Line 9). Public fire Max Hour Extra Capacity is its Max Hour Total Capacity less its Max Day Total Capacity. Max day and max hour factors for private fire are calculated similarly using its proportional share of connections (Table 5-12, Column D, Line 9).

Table 5-14: Units of Service

No.	Customer Class	Annual Use (hcf) (A)	Average Daily Use (hcf/day) (B)	Max Day			Peak Hour			Number of Equiv. Meters (I)	Number of Equiv. Fire Lines (J)	Number of Customers (K)	Number of Bills (L)
				Peaking Factor (C)	Total Capacity (hcf/day) (D)	Extra Capacity (hcf/day) (E)	Peaking Factor (F)	Total Capacity (hcf/day) (G)	Extra Capacity (hcf/day) (H)				
1	Residential	1,871,202	5,127							13,722		13,658	163,896
2	Tier 1: 0-6 hcf	859,107	2,354	1.10	2,589	235	1.10	2,589	0				
3	Tier 2: 7-14 hcf	599,916	1,644	1.34	2,209	566	1.81	2,968	759				
4	Tier 3: 15 - 22 hcf	240,746	660	1.59	1,048	389	2.68	1,766	718				
5	Tier 4: > 22 hcf	171,434	470	1.85	870	400	3.70	1,736	866				
6	Multi-Family	93,994	258	1.01	261	3	1.26	324	63	293		28	331
7	Non-Residential									1,151		181	2,172
8	Tier 1: 0-34 hcf	36,429	100	1.06	106	6	1.27	126	20				
9	Tier 2: >34 hcf	91,314	250	1.71	429	179	2.84	710	281				
10	Irrigation									753		206	2,472
11	Tier 1: 0-113 hcf	111,711	306	1.83	560	254	1.99	610	50				
12	Tier 2: >113 hcf	137,481	377	2.45	921	544	4.95	1,866	945				
13	Construction/Hydrant									592		31	368
14	Tier 1: 0-115 hcf	7,120	20	1.83	36	16	1.99	39	3				
15	Tier 2: >115 hcf	15,833	43	2.45	106	63	4.95	215	109				
16	Subtotal	2,365,084	6,480		9,135	2,655		12,950	3,815	16,511		14,103	169,238
17	Private Fire				50	50		743	694		437	86	1,032
18	Public Fire				271	271		4,069	3,798				
19	Total	2,365,084	6,480			2,976			8,307	16,511	437	14,189	170,270

Table 5-15 shows the operating and capital-related revenue requirements allocated to cost components. Line 1 matches the total from Table 5-5. Line 2 comes from Table 5-7. Revenue offsets and adjustments (Line 3) come from Table 5-1 and are allocated to the cost centers using the percentages shown at the bottom of Table 5-5, which excludes fire detector assembly, fire service, and backflow. Lines 1 through 3 are added to arrive at the net revenue requirements before adjustments (Line 4). Lines 5 and 7 show the allocation of general O&M costs and general revenue offsets using the same allocation as Line 3. Line 6 shows the allocation of general capital-related pro rata according to Line 2.

Table 5-15: Total Cost-of-Service Calculation

No.	Revenue Requirement	Supply	Base-Delivery	Max Day	Max Hour	Meters	Public Fire	Private FP	Conservation	Fire DA	Fire Srvc	Backflow	General	Total
1	Operating Revenue Requirement	\$5,425,868	\$2,476,990	\$2,998,403	\$860,593	\$2,737,377	\$74,900	\$0	\$311,556	\$85,067	\$34,204	\$510,701	\$3,510,667	\$19,026,326
2	Capital Revenue Requirement	\$310,539	\$1,182,296	\$814,609	\$799,513	\$0	\$2,841	\$0	\$0	\$0	\$0	\$0	\$317,163	\$3,426,961
3	Revenue Offsets & Adjustments	-\$500,842	-\$228,642	-\$276,771	-\$79,438	-\$252,677	-\$6,914	\$0	-\$28,759	\$0	\$0	\$0	-\$324,057	-\$1,698,099
4	Total - Cost of Service	\$5,235,565	\$3,430,645	\$3,536,241	\$1,580,667	\$2,484,700	\$70,827	\$0	\$282,797	\$85,067	\$34,204	\$510,701	\$3,503,773	\$20,755,188
5	Allocation of General Costs - Operating	\$1,279,646	\$584,178	\$707,149	\$202,964	\$645,588	\$17,665	\$0	\$73,478	\$0	\$0	\$0	-\$3,510,667	\$0
6	Allocation of General Costs - Capital	\$31,671	\$120,580	\$83,081	\$81,541	\$0	\$290	\$0	\$0	\$0	\$0	\$0	-\$317,163	\$0
7	Allocation of General Costs - Rev Offsets	-\$118,119	-\$53,923	-\$65,274	-\$18,735	-\$59,592	-\$1,631	\$0	-\$6,782	\$0	\$0	\$0	\$324,057	\$0
8	Reallocation of Capacity for Public Fire	\$0	\$0	-\$322,341	-\$722,748	\$1,132,240	-\$87,151	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Reallocation of Capacity for Private Fire	\$0	\$0	-\$58,880	-\$132,019	\$0	\$0	\$190,899	\$0	\$0	\$0	\$0	\$0	\$0
10	Reallocation of Base-Delivery	\$0	-\$612,222	\$0	\$0	\$612,222	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Total - Adjusted Cost of Service	\$6,428,763	\$3,469,258	\$3,879,975	\$991,671	\$4,815,158	\$0	\$190,899	\$349,493	\$85,067	\$34,204	\$510,701	\$0	\$20,755,188

The revenue requirements are further adjusted for public and private fire peaking impacts and for base-delivery costs. Note that the reallocation results in a shifting of costs between cost causation components but does not change the total rate revenue requirement.

- Reallocation of Public Fire Costs:** Public fire protection represents a common benefit. Therefore, all public fire protection costs are reallocated to the Meters cost causation component to be recovered from all metered connections. Public fire’s proportion of total max day costs are determined based on the ratio of public fire Max Day Extra Capacity (Table 5-14, Column E, Line 18) to Total System Extra Capacity (Table 5-14, Column E, Line 19). Public fire’s proportion of max hours costs are determined based on the ratio of public fire Max Hour Extra Capacity (Table 5-14, Column H, Line 18) to Total System Extra Capacity (Table 5-14, Column H, Line 19). Line 8 of Table 5-15 shows that public fire max day and max hour costs, as well as direct public fire costs, are allocated to the meter component since public fire protection is a fixed cost of the system.
- Reallocation of Private Fire Costs:** Private fire’s share of max day and max hour demand are calculated similarly to public fire. Line 9 of Table 5-15 shows the allocation of private fire peaking costs to the private fire component.
- Reallocation of Base-Delivery Costs:** To maintain the current level of revenue stability, the District has elected to move 15 percent of base-delivery costs into the Meter cost center.

The total adjusted cost of service for the test year is shown in Line 11 of Table 5-15, which is the sum of Lines 4 through 10. This represents the amount that must be recovered by the District’s fixed charges and volumetric rates in the test year. The adjusted cost-of-service allocations to each cost-causation component are used to calculate the District’s FY 2026 proposed water rates.

Table 5-16 divides the adjusted cost-of-service (Table 5-15, Line 11) by the respective units of service (Table 5-14) for each cost component to determine the unit cost for each component

Table 5-16: Unit Costs of Service

Unit Costs	Meter	Fire	Fire Detector Assembly	Fire Service Lateral	Backflow	Supply	Base Delivery	Max Day	Max Hour	Conservation	Total
Cost of Service	\$4,815,158	\$190,899	\$85,067	\$34,204	\$510,701	\$6,428,763	\$3,469,258	\$3,879,975	\$991,671	\$349,493	\$20,755,188
Units of Service	198,126	5,241	1,991	1,326	67,168	2,365,084	2,365,084	2,655	3,815	412,180	
Unit Cost	\$24.30	\$36.43	\$42.72	\$25.79	\$7.60	\$2.72	\$1.47	\$1,461.15	\$259.96	\$0.85	
	equiv. meter	equiv. line	Eq. Fire DA	Eq. Fire SL	eq. BF Device	hcf	hcf	hcf/day	hcf/day	hcf	

6. Rate Design

Rate design is the process by which the cost causation components derived in Line 11 of Table 5-15 are converted into rates and charges that recover those costs on a basis that is proportional to the cost of service as supported by the data and related analysis. These rates are designed to recover the total cost of service (Table 5-1, Column C, Line 13).

6.1. Proposed Rate Structure Change

Raftelis worked closely with District staff to evaluate potential changes to the existing rate structure. Different rate structures promote varying policy objectives. Therefore, it is critical for a public water utility to implement a rate structure that advances its agency-specific policy priorities.

To help with affordability for those customers able to reduce usage, to capture the peaking cost impacts of the highest users, and to capture changes to demand patterns since the rate structure was last updated, the District has elected to revise the residential tiers as shown in Table 6-1. Tier 1 is intended to include essential indoor water use. The Tier 1 monthly maximum (6 hcf/mo) is based on the California water efficiency target of 42 gallons per capita day (gpcd). Tier 2 is intended to provide for reasonable outdoor water use and captures average use as well. The top of Tier 3 is based on the usage level at which the top 10 percent of usage occurs. Usage above 22 hcf/mo accounts for about 10 percent of annual residential usage. The new Tier 4 captures that usage. Each of these rate structures is designed to be proportional to the actual costs of service, as explained in this study.

Table 6-1: Proposed Residential Tier Definitions

Tier	Definition	Basis
Tier 1	0 - 6 hcf/mo	Reflects the California State water efficiency target of 42 gpcd and approximately 3.6 persons per household in the Oakley, CA area according to the 2023 American Community Survey, 5-year average.
Tier 2	7 - 14 hcf/mo	Provides for a reasonable outdoor use and captures average use.
Tier 3	15 - 22 hcf/mo	Captures use between the top of Tier 2 and the bottom of Tier 4.
Tier 4	> 22 hcf/mo	Captures the top 10 percent of usage based on FY 2024 billing data.

Table 6-2 summarizes the proposed changes to the residential customer class tier definitions and the estimated FY 2026 water use under the current and proposed tier definitions. These estimates are based on detailed account-level analysis of actual FY 2024 residential water use. The proposed tier definitions result in a shift in water use from Tier 1 to Tier 2 due to the reduction in the proposed Tier 1 monthly maximum.

Table 6-2: Proposed Changes to Residential Tiers

Tiers	Current			Tiers	Proposed		
	Usage	% Usage	% Bills		Usage	% Usage	% Bills
Tier 1: 0-8 hcf	1,062,892	57%	47%	Tier 1: 0-6 hcf	859,107	46%	34%
Tier 2: 9-14 hcf	396,130	21%	26%	Tier 2: 7-14 hcf	599,916	32%	39%
Tier 3: >14 hcf	400,142	22%	27%	Tier 3: 15 - 22 hcf	240,746	13%	16%
				Tier 4: > 22 hcf	180,457	10%	11%

6.2. Proposed Fixed Charges

6.2.1. Monthly Service Charge

From the calculations in Table 5-16, the proposed fixed charges are determined for each meter size. Table 6-3 shows the derivation of the monthly service charge. The Meter component (Column C) is the Meter unit cost from Table 5-16 divided by 12 months for the 5/8", 3/4", and 1" w/ Fire meter sizes. For meters larger than 3/4" (except for those sized for home fire sprinklers), this unit rate is multiplied by the Capacity Ratio (Column B) to derive the Meter capacity cost (Column C) associated with those larger meter sizes. The proposed monthly service charge (Column D) is rounded up to the nearest penny for revenue sufficiency. The Current Monthly Charge (Column E) is shown for comparison.

Table 6-3: Test Year Monthly Service Charge Derivation (\$/mo)

No.	Meter Size (A)	Capacity Ratio (B)	Meter, \$/mtr/mo (C)	Proposed Monthly Charge (D)	Current Monthly Charge (E)
1	5/8"x 3/4" & 1" w/Fire	1.00	\$24.30	\$24.31	\$23.56
2	1"	2.50	\$60.76	\$60.76	\$58.90
3	1 1/2"	5.00	\$121.52	\$121.52	\$117.80
4	2"	8.00	\$194.43	\$194.43	\$188.48
5	3"	17.50	\$425.31	\$425.32	\$412.30
6	4"	30.00	\$729.11	\$729.11	\$706.80
7	6"	67.50	\$1,640.49	\$1,640.49	\$1,590.30
8	8"	140.00	\$3,402.49	\$3,402.50	\$3,298.40
9	10"	210.00	\$5,103.74	\$5,103.74	\$4,947.60
10	12"	265.00	\$6,440.43	\$6,440.43	\$6,243.40

6.2.2. Backflow Charge

Table 6-4, on the following page, shows the derivation of the Backflow charge. The cost for a 3/4" DCDA device (Column C) is the baseline cost and matches the Backflow unit cost shown in Table 5-16. The costs for larger devices or the RPDA device are derived by taking the base cost multiplied by the Cost Ratio (Column B). The cost ratio is based on detailed cost data provided by District staff. The Proposed Monthly Charge is shown in Column D and is rounded up to the nearest penny for revenue sufficiency.

Table 6-4: Test Year Backflow Charge Derivation (\$/mo)

Device Size (A)	Cost Ratio (B)	Charge, \$/mtr/mo (C)	Proposed Monthly Charge (D)	Current Monthly Charge (E)
3/4" DC	1.00	\$7.60	\$7.61	\$6.04
3/4" RP	1.00	\$7.60	\$7.61	\$6.04
1" DC	1.00	\$7.60	\$7.61	\$6.04
1" RP	1.00	\$7.60	\$7.61	\$6.04
1 1/4" DC	1.39	\$10.55	\$10.56	\$6.04
1 1/2" RP	3.07	\$23.31	\$23.31	\$6.04
2" RP	3.21	\$24.42	\$24.42	\$6.04
3" DC	5.23	\$39.74	\$39.75	\$11.32
3" RP	7.20	\$54.77	\$54.77	\$11.32
4" DC	5.54	\$42.11	\$42.12	\$18.87
4" RP	8.27	\$62.87	\$62.87	\$18.87
6" DC	7.78	\$59.18	\$59.19	\$37.75
6" RP	10.15	\$77.14	\$77.14	\$37.75
8" DC	14.49	\$110.20	\$110.21	\$60.40
8" RP	15.00	\$114.06	\$114.06	\$60.40
10" DC	15.30	\$116.34	\$116.35	\$86.83
10" RP	18.43	\$140.09	\$140.10	\$86.83

6.2.3. Private Fire Line Charge

The Private Fire Line Charge comprises three components: fire service lateral, fire detector assembly, and fire capacity costs. Table 6-5 shows the derivation of the fire service lateral component. The base, 4” size, (Line 1, Column C) is equal to the Fire Service Lateral unit cost shown in Table 5-16. The larger lateral sizes are the base unit cost multiplied by the Cost Ratio (Column B). The cost ratio is based on cost information provided by District staff.

Table 6-5: Private Fire Service Lateral Component, (\$/mo)

No.	Lateral Size (A)	Cost Ratio (B)	Lateral Component, \$/mo (C)
1	4"	1.00	\$25.79
2	6"	1.15	\$29.74
3	8"	1.35	\$34.72
4	10"	1.74	\$44.76

Table 6-6 shows the derivation of the fire detector assembly component. The base is the 4” DCDA device and is equal to the Fire Detector Assembly unit cost shown in Table 5-16. The larger/different type devices are the base unit cost (Line 1, Column C) multiplied by the Cost Ratio (Column B). The cost ratio is based on cost information provided by District staff.

Table 6-6: Private Fire Detector Assembly Component, (\$/mo)

No.	Detector Size (A)	Cost Ratio (B)	Detector Component, \$/mo (C)
1	4" DCDA	1.00	\$42.72
2	4" RPDA	1.60	\$68.44
3	6" DCDA	1.30	\$55.62
4	6" RPDA	1.91	\$81.55
5	8" DCDA	2.29	\$97.65
6	8" RPDA	2.66	\$113.56
7	10" DCDA	2.85	\$121.92
8	10" RPDA	3.27	\$139.73

Table 6-7 shows the derivation of the private fire capacity component. The base, 4” size, unit cost (Line 1, Column C) is equal to the Fire unit cost shown in Table 5-16. The larger fire line sizes are the base unit cost multiplied by the Fire Capacity Factor (Column B).

Table 6-7: Private Fire Capacity Component Derivation (\$/mo)

No.	Fire Connection Size (A)	Fire Capacity Factor (B)	Fireline, \$/line/mo (C)
1	4"	1.00	\$36.43
2	6"	2.90	\$105.81
3	8"	6.19	\$225.49
4	10"	11.13	\$405.50

Table 6-8 shows the total Private Fire Line Charge. The charge shown in Column E is the sum of the unit rates shown in Columns B – D rounded up to the nearest penny for revenue sufficiency. The current monthly charge is shown in Column F for comparison.

Table 6-8: Total Private Fire Line Charge, Test Year (\$/mo)

No.	Size & Type (A)	Service Lateral Component (B)	Detector Assembly Component (C)	Fire Capacity Component (D)	Private Fire Protection \$/mo (E)	Current Charge \$/mo (F)
1	4" DCDA	\$25.79	\$42.72	\$36.43	\$104.94	\$46.36
2	4" RPDA	\$25.79	\$68.44	\$36.43	\$130.66	\$46.36
3	6" DCDA	\$29.74	\$55.62	\$105.81	\$191.17	\$64.90
4	6" RPDA	\$29.74	\$81.55	\$105.81	\$217.11	\$64.90
5	8" DCDA	\$34.72	\$97.65	\$225.49	\$357.87	\$87.17
6	8" RPDA	\$34.72	\$113.56	\$225.49	\$373.77	\$87.17
7	10" DCDA	\$44.76	\$121.92	\$405.50	\$572.18	\$113.14
8	10" RPDA	\$44.76	\$139.73	\$405.50	\$590.00	\$113.14

6.3. Volumetric Charge Rates

The following subsection describes the derivation of volumetric charge rates for each customer class and tier. The volumetric charges are designed to recover the revenue requirements for the following cost causation components, **Supply**, **Base**, **Max Day** and **Max Hour** (collectively referred to as **Peaking**), and **Conservation**. These four cost-causation components generally vary with the amount of water used and are recovered by dollar per hcf rates. The revenue requirement in FY 2026 for each is shown in Line 11 of Table 5-15. Note that the Peaking revenue requirement is the sum of the Max Day and Max Hour revenue requirements. Units of service for each component are shown in Table 5-16. The remainder of this subsection details the derivation of unit costs by customer class and tier and then the summation of the unit costs of the four cost causation components to determine the proposed volumetric charge rates.

6.3.1. Supply Unit Cost

Supply costs are costs related to the cost of purchasing and producing water. The District has two sources of water, each incurring different supply-related costs, as shown in Table 6-9. Table 6-9 shows the determination of per hcf supply costs for water from the District’s wells and from CCWD. This must be determined to calculate a weighted average supply unit cost for each customer class and tier. Columns A and B show the share and amount of test year water sold between the two sources. The direct, O&M costs related to each supply are shown in Column C and the share of costs in Column D. The total supply costs from the cost-of-service analysis are allocated to the two sources using the share in Column D. The unit supply cost for each source is shown in Column F and is the supply cost (Column E) divided by the water sold (Column B).

Table 6-9: Groundwater and CCWD Supply Unit Costs

No.	Supply	Water Sold (A)	Water Sold (B)	Direct Cost (C)	Direct Cost % (D)	Supply COS (E)	Cost (\$/hcf) (F)
1	Wells	10%	236,508	\$324,039	5%	\$327,471	\$1.38
2	Purchased Water	90%	2,128,576	\$6,037,343	95%	\$6,101,292	\$2.87
3		100%	2,365,084	\$6,361,381	100%	\$6,428,763	

In consultation with District staff, the relatively less expensive District well supply costs are allocated to a portion of residential Tier 1 water use, a portion of multi-family water use, and a portion of non-residential Tier 1 water use. All users in these classes benefit from this approach of allocating lowest cost water to the lowest tier as even high volume residential and non-residential water customers must first pass through their respective Tier 1.

Table 6-10 shows the supply unit cost component derivation. Projected test year (FY 2026) water sales are shown in Column B. The allocation of well supply to residential Tier 1, multi-family, and non-residential Tier 1 is shown in Column C. This allocation is based on the annual use in residential Tier 1, an equivalent amount of annual use in multi-family as for residential, and the annual use in non-residential Tier 1. Columns D and E show the portion of Well and Purchased water allocated to each class and tier. The supply costs allocated to each customer class and tier (Column F) is the amount of Well water (Column D) times the well unit cost from Table 6-9, Column F, Line 1 plus the amount of Purchased water (Column D) times the

purchased water unit cost from Table 6-9, Column F, Line 2. The Unit Cost (Column G) is the Total cost (Column F) divided by the water sales (Column B).

Table 6-10: Supply Unit Cost, Test Year

No.	Water Sales (hcf) (A)	Water Sales (hcf) (B)	Well Allocation (C)	Wells (D)	Purchased (E)	Total (F)	Unit Cost (\$/hcf) (G)
1	Residential	1,871,202		216,457	1,654,745		
2	Tier 1: 0-6 hcf	859,107	92%	216,457	642,650	\$2,141,782	\$2.49
3	Tier 2: 7-14 hcf	599,916		0	599,916	\$1,719,582	\$2.87
4	Tier 3: 15 - 22 hcf	240,746		0	240,746	\$690,067	\$2.87
5	Tier 4: > 22 hcf	171,434		0	171,434	\$491,393	\$2.87
6	Multi-Family	93,994	5%	10,873	83,121	\$253,311	\$2.69
7	Non-Residential	127,743		9,178	118,565		
8	Tier 1: 0-34 hcf	36,429	4%	9,178	27,251	\$90,819	\$2.49
	Tier 2: >34 hcf	91,314		0	91,314	\$261,740	\$2.87
9	Irrigation	249,192		0	249,192		
10	Tier 1: 0-113 hcf	111,711		0	111,711	\$320,205	\$2.87
11	Tier 2: >113 hcf	137,481		0	137,481	\$394,072	\$2.87
12	Construction/Hydrant	22,953		0	22,953		
13	Tier 1: 0-115 hcf	7,120		0	7,120	\$20,409	\$2.87
14	Tier 2: >115 hcf	15,833		0	15,833	\$45,383	\$2.87

6.3.2. Base-Delivery Unit Cost

The base-delivery cost-causation component pertains to the costs to treat and deliver water under average daily demand conditions. Since the base cost-causation component is designed to recover costs incurred to meet average day demands, the base-delivery unit cost is uniform for all units of water, regardless of customer class or tier. The Base-Delivery unit cost is shown in Table 5-16.

6.3.3. Peaking Unit Cost

The peaking cost-causation component is designed to recover costs incurred to meet customer peak demands in excess of average daily demand. Total peaking costs are comprised of max day and max hour costs. The peaking costs are distributed to each tier using peaking factors derived for each class and tier based on the District's data.

Table 6-11 shows the derivation of peaking unit costs for each customer class and tier. The peaking costs are the sum of the max day costs (max day unit costs from Table 5-16 apportioned to each customer class by the classes'/tier's respective max day extra capacity (Table 5-14, Column E)) plus the max hour costs (max hour unit costs from Table 5-16 apportioned to each customer class by the classes'/tier's respective max hour extra capacity (Table 5-14, Column H)). The annual use comes from Table 5-14, Column A. The unit cost for each class and tier are the Peaking Cost divided by the Annual Use. The total peaking cost matches the sum of the totals shown for max day and max hour in Table 5-15 .

Table 6-11: Derivation of Peaking Unit Costs

Peaking Unit Cost	Annual Use (hcf)	Peaking Cost	Unit Cost, \$/hcf
Residential			
Tier 1: 0-6 hcf	859,107	\$343,913	\$0.40
Tier 2: 7-14 hcf	599,916	\$1,023,558	\$1.71
Tier 3: 15 - 22 hcf	240,746	\$754,709	\$3.13
Tier 4: > 22 hcf	171,434	\$810,054	\$4.73
Multi-Family	93,994	\$21,408	\$0.23
Non-Residential			
Tier 1: 0-34 hcf	36,429	\$14,078	\$0.39
Tier 2: >34 hcf	91,314	\$334,215	\$3.66
Irrigation			
Tier 1: 0-113 hcf	111,711	\$384,332	\$3.44
Tier 2: >113 hcf	137,481	\$1,040,995	\$7.57
Construction/Hydrant			
Tier 1: 0-115 hcf	7,120	\$24,496	\$3.44
Tier 2: >115 hcf	15,833	\$119,886	\$7.57
Total	2,365,084	\$4,871,646	

6.3.4. Conservation Unit Cost

The conservation cost-causation component pertains to costs associated with the District’s water conservation efforts, which include the extra customer care costs associated with residential Tier 3 and 4 users. The Conservation unit cost shown in Table 5-16 represents the average unit cost across residential Tiers 3 and 4. That unit rate is applied equally to Tiers 3 and 4 as shown in Table 6-12. The total conservation cost equals the conservation cost in Line 11 of Table 5-15.

Table 6-12: Application of Conservation Unit Costs

Residential Tiers	Unit Rate	Annual Use (hcf)	Conservation Cost
Tier 1: 0-6 hcf	\$0.00	859,107	\$0
Tier 2: 7-14 hcf	\$0.00	599,916	\$0
Tier 3: 15 - 22 hcf	\$0.85	240,746	\$204,132
Tier 4: > 22 hcf	\$0.85	171,434	\$145,361
Total		1,871,202	\$349,493

Since conservation-related costs are made increasingly necessary because of wasteful and/or inefficient water use, all conservation costs allocated to the residential customer class are designated to be recovered by Tiers 3 and 4 (which represents water use above average water use). All residential water users, even those with use in Tiers 3 and 4, benefit from Tier 1 and Tier 2 water being exempted from conservation cost recovery.

6.3.5. Derivation of Proposed FY 2026 Volumetric Charge Rates

To determine proposed FY 2026 volumetric charge rates, the Supply, Base, Peaking, and Conservation unit costs are summed for each customer class and tier. The calculation of FY 2026 volumetric charge rates is shown below in Table 6-13. The total Proposed Charge is the sum of the components and is rounded up to the nearest penny.

Table 6-13: Derivation of FY 2026 Volumetric Charge Rates (\$/hcf)

Class/Tier	Supply, \$/hcf	Base Delivery, \$/hcf	Peaking, \$/hcf	Conservation, \$/hcf	Proposed Charge, \$/hcf	Current Charge*, \$/hcf
Residential						
Tier 1: 0-6 hcf	\$2.49	\$1.47	\$0.40	\$0.00	\$4.37	\$3.98
Tier 2: 7-14 hcf	\$2.87	\$1.47	\$1.71	\$0.00	\$6.04	\$6.03
Tier 3: 15 - 22 hcf	\$2.87	\$1.47	\$3.13	\$0.85	\$8.32	\$9.82
Tier 4: > 22 hcf	\$2.87	\$1.47	\$4.73	\$0.85	\$9.91	\$9.82
Multi-Family						
All Use	\$2.69	\$1.47	\$0.23	\$0.00	\$4.39	\$6.01
Non-Residential						
Tier 1: 0-34 hcf	\$2.49	\$1.47	\$0.39	\$0.00	\$4.35	\$5.40
Tier 2: >34 hcf	\$2.87	\$1.47	\$3.66	\$0.00	\$8.00	\$6.91
Irrigation						
Tier 1: 0-113 hcf	\$2.87	\$1.47	\$3.44	\$0.00	\$7.78	\$5.40
Tier 2: >113 hcf	\$2.87	\$1.47	\$7.57	\$0.00	\$11.91	\$7.52
Construction/Hydrant						
Tier 1: 0-115 hcf	\$2.87	\$1.47	\$3.44	\$0.00	\$7.78	\$5.40
Tier 2: >115 hcf	\$2.87	\$1.47	\$7.57	\$0.00	\$11.91	\$7.52

* Current Tier 2 shown is an average rate to account for the different tier size.

6.4. 5-Year Schedule of Rates & Charges

The proposed five-year schedule of rates and charges are shown in Table 6-14 through Table 6-17. In each table, the rates for FY 2026 are derived from the cost-of-service analysis and the proposed revenue adjustments from Table 4-12 are used to determine the proposed water rates and charges for FY 2027 to FY 2030 by escalating the previous year rates, rounded up to the nearest penny.

Table 6-14: Proposed Monthly Service Charges Through FY 2030

Monthly Service Charge	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
5/8"x 3/4" & 1" w/Fire	\$23.56	\$24.31	\$26.08	\$27.91	\$29.87	\$31.97
1"	\$58.90	\$60.76	\$65.17	\$69.74	\$74.63	\$79.86
1 1/2"	\$117.80	\$121.52	\$130.34	\$139.47	\$149.24	\$159.69
2"	\$188.48	\$194.43	\$208.53	\$223.13	\$238.75	\$255.47
3"	\$412.30	\$425.32	\$456.16	\$488.10	\$522.27	\$558.83
4"	\$706.80	\$729.11	\$781.98	\$836.72	\$895.30	\$957.98
6"	\$1,590.30	\$1,640.49	\$1,759.43	\$1,882.60	\$2,014.39	\$2,155.40
8"	\$3,298.40	\$3,402.50	\$3,649.19	\$3,904.64	\$4,177.97	\$4,470.43
10"	\$4,947.60	\$5,103.74	\$5,473.77	\$5,856.94	\$6,266.93	\$6,705.62
12"	\$6,243.40	\$6,440.43	\$6,907.37	\$7,390.89	\$7,908.26	\$8,461.84

Table 6-15: Proposed Monthly Private Fire Line Charges Through FY 2030

Private Fireline Charges	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
4" DCDA	\$46.36	\$104.94	\$112.55	\$120.43	\$128.87	\$137.90
4" RPDA	\$46.36	\$130.66	\$140.14	\$149.95	\$160.45	\$171.69
6" DCDA	\$64.90	\$191.17	\$205.03	\$219.39	\$234.75	\$251.19
6" RPDA	\$64.90	\$217.11	\$232.86	\$249.17	\$266.62	\$285.29
8" DCDA	\$87.17	\$357.87	\$383.82	\$410.69	\$439.44	\$470.21
8" RPDA	\$87.17	\$373.77	\$400.87	\$428.94	\$458.97	\$491.10
10" DCDA	\$113.14	\$572.18	\$613.67	\$656.63	\$702.60	\$751.79
10" RPDA	\$113.14	\$590.00	\$632.78	\$677.08	\$724.48	\$775.20

Note: DCDA = Double Check Detector Assembly, RPDA = Reduced Pressure Detector Assembly

Table 6-16: Proposed Monthly Backflow Charges Through FY 2030

Detector Device Type	Current FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
3/4" DC or RP	\$6.04	\$7.61	\$8.17	\$8.75	\$9.37	\$10.03
1" DC or RP	\$6.04	\$7.61	\$8.17	\$8.75	\$9.37	\$10.03
1 1/4" DC	\$6.04	\$10.56	\$11.33	\$12.13	\$12.98	\$13.89
1 1/2" RP	\$6.04	\$23.31	\$25.00	\$26.75	\$28.63	\$30.64
2" RP	\$6.04	\$24.42	\$26.20	\$28.04	\$30.01	\$32.12
3" DC	\$11.32	\$39.75	\$42.64	\$45.63	\$48.83	\$52.25
3" RP	\$11.32	\$54.77	\$58.75	\$62.87	\$67.28	\$71.99
4" DC	\$18.87	\$42.12	\$45.18	\$48.35	\$51.74	\$55.37
4" RP	\$18.87	\$62.87	\$67.43	\$72.16	\$77.22	\$82.63
6" DC	\$37.75	\$59.19	\$63.49	\$67.94	\$72.70	\$77.79
6" RP	\$37.75	\$77.14	\$82.74	\$88.54	\$94.74	\$101.38
8" DC	\$60.40	\$110.21	\$118.21	\$126.49	\$135.35	\$144.83
8" RP	\$60.40	\$114.06	\$122.33	\$130.90	\$140.07	\$149.88
10" DC	\$86.83	\$116.35	\$124.79	\$133.53	\$142.88	\$152.89
10" RP	\$86.83	\$140.10	\$150.26	\$160.78	\$172.04	\$184.09

Note: DC = Double Check, RP = Reduced Pressure

Table 6-17: Proposed Volumetric Charge Rates through FY 2030 (\$/hcf)

Customer Class & Tier	Current* FY 2025	Proposed FY 2026	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030
Residential						
Tier 1: 0-6 hcf	\$3.98	\$4.37	\$4.69	\$5.02	\$5.38	\$5.76
Tier 2: 7-14 hcf	\$6.03	\$6.04	\$6.48	\$6.94	\$7.43	\$7.96
Tier 3: 15 - 22 hcf	\$9.82	\$8.32	\$8.93	\$9.56	\$10.23	\$10.95
Tier 4: > 22 hcf	\$9.82	\$9.91	\$10.63	\$11.38	\$12.18	\$13.04
Multi-Family						
All usage	\$6.01	\$4.39	\$4.71	\$5.04	\$5.40	\$5.78
Non-Residential						
Tier 1: 0-34 hcf	\$5.40	\$4.35	\$4.67	\$5.00	\$5.35	\$5.73
Tier 2: >34 hcf	\$6.91	\$8.00	\$8.58	\$9.19	\$9.84	\$10.53
Irrigation						
Tier 1: 0-113 hcf	\$5.40	\$7.78	\$8.35	\$8.94	\$9.57	\$10.24
Tier 2: >113 hcf	\$7.52	\$11.91	\$12.78	\$13.68	\$14.64	\$15.67
Construction/Hydrant						
Tier 1: 0-115 hcf	\$5.40	\$7.78	\$8.35	\$8.94	\$9.57	\$10.24
Tier 2: >115 hcf	\$7.52	\$11.91	\$12.78	\$13.68	\$14.64	\$15.67

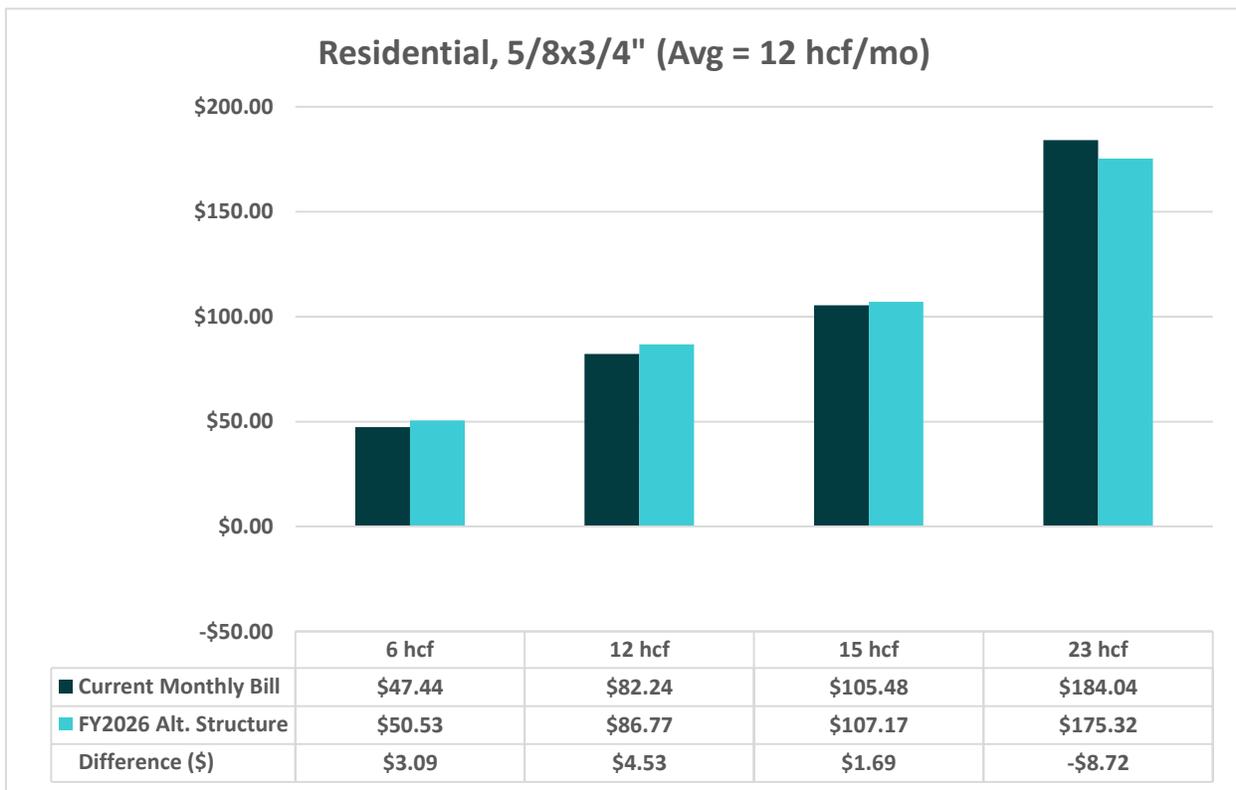
* Current Tier 2 shown is an average rate to account for the different tier size.

7. Customer Bill Impacts and Neighboring Agency Comparison

7.1. Residential Bill Impacts

Figure 7-1 shows calculated monthly water bills (which includes the monthly service charge and volumetric charge) for residential customers at different levels of monthly water usage under current FY 2025 rates and proposed FY 2026 rates. The dark teal bars in Figure 7-1 represent monthly water bills under the current rates. The light teal bars show monthly water bills using the proposed FY 2026 rates. The current and proposed monthly bills in Figure 7-1 are calculated assuming a 5/8x3/4-inch meter size. The dollar difference between current and proposed monthly bills at different monthly water use levels is shown in the Difference (\$) row of Figure 7-1. These amounts were selected to give a cross-section of the District customer’s usage patterns. The first column, at 6 hcf/mo of use, indicates use that is wholly contained within the first tier, the second indicates average residential usage (12 hcf/mo), the third shows usage at the 75th percentile (75 percent of bills are at or below 15 hcf/mo), and the fourth column shows usage in the 90th percentile.

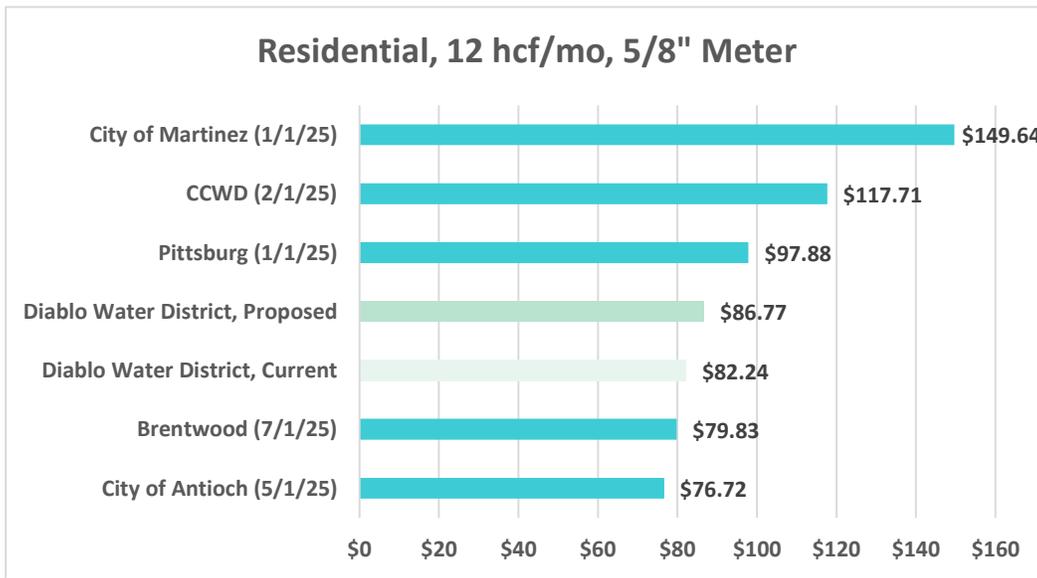
Figure 7-1: Residential Monthly Bill Impacts



7.2. Neighboring Agency Comparison

Figure 7-2 shows a comparison of monthly water bills for a residential customer on a 5/8-inch meter using 12 hcf/mo. The comparison shows current FY 2025 rates and adopted or proposed rates for FY 2026.

Figure 7-2: Neighboring Agency Comparison



8. Drought Rates

As part of the study, Raftelis calculated a demand reduction surcharge (i.e., drought rate or drought surcharge) to recover the revenue shortfall that occurs because of demand reduction during water shortage situations.

A drought surcharge may be imposed during times of a declared drought when a certain level of reduction from the base usage has been mandated. A drought surcharge is charged on each unit of water used and is calculated to recover costs resulting from a loss of volumetric revenue due to reduced water use. The amount of the drought surcharge at different levels of usage reduction is based upon the District’s projected revenue shortfall, adjusted for changes in costs.

To determine the demand reduction surcharge, the first step is to project the water demand reduction for each customer class under different levels of shortage. Table 8-1 shows the projected water demand for each customer class and tier at different levels of reduction. Raftelis analyzed individual customer usage data, assuming that customers using more water are expected to reduce more since they have more discretionary water use. The analysis calculates the increase in commodity rates that need to be applied to all usage, including the tiers, at each percentage reduction in usage. Note that the reduction achieved under each drought stage is lower than the maximum targeted at each level but falls at the upper end of each range.

Table 8-1: Projected Water Demand by Percent Usage Reduction

Usage Data (kgal)	Monthly Tier	Proposed Rates	FY 2026	% Reduction	0 - 10% Reduction	% Reduction	10 - 20% Reduction	% Reduction	20 - 30% Reduction	% Reduction	30 - 40% Reduction	% Reduction	40 - 50% Reduction
Residential													
Tier 1	6	\$4.37	859,107	-4.0%	824,743	-7.0%	798,969	-10.0%	773,196	-15.0%	730,241	-24.0%	652,921
Tier 2	14	\$6.04	599,916	-12.0%	527,926	-25.0%	449,937	-35.0%	389,945	-45.0%	329,954	-60.0%	239,966
Tier 3	22	\$8.32	240,746	-20.0%	192,597	-30.0%	168,522	-55.0%	108,336	-75.0%	60,186	-85.0%	36,112
Tier 4	>22	\$9.91	171,434	-20.0%	137,147	-30.0%	120,004	-55.0%	77,145	-75.0%	42,858	-85.0%	25,715
Subtotal Residential			1,859,165	-10.1%	1,682,412	-17.8%	1,537,432	-27.9%	1,348,622	-37.8%	1,163,239	-49.0%	954,714
Multi-Family		\$4.39	93,994	-5%	89,294	-10%	84,595	-30%	65,796	-35%	61,096	-45%	51,697
Non-Residential													
Tier 1	34	\$4.35	36,429	-8%	33,515	-10%	32,786	-20%	29,143	-35%	23,679	-45%	20,036
Tier 2	>34	\$8.00	91,314	-8%	84,009	-10%	82,183	-20%	73,051	-35%	59,354	-45%	50,223
Irrigation													
Tier 1	113	\$7.78	111,711	-10%	100,540	-20%	89,369	-30%	78,198	-40%	67,027	-50%	55,856
Tier 2	>113	\$11.91	137,481	-10%	123,733	-20%	109,985	-30%	96,237	-40%	82,489	-50%	68,741
Construction/Hydrant													
Tier 1	115	\$7.78	7,120	-10%	6,408	-20%	5,696	-30%	4,984	-40%	4,272	-50%	3,560
Tier 2	>115	\$11.91	15,833	-10%	14,250	-20%	12,666	-30%	11,083	-40%	9,500	-50%	7,917
Total Other			493,882	-9%	451,748	-16%	417,279	-27%	358,492	-38%	307,416	-48%	258,028
Total Potable Water (hcf)			2,365,084		2,134,160		1,954,711		1,707,114		1,470,655		1,212,742
% Total Reduction					-9.8%		-17.4%		-27.8%		-37.8%		-48.7%

The next step is to estimate the water supply cost savings that result when there is a reduction in demand. For this study, Raftelis presumed that the overall reduction percentage for a stage is met by reducing the amount of water purchases. The variable costs associated with each supply are used to determine the cost savings. Almost all other costs are fixed; therefore, no other costs are included in the analysis. Table 8-2 shows the estimated cost savings in the water supply costs for each stage due to the reduction in usage. The total supply assumes a 5.8 percent water loss from the water usage shown in Table 8-1.

Table 8-2: Estimated Cost Savings by Percent Usage Reduction

	FY 2026	0 - 10% Reduction	10 - 20% Reduction	20 - 30% Reduction	30 - 40% Reduction	40 - 50% Reduction
Supply (hcf)						
Groundwater Wells	252,080	252,080	252,080	252,080	252,080	252,080
Contra Costa Water District	2,259,142	2,013,950	1,823,412	1,560,516	1,309,447	1,035,597
Total Potable Supply	2,511,223	2,266,030	2,075,493	1,812,596	1,561,527	1,287,678
Variable Cost (\$/hcf)						
Groundwater	\$1.29	\$1.29	\$1.29	\$1.29	\$1.29	\$1.29
CCWD	\$3.08	\$3.08	\$3.08	\$3.08	\$3.08	\$3.08
Total Variable Costs	\$7,282,197	\$6,527,004	\$5,940,149	\$5,130,428	\$4,357,135	\$3,513,678
Total Water Supply Costs	\$7,282,197	\$6,527,004	\$5,940,149	\$5,130,428	\$4,357,135	\$3,513,678
Cost Savings		\$755,193	\$1,342,048	\$2,151,769	\$2,925,062	\$3,768,519

The final step is to calculate the drought surcharge, shown in Table 8-3. First, the projected potable water revenue is calculated by multiplying the demand projections from Table 8-1 for each level of reduction in use and the proposed water rates in FY 2026. The revenue shortfall is determined by comparing this revenue for each reduction level with the FY 2026 revenues. Next, we add the estimated cost savings from Table 8-2 for each reduction level. The net revenue shortfall is the sum of the revenue shortfall and cost savings. The percent revenue shortfall is then shortfall divided by the projected variable revenue. The percentages shown will be applied to all water usage rates in place through the duration of the shortage.

Table 8-3: Drought Surcharge by Percent Usage Reduction

	FY 2026	0 - 10% Reduction	10 - 20% Reduction	20 - 30% Reduction	30 - 40% Reduction	40 - 50% Reduction
Projected Variable Revenue	\$15,131,788	\$13,439,617	\$12,172,284	\$10,325,356	\$8,605,883	\$6,949,073
Revenue Shortfall		(\$1,692,171)	(\$2,959,504)	(\$4,806,432)	(\$6,525,905)	(\$8,182,715)
Cost Savings		\$755,193	\$1,342,048	\$2,151,769	\$2,925,062	\$3,768,519
Net Revenue Shortfall to be Recovered		(\$936,978)	(\$1,617,456)	(\$2,654,663)	(\$3,600,843)	(\$4,414,196)
% Revenue Shortfall		7%	13%	26%	42%	64%