

CITY OF  
**Whittier**

**Water and Sewer Comprehensive Cost-of-  
Service Rate Study**

Final Report / November 7, 2024

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November 7, 2024

Mr. Kyle Cason  
Director of Public Works and City Engineer  
City of Whittier  
11579 Hadley St  
Whittier, CA 90606

**Subject: Water and Sewer Comprehensive Cost-of-Service Rate Study**

Dear Mr. Cason,

Raftelis Financial Consultants, Inc. is pleased to provide this report to the City of Whittier for the Water and Sewer Comprehensive Cost-of-Service Rate Study. This report presents the analyses, rationales, and methodologies utilized to determine utility rates in compliance with California Constitution Article XIII D, Section 6 (commonly referred to as Proposition 218).

The study involved a comprehensive review of the City's current water and sewer cost requirements to determine rates that meet the City's objectives. The main objectives that informed the study include:

- » Adequately recovering costs to ensure the financial sufficiency of the City's utilities
- » Determining feasible capital financing plans
- » Developing long-term financial plans
- » Calculating proposed water and sewer rates for the period 2025 – 2029 in a manner compliant with Proposition 218.
- » Minimizing customer impacts from changes to the rate structures

We are confident that the proposed rates developed during this study are fair and equitable for the City's customers. It was a pleasure working with you and your team, and we wish to express our gratitude for the support you and other City staff provided us during the study. If you have any questions, please do not hesitate to call me at 303-909-5575.

Sincerely,

*Raftelis Financial Consultants, Inc.*



**John Wright**  
*Senior Manager*



**Brian Bass**  
*Manager*

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# Abbreviations

AWWA	American Water Works Association
CIP	Capital Improvement Plan
City	City of Whittier
CPI	Consumer Price Index
FY	Fiscal Year
HCF	Hundred Cubic Feet
O&M	Operations and Maintenance
PFAS	Per- and Polyfluoroalkyl Substances
Raftelis	Raftelis Financial Consultants, Inc.
SFR	Single Family Residential
Study	Water and Sewer Comprehensive Cost of Service Rate Study
T&D	Transmission and Distribution
WEF	Water Environment Federation



# 1. Executive Summary

## 1.1. Study Background

In 2023, the City of Whittier (City) retained the services of Raffelis Financial Consultants, Inc. (Raffelis) to conduct a Water and Sewer Comprehensive Cost of Service Rate Study (study). The study included developing long-term water and sewer financial plans and proposed cost-of-service rates. This report presents the financial plans for each utility for a five-year study period, along with proposed cost-of-service rates commencing January 2025 and in January of every year thereafter until 2029.

This Executive Summary outlines the proposed financial plans and resulting rates and describes the rate study methodology and recommendations. The main objectives that informed the Study include:

- » Adequately recovering costs to ensure the financial sufficiency of the City’s utilities
- » Determining feasible capital financing plans
- » Developing long-term financial plans
- » Calculating proposed water and sewer rates for the period 2025 – 2029 in a manner compliant with the Proposition 218.
- » Minimizing customer impacts from changes to the rate structures

## 1.2. Current Rates

The City’s current water rates were last updated on July 1, 2023. The bi-monthly water service charges consist of a fixed service charge varied by meter sizes and a commodity charge for water usage. Commodity rates for Single Family Residential (SFR) customers are charged per 100 cubic feet (HCF) of water, subject to a two-tiered inclining block rate structure. The commodity rates for all other customers are charged at a uniform \$/HCF rate. The fire service charge is imposed on parcels with a private fire service line and is a fixed charge based on the size of the private fire meter. **Table 1-1** shows the current monthly service charges and **Table 1-2** shows the water commodity rates by customer class.

**Table 1-1: Current Bi-Monthly Water Service Charges (\$/meter size)**

Line	A Meter Size	B Single-Family	C Multi-Family	D Non-Residential	E Landscape	E Reclaimed	F Private Fire
1	3/4"	\$80.03	\$107.97	\$90.82	\$113.62	\$90.82	\$0.87
2	1"	\$131.87	\$178.43	\$149.84	\$187.85	\$149.84	\$1.90
3	1 ½"	\$261.45	\$354.58	\$297.40	\$373.42	\$297.40	N/A
4	2"	\$416.94	\$565.96	\$474.47	\$596.11	\$474.47	\$11.79
5	3"	\$831.60	\$1,129.64	\$946.65	\$1,189.93	\$946.65	\$34.22
6	4"	\$1,298.10	\$1,763.78	\$1,477.85	\$1,857.98	\$1,477.85	\$72.92
7	6"	\$2,593.91	\$3,525.29	\$2,953.42	\$3,713.68	\$2,953.42	\$211.81
8	8"	\$4,148.88	\$5,639.09	\$4,724.10	\$5,940.52	\$4,724.10	\$451.38
9	10"	N/A	N/A	N/A	N/A	N/A	\$811.75
10	12"	N/A	N/A	N/A	N/A	N/A	\$1,311.19

**Table 1-2: Current Commodity Charges (\$/HCF of water)**

Line	A	B	C
	Customer Class	Bi-Monthly Tiers (HCF)	\$/HCF Rate
1	SFR		
2	Tier 1	0-22	\$2.54
3	Tier 2	>22	\$4.15
4	Multi-Family	Uniform	\$2.58
5	Non-Residential	Uniform	\$2.62
6	Landscape	Uniform	\$3.03
7	Reclaimed	Uniform	\$2.13

The City’s current sewer rates were last updated on July 1, 2023. Rates for residential and non-residential customers are based on a fixed customer service charge and a \$/HCF commodity rate for billed water usage. Sewer customers are billed annually. **Table 1-3** shows the current rate structure effective July 1, 2023.

**Table 1-3: Current Sewer Rates**

Line	A	B	C
	Customer Class	Annual Customer Service Charge	Commodity Charge
	Residential		
1	Single-Family	\$8.45	\$1.17
2	Multi-Family	\$8.45	\$1.17
3	Commercial	\$8.45	\$1.17
4	Private Development	\$8.45	\$0.83
5	Qualified Low Income	\$8.45	\$0.65

### 1.3. Process and Approach

The City’s cost-of-service study process involved staff participation and feedback. During the study, City staff and Raftelis conducted a series of meetings to discuss and understand the challenges the City’s utilities face and to provide guidance to finalize the rate recommendations detailed in this report.

During these meetings, Raftelis presented the various assumptions, inputs, and scenario analyses to develop the water and sewer financial plans. City staff discussed the upcoming capital project requirements, including those related to per- and poly-fluoroalkyl (PFAS) substances, which are the main drivers for the revenue adjustments in the final recommendations presented in this report. Raftelis designed and presented financial planning and rate models to analyze various scenarios, such as those related to revenue adjustments, reserve requirements, and capital costs.

The proposed financial plans detailed in this report were developed using industry-standard practices for long-term financial planning. Raftelis worked closely with City staff to determine the most accurate methodology for projecting future revenues and expenses to reinforce sound fiscal management practices. When the City did not directly provide the assumptions used in the financial plans, they were based on commonly accepted assumptions such as those related to projected inflation.

The cost-of-service analysis utilized to develop the proposed water and sewer rates followed the industry-standard guidelines for allocating costs as outlined in the American Water Works Association (AWWA) publication *Manual of Water Supply Practices M1 Principles of Water Rates, Fees, and Charges, Manual M1* (AWWA Manual M1) and in the Water Environment Federation (WEF) publication *Manual of Practice No. 27, Financing and Charges for Wastewater*

Systems (WEF Manual 27). These guidelines and principles ensure that the proposed water and sewer reflect the costs incurred to serve each customer class based on their unique demand characteristics.

The financial plans for the water and sewer utilities include the five-year study period from FY 2024-25<sup>1</sup> to FY 2028-29. The proposed rates were developed for implementation on January 1, 2025 (in FY 2024-25) and in January of every year thereafter until 2029.

## 1.4. Legal Framework

In November 1996, California voters approved Proposition 218, which amended the California Constitution by adding Article XIII C and Article XIII D. Article XIII D placed substantive limitations on the use of the revenue collected from property-related fees and on the amount of the fee that may be imposed on each parcel. Additionally, it established procedural requirements for imposing new, or increasing existing, property-related fees. The California Supreme Court has determined that water and wastewater service fees are property-related fees. These provisions require that a property-related fee must meet all of the following requirements:

- Revenues derived from the fee must not exceed the funds required to provide the property-related service.
- Revenues from the fee must not be used for any purpose other than that for which the fee is imposed.
- The amount of a fee imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel.
- The fee may not be imposed for a service, unless the service is actually used by, or immediately available to, the owner of the property subject to the fee. A fee based on potential or future use of a service is not permitted and stand-by charges must be classified as assessments subject to the ballot protest and proportionality requirements for assessments.
- No fee may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners. The five substantive requirements in Article XIII D are structured to place limitations on (1) the use of the revenue collected from property-related fees and (2) the allocation of costs recovered by such fees to ensure that they are proportionate to the cost of providing the service attributable to each parcel.

As stated in the American Water Works publication, *Manual of Water Supply Practice M1, Principles of Water Rates, Fees, and Charges*, 7th Edition (AWWA Manual M1), “water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” Similarly, the Water Environment Federation (WEF) publication, *Financing and Charges for Wastewater Systems, WEF Manual of Practice No. 27*, 4th Edition (WEF Manual 27), states, “the process of identifying the service characteristics of the utility's customers and distributing costs in proportion to their service demands are critical steps in the development of equitable rates and charges.”

California Courts have also made clear that, while agencies are authorized to use industry-standard rate setting methodologies set forth in AWWA Manual M1 and WEF Manual 27, rates for water and wastewater service must

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<sup>1</sup> A fiscal year is the year starting on July 1 and ending on June 30. For example, FY 2024 begins on July 1, 2023 and ends on June 30, 2024.

meet the substantive requirements of Proposition 218. This study demonstrates that such requirements have been met for the water and wastewater fees.

## 1.5. Results and Recommendations

Raftelis worked closely with City staff to define the final results and recommendations of the water and sewer rate study. The recommendations presented in this report will ensure the financial sufficiency and stability of the City’s utilities to fund all necessary operating and capital costs and to maintain sufficient cash balances. To maximize the equity of the rate structures, which is a key objective that informed the study approach, Raftelis recommends that the City retain the current rate structures for the water and sewer systems.

### Water Utility

- » The water operations and maintenance (O&M) expenses are expected to increase, on average, by 4.5 percent each year of the study based on the City’s FY 2023-24 budget and inflationary assumptions.
- » The City plans to spend approximately \$43 million on capital projects from FY 2024-25 to FY 2028-29 and transfer \$1.75 million a year into a reserve fund for future PFAS or emerging contaminants projects.
- » The Study team proposes the annual revenue adjustments shown in **Table 1-4** from FY 2024-25 to FY 2028-29 to fund capital project spending and maintain sufficient cash balances.

### Sewer Utility

- » The sewer O&M expenses are expected to increase, on average, by 4 percent each year of the study based on the City’s FY 2023-24 budget and inflationary assumptions.
- » The City plans to spend approximately \$21 million on capital projects from FY 2024-25 to FY 2028-29.
- » The Study team recommends the annual revenue adjustments shown in **Table 1-4**.

**Table 1-4: Proposed Rate Revenue Increases**

A	B	C	D	E	F
Utility	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Water	5.0%	5.0%	5.0%	5.0%	5.0%
Sewer	5.0%	3.0%	3.0%	3.0%	3.0%

## 1.6. Proposed Rates

The proposed monthly service charges and \$/HCF commodity rates for the City’s water customers are shown in **Table 1-5** and **Table 1-6**. The proposed sewer rates are shown in **Table 1-7**. The FY 2024-25 rates, which will become effective on January 1, 2025, were determined through cost-of-service calculations. The FY 2025-26 through FY 2029 rates, which will become effective on January 1<sup>st</sup> of each year, were determined by increasing FY 2024-25 rates by the recommended revenue adjustments. The City will implement rates equal to or lower than the cost-of-service-based rates.

**Table 1-5: Proposed Bi-Monthly Water Service Charges (\$/meter size)**

Line	A	B	C	D	E	F	G
	Service Charges	FY 2025 (Current)	CY 2025 (Jan 2025) Proposed	CY 2026 (Jan 2026)	CY 2027 (Jan 2027)	CY 2028 (Jan 2028)	CY 2029 (Jan 2029)
<b>Single-Family</b>							
1	3/4"	\$80.03	\$79.25	\$83.22	\$87.39	\$91.76	\$96.35
2	1"	\$131.87	\$128.36	\$134.78	\$141.52	\$148.60	\$156.03
3	1 1/2"	\$261.45	\$251.15	\$263.71	\$276.90	\$290.75	\$305.29
4	2"	\$416.94	\$398.49	\$418.42	\$439.35	\$461.32	\$484.39
5	3"	\$831.60	\$865.07	\$908.33	\$953.75	\$1,001.44	\$1,051.52
6	4"	\$1,298.10	\$1,552.67	\$1,630.31	\$1,711.83	\$1,797.43	\$1,887.31
7	6"	\$2,593.91	\$3,197.99	\$3,357.89	\$3,525.79	\$3,702.08	\$3,887.19
8	8"	\$4,148.88	\$5,899.26	\$6,194.23	\$6,503.95	\$6,829.15	\$7,170.61
<b>Multi-Family</b>							
9	3/4"	\$107.97	\$86.36	\$90.68	\$95.22	\$99.99	\$104.99
10	1"	\$178.43	\$140.22	\$147.24	\$154.61	\$162.35	\$170.47
11	1 1/2"	\$354.58	\$274.87	\$288.62	\$303.06	\$318.22	\$334.14
12	2"	\$565.96	\$436.44	\$458.27	\$481.19	\$505.25	\$530.52
13	3"	\$1,129.64	\$948.08	\$995.49	\$1,045.27	\$1,097.54	\$1,152.42
14	4"	\$1,763.78	\$1,702.09	\$1,787.20	\$1,876.56	\$1,970.39	\$2,068.91
15	6"	\$3,525.29	\$3,506.32	\$3,681.64	\$3,865.73	\$4,059.02	\$4,261.98
16	8"	\$5,639.09	\$6,468.48	\$6,791.91	\$7,131.51	\$7,488.09	\$7,862.50
<b>Non-Residential</b>							
17	3/4"	\$90.82	\$87.23	\$91.60	\$96.18	\$100.99	\$106.04
18	1"	\$149.84	\$141.66	\$148.75	\$156.19	\$164.00	\$172.20
19	1 1/2"	\$297.40	\$277.75	\$291.64	\$306.23	\$321.55	\$337.63
20	2"	\$474.47	\$441.06	\$463.12	\$486.28	\$510.60	\$536.13
21	3"	\$946.65	\$958.18	\$1,006.09	\$1,056.40	\$1,109.22	\$1,164.69
22	4"	\$1,477.85	\$1,720.27	\$1,806.29	\$1,896.61	\$1,991.45	\$2,091.03
23	6"	\$2,953.42	\$3,543.83	\$3,721.03	\$3,907.09	\$4,102.45	\$4,307.58
24	8"	\$4,724.10	\$6,537.73	\$6,864.62	\$7,207.86	\$7,568.26	\$7,946.68
<b>Landscape</b>							
25	3/4"	\$113.62	\$96.86	\$101.71	\$106.80	\$112.14	\$117.75
26	1"	\$187.85	\$157.71	\$165.60	\$173.88	\$182.58	\$191.71
27	1 1/2"	\$373.42	\$309.84	\$325.34	\$341.61	\$358.70	\$376.64
28	2"	\$596.11	\$492.40	\$517.02	\$542.88	\$570.03	\$598.54
29	3"	\$1,189.93	\$1,070.50	\$1,124.03	\$1,180.24	\$1,239.26	\$1,301.23
30	4"	\$1,857.98	\$1,922.43	\$2,018.56	\$2,119.49	\$2,225.47	\$2,336.75
31	6"	\$3,713.68	\$3,960.99	\$4,159.04	\$4,367.00	\$4,585.35	\$4,814.62
32	8"	\$5,940.52	\$7,307.89	\$7,673.29	\$8,056.96	\$8,459.81	\$8,882.81
<b>Reclaimed</b>							
33	3/4"	\$90.82	\$77.83	\$81.73	\$85.82	\$90.12	\$94.63
34	1"	\$149.84	\$126.00	\$132.30	\$138.92	\$145.87	\$153.17
35	1 1/2"	\$297.40	\$246.43	\$258.76	\$271.70	\$285.29	\$299.56
36	2"	\$474.47	\$390.94	\$410.49	\$431.02	\$452.58	\$475.21
37	3"	\$946.65	\$848.56	\$890.99	\$935.54	\$982.32	\$1,031.44
38	4"	\$1,477.85	\$1,522.94	\$1,599.09	\$1,679.05	\$1,763.01	\$1,851.17
39	6"	\$2,953.42	\$3,136.64	\$3,293.48	\$3,458.16	\$3,631.07	\$3,812.63
40	8"	\$4,724.10	\$5,786.00	\$6,075.30	\$6,379.07	\$6,698.03	\$7,032.94
<b>Fire</b>							
41	3/4"	\$0.90	\$5.97	\$6.27	\$6.59	\$6.92	\$7.27
42	1"	\$1.90	\$6.42	\$6.75	\$7.09	\$7.45	\$7.83
43	1 1/2"	N/A	N/A	N/A	N/A	N/A	N/A
44	2"	\$11.79	\$10.76	\$11.30	\$11.87	\$12.47	\$13.10
45	3"	\$34.22	\$20.63	\$21.67	\$22.76	\$23.90	\$25.10
46	4"	\$72.92	\$37.66	\$39.55	\$41.53	\$43.61	\$45.80
47	6"	\$211.81	\$98.76	\$103.70	\$108.89	\$114.34	\$120.06
48	8"	\$451.38	\$204.16	\$214.37	\$225.09	\$236.35	\$248.17
49	10"	\$811.75	\$362.69	\$380.83	\$399.88	\$419.88	\$440.88
50	12"	\$1,311.19	\$576.84	\$605.69	\$635.98	\$667.78	\$701.17

**Table 1-6: Proposed Monthly Water Usage Rates (\$/HCF of water)**

Line	A	B	C	D	E	F	G	H
	Customer Class	Bi-Monthly Tiers (HCF)	FY 2025 (Current)	CY 2025 (Jan 2025) Proposed	CY 2026 (Jan 2026)	CY 2027 (Jan 2027)	CY 2028 (Jan 2028)	CY 2029 (Jan 2029)
	SFR							
1	Tier 1	0-22	\$2.54	\$2.81	\$2.96	\$3.11	\$3.27	\$3.44
2	Tier 2	>22	\$4.15	\$4.66	\$4.90	\$5.15	\$5.41	\$5.69
3	Multi-Family	Uniform	\$2.58	\$3.51	\$3.69	\$3.88	\$4.08	\$4.29
4	Non-Residential	Uniform	\$2.62	\$2.90	\$3.05	\$3.21	\$3.38	\$3.55
5	Landscape	Uniform	\$3.03	\$3.94	\$4.14	\$4.35	\$4.57	\$4.80
6	Reclaimed	Uniform	\$2.13	\$3.37	\$3.54	\$3.72	\$3.91	\$4.11

**Table 1-7: Proposed Annual Sewer Rates**

Line	A	B	C	D	E	F	G
	Customer Class	FY 2025 (Current)	CY 2025 (Jan 2025) Proposed	CY 2026 (Jan 2026)	CY 2027 (Jan 2027)	CY 2028 (Jan 2028)	CY 2029 (Jan 2029)
	Residential						
1	Single-Family	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
2	Multi-Family	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
3	Commercial	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
4	Private Development	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
5	Qualified Low Income	\$0.65	\$0.68	\$0.70	\$0.72	\$0.74	\$0.77
6	Annual Fixed Charge	\$8.45	\$11.25	\$11.59	\$11.94	\$12.30	\$12.67

## 1.7. Customer Bill Impacts

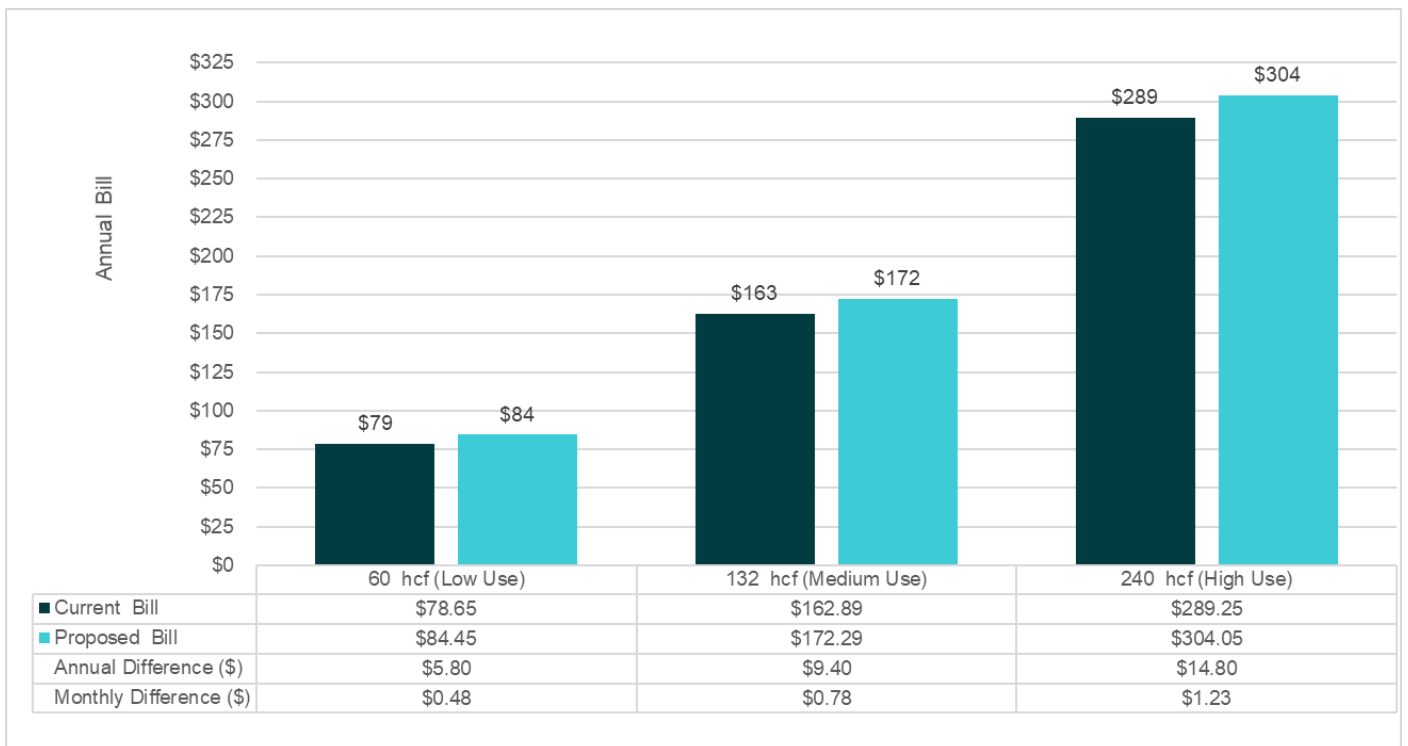
**Table 1-8** outlines the proposed customer bi-monthly water bill impacts for SFR customers with a 3/4” meter with various amounts of billed water usage each billing period. The table compares a bill under the current rate structure to one under the proposed FY 2024-25 rates. The impact for an average customer using 26 HCF on a bi-monthly basis will increase by \$6.99.

**Table 1-8: Proposed Single Family Customer Bi-Monthly Water Bill Impacts (3/4” meter, varying HCF)**



Table 1-9 outlines the proposed annual sewer bill impacts for Residential customers.

**Table 1-9: Proposed Residential Customer Annual Sewer Bill Impacts**



## 2. Assumptions

The assumptions outlined in this report section were utilized to project the number of customer accounts, revenues, and expenses for future years. City staff provided data on customer accounts and usage for FY 2020-21 and FY 2021-22, actual revenues and expenses for FY 2020-21 to FY 2022-23, and budget revenue and expenses for FY 2023-24. The remaining years of the study, from FY 2024-25 to FY 2028-29, were projected based on the assumptions discussed in this section.

### 2.1. Customer Demand Growth

Table 2-1 shows the demand growth projections for each customer class. Based on consultations with City staff, Raftelis assumed a 0.5% annual growth in customer accounts. In addition to customer account growth, demand projections must also consider the change in customer billed consumption during each year of the planning horizon. For average consumption per account, Raftelis modeled a 0.5% annual usage reduction to reflect factors such as customer conservation efforts and the nature replacement of low efficiency plumbing fixtures during the projection period.

Table 2-1: Customer Demand Growth Projections

Line	A	B	C	D	E	F
	Growth Assumptions	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
	<b>Account Growth</b>					
1	Single-Family	0.5%	0.5%	0.5%	0.5%	0.5%
2	Multi-Family	0.5%	0.5%	0.5%	0.5%	0.5%
3	Non-Residential	0.5%	0.5%	0.5%	0.5%	0.5%
4	Landscape	0.5%	0.5%	0.5%	0.5%	0.5%
5	Private Fire	0.5%	0.5%	0.5%	0.5%	0.5%
6	Reclaimed	0.5%	0.5%	0.5%	0.5%	0.5%

### 2.2. Revenue Inflation Factors

Table 2-2 shows the revenue inflation factors used to project future revenues and calculate investment income. These factors were developed in consultation with City staff.

Table 2-2: Revenue Inflation Factors

Line	A	B	C	D	E	F
	Revenue Escalation Assumptions	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
1	Miscellaneous Revenues	2.0%	2.0%	2.0%	2.0%	2.0%
2	Reserve Interest Rate	1.5%	1.5%	1.5%	1.5%	1.5%

### 2.3. Expense Inflation Factors

Table 2-3 shows the expense inflation factors used to project future operating and capital project expenses for the study period. These factors were determined in consultation with City staff.



**Table 2-3: Expense Inflation Factors**

Line	A	B	C	D	E	F
	Expense Inflation Assumptions	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
1	General	3.0%	3.0%	3.0%	3.0%	3.0%
2	Salary	5.5%	5.5%	5.5%	5.5%	5.5%
3	Benefits	5.5%	5.5%	5.5%	5.5%	5.5%
4	Utilities	6.0%	6.0%	6.0%	6.0%	6.0%
5	Chemicals	6.0%	6.0%	6.0%	6.0%	6.0%
6	Miscellaneous	3.0%	3.0%	3.0%	3.0%	3.0%
7	Recurring CIP	3.0%	3.0%	3.0%	3.0%	3.0%

# 3. Water Financial Plan

This section of the report details the water utility’s long-term financial plan, based on the projected revenues, expenses, debt service, and capital project costs. Raftelis modeled the financial plan without revenue adjustments (status quo) and with proposed revenue adjustments to ensure the financial sustainability and solvency of the water utility.

## 3.1. Projected Demand

City staff provided a count of accounts served and volumes sold for FY 2020-21 and FY 2021-22. Raftelis forecasted future bills using the growth factors presented in **Table 2-1**. **Table 3-1** shows the assumed growth in the number of bills and usage.

**Table 3-1: Projected Water Demand**

Line	A	B	C	D	E	F	G
	Bills and Usage	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
	<b>Bills</b>						
1	Single-Family	4,585	4,608	4,631	4,654	4,677	4,701
2	Multi-Family	938	943	948	953	957	962
3	Non-Residential	522	524	527	530	532	535
4	Landscape	71	71	71	72	72	73
5	Reclaimed	4	4	4	4	4	4
6	Private Fire	<u>85</u>	<u>86</u>	<u>86</u>	<u>87</u>	<u>87</u>	<u>85</u>
7	<b>Total</b>	<b>6,205</b>	<b>6,236</b>	<b>6,267</b>	<b>6,299</b>	<b>6,330</b>	<b>6,362</b>
	<b>Water Use (HCF)</b>						
8	Single-Family	1,525,200	1,525,162	1,525,124	1,525,085	1,525,047	1,525,009
9	Multi-Family	745,724	745,706	745,687	745,668	745,650	745,631
10	Non-Residential	566,165	566,151	566,137	566,122	566,108	566,094
11	Landscape	142,949	142,946	142,942	142,939	142,935	142,932
12	Reclaimed	<u>35,606</u>	<u>35,605</u>	<u>35,604</u>	<u>35,603</u>	<u>35,603</u>	<u>35,602</u>
13	<b>Total</b>	<b>3,015,645</b>	<b>3,015,569</b>	<b>3,015,494</b>	<b>3,015,418</b>	<b>3,015,343</b>	<b>3,015,268</b>

## 3.2. Projected Revenues

City staff provided the actual FY 2022-23 revenues and budgeted FY 2023-24 revenues for the water utility, which were used to confirm calculated rate revenues and project miscellaneous revenues for the remainder of the study period. Rate revenues on Line 1 were calculated using the units of service shown in **Table 3-1** and the rates are shown in **Table 1-1** and **Table 1-2**. **Table 3-2** shows the projected water revenues under the status quo.

The City expects minor increases in water rate revenues for all years of the study due to increases in customer accounts. The interest income (Line 2) is calculated using the reserve interest rate (**Table 2-2**, Line 2). The remaining revenues are inflated using the non-rate revenue inflation factor (**Table 2-2**, Line 1). The majority of Other Revenues shown in Line 3 are associated with rental income and interest income.

**Table 3-2: Projected Operating Fund Water Revenues (Status Quo)**

Line	A	B	C	D	E	F	G
	Revenue	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
1	<b>Rate Revenue</b>	\$18,737,405	\$18,787,255	\$18,837,356	\$18,887,708	\$18,938,313	\$18,989,172
	<b>Other Revenue</b>						
2	Interest Income	\$155,304	\$65,175	\$62,406	\$59,319	\$56,062	\$52,609
3	Other Revenues	<u>\$1,272,014</u>	<u>\$706,238</u>	<u>\$720,363</u>	<u>\$734,770</u>	<u>\$749,466</u>	<u>\$764,455</u>
4	<b>Total Revenue</b>	<b>\$20,164,723</b>	<b>\$19,558,669</b>	<b>\$19,620,124</b>	<b>\$19,681,797</b>	<b>\$19,743,841</b>	<b>\$19,806,237</b>

### 3.3. Projected O&M Expenses

City staff provided the actual FY 2022-23 O&M expenses and budgeted FY 2023-24 O&M expenses for the water utility based on expense function. **Table 3-3** shows the projected O&M expenses for the study period summarized by the department. The expenses for the departments in column A include several categories such as salary, benefits, maintenance, etc., and each line item within that department’s budget is escalated based on the expense inflation factors (**Table 2-3**).

**Table 3-3: Projected Water O&M Expenses**

Line	A	B	C	D	E	F	G
	O&M Expenses	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-2029
	<b>Department</b>						
	Water Quality Protection						
1	Treatment Facility	\$1,378,316	\$1,442,300	\$1,509,559	\$1,580,275	\$1,654,636	\$1,732,843
2	Water Administration	\$11,648,076	\$12,043,075	\$12,590,007	\$13,165,140	\$13,769,995	\$14,406,177
3	Wells	\$81,867	\$86,779	\$91,986	\$97,505	\$103,355	\$109,557
4	Pumping Plant	\$176,478	\$184,358	\$192,629	\$201,313	\$210,432	\$220,009
5	Facilities Maintenance	\$215,407	\$228,188	\$233,291	\$247,176	\$261,889	\$277,481
	Mains, Hydrants						
6	Maintenance	\$372,627	\$394,726	\$418,140	\$442,951	\$469,239	\$497,095
	Meter Services						
7	Maintenance	\$71,574	\$75,704	\$80,078	\$84,708	\$89,612	\$94,804
8	Warehouse Operations	<u>\$77,801</u>	<u>\$82,072</u>	<u>\$86,578</u>	<u>\$91,331</u>	<u>\$96,345</u>	<u>\$101,635</u>
9	<b>Total</b>	<b>\$14,022,146</b>	<b>\$14,537,201</b>	<b>\$15,202,269</b>	<b>\$15,910,399</b>	<b>\$16,655,503</b>	<b>\$17,439,600</b>

### 3.4. Debt Service

The City currently has two existing revenue bonds for the water utility. **Table 3-4** shows the annual payments for the Series 2012 and Series 2020 Water Revenue Bonds.

**Table 3-4: Existing Water Debt Service**

Line	A	B	C	D	E	F	G
	Existing Debt Service	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-29
1	2012 Water Revenue Bond	\$680,575	\$681,575	\$676,325	\$680,325	\$678,325	\$682,650
2	2020 Water Revenue Bond	<u>\$429,600</u>	<u>\$430,400</u>	<u>\$425,800</u>	<u>\$426,000</u>	<u>\$430,800</u>	<u>\$430,000</u>
3	<b>Total</b>	<b>\$1,110,175</b>	<b>\$1,111,975</b>	<b>\$1,102,125</b>	<b>\$1,106,325</b>	<b>\$1,109,125</b>	<b>\$1,112,650</b>

### 3.5. Capital Projects

City staff provided the capital improvement plan (CIP) for the water utility for the study period. **Table 3-5** shows the CIP costs for the study period in future dollars after being adjusted by 3.0% annually for construction cost inflation. Projects are funded through a combination of water rate revenues and grant proceeds. In addition to the capital plan below, the City plans to transfer \$1.75 million annually into an emerging contaminants reserve to prepare for PFAS-related expenditures in the future.

*[Remainder of page intentionally left blank]*

**Table 3-5: Projected Water Capital Projects**

Line	Capital Improvement Program	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
1	<b>Distribution System Improvements</b>						
2	West Distribution System Improvements Group No. 1	\$0	\$0	\$0	\$0	\$0	\$0
3	West Distribution System Improvements Group No. 2	\$4,503,080	\$0	\$1,055,558	\$1,368,457	\$1,125,509	\$0
4	Central Distribution System Improvements Group No. 1	\$0	\$1,030,000	\$2,121,800	\$2,185,454	\$1,547,555	\$1,159,274
5	Central Distribution System Improvements Group No. 2	\$0	\$0	\$1,060,900	\$1,092,727	\$2,251,018	\$2,318,548
6	South Distribution System Improvements Group No. 1	\$0	\$0	\$0	\$0	\$879,505	\$1,451,796
7	South Distribution System Improvements Group No. 2	\$0	\$0	\$0	\$0	\$0	\$0
8	South Distribution System Improvements Group No. 3	\$0	\$0	\$0	\$0	\$0	\$0
9	<b>Water Facility Replacement</b>	\$0	\$0	\$0	\$0	\$0	\$0
10	Murphy West and East Reservoir Replacement	\$3,505,776	\$1,462,158	\$0	\$0	\$0	\$0
11	Washington Pump Station Replacement	\$0	\$0	\$0	\$0	\$0	\$1,159,274
12	Greenleaf/Hoover Storage Replacement	\$0	\$0	\$398,580	\$1,092,727	\$1,125,509	\$2,318,548
13	Murphy Hills Pump Station	\$0	\$0	\$0	\$0	\$0	\$1,159,274
14	Rideout Reservoir Replacement	\$0	\$0	\$2,657,198	\$0	\$0	\$0
15	Starlight Reservoir Redundancy	\$0	\$0	\$0	\$1,368,457	\$0	\$0
16	Hazzard Reservoir Replacement	\$0	\$0	\$0	\$0	\$0	\$0
17	College Hills Reservoir Replacement	\$0	\$0	\$0	\$0	\$0	\$0
18	Booster Station Repair	\$0	\$0	\$265,720	\$0	\$0	\$0
19	Oceanview Reservoir Improvements	\$0	\$0	\$0	\$0	\$0	\$0
20	<b>Pipeline Replacement Program</b>	\$0	\$0	\$0	\$0	\$0	\$0
21	Cylindrical Steel Pipeline Replacement Program	\$0	\$386,971	\$398,580	\$410,537	\$422,853	\$0
22	<b>Valve Replacement Program</b>	\$0	\$0	\$0	\$0	\$0	\$0
23	Large Valve Replacement Program	\$0	\$142,212	\$153,802	\$166,337	\$179,893	\$0
24	Valve Replacement Program	\$0	\$142,212	\$0	\$158,417	\$171,327	\$0
25	<b>Interconnection Improvements</b>	\$0	\$0	\$0	\$0	\$0	\$0
26	Santa Fe Springs Transmission Main	\$0	\$0	\$0	\$0	\$0	\$0
27	<b>Pipeline Replacement (combined)</b>	\$0	\$0	\$0	\$0	\$0	\$0
28	Non Master Plan Improvements	\$0	\$0	\$0	\$0	\$0	\$0
29	Well Rehab	\$0	\$142,212	\$153,802	\$166,337	\$179,893	\$0
30	City Yard Improvements	\$0	\$71,106	\$76,901	\$83,168	\$89,947	\$0
31	Emergency Water Main Repair	\$0	\$0	\$0	\$0	\$0	\$0
32	WTR CIP PALM Avenue	\$300,000	\$2,575,000	\$0	\$0	\$0	\$0
33	WTR CIP Greenleaf Avenue	\$0	\$2,369,000	\$0	\$0	\$0	\$0
34	WTR CIP Norino Transmission Main	\$0	\$1,133,000	\$0	\$0	\$0	\$0
35	WTR Well 8 Rehab	\$565,402	\$0	\$0	\$0	\$0	\$0
36	<b>Total</b>	<b>\$8,874,258</b>	<b>\$9,453,869</b>	<b>\$8,342,840</b>	<b>\$8,092,617</b>	<b>\$7,973,009</b>	<b>\$9,566,714</b>

### 3.6. Water Financial Plan without Rate Increases

**Table 3-6** shows the projected water financial plan without revenue adjustments (also referred to as the status quo financial plan). Rate revenues and other revenues are derived from projected revenues (**Table 3-2**) using growth and inflation factors. O&M expenses are derived from projected O&M expenses using inflation factors (**Table 3-3**), existing debt service is from the annual debt service payments for outstanding debt (**Table 3-4**), and rate-funded capital projects are from the capital financing plan (**Table 3-5**).

The status quo scenario uses approximately \$3.5 million in grant funding for FY 2023-2024, and the remainder of capital projects are rate-funded. Raftelis modeled operating and capital fund cashflows. The distinction between funds allows us to observe how utility rates recover operational costs and what remains to fund capital investments compared to the required level of investment. The need for rate increases arises from the gap between the capital investment currently funded by rate revenues and the capital investment required by the utility. The operating fund maintains a balance equal to the operating reserve target, with any excess rate revenues transferred to the capital fund's cash flow. The capital fund is used to finance capital projects and allocate funds to an emergency reserve for PFAS-related or emerging contaminant expenditures.

The operating cash flow (Line 7) is calculated by subtracting O&M expenses (Line 5) and debt service (Line 6) from total revenues (Line 4). Lines 8 through 10 display the beginning and ending balances concerning the operating reserve, which targets 60 days' worth of operating expenses. Any difference between the required operating reserve and the actual balance is transferred to the capital fund to support capital projects (Line 11).

The debt service coverage ratio is shown on Line 13. It is calculated by dividing net revenues (Line 4 minus Line 5) by the annual debt service payment (Line 6). When you compare Line 13 to Line 14, the City meets its required debt service coverage requirement of 1.25 times the annual debt service.

In the capital cash flow (**Table 3-7**), the total sources of funds (Line 4) consist of grant proceeds, interest earnings, and transfers from the operating reserve. These funds are used to finance capital projects and maintain an emergency reserve. However, since the total sources (Line 4) are less than the total uses (Line 7), the result is a negative net cash flow, leading to a depletion of reserves to fund capital projects and the emergency reserve. By the end of the study period for the status quo, there is a deficit of \$5 million, indicating that current rates are insufficient to cover ongoing operational costs, necessary investments in the system, and an emergency fund

**Table 3-6: Projected Water Operating Fund Financial Plan (Status Quo)**

Line	A	B	C	D	E	F	G
	Financial Plan	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-29
	<b>Revenues</b>						
1	Rate Revenues	\$18,737,405	\$18,787,255	\$18,837,356	\$18,887,708	\$18,938,313	\$18,989,172
2	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
3	Other Revenues	<u>\$1,427,318</u>	<u>\$771,414</u>	<u>\$782,769</u>	<u>\$794,089</u>	<u>\$805,528</u>	<u>\$817,064</u>
4	<b>Total Revenues</b>	\$20,164,723	\$19,558,669	\$19,620,124	\$19,681,797	\$19,743,841	\$19,806,237
5	<b>O&amp;M Expenses</b>	\$14,022,146	\$14,537,201	\$15,202,269	\$15,910,399	\$16,655,503	\$17,439,600
6	<b>Debt Service</b>	\$1,110,175	\$1,111,975	\$1,102,125	\$1,106,325	\$1,109,125	\$1,112,650
7	<b>Net Cash Flow</b>	\$5,032,402	\$3,909,492	\$3,315,730	\$2,665,074	\$1,979,213	\$1,253,987
8	<b>Beginning Balance</b>	\$2,337,024	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600
9	Ending Balance	\$7,369,427	\$6,332,359	\$5,849,442	\$5,316,807	\$4,755,130	\$4,160,587
10	Reserve Target	\$2,337,024	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600
11	<b>Transfer to Capital</b>	\$4,946,560	\$3,798,648	\$3,197,709	\$2,540,890	\$1,848,530	\$1,116,450
12	<b>Ending Balance After Transfer</b>	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600	\$3,044,137
13	Calculated Debt Coverage	5.53	4.52	4.01	3.41	2.78	2.13
14	<b>Required Debt Coverage</b>	1.25	1.25	1.25	1.25	1.25	1.25

**Table 3-7: Projected Water Capital Fund Financial Plan (Status Quo)**

Line	A	B	C	D	E	F	G	H
	Financial Plan	Description	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-29
1	Beginning Unrestricted Balance	--	\$24,860,010	\$23,044,698	\$15,929,608	\$9,221,708	\$2,003,542	-\$5,870,937
	<b>Sources of Funds</b>							
2	Grant Proceeds	--	\$3,505,776	\$0	\$0	\$0	\$0	\$0
3	Interest Earnings	--	\$356,611	\$290,131	\$187,231	\$83,563	\$0	\$0
4	Transfer from Operating	--	\$4,946,560	\$3,798,648	\$3,197,709	\$2,540,890	\$1,848,530	\$1,116,450
5	<b>Total Sources</b>	Sum of Lines 2 through 4	\$8,808,947	\$4,088,779	\$3,384,940	\$2,624,453	\$1,848,530	\$1,116,450
	<b>Uses of Funds</b>							
6	Cash Funded Capital	--	\$8,874,258	\$9,453,869	\$8,342,840	\$8,092,617	\$7,973,009	\$9,566,714
7	Transfer to Emergency Fund	--	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000
8	<b>Total Uses</b>	Sum of Lines 6 and 7	\$10,624,258	\$11,203,869	\$10,092,840	\$9,842,617	\$9,723,009	\$11,316,714
9	<b>Net Cash Flow</b>	Line 5 – Line 8	(\$1,815,312)	(\$7,115,090)	(\$6,707,900)	(\$7,218,165)	(\$7,874,479)	(\$10,200,264)
10	Ending Unrestricted Balance	Line 1 + Line 9	\$23,044,698	\$15,929,608	\$9,221,708	\$2,003,542	(\$5,870,937)	(\$16,071,201)
11	Beginning Emergency Balance		\$0	\$1,763,125	\$3,552,697	\$5,369,112	\$7,212,774	\$9,084,091
12	Ending Emergency Balance	Line 11 + Line 7 + Interest Earnings on Balance	\$1,763,125	\$3,552,697	\$5,369,112	\$7,212,774	\$9,084,091	\$10,983,477
13	<b>Ending Total Capital Balance</b>	Line 10 + Line 12	\$24,807,823	\$19,482,305	\$14,590,820	\$9,216,317	\$3,213,154	(\$5,087,724)
14	<i>Target For Emergency</i>	--	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000



Figure 1: Water Operating Fund Ending Cash Balance (Status Quo)

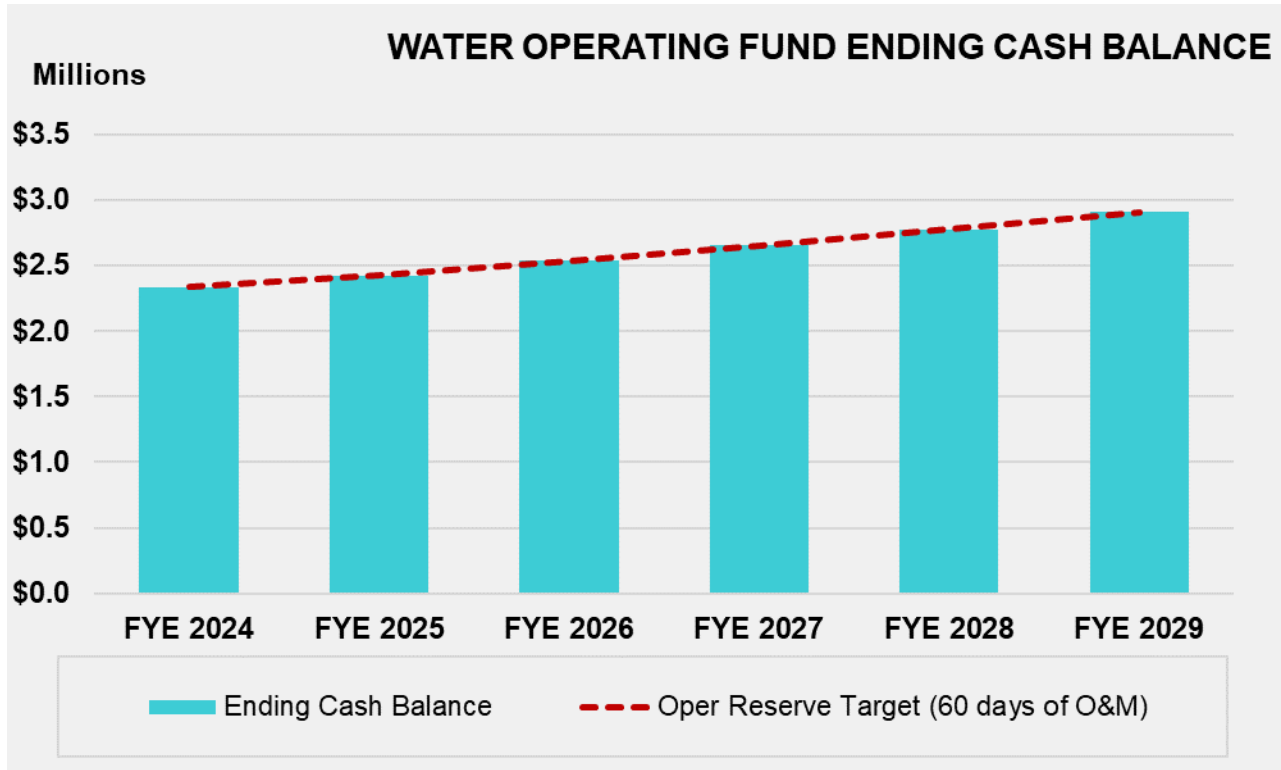
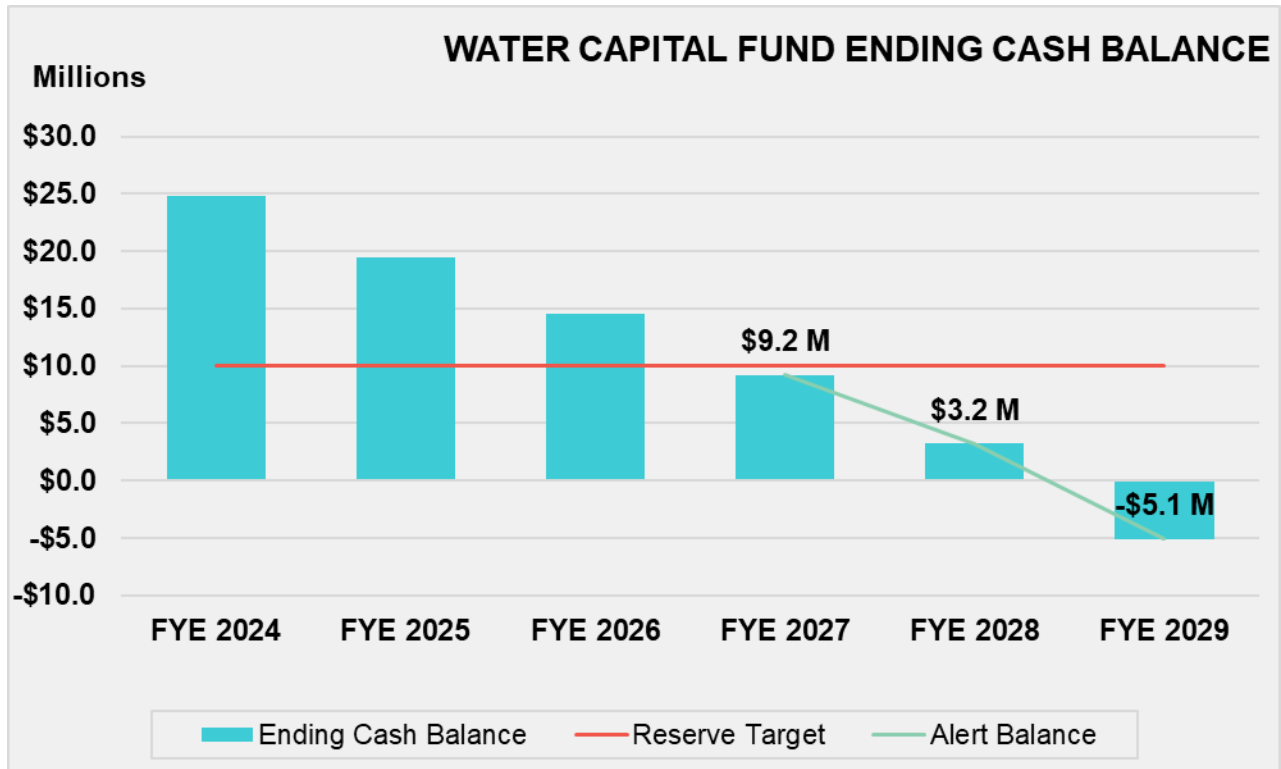


Figure 2: Water Capital Fund Ending Cash Balance (Status Quo)



### 3.7. Proposed Water Financial Plan

The projected financial plan under the status quo scenario in **Table 3-6** and **Table 3-7** shows that the City’s current water rate revenues are insufficient to sustain the water utility and meet all of the anticipated capital revenue requirements.

The proposed revenue adjustments for the study period are effective on January 1 of each year and are shown in **Table 3-8**. The proposed revenue adjustments were designed as an interim measure to start funding an emerging contaminants reserve, align available revenue after covering operational costs with the expenses of capital improvement projects, and help mitigate the impact of rate increases on residents.

**Table 3-8: Proposed Water Revenue Adjustments**

Line	A	B	C
	Fiscal Year	Revenue Adjustment	Month Effective
1	2024-25	5.0%	January
2	2025-26	5.0%	January
3	2026-27	5.0%	January
4	2027-28	5.0%	January
5	2028-29	5.0%	January

**Table 3-9** shows the projected water operating financial plan with the proposed revenue adjustments from **Table 3-8**. The transfer to the capital fund (Line 11) has increased compared to the status quo, which means more funds are available for capital expenditures. In the capital cash flow, these transfers help to reconcile the difference between the sources and uses of funds, but a negative cash flow persists. The City continues to rely on its reserves to fund capital projects; however, due to the rate increases, reserves are not fully depleted by the end of the forecast period. Lines 8 through 10 indicate that in FY 2028-29, the City will need to tap into the emerging contaminants fund due to insufficient unrestricted reserves, and the City will be short of its \$10 million reserve target. The overall balance of the capital fund, shown in Line 10, represents the sum of the unrestricted deficit ending balance and the emergency funds.

**Table 3-9: Projected Water Operating Financial Plan (Proposed Rate Revenue Adjustments)**

Line	A	B	C	D	E	F	G
	Financial Plan	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-29
	<b>Revenues</b>						
1	Rate Revenues	\$18,737,405	\$18,787,255	\$18,837,356	\$18,887,708	\$18,938,313	\$18,989,172
2	Revenue Adjustments	\$0	\$469,681	\$1,436,348	\$2,456,583	\$3,533,238	\$4,669,322
3	Other Revenues	<u>\$1,427,318</u>	<u>\$774,936</u>	<u>\$793,541</u>	<u>\$812,514</u>	<u>\$832,027</u>	<u>\$852,084</u>
4	<b>Total Revenues</b>	\$20,164,723	\$20,031,873	\$21,067,245	\$22,156,804	\$23,303,579	\$24,510,578
5	<b>O&amp;M Expenses</b>	\$14,022,146	\$14,537,201	\$15,202,269	\$15,910,399	\$16,655,503	\$17,439,600
6	<b>Debt Service</b>	\$1,110,175	\$1,111,975	\$1,102,125	\$1,106,325	\$1,109,125	\$1,112,650
7	<b>Net Cash Flow</b>	\$5,032,402	\$4,382,696	\$4,762,851	\$5,140,081	\$5,538,950	\$5,958,328
8	<b>Beginning Balance</b>	\$2,337,024	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600
9	Ending Balance	\$7,369,427	\$6,805,563	\$7,296,563	\$7,791,814	\$8,314,868	\$8,864,928
10	Reserve Target	\$2,337,024	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600
11	<b>Transfer to Capital</b>	\$4,946,560	\$4,271,852	\$4,644,830	\$5,015,896	\$5,408,268	\$5,820,792
12	<b>Ending Balance After Transfer</b>	\$2,422,867	\$2,533,711	\$2,651,733	\$2,775,917	\$2,906,600	\$3,044,137
13	Calculated Debt Coverage	5.53	4.94	5.32	5.65	5.99	6.36
14	<b>Required Debt Coverage</b>	1.25	1.25	1.25	1.25	1.25	1.25

**Table 3-10: Projected Water Capital Financial Plan (Proposed Revenue Adjustments)**

Line	A	B	C	D	E	F	G	H
	Financial Plan	Description	FY 2023-24	FY 2024-25	FY 2025-2026	FY 2026-27	FY 2027-28	FY 2028-29
1	Beginning Unrestricted Balance	--	\$24,860,010	\$23,044,698	\$16,406,361	\$11,163,586	\$6,468,119	\$2,218,038
	<b>Sources of Funds</b>							
2	Grant Proceeds	--	\$3,505,776	\$0	\$0	\$0	\$0	\$0
3	Interest Earnings	--	\$356,611	\$293,680	\$205,235	\$131,253	\$64,661	\$0
4	Transfer from Operating	--	\$4,946,560	\$4,271,852	\$4,644,830	\$5,015,896	\$5,408,268	\$5,820,792
5	<b>Total Sources</b>	Sum of Lines 2 through 4	\$8,808,946	\$4,565,532	\$4,850,065	\$5,147,150	\$5,472,929	\$5,820,792
	<b>Uses of Funds</b>							
6	Cash Funded Capital	--	\$8,874,258	\$9,453,869	\$8,342,840	\$8,092,617	\$7,973,009	\$9,566,714
7	Transfer to Emergency Fund	--	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000
8	<b>Total Uses</b>	Sum of Lines 6 and 7	\$10,624,258	\$11,203,869	\$10,092,840	\$9,842,617	\$9,723,009	\$11,316,714
9	<b>Net Cash Flow</b>	Line 5 – Line 8	(\$1,815,312)	(\$6,638,337)	(\$5,242,775)	(\$4,695,467)	(\$4,250,080)	(\$5,495,923)
10	Ending Unrestricted Balance	Line 1 + Line 9	\$23,044,698	\$16,406,361	\$11,163,586	\$6,468,119	\$2,218,038	(\$3,277,884)
11	Beginning Emergency Balance		\$0	\$1,763,125	\$3,552,697	\$5,369,112	\$7,212,774	\$9,084,091
12	Ending Emergency Balance	Line 11 + Line 7 + Interest Earnings on Balance	\$1,763,125	\$3,552,697	\$5,369,112	\$7,212,774	\$9,084,091	\$10,983,477
13	<b>Ending Total Capital Balance</b>	Line 10 + Line 12	\$24,807,823	\$19,959,058	\$16,532,699	\$13,680,893	\$11,302,129	\$7,705,593
14	<i>Target For Emergency</i>	--	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000	\$10,000,000

Figure 3: Water Operating Fund Ending Balance (Proposed Financial Plan)

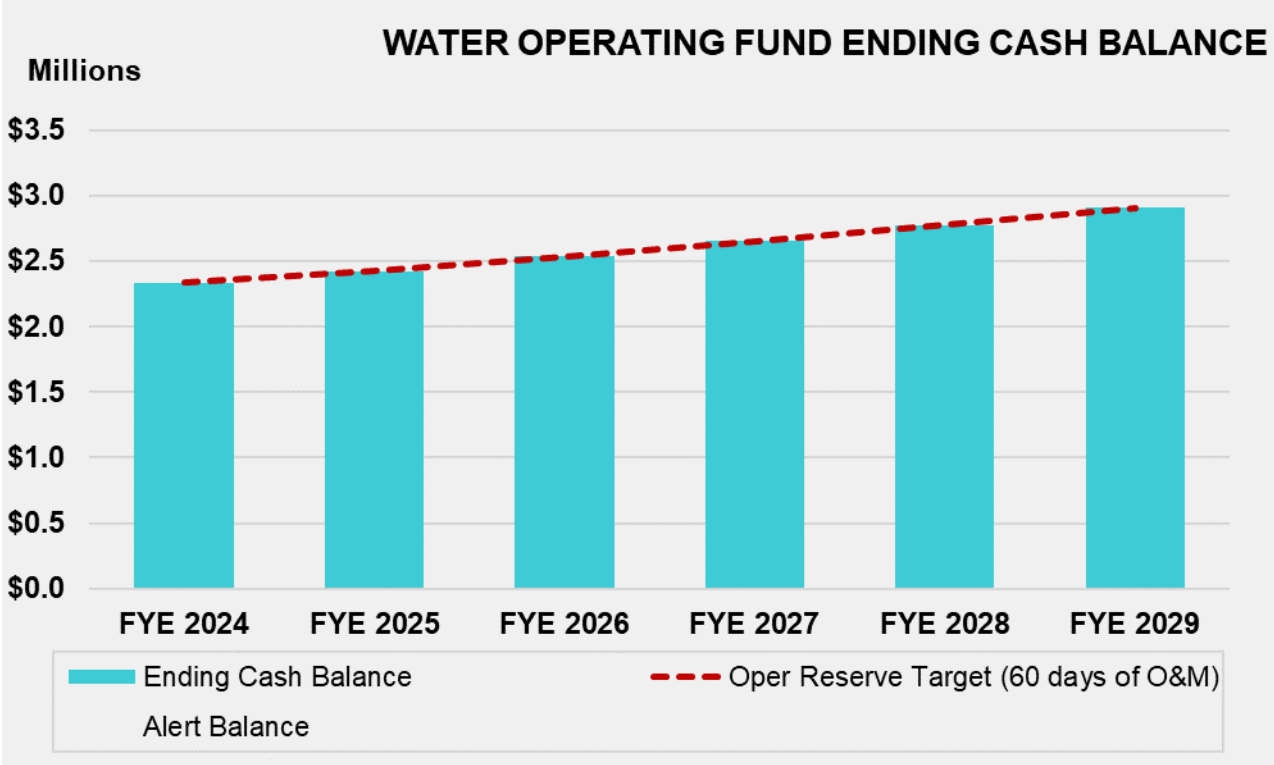
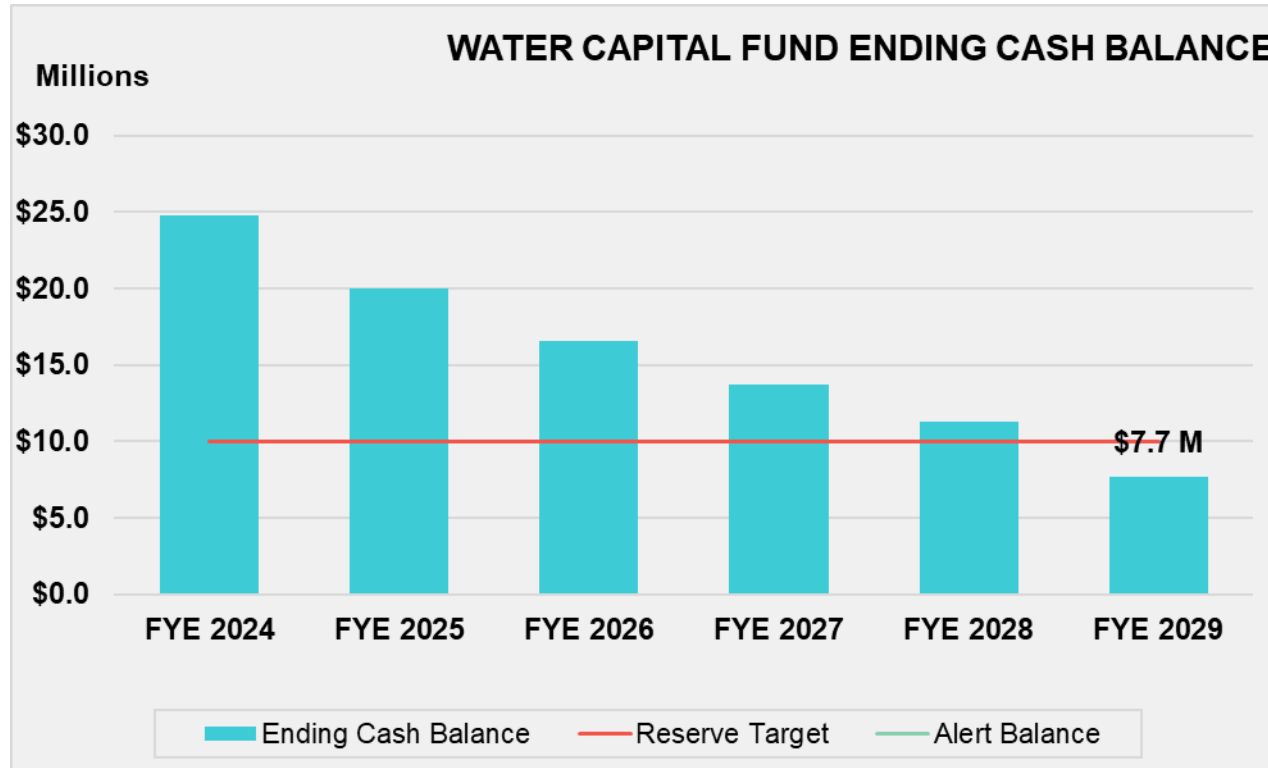


Figure 4: Water Capital Fund Ending Balance (Proposed Financial Plan)



# 4. Water Cost-of-Service

A cost-of-service analysis distributes a utility’s revenue requirements from rates (costs) to each customer class based on their proportionate share of total system water demand. The cost-of-service analysis completed by Raftelis followed industry standard cost allocation principles as presented in AWWA Manual M1.

## 4.1. Revenue Requirement Determination

The starting point of the water COS analysis is to identify the operating and capital cost components of the annual revenue requirement from rates. **Table 4-1** shows the FY 2024-25 revenue requirement derivation, which results in the total revenue required from water rates (Line 21). The revenue requirement comprises the Operating (Column B, Line 14) and Capital (Column C, Line 14) revenue requirements, which will be allocated to the cost causation components based on the proportion of O&M expense and capital asset functions, respectively.

**Table 4-1: FY 2024-25 Potable Revenue Requirements**

Line	A Potable Water FY 2024-25 Requirements	B Operating	C Capital	D Total
<b>Revenue Requirements</b>				
1	O&M Expenses			
2	WQPP	\$1,442,300		\$1,442,300
3	Water Administration	\$12,043,075		\$12,043,075
4	Wells	\$86,779		\$86,779
5	Pumping Plant	\$184,358		\$184,358
6	Facilities Maintenance	\$228,188		\$228,188
7	Mains, Hydrants, Maintenance	\$394,726		\$394,726
8	Meter Services Maintenance	\$75,704		\$75,704
9	Warehouse Operations	\$82,072		\$82,072
10	Existing Debt Service		\$1,111,975	\$1,111,975
11	Proposed Debt Service		\$0	\$0
12	Capital Projects			
	Rate Funded Capital Projects (Transfer to			
13	Capital Fund)		\$4,271,852	\$4,271,852
14	<b>Total Revenue Requirements</b>	<b>\$14,537,201</b>	<b>\$5,383,827</b>	<b>\$19,921,028</b>
<b>Less: Revenue Offsets</b>				
15	Miscellaneous Revenues	\$706,238		\$706,238
16	Interest Income	\$68,698		\$68,698
17	<b>Total Revenue Offsets</b>	<b>\$774,936</b>	<b>\$0</b>	<b>\$774,936</b>
<b>Less: Adjustments</b>				
18	Adjustment for Cash Balance		(\$110,845)	(\$110,845)
19	Adjustment for Midyear Increase	(\$469,681)		(\$469,681)
20	<b>Total Adjustments</b>	<b>(\$469,681)</b>	<b>(\$110,845)</b>	<b>(\$580,526)</b>
21	<b>Revenue Requirement from Rates</b>	<b>\$14,231,946</b>	<b>\$5,494,671</b>	<b>\$19,726,618</b>

## 4.2. Allocation of Expenses to Cost Causation Components

After determining the FY 2024-25 operating and capital cost revenue requirement components, the next step in the cost of service process is to assign the revenue requirement from rates to specific functional categories and cost

causation components. The assignment of costs to functional categories answers the question, what water utility functions are supported by (i.e., paid for) the rate revenue provided by customers? Functional categories for water utilities may include, but not necessarily be limited to, the supply, wells, reservoirs, treatment, pumping, transmission and distribution, customer service, and general and administration functions.

Cost causation components reflect the types of demands the water utility must have the ability to serve. The allocation of costs to cost causation components answers the question, what types of customer demands are met by (i.e., paid for) each function of the water utility system? Cost causation components used in the study include:

1. Water supply
2. Base delivery costs to meet average day demands
3. Peaking costs to meet maximum day and maximum hour demands
4. Meter service
5. Billing and customer service
6. Fire protection
7. General and administrative costs (legal, office supplies, minor equipment purchases, miscellaneous materials and supplies, training, uniforms, etc.)

Water utility peaking demands are separated into maximum day and maximum hour demands. Maximum day demand is the maximum amount of water used on a single day in a year. Maximum hour demand is the maximum hour usage on the maximum usage day. Both maximum day and maximum hour demands are used to calculate peaking factors that are critical in distributing costs to customer classes. In the COS analysis, the operating and capital costs incurred by a water utility are allocated to customer classes based on their unique maximum day and maximum hour peaking factors. This method is consistent with the AWWA M1 Manual and is widely used in the water industry to perform cost-of-service analyses.

The significance of peaking demands in the cost allocation process is best explained by looking at the City's infrastructure investments. The extra capacity costs incurred to build, maintain, and operate infrastructure to serve maximum day and maximum hour demands are significantly higher than the costs associated with meeting average day demands. For example, the larger pipelines, storage tanks, and pumps used to serve peak demands are more expensive and add to the City's costs to provide water service.

The City's system-wide water utility peaking factors are shown in **Table 4-2**. The system-wide peaking factors (Column B) are used to derive the cost component allocation percentages (Columns C through E). These peaking factors are from the City's water system engineering master plan. To understand the interpretation of the percentages, we must first establish the base use as the average daily demand during the year – which is assigned an allocation basis of 100 percent. If the base allocation basis is used to allocate an expense, the associated costs are used to meet average day demand (base) related costs.

Expenses allocated to the cost causation components on a maximum day basis are those attributed to ensuring the water system can accommodate both base demand (average day demand) and the expected maximum day demand. An industry standard methodology for determining what percentage of demand and associated costs should be allocated to base demand versus maximum demand is provided in AWWA Manual M1. This approach was used in the water COS analysis. Specifically, the maximum day allocation (Line 2) attributes 50.0% (1.00/2.00) of the demand and associated costs to base demand and the remainder to maximum day demand. Expenses allocated to the cost causation components on a maximum hour basis are those attributed to ensuring the water system can accommodate base demand, maximum day demand, and expected maximum hour demand. The method used to determine what percentage of demand and associated costs that should be allocated to base demand, maximum day



demand, or maximum hour demand was also determined using in the methodology in AWWA Manual M1. (Line 3) assumes 32.9% (1.00/3.04) of costs are due to base demand, 32.9% are due to maximum day ((2.00-1.00)/3.04), and the remaining 34.2% are due to maximum hour demand.

The maximum day and maximum hour cost components are called peaking costs. The system peaking factors shown in Lines 1 - 3 in Column B of **Table 4-2** were obtained from the City’s water system engineering master plan. The system-wide maximum month ratio is (Line 4) calculated by dividing maximum month demand by average month demand. The monthly to maximum day ratio (Line 5) is calculated by dividing the maximum month by the maximum day. The system-wide maximum day-to-maximum hour ratio (Line 5) is calculated by dividing the maximum day by the maximum hour. These allocation bases assign O&M expenses and capital costs to the cost causation components.

**Table 4-2: System Peaking Factors, Conversions, and Cost Component Allocations**

	A	B	C	D	E	F
Line	Description	Factor	Base Delivery	Max Day	Max Hour	Total
1	Base	1.00	100%	0%	0%	100%
2	Max Day (Note 1)	2.00	50.0%	50.0%	0%	100%
3	Max Hour (Note 2)	3.04	32.9%	32.9%	34.2%	100%
4	System-Wide Max Month	1.43				
5	System-Wide Max Day to Max Hour	1.52				

Note 1: Derivation of Max Day Allocations:

1.00 Base Factor/2.00 Max Day Factor = 50% Base Allocation

(2.00 Max Day Factor - 1.0 Base Factor)/2.00 Max Day Factor = 50% Max Day Allocation

Note 2: Derivation of Max Hour Allocations:

1.00 Base Factor/3.04 Max Hour Factor = 32.9% Base Allocation

(2.00 Max Day Factor - 1.0 Base Factor)/3.04 Max Hour Factor = 32.9% Max Day Allocation

(3.04 Max Hour Factor – 2.00 Max Day Factor)/3.04 Max Hour Factor = 34.2% Max Hour Allocation

The allocation basis for each expense in the annual revenue requirement is chosen based on the type of cost for each line item and the proportion of those costs associated with each cost causation component (Base or average demand, Max Day, Max Hour, General, etc.). The allocation is based on the design basis of the different components of the water system. For example, pumps on wells are often designed to meet Max Day demands and costs are allocated 50.0 percent to Base and 50.0 percent to Max Day as shown in **Table 4-3**.

The O&M expenses in the annual revenue requirement are allocated to the cost components, as shown in **Table 4-4**. The O&M allocation percentages (Line 11) are then used to allocate the Operating revenue requirement (**Table 4-1**, Column B, Line 14).

The capital costs in the annual revenue requirement are allocated in a similar process based the profile of water utility assets, as shown in **Table 4-5** and **Table 4-6**. The capital allocation percentages (**Table 4-6**, Line 11) are used to allocate the capital cost revenue requirement (**Table 4-1**, Column C, Line 14). The value of the City’s potable water fixed assets was used to allocate costs. Assets represent the utility’s long-term investments in its capital infrastructure and do not fluctuate as much each year.

**Table 4-3: Water O&M Allocation Factors**

Line	A	B	C	D	E	F	G	H	I	J
Line	Potable O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Meters	Customer	Fire	General	Total
1	Supply	100%								100%
2	Pumping		50%	50%						100%
3	Treatment		100%							100%
4	Storage		50%	50%						100%
5	T&D		32.9%	32.9%	34.2%					100%
6	Meters					100%				100%
7	Customer Service						100%			100%
8	Fire Protection							100%		100%
9	General								100%	100%

Note: T&D - Transmission and Distribution

**Table 4-4: Water O&M Allocations**

Line	A	B	C	D	E	F	G	H	I	J
Line	Potable O&M Cost	Supply	Base Delivery	Max Day	Max Hour	Meters	Customer	Fire	General	Total
1	Supply	\$86,779	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$86,779
2	Pumping	\$0	\$92,179	\$92,179	\$0	\$0	\$0	\$0	\$0	\$184,358
3	Treatment	\$0	\$1,442,300	\$0	\$0	\$0	\$0	\$0	\$0	\$1,442,300
4	Storage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	T&D	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Meters	\$0	\$0	\$0	\$0	\$4,049,919	\$0	\$0	\$0	\$4,049,919
7	Customer Service	\$0	\$0	\$0	\$0	\$0	\$240,862	\$0	\$0	\$240,862
8	Fire Protection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	General	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,532,984	\$8,532,984
10	<b>Total O&amp;M Expenses</b>	<b>\$86,779</b>	<b>\$1,534,478</b>	<b>\$92,179</b>	<b>\$0</b>	<b>\$4,049,919</b>	<b>\$240,862</b>	<b>\$0</b>	<b>\$8,532,984</b>	<b>\$14,537,201</b>
11	<b>O&amp;M Allocation</b>	<b>0.6%</b>	<b>10.6%</b>	<b>0.6%</b>	<b>0.0%</b>	<b>27.9%</b>	<b>1.7%</b>	<b>0.0%</b>	<b>58.7%</b>	<b>100.0%</b>

**Table 4-5: Water Asset Allocation Factors**

Line	A	B	C	D	E	F	G	H	I	J
	Potable Asset Allocation	Supply	Base Delivery	Max Day	Max Hour	Meters	Customer	Fire	General	Total
1	Supply	100%								100%
2	Pumping		50%	50%						100%
3	Treatment		100%							100%
4	Storage		50%	50%						100%
5	T&D		32.9%	32.9%	34.2%					100%
6	Meters					100%				100%
7	Customer Service						100%			100%
8	Fire Protection							100%		100%
9	General								100%	100%

**Table 4-6: Water Asset Allocations**

Line	A	B	C	D	E	F	G	H	I	J
	Potable Assets	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	Total
1	Supply	\$1,520,407	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,520,407
2	Pumping	\$0	\$10,877,301	\$10,877,301	\$0	\$0	\$0	\$0	\$0	\$21,754,602
3	Treatment	\$0	\$90,687	\$0	\$0	\$0	\$0	\$0	\$0	\$90,687
4	Storage	\$0	\$11,053,036	\$11,053,036	\$0	\$0	\$0	\$0	\$0	\$22,106,071
5	T&D	\$0	\$8,439,569	\$8,439,569	\$8,777,152	\$0	\$0	\$0	\$0	\$25,656,289
6	Meters	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	Customer Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Fire Protection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	General	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,959,169	\$2,959,169
10	<b>TOTAL ASSETS</b>	<b>\$1,520,407</b>	<b>\$30,460,592</b>	<b>\$30,369,905</b>	<b>\$8,777,152</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$2,959,169</b>	<b>\$74,087,225</b>
11	<i>Capital Allocation</i>	<i>2.1%</i>	<i>41.1%</i>	<i>41.0%</i>	<i>11.8%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>4.0%</i>	<i>100.0%</i>

### 4.3. Units of Service

Once all expenses have been allocated to the appropriate cost components, the next step is to determine the units of service over which the costs will be recovered. The service units are number of customers, equivalent meter units (EMUs), annual water use, and extra capacity units. Private fire connections and city hydrants are also used in the calculation of private fire charges.

#### 4.3.1. CUSTOMER AND METER EQUIVALENTS

**Table 4-7** summarizes customer and equivalent meter units. Meter counts can be found in **Table 3-1**. EMUs represent the potential demand that meters can place on the system. The AWWA M1 Manual provides data about the potential demand that each standard meter size can place on the system. For this study, the base meter is the 3/4-inch meter, which is the most common meter size. The AWWA ratio (Column C) is calculated by dividing the capacity in gallons per minute (gpm) (Column B) for each meter size by the capacity of a 3/4-inch meter (Column B, Line 1). EMUs for each class are derived by multiplying the AWWA ratio (Column C) by the number of accounts at a given meter size. The numbers shown in the tables of this section are rounded. Therefore, hand calculations based on the displayed numbers, such as summing or multiplying, may not equal the exact results shown.

**Table 4-7: Customer and Equivalent Meter Units**

Line	A Meter Size	B Capacity (gpm)	C AWWA Ratio	D SFR EMUs	E MFR EMUs	F Non-Residential EMUs	G Landscape EMUs	H Reclaimed Water EMUs	I EMUs
1	3/4"	30	1.00	7,431	1,247	365	12	0	9,056
2	1"	50	1.67	2,797	485	335	61	0	3,679
3	1 1/2"	100	3.33	244	853	471	108	0	1,677
4	2"	160	5.33	176	439	1,189	248	11	2,062
5	3"	350	11.67	0	61	548	128	35	772
6	4"	630	21.00	0	95	1,308	78	42	1,524
7	6"	1,300	43.33	0	0	284	0	0	284
8	8"	2,400	80.00	0	0	175	0	0	175
9	<b>Total</b>			<b>10,649</b>	<b>3,181</b>	<b>4,676</b>	<b>634</b>	<b>89</b>	<b>19,229</b>

Equivalent fire accounts are treated similarly, using the Hazen Williams equation for pipe flow<sup>2</sup>, demonstrated in **Table 4-8**. The fire ratios (Column B) are applied to the number of private fire connections to determine the number of 6-inch fire line equivalents; the same is applied to fire hydrants (Column E), which assumes a 6-inch diameter line. The proportion of equivalent fire lines allocated to private and public fire protection (Line 10) are used in **Table 4-11** to calculate the cost of providing private fire protection service.

<sup>2</sup> The potential flow is the diameter of the connection raised to the 2.63 power – the Hazen Williams equation for pipe flow. For a 2" pipe the 6" equivalent demand factor would be  $(2/6)^{2.63} = .056$ .

**Table 4-8: Public Hydrants and Private Fire Lines**

Line	A	B	C	D	E	F
	Line Size	Fire Ratio	Lines	Eq. Lines	Hydrants	Eq. Hydrants
1	2"	0.06	2	0		
2	3"	0.16	0	0		
3	4"	0.34	73	25		
4	6"	1.00	55	55		
5	8"	2.13	37	80		
6	10"	3.83	4	15		
7	12"	6.19	1	6		
8	6"	1.00			1,054	1,054
9	<b>Total</b>		<b>172</b>	<b>181</b>	<b>1,054</b>	<b>1,054</b>
10	<i>% of Equiv. Lines</i>			<i>14.7%</i>		<i>98.3%</i>

### 4.3.2. CUSTOMER CLASS WATER USAGE AND PEAKING

Service units also include the annual water demand units, and the maximum day and maximum hour peak demand units. The first step in the process of calculating customer class peaking units is to estimate their respective maximum day and maximum hour peaking factors. Peaking factors reflect the estimated proportionate share of system-wide non-coincident peak demands for each customer class.

**Table 4-9** shows the calculation of peaking factors for each customer class. In the case of Single Family Residential customers, maximum day and maximum hour peaking factors were developed for both Tier 1 and Tier 2. Tier 1 for Single Family Residential customers is intended to provide an amount of water adequate for non-discretionary indoor usage. Tier 2 usage is intended to provide water for outdoor irrigation purposes. The process of calculating customer class maximum day and maximum hour peaking factors included the following steps:

- » Analyzing the billing records for each customer class to estimate the ratio of their maximum month to average month demands. Monthly demands are used because the City reads customer meters on a monthly basis and information on daily or hourly consumption is not available.
- » The ratio of maximum month to average month demand is then converted into a maximum day peaking factor for each customer class through the use of the system-wide maximum day factor originally shown in Line 4 of Table 4-2.
- » The maximum hour peaking factors for each customer class are then estimated by applying the system-wide maximum hour peaking factor originally shown in Line 5 of Table 4-2.
- » Daily and hourly adjustment factors were applied to the peaking factors calculated for each customer class (Line 3 and Line 6). These adjustments are necessary due to the fact that there is daily variability in the maximum month water demands of customer classes. Further, actual maximum day and maximum hour demand data is not available for individual customer classes. The adjustment factors were developed based on City staff's understanding of typical customer behavior. For example, the Multi-Family customer class has a maximum day weekly usage adjustment factor of 1.17 because it assumes 6 days of water usage each week (7 days divided by 6 days of water usage = 1.17). Tier 2 of the Single Family Residential customer class has a maximum day weekly adjustment factor of 1.75 which assumes that Tier 2 water usage occurs 4 days per week (7 days divided by 4 days of water usage = 1.75).

**Table 4-9: Class Peaking Factors**

Line	Description	Single Family Tier 1	Single Family Tier 2	Multifamily	Non-Residential	Landscape	Reclaimed
1	Ratio of Max Month/ Avg Day	1.35	2.11	1.86	1.37	1.95	1.98
2	System Max Day/Max Month Ratio	1.43	1.43	1.43	1.43	1.43	1.43
3	Weekly Usage Adjustment	1.00	1.75	1.17	1.00	1.40	1.00
4	<b>Max Day Peaking Factor (Lines 1 * 2 * 3)</b>	<b>1.92</b>	<b>5.27</b>	<b>3.10</b>	<b>1.96</b>	<b>3.91</b>	<b>2.83</b>
5	System Max Hour Ratio	1.52	1.52	1.52	1.52	1.52	1.52
6	Peak Hour Usage Adjustment	1.00	1.50	1.50	1.50	1.50	1.50
7	<b>Max Hour Peaking Factor (Lines 4 * 5 * 6)</b>	<b>2.92</b>	<b>12.01</b>	<b>7.07</b>	<b>4.46</b>	<b>8.90</b>	<b>6.45</b>

**Table 4-10** shows the calculation of extra capacity units for each class. Annual usage (Column C) is the total amount of water each class is forecasted to use in the test year, which is also shown in **Table 3-1**. Average day (Column D) is equal to annual use divided by 365 days.

The Max Day peaking factor (Column E) was derived in **Table 4-9**. The Max Day peaking factor is multiplied by the average day used to determine the Max Day total capacity (Column F). The extra capacity required to serve water under Max Day conditions (Column G) is the difference between the Max Day total capacity and the average day use. These extra capacity units are used to distribute peaking costs between the classes.

The same steps as described above are applied to calculate Max Hour total capacity (Column I). The extra capacity for Max Hour use is calculated by subtracting the Max Day total capacity from the Max Hour total capacity.

### 4.3.3. COST DISTRIBUTIONS TO THE COST CAUSATION COMPONENTS

**Table 4-11** summarizes the results of the cost allocation to the cost causation components and the final unit costs for each cost causation component. The operating revenue requirement (Column J, Line 1) is from **Table 4-1** and is allocated based on the operating allocation percentages from **Table 4-3**. The capital revenue requirement (Column J, Line 2) is also from **Table 4-1** and is allocated based on the capital allocation percentages from **Table 4-5**. Note that the total revenue requirement (**Table 4-11**, Column J, Line 3) is equal to the total revenue required from rates (**Table 4-1**, Column D, Line 14).

General costs (Column I) are reallocated back to all other components based on the proportion of costs within each cost component in the total cost of service (Line 3). Public fire protection costs (Line 5) are reallocated based on the percentage of equivalent fire lines for public fire hydrants (**Table 4-8**, Line 10); these costs are recovered from ratepayers in their fixed meter charge. Finally, the City chooses to reallocate 25 percent of extra capacity peaking costs to the equivalent meter basis to reach revenue stability goals. Peaking costs can be recovered in proportion to meter size. Total adjusted costs (Line 8), fully allocated to the appropriate cost causation components, are used to determine the final unit costs.

The unit costs (Line 11) are the result of dividing the adjusted cost of service (Line 8) for each cost causation component by the units of service (Line 9), which were summarized in **Table 4-10**. Unit costs on Line 11 for meters, customers, and fire protection are per bill.

**Table 4-12** presents the results of the cost-of-service analysis. Using the unit costs calculated in **Table 4-11** and the detailed units of service in **Table 4-10**, the costs are distributed to each customer class. Supply and Base Delivery are distributed to each customer class and tier based on annual water use (**Table 4-10**, Column C). Max Day and Max Hour costs are distributed based on extra capacity units for each component (**Table 4-10**, Columns G and J, respectively). Fire costs are distributed based on equivalent fire lines (**Table 4-10**, Column M, Line 5). Meter costs

are distributed based on EMUs (**Table 4-10**, Column K). Finally, Customer costs are distributed based on the number of bills (**Table 4-10**, Column L multiplied by 12).

Fire capacity costs are based on the maximum day and maximum hour capacity units in **Table 4-10** columns N and O. The allocation of fire costs to each customer class is based on assumptions regarding the intensity and duration of a fire event associated with different land use types. These assumptions are provided in the City's potable water system engineering master plan which specifies that a single family residential fire event will require 1,250 gallons per minute (gpm) over a 2 hour duration. The assumption for multi-family residential is 2,250 gpm over a 2 hour duration. A non-residential fire event is specified as requiring 3,000 gpm over a 3 hour duration. Raftelis assumed that a fire even regarding landscaping would require 1,000 gpm over a 1 hour period require. The maximum day and maximum hour capacity units shown in Columns N and O were determined based on these assumptions.

**Table 4-10: Units of Service**

Line	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Customer Class	Monthly Tiers (HCF)	Annual Use (HCF)	Average Daily Use	MD Capacity Factor	MD Total Capacity	MD Extra Capacity	MH Capacity Factor	MH Total Capacity	MH Extra Capacity	EMUs	Accounts	Eq. Lines	Public Fire MD Capacity	Public Fire MH Capacity
1	<b>SFR</b>										10,649	9,216		201	2,206
2	Tier 1	0-22	945,413	2,590	1.92	4,978	2,388	2.92	7,567	2,589					
3	Tier 2	22+	579,749	1,588	5.27	8,369	6,781	12.01	19,081	10,712					
4	Multi-family		745,706	2,043	3.10	6,335	4,292	7.07	14,443	8,109	3,181	1,886		361	3,970
5	Non-Residential		566,151	1,551	1.96	3,034	1,483	4.46	6,918	3,884	4,676	1,049		722	5,053
6	Landscape		142,946	392	3.91	1,529	1,138	8.90	3,487	1,958	634	142		160	1,765
7	Reclaimed		35,605	98	2.83	276	179	6.45	630	353	89	7			
8	Private Fire											172	181		
9	<b>Total</b>		<b>3,015,569</b>			<b>24,522</b>	<b>16,260</b>		<b>52,127</b>	<b>27,605</b>	<b>19,229</b>	<b>12,472</b>	<b>181</b>	<b>1,444</b>	<b>12,994</b>

**Table 4-11: Unit Cost of Service**

Line	A	B	C	D	E	F	G	H	I	J	K	L
	Cost of Service	Supply	Base Delivery	Max Day	Max Hour	Meters	Customer	Fire	General	Public Fire MD Capacity	Public Fire MH Capacity	Total
1	Operating Expenses	\$84,957	\$1,502,257	\$90,243	\$0	\$3,964,878	\$235,804	\$0	\$8,353,807			\$14,231,946
2	Capital Expenses	\$112,761	\$2,259,107	\$2,252,381	\$650,957	\$0	\$0	\$0	\$219,466			\$5,494,671
3	<b>Total Cost of Service</b>	<b>\$197,718</b>	<b>\$3,761,364</b>	<b>\$2,342,624</b>	<b>\$650,957</b>	<b>\$3,964,878</b>	<b>\$235,804</b>	<b>\$0</b>	<b>\$8,573,273</b>			<b>\$19,726,618</b>
4	Allocation of General Cost	\$151,980	\$2,891,258	\$1,800,712	\$500,373	\$3,047,694	\$181,256	\$0	-\$8,573,273			
5	Allocation of Public Fire Cost			-\$310,275	-\$279,027					\$310,275	\$279,027	
6	Allocation of Private Fire Cost			-\$53,301	-\$47,933			\$101,234				
7	Allocation of Peaking Cost to Meter		\$0	-\$1,035,834	-\$287,832	\$1,323,666						
8	<b>Total Adjusted Cost of Service</b>	<b>\$349,698</b>	<b>\$6,652,622</b>	<b>\$2,743,925</b>	<b>\$536,538</b>	<b>\$8,336,239</b>	<b>\$417,060</b>	<b>\$101,234</b>	<b>\$0</b>	<b>\$310,275</b>	<b>\$279,027</b>	<b>\$19,726,618</b>
9	Unit of Service	3,015,569	3,015,569	16,260	27,605	19,229	74,833	1,086		1,444	12,994	
10	Unit	HCF	HCF	HCF	HCF	EMU's	bills	EMU's		gpm	gpm	
11	Unit Cost	\$0.12	\$2.21	\$168.75	\$19.44	\$72.26	\$5.57	\$93.19		\$214.91	\$21.47	



**Table 4-12: Class Cost of Service**

	A	B	C	D	E	F	G	H	I	J	K
Line	Cost of Service by Class	Supply	Base Delivery	Max Day	Max Hour	Meters	Customer	Fire	Public Fire MD Capacity	Public Fire MH Capacity	Total
1	<b>SFR</b>					\$4,616,591	\$308,176		\$43,094	\$47,366	\$5,015,227
2	Tier 1	\$109,634	\$2,085,667	\$402,997	\$50,315						\$2,648,613
3	Tier 2	\$67,230	\$1,278,979	\$1,144,260	\$208,212						\$2,698,681
4	Multi-family	\$86,475	\$1,645,095	\$724,243	\$157,602	\$1,379,095	\$63,074		\$77,569	\$85,258	\$4,218,411
5	Non-Residential	\$65,653	\$1,248,980	\$250,281	\$75,488	\$2,027,300	\$35,075		\$155,138	\$108,510	\$3,966,425
6	Landscape	\$16,577	\$315,352	\$192,012	\$38,051	\$274,865	\$4,757		\$34,475	\$37,892	\$913,982
7	Reclaimed	\$4,129	\$78,548	\$30,133	\$6,869	\$38,387	\$236		\$0	\$0	\$158,303
8	Private Fire						\$5,742	\$101,234			\$106,975
9	<b>Total</b>	<b>\$349,698</b>	<b>\$6,652,622</b>	<b>\$2,743,925</b>	<b>\$536,538</b>	<b>\$8,336,239</b>	<b>\$417,060</b>	<b>\$101,234</b>	<b>\$310,275</b>	<b>\$279,027</b>	<b>\$19,726,618</b>

# 5. Water Rate Design

While the cost-of-service analysis determines how much revenue should be recovered from each customer class, the rate design process determines how and on what basis. Costs are allocated to the fixed and volume charges of each class to recover costs in a manner that is equitable and meets the City’s goals.

## 5.1. Proposed Bi-Monthly Service Charge

The bi-monthly service charge recovers three types of costs:

1. Costs associated with maintaining and servicing meters,
2. Capacity (also known as peaking) costs, and
3. Public fire protection costs that reflect the engineering master plan flow criteria as discussed in the previous section of this report.

The bi-monthly service charges increase as the meter size increases and are proportional to the AWWA hydraulic capacity ratios shown in **Table 4-7**. The AWWA capacity ratios, which are a function of a meter’s safe maximum flow rate, are used to increase the meter service component for larger capacity meters which impose a greater demand on the system and require larger systems and therefore are responsible for higher costs. This assumes that the potential capacity (peaking) demand is proportional to the potential flow through each meter size as established by the AWWA capacity ratios.

The Customer component ( **Table 4-11**, Column G, Line 11) recovers costs associated with meter reading, customer billing, and collection, as well as answering customer calls. These costs are the same for all meter sizes as it costs the same to bill a small meter as it does a larger meter. Customer costs (Column D) are the same for all meter sizes. Because fire flow assumptions differ for each customer class, each class is allocated a share of the public fire cost based on their specific fire flow requirements. As a result, this cost component varies between customer classes. Reclaimed water does not receive any fire costs. The bi-monthly fixed charge per class is the summation of the meter charge (column C), customer charge (column D), and the fire component applicable to the class.

**Table 5-1: Bi-Monthly Fixed Charge Derivation by Meter Size**

Line	A	B	C	D	E	F	G	H
	Meter Size	AWWA Ratio	Meter	Customer	Single Family Fire	Multi-Family Fire	Non-Residential Fire	Landscape Fire
1	3/4"	1.00	\$72.26	\$5.57	\$1.42	\$8.53	\$9.40	\$19.02
2	1"	1.67	\$120.43	\$5.57	\$2.36	\$14.22	\$15.66	\$31.71
3	1 1/2"	3.33	\$240.85	\$5.57	\$4.72	\$28.44	\$31.32	\$63.41
4	2"	5.33	\$385.36	\$5.57	\$7.55	\$45.50	\$50.12	\$101.46
5	3"	11.67	\$842.98	\$5.57	\$16.52	\$99.53	\$109.63	\$221.94
6	4"	21.00	\$1,517.36	\$5.57	\$29.73	\$179.15	\$197.33	\$399.50
7	6"	43.33	\$3,131.06	\$5.57	\$61.35	\$369.68	\$407.19	\$824.36
8	8"	80.00	\$5,780.42	\$5.57	\$113.26	\$682.48	\$751.74	\$1,521.89

## 5.2. Proposed Bi-Monthly Private Fire Protection Charge

**Table 5-2** shows the derivation of the bi-monthly private fire charge (Column E). The fire cost in Column C is calculated for each line size by multiplying the unit cost of fire protection (**Table 4-11**, Column H, Line 11) by the flow ratios in Column B. The proposed private fire charge is calculated by adding the scaled fire cost (Column C)

to the customer billing charge (Column D). The proposed private fire charges are proportional to the potential flow through each private fire connection.

**Table 5-2: Bi-Monthly Private Fire Charge Derivation by Meter Size**

Line	A	B	C	D	E
	Line Size	Flow Ratio	Fire	Customer	Proposed Charge
1	3/4"	0.00	\$0.39	\$5.57	\$5.97
2	1"	0.01	\$0.84	\$5.57	\$6.41
3	2"	0.06	\$5.18	\$5.57	\$10.76
4	3"	0.16	\$15.05	\$5.57	\$20.63
5	4"	0.34	\$32.08	\$5.57	\$37.65
6	6"	1.00	\$93.19	\$5.57	\$98.76
7	8"	2.13	\$198.58	\$5.57	\$204.15
8	10"	3.83	\$357.12	\$5.57	\$362.69
9	12"	6.19	\$576.84	\$0.00	\$576.84

### 5.3. Volumetric Rates

#### 5.3.1. CUSTOMER CLASSES

Raftelis does not recommend changes to volumetric rate structures. SFR customers are more likely to have predictable peaking patterns based on seasonality: water use during the summer months tends to peak more due to increased irrigation needs. The City incurs costs specific to accommodating such peak demand with infrastructure sized to provide capacity. To ensure that customers with higher use due to peaking cover the costs proportionally, tiered rates are proposed for SFR customers. The remaining customers vary significantly in size and use and generally are subject to uniform rates.

#### 5.3.2. TIER DEFINITIONS

Table 5-3 shows the current tier definitions for customer classes. Tier 1 for Single Family Residential customers is intended to provide an amount of water adequate for non-discretionary indoor usage. Tier 2 usage is intended to provide water for outdoor irrigation purposes.

**Table 5-3: Current Volumetric Tiers**

Line	A	B
	Tier	HCF
	<b>Single Family Residential</b>	
1	Tier 1	0-22
2	Tier 2	22 and above
3	<b>All Other</b>	All Usage

A uniform rate for all other customer classes is appropriate because of smaller peaking requirements. Commercial customers tend to be much less homogenous and their individual water needs vary significantly. Such customers do not place peak demands on the system in the same way as Single-Family Residential customers. For example, a large commercial customer or industrial customer may use large volumes of water consistently. It may be inequitable to charge most of its use at Tier 2 rates and therefore uniform rates are common for industrial customers.

#### 5.3.3. COMMODITY COST COMPONENT DEFINITIONS

The commodity rates for each class and tier are derived by summing the unit rates (\$/HCF) for:

1. Water Supply
2. Base Delivery
3. Peaking

Supply costs are the operating and capital costs associated with obtaining and maintaining a utility's water supply. Therefore, supply costs are spread over all units of water which results in a uniform delivery unit cost for all classes and tiers. The supply unit rate for all customers (**Table 4-11**, Column B, Line 11) was developed in the cost-of-service analysis.

**Table 5-4: Water Supply Unit Costs**

Line	A	F
	Description	Total
1	Water Demand (HCF)	3,015,569
2	Supply Costs	\$349,698
3	Unit Cost per HCF	<b>\$0.12</b>

Base Delivery costs are the operating and capital costs associated with delivering water to all customers through the distribution system (pipelines and storage reservoirs) at a constant average rate of use – also known as serving customers under average daily demand conditions. Therefore, delivery costs are spread over all units of water which results in a uniform delivery unit cost for all classes and tiers. The delivery unit rate for all customers (**Table 4-11**, Column C, Line 11) was developed in the cost-of-service analysis.

Peaking costs, or extra-capacity costs, represent costs incurred to meet customer peak demands above average daily demand. These costs are calculated in **Table 5-5**. The Max Day and Max Hour costs and represent capital and operating costs associated with system oversizing to meet peak demands. The cost for each class is divided by the forecasted use for the class as shown in Columns D and F.

**Table 5-5: Delivery and Peaking Unit Rates**

Line	A	B	C	D	E	F
	Class	Usage (HCF)	Base Cost	Base Unit Rate	Peaking Cost	Peaking Unit Rate
<b>SFR</b>						
1	Tier 1	945,413	\$2,085,667	\$2.21	\$453,312	\$0.48
2	Tier 2	579,749	\$1,278,979	\$2.21	\$1,352,472	\$2.33
3	<b>Multi-Family</b>	745,706	\$1,645,095	\$2.21	\$881,844	\$1.18
4	<b>Non-Residential</b>	566,151	\$1,248,980	\$2.21	\$325,769	\$0.58
5	<b>Landscape</b>	142,946	\$315,352	\$2.21	\$230,064	\$1.61
6	<b>Reclaimed</b>	35,605	\$78,548	\$2.21	\$37,002	\$1.04

**Table 5-6** combines each of the volumetric rate components derived in **Table 5-4** and **Table 5-5**.

**Table 5-6: Commodity Rate Calculation**

Line	A Class	B Tiers	C Usage (HCF)	D Supply	E Base	F Peaking	G Total
	<b>SFR</b>						
1	Tier 1	0-22	945,413	\$0.12	\$2.21	\$0.48	\$2.81
2	Tier 2	>22	579,749	\$0.12	\$2.21	\$2.33	\$4.66
3	<b>Multi-Family</b>	Uniform	745,706	\$0.12	\$2.21	\$1.18	\$3.51
4	<b>Non-Residential</b>	Uniform	566,151	\$0.12	\$2.21	\$0.58	\$2.90
5	<b>Landscape</b>	Uniform	142,946	\$0.12	\$2.21	\$1.61	\$3.94
6	<b>Reclaimed</b>	Uniform	35,605	\$0.12	\$2.21	\$1.04	\$3.37

## 5.4. 5-Year Rate Schedule

Table 5-7 and Table 5-8 show the proposed five-year water rate schedules commencing January 2025 and in January of every year thereafter until 2029. These rates are developed by applying the revenue increases determined in Table 3-8 to the cost of service rates in Table 5-1, Table 5-2, and Table 5-6. The City will implement rates equal to or lower than the cost-of-service rates.

**Table 5-7: Proposed Water Usage Rates (\$/HCF of water)**

Line	A	B	C	D	E	F	G	H
	Class	Description	Current	CY 2025 (Jan 2025)	CY 2026 (Jan 2026)	CY 2027 (Jan 2027)	CY 2028 (Jan 2028)	CY 2029 (Jan 2029)
	<b>SFR</b>							
1	Tier 1	0-22	\$2.54	\$2.81	\$2.96	\$3.11	\$3.27	\$3.44
2	Tier 2	>22	\$4.15	\$4.66	\$4.90	\$5.15	\$5.41	\$5.69
3	Multi-Family	Uniform	\$2.58	\$3.51	\$3.69	\$3.88	\$4.08	\$4.29
4	Non-Residential	Uniform	\$2.62	\$2.90	\$3.05	\$3.21	\$3.38	\$3.55
5	Landscape	Uniform	\$3.03	\$3.94	\$4.14	\$4.35	\$4.57	\$4.80
6	Reclaimed	Uniform	\$2.13	\$3.37	\$3.54	\$3.72	\$3.91	\$4.11

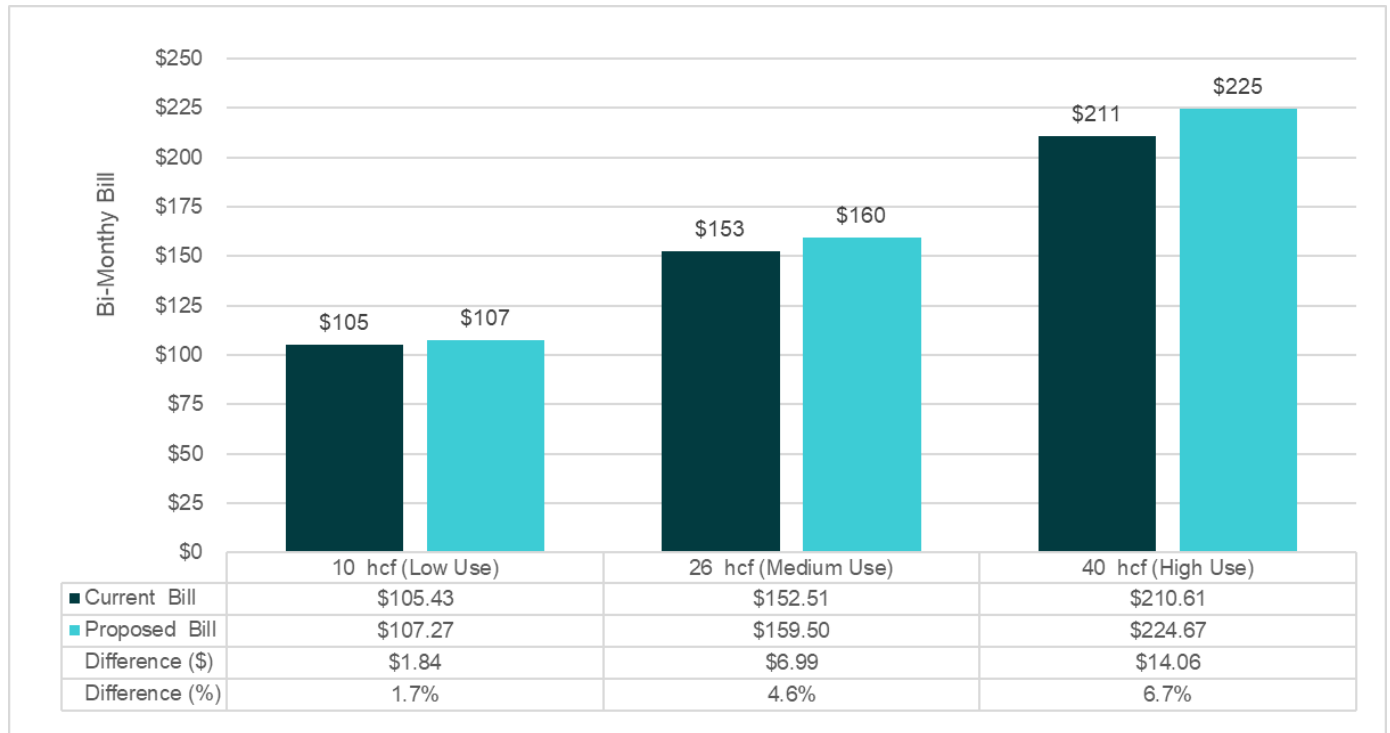
**Table 5-8: Proposed Monthly Water Service Charges (\$/meter size)**

Line	A	B	C	D	E	F	G
	Class	CY 2025	CY 2025 (Jan 2025)	CY 2026 (Jan 2026)	CY 2027 (Jan 2027)	CY 2028 (Jan 2028)	CY 2029 (Jan 2029)
<b>Single-Family</b>							
1	3/4"	\$80.03	\$79.25	\$83.22	\$87.39	\$91.76	\$96.35
2	1"	\$131.87	\$128.36	\$134.78	\$141.52	\$148.60	\$156.03
3	1 1/2"	\$261.45	\$251.15	\$263.71	\$276.90	\$290.75	\$305.29
4	2"	\$416.94	\$398.49	\$418.42	\$439.35	\$461.32	\$484.39
5	3"	\$831.60	\$865.07	\$908.33	\$953.75	\$1,001.44	\$1,051.52
6	4"	\$1,298.10	\$1,552.67	\$1,630.31	\$1,711.83	\$1,797.43	\$1,887.31
7	6"	\$2,593.91	\$3,197.99	\$3,357.89	\$3,525.79	\$3,702.08	\$3,887.19
8	8"	\$4,148.88	\$5,899.26	\$6,194.23	\$6,503.95	\$6,829.15	\$7,170.61
<b>Multi-Family</b>							
9	3/4"	\$107.97	\$86.36	\$90.68	\$95.22	\$99.99	\$104.99
10	1"	\$178.43	\$140.22	\$147.24	\$154.61	\$162.35	\$170.47
11	1 1/2"	\$354.58	\$274.87	\$288.62	\$303.06	\$318.22	\$334.14
12	2"	\$565.96	\$436.44	\$458.27	\$481.19	\$505.25	\$530.52
13	3"	\$1,129.64	\$948.08	\$995.49	\$1,045.27	\$1,097.54	\$1,152.42
14	4"	\$1,763.78	\$1,702.09	\$1,787.20	\$1,876.56	\$1,970.39	\$2,068.91
15	6"	\$3,525.29	\$3,506.32	\$3,681.64	\$3,865.73	\$4,059.02	\$4,261.98
16	8"	\$5,639.09	\$6,468.48	\$6,791.91	\$7,131.51	\$7,488.09	\$7,862.50
<b>Non-Residential</b>							
17	3/4"	\$90.82	\$87.23	\$91.60	\$96.18	\$100.99	\$106.04
18	1"	\$149.84	\$141.66	\$148.75	\$156.19	\$164.00	\$172.20
19	1 1/2"	\$297.40	\$277.75	\$291.64	\$306.23	\$321.55	\$337.63
20	2"	\$474.47	\$441.06	\$463.12	\$486.28	\$510.60	\$536.13
21	3"	\$946.65	\$958.18	\$1,006.09	\$1,056.40	\$1,109.22	\$1,164.69
22	4"	\$1,477.85	\$1,720.27	\$1,806.29	\$1,896.61	\$1,991.45	\$2,091.03
23	6"	\$2,953.42	\$3,543.83	\$3,721.03	\$3,907.09	\$4,102.45	\$4,307.58
24	8"	\$4,724.10	\$6,537.73	\$6,864.62	\$7,207.86	\$7,568.26	\$7,946.68
<b>Landscape</b>							
25	3/4"	\$113.62	\$96.86	\$101.71	\$106.80	\$112.14	\$117.75
26	1"	\$187.85	\$157.71	\$165.60	\$173.88	\$182.58	\$191.71
27	1 1/2"	\$373.42	\$309.84	\$325.34	\$341.61	\$358.70	\$376.64
28	2"	\$596.11	\$492.40	\$517.02	\$542.88	\$570.03	\$598.54
29	3"	\$1,189.93	\$1,070.50	\$1,124.03	\$1,180.24	\$1,239.26	\$1,301.23
30	4"	\$1,857.98	\$1,922.43	\$2,018.56	\$2,119.49	\$2,225.47	\$2,336.75
31	6"	\$3,713.68	\$3,960.99	\$4,159.04	\$4,367.00	\$4,585.35	\$4,814.62
32	8"	\$5,940.52	\$7,307.89	\$7,673.29	\$8,056.96	\$8,459.81	\$8,882.81
<b>Reclaimed</b>							
33	3/4"	\$90.82	\$77.83	\$81.73	\$85.82	\$90.12	\$94.63
34	1"	\$149.84	\$126.00	\$132.30	\$138.92	\$145.87	\$153.17
35	1 1/2"	\$297.40	\$246.43	\$258.76	\$271.70	\$285.29	\$299.56
36	2"	\$474.47	\$390.94	\$410.49	\$431.02	\$452.58	\$475.21
37	3"	\$946.65	\$848.56	\$890.99	\$935.54	\$982.32	\$1,031.44
38	4"	\$1,477.85	\$1,522.94	\$1,599.09	\$1,679.05	\$1,763.01	\$1,851.17
39	6"	\$2,953.42	\$3,136.64	\$3,293.48	\$3,458.16	\$3,631.07	\$3,812.63
40	8"	\$4,724.10	\$5,786.00	\$6,075.30	\$6,379.07	\$6,698.03	\$7,032.94
<b>Fire</b>							
41	3/4"	\$0.90	\$5.97	\$6.27	\$6.59	\$6.92	\$7.27
42	1"	\$1.90	\$6.42	\$6.75	\$7.09	\$7.45	\$7.83
43	1 1/2"	N/A	N/A	N/A	N/A	N/A	N/A
44	2"	\$11.79	\$10.76	\$11.30	\$11.87	\$12.47	\$13.10
45	3"	\$34.22	\$20.63	\$21.67	\$22.76	\$23.90	\$25.10
46	4"	\$72.92	\$37.66	\$39.55	\$41.53	\$43.61	\$45.80
47	6"	\$211.81	\$98.76	\$103.70	\$108.89	\$114.34	\$120.06
48	8"	\$451.38	\$204.16	\$214.37	\$225.09	\$236.35	\$248.17
49	10"	\$811.75	\$362.69	\$380.83	\$399.88	\$419.88	\$440.88
50	12"	\$1,311.19	\$576.84	\$605.69	\$635.98	\$667.78	\$701.17

## 5.5. Customer Bill Impacts

**Table 5-9** outlines the proposed bi-monthly bill impacts for SFR customers with a 3/4" meter using various amounts of water as shown. The table compares a bill under the current rate structure to one under the proposed FY 2024-25 rates. The impact for a typical customer using 26 HCF on a bi-monthly basis will increase by \$6.99.

**Table 5-9: Proposed Single Family Customer Bi-Monthly Bill Impacts (3/4" meter, varying ccf)**



# 6. Sewer Financial Plan

This report section details the sewer utility’s long-term financial plan, based on the projected revenues, expenses, debt service, and capital project costs. Raftelis modeled the financial plan without revenue adjustments (status quo) and with proposed revenue adjustments to ensure the financial sustainability and solvency of the sewer utility.

## 6.1. Projection of Customer Data

City staff provided the actual units (accounts) for each customer class and billed usage for all customers for FY 2021-22. Raftelis forecasted these for the study period using a growth factor of 0.5% for each customer class as shown in **Table 6-1**. For billed usage, Raftelis forecasted a 0.5% usage reduction, in line with conservation. **Table 6-2** shows a summary of the results of the customer unit and billed usage forecast.

**Table 6-1: Account Growth And Usage Demand Factors**

Line	A Account Growth	B FY 2023-24	C FY 2024-25	D FY 2025-26	E FY 2026-27	F FY 2027-208	G FY 2028-29
1	Residential	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2	Multi-Family Residential	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
3	Commercial	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
4	Private Development	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
5	Qualified Low Income	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
6	Billed Usage (all classes)	0.0%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%

**Table 6-2: Projected Sewer Units and Usage (HCF)**

Line	A Customer Class	B FY 2023-24	C FY 2024-25	D FY 2025-26	E FY 2026-27	F FY 2027-208	G FY 2028-29
<b>Units</b>							
1	Residential	19,063	19,158	19,254	19,350	19,447	19,544
2	Multi-Residential	1,892	1,902	1,911	1,921	1,931	1,940
3	Commercial	1,733	1,741	1,750	1,759	1,768	1,776
4	Private Development	0	0	0	0	0	0
5	Qualified Low Income	5	5	5	5	5	5
6	<b>Total Units</b>	<b>22,693</b>	<b>22,806</b>	<b>22,920</b>	<b>23,035</b>	<b>23,150</b>	<b>23,266</b>
<b>Billed Usage (HCF)</b>							
7	Residential	2,921,613	2,907,005	2,892,470	2,878,008	2,863,618	2,849,299
8	Multi-Residential	416,390	414,308	412,237	410,175	408,124	406,084
9	Commercial	1,441,213	1,434,007	1,426,837	1,419,703	1,412,604	1,405,541
10	Private Development	0	0	0	0	0	0
11	Qualified Low Income	351	349	347	346	344	342
12	<b>Total Billed Usage</b>	<b>4,779,567</b>	<b>4,755,669</b>	<b>4,731,891</b>	<b>4,708,231</b>	<b>4,684,690</b>	<b>4,661,267</b>

## 6.2. Projected Revenues

The current sewer rates are listed below in **Table 6-3**.



**Table 6-3: Current Sewer Rates (FY 2024-25)**

	A	B
Line	Description	FY 2024-25
1	<b>Annual Fixed Charge</b>	\$8.45
	<b>Volumetric Charge (\$/HCF)</b>	
2	Residential	\$1.17
3	Multi-Residential	\$1.17
4	Commercial	\$1.17
5	Private Development	\$0.83
6	Qualified Low Income	\$0.65

Using the current rates in **Table 6-3** and the projected units and usage in **Table 6-2** Raftelis prepared a forecast of revenue by customer class shown in **Table 6-4**.

**Table 6-4: Projected Sewer Rate Revenue**

Line	A	B	C	D	E	F	G
	Customer Class	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
	<b>Fixed Charge Revenue</b>						
1	Residential	\$161,081	\$161,886	\$162,696	\$163,509	\$164,327	\$165,148
2	Multi-Residential	\$15,991	\$16,071	\$16,151	\$16,232	\$16,313	\$16,395
3	Commercial	\$14,641	\$14,714	\$14,787	\$14,861	\$14,936	\$15,010
4	Private Development	\$0	\$0	\$0	\$0	\$0	\$0
5	Qualified Low Income	\$42	\$43	\$43	\$43	\$43	\$44
6	<b>Total - Fixed Charge Revenue</b>	<b>\$191,755</b>	<b>\$192,714</b>	<b>\$193,677</b>	<b>\$194,646</b>	<b>\$195,619</b>	<b>\$196,597</b>
	<b>Consumption Charge Revenue</b>						
7	Residential	\$3,418,287	\$3,401,196	\$3,384,190	\$3,367,269	\$3,350,433	\$3,333,680
8	Multi-Residential	\$487,176	\$484,740	\$482,317	\$479,905	\$477,506	\$475,118
9	Commercial	\$1,686,219	\$1,677,788	\$1,669,399	\$1,661,052	\$1,652,747	\$1,644,483
10	Private Development	\$0	\$0	\$0	\$0	\$0	\$0
11	Qualified Low Income	\$228	\$227	\$226	\$225	\$224	\$223
12	<b>Total -Consumption Revenue</b>	<b>\$5,591,911</b>	<b>\$5,563,951</b>	<b>\$5,536,132</b>	<b>\$5,508,451</b>	<b>\$5,480,909</b>	<b>\$5,453,504</b>
13	<b>Total - Rate Revenue</b>	<b>\$5,783,666</b>	<b>\$5,756,665</b>	<b>\$5,729,809</b>	<b>\$5,703,097</b>	<b>\$5,676,528</b>	<b>\$5,650,101</b>

City staff provided the actual FY 2021-22 and FY 2022-23 revenues and budgeted FY 2023-24 revenues for the sewer utility, which were used to project revenues for the remainder of the study period. **Table 6-5** shows the projected sewer revenues based on the demand in **Table 6-2** and the current rates in **Table 1-3**.

If the City continues existing rates, the City expects modest increases in sewer rate revenues for all years of the study based on account growth. The investment income (Line 3) is calculated using the reserve interest rate (**Table 2-2**, Line 2). Miscellaneous revenues include interdepartmental transfers and NPDES Fog Inspection fees.

**Table 6-5: Projected Sewer Revenues Summary**

Line	A	B	C	D	E	F	G
	Revenue	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
1	<b>Rate Revenue</b>	\$5,783,666	\$5,756,665	\$5,729,809	\$5,703,097	\$5,676,528	\$5,650,101
	<b>Other Revenue</b>						
2	Interest Income	\$58,201	\$28,440	\$27,602	\$17,824	\$17,226	\$16,606
3	Miscellaneous Revenue	<u>\$24,487</u>	<u>\$24,977</u>	<u>\$25,476</u>	<u>\$25,986</u>	<u>\$26,506</u>	<u>\$27,036</u>
4	<b>Total</b>	<b>\$5,866,354</b>	<b>\$5,810,082</b>	<b>\$5,782,888</b>	<b>\$5,746,906</b>	<b>\$5,720,259</b>	<b>\$5,693,743</b>

### 6.3. Projected O&M Expenses

City staff provided the actual FY 2023 O&M expenses and budgeted FY 2024 O&M expenses for the sewer utility. **Table 6-6** shows the projected O&M expenses for the study period, inflated for FY 2024 and beyond using the expense inflation factors (**Table 2-3**).

**Table 6-6: Projected Sewer O&M Expenses**

Line	A	B	C	D	E	F	G
	Revenue	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
1	Salaries and Wages	\$766,239	\$866,702	\$914,370	\$964,661	\$1,017,717	\$1,073,691
2	Paid Leave	\$4,809	\$4,905	\$5,175	\$5,459	\$5,760	\$6,076
3	Labor Charges	\$31,715	\$148,225	\$156,377	\$164,978	\$174,052	\$183,625
4	Employee Benefits	\$364,640	\$517,271	\$532,789	\$548,772	\$565,236	\$582,193
5	Dues, Memberships, Publications	\$22,145	\$22,180	\$22,845	\$23,531	\$24,237	\$24,964
6	Rentals	\$3,273	\$3,345	\$3,546	\$3,758	\$3,984	\$4,223
7	Taxes & Assessments	\$0	\$0	\$0	\$0	\$0	\$0
8	Bad Debt Cost	\$109	\$111	\$114	\$118	\$121	\$125
9	Insurance	\$630,883	\$541,022	\$557,253	\$573,970	\$591,189	\$608,925
10	Professional and Contractual	\$327,666	\$266,541	\$274,537	\$282,773	\$291,257	\$299,994
11	Utilities and Related Programs	\$2,292	\$2,343	\$2,484	\$2,633	\$2,791	\$2,958
12	Travel and Allowances	\$5,313	\$2,898	\$2,985	\$3,074	\$3,167	\$3,262
13	Miscellaneous Services	\$3,686	\$3,767	\$3,880	\$3,996	\$4,116	\$4,240
14	Repairs and Maintenance	\$254,233	\$259,826	\$275,416	\$291,940	\$309,457	\$328,024
15	Operating Materials	\$6,000	\$6,132	\$6,500	\$6,890	\$7,303	\$7,742
16	Supplies	\$31,970	\$32,674	\$34,634	\$36,713	\$38,915	\$41,250
17	City Charges	\$130,708	\$137,112	\$141,225	\$145,462	\$149,826	\$154,321
18	Mobile Equipment Rentals	\$122,730	\$128,792	\$136,520	\$144,711	\$153,393	\$162,597
19	Operating Transfer Out	<u>\$174,309</u>	<u>\$40,594</u>	<u>\$41,812</u>	<u>\$43,066</u>	<u>\$44,358</u>	<u>\$45,689</u>
20	<b>Total - O&amp;M Expenses</b>	<b>\$2,882,720</b>	<b>\$2,984,439</b>	<b>\$3,112,462</b>	<b>\$3,246,507</b>	<b>\$3,386,879</b>	<b>\$3,533,898</b>

### 6.4. Debt Service

The City currently has no existing debt for the sewer utility, and the financial plan does not propose any new issuances in the study period.

### 6.5. Capital Projects

City staff provided the CIP for the sewer utility for the study period **Table 6-7** presents the forecasted CIP for the five-year period in current year dollars (Line 5) and inflated (Line 7) using the inflation factors (Line 6). The City plans to fully cash-fund its sewer CIP for all years of the study period.

**Table 6-7: Projected Sewer Capital Projects**

Line	A	B	C	D	E	F	G
	Capital Projects	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
1	Sewer cleaning for hard-to-reach areas	\$208,547	\$55,747	\$56,974	\$58,227	\$59,508	\$60,608
2	Sewer Replacement	\$0	\$3,501,410	\$3,607,648	\$3,717,083	\$3,829,812	\$3,946,142
3	Repair asphalt after sewer projects	\$0	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
4	Palm Project	<u>\$3,000,000</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
5	Total Funded CIP	\$3,208,547	\$3,582,157	\$3,689,622	\$3,800,310	\$3,914,320	\$4,031,750
6	Cumulative Capital Inflation Factor	100.0%	103.0%	106.1%	109.3%	112.6%	115.9%
7	<b>Total Inflated CIP</b>	<b>\$3,208,547</b>	<b>\$3,689,622</b>	<b>\$3,914,320</b>	<b>\$4,152,701</b>	<b>\$4,405,602</b>	<b>\$4,673,903</b>

## 6.6. Current Financial Plan – Status Quo

Table 6-8 shows the projected sewer financial plan without revenue adjustments (also referred to as status quo). Rate revenues and other revenues are derived from projected revenues (Table 6-5). O&M expenses are derived from projected O&M expenses (Table 6-6).

The status quo scenario assumes all capital projects to be rate-funded. Raftelis modeled two separate cash flows, an operating fund cash flow and a capital fund cash flow. The distinction between funds allows us to observe how utility rates recover operational costs and what remains to fund capital investments compared to the required level of investment. The need for rate increases arises from the gap between the capital investment currently funded by rate revenues and the capital investment required by the utility. The operating fund maintains a balance equal to the operating reserve target, with any excess rate revenues transferred to the capital fund's cash flow. The capital fund uses existing reserves and transfers from the operating fund to fund cash-funded capital projects.

On the operating cash flow (Table 6-8) the net cash flow (Line 6) is calculated by subtracting O&M expenses (Line 5) from the total revenues (Line 4). The transfer to the capital fund (line 10) is determined by the differential in available funds resulting from the net cash flow and the required operating reserve which is 60 days of operating expenses. On the capital cash flow (Table 6-8) you can observe the total sources of funds on line 3 in comparison to the total uses of funds on cash-funded capital on line 5. The net cash flow, line 6, is negative and the ending balance, line 7, is depleted at the end of the study period- necessitating for additional funds from the operating fund, thereby a rate increase,

**Table 6-8: Projected Sewer Operating Financial Plan (Status Quo)**

Line	A	B	C	D	E	F	G
	Financial Plan	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
	<b>Revenues</b>						
1	Rate Revenues	\$5,783,666	\$5,756,665	\$5,729,809	\$5,703,097	\$5,676,528	\$5,650,101
2	Revenue Adjustments	\$0	\$0	\$0	\$0	\$0	\$0
3	Other Revenues	\$82,688	\$53,417	\$53,079	\$43,810	\$43,731	\$43,642
4	<b>Total Revenues</b>	\$5,866,354	\$5,810,082	\$5,782,888	\$5,746,906	\$5,720,259	\$5,693,743
5	<b>O&amp;M Expenses</b>	\$2,882,720	\$2,984,439	\$3,112,462	\$3,246,507	\$3,386,879	\$3,533,898
6	<b>Net Cash Flow</b>	\$2,983,634	\$2,825,643	\$2,670,426	\$2,500,400	\$2,333,380	\$2,159,844
7	<b>Beginning Balance</b>	\$480,453	\$497,407	\$518,744	\$541,084	\$564,480	\$588,983
8	Ending Balance	\$3,464,087	\$3,323,049	\$3,189,169	\$3,041,484	\$2,897,860	\$2,748,827
9	Reserve Target	\$480,453	\$497,407	\$518,744	\$541,084	\$564,480	\$588,983
10	<b>Transfer to Capital</b>	\$2,966,681	\$2,804,306	\$2,648,085	\$2,477,004	\$2,308,877	\$2,134,177

**Table 6-9: Projected Sewer Capital Financial Plan (Status Quo)**

Line	A	B	C	D	E	F	G
	Financial Plan	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-208	FY 2028-29
	<b>Sources of Funds</b>						
1	Interest Earnings	\$95,931	\$88,916	\$74,114	\$35,440	\$16,933	\$0
2	Transfer from Operating	\$2,966,681	\$2,804,306	\$2,648,085	\$2,477,004	\$2,308,877	\$2,134,177
3	<b>Total Sources</b>	\$3,062,612	\$2,893,222	\$2,722,198	\$2,512,445	\$2,325,810	\$2,134,177
	<b>Uses of Funds</b>						
4	Cash Funded Capital	\$3,208,547	\$3,689,622	\$3,914,320	\$4,152,701	\$4,405,602	\$4,673,903
5	<b>Total Uses</b>	\$3,208,547	\$3,689,622	\$3,914,320	\$4,152,701	\$4,405,602	\$4,673,903
6	<b>Net Cash Flow</b>	(\$145,935)	(\$796,400)	(\$1,192,12)	(\$1,640,25)	(\$2,079,79)	(\$2,539,72)
7	Ending Unrestricted Balance	\$6,370,418	\$5,574,018	\$4,381,897	\$2,741,640	\$661,848	(\$1,877,87)

## 6.7. Proposed Financial Plan

The projected financial plans under the status quo scenario in Table 6-8 and Table 6-9 show the projected financial plan without revenue adjustments. Table 6-9 shows that the City’s sewer utility would slowly draw down reserves. Table 6-10 shows the proposed revenue adjustments for the study period, effective in July of each year. The City proposes implementing small increases over time and slowly draw down reserves as opposed to avoiding increases necessitating a larger increase in the future.

**Table 6-10: Proposed Sewer Revenue Adjustments**

Line	A	B	C
	Fiscal Year	Revenue Adjustment	Month Effective
1	2025	5%	January
2	2026	3%	January
3	2027	3%	January
4	2028	3%	January
5	2029	3%	January

Table 6-11 and Table 6-12 shows the projected sewer financial plan with the proposed revenue adjustments from Table 6-10. The proposed financial plan shows cash reserves are needed to fund capital projects, and the rate

increases prevent the reserves from being depleted. The wastewater utility is projected to have a higher ending cash position at the end of the study period compared to the status quo.

**Table 6-11: Projected Sewer Operating Financial Plan (Proposed Revenue Adjustments)**

Line	A Financial Plan	B FY 2023-24	C FY 2024-25	D FY 2025-26	E FY 2026-27	F FY 2027-208	G FY 2028-29
	<b>Revenues</b>						
1	Rate Revenues Revenue	\$5,783,666	\$5,756,665	\$5,729,809	\$5,703,097	\$5,676,528	\$5,650,101
2	Adjustments	\$0	\$143,917	\$376,735	\$557,321	\$741,662	\$929,859
3	Other Revenues	\$82,688	\$54,496	\$55,904	\$46,596	\$47,439	\$48,291
4	<b>Total Revenues</b>	\$5,866,354	\$5,955,078	\$6,162,448	\$6,307,014	\$6,465,629	\$6,628,251
5	<b>O&amp;M Expenses</b>	\$2,882,720	\$2,984,439	\$3,112,462	\$3,246,507	\$3,386,879	\$3,533,898
6	<b>Net Cash Flow</b>	\$2,983,634	\$2,970,639	\$3,049,986	\$3,060,507	\$3,078,750	\$3,094,352
7	<b>Beginning Balance</b>	\$480,453	\$497,407	\$518,744	\$541,084	\$564,480	\$588,983
8	Ending Balance	\$3,464,087	\$3,468,045	\$3,568,730	\$3,601,591	\$3,643,230	\$3,683,335
9	Reserve Target	\$480,453	\$497,407	\$518,744	\$541,084	\$564,480	\$588,983
10	<b>Transfer to Capital</b>	\$2,966,681	\$2,949,302	\$3,027,645	\$3,037,112	\$3,054,247	\$3,068,685

**Table 6-12: Projected Sewer Capital Financial Plan (Proposed Revenue Adjustments)**

Line	A Financial Plan	B FY 2023-24	C FY 2024-25	D FY 2025-26	E FY 2026-27	F FY 2027-208	G FY 2028-29
	<b>Sources of Funds</b>						
1	Interest Earnings	\$95,931	\$90,004	\$79,151	\$43,548	\$31,649	\$17,182
2	Transfer from Operating	\$2,966,681	\$2,949,302	\$3,027,645	\$3,037,112	\$3,054,247	\$3,068,685
3	<b>Total Sources</b>	\$3,062,612	\$3,039,305	\$3,106,797	\$3,080,660	\$3,085,896	\$3,085,867
	<b>Uses of Funds</b>						
4	Cash Funded Capital	\$3,208,547	\$3,689,622	\$3,914,320	\$4,152,701	\$4,405,602	\$4,673,903
5	<b>Total Uses</b>	\$3,208,547	\$3,689,622	\$3,914,320	\$4,152,701	\$4,405,602	\$4,673,903
6	<b>Net Cash Flow</b>	(\$145,935)	(\$650,316)	(\$807,523)	(\$1,072,04)	(\$1,319,70)	(\$1,588,03)
7	Ending Unrestricted Balance	\$6,370,418	\$5,720,102	\$4,912,578	\$3,840,537	\$2,520,831	\$932,794

# 7. Sewer Cost of Service and Rates

This report section details the cost-of-service analysis and rate calculation process to determine the proposed sewer rates. The goal of this process is to determine the cost of providing sewer service to each of the City’s sewer customer classes and to ensure equity and fairness among the various classes.

## 7.1. Process and Approach

The cost-of-service analysis utilized to develop the sewer rates followed the guidelines for allocating costs outlined in the WEF Manual No. 27. The cost-of-service analysis and rate design process consists of six major steps, as outlined below:

1. Determine the revenue requirement, equal to the revenue to be recovered from rates.
2. Functionalize O&M expenses and capital assets into functional categories such as flow, customer, general, and treatment.
3. Develop customer class characteristics and units of service by cost causation component.
4. Calculate the cost causation component unit rates by dividing the total cost in each cost causation component by the total units of service for that component.
5. Calculate the cost for each customer class by multiplying the unit cost by the units of service for each customer class.
6. Design rates to meet the City’s objectives.

## 7.2. Revenue Requirement Determination

Table 7-1 shows the revenue requirement derivation for FY 2024-25. The revenue requirement is comprised of the Operating (Column B, Line 9) and Capital (Column C, Line 3) revenue requirements. The adjustment for cash balance (Line 8) is equal to the net cash flow.

**Table 7-1: Sewer Revenue Requirement**

Line	A	B	C	D
	Sewer FY 2024 Revenue Requirements	Operating	Capital	Total
	<b>Revenue Requirements</b>			
1	O&M Expenses	\$2,984,439		\$2,984,439
2	Rate Funded Capital Projects		\$2,949,302	\$2,949,302
3	<b>Subtotal</b>	<b>\$2,984,439</b>	<b>\$2,949,302</b>	<b>\$5,933,741</b>
	<b>Other Revenue</b>			
4	Other Revenue	\$24,977		\$24,977
5	Interest Income	\$29,519		\$29,519
6	<b>Subtotal</b>	<b>\$54,496</b>	<b>\$0</b>	<b>\$54,496</b>
	<b>Adjustments</b>			
7	Adjustment to Annualize Rate Increase	(\$143,917)		(\$143,917)
8	Adjustments for Annual Cash Balance		(\$21,337)	(\$21,337)
9	<b>Subtotal</b>	<b>(\$143,917)</b>	<b>(\$21,337)</b>	<b>(\$165,254)</b>
10	<b>Revenue to be Recovered from Rates</b>	<b>\$3,073,860</b>	<b>\$2,970,639</b>	<b>\$6,044,498</b>

## 7.3. Allocation of Expenses to Cost Components

Sewer Expenses are allocated similarly to the water cost of service described above. O&M is allocated in **Table 7-2** and **Table 7-3**. Flow related costs as shown in Column B are directly related to the operation and maintenance of the sewer collection system. Customer related costs as shown in Column C are directly related to customer service function. General costs as shown in Column D are related to sewer utility administration. The percentages shown in each column were developed in consultation with City staff.

**Table 7-2: Sewer O&M Allocation Factors to Cost Components**

Line	A	B	C	D	F
	O&M Allocation	Flow	Customer	General	Total
1	Salaries and Wages	80%	10%	10%	100%
2	Paid Leave	80%	10%	10%	100%
3	Labor Charges	80%	10%	10%	100%
4	Employee Benefits	80%	10%	10%	100%
5	Dues, Memberships, Publications			100%	100%
6	Rentals			100%	100%
7	Taxes & Assessments			100%	100%
8	Bad Debt Cost			100%	100%
9	Insurance			100%	100%
10	Professional and Contractual	100%			100%
11	Utilities and Related Programs	100%			100%
12	Travel and Allowances	80%			100%
13	Miscellaneous Services	80%	20%		100%
14	Repairs and Maintenance	100%			100%
15	Operating Materials	100%			100%
16	Supplies	100%			100%
17	City Charges	60%	20%		100%
18	Mobile Equipment Rentals	60%	20%		100%
19	Operating Transfer Out	60%	20%		100%

**Table 7-3: Sewer O&M Allocation to Cost Components**

Line	A	B	C	D	F
Line	Allocation	Flow	Customer	General	Total
1	Salaries and Wages	\$693,361	\$86,670	\$86,670	\$866,702
2	Paid Leave	\$3,924	\$491	\$491	\$4,905
3	Labor Charges	\$118,580	\$14,823	\$14,823	\$148,225
4	Employee Benefits	\$413,817	\$51,727	\$51,727	\$517,271
5	Dues, Memberships, Publications	\$0	\$0	\$22,180	\$22,180
6	Rentals	\$0	\$0	\$3,345	\$3,345
7	Taxes & Assessments	\$0	\$0	\$0	\$0
8	Bad Debt Cost	\$0	\$0	\$111	\$111
9	Insurance	\$0	\$0	\$541,022	\$541,022
10	Professional and Contractual	\$266,541	\$0	\$0	\$266,541
11	Utilities and Related Programs	\$2,343	\$0	\$0	\$2,343
12	Travel and Allowances	\$2,318	\$0	\$580	\$2,898
13	Miscellaneous Services	\$3,014	\$753	\$0	\$3,767
14	Repairs and Maintenance	\$259,826	\$0	\$0	\$259,826
15	Operating Materials	\$6,132	\$0	\$0	\$6,132
16	Supplies	\$32,674	\$0	\$0	\$32,674
17	City Charges	\$82,267	\$27,422	\$27,422	\$137,112
18	Mobile Equipment Rentals	\$77,275	\$25,758	\$25,758	\$128,792
19	Operating Transfer Out	\$24,356	\$8,119	\$8,119	\$40,594
20	<b>Total O&amp;M Expenses</b>	<b>\$1,986,429</b>	<b>\$215,763</b>	<b>\$782,247</b>	<b>\$2,984,439</b>

## 7.4. Units of Service

Once all expenses have been allocated to the appropriate cost components, the next step is to determine the units of service over which the costs will be recovered. The units used in this study are HCF of metered water use and annual bills. These are presented in **Table 7-4**.

**Table 7-4: Sewer Units of Service**

Line	A	B	C	D	E
	Customer Class	Units	# of Accounts	Billed Usage (HCF)	% of Flow
1	Residential	19,158	19,158	2,907,005	61.13%
2	Multi-Residential	1,902	1,902	414,308	8.71%
3	Commercial	1,741	1,741	1,434,007	30.15%
4	Private Development	0	0	0	0.00%
5	Low Income	<u>5</u>	<u>5</u>	<u>349</u>	<u>0.01%</u>
6	Total	<b>22,806</b>	<b>22,806</b>	<b>4,755,669</b>	<b>100%</b>

### 7.4.1. SEWER COST OF SERVICE

As shown in **Table 7-5**, the cost-of-service calculation allocates the operating revenue requirement (Column E, Line 1) based on the operating allocation percentages (**Table 7-3**, Line 21) and the capital revenue requirement (Column E, Line 2) to flow since these costs are all for the City's collection system. The City total (Column E) is the total revenue required in **Table 7-1**. The unit costs (Line 7) are the result of dividing the total adjusted costs (Line 5) by the units of service (Line 6), which were developed in **Table 7-4**.

**Table 7-5: Sewer Cost of Service**

Line	A	B	C	D	E
	Cost of Service	Flow	Customer	General	Total
1	Operating Expenses	\$2,045,947	\$222,228	\$805,685	\$3,073,860
2	Capital Expenses	\$2,970,639	\$0	\$0	\$2,970,639
3	<b>Subtotal</b>	<b>\$5,016,585</b>	<b>\$222,228</b>	<b>\$805,685</b>	<b>\$6,044,498</b>
4	Allocation of General Costs	<u>\$771,509</u>	<u>\$34,177</u>	<u>(\$805,685)</u>	-
5	<b>Total Adjusted COS</b>	<b>\$5,788,094</b>	<b>\$256,405</b>	<b>\$0</b>	<b>\$6,044,498</b>
6	Units of Service	4,755,669	22,806		
7	<i>Units</i>	<i>HCF</i>	<i>bills</i>		
8	<b>Unit Cost</b>	<b>\$1.22</b>	<b>\$11.24</b>		

### 7.4.2. SEWER CLASS COST OF SERVICE

The next step is to allocate these costs to each customer class. The unit costs in **Table 7-5** are applied to the class units of service in **Table 7-4**. **Table 7-6** presents the derivation of the cost to collect sewage discharge from each class.

**Table 7-6: Sewer Class Cost of Service**

Line	A	B	C	D
	Customer Class	Flow	Customer	Total
1	Residential	\$3,538,097	\$215,389	<b>\$3,753,486</b>
2	Multi-Residential	\$504,252	\$21,382	<b>\$525,634</b>
3	Commercial	\$1,745,320	\$19,577	<b>\$1,764,897</b>
4	Private Development	\$0	\$0	<b>\$0</b>
5	Low Income	<u>\$425</u>	<u>\$57</u>	<u><b>\$482</b></u>
6	Total	<b>\$5,788,094</b>	<b>\$256,405</b>	<b>\$6,044,498</b>



### 7.4.3. SEWER RATES AND CUSTOMER BILL IMPACTS

**Table 7-7** presents the rate calculation for all classes. The total cost of service per rate component (Columns C and D) is divided by the relevant units of service (Columns E and F) to determine the rates (Columns G and H).

**Table 7-8** shows the proposed five-year sewer rate schedule commencing January 2025 and in January of every year thereafter until 2030 the rates are forecasted using the required cost of service revenues increases from **Table 6-10**. The City will implement rates equal to or lower than the cost of service-based rates.

**Table 7-7: Sewer Rate Calculation**

Line	A Class	B Cost of Service	C Flow Cost of Service	D Customer Cost of Service	E Flow Units of Service	F Customer Units of Service	G Flow Rate	H Customer Rate
1	Residential	\$3,753,486	3,538,097	\$215,389	2,907,005	19,158	\$1.22	\$11.24
2	Multi-Residential	\$525,634	504,252	\$21,382	414,308	1,902	\$1.22	\$11.24
3	Commercial	\$1,764,897	1,745,320	\$19,577	1,434,007	1,741	\$1.22	\$11.24
4	Private Development	\$0	0	\$0	-	-		
5	Low Income	\$482	425	\$57	349	5	\$1.22	\$11.24

**Table 7-8: Proposed Sewer Rates**

Line	A Class	B (Current)	C CY 2025 (Jan 2025)	D CY 2026 (Jan 2026)	E CY 2027 (Jan 2027)	F CY 2028 (Jan 2028)	G CY 2029 (Jan 2029)
1	Residential	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
2	Multi-Residential	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
3	Commercial	\$1.17	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
4	Private Development	\$0.83	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
5	Qualified Low Income	\$0.65	\$1.22	\$1.26	\$1.30	\$1.34	\$1.39
6	Annual Fixed Charge	\$8.45	\$11.25	\$11.59	\$11.94	\$12.30	\$12.67

As presented in **Table 7-8**, the City also has a Reduced Rate customer class for low-income customers. This study does not calculate a proposed Reduced Rate due to the constraints imposed by the requirements of Proposition 218 which prohibit the redistribution of costs from one class to another unless there is a demonstrated relationship to the cost of providing the service. In this case, there is no justification for redistributing the cost from the reduced rate customers to other customers as there is no relationship between the cost to serve customers and their household income. However, the Utility can choose to continue offering the program, but it must be funded through a non-rate revenue source, such as the City General Fund, or a non-operating utility revenue (e.g. lease revenues).

**Table 7-9** presents a series of typical bills for various customer classes. The tables compare the bill at different levels of usage under the current rates and the proposed rates. Note that the City does bill for annual sewer usage of more than 280 HCF for residential customers. The 280 HCF limit is roughly aligned with the water rate Single Family Residential Tier 1 consumption threshold of 22 HCF. Specifically, 22 HCF used each month during a 12-month period is 264 HCF.

**Table 7-9: Sewer Bill Impacts**

