



CITY OF HUNTINGTON BEACH

Water Rate Study

FINAL REPORT / FEBRUARY 27, 2024



February 27, 2024

Mr. Alvin Papa
Project Manager
City of Huntington Beach Public Works Department, Utilities Division
19001 Huntington Street, P.O. Box # 190
Huntington Beach, CA 92648

Subject: FY 2025 Water Rate Study Report – FINAL

Dear Mr. Papa:

Raftelis is pleased to provide this FY 2025 Water Rate Study report to the City of Huntington Beach (City). The contents of this report include an updated five-year financial plan for the City's water utility for fiscal year (FY) 2025 to FY 2029 and proposed water rates for the same five-year period.

The major objectives of the study include the following:

- Update the five-year financial plan for the City's water utility to ensure revenue sufficiency and financial sustainability
- Conduct a cost-of-service analysis to equitably allocate the costs of providing water service incurred by the City to serve the City's customers
- Develop updated water rates for FY 2025 through FY 2029 that are fair and equitable

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

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

Sincerely,

A handwritten signature in blue ink that reads 'Steve Gagnon'.

Steve Gagnon, P.E.
Vice President

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1. Executive Summary

1.1. Introduction

In 2022, the City of Huntington Beach (City) engaged Raftelis to conduct a cost-of-service analysis and rate study for the water utility. The major objectives of this study include the following:

- Ensure revenue sufficiency to meet the operations and maintenance (O&M) and capital needs of the City’s water utility.
- Ensure that rates are fair and equitable, in accordance with cost-of-service guidelines used in the industry.
- Plan for rate and revenue stability to prevent rate spikes, ensure adequate capital replacement funding, preserve the overall financial health of the utility, and maintain adequate reserves under uncertain conditions.

The City operates on a fiscal year (FY) basis running from July 1 through June 30. For example, July 1, 2024 – June 30, 2025 would be FY 2025 (or FY 2024/25). This executive summary provides an overview of the results of the study and shows the proposed water rates for FY 2025 – FY 2029.

1.2. Proposed Financial Plan

To maintain fiscal solvency, fund O&M and capital expenses, maintain reserve fund balance targets, and avoid the need for debt issuance, we make several recommendations regarding the City’s current rate structure and financial plan.

1.2.1. Fund 506 Revenue Adjustments

The City currently adjusts the monthly fixed meter charge on a combination of the annual percentage change available on July 1 in the Consumer Price Index for All Urban Consumers (CPI) in Los Angeles, Orange, and Riverside counties as established by the U.S. Bureau of Labor Statistics and an incremental dollar amount.

Raftelis recommends that the City make overall revenue adjustments for Fund 506 as shown in Table 1-1, which would apply to the fixed meter, fire, and commodity charges. Additionally, Raftelis recommends that the City continue to pass through wholesale costs that are higher than what is presumed in the modeling.

Table 1-1: Proposed Fund 506 Adjustments

Effective Date	Revenue Adjustment
1-Jul-24	9.5%
1-Jul-25	9.5%
1-Jul-26	8.5%
1-Jul-27	6.5%
1-Jul-28	4.5%

1.2.2. Capital Fund 507 Revenue Adjustments

Raftelis recommends that the City make the overall revenue adjustments for Fund 507 shown in Table 1-2.

Table 1-2: Proposed Capital Charge (Fund 507) Adjustments

Effective Date	Revenue Adjustment
1-Jul-24	19.0%
1-Jul-25	19.0%
1-Jul-26	19.0%
1-Jul-27	19.0%
1-Jul-28	19.0%

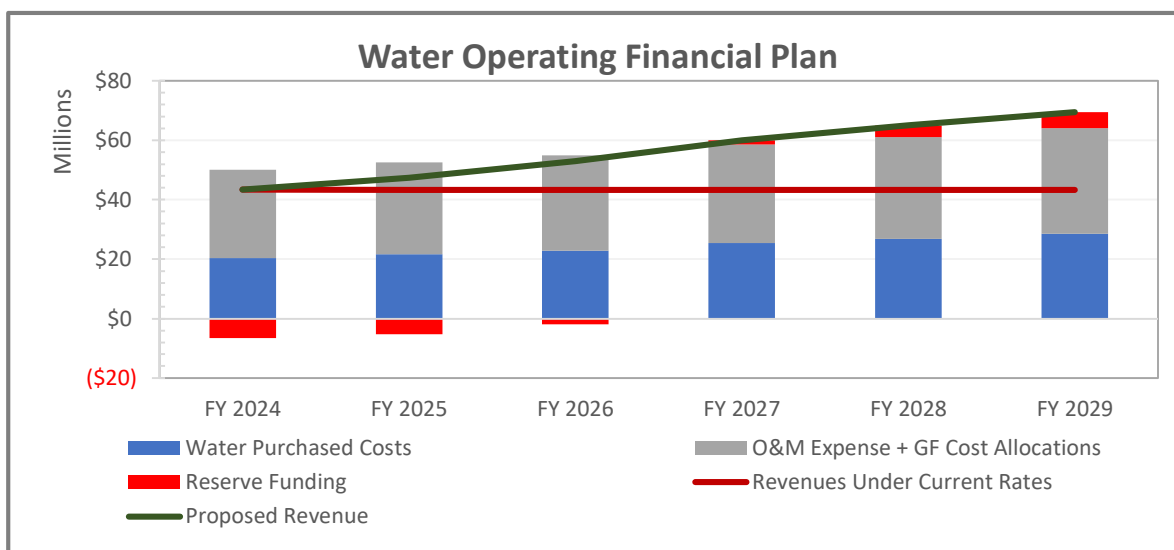
1.2.3. Commodity Charge Pass-Through

The commodity charge is designed to recover the variable costs of providing water, including water supply costs and unrecovered water system fixed costs¹. We recommend that the City increase the commodity charge based on the overall revenue adjustment, after the test year. We also recommend that the City continues to “pass-through” water supply costs if higher than forecast in the model. In keeping with industry standard pass-through methodologies, the City will calculate the actual change in water supply costs in each year as new purveyor rates become available.

1.2.4. Proposed Financial Plan

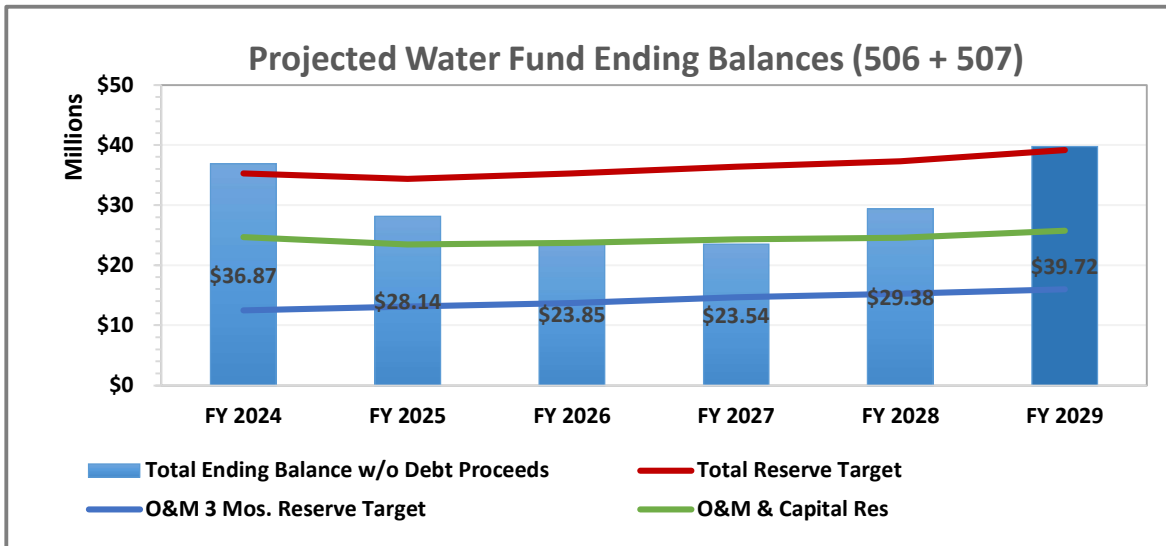
Based on the recommended revenue adjustments, we project the proposed financial plan for the study period. The proposed revenue adjustments help increase projected rate revenues, but reserves are drawn down in the first three years of the study period, then rebound over the next two years. Note that in the absence of any revenue adjustments, reserve balances would be reduced in an unsustainable manner that would jeopardize the fiscal solvency of the City’s water utility. Figure 1-1 and Figure 1-2 display the proposed operating financial plan and projected end-year reserve combined balances.

Figure 1-1: Proposed Operating Financial Plan



¹ A portion of water system fixed costs is recovered in the fixed service charge.

Figure 1-2: Projected Reserve Balances Under Proposed Financial Plan



1.3. Proposed Water Rates

Table 1-3 shows the current and proposed fixed meter charges for FY 2024/25 – FY 2028/29 on a monthly basis. The rates are based on the cost-of-service analysis and rate derivations detailed in Sections 4 and 5 of this report. Table 1-4 shows the fixed meter charge on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 1-3: Current and Proposed 5-Year Fixed Meter Charges, Monthly Basis

Meter Size	Current FY2023/24	Proposed FY2024/25	Proposed FY2025/26	Proposed FY2026/27	Proposed FY2027/28	Proposed FY2028/29
3/4"	\$18.23	\$19.31	\$21.14	\$22.94	\$24.43	\$25.53
1"	\$30.45	\$32.17	\$35.23	\$38.22	\$40.70	\$42.53
1 1/2"	\$60.71	\$64.34	\$70.45	\$76.44	\$81.41	\$85.07
2"	\$97.18	\$102.94	\$112.72	\$122.30	\$130.25	\$136.11
3"	\$212.77	\$225.19	\$246.58	\$267.54	\$284.93	\$297.75
4" Compound	\$303.93	\$321.69	\$352.25	\$382.19	\$407.03	\$425.35
4" FM	\$425.35	\$450.37	\$493.16	\$535.08	\$569.86	\$595.50
6" Compound	\$607.67	\$643.38	\$704.50	\$764.38	\$814.06	\$850.69
6" FM	\$972.31	\$1,029.40	\$1,127.19	\$1,223.00	\$1,302.50	\$1,361.11
8" Compound	\$1,604.98	\$1,029.40	\$1,127.19	\$1,223.00	\$1,302.50	\$1,361.11
8" FM	\$1,701.59	\$1,801.45	\$1,972.59	\$2,140.26	\$2,279.38	\$2,381.95
10" FM	\$2,674.09	\$2,830.85	\$3,099.78	\$3,363.26	\$3,581.87	\$3,743.05

Table 1-4: Current and Proposed 5-Year Fixed Meter Charges, Daily Basis

Meter Size	Current		Proposed			
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$0.5994	\$0.6349	\$0.6951	\$0.7542	\$0.8032	\$0.8394
1"	\$1.0010	\$1.0577	\$1.1583	\$1.2566	\$1.3381	\$1.3983
1 1/2"	\$1.9960	\$2.1153	\$2.3162	\$2.5131	\$2.6765	\$2.7969
2"	\$3.1948	\$3.3844	\$3.7059	\$4.0209	\$4.2822	\$4.4749
3"	\$6.9951	\$7.4036	\$8.1068	\$8.7959	\$9.3676	\$9.7891
4" Compound	\$9.9921	\$10.5762	\$11.5809	\$12.5652	\$13.3819	\$13.9842
4" FM	\$13.9842	\$14.8067	\$16.2135	\$17.5917	\$18.7352	\$19.5781
6" Compound	\$19.9783	\$21.1523	\$23.1617	\$25.1304	\$26.7637	\$27.9679
6" FM	\$31.9664	\$33.8433	\$37.0584	\$40.2083	\$42.8220	\$44.7489
8" Compound	\$52.7664	\$33.8433	\$37.0584	\$40.2083	\$42.8220	\$44.7489
8" FM	\$55.9428	\$59.2258	\$64.8523	\$70.3648	\$74.9386	\$78.3107
10" FM	\$87.9152	\$93.0691	\$101.9106	\$110.5730	\$117.7602	\$123.0592

The current and proposed FY 2024/25 – FY 2028/29 capital charge is shown in Table 1-5. Table 1-6 shows the capital charge on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 1-5: Current and Proposed 5-Year Fixed Capital Charges, Monthly Basis

Meter Size	Current	Proposed	Proposed	Proposed	Proposed	Proposed
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$4.00	\$4.76	\$5.66	\$6.74	\$8.02	\$9.54
1"	\$6.67	\$7.94	\$9.45	\$11.25	\$13.39	\$15.93
1 1/2"	\$13.33	\$15.88	\$18.90	\$22.49	\$26.76	\$31.84
2"	\$21.33	\$25.40	\$30.23	\$35.97	\$42.80	\$50.93
3"	\$46.67	\$55.57	\$66.13	\$78.69	\$93.64	\$111.43
4" Compound	\$66.67	\$79.38	\$94.46	\$112.41	\$133.77	\$159.19
4" FM	\$93.33	\$111.13	\$132.24	\$157.37	\$187.27	\$222.85
6" Compound	\$133.33	\$158.76	\$188.92	\$224.81	\$267.52	\$318.35
6" FM	\$213.33	\$254.01	\$302.27	\$359.70	\$428.04	\$509.37
8" Compound	\$373.33	\$254.01	\$302.27	\$359.70	\$428.04	\$509.37
8" FM	\$373.33	\$444.52	\$528.98	\$629.49	\$749.09	\$891.42
10" FM	\$586.67	\$698.54	\$831.26	\$989.20	\$1,177.15	\$1,400.81

Table 1-6: Current and Proposed 5-Year Fixed Capital Charges, Daily Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$0.1315	\$0.1565	\$0.1861	\$0.2216	\$0.2637	\$0.3137
1"	\$0.2193	\$0.2611	\$0.3107	\$0.3699	\$0.4403	\$0.5238
1 1/2"	\$0.4382	\$0.5221	\$0.6214	\$0.7394	\$0.8798	\$1.0468
2"	\$0.7013	\$0.8351	\$0.9939	\$1.1826	\$1.4072	\$1.6745
3"	\$1.5344	\$1.8270	\$2.1742	\$2.5871	\$3.0786	\$3.6635
4" Compound	\$2.1919	\$2.6098	\$3.1056	\$3.6957	\$4.3980	\$5.2337
4" FM	\$3.0684	\$3.6536	\$4.3477	\$5.1739	\$6.1569	\$7.3266
6" Compound	\$4.3835	\$5.2196	\$6.2111	\$7.3911	\$8.7952	\$10.4664
6" FM	\$7.0136	\$8.3511	\$9.9377	\$11.8258	\$14.0726	\$16.7465
8" Compound	\$12.2739	\$8.3511	\$9.9377	\$11.8258	\$14.0726	\$16.7465
8" FM	\$12.2739	\$14.6144	\$17.3912	\$20.6956	\$24.6277	\$29.3070
10" FM	\$19.2878	\$22.9657	\$27.3291	\$32.5217	\$38.7009	\$46.0541

The current and proposed FY 2024/25 – FY 2028/29 capital charge is shown in Table 1-7. Table 1-8 shows the fire sprinkler charge on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 1-7: Current and Proposed 5-Year Private Fire Service Sprinkler Charge, Monthly Basis

Meter Size	Current	Proposed	Proposed	Proposed	Proposed	Proposed
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$3.65	\$0.29	\$0.32	\$0.35	\$0.37	\$0.39
1"	NA	\$0.29	\$0.32	\$0.35	\$0.37	\$0.39
1.5"	NA	\$0.82	\$0.90	\$0.98	\$1.04	\$1.09
2"	\$10.04	\$1.74	\$1.91	\$2.07	\$2.20	\$2.30
3"	\$14.90	\$5.05	\$5.53	\$6.00	\$6.39	\$6.68
4"	\$20.08	\$10.75	\$11.77	\$12.77	\$13.60	\$14.21
6"	\$30.11	\$31.21	\$34.17	\$37.07	\$39.48	\$41.26
8"	\$40.15	\$66.51	\$72.83	\$79.02	\$84.16	\$87.95
10"	\$49.88	\$119.60	\$130.96	\$142.09	\$151.33	\$158.14
12"	\$59.92	\$193.19	\$211.54	\$229.52	\$244.44	\$255.44

Table 1-8: Current and Proposed 5-Year Private Fire Service Sprinkler Charge, Daily Basis

Meter Size	Current FY2023/24	Proposed FY2024/25	Proposed FY2025/26	Proposed FY2026/27	Proposed FY2027/28	Proposed FY2028/29
3/4"	\$0.1200	\$0.0096	\$0.0106	\$0.0116	\$0.0122	\$0.0129
1"	NA	\$0.0096	\$0.0106	\$0.0116	\$0.0122	\$0.0129
1.5"	NA	\$0.0270	\$0.0296	\$0.0323	\$0.0342	\$0.0359
2"	\$0.3300	\$0.0573	\$0.0628	\$0.0681	\$0.0724	\$0.0757
3"	\$0.4900	\$0.1661	\$0.1819	\$0.1973	\$0.2101	\$0.2197
4"	\$0.6600	\$0.3535	\$0.3870	\$0.4199	\$0.4472	\$0.4672
6"	\$0.9900	\$1.0261	\$1.1234	\$1.2188	\$1.2980	\$1.3565
8"	\$1.3200	\$2.1867	\$2.3945	\$2.5980	\$2.7670	\$2.8916
10"	\$1.6400	\$3.9321	\$4.3056	\$4.6715	\$4.9753	\$5.1992
12"	\$1.9700	\$6.3515	\$6.9548	\$7.5459	\$8.0364	\$8.3981

Table 1-9 shows the current and proposed FY 2024/25 – FY 2028/29 commodity charge. This charge includes estimated wholesale costs over the rate-setting period. If the effective rates for water supplied by OCWD and MWDOC are higher than modeled, the City will calculate a pass-through adjustment.

Table 1-9: Current and Proposed 5-Year Commodity Rate, \$/ccf

Component	Current		Proposed			
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
City-Related Costs			\$2.9423	\$3.1924	\$3.3999	\$3.5529
Wholesale Estimated (1)			\$0.1128	\$0.3570	\$0.4853	\$0.6495
Total	\$2.4034	\$2.6870	\$3.0551	\$3.5494	\$3.8852	\$4.2024

(1) pass-through

1.3.1. Customer Impacts

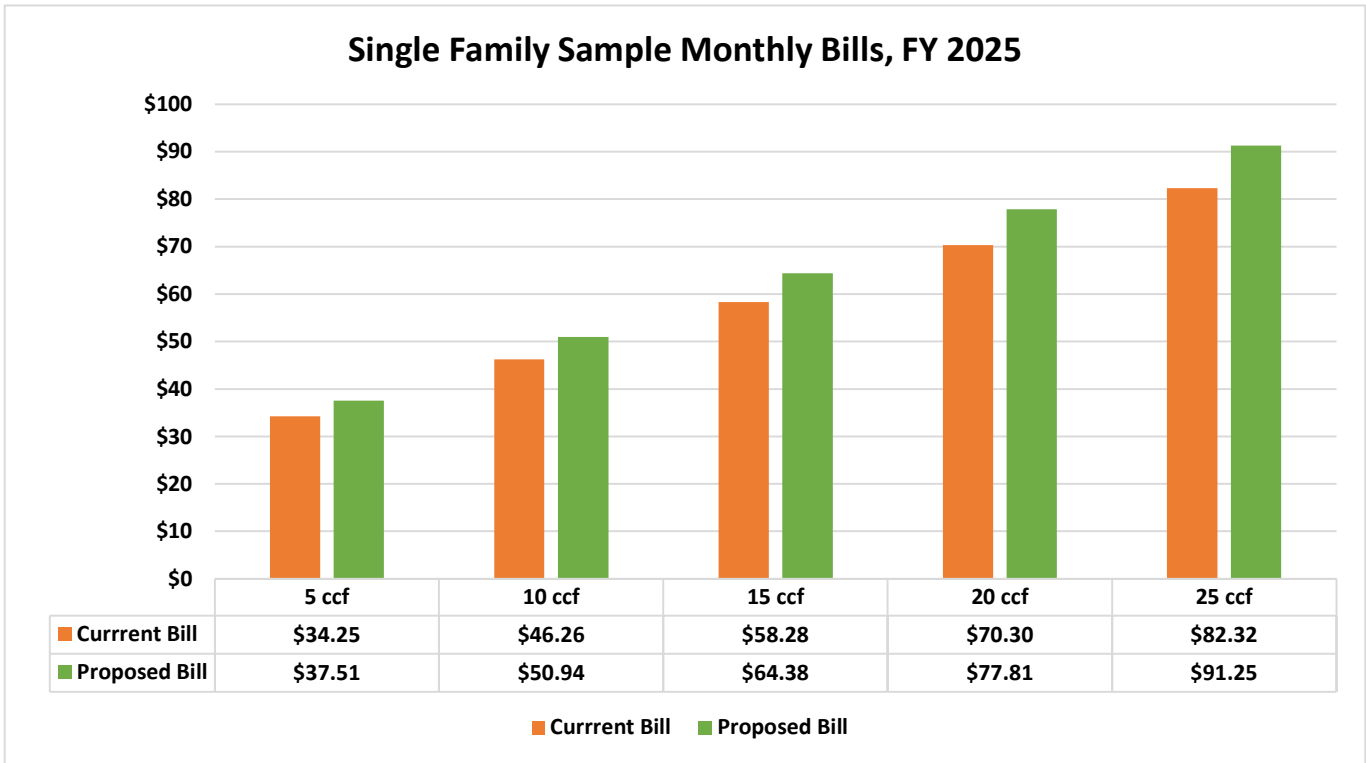
Table 1-10 compares bills under the current FY 2023/24 rate schedule with those projected under the proposed FY 2024/25 rates. We compared bills for an average residential customer with a 3/4-inch meter using 9 ccf of water in a month, which represents the median residential billed monthly use.

Table 1-10: Residential Customer Monthly Water Bill Impacts at 9 ccf and 3/4-inch Meter

Description	Current	Proposed	
	FY2023/24	FY2024/25	\$ Change
Fixed Meter Service Charge	\$18.23	\$19.31	\$1.08
Capital Surcharge	\$4.00	\$4.76	\$0.76
Commodity Rate Charge	\$21.63	\$24.18	\$2.55
Total Bill	\$43.86	\$48.25	\$4.39

Figure 1-3 shows a breakdown of monthly customer impacts for customers with a 3/4-inch meter at various levels of usage.

Figure 1-3: Projected Residential Bill Impacts



2. Introduction

2.1. Agency Background

The City of Huntington Beach Public Works Department is responsible for the design, construction, maintenance, and operation of public facilities and infrastructure within the City of Huntington Beach. This includes the water utility, which serves approximately 52,500 metered connections. The City's top priorities and goals for the water enterprise include providing safe drinking water, fighting fires (and protecting property), and maintaining a reliable and dependable water system for current and future generations.

The City currently provides water from two sources: local groundwater serviced by the Orange County Water District (OCWD) and imported purchased water from the Metropolitan Water District of Orange County (MWDOC). In recent years, the City has provided 75 percent of its water supply from OCWD and the remaining 25 percent from MWDOC. The City anticipates significant costs to maintain and replace its substantial water infrastructure, which includes 8 active wells, 611 miles of distribution mains, 4 reservoirs, 3 booster pump stations, and 3 import connections. The City also maintains 5,833 public hydrants and over 15,000 large valves.

The City currently charges customers a uniform commodity rate based on its water supply and other operating costs, a monthly fixed meter charge based on meter size, and a monthly capital charge based on meter size to fund a portion of the water utility's capital improvement plan (CIP) expenditures. Those receiving private fire sprinkler service pay a monthly charge for that service.

The City currently adjusts the monthly fixed meter charge by the annual percentage change available on July 1 in the Consumer Price Index for All Urban Consumers (CPI) in Los Angeles, Orange, and Riverside counties as established by the U.S. Bureau of Labor Statistics. The uniform commodity rate is currently adjusted in each year via a "pass-through" of the water utility's water supply cost increases. This means that the City increases its commodity rate based on the incremental increase in its water supply costs each year.

2.2. Study Background

In 2022, Raftelis was engaged to perform a cost-of-service analysis and rate study for the water utility and to establish rates for FY 2024/25 through FY 2028/29. The major objectives of this study include the following:

- Ensure revenue sufficiency to meet the operations and maintenance (O&M) and capital needs of the City's water utility.
- Ensure that rates are fair and equitable, in accordance with cost-of-service guidelines used in the industry.
- Plan for rate and revenue stability to prevent rate spikes, ensure adequate capital replacement funding, preserve the overall financial health of the utility, and maintain adequate reserves under uncertain conditions.

This report documents the methods and results of the study update and concludes with recommended water rates for FY 2024/25 through FY 2028/29.

2.3. Rate Setting Methodology

This study was conducted using industry-standard principles outlined by the American Water Works Association (AWWA) Manual M1. The process and approach Raftelis utilized in the study to determine water rates is informed by the City's policy objectives, the current water system and rates, and the legal requirements in California (namely, Proposition 218). The resulting financial plan, cost-of-service analysis, and rate design process follows five key steps, outlined below, to determine proposed rates that fulfill the City'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 City's revenues, expenses, capital project financing, annual debt service, and reserve funding. The financial plan is used to determine the revenue adjustment, which allows the City to recover adequate revenues to fund expenses and reserves.
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 2024/25. The revenue requirement should sufficiently fund the City'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 units of service (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 costs are incurred during periods of peak consumption, most often coinciding with summer water use. Additional capacity-related costs are associated with designing, constructing, operating, maintaining, and replacing facilities to meet peak demand. Peaking imposes additional costs on a water utility and peaking demands are used to determine the cost burden on 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 City'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.
5. **Record Preparation and Rate Adoption:** The final step in a rate study is to develop the report in conjunction with the rate adoption process. The report documents the study results and presents the methodologies, rationale, justifications, and calculations used to determine the proposed rates.

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. Financial Plan Development

3.1. Key Assumptions

The first step in developing the updated financial plan is to identify the growth assumptions used to project costs, usage, and revenues over the study period. Key assumptions of the study include anticipated growth in costs over the study period, inflation factors for account growth and demand growth, and reserve policies. Raftelis developed these assumptions based on the City’s data and projections. These assumptions represent our projections of the most likely scenario over the study period, to the extent that data are available.

3.1.1. Inflation Factors

Table 3-1 lists the anticipated change in accounts and usage over the study period. It also lists the annual inflation factors for each of the City’s cost categories, including O&M, capital, and water supply costs. Note that the City does not have any outstanding bonds and does not plan to issue any new debt during the study period.

Table 3-1: Inflation Factors

Cost Category	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
General	5%	3%	3%	3%	3%
Salary	3%	3%	3%	3%	3%
Benefits	6%	6%	5%	5%	5%
Energy	5%	5%	5%	5%	5%
Chemicals	5%	3%	3%	3%	3%
Water Supply (OCWD)	Per OCWD Budget through FY 2027/28				7%
Water Supply (MWDOC)	7%	6%	6%	6%	6%
Capital	6%	5%	3%	3%	3%

The City’s water system is currently built out, so we do not assume any change in the number of accounts over the study period. Additionally, we assume no change in average demand over the study period.

3.1.2. Financial Policies

A reserve policy is a written document that establishes reserve goals/targets. It provides 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. Adopting and adhering to a sustainable reserve policy enhances financial management transparency and helps achieve or maintain a certain credit rating for future debt issues. Reserves can offset unanticipated reductions in revenues, fluctuations in costs of providing services, and fiscal emergencies such as revenue shortfalls, asset failure, and natural disasters. Capital reserves set funds aside for replacement of capital assets as they age and for new capital projects. The appropriate amount of reserves and reserve types are determined by a variety of factors such as the size of the operating budget, the amount of debt, the type of rate structure, frequency of customer billing, and risk of natural disaster.

The City maintains two separate reserve funds: the Water Fund (i.e., Fund 506, Operating Reserve Fund) and the Water Master Plan Fund (i.e., Fund 507, Capital Reserve Fund). Table 3-2 shows these reserve policies for Funds 506 and 507.

- **Fund 506, Operating Reserve Fund** - Used for unanticipated operating expenses. This fund is designated to maintain working capital for current operations and to meet routine cash flow needs. The target level of Fund 506 includes:
 - Operating reserve: 25 percent or 3 months of the Water Fund's budgeted total operating expenses.
 - Emergency reserve: based on the estimated cost for having to buy imported water for 30 months in case a well is unavailable.

- **Fund 507, Capital Reserve Fund** - Used for the replacement of capitalized assets when they reach the end of their useful lives. The target level of Fund 507 includes:
 - Capital replacement reserve: 150% of 5-year average CIP to allow flexibility in the timing of projects and/or schedules.
 - Emergency reserve: \$5.8M for estimated well replacement costs and the associated cost of importing additional water during construction.

Table 3-2: Reserve Policies

Reserve	Reserve Target Definition	Estimated FY2024/25 Target
Operations (Fund 506)	25% of annual operating budget	\$18,260,201
Emergency (Fund 506)	incremental cost of 30 months of imported water	\$13,153,164
Capital (Fund 507)	150% of 5-year average annual CIP	\$10,271,485
Emergency (Fund 507)	Estimated cost of well replacement	\$5,830,000

3.2. Revenue from Current Water Rates

To develop a new financial plan for the City, we first calculated the anticipated revenues if the City were not to make any changes to its current rate schedule. This provides a baseline with which to compare the proposed financial plan and rate structure.

Table 3-3 shows the City’s current fixed and capital rate schedule. We use the FY 2023/24 rates to project status quo fixed charge revenues across the study period.

Table 3-3: Current Fixed Meter and Capital Charges

Meter Size	Daily Fixed Charge	Daily Capital Charge
3/4"	\$0.5994	\$0.1315
1"	\$1.0010	\$0.2193
1 1/2"	\$1.9960	\$0.4382
2"	\$3.1948	\$0.7013
3"	\$6.9951	\$1.5344
4" Compound	\$9.9921	\$2.1919
4" (fire meter)	\$13.9842	\$3.0684
6" Compound	\$19.9783	\$4.3835
6" (fire meter)	\$31.9664	\$7.0136
8" Compound	\$52.7664	\$12.2739
8" (fire meter)	\$55.9428	\$12.2739
10" (fire meter)	\$87.9152	\$19.2878

Table 3-4 shows the current private fire service sprinkler charges.

Table 3-4: Current Private Fire Service Sprinkler Charges

Meter Size	Daily Charge
3/4"	\$0.1200
1"	NA
1.5"	NA
2"	\$0.3300
3"	\$0.4900
4"	\$0.6600
6"	\$0.9900
8"	\$1.3200
10"	\$1.6400
12"	\$1.9700

Table 3-5 shows the projected water sales for the study period. We do not anticipate any growth in demand over the course of the study period through FY 2028/29. The current commodity rate in FY 2023/24 for all customer classes is \$2.4034 per hundred cubic feet (CCF) of water delivered.

Table 3-5: Projected Water Sales

FY	Total Sales (ccf)	Total Sales (AF)
FY2023/24	10,662,508	24,478
FY2024/25	10,662,508	24,478
FY2025/26	10,662,508	24,478
FY2026/27	10,662,508	24,478
FY2027/28	10,662,508	24,478
FY2028/29	10,662,508	24,478

Table 3-6 shows the projected revenues under the current rate schedule. We calculate fixed charge revenues by multiplying the fixed and capital meter charges (from Table 3-3) by the appropriate number of accounts at

each meter size. We then multiply the result by 365 days to annualize the fixed and capital charge revenues. We determine the commodity rate revenues by multiplying the FY 2023/24 uniform commodity rate (\$2.4034 per CCF) by total usage (from Table 3-5) in each year. This is the total revenue the City expects to collect without any changes to the current FY 2023/24 rates.

Table 3-6: Projected Revenues from Current Water Rates

Operating Revenue	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Daily Meter Charge	\$16,798,057	\$16,798,057	\$16,798,057	\$16,798,057	\$16,798,057	\$16,798,057
Daily Capital Charge	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037
Private Fire Service	\$376,578	\$376,578	\$376,578	\$376,578	\$376,578	\$376,578
Commodity Charge	\$25,573,924	\$25,573,924	\$25,573,924	\$25,573,924	\$25,573,924	\$25,573,924
Total	\$46,433,595	\$46,433,595	\$46,433,595	\$46,433,595	\$46,433,595	\$46,433,595

Table 3-7 displays the projected non-operating revenues for the Water Fund. Note that interest income is based on the proposed financial plan, not the status quo scenario, as it is dependent on reserve balances and cash changes.

Table 3-7: Fund 506 – Projected Non-Operating Revenue

Non-Operating Revenue	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Interest Income	\$233,710	\$175,030	\$133,515	\$117,693	\$136,760	\$174,033
Late Charges	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
M&O Huntington Beach	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Construction Sales & Meter	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000
Other Revenue	\$60,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Total	\$683,710	\$605,030	\$563,515	\$547,693	\$566,760	\$604,033

3.3. Projected Expenses

3.3.1. Water Supply Costs

The City incurs water supply costs, which form part of the revenue requirement to be recovered by the commodity rate. The City has two sources of water: local groundwater furnished through OCWD and imported water from MWDOC. Groundwater from OCWD is the cheaper of the two sources; and, therefore, the most desirable. In each fiscal year the City is allotted a specific basin pumping percentage (BPP), which determines the proportion of its total water demand that can be sourced through OCWD. The City’s BPP is currently 77 percent. The City anticipates the percentage to stay the same through the end of the study period.

Table 3-8 shows the City’s projected water production for the study period. We based these projections on anticipated demand and water loss (i.e., the percent of supplied water that is not sold). Based on input from City staff, the over pumping due to Well #9 will end after FY 2025/26.

Table 3-8: Projected Water Production

Line Item	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Basin Pumping Percentage (BPP)	77%	77%	77%	77%	77%	77%
Water Loss	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%
Water Sales (AF)	24,478	24,478	24,478	24,478	24,478	24,478
Water Production (AF)	26,377	26,377	26,377	26,377	26,377	26,377
Water Purchases						
OCWD (AF)	22,234	22,234	22,234	20,310	20,310	20,310
MWDOC (AF)	4,143	4,143	4,143	6,067	6,067	6,067

The costs for each source vary based on season. OCWD’s rates are 100 percent variable while MWDOC’s rates include both fixed and variable components. For each source, we take a weighted average of the seasonal variable costs to develop a “blended rate.” The blended rate is weighted based on the proportion of water that the City plans to purchase in each seasonal period. We multiply the blended rate for each source by the total anticipated purchases to arrive at the total variable water supply cost in each fiscal year. Finally, we add the MWDOC fixed charges to arrive at the final total water supply cost. This amount is recovered through the City’s commodity rate.

Table 3-9 shows the projected unit costs and total water supply costs for the study period. Water supply costs are projected based on each agency’s rate schedule, escalated by the inflation factors shown in Table 3-1. The bottom row displays the year-to-year projected increase in water supply costs to be recovered as a pass-through cost. Note that the pass-through projections are based on projected incremental increases in water supply costs each year. Actual pass-through adjustments will be determined by City staff as updated water supply cost information becomes available. The proposed commodity rate for FY 2024/25, shown in Section 5, does include the estimated wholesale costs for FY 2024/25. Additionally, the financial plans shown in this study assume that any increase in water supply costs relative to FY 2024/25 will be recovered via pass-through adjustments.

Table 3-9: Projected Water Supply Costs

Water Supply Costs	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
OCWD - Fixed Costs	\$0	\$0	\$0	\$0	\$0	\$0
OCWD - Unit Cost (\$/AF)						
Jul - Dec	\$624	\$665	\$699	\$733	\$769	\$822
Jan - Jun	\$624	\$665	\$699	\$733	\$769	\$822
MWDOC - Fixed Costs	\$669,733	\$716,614	\$759,611	\$805,187	\$853,499	\$904,709
MWDOC - Retail Meter Charge (\$/mtr)						
Jul - Dec	\$13.75	\$14.25	\$15.25	\$16.16	\$17.13	\$18.16
Jan - Jun	\$14.25	\$15.25	\$16.16	\$17.13	\$18.16	\$19.25
MWDOC - Unit Cost (\$/AF)						
Jul - Dec	\$1,209	\$1,256	\$1,344	\$1,425	\$1,510	\$1,601
Jan - Jun	\$1,256	\$1,344	\$1,425	\$1,510	\$1,601	\$1,697
Water Purchased from:						
OCWD	22,234	22,234	22,234	20,310	20,310	20,310
MWDOC	4,143	4,143	4,143	6,067	6,067	6,067
Effective Unit Cost (\$/AF)						
OCWD	\$624	\$665	\$699	\$733	\$769	\$822
MWDOC	\$1,230	\$1,296	\$1,380	\$1,463	\$1,551	\$1,644
Total Variable Cost (\$)						
OCWD	\$13,874,142	\$14,785,745	\$15,541,707	\$14,887,378	\$15,618,546	\$16,694,862
MWDOC	\$5,096,203	\$5,367,262	\$5,717,894	\$8,875,883	\$9,408,436	\$9,972,942
Total Cost by Source (\$)						
OCWD	\$13,874,142	\$14,785,745	\$15,541,707	\$14,887,378	\$15,618,546	\$16,694,862
MWDOC	\$6,501,734	\$6,859,026	\$7,302,909	\$10,555,998	\$11,189,358	\$11,860,720
Total Supply Cost (\$)	\$20,375,876	\$21,644,771	\$22,844,616	\$25,443,377	\$26,807,904	\$28,555,582
Water Supply Pass-Through (\$)	\$0	\$0	\$1,199,845	\$3,798,606	\$5,163,133	\$6,910,811

3.3.2. Water O&M Expenses

Table 3-10 shows the City’s operating and maintenance (O&M) budget. This includes salaries, benefits, other operating expenses, water purchase costs, operating capital expenses not included in the CIP, and transfers to the General Fund to pay for services rendered by the General Fund to the water utility. Note that the water purchase cost projections match those in Table 3-9.

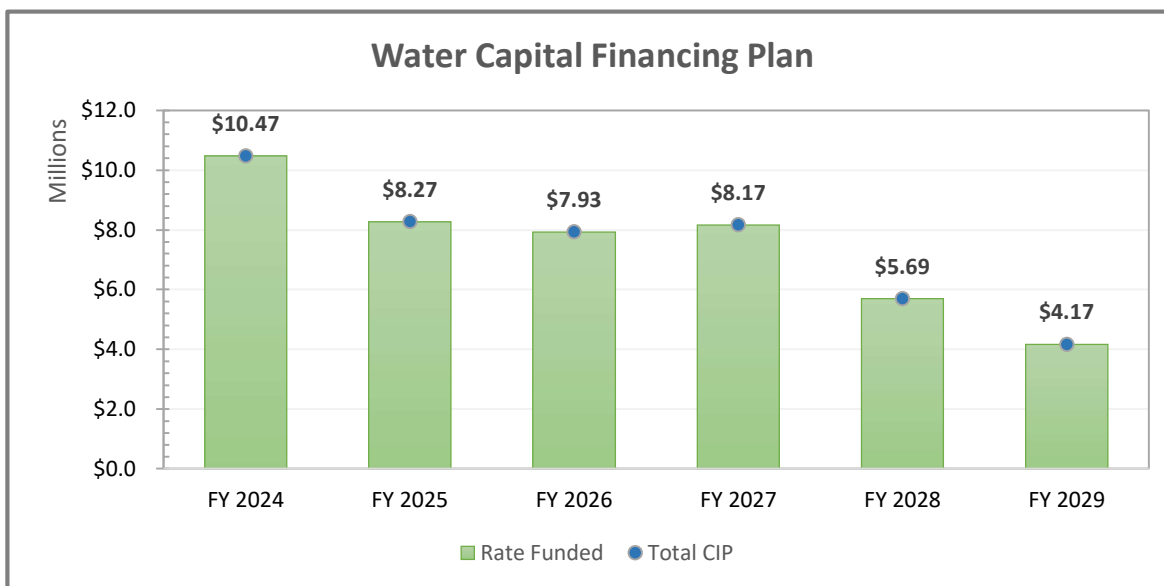
Table 3-10: Projected Water Fund 506 Water Operating Expenses

O&M Expenses	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Salaries	\$8,298,068	\$8,547,010	\$8,803,420	\$9,067,523	\$9,339,549	\$9,619,735
Benefits	\$3,320,461	\$3,519,689	\$3,695,673	\$3,880,457	\$4,074,480	\$4,278,204
Other Operating Expenses						
Equipment & Supplies	\$1,055,200	\$1,107,960	\$1,141,199	\$1,175,435	\$1,210,698	\$1,247,019
Other Services	\$1,783,400	\$1,872,570	\$1,928,747	\$1,986,610	\$2,046,208	\$2,107,594
Electricity	\$903,500	\$948,675	\$996,109	\$1,045,914	\$1,098,210	\$1,153,120
Natural Gas	\$853,500	\$896,175	\$940,984	\$988,033	\$1,037,435	\$1,089,306
Permit Expense	\$947,500	\$994,875	\$1,044,619	\$1,096,850	\$1,151,692	\$1,209,277
Purchased Water OCWD	\$13,874,142	\$14,785,745	\$15,541,707	\$14,887,378	\$15,618,546	\$16,694,862
Purchased Water MWDOC	\$6,501,734	\$6,859,026	\$7,302,909	\$10,555,998	\$11,189,358	\$11,860,720
Chemicals	\$196,000	\$205,800	\$211,974	\$218,333	\$224,883	\$231,630
Water Wells Maintenance	\$200,000	\$210,000	\$216,300	\$222,789	\$229,473	\$236,357
Water Svs & Other Maintenance	\$1,647,000	\$1,729,350	\$1,781,231	\$1,834,667	\$1,889,707	\$1,946,399
Pump Plant Maintenance	\$275,000	\$288,750	\$297,413	\$306,335	\$315,525	\$324,991
Capital/Equipment	\$2,666,000	\$2,825,960	\$2,967,258	\$3,056,276	\$3,147,964	\$3,242,403
Cost Allocation to General Fund	\$7,448,639	\$7,821,071	\$8,055,703	\$8,297,374	\$8,546,295	\$8,802,684
Total	\$49,970,144	\$52,612,656	\$54,925,245	\$58,619,972	\$61,120,022	\$64,044,300

3.3.3. Capital Improvement Plan (CIP)

The City’s projected CIP expenditures over the course of the study period are shown in Figure 3-1. The City’s expected CIP expenditures shown in this report represent estimates. Actual CIP expenditures are subject to future capital planning efforts. The City’s capital expenses and Fund 507 reserve targets are financed entirely by rates and the City does not anticipate issuing any new debt to fund capital projects over the study period.

Figure 3-1: Projected CIP Expenditures, Fund 507



3.4. Status Quo Financial Plan

We develop the proposed financial plan for the study period after first estimating the status quo financial plan. The status quo financial plan keeps its fixed meter and capital charges at the current FY 2023/24 rates for the next five years through FY 2028/29. The status quo financial plan does assume that any increases in water supply costs are passed through to customers via the pass-through mechanism.

Based on the results of the status quo financial plan, we then make recommendations for proposed fixed meter, capital charge, commodity, and private fire service sprinkler adjustments in each year necessary to preserve the fiscal solvency of the City’s water utility. Finally, we project the City’s operating finances and reserve balances under the proposed scenario with all recommendations incorporated. We also project the City’s capital finances and reserve balances under the proposed scenarios. This allows for a comparison of the City’s current situation with the projected results of implementing the recommendations of this study.

Figure 3-2 and Figure 3-3 illustrate the financial plan under status quo conditions. This is the anticipated result if the City does not implement any changes to its fixed meter, capital, and private fire charges and only implements the estimated wholesale pass through on the commodity charge. Under this scenario, the City will draw down both its operating and capital reserves below target levels and be in deficit in FY 2026/27. This projection highlights the need for adjustments to the City’s rates and charges if the water utility’s financial sustainability is to be preserved into the future.

Figure 3-2: Status Quo Operating Financial Plan

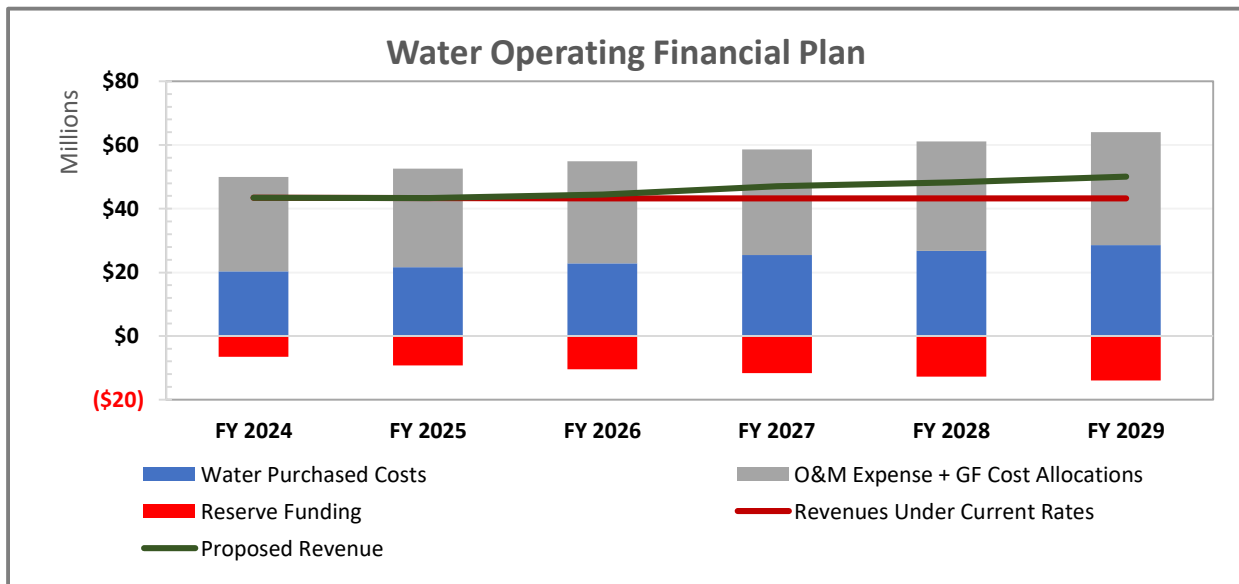
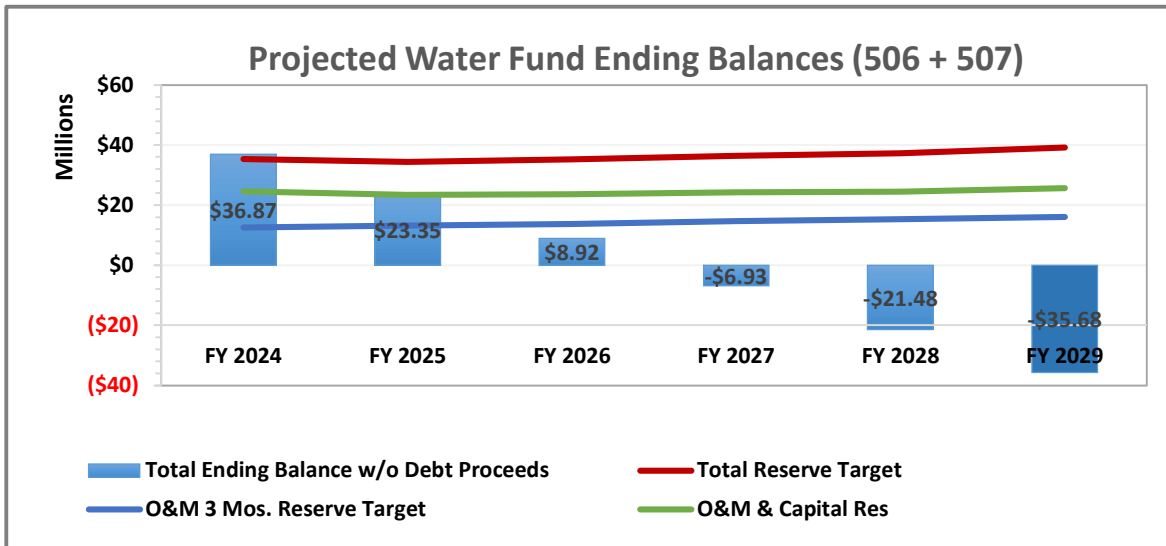


Figure 3-3: Status Quo Projected Reserve Balances (Funds 506 & 507)



3.5. Proposed Financial Plan

Raftelis recommends that the City implement a schedule of fixed meter charge, commodity, capital, and private fire charge revenue adjustments to maintain fiscal solvency, fund O&M and capital expenses, maintain reserve fund balance targets, and avoid the need for debt issuance. These annual adjustments apply to the fixed meter charge, private fire service sprinklers, and the commodity rate. However, the commodity rate from FY 2025/26 onwards would also be adjusted by the pass-through of the water supply costs. Separate annual adjustments are determined for the capital fund (507).

3.5.1. Revenue Adjustments

In absence of a revenue adjustment schedule, the City currently escalates its fixed meter charge in each year based on the annual percentage change available on July 1 in the Consumer Price Index for All Urban Consumers (CPI) in Los Angeles, Orange, and Riverside counties as established by the U.S. Bureau of Labor Statistics CPI. The City also currently only adjusts its commodity charge based on a wholesale pass-through of charges.

The updated modeling presumes an overall operating revenue adjustment is applied to the fixed, commodity, and private fire charges, which is displayed in Table 3-11. The overall operating revenue adjustment is shown and includes a presumed 2.5 percent CPI adjustment². Commodity charges would still be adjusted by a wholesale pass-through. Table 3-12 shows the capital fund revenue adjustment used in this study.

² For the CPI we round to 2.5 percent, to provide a conservative estimate of fixed charge revenues for financial planning purposes.

Table 3-11: Proposed Fund 506 Revenue Adjustments

Effective Date	Revenue Adjustment
1-Jul-24	9.5%
1-Jul-25	9.5%
1-Jul-26	8.5%
1-Jul-27	6.5%
1-Jul-28	4.5%

Table 3-12: Proposed Fund 507 Revenue Adjustments

Effective Date	Revenue Adjustment
1-Jul-24	19.0%
1-Jul-25	19.0%
1-Jul-26	19.0%
1-Jul-27	19.0%
1-Jul-28	19.0%

3.5.2. Commodity Charge Pass-Through

The commodity charge is designed to recover the variable costs of providing water, including water supply costs and unrecovered water system fixed costs³. In addition to the proposed increases, we recommend that the City increase the commodity charges each year based on a “pass-through” of water supply costs so that if actual wholesale costs are higher than projected, the City can be made whole. Under this policy, the City increases its commodity charge based on the proposed rate schedule but also on the incremental change in water supply costs in each fiscal year. Note that the City will calculate the annual pass-through cost each year, which may differ from our estimated water supply costs based on inflation assumptions. In keeping with industry standard pass-through methodologies, the City will calculate the actual change in water supply costs in each year as new purveyor rates become available.

3.5.3. Proposed Financial Plan

Based on the recommended revenue adjustments, we project the proposed financial plan for the study period. The proposed operating fund revenue adjustments help increase projected rate revenues, but reserves are still drawn down in the first three years of the study period, then increase to meet the reserve target in the fifth year. Figure 3-4 and Figure 3-5 display the proposed financial plan.

³ A portion of the water system fixed costs is recovered in the fixed service charge.

Figure 3-4: Proposed Operating Financial Plan

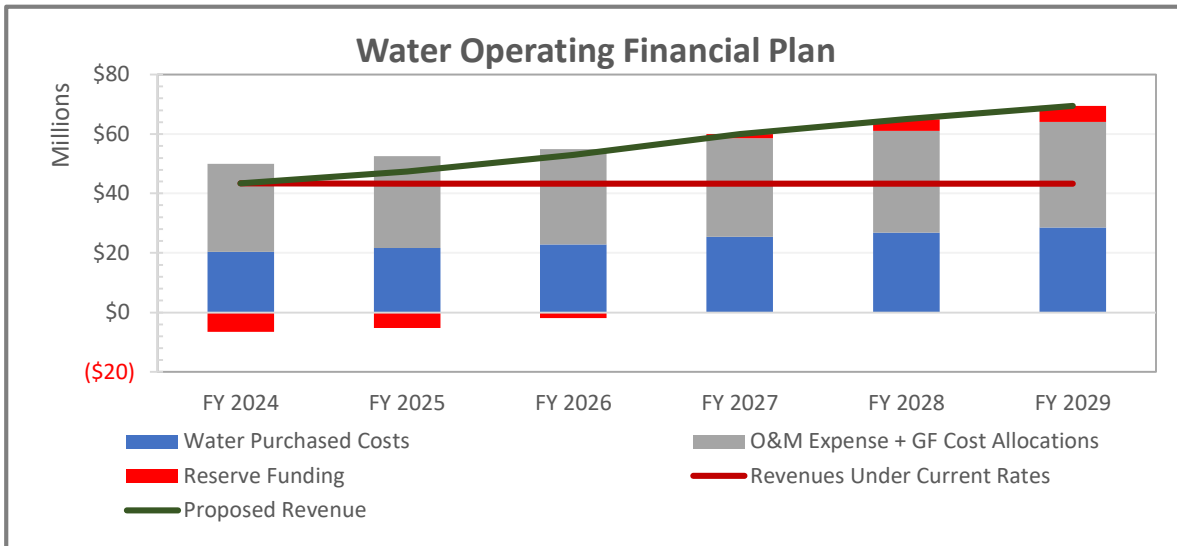


Figure 3-5: Projected Water Fund Ending Balances Under Proposed Financial Plan

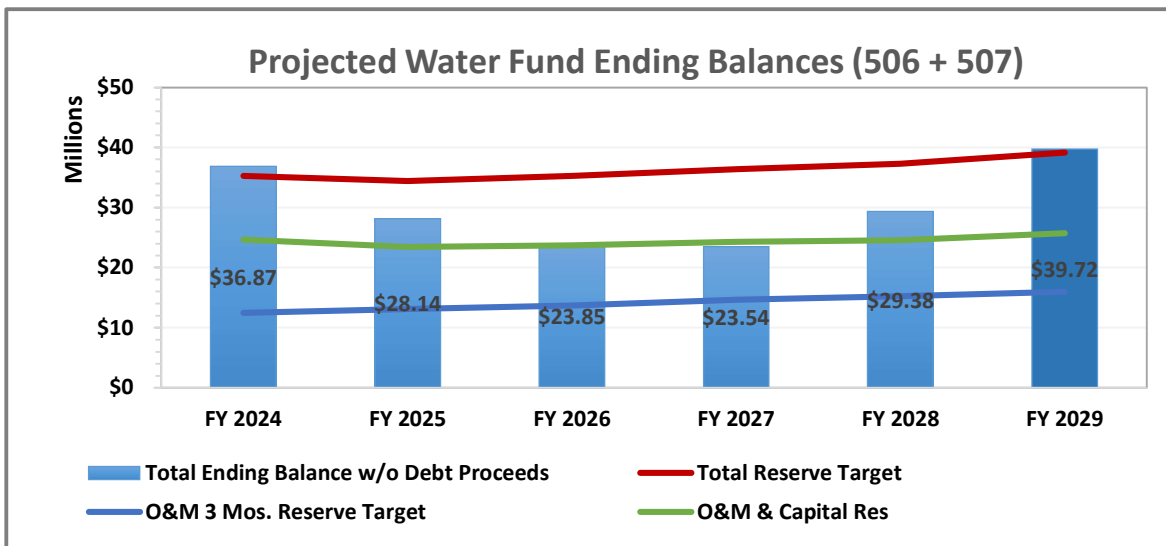


Table 3-13 and Table 3-14 show the proposed financial plan, including a breakdown of all revenues and expenses for both funds. The proposed operating financial plan incorporates the operating fund rate adjustments, as shown previously in Table 3-11. The proposed capital financial plan incorporates the capital fund rate adjustments, as shown previously in Table 3-12.

Table 3-13: Proposed Water Fund 506 Financial Plan

Fund 506 Financial Plan	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Revenues Under Existing Rates	\$42,748,558	\$42,748,558	\$42,748,558	\$42,748,558	\$42,748,558	\$42,748,558
Revenue from Adjustments on City Charges	\$0	\$4,061,113	\$8,508,032	\$12,864,842	\$16,479,713	\$19,144,985
Wholesale pass-through revenue	\$0	\$0	\$1,199,845	\$3,798,606	\$5,163,133	\$6,910,811
Total Rate-Based Revenue	\$42,748,558	\$46,809,671	\$52,456,435	\$59,412,006	\$64,391,404	\$68,804,354
Interest Income	\$233,710	\$175,030	\$133,515	\$117,693	\$136,760	\$174,033
Late Charges	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
M&O Huntington Beach	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Construction Sales & Meter	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000	\$110,000
Other Revenue	\$60,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Total Revenue	\$43,432,268	\$47,414,701	\$53,019,950	\$59,959,699	\$64,958,164	\$69,408,387
O&M Expenses						
Salaries & Benefits	\$11,618,529	\$12,066,699	\$12,499,093	\$12,947,980	\$13,414,028	\$13,897,939
Equipment & Supplies	\$1,055,200	\$1,107,960	\$1,141,199	\$1,175,435	\$1,210,698	\$1,247,019
Other Services	\$1,783,400	\$1,872,570	\$1,928,747	\$1,986,610	\$2,046,208	\$2,107,594
Electricity	\$903,500	\$948,675	\$996,109	\$1,045,914	\$1,098,210	\$1,153,120
Natural Gas	\$853,500	\$896,175	\$940,984	\$988,033	\$1,037,435	\$1,089,306
Permit Expense	\$947,500	\$994,875	\$1,044,619	\$1,096,850	\$1,151,692	\$1,209,277
Purchased Water OCWD	\$13,874,142	\$14,785,745	\$15,541,707	\$14,887,378	\$15,618,546	\$16,694,862
Purchased Water MWDOC	\$6,501,734	\$6,859,026	\$7,302,909	\$10,555,998	\$11,189,358	\$11,860,720
Chemicals	\$196,000	\$205,800	\$211,974	\$218,333	\$224,883	\$231,630
Water Wells Maintenance	\$200,000	\$210,000	\$216,300	\$222,789	\$229,473	\$236,357
Water Svs & Other Maintenance	\$1,647,000	\$1,729,350	\$1,781,231	\$1,834,667	\$1,889,707	\$1,946,399
Pump Plant Maintenance	\$275,000	\$288,750	\$297,413	\$306,335	\$315,525	\$324,991
Capital/Equipment	\$2,666,000	\$2,825,960	\$2,967,258	\$3,056,276	\$3,147,964	\$3,242,403
Cost Allocation to General Fund	\$7,448,639	\$7,821,071	\$8,055,703	\$8,297,374	\$8,546,295	\$8,802,684
Total O&M	\$49,970,144	\$52,612,656	\$54,925,245	\$58,619,972	\$61,120,022	\$64,044,300
Net Operating Income	-\$6,537,876	-\$5,197,954	-\$1,905,295	\$1,339,727	\$3,838,142	\$5,364,087
Beginning Balance	\$26,639,896	\$20,102,020	\$14,904,065	\$12,998,770	\$14,338,497	\$18,176,639
Ending Balance	\$20,102,020	\$14,904,065	\$12,998,770	\$14,338,497	\$18,176,639	\$23,540,726
<i>Fund 506 Reserve Target</i>	<i>\$17,649,332</i>	<i>\$18,260,201</i>	<i>\$19,189,411</i>	<i>\$20,508,805</i>	<i>\$21,572,230</i>	<i>\$22,768,997</i>

Table 3-14: Proposed Water Master Plan Fund 507 Financial Plan

Fund 507 Financial Plan	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
Revenues Under Existing Capital Charge	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037	\$3,685,037
Revenue from Capital Adjustment	\$0	\$700,157	\$1,533,344	\$2,524,836	\$3,704,712	\$5,108,765
Capacity Fee (Developer fee revenue)	\$880,000	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000
Interest Income	\$204,084	\$151,948	\$122,376	\$102,193	\$103,969	\$138,877
Total Revenue	\$4,769,121	\$5,137,142	\$5,940,757	\$6,912,067	\$8,093,719	\$9,532,679
Operating Expenses						
Other Services	\$400,000	\$0	\$0	\$0	\$0	\$0
Cost Allocations to General Fund	\$392,519	\$392,519	\$392,519	\$392,519	\$392,519	\$392,519
Total Operating	\$792,519	\$392,519	\$392,519	\$392,519	\$392,519	\$392,519
Capital Expenses						
Cash Funded	\$10,474,250	\$8,274,095	\$7,933,186	\$8,171,181	\$5,694,320	\$4,165,503
Debt Funded	\$0	\$0	\$0	\$0	\$0	\$0
Total Capital	\$10,474,250	\$8,274,095	\$7,933,186	\$8,171,181	\$5,694,320	\$4,165,503
Net Cash Balance	-\$6,497,648	-\$3,529,472	-\$2,384,947	-\$1,651,634	\$2,006,880	\$4,974,657
Beginning Balance	\$23,260,948	\$16,763,300	\$13,233,828	\$10,848,881	\$9,197,247	\$11,204,128
Ending Balance	\$16,763,300	\$13,233,828	\$10,848,881	\$9,197,247	\$11,204,128	\$16,178,785
<i>Target Balance</i>	<i>\$17,664,110</i>	<i>\$16,101,485</i>	<i>\$16,093,540</i>	<i>\$15,921,763</i>	<i>\$15,744,833</i>	<i>\$16,379,193</i>

4. Cost-of-Service Analysis

4.1. Methodology

As stated in the American Water Works Association (AWWA) M1 Manual, “the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” To develop utility rates that align with Proposition 218 and industry standards while meeting other emerging goals and objectives of the utility, we follow the cost-of-service methodology discussed below.

4.1.1. Determine Revenue Requirements

The rate-making process starts by determining the revenue requirement. In this study, the cost-of-service analysis is based on FY 2024/25 revenue requirements since this is the year the new rates will go into effect. The revenue requirement includes the utility’s O&M, debt service, capital expenses, and reserve requirements.

4.1.2. Cost-of-Service Analysis

The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. For this study, our cost-of-service analysis involves the following:

- **Functionalizing costs.** Examples of functions are supply, treatment, transmission, distribution, storage, meter servicing, and customer billing.
- **Allocating functionalized costs to cost causation components.** Cost causation components include supply, base delivery, maximum day, maximum hour⁴, fire, and meter costs.
- **Calculating costs to be recovered by each rate category.** We allocate cost causation components to the City’s fixed charges, capital charges, private fire service sprinklers, and variable commodity rates to ensure that the full cost of service is collected equitably through these rate categories.

A cost-of-service analysis considers both the average quantity of water consumed (base delivery costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands)⁵. Peaking costs are costs that are incurred during peak times of consumption. The water system is designed to handle peak demands and additional costs are associated with designing, constructing, and operating and maintaining larger facilities needed to meet peak demands.

A cost-of-service analysis distributes a utility’s revenue requirements (costs) equitably. After determining a utility’s revenue requirements, the next step in a cost-of-service analysis is to functionalize its O&M costs, based on the City’s current O&M budget (see Section 3.3). The functionalization of costs allows us to better allocate the functionalized costs to the cost causation components; i.e., the specific “buckets” of revenue requirements that are recovered by the rates. The cost causation components utilized in this study include:

- **Supply** – variable costs associated with providing water supply to all customers
- **Base Delivery** – fixed costs associated with providing service under average conditions
- **Peaking (Max Day and Max Hour)** – costs associated with meeting above-average demand

⁴ Collectively, maximum day and maximum hour costs are known as peaking costs or capacity costs.

⁵ System capacity is the system’s ability to supply water to all delivery points at the time when demanded. It is measured by each customer’s water demand at the time of greatest system demand. The time of greatest demand is known as peak demand. Operating and capital costs incurred to accommodate the peak demands are allocated to each customer class based upon the class’s peaking characteristics.

- **Fire** – costs associated with providing fire protection capacity
- **Meters** – costs associated with maintenance of meters and associated capital costs
- **General** – costs that cannot be allocated directly to any cost causation component(s)

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 distribution and storage facilities (as well as the O&M costs associated with those facilities), are designed to meet the peaking demands of customers. Therefore, extra capacity⁶ costs include the O&M and capital costs associated with meeting peak customer demand. This method is consistent with the AWWA M1 Manual and is widely used in the water industry to perform cost-of-service analyses.

4.1.3. Rate Design and Calculations

Rates do more than simply recover costs. Properly designed rates should support and optimize a blend of various utility objectives including revenue stability, customer affordability, regulatory compliance, political feasibility, and fiscal solvency. Rates may also act as a public information tool in communicating these objectives to customers. The M1 Manual describes a wide variety of potential rate structures, all of which meet these various requirements to various degrees.

We design rates to fully recover the cost of service for each customer class, as determined in the cost-of-service analysis. Rates include both a fixed and variable component, each of which recovers specific cost causation components. We derive the rates using the annual units of service and the total revenue requirement for each cost causation component and for each customer class. Fixed and capital charges are developed based on meter size (i.e., meter capacity) while variable charges are based on water use.

4.1.4. Rate Adoption

Rate adoption is the last step of the rate-making process to align with Proposition 218. Raftelis documented the rate study results in this report to help educate the public about the proposed changes, the rationale and justifications behind the changes, and their anticipated financial impacts in lay terms.

4.2. Analysis

Proposition 218 requires a nexus between the rates charged and the costs of providing service. Based on the proposed financial plan, the cost-of-service analysis translates this financial requirement into the unit costs used to develop rates. This subsection describes each section of the cost-of-service analysis in detail.

4.2.1. Revenue Requirement Determination

Table 4-1 shows the revenue requirement derivation, which results in the total revenue required from rates in FY 2024/25. The totals shown in the “Operating” and “Capital” columns are the total O&M and capital revenue requirements, respectively, that are to be recovered through rates.

⁶ The terms extra capacity, peaking, and capacity costs are used interchangeably.

Table 4-1: FY 2024/25 Revenue Requirement

No.	Revenue Requirement	Operating	Capital	Total
Revenue Requirements				
1	O&M Expenses	\$52,612,656	\$392,519	\$53,005,175
2	Debt Service	\$0	\$0	\$0
3	PAYGO Capital Projects	\$0	\$8,274,095	\$8,274,095
4	Subtotal - Revenue Requirements	\$52,612,656	\$8,666,614	\$61,279,270
Revenue Offsets				
5	Wholesale Pass-through revenue	\$0	\$0	\$0
6	Other Operating Revenue	-\$605,030	-\$751,948	-\$1,356,979
7	Subtotal - Revenue Offsets	-\$605,030	-\$751,948	-\$1,356,979
Adjustments				
8	Adjustment to Annualize Rate Increase	\$0	\$0	\$0
9	Adjustment for Cash Balance	-\$5,197,954	-\$3,529,472	-\$8,727,426
10	Subtotal - Adjustments	-\$5,197,954	-\$3,529,472	-\$8,727,426
11	Total - Revenue Required from Rates	\$46,809,671	\$4,385,194	\$51,194,865

Raftelis calculated the revenue requirement using projected FY 2024/25 expenses, which include O&M expenses, water supply costs, rate funded capital expenses, and existing and proposed debt service. To arrive at the rate revenue requirement, we subtract revenue offsets (e.g., non-rate revenues). We also adjust for annual cash balances to ensure the City’s net cash flow does not deviate from the proposed financial plan under the new rates. These adjustments are then added to arrive at the total revenue requirement from rates. This is the amount that the City’s rates are designed to collect.

4.2.2. Allocation of Functionalized Expenses to Cost Causation Components

After determining the City’s overall revenue requirement from rates, we begin to allocate costs so that each cost function is recovered equitably. We first determine the function of all O&M and capital expenses and then allocate these functions to cost causation components, which then form the basis of the new rates. We use systemwide peaking factors, provided by City staff, to develop allocation percentages for the City’s costs. These allocation percentages in turn are used to allocate system costs to the peaking components of the rates (Max Day and Max Hour).

The City’s Max Day factor is 1.8, which means that Max Day demand is expected to be 180 percent of the average day demand. Calculating the Max Day allocation of functionalized costs to the cost causation components results in the following allocation percentages:

$$\text{Base Allocation} = \text{Base}/(\text{Max Day}) = 1/1.8 \approx 56\%$$

$$\text{Max Day Allocation} = 1-\text{Base}/(\text{Max Day}) \approx 44\%$$

Facilities designed for Max Hour peaks, such as distribution system facilities, are allocated similarly. The Max Hour factor is 2.8, so Max Hour facilities are designed to provide 280 percent of the average day demand. Below are the allocation percentages for facilities designed to meet Max Hour demand:

$$\text{Base Allocation} = \text{Base}/(\text{Max Hour}) = 1/2.8 \approx 36\%$$

$$\text{Max Day Allocation} = (\text{Max Day-Base})/(\text{Max Hour}) = (1.8-1.00)/2.8 \approx 29\%$$

$$\text{Max Hour Allocation} = 1-36\%-29\% \approx 36\%$$

Table 4-2 summarizes the systemwide peaking factors and resulting allocation percentages.

Table 4-2: Systemwide Peaking Factors and Allocation Percentages

	Factor	Base Delivery	Max Day	Max Hour	Total
Base	1.00	100%			100%
Max Day	1.80	56%	44%	0%	100%
Max Hour	2.80	36%	29%	36%	100%

We categorize the City’s costs by function in order to allocate them to cost causation components. The cost causation components include Supply, Base, Peaking (Max Day & Max Hour), Meters, and Capital (recovered by the proposed Capital Charge). Each cost function has a specific basis of allocation to these cost causation components, following from the Base, Max Day, and Max Hour percentages shown in Table 4-2.

We use the following cost functions in this study:

- **Water Supply Costs:** These costs are related to water supply and are recovered by the commodity rate. They are allocated 100% to the Supply cost causation component.
- **Source of Supply:** These are capital costs related to facilities that provide water supply. They are allocated 100% to the Base cost causation component.
- **Storage:** Capital costs for system facilities that store water for current or future use. They are allocated according to Max Day.
- **Pumping:** Includes capital costs for pump stations, booster pumps, etc.; and O&M expenses for utilities needed to power pumping facilities. They are allocated according to Max Hour.
- **Treatment:** Includes capital costs for water treatment facilities, and O&M costs for chemicals. They are allocated according to Max Day.
- **Meter Service:** Includes both capital costs of meters and O&M costs for service and maintenance. They are allocated 100% to the Meters cost causation component and recovered by the fixed service charges.
- **General & Administrative Costs:** Includes costs related to O&M payroll expenses, the value of land owned by the utility, office supplies, and other general costs. These costs are allocated to a “General” cost causation component, and then reallocated proportionally to the share of total costs by the other components.
- **Capital Costs:** capital-related costs such as cash-funded capital.

Table 4-3 shows the allocation bases for each of the O&M functions.

Table 4-3: O&M functions and Allocation Bases

O&M Expense	Functions	Allocation Basis
Salaries	G&A	General
Benefits	G&A	General
Equipment & Supplies	G&A	General
Other Services	G&A	General
Electricity	Pumping	Max Hour
Natural Gas	Pumping	Max Hour
Permit Expense	Source of Supply	Base
Purchased Water MWDOC	Variable Water Supply Costs	Supply
Purchased Water OCWD	Variable Water Supply Costs	Supply
Chemicals	Treatment	Max Day
Water Wells Maintenance	Source of Supply	Base
Water Svs & Other Maintenance	Meter Service	Meters
Pump Plant Maintenance	Pumping	Max Hour
Capital / Equipment	G&A	General
Cost Allocations to General Fund	G&A	General

Capital-related costs are allocated to the capital charge.

Table 4-4 shows the functions for each O&M cost item and the allocation percentages to each of the cost causation components as summarized in the preceding table. Costs that cannot be readily functionalized are allocated to General and then spread amongst all the other cost causation components proportionate to the overall cost allocation.

Table 4-4: O&M Allocations to Cost Causation Components

O&M Expense	FY 2024/25	Water Purchase	Base	Max Day	Max Hour	Fire	Meter	General
Salaries	\$8,547,010	0%	0%	0%	0%	0%	0%	100%
Benefits	\$3,519,689	0%	0%	0%	0%	0%	0%	100%
Equipment & Supplies	\$1,107,960	0%	0%	0%	0%	0%	0%	100%
Other Services	\$1,872,570	0%	0%	0%	0%	0%	0%	100%
Electricity	\$948,675	0%	36%	29%	36%	0%	0%	0%
Natural Gas	\$896,175	0%	36%	29%	36%	0%	0%	0%
Permit Expense	\$994,875	0%	100%	0%	0%	0%	0%	0%
Purchased Water MWDOC	\$6,859,026	100%	0%	0%	0%	0%	0%	0%
Purchased Water OCWD	\$14,785,745	100%	0%	0%	0%	0%	0%	0%
Chemicals	\$205,800	0%	56%	44%	0%	0%	0%	0%
Water Wells Maintenance	\$210,000	0%	100%	0%	0%	0%	0%	0%
Water Svs & Other Maintenance	\$1,729,350	0%	0%	0%	0%	0%	100%	0%
Pump Plant Maintenance	\$288,750	0%	36%	29%	36%	0%	0%	0%
Capital / Equipment	\$2,825,960	0%	0%	0%	0%	0%	0%	100%
Cost Allocations to General Fund	\$7,821,071	0%	0%	0%	0%	0%	0%	100%
Total	\$52,612,656	\$21,644,771	\$2,081,208	\$701,067	\$762,000	\$0	\$1,729,350	\$25,694,260
Reallocated General	\$0	\$0	\$10,140,104	\$3,415,751	\$3,712,631	\$0	\$8,425,773	(\$25,694,260)
Reallocated O&M Expense	\$52,612,656	\$21,644,771	\$12,221,313	\$4,116,817	\$4,474,631	\$0	\$10,155,123	\$0

Capital-related costs from Table 4-1 are allocated 100 percent to the capital charge.

Table 4-5 shows the preliminary allocation of the total FY 2024/25 rate revenue requirement to the various cost causation components. The O&M Expense line is carried forward from Table 4-4. The capital-related costs from Table 4-1 are allocated 100 percent to the capital component. Revenue offsets assigned to O&M Expenses are allocated like the O&M Expense line. Revenue offsets assigned to capital are allocated 100 percent to the capital component. The preliminary allocations are subject to further adjustments based on additional reallocations developed in the following subsections.

Table 4-5: Net Revenue Requirement Allocation

Description	Supply	Base	Max Day	Max Hour	Meter	Capital	Total
O&M Expense	\$21,644,771	\$12,221,313	\$4,116,817	\$4,474,631	\$10,155,123	\$0	\$52,612,656
Capital-Related Expenses	\$0	\$0	\$0	\$0	\$0	\$8,666,614	\$8,666,614
Revenue Offsets							\$0
Interest Income - Operating	\$0	-\$69,075	-\$23,268	-\$25,291	-\$57,397	\$0	-\$175,030
Other Operating/NonOp Rev	\$0	-\$169,697	-\$57,163	-\$62,132	-\$141,007	\$0	-\$430,000
Adj. Cash Balance - Operating	\$0	-\$2,051,345	-\$691,007	-\$751,066	-\$1,704,536	\$0	-\$5,197,954
Capacity Fee	\$0	\$0	\$0	\$0	\$0	-\$600,000	-\$600,000
Interest Income - Capital	\$0	\$0	\$0	\$0	\$0	-\$151,948	-\$151,948
Adj. Cash Balance - Capital	\$0	\$0	\$0	\$0	\$0	-\$3,529,472	-\$3,529,472
Total	\$21,644,771	\$9,931,195	\$3,345,379	\$3,636,143	\$8,252,183	\$4,385,194	\$51,194,865

4.2.3. 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). Raftelis performed a fire demand analysis to determine the share of Fire Protection costs allocated to public versus private fire protection.

Table 4-6 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 fire flow demand⁷. The fire flow demand is multiplied by the number of connections or hydrants by size to calculate equivalent fire connections. Total equivalent fire demand is shown for public hydrants and private fire lines as are the proportion of equivalent connections.

⁷ Hazen-Williams equation and AWWA Manual M1

Table 4-6: Equivalent Fire Service Sprinkler Connections

Private Fire Line Size	Equivalent Fire Demand	Public Hydrants	Private Fire Connections	Equivalent Hydrants	Equivalent Private Fire Connections
1" and below	1.00	0	1	0	1
1.5"	2.90	0	0	0	0
2"	6.19	0	4	0	25
3"	17.98	0	8	0	144
4"	38.32	0	169	0	6,476
Hydrant	50.70	5,833	0	295,732	0
6"	111.31	0	627	0	69,792
8"	237.21	0	189	0	44,832
10"	426.58	0	26	0	11,091
12"	689.04	0	1	0	689
Total		5,833	1,024	295,732	133,049
				69%	31%

Table 4-7 shows a methodology used to calculate peaking units of service associated with Fire Protection based on assumptions regarding the duration and water use rate associated with typical fires:

$$\text{Max Day Requirements (ccf/day)} = \text{Duration of Fire (hrs)} \times \text{Water Use Rate (gpm)} \times 60 \text{ mins/hr} \div 748 \text{ gallons/ccf}$$

$$\text{Max Hour Requirements (ccf/day)} = \text{Water Use Rate (gpm)} \times 60 \text{ mins/hr} \times 24 \text{ hrs/day} \div 748 \text{ gallons/ccf}$$

The peak fire requirements are allocated between public and private fire using the allocations from Table 4-6.

Table 4-7: Peaking Units for Fire Protection

Simultaneous Fires	Max. Fire Flow (gpm)	Duration (hours)	Max Day Fire Flow (ccf)	Max Hour Fire Flow (ccf)
Regional commercial, industrial	6,000	6	2,888	11,551
Public			1,992	7,967
Private			896	3,584

4.2.4. Peaking Units of Service

Peaking units of service are developed to calculate unit peaking costs (Max Day and Max Hour) for each customer class and provide a basis to reallocate peaking costs to Fire Protection in subsequent steps of the cost-of-service analysis. Public hydrants and private fire lines contribute to system capacity-related costs (i.e., peaking costs) and therefore are reallocated a portion of Max Day and Max Hour costs.

Table 4-8 shows calculations used to attribute peaking costs to specific customer classes based on actual water use patterns and fire protection as described above. Raftelis estimated Max Day (Column C) and Max Hour (Column F) factors based on actual FY 2021/22 water use and system-wide peaking factors from Table 4-2. Projected FY 2024/25 annual water use (Column A) is divided by 365 days to determine average daily water use (Column B). Average daily use in Column B is then multiplied by the Max Day capacity factor

(Column C) to determine Max Day total capacity (Column D). Max Day extra capacity requirements (Column E) are determined by subtracting average daily water use (Column B) from Max Day demand (Column D). Max Hour total capacity (Column G) equals average daily water use (Column B) multiplied by Max Hour capacity factor (Column F). Max Hour extra capacity (Column H) equals Max Hour total capacity (Column G) less Max Day total capacity (Column D).

Table 4-8: Peaking Units by Customer Class

No.	Customer Class	Annual Water	Average	Capacity	Max Day		Capacity	Max Hour	
		Use	Daily Use		Total	Extra		Total	Extra
		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
		hcf	hcf/day		hcf/day	hcf/day		hcf/day	hcf/day
1	Single Family	5,343,254	14,639	1.53	22,352	7,713	2.38	34,770	12,418
2	MultiFamily	2,520,443	6,905	1.45	10,029	3,124	2.26	15,601	5,572
3	NonResidential	1,660,234	4,549	1.61	7,340	2,792	2.51	11,419	4,078
4	Irrigation NonResidential	1,080,307	2,960	1.79	5,291	2,331	2.78	8,230	2,939
5	Irrigation Residential	36,489	100	1.94	194	94	3.01	301	108
6	Subtotal	10,640,727				16,054			25,115
7	Private Fire Protection				896	896		3,584	2,688
8	Public Fire Protection				1,992	1,992		7,967	5,975
9	Total	10,640,727				18,942			33,778

4.2.5. Equivalent Meters

Equivalent meters (EMs) are used to allocate meter-related costs. Larger meters can impose greater 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 prior studies, the base meter used in the study is the 3/4" meter.

Table 4-9 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 3/4" 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, shown in Column E.

Table 4-9: Equivalent Meters

No.	Meter Size (A)	Capacity (gpm) (B)	Ratio (C)	No. of Meters (D)	Equivalent Meters (E)
1	3/4"	30	1.00	39,993	39,993
2	1"	50	1.67	8,841	14,735
3	1 1/2"	100	3.33	1,478	4,927
4	2"	160	5.33	1,987	10,597
5	3"	350	11.67	129	1,505
6	4"	500	16.67	82	1,367
7	4" FM	700	23.33	1	23
8	6"	1,000	33.33	31	1,033
9	6" FM	1,600	53.33	14	747
10	8"	1,600	53.33	1	53
11	8" FM	2,800	93.33	14	1,307
12	10" FM	4,400	146.67	3	440
13	Total			52,574	76,727

4.2.6. Adjusted Cost-of-Service Allocation

Table 4-10 shows the adjusted allocation of the rate revenue requirement to the various cost causation components. The adjusted cost of service incorporates adjustments to the preliminary cost allocations (Table 4-5) and ultimately provides the underlying basis for the proposed FY 2024/25 rate calculations shown in Section 5.

Table 4-10: Adjusted Cost-of-Service Allocation

Description	Supply	Base	Max Day	Max Hour	Private Fire	Meter	Capital	Total
Allocated Costs	\$21,644,771	\$9,931,195	\$3,345,379	\$3,636,143	\$0	\$8,252,183	\$4,385,194	\$51,194,865
Reallocations								
Public Fire			-\$351,758	-\$643,199		\$994,957		\$0
Private Fire			-\$158,254	-\$289,373	\$447,627			\$0
Base to Meter		-\$4,369,726				\$4,369,726		\$0
Peak to Meter		\$0	-\$2,126,525	-\$2,027,679		\$4,154,203		\$0
Adjusted Cost of Service	\$21,644,771	\$5,561,469	\$708,842	\$675,893	\$447,627	\$17,771,069	\$4,385,194	\$51,194,865

Public fire max day and max hour costs are reallocated to meters because it is common to recover public fire protection costs through a fixed charge in proportion to meter size. This allocation is based on the percent of public fire’s proportion of total max day extra capacity and total max hour extra capacity. Private fire service sprinkler max day and max hour costs are similarly reallocated to the private fire charge.

Base and peaking costs are also allocated to support revenue stability. The City currently collects approximately 45 percent of its rate revenues from fixed charges. Without these additional cost reallocations, this updated cost-of-service analysis would reduce the proportion of revenues from fixed charges to approximately 27 percent. This would reduce revenue stability and increase the risk of revenue insufficiency resulting from decreases in water sales during periods of reduced demand. To increase the proportion of fixed revenue, Raftelis reallocated 75 percent of remaining Max Day and Max Hour costs after the fire reallocations to Meter. A 44 percent portion of Base costs is also reallocated to the Meter component. Utilities invest in and

continuously maintain facilities to provide capacity to meet all levels of water consumption, including base and peak demand. These costs must be recovered regardless of the amount of water used during a given period, so these costs are generally considered fixed water system costs incurred regardless of water use. To balance between affordability and revenue stability, it is a common practice that a portion of these costs is recovered in the service charge, along with customer-related costs and meter-related costs.

4.2.7. Unit Costs of Service

Table 4-11 shows the total adjusted cost of service (Table 4-10) and resulting unit costs of service. The units for Supply, Base, Max Day, and Max Hour match those shown in Table 4-8. Private fire units are those in Table 4-6 multiplied by 12. The equivalent meter units are the number of equivalent meters in Table 4-9 times by 12.

Table 4-11: Unit Costs of Service

Description	Supply	Base	Max Day	Max Hour	Private Fire	Meter	Capital
Adjusted Cost of Service	\$21,644,771	\$5,561,469	\$708,842	\$675,893	\$447,627	\$17,771,069	\$4,385,194
Units	hcf	hcf	hcf/day	hcf/day	Equiv. FL-yr	Equiv. Mtr-mo	Equiv. Mtr-mo
Units of Service	10,640,727	10,640,727	16,054	25,115	1,596,584	920,724	920,724
Unit Cost, \$/unit	\$2.03	\$0.52	\$44.15	\$26.91	\$0.28	\$19.30	\$4.76

5. Rate Derivation

We develop rates to recover the revenue requirement from each cost causation component, as determined by the cost-of-service analysis in Section 4 and summarized in Table 4-11.

5.1. Proposed Fixed Service Charge

Table 5-1 shows the proposed FY 2024/25 fixed meter charge on both a daily and monthly basis. The fixed meter charge for each meter size is determined by multiplying the fixed charge at the 3/4" meter size by the corresponding AWWA meter capacity ratio (Table 4-9). Daily charges are rounded up to four decimals and monthly charges are rounded up to two decimals.

Table 5-1: Proposed FY 2024/25 Fixed Meter Charges (Daily & Monthly)

Meter Size	Daily			Monthly		
	Current	Proposed	Difference	Current	Proposed	Difference
3/4"	\$0.5994	\$0.6349	\$0.0355	\$18.23	\$19.31	\$1.08
1"	\$1.0010	\$1.0577	\$0.0567	\$30.45	\$32.17	\$1.72
1 1/2"	\$1.9960	\$2.1153	\$0.1193	\$60.71	\$64.34	\$3.63
2"	\$3.1948	\$3.3844	\$0.1896	\$97.18	\$102.94	\$5.76
3"	\$6.9951	\$7.4036	\$0.4085	\$212.77	\$225.19	\$12.42
4" Compound	\$9.9921	\$10.5762	\$0.5841	\$303.93	\$321.69	\$17.76
4" FM	\$13.9842	\$14.8067	\$0.8225	\$425.35	\$450.37	\$25.02
6" Compound	\$19.9783	\$21.1523	\$1.1740	\$607.67	\$643.38	\$35.71
6" FM	\$31.9664	\$33.8433	\$1.8769	\$972.31	\$1,029.40	\$57.09
8" Compound	\$52.7664	\$33.8433	-\$18.9231	\$1,604.98	\$1,029.40	-\$575.58
8" FM	\$55.9428	\$59.2258	\$3.2830	\$1,701.59	\$1,801.45	\$99.86
10" FM	\$87.9152	\$93.0691	\$5.1539	\$2,674.09	\$2,830.85	\$156.76

Table 5-2 displays the rate schedule of monthly fixed meter service charges by meter size through FY 2028/29. The proposed FY 2024/25 rate matches that shown in Table 5-1, which reflects both the cost-of-service analysis and the overall operating revenue adjustment for FY 2024/25. Subsequent years are adjusted by the overall operating revenue adjustment (Table 3-11).

Table 5-2: Current and Proposed FY 2024/25 Through FY 2028/29 Proposed Fixed Charges, Monthly Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$18.23	\$19.31	\$21.14	\$22.94	\$24.43	\$25.53
1"	\$30.45	\$32.17	\$35.23	\$38.22	\$40.70	\$42.53
1 1/2"	\$60.71	\$64.34	\$70.45	\$76.44	\$81.41	\$85.07
2"	\$97.18	\$102.94	\$112.72	\$122.30	\$130.25	\$136.11
3"	\$212.77	\$225.19	\$246.58	\$267.54	\$284.93	\$297.75
4" Compound	\$303.93	\$321.69	\$352.25	\$382.19	\$407.03	\$425.35
4" FM	\$425.35	\$450.37	\$493.16	\$535.08	\$569.86	\$595.50
6" Compound	\$607.67	\$643.38	\$704.50	\$764.38	\$814.06	\$850.69
6" FM	\$972.31	\$1,029.40	\$1,127.19	\$1,223.00	\$1,302.50	\$1,361.11
8" Compound	\$1,604.98	\$1,029.40	\$1,127.19	\$1,223.00	\$1,302.50	\$1,361.11
8" FM	\$1,701.59	\$1,801.45	\$1,972.59	\$2,140.26	\$2,279.38	\$2,381.95
10" FM	\$2,674.09	\$2,830.85	\$3,099.78	\$3,363.26	\$3,581.87	\$3,743.05

Table 5-3 shows the monthly fixed charges on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 5-3: Current and Proposed FY 2024/25 Through FY 2028/29 Proposed Fixed Charges, Daily Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$0.5994	\$0.6349	\$0.6951	\$0.7542	\$0.8032	\$0.8394
1"	\$1.0010	\$1.0577	\$1.1583	\$1.2566	\$1.3381	\$1.3983
1 1/2"	\$1.9960	\$2.1153	\$2.3162	\$2.5131	\$2.6765	\$2.7969
2"	\$3.1948	\$3.3844	\$3.7059	\$4.0209	\$4.2822	\$4.4749
3"	\$6.9951	\$7.4036	\$8.1068	\$8.7959	\$9.3676	\$9.7891
4" Compound	\$9.9921	\$10.5762	\$11.5809	\$12.5652	\$13.3819	\$13.9842
4" FM	\$13.9842	\$14.8067	\$16.2135	\$17.5917	\$18.7352	\$19.5781
6" Compound	\$19.9783	\$21.1523	\$23.1617	\$25.1304	\$26.7637	\$27.9679
6" FM	\$31.9664	\$33.8433	\$37.0584	\$40.2083	\$42.8220	\$44.7489
8" Compound	\$52.7664	\$33.8433	\$37.0584	\$40.2083	\$42.8220	\$44.7489
8" FM	\$55.9428	\$59.2258	\$64.8523	\$70.3648	\$74.9386	\$78.3107
10" FM	\$87.9152	\$93.0691	\$101.9106	\$110.5730	\$117.7602	\$123.0592

5.2. Proposed Capital Charge

Table 5-4 shows the proposed FY 2024/25 capital charge on both a daily and monthly basis. The capital charge for each meter size is determined by multiplying the capital charge at the 3/4" meter size by the corresponding AWWA meter capacity ratio (Table 4-9). Daily charges are rounded up to four decimals and monthly charges are rounded up to two decimals.

Table 5-4: Proposed FY 2024/25 Capital Charges (Daily & Monthly)

Meter Size	Daily			Monthly		
	Current	Proposed	Difference	Current	Proposed	Difference
3/4"	\$0.1315	\$0.1565	\$0.0250	\$4.00	\$4.76	\$0.76
1"	\$0.2193	\$0.2611	\$0.0418	\$6.67	\$7.94	\$1.27
1 1/2"	\$0.4382	\$0.5221	\$0.0839	\$13.33	\$15.88	\$2.55
2"	\$0.7013	\$0.8351	\$0.1338	\$21.33	\$25.40	\$4.07
3"	\$1.5344	\$1.8270	\$0.2926	\$46.67	\$55.57	\$8.90
4" Compound	\$2.1919	\$2.6098	\$0.4179	\$66.67	\$79.38	\$12.71
4" FM	\$3.0684	\$3.6536	\$0.5852	\$93.33	\$111.13	\$17.80
6" Compound	\$4.3835	\$5.2196	\$0.8361	\$133.33	\$158.76	\$25.43
6" FM	\$7.0136	\$8.3511	\$1.3375	\$213.33	\$254.01	\$40.68
8" Compound	\$12.2739	\$8.3511	-\$3.9228	\$373.33	\$254.01	-\$119.32
8" FM	\$12.2739	\$14.6144	\$2.3405	\$373.33	\$444.52	\$71.19
10" FM	\$19.2878	\$22.9657	\$3.6779	\$586.67	\$698.54	\$111.87

Table 5-5 displays the rate schedule of monthly capital charges by meter size through FY 2028/29. The proposed FY 2024/25 rate matches that shown in Table 5-4, which reflects both the cost-of-service analysis and the overall capital (fund 507) revenue adjustment for FY 2024/25. Subsequent years are adjusted by the overall capital revenue adjustment (Table 3-12).

Table 5-5: Current and Proposed Capital Charge Through FY 2028/29, Monthly Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$4.00	\$4.76	\$5.66	\$6.74	\$8.02	\$9.54
1"	\$6.67	\$7.94	\$9.45	\$11.25	\$13.39	\$15.93
1 1/2"	\$13.33	\$15.88	\$18.90	\$22.49	\$26.76	\$31.84
2"	\$21.33	\$25.40	\$30.23	\$35.97	\$42.80	\$50.93
3"	\$46.67	\$55.57	\$66.13	\$78.69	\$93.64	\$111.43
4" Compound	\$66.67	\$79.38	\$94.46	\$112.41	\$133.77	\$159.19
4" FM	\$93.33	\$111.13	\$132.24	\$157.37	\$187.27	\$222.85
6" Compound	\$133.33	\$158.76	\$188.92	\$224.81	\$267.52	\$318.35
6" FM	\$213.33	\$254.01	\$302.27	\$359.70	\$428.04	\$509.37
8" Compound	\$373.33	\$254.01	\$302.27	\$359.70	\$428.04	\$509.37
8" FM	\$373.33	\$444.52	\$528.98	\$629.49	\$749.09	\$891.42
10" FM	\$586.67	\$698.54	\$831.26	\$989.20	\$1,177.15	\$1,400.81

Table 5-6 shows the monthly capital charges on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 5-6: Current and Proposed Capital Charge Through FY 2028/29, Daily Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$0.1315	\$0.1565	\$0.1861	\$0.2216	\$0.2637	\$0.3137
1"	\$0.2193	\$0.2611	\$0.3107	\$0.3699	\$0.4403	\$0.5238
1 1/2"	\$0.4382	\$0.5221	\$0.6214	\$0.7394	\$0.8798	\$1.0468
2"	\$0.7013	\$0.8351	\$0.9939	\$1.1826	\$1.4072	\$1.6745
3"	\$1.5344	\$1.8270	\$2.1742	\$2.5871	\$3.0786	\$3.6635
4" Compound	\$2.1919	\$2.6098	\$3.1056	\$3.6957	\$4.3980	\$5.2337
4" FM	\$3.0684	\$3.6536	\$4.3477	\$5.1739	\$6.1569	\$7.3266
6" Compound	\$4.3835	\$5.2196	\$6.2111	\$7.3911	\$8.7952	\$10.4664
6" FM	\$7.0136	\$8.3511	\$9.9377	\$11.8258	\$14.0726	\$16.7465
8" Compound	\$12.2739	\$8.3511	\$9.9377	\$11.8258	\$14.0726	\$16.7465
8" FM	\$12.2739	\$14.6144	\$17.3912	\$20.6956	\$24.6277	\$29.3070
10" FM	\$19.2878	\$22.9657	\$27.3291	\$32.5217	\$38.7009	\$46.0541

5.3. Proposed Private Fire Sprinkler Charge

Table 5-7 shows the current and proposed private fire sprinkler charge. FY 2024/25 is based on the cost-of-service analysis and the overall revenue adjustment. Subsequent years are based on the overall revenue adjustment.

Table 5-7: Current and Proposed Private Fire Sprinkler Charge, Monthly Basis

Meter Size	Current			Proposed		
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
3/4"	\$3.65	\$0.29	\$0.32	\$0.35	\$0.37	\$0.39
1"	NA	\$0.29	\$0.32	\$0.35	\$0.37	\$0.39
1.5"	NA	\$0.82	\$0.90	\$0.98	\$1.04	\$1.09
2"	\$10.04	\$1.74	\$1.91	\$2.07	\$2.20	\$2.30
3"	\$14.90	\$5.05	\$5.53	\$6.00	\$6.39	\$6.68
4"	\$20.08	\$10.75	\$11.77	\$12.77	\$13.60	\$14.21
6"	\$30.11	\$31.21	\$34.17	\$37.07	\$39.48	\$41.26
8"	\$40.15	\$66.51	\$72.83	\$79.02	\$84.16	\$87.95
10"	\$49.88	\$119.60	\$130.96	\$142.09	\$151.33	\$158.14
12"	\$59.92	\$193.19	\$211.54	\$229.52	\$244.44	\$255.44

Table 5-8 shows the monthly fire sprinkler charges on a daily basis by multiplying the monthly charge by 12 months and dividing by 365 days, rounded up to 4 decimal places.

Table 5-8: Current and Proposed Private Fire Sprinkler Charge, Daily Basis

Meter Size	Current FY2023/24	Proposed FY2024/25	Proposed FY2025/26	Proposed FY2026/27	Proposed FY2027/28	Proposed FY2028/29
3/4"	\$0.1200	\$0.0096	\$0.0106	\$0.0116	\$0.0122	\$0.0129
1"	NA	\$0.0096	\$0.0106	\$0.0116	\$0.0122	\$0.0129
1.5"	NA	\$0.0270	\$0.0296	\$0.0323	\$0.0342	\$0.0359
2"	\$0.3300	\$0.0573	\$0.0628	\$0.0681	\$0.0724	\$0.0757
3"	\$0.4900	\$0.1661	\$0.1819	\$0.1973	\$0.2101	\$0.2197
4"	\$0.6600	\$0.3535	\$0.3870	\$0.4199	\$0.4472	\$0.4672
6"	\$0.9900	\$1.0261	\$1.1234	\$1.2188	\$1.2980	\$1.3565
8"	\$1.3200	\$2.1867	\$2.3945	\$2.5980	\$2.7670	\$2.8916
10"	\$1.6400	\$3.9321	\$4.3056	\$4.6715	\$4.9753	\$5.1992
12"	\$1.9700	\$6.3515	\$6.9548	\$7.5459	\$8.0364	\$8.3981

5.4. Proposed Commodity Rate

The commodity rate is designed to recover three cost causation components: Supply (including supply O&M costs and source of supply capital costs), Base Delivery, and Peaking (including Max Day and Max Hour supply costs). These components are shown in Table 5-9 for clarity. The unit rate shown in the first line (from Table 4-11) is multiplied by the units for each class (Table 4-8) (annual use for supply and base, extra capacity for max day and max hour, respectively). The total cost for the system is calculated and divided by total projected use to determine a uniform rate. The final rate is rounded to four decimal places.

Table 5-9: Commodity Rate Derivation, FY 2024/25

Customer Class	Supply	Base	Max Day	Max Hour	Total	Projected Use (hcf)	Unit Rate (\$/hcf)
<i>Unit Cost</i>	<i>\$2.03</i>	<i>\$0.52</i>	<i>\$44.15</i>	<i>\$26.91</i>			
Single Family	\$10,868,948	\$2,792,699	\$340,570	\$334,194	\$14,336,411	5,343,254	
MultiFamily	\$5,126,944	\$1,317,332	\$137,939	\$149,951	\$6,732,166	2,520,443	
NonResidential	\$3,377,155	\$867,736	\$123,273	\$109,749	\$4,477,913	1,660,234	
Irrigation NonResidential	\$2,197,500	\$564,632	\$102,925	\$79,104	\$2,944,161	1,080,307	
Irrigation Residential	\$74,224	\$19,071	\$4,134	\$2,895	\$100,324	36,489	
System-wide	\$21,644,771	\$5,561,469	\$708,842	\$675,893	\$28,590,975	10,640,727	\$2.6870

The current and proposed uniform commodity rates are shown in Table 5-10. The FY 2024/25 rate includes the wholesale costs based on the rates provided by OCWD and MWDOC. Subsequent years apply the operating revenue adjustment (Table 3-11) to the city-related commodity costs. The wholesale unit rates are estimated based on the projected OCWD and MWDOC rates and charges and projected water purchases. To the extent the actual rates are higher than projected, the City will pass through the increased wholesale costs.

Table 5-10: Current and Proposed Commodity Rates through FY 2028/29)

Component	Current		Proposed			
	FY2023/24	FY2024/25	FY2025/26	FY2026/27	FY2027/28	FY2028/29
City-Related Costs			\$2.9423	\$3.1924	\$3.3999	\$3.5529
Wholesale Estimated (1)			\$0.1128	\$0.3570	\$0.4853	\$0.6495
Total	\$2.4034	\$2.6870	\$3.0551	\$3.5494	\$3.8852	\$4.2024

(1) pass-through

5.5. Customer Impact Analysis

Figure 5-1 shows a comparison of monthly residential customer bills to the current bill for customers with a 3/4-inch meters at various levels of usage.

Figure 5-1: Projected Residential Bill Impacts

