



# CITY OF DEL MAR

## Water and Wastewater Rate Cost-of-Service Study

**Final Report – March 8, 2024**  
**Revised April 12, 2024**



# **CITY OF DEL MAR**

1050 Camino Del Mar  
Del Mar, CA 92014



# **WATER AND WASTEWATER RATE COST-OF-SERVICE STUDY**

*Revised April 12, 2024*

## **HF&H CONSULTANTS, LLC**

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April 12, 2024

Joe Bride  
Public Works Director, City Engineer  
City of Del Mar  
1050 Camino Del Mar  
Del Mar, CA 92014

**Subject: Water and Wastewater Rate Cost-of-Service Study – Final Report**

Dear Joe Bride:

HF&H is pleased to submit this cost-of-service report to the City of Del Mar (City). The report summarizes the analysis that was conducted to develop the recommended water and wastewater rates for FY 2024-25 through FY 2028-29. The rates proposed in this report reflect the current and projected cost of providing water and wastewater service for the next five years.

We greatly appreciate your assistance in developing the cost-of-service analysis.

Please note this report was revised April 2024 to revise calculation errors in Figure I-5 and Figure V-14, which provided sample FY 2024-25 water rates adjusted for each of the six stages of water shortages, corresponding to the drought factors proposed. The calculation errors have no effect on the Notice of Public Hearing mailed in advance of the Public Hearing scheduled for May 6, 2024 to adopt new water and wastewater rates. This is because the notice includes the drought rate factors to be approved and potentially applied to any then-current commodity rates, rather than the adjusted commodity rates themselves. The revised calculations do not change the recommended rates and charges included within this report or within the Notice of Public Hearing.

Sincerely,



HF&H CONSULTANTS, LLC

Rick Simonson  
Senior Vice President



# TABLE OF CONTENTS

<b>I. EXECUTIVE SUMMARY .....</b>	<b>3</b>
Study Objectives.....	3
Findings and Recommendations .....	3
<b>II. INTRODUCTION .....</b>	<b>12</b>
Study Purpose .....	13
Study Process.....	13
Report Organization .....	14
<b>III. WATER REVENUE REQUIREMENTS .....</b>	<b>15</b>
Revenue Requirement Assumptions and Projections .....	15
O&M Expenses .....	16
Raw Water Purchases .....	16
Water Treatment Expenses .....	16
Capital Project Costs.....	17
Reserves.....	17
Operating Reserve.....	18
Self-Insurance Reserve .....	18
Pension Reserve.....	18
Capital Reserve .....	18
Equipment Replacement Reserve.....	18
Rate Stabilization Fund .....	18
Revenue Increases .....	18
Reserve Fund Balance.....	19
<b>IV. WATER RATE COST OF SERVICE ANALYSIS.....</b>	<b>21</b>
Methodology .....	21
Customer Classes .....	22
Cost-of-Service Allocations .....	22
Fairgrounds Allocation Factors.....	23
Staff Allocation .....	23
Hydraulic Capacity.....	23
Distribution System Sizing .....	24
Total Water Use.....	24
Operations & Maintenance Composite .....	25
Results of Initial Allocation .....	25
Demand Service Allocation Factors.....	25
Average (Base) Day demand.....	25
Maximum Day demand.....	25
Maximum Hour demand .....	26
Load Factors .....	26
Cost-of-Service Allocations and Allocation Factors .....	27
<b>V. WATER RATE DESIGN .....</b>	<b>32</b>
Current Rates.....	32

Current Service Charges.....	32
Current Commodity Charges.....	32
Service Charge Design .....	33
Water Use Charge Design.....	35
Single Family Residential Commodity Charges.....	36
Uniform Commodity Charges.....	37
Commodity Charges Summary.....	37
Drought Rate Factors.....	38
Analysis.....	39
Implementation.....	43
<b>VI. COMPARISON TO WATER AGENCIES.....</b>	<b>45</b>
Neighboring Agency Comparison .....	45
<b>VII. WASTEWATER REVENUE REQUIREMENTS.....</b>	<b>46</b>
Operating & Maintenance (O&M) Expenses.....	46
Wastewater Transportation Expenses.....	46
Wastewater Treatment Expenses.....	47
Debt Service .....	47
Capital Project Costs.....	48
Reserve Contributions.....	48
Reserves.....	48
Operating Reserve.....	49
Self-Insurance Reserve .....	49
Pension Reserve.....	49
Debt Service Reserve.....	49
Capital Reserve .....	49
Equipment Replacement Reserve.....	49
Rate Stabilization Fund .....	49
Revenue Increases .....	50
Debt Service Coverage.....	50
Reserve Fund Balance.....	51
<b>VIII. WASTEWATER RATE .....</b>	<b>53</b>
<b>COST OF SERVICE ANALYSIS .....</b>	<b>53</b>
Methodology .....	53
Customer Classes .....	53
Volumetric Rates Modifications.....	53
Cost-of-Service Allocations .....	54
Fairgrounds Allocation Factors.....	55
Staff Allocation .....	55
Hydraulic Capacity.....	55
Collection System Sizing .....	56
Wastewater Flow .....	56
Operations & Maintenance Composite .....	57
Results of Initial Allocation .....	57
Cost-of-Service Allocations and Allocation Factors .....	57
Units of Service.....	59
Unit Costs of Service.....	60

**IX. WASTEWATER RATE DESIGN .....62**  
    Current Rates .....62  
        Current Service Charges.....62  
        Current Volumetric Rates .....62  
    Service Charge Design .....63  
    Volumetric Rates Design.....64

**X. COMPARISON TO WASTEWATER AGENCIES .....65**  
    Neighboring Agency Comparison.....65

**XI. COMBINED UTILITY BILL IMPACTS .....66**

## TABLE OF FIGURES

Figure I-1. Water Enterprise Reserve Fund Balance..... 4  
Figure I-2. Cost-of-Service Water Rates Revenue Summary ..... 5  
Figure I-3. Current and Proposed Service Charge Rates..... 5  
Figure I-4. Current and Proposed Commodity Charge Rates..... 6  
Figure I-5. Sample Rates With Drought Rate Factors – FY 2024-25 Rates ..... 7  
Figure I-6. Wastewater Enterprise Reserve Fund Balance ..... 8  
Figure I-7. Cost-of-Service Wastewater Rates Revenue Summary..... 9  
Figure I-8. Current and Proposed Service Charge Rates..... 9  
Figure I-9. Current and Proposed Volumetric Rates .....10  
Figure III-1. Projection Assumptions.....15  
Figure III-2. Total Annual Projected Revenue Requirement for Water Enterprise .....16  
Figure III-3. Water Enterprise Five-Year Capital Improvement Plan .....17  
Figure III-4. Rate Increase Calculations .....19  
Figure III-5. Projected Year-End Fund Balance .....20  
Figure IV-1. Allocation of FY 2024-25 Revenue Requirement to Fairgrounds.....23  
Figure IV-2. Fairgrounds Allocation Factors .....23  
Figure IV-3. Capacity Calculations of City’s Water Meters.....24  
Figure IV-4. Water Use Analysis .....24  
Figure IV-5. Service Level Demands and Load Factors.....26  
Figure IV-6. Demand Service Levels.....27  
Figure IV-7. Cost-of-Service Allocation Factors.....28  
Figure IV-8. Fairgrounds Cost-of-Service Allocations.....28  
Figure IV-9. City Customers Cost-of-Service Allocations.....29  
Figure IV-10. Customer Class Cost-of-Service Allocations for Demand Service Levels .....30  
Figure IV-11. Cost-of-Service Revenue Summary .....31  
Figure V-1. Current Service Charges .....32  
Figure V-2. Current Commodity Charges .....33  
Figure V-3. Service Charge Units of Service .....34  
Figure V-4. Service Charge Unit Costs.....34  
Figure V-5. Proposed Bi-Monthly Service Charge Rates – FY 2024-25 .....35  
Figure V-6. Current and Proposed Service Charge Rates.....35  
Figure V-7. Breakpoint Locations – Single Family Residential.....36  
Figure V-8. Calculation of Proposed Commodity Charge Rates – Single Family Residential .....37  
Figure V-9. Calculation of Commercial/Multi Family Uniform Commodity Charges.....37

Figure V-10. Current and Proposed Commodity Charges.....38  
Figure V-11. WSCP Required Water Use Reductions by Class .....39  
Figure V-12A. Calculation of 10-30% Shortage Reductions by Stage and Customer Class .....40  
Figure V-12B. Calculation of 40-56% Shortage Reductions by Stage and Customer Class .....41  
Figure V-13. Drought Rate Factors by WSCP-Defined Shortage Stage .....42  
Figure V-14. Sample Rates With Drought Rate Factors – FY 2024-25 Rates.....43  
Figure VI-1. Neighboring Agency Water Bi-Monthly Bill Comparison.....45  
Figure VII-1. Key Modeling Assumptions .....46  
Figure VII-2. Total Annual Projected Revenue Requirements for Wastewater Enterprise.....47  
Figure VII-3. Wastewater Five-Year Capital Improvement Plan.....48  
Figure VII-4. Rate Increase Calculations.....50  
Figure VII-5. City Debt Coverage Ratio Calculations (with rate adjustments) .....50  
Figure VII-6. Projected Year-End Fund Balance.....52  
Figure VIII-1. Allocation of FY 2024-25 Revenue Requirement to Fairgrounds .....55  
Figure VIII-2. Fairgrounds Allocation Factors .....55  
Figure VIII-3. Capacity Calculations for City Wastewater Service .....56  
Figure VIII-4. Wastewater Flow Analysis .....56  
Figure VIII-5. Cost-of-Service Allocation Factors .....57  
Figure VIII-6. Fairgrounds Cost-of-Service Allocations .....58  
Figure VIII-7. City Customers Cost-of-Service Allocations .....59  
Figure VIII-8. Wastewater Flow Analysis .....60  
Figure VIII-9. Summary of Units of Service by Customer Class.....60  
Figure VIII-10. Unit Costs of Service (City).....60  
Figure VIII-11. Cost-of-Service Revenue Summary.....61  
Figure IX-1. Current Service Charges .....62  
Figure IX-2. Current Volumetric Rates.....63  
Figure IX-3. Proposed City Customers Bi-Monthly Service Charge Rates – FY 2024-25.....63  
Figure IX-4. Current and Proposed Service Charge Rates.....64  
Figure IX-5. Current and Proposed Volumetric Rates .....64  
Figure X-1. Neighboring Agency Wastewater Bi-Monthly Bill Comparison.....65  
Figure XI-1. Single Family Residential Bill Comparison .....66  
Figure XI-2. Multi-Family Residential Bill Comparison.....67  
Figure XI-3. Commercial/Institutional Customer Bill Comparison.....67  
Figure XI-4. Hotels with Restaurant Customer Bill Comparison .....68  
Figure XI-5. Restaurant Customer Bill Comparison .....68  
Figure XI-6. Fairgrounds Customer Bill Comparison .....69  
Figure XI-7. Annual Single-Family Residential Customer Combined Bill Adjustments.....69  
Figure XI-8. Annual Multi-Family Residential Customer Combined Bill Adjustments .....70  
Figure XI-9. Annual Commercial Customer Combined Bill Adjustments.....70

## GLOSSARY

**AMI** - advanced metering infrastructure.

**AWWA** – American Water Works Association.

**Breakpoint** – The volume of water per billing period separating tiers in tiered rate structures.

**City** – City of Del Mar and/or the City’s Water or Wastewater Enterprise

**CCF** – Hundred cubic feet (see HCF below).

**CIP** - Capital Improvement Program.

**Commodity Charges** – The product of rates per unit of metered water use multiplied by a customer's metered water use during the billing period.

**CY** – Calendar Year.

**Drought Rate Factors** – Factors applied to Commodity charges to stabilize revenue to meet the City's water revenue requirement during periods of conservation when there are significant reductions in water usage, and hence in water revenues.

**EMU** – Equivalent Meter Unit.

**Fairgrounds** – 22<sup>nd</sup> Agricultural Association Fairgrounds in Del Mar. This is the largest water and wastewater customer served by the City of Del Mar.

**FY** - Fiscal Year.

**Flat rates** - Fixed charges per account that do not vary based on metered water use. Flat rates are found in unmetered water systems and in wastewater rates. Flat rates are not uniform rates (see below).

**GPD** - Gallons Per Day.

**HCF** - Hundred cubic feet of metered water; 748 gallons; a cube of water 4.6 feet on edge. One HCF per month is about 25 gallons per day.

**Meter charges** - One-time charges for the purchase of a meter. Meter charges are not Service Charges (see below).

**Multi-Family Residential** – Refers to the current Multi Family Residential customer class. Includes all multi-family customer accounts, including those receiving irrigation from the same potable meter.

**O&M** - Operating and Maintenance, in reference to the costs of running facilities.

**PAYGo** - Pay-As-You-Go, in reference to funding capital improvements from cash rather than from borrowed sources such as bonds or loans.

**SDCWA** – San Diego County Water Authority.

**SEJPA** – San Elijo Joint Powers Authority.

**Service Charges** – Fixed charges paid by City customers per meter size, regardless of the amount of water used. The charge is proportionate to the capacity of the customer's service.

**Study Period** – Five-year planning period analyzed in this study, which includes fiscal year 2024-25 to fiscal year 2028-29.

**Uniform rates** - Constant charges per unit of water use that do not change depending on the amount used. Uniform rates are not flat rates (see above).

**Volumetric Rates** – The rates assessed per unit of metered water use during the billing period to determine the volumetric portion of a wastewater bill.

**WSCP** – Water Shortage Contingency Plan.

## ACKNOWLEDGEMENTS

### City Council

Dave Druker, Mayor  
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Dan Quirk, Councilmember  
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## LIMITATIONS

This document was prepared solely for the City of Del Mar in accordance with the contract between the City and HF&H and is not intended for use by any other party for any other purpose.

In preparing this study, we relied on information from the City, which we consider accurate and reliable. Our analysis is based on the best available information at the time of the study.

Rounding differences caused by stored values in electronic models may exist.

This document represents our understanding of relevant laws, regulations, and court decisions but should not be relied upon as legal advice. Questions concerning the interpretation of legal authorities referenced in this document should be referred to a qualified attorney.



**WATER AND WASTEWATER RATE  
COST-OF-SERVICE STUDY**



## I. EXECUTIVE SUMMARY

This study documents the process by which the City's water and wastewater rates were analyzed to ensure that rates continue to meet the cost of service. This report describes how the revenue requirement (expenses) is apportioned between customer classes receiving water and wastewater service, the appropriate changes in the respective classes' rates to cover their costs, and the proposed water and wastewater rate designs that are appropriate to ensure that customers continue paying their proportionate share.

The Executive Summary presents the findings and recommendations in this report.

### STUDY OBJECTIVES

The City undertook this rate study to meet the following key objectives.

1. **Provide revenue sufficiency and financial stability** - Ensure revenues from future water and wastewater rates continue covering costs without depleting reserves and maintaining necessary debt service coverage requirements. Revenue requirement projections (i.e., expenses) are increasing with expanded capital program expenses to upgrade aging infrastructure.
2. **Maintain adequate reserves to meet City policies** – Confirm future rates will continue to generate revenues that will keep the City's reserve balance in line with its target threshold to have sufficient reserves on hand for operational cash flow, debt service payments, unplanned emergencies, retirement funding liability, and capital project funding.
3. **Rate payer equity** - Revisit allocation of City's costs to verify each customer class pays their proportionate share of expenses for each utility. Each customer within each customer class must pay their proportionate share of expenses via volumetric and service capacity charges.

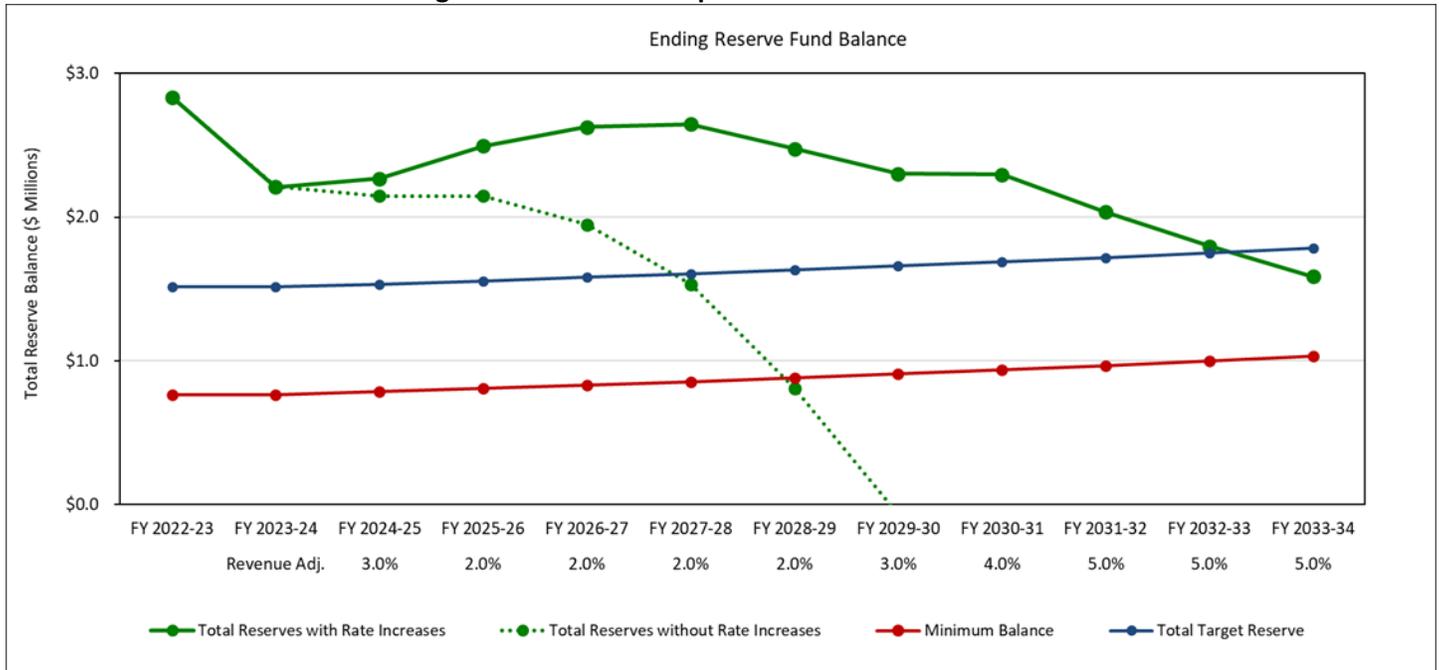
### FINDINGS AND RECOMMENDATIONS

The following discussion summarizes HF&H's findings and recommendations for both the Water and Wastewater Enterprises.

1. **Water rate revenue increases are necessary.** Recent historically high, nationwide inflation rates, as well as increases to water treatment and water supply expenses, as well as funding for capital improvement projects are driving the need to increase water rates beginning FY 2024-25. Water treatment and water supply expenses together comprise more than 50% of the City's water expenses and these costs are set by third-party agencies. A revenue increase of 3% in FY 2024-25 and 2% annual increases each fiscal year FY 2025-26 through FY 2028-29 are recommended. Refer to **Section III** for further details.
2. **The City will continue to meet all Water Enterprise reserve targets with recommended revenue increases.** Increasing water rate revenues will allow the City to continue to maintain sufficient reserves to meet all adopted operating and capital reserve targets. Beyond FY 2028-29, the City will be required to use more reserves in combination with larger revenue increases, if cost projections hold. Cost increases should be monitored to ensure modeled rate increases are sufficient. The City should

re-analyze rates within five years to ensure rates are providing enough support so that reserves continue to meet the target threshold. See **Figure I-1** for reference and refer to **Section III** for further information.

**Figure I-1. Water Enterprise Reserve Fund Balance**



- Water rates are recommended for realignment to the cost of service.** The cost-of-service analysis of the FY 2024-25 revenue requirement indicates adjustments are required to realign water rates to reflect the proportional benefits each customer class receives. With the recommended adjustments, rate revenues for each customer class would adjust based on **Figure I-2**.

Based on the cost-of-service analysis, overall revenue from Commodity Charges would increase by 4.8% and revenue from Service Charges would increase by 0.6%. The Fairgrounds received a larger cost allocation than during the previous study, as their proportionate share grew from 14.9% to 17.6%. The increase can be attributed to an increased share of the raw water supply costs allocated to the Fairgrounds based on recent water demand patterns. This expense is the largest expense category in the cost allocation exercise. The Fairgrounds share of the revenue requirement to be recovered through the FY 2024-25 rates will be \$850,661 (17.6%) and the remaining City customer’s share will be \$3,978,871 (82.4%). Refer to **Section IV**.

**Figure I-2. Cost-of-Service Water Rates Revenue Summary**

Components of Rate Structure	Revenue at		Cost of Service		Difference	
	Current Rates FY 2023-24		Proposed Rates FY 2024-25		COS Minus Current	
<b>Single-Family Residential</b>						
Commodity Revenue	\$1,373,266	58%	\$1,418,687	59%	\$45,421	3.3%
Service Charge Revenue	\$1,010,762	42%	\$997,352	41%	(\$13,411)	-1.3%
<b>Subtotal - SFR</b>	<b>\$2,384,028</b>	<b>100%</b>	<b>\$2,416,039</b>	<b>100%</b>	<b>\$32,010</b>	<b>1.3%</b>
<b>Multi-Family Residential</b>						
Commodity Revenue	\$325,737	58%	\$360,237	61%	\$34,500	10.6%
Service Charge Revenue	\$240,067	42%	\$230,007	39%	(\$10,060)	-4.2%
<b>Subtotal - MFR</b>	<b>\$565,804</b>	<b>100%</b>	<b>\$590,244</b>	<b>100%</b>	<b>\$24,439</b>	<b>4.3%</b>
<b>Commercial</b>						
Commodity Revenue	\$298,277	63%	\$287,910	63%	(\$10,367)	-3.5%
Service Charge Revenue	\$178,794	37%	\$170,196	37%	(\$8,598)	-4.8%
<b>Subtotal - Commercial</b>	<b>\$477,071</b>	<b>100%</b>	<b>\$458,107</b>	<b>100%</b>	<b>(\$18,965)</b>	<b>-4.0%</b>
<b>Irrigation</b>						
Commodity Revenue	\$355,844	69%	\$361,865	70%	\$6,021	1.7%
Service Charge Revenue	\$158,462	31%	\$152,617	30%	(\$5,845)	-3.7%
<b>Subtotal - Irrigation</b>	<b>\$514,306</b>	<b>100%</b>	<b>\$514,482</b>	<b>100%</b>	<b>\$176</b>	<b>0.0%</b>
<b>Fairgrounds</b>						
Commodity Revenue	\$339,848	45%	\$392,870	46%	\$53,021	15.6%
Service Charge Revenue	\$407,808	55%	\$457,792	54%	\$49,984	12.3%
<b>Subtotal - Fairgrounds</b>	<b>\$747,656</b>	<b>100%</b>	<b>\$850,661</b>	<b>100%</b>	<b>\$103,005</b>	<b>13.8%</b>
<b>Total</b>						
Commodity Revenue	\$2,692,972	57%	\$2,821,569	58%	\$128,596	4.8%
Service Charge Revenue	\$1,995,894	43%	\$2,007,963	42%	\$12,070	0.6%
<b>Total</b>	<b>\$4,688,866</b>	<b>100%</b>	<b>\$4,829,532</b>	<b>100%</b>	<b>\$140,666</b>	<b>3.0%</b>

4. **Updated Fixed Service Charges are recommended.** Figure I-3 shows the current and cost-of-service Fixed Service Charges during the period of FY 2024-25 through FY 2028-29. The customers with a 5/8" meter will see a 0.7% increase, while customers served by meters ranging between ¾" to 4" will see a decrease. The Fairgrounds will see a 12.3% increase to their existing Fixed Service Charge. Refer to Section V.

**Figure I-3. Current and Proposed Service Charge Rates**

Bi-Monthly Fixed Service Charges	Current Rates rate increase:	Proposed Rates				
		FY 2024-25 eff. 7/1/2024	FY 2025-26 eff. 7/1/2025	FY 2026-27 eff. 7/1/2026	FY 2027-28 eff. 7/1/2027	FY 2028-29 eff. 7/1/2028
Meter Size		varies	2%	2%	2%	2%
5/8"	\$88.04	\$88.70	\$90.47	\$92.28	\$94.13	\$96.01
3/4"	\$132.06	\$129.41	\$132.00	\$134.64	\$137.33	\$140.08
1"	\$220.08	\$210.81	\$215.03	\$219.33	\$223.72	\$228.19
1 1/2"	\$440.16	\$414.33	\$422.62	\$431.07	\$439.69	\$448.48
2"	\$704.24	\$658.55	\$671.72	\$685.15	\$698.85	\$712.83
3"	\$1,408.46	\$1,309.82	\$1,336.02	\$1,362.74	\$1,389.99	\$1,417.79
4"	\$2,200.72	\$2,042.49	\$2,083.34	\$2,125.01	\$2,167.51	\$2,210.86
Fairgrounds	\$67,968.00	\$76,298.59	\$77,824.56	\$79,381.05	\$80,968.67	\$82,588.04

- Updated Commodity Charges are recommended.** Figure I-4 shows the current and cost-of-service Commodity Charges during the period of FY 2024-25 through FY 2028-29. Single Family Residential tiers were adjusted to reflect updated patterns of demand. As a result, the Tier 1 breakpoint would increase from 20 to 22 HCF. All Commercial, Multi-Family, Irrigation customers and the Fairgrounds will see increased rates. Refer to **Section V**.

**Figure I-4. Current and Proposed Commodity Charge Rates**

Bi-Monthly Commodity Charges	Current Rates (\$/hcf)	Bi-Monthly Commodity Charges rate increase:	Proposed Rates (\$/hcf)				
			FY 2024-25 eff. 7/1/2024 varies	FY 2025-26 eff. 7/1/2025 2%	FY 2026-27 eff. 7/1/2026 2%	FY 2027-28 eff. 7/1/2027 2%	FY 2028-29 eff. 7/1/2028 3%
Single Family Residential		Single Family Resid.					
Tier 1 (0-20 hcf)	\$6.22	Tier 1 (0-22 hcf)	\$6.26	\$6.39	\$6.52	\$6.65	\$6.78
Tier 2 (21+ hcf)	\$7.47	Tier 2 ( 23+ hcf)	\$7.37	\$7.52	\$7.67	\$7.82	\$7.98
Multi-Family Residential	\$6.41	Multi-Family Resid.	\$6.81	\$6.95	\$7.09	\$7.23	\$7.37
Commercial/Insitutional	\$6.52	Commercial/Instit.	\$6.80	\$6.94	\$7.08	\$7.22	\$7.36
Irrigation	\$6.96	Irrigation	\$7.11	\$7.25	\$7.40	\$7.55	\$7.70
Fairgrounds	\$6.52	Fairgrounds	\$8.08	\$8.24	\$8.40	\$8.57	\$8.74

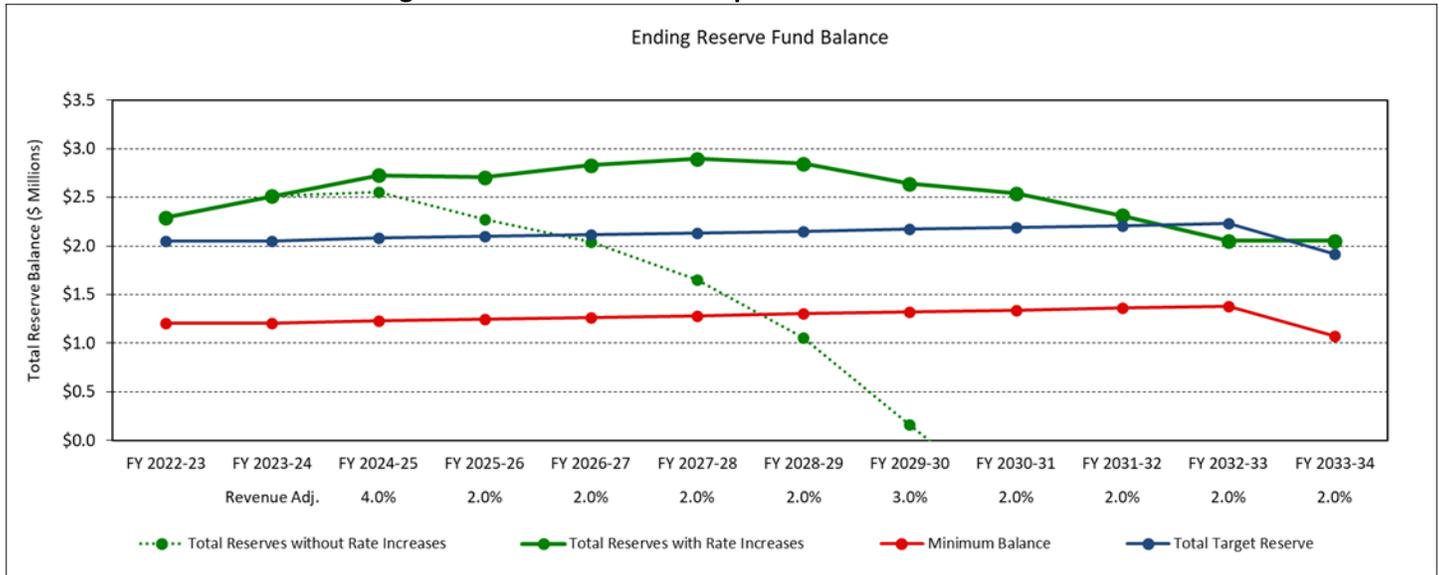
- Drought Rate Factors are recommended to replace Demand Management.** In place of the City’s current practice of assessing a surcharge to Service Charges and Commodity Charges during times of drought when water use, and therefore revenues, decrease, HF&H recommends a set of drought rate factors that would be applied solely to the Commodity Charges to cover fixed costs when water shortage reduces water demand and water sales decrease in response. The factors would be implemented during declared water shortage stages in accordance with the City’s Water Shortage Contingency Plan (WSCP), state mandated reductions in the level of potable water usage, or other natural disaster or event that results in a water shortage and an unforeseen drop in water demand that requires reductions in water use. **Figure I-5** shows the Drought Rate Factors that would be applied to the proposed FY 2024-25 rates that would normally be in effect absent declared shortages. Refer to **Section V**.

**Figure I-5. Sample Rates With Drought Rate Factors – FY 2024-25 Rates**

Water Emergency Shortage Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	
Single Family Drought Rate Factors	1.013	1.028	1.047	1.069	1.098	1.114	
Multi-Family Drought Rate Factors	1.015	1.034	1.058	1.088	1.128	1.157	
Commercial Drought Rate Factors	1.013	1.029	1.048	1.071	1.100	1.117	
Irrigation Drought Rate Factors	1.032	1.080	1.163	1.336	1.944	N/A	
Fairgrounds Drought Rate Factors	1.026	1.062	1.116	1.207	1.393	1.738	
<b>Sample FY 2024-25 Rates</b>		<b>Sample Rates with Drought Rate Factors Applicable to % Reductions</b>					
<b>Single Family Residential</b>							
Tier 1 (0-22 hcf)	\$6.26	\$6.34	\$6.44	\$6.55	\$6.69	\$6.87	\$6.97
Tier 2 ( 23+ hcf)	\$7.37	\$7.47	\$7.58	\$7.72	\$7.88	\$8.09	\$8.21
<b>Multi-Family Residential</b>							
Commercial/Institutional	\$6.80	\$6.89	\$6.99	\$7.12	\$7.28	\$7.48	\$7.59
<b>Irrigation</b>							
Fairgrounds	\$7.11	\$7.33	\$7.68	\$8.27	\$9.50	\$13.82	N/A
<b>Fairgrounds</b>							
	\$8.08	\$8.29	\$8.58	\$9.02	\$9.75	\$11.26	\$14.05

- Wastewater rate revenue increases are necessary.** Recent historically, high nationwide inflation rates, as well as increases to wastewater treatment and conveyance expenses, as well as funding for capital improvement projects are driving the need to increase wastewater rates beginning FY 2024-25. Water treatment and water supply expenses together comprise more than 26% of the City’s wastewater expenses and these costs are set by third-party agencies. A revenue increase of 4% in FY 2024-25 and 2% annual increases in each fiscal year for FY 2025-26 through FY 2028-29, are recommended. Refer to **Section VII** for further details.
- The City will continue to meet all Wastewater Enterprise reserve targets with recommended revenue increases.** Increasing water rate revenues will allow the City to continue to maintain sufficient reserves to meet all adopted operating and capital reserve targets. Beyond FY 2028-29, the City will be required to use more reserves in combination with larger revenue increases, if cost projections hold. Cost increases should be monitored to ensure modeled rate increases are sufficient. The City should re-analyze rates within five years to ensure rates are providing enough support so that reserves continue to meet the target threshold. See **Figure I-6** for reference and refer to **Section VII** for further information.

**Figure I-6. Wastewater Enterprise Reserve Fund Balance**



- Wastewater rates are recommended for realignment to the cost of service.** The cost-of-service analysis of the FY 2024-25 revenue requirement indicates adjustments are required to realign wastewater rates to reflect the proportional benefits each customer class receives. With the recommended adjustments, rate revenues for each customer class would adjust based on **Figure I-7**.

Based on the cost-of-service analysis, overall revenue from Volumetric Rates would decrease by 0.3% and revenue from Service Charges would increase by 8.9%. The Fairgrounds allocation has decreased since the previous cost-of-service study, which yielded an overall allocation of 17.25%. The decrease can be attributed to a reduced proportionate share of flow-related costs allocated to the Fairgrounds. Because of the Fairgrounds reduced volumetric share of contributed wastewater relative to all other City customers. Fairgrounds flow rebounded in 2023, but the proportionate share of flows they send to SEJPA has not returned to pre-pandemic levels yet. The Fairgrounds share of the revenue requirement to be recovered through the FY 2024-25 rates will be \$670,430 (15.1%) and the remaining City customer’s share will be \$3,784,186 (84.9%). Refer to **Section VIII**.

**Figure I-7. Cost-of-Service Wastewater Rates Revenue Summary**

Components of Rate Structure	Revenue at		Cost of Service		Difference	
	Current Rates FY 2023-24		Proposed Rates FY 2024-25		COS Minus Current	
<b>Single Family Residential</b>						
Fixed Charge Revenue	\$1,063,827	48.6%	\$1,185,192	50.1%	\$121,365	11.4%
Volumetric Rates Revenue	\$1,125,095	51.4%	\$1,182,515	49.9%	\$57,420	5.1%
Subtotal	\$2,188,922	100.0%	\$2,367,708	100.0%	\$178,785	8.2%
<b>Multi Family Residential</b>						
Fixed Charge Revenue	\$348,501	50.6%	\$388,267	52.0%	\$39,766	11.4%
Volumetric Rates Revenue	\$340,624	49.4%	\$358,008	48.0%	\$17,384	5.1%
Subtotal	\$689,125	100.0%	\$746,275	100.0%	\$57,150	8.3%
<b>Commercial</b>						
Fixed Charge Revenue	\$259,277	37.2%	\$288,864	43.1%	\$29,587	11.4%
Volumetric Rates Revenue	\$438,153	62.8%	\$381,339	56.9%	(\$56,814)	-13.0%
Subtotal	\$697,430	100.0%	\$670,204	100.0%	(\$27,227)	-3.9%
<b>Fairgrounds</b>						
Fixed Charge Revenue	\$330,144	46.6%	\$318,270	47.5%	(\$11,874)	-3.6%
Volumetric Rates Revenue	\$377,664	53.4%	\$352,160	52.5%	(\$25,503)	-6.8%
Subtotal	\$707,808	100.0%	\$670,430	100.0%	(\$37,377)	-5.3%
Total Fixed Charge Revenue	\$2,001,750	46.7%	\$2,180,594	49.0%	\$178,844	8.9%
Total Volumetric Charge Revenue	\$2,281,536	53.3%	\$2,274,023	51.0%	(\$7,513)	-0.3%
<b>Total Revenue</b>	<b>\$4,283,285</b>	<b>100.0%</b>	<b>\$4,454,617</b>	<b>100.0%</b>	<b>\$171,331</b>	<b>4.0%</b>

10. **Update Service Charges are recommended.** Figure I-8 shows the current and cost-of-service Service Charges during the period of FY 2024-25 through FY 2028-29. All City customers, aside from the Fairgrounds, will see an increased Service Charge. The Fairgrounds will see a 3.6% decrease to their existing Service Charge. Refer to Section IX.

**Figure I-8. Current and Proposed Service Charge Rates**

Bi-Monthly Fixed Service Charges	Current Rates rate increase:	Proposed Rates				
		FY 2024-25 eff. 7/1/2024	FY 2025-26 eff. 7/1/2025	FY 2026-27 eff. 7/1/2026	FY 2027-28 eff. 7/1/2027	FY 2028-29 eff. 7/1/2028
Single-Family Residential (per DU)	\$127.10	\$141.60	\$144.43	\$147.32	\$150.27	\$153.28
<b>Meter Size</b>						
5/8"	\$127.10	\$141.60	\$144.43	\$147.32	\$150.27	\$153.28
3/4"	\$190.66	\$212.40	\$216.65	\$220.98	\$225.40	\$229.91
1"	\$317.74	\$354.00	\$361.08	\$368.30	\$375.67	\$383.18
1.5"	\$635.48	\$708.00	\$722.16	\$736.60	\$751.33	\$766.36
2"	\$1,016.76	\$1,132.80	\$1,155.46	\$1,178.57	\$1,202.14	\$1,226.18
3"	\$2,033.52	\$2,265.60	\$2,310.91	\$2,357.13	\$2,404.27	\$2,452.36
Fairgrounds	\$55,024.00	\$53,045.02	\$54,105.92	\$55,188.04	\$56,291.80	\$57,417.64

11. **The Volumetric Rates may be simplified.** The City's wastewater treatment and conveyance charges do not vary based on wastewater strength. Therefore, there is no longer a nexus to charge high

strength customers a higher volumetric rate than other commercial customers. As a result, the recommendation will reduce the number of volumetric rates from six to two. Refer to **Section VIII** for further explanation.

12. **Updated Volumetric Rates are recommended.** Figure I-9 shows the current and cost-of-service Volumetric Rates during the period of FY 2024-25 through FY 2028-29. All Commercial, Multi-Family, and Single-Family Residential customers will be assessed the same rate for billed wastewater flows. This change results in significant decreases to the rates assigned to Hotels with Restaurants, Restaurants, and Shopping Center customers. The Fairgrounds will continue to pay a separate rate. Refer to **Section IX**.

**Figure I-9. Current and Proposed Volumetric Rates**

Bi-Monthly Volumetric Rates	Current Rates  rate increase:	Revised Customers	Proposed Rates				
			FY 2024-25 eff. 7/1/2024 varies	FY 2025-26 eff. 7/1/2025 2%	FY 2026-27 eff. 7/1/2026 2%	FY 2027-28 eff. 7/1/2027 2%	FY 2028-29 eff. 7/1/2028 2%
Single Family Residential	\$8.98	Single Family Residential	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Multi-Family Residential	\$8.98	Multi-Family Residential	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Commercial	\$8.98	Commercial	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Institutional	\$8.98						
Hotels/Motels w/o Restaurants	\$8.84						
Hotels/Motels w/ Restaurants	\$12.73						
Restaurants	\$15.06						
Shopping Centers	\$10.45						
Fairgrounds	\$10.27	Fairgrounds	\$11.49	\$11.72	\$11.95	\$12.19	\$12.43

13. **Combined water and wastewater bill increases will vary by customer type and level of water use.** Sample bi-monthly bill comparisons, for FY 2024-25, are provided in **Section XI**. Using 2022 as a test year, bills at current rates (which reflects rates implemented on January 1, 2024) were compared to bills under the proposed rates, effective July 1, 2024, to determine the level of adjustment customers could pay annually for water and wastewater service.

Residential bill impacts vary. 75% of single family households will see an increase of at least 3% in their combined water and wastewater payments, based on the rate shown in the figure above, with the largest annual increase being 7% for the year. For the customers facing larger increases, these adjustments are attributable to the increased fixed service charge for wastewater service. Multi-family accounts can expect an annual increase between 4-7% for the year.

Commercial customer bills demonstrate the highest order of variability due to the adjustment in wastewater rates. Previously, customers charged more to account for their wastewater strength will see a significant decrease. Accounts connected to shopping centers, restaurants, and hotels with a restaurant (or providing food service) will see the largest decrease in their combined utility bills, with some seeing a decrease of as much as 22%. There are 19.2% of Commercial customers that would see a decrease. While these customers will likely see lower utility bills, the majority of customers (80.8%)

can expect an increase of up to 7% of their annual utility bills for water and wastewater services. The increases capture the increases to fixed service charges for all wastewater customers and the increases to volumetric rates for customers previously categorized as Commercial or Institutional. The increases in bills reflect the higher Commodity Charges proposed, as well.

**Refer to Section XI** for further analysis.

## II. INTRODUCTION

The City provides water service to its residential and commercial accounts, including 1,433 Single Family Residential meters, 183 Multi-Family Residential meters, 139 Irrigation meters, 114 combined Commercial and City meters, and the 22<sup>nd</sup> Agricultural Association Fairgrounds (Fairgrounds). As a member of San Diego County Water Authority (SDCWA), the City receives raw water that is then treated by the City of San Diego for potable use.

The City provides wastewater collection service to a population of 3,830, including 1,395 Single Family Residential accounts, 184 Multi-Family accounts, 11 non-residential (e.g. Commercial, Institutional, and City) accounts, and the Fairgrounds. Most City wastewater is conveyed through the City's network and is transported via a force main operated by Solana Beach for treatment overseen by San Elijo Joint Powers Authority (SEJPA). Occasionally, a small portion of wastewater is conveyed to the San Diego Metro System for treatment, when necessary (during operation challenges or system maintenance).

Separate enterprise funds are maintained for the wastewater and water programs provided by the City's Public Works Department. As such, each enterprise fund maintains its own rate stabilization, operating, capital, equipment, debt service, self-insurance, and pension reserves.

The water rates in this study were developed using rate-making principles set forth by the American Water Works Association (AWWA) in *Principles of Water Rates, Fees and Charges* (M1 Manual). This Manual's cost-of-service principles endeavor to distribute costs to customer classes (also referred to as classes) and to individual customers in proportion to customers impacts on the water system. Pursuant to the M1 Manual, rate studies generally contain three elements: (1) a revenue requirements analysis, which determines how much revenue is needed from rates to recover a utility's projected costs; (2) a cost-of-service analysis, which allocates the revenue requirements to the rate components;<sup>1</sup> and (3) a rate design analysis, which determines any modifications that are required to align the rate structure with the cost of service.

Similarly, the wastewater rates in this study were developed using rate-making principles in compliance with Proposition 218. Therefore, the wastewater rate analysis employs the same three elements as the water rate analysis: (1) a revenue requirements analysis; (2) a cost-of-service analysis; and (3) a rate design analysis.

Rate studies always include a revenue requirements analysis. A cost-of-service analysis is typically only conducted periodically. It is recommended that a cost-of-service analysis be conducted at least every five years to account for any material differences in the costs of providing service and in the water usage among customer classes, which will affect their respective shares of the cost of service. The City last conducted a cost-of-service study in 2019 for each of the respective utilities.

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<sup>1</sup> The cost-of-service analysis in the current study tailors the base/extra capacity method to account for unique conditions, circumstances, and factors related to the City's cost of providing water service, which the M1 Manual does not specifically address. The adjustments to the M1 base/extra capacity method of allocating costs are described in more detail in Chapter IV.

The City hired HF&H Consultants (HF&H) to conduct a cost-of-service study to set water and wastewater rates for FY 2024-25 through FY 2028-29 (Study Period). Since the previous study, changes in usage patterns among customer classes has occurred, which affects the factors that are used to allocate costs. The costs to which the allocation factors are applied also changed. Hence, there will be differences between the previous and current cost-of-service analyses. Adjustments are made to reflect the differences and rates are set accordingly.

The cost-of-service analysis proportionately allocates the revenue that is required from rates to the components of the rate structure and to the customer classes. Costs are classified corresponding to the function they serve. Each function's costs are further allocated to each component of the rates in proportion to the level of service required by customers. The levels of service are related to volumes of peak and non-peak demand, infrastructure capacity, and customer service. A cost-of-service analysis ensures that the rates yield charges that are proportional to the cost of providing service to each customer.

## STUDY PURPOSE

The purpose of this study is to conduct a cost-of-service analysis that will determine rates that proportionally recover the cost of providing the City's water service. Toward that end, the cost-of-service analysis determines how much revenue should be generated by each component of the rate structure so that rate payers within each customer class are charged for their proportionate share of the cost of providing service on a parcel basis. The cost-of-service analysis is tailored specifically to the City's customer classes and the rate structures that are appropriate for each class.

## STUDY PROCESS

In 2023, the City contracted with HF&H to perform a cost-of-service study to set water and wastewater rates for FY 2024-25 and FY 2028-29. A ten-year analysis provided support for long-term planning. The primary goal of this study is to ensure that rates continue to reflect the current cost of providing water and wastewater service, as required by Proposition 218.

A comprehensive rate study comprises three steps: 1) revenue requirement projections; 2) cost-of-service analysis; and 3) rate design. Revenue requirement projections identify how much revenue is needed from rates. The cost-of-service analysis determines how much of the revenue should come from the fixed and variable charges. This step also confirms the proportionate amount to be paid by each customer class. The final step, rate design, establishes the structure of the fixed service charges and the variable volume charges for each customer class.

The water cost-of-service analysis was conducted following industry practices promulgated by the American Water Works Association.<sup>2</sup> At the outset of the analysis, the types of customer classes were reviewed, as were the types of rate structures that are appropriate to the City's customer classes.

The wastewater cost-of-service analysis was conducted following industry practices promulgated by the Water Environment Federation Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 2004. At the initial stages of the project, HF&H reviewed the types of customer classes and the types of rate structures that are appropriate to the City's customer classes.

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<sup>2</sup> *Principles of Water Rates, Fees, and Charges*. American Water Works Association Manual M1. 2017.

## **REPORT ORGANIZATION**

The report includes both the water rates study and wastewater rates study. The report is bifurcated to cover the analysis associated with each study. Therefore, the report is divided into four initial sections addressing the water rate study: Water Revenue Requirements, Water Rate Cost of Service Analysis, Water Rate Design, and Comparison to Water Agencies. Next, there are four subsequent sections addressing the wastewater rate study: Wastewater Revenue Requirements, Wastewater Rate Cost of Service Analysis, Wastewater Rate Design, and Comparison to Wastewater Agencies. Finally, the closing section is the Combined Utility Bill Impacts, which looks at the overall impacts to customers when both water and wastewater rate adjustments are considered.

A Glossary of technical terms and acronyms is provided following the Table of Contents.

### III. WATER REVENUE REQUIREMENTS

The revenue requirements analysis starts by determining the FY 2024-25 revenue requirements based on the budgeted O&M and capital expenditures. Revenue requirements for each fiscal year are then projected over the Study Period. Revenue increases needed to cover the projected revenue requirements are then determined.

#### REVENUE REQUIREMENT ASSUMPTIONS AND PROJECTIONS

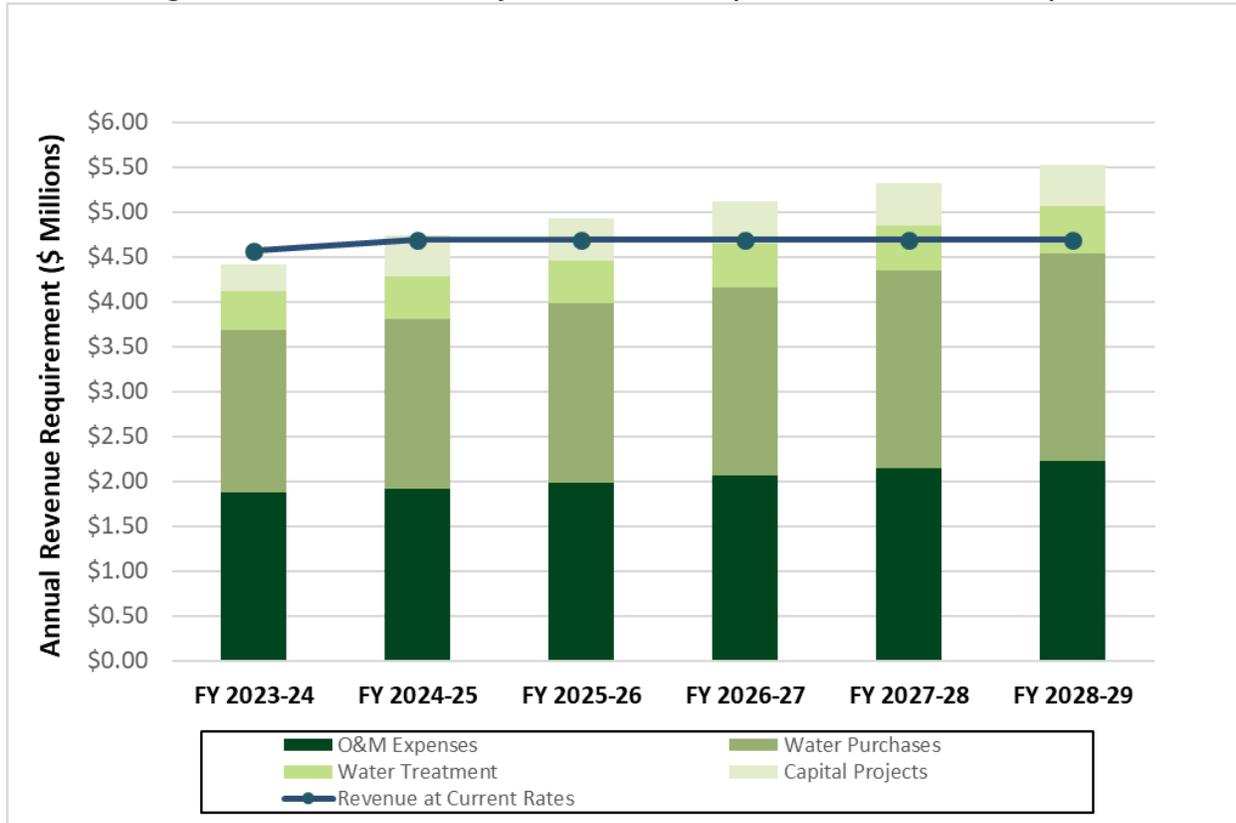
Expense projections become the revenue requirements. The City’s operating and capital budgets were relied on for FY 2024-25 expenses in the first-year revenue requirement. The operating and maintenance (O&M) expenses were projected over a ten-year period, through FY 2033-34, using appropriate escalation factors. Capital expenses were projected according to the City’s current capital improvement program (CIP). While a ten-year model was built, for brevity, **Figure III-1** reflects the assumptions which were used to project revenue requirements through FY 2028-29 in order to set rates for the next five-year period. All assumptions were reviewed with City staff. Purchased water cost increases reflect the projected average annual increase from 2024-2029, made by San Diego County Water Authority (SDCWA). HF&H worked with City staff to project expenses for additional years where approved budgets were not available.

**Figure III-1. Projection Assumptions**

Assumptions	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
General inflation	per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
Salary/wage cost increases	per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Benefit cost increases	per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Utility cost increases	per Budget	4.0%	4.0%	4.0%	4.0%	4.0%
Purchased water cost increases	per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Interest of Reserve Balance	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Construction Cost Inflation	per Budget	3.8%	3.4%	3.4%	3.4%	3.4%
Growth in Residential Accounts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth in Commercial Accounts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in Water Use per Residential Customer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change in Water Use per Non-Residential Customer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The application of these projections to O&M and capital expenses are summarized graphically in **Figure III-2** and are described below in more detail.

**Figure III-2. Total Annual Projected Revenue Requirement for Water Enterprise**



### O&M Expenses

The City’s O&M expenses include salaries, benefits, materials, supplies, insurance, vehicle maintenance, utilities, and administrative expenses, and City administrative charges. Expense projections were calculated using assumptions reviewed with City staff. No additional headcount has been projected through the five-year rate setting period. Collectively, this category represents approximately 40% of the total revenue requirement. These O&M expenses are projected to increase annually by an average of 4% over the five-year period, averaging \$2.0 million per fiscal year from FY 2024-25 through FY 2028-29. Individual expense line items present in both water and wastewater studies were escalated by the same factor for consistency.

### Raw Water Purchases

Raw water costs, purchased from SDCWA, make up the largest portion of the annual revenue requirement. Based on SDCWA projections, raw water costs are assumed to increase by an average of 5% annually. This expense averages \$2.1 million per fiscal year from FY 2024-25 through FY 2028-29. Increases to water purchase expenses have not accounted for any supplemental water demand due to new connections, as the City does not anticipate additional growth.

### Water Treatment Expenses

The City of San Diego charges the City for water treatment and delivery services that are passed along to the City’s customers. Collectively, these expenses comprise approximately 10% of the overall revenue

requirement and are projected to increase to keep pace with inflation through FY 2028-29. The average annual cost of treatments is estimated to be \$490,000 during the period of study. When combined, raw water purchases and treatment and delivery expenses, costs controlled by external agencies, account for more than half of the overall expenses to be recovered through water rates.

### Capital Project Costs

CIP expenditures projections average \$465,551 annually during the five-year period. All projects have been assumed to be cash funded. **Figure III-3** provides a detailed listing of the Water Enterprise five-year CIP. The City’s focus continues to be on addressing risk-based sections of its system through the Annual High Priority 1 Improvements program. Also, an Automated Meter Infrastructure (AMI) Study has been included to evaluate the feasibility of replacing the City’s existing, manually-read, meter infrastructure with AMI. The project costs exclude previously considered recycled water projects after discussions were held with staff (and with the Finance Committee in January 2024) in an effort to reduce potential rate increases. All project costs shown have been escalated using an assumed Construction Cost Index of 3.8% for FY 2024-25 and 3.4% thereafter based on historical changes in the Engineering News Record-Construction Cost Index.

**Figure III-3. Water Enterprise Five-Year Capital Improvement Plan**

Capital Projects	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	Total
Annual High Priority 1 Improvements	\$352,000	\$76,000	\$176,000	\$176,000	\$176,000	<b>\$956,000</b>
Citywide Pressure Upgrades	\$240,000	\$0	\$0	\$0	\$0	<b>\$240,000</b>
Reservoir Rehabilitation Program	\$0	\$210,000	\$90,000	\$0	\$0	<b>\$300,000</b>
Crest Reservoir Piping Upgrade	\$0	\$0	\$64,000	\$156,000	\$0	<b>\$220,000</b>
High Zone Pressure Relief Stations	\$0	\$0	\$0	\$0	\$154,000	<b>\$154,000</b>
Automated Meter Infrastructure Study	\$0	\$50,000	\$0	\$0	\$0	<b>\$50,000</b>
Seismic Equipment Assessment	\$0	\$0	\$0	\$0	\$65,000	<b>\$65,000</b>
Water Valve Replacements	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	<b>\$125,000</b>
<b>Total Capital Projects</b>	<b>\$617,000</b>	<b>\$361,000</b>	<b>\$355,000</b>	<b>\$357,000</b>	<b>\$420,000</b>	<b>\$2,110,000</b>
Construction Cost Index	1.038	1.073	1.109	1.146	1.185	
<b>Total Inflated CIP</b>	<b>\$640,179</b>	<b>\$387,195</b>	<b>\$393,601</b>	<b>\$409,168</b>	<b>\$497,610</b>	<b>\$2,327,753</b>
	Average Annual PAYGo-Funded CIP					\$465,551

### RESERVES

The City uses its reserves to stabilize rates against annual fluctuations in capital expenditures, variances between projected and actual water demands, and unanticipated expenditures and other expenditure variances. In some years, there is surplus revenue that is available to replenish reserves. In other years, reserves are drawn down to cover the cost of service.

Reserves are required to stabilize rates and to provide for contingencies. Reserves can be drawn on in years when the City’s Water Enterprise Fund experiences above average costs and augmented during years when costs are below average. The City’s reserves are used for operating and capital purposes. Each of these purposes has its own requirements that lead to a minimum and optimum target balance. Rates must be set so that the fund balance achieves the target balance.

## Operating Reserve

The operating component of the reserves provides working capital for month-to-month O&M expenditures. With sufficient working capital, the City can operate without cash flow constraints. The City's approved reserve policy is 45 days of operating expenses. The City's Reserves should never drop below this minimum balance.

## Self-Insurance Reserve

The City maintains a Self-Insurance Fund for the Water utility with a targeted minimum balance of \$50,000. The purpose of the reserve is solely to pay out claims related to Water utility damage.

## Pension Reserve

The City has a fully funded Pension Reserve to pay for the Water Enterprise's share of staff costs. The targeted minimum balance is set to \$200,000.

## Capital Reserve

The capital improvement component of the reserves provides working capital for the City's capital improvement program. The fund balance needs to be sufficient to at least pay contractors without delays caused by cash flow limitations. The fund balance can be larger so that the City can fund larger construction projects on a pay-as-you-go basis, thereby eliminating financing costs. The City's approved policy requires a reserve threshold of \$350,000. This total is less than the five-year average of annual capital improvement expenses, \$465,551. The City could contemplate increasing this reserve to account for rising construction costs.

## Equipment Replacement Reserve

This reserve is maintained to fund capital outlay projects, such as the replacement or purchase of new vehicles, large maintenance items, machinery, and equipment. An approved policy reserve target of \$200,000 is maintained. The reserve provides an emergency source of funding in the event of an unanticipated breakdown or failure.

## Rate Stabilization Fund

The Rate Stabilization Fund provides funding which the City can draw upon prior to passing funding for unanticipated events onto its customers. For example, in the event of a water shortage, the City could utilize reserves from the Rate Stabilization Fund prior to enacting Demand Management Rates. The reserve helps to offset the financial burden ratepayers might experience when the City is required to raise rates. The current approved reserve target is set at \$200,000.

## REVENUE INCREASES

Rates are set to generate sufficient revenue to cover annual expenses. In addition, rates are set to maintain adequate reserves. **Figure III-4** summarizes the projected revenue from current rates, annual revenue requirements, annual variances, and the rate increases necessary to cover the City's costs.

**Figure III-4. Rate Increase Calculations**

	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Revenue from Current Rates	\$4,688,866	\$4,688,866	\$4,688,866	\$4,688,866	\$4,688,866
Revenue Requirement	(\$4,738,931)	(\$4,922,345)	(\$5,114,021)	(\$5,314,341)	(\$5,523,712)
Non-Operating Revenue	\$74,000	\$74,960	\$75,949	\$76,967	\$78,016
Transfer to Reserves	(\$164,601)	\$0	\$0	\$0	\$0
Net Revenue Requirement	(\$4,829,532)	(\$4,847,385)	(\$5,038,072)	(\$5,237,374)	(\$5,445,696)
Revenue Surplus/(Shortfall)	(\$140,666)	(\$158,519)	(\$349,206)	(\$548,508)	(\$756,830)
<b>Proposed Revenue Increase</b>	<b>3.0%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>2.0%</b>
Revenue at Proposed Rates	\$4,829,532	\$4,926,123	\$5,024,645	\$5,125,138	\$5,227,641
<b>Revenue Surplus/(Shortfall)</b>	<b>\$0</b>	<b>\$78,737</b>	<b>(\$13,427)</b>	<b>(\$112,236)</b>	<b>(\$218,055)</b>

Rate increases account for rate revenue and future revenue requirements. As shown in **Figure III-4**, the City’s reserves have been used to keep the revenue increases low (i.e., there are projected revenue shortfalls in FY 2026-27 through FY 2028-29 after accounting for the revenue increases, which will be covered by reserves). The revenue requirement (shown in greater detail in **Figure III-2**) increases due to increasing water supply costs and capital expenditures. The proposed revenue increases serve to decrease the projected shortfalls facing the City.

The rates are derived in Chapter V. With these rate increases, the City is able to pay for its annual O&M and capital expenses and maintain adequate reserves, as further discussed below.

## RESERVE FUND BALANCE

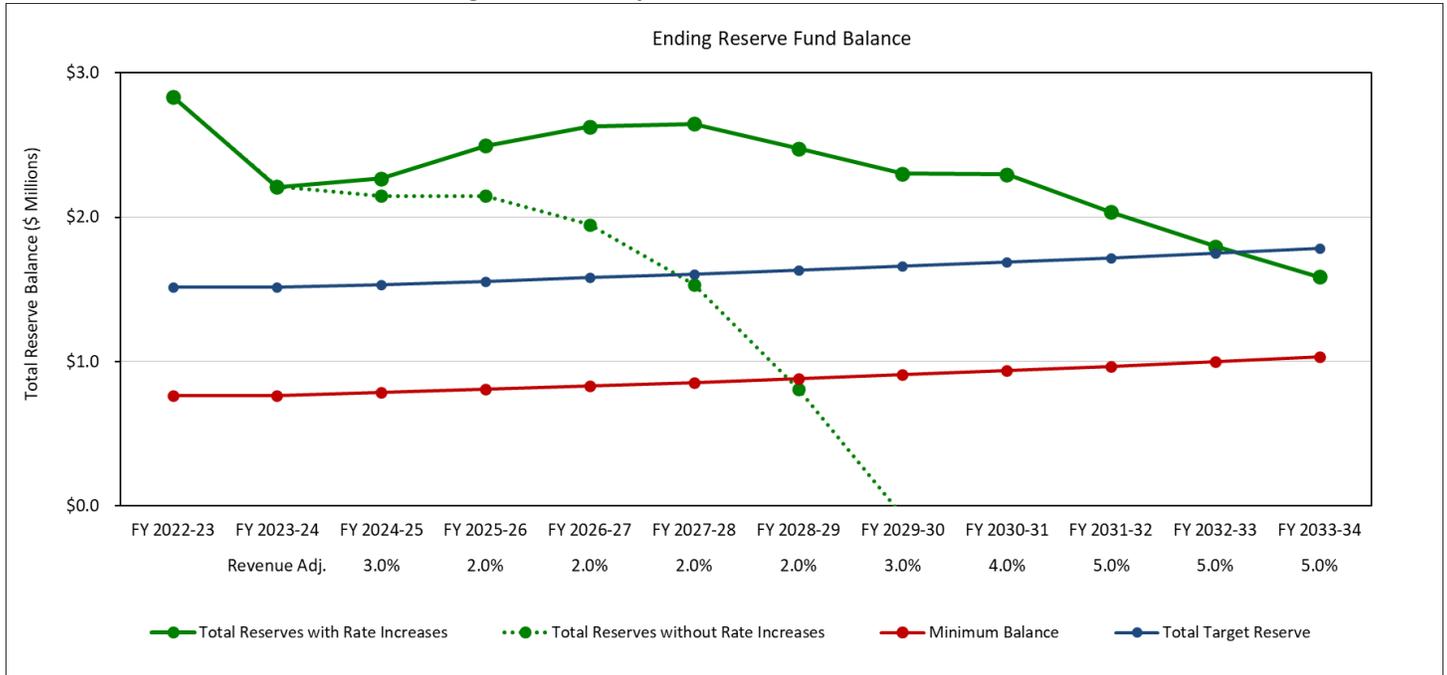
**Figure III-5** shows the annual fluctuations (solid green line) in the fund balance that are caused by the differences between the revenue requirement and revenue from rates with the rate increases; the dashed green line is the projected fund balance without rate increases. The revenue and rate increases in **Figure III-4** were derived to balance increasing rates while maintaining a level of reserves that continues to meet the City’s reserve target (blue line) through FY 2028-29.

For purposes of rate setting, the following combined reserve target balances were established. The red line labeled, “Minimum Balance” represents the target balance for the Operating Reserve, Self-Insurance Reserve, and the Pension Reserve. The blue line labeled, “Total Target Reserve” is the sum of the Minimum Balance plus the Capital Reserve, Equipment Replacement Reserve, and Rate Stabilization reserve targets.

The ten-year projection in **Figure III-5** demonstrates the use of reserves beyond FY 2028-29 as expense projections outpace revenue increases. Initially, revenue increases are kept between 2-3% annually through FY 2028-29. However, the cumulative growth of expenses, driven by 5% projected increases in water supply costs, overtakes revenue growth, requiring a greater share of reserves to support rate revenues. Consequently, reserves project to decline beginning in FY 2028-29, despite larger revenue increases. The reserve fund balance projects to fall below the Target Reserve by FY 2033-34. The inflationary increases recommended in FY 2024-25 through FY 2028-29 serve as an “ounce of prevention” to possible, larger increases in the future. In contrast, the dashed green line, reflects that without revenue increases,

the year-end fund balance of \$2.8 million in FY 2022-23 is projected to drop below the City's Minimum Reserve by FY 2028-29.

**Figure III-5. Projected Year-End Fund Balance**



## IV. WATER RATE COST OF SERVICE ANALYSIS

### METHODOLOGY

The revenue requirement analysis establishes how much revenue is required from rates. The next step in the analysis is determining the cost of service. Cost-of-service analysis is used to derive rates that proportionally allocate the cost of service. The cost-of-service analysis performed in this study follows a procedure described by the AWWA, which is referred to as the “base/extra capacity method.” This method allocates the revenue requirements to the components of the rate structure.

A cost-of-service analysis determines the unit cost of the services provided to the City’s water customers. Each customer class is charged the same unit cost for its share of the services that it requires. In this way, the total revenue requirement is proportioned between the Service Charges and the Commodity Charges. This methodology is consistent with industry standards promulgated by the American Water Works Association and referred to as the “base/extra capacity method.”

The City provides demand services and customer services to water customers. Demand services include the costs related to meeting average and peak levels of demand. Customer services include the costs related to customer accounts and the capacity that customers require.

The analytical procedure contains the following steps:

1. Cost classification - Costs in the FY 2024-25 revenue requirement are classified into the service categories related to providing for customer demands and for customer service. FY 2024-25 costs are used for the cost-of-service analysis because they are the most recent budget year.
2. Cost allocation - The classified costs are allocated to the functions associated with each service. For demand services, the functions are levels of service that comprise average day, maximum day, and maximum hour demands. For customer services, the functions are customer accounts and customer capacity.

The classifications of major costs are summarized as follows:

#### Demand services

- Base day – non-seasonal daily demand based on winter water use.
- Average day – average daily demand utilizing base supply plus a small portion for peaking beyond winter water use levels.
- Maximum day – peaking on the maximum day: peak supply, transmission mains to distribution storage, booster pumps.
- Maximum hour – peak hour on the maximum day: a portion of distribution storage, distribution mains to customers, hydrants, conservation programs.

#### Customer services

- Accounts: meter reading, billing, accounting, customer service, fire services.
- Capacity: a portion of distribution storage, distribution mains to customers, hydrants, conservation programs. Composite services ☐ Indirect allocations for costs that are not directly related to either the demand or customer service functions: reserves transfers, debt service.

Working with City staff, the individual line items in the revenue requirements were classified into either the demand or customer service categories. Certain costs, however, are not directly related to either demand or customer services. Such costs are considered to be composite in function and are allocated based on a composite of the direct allocations to the demand and customer service categories.

## CUSTOMER CLASSES

The cost-of-service analysis distributes the revenue requirements among customer classes in proportion to their service requirements. There is no industry standard that specifies which customer classes should be used. The law allows utilities to exercise discretion in determining the appropriate customer classes provided the rates yield charges that are proportional to the cost of providing service for each category. As a result, the base/extra capacity method needs to be tailored to the customer classes.

The City currently has multiple customer classes: Single Family Residential, Multi-Family Residential, Commercial/Institutional, Irrigation, and Fairgrounds. These classes were last reviewed as part of the previous cost-of-service study in 2019. The segregation into separate customer classes stems from the typical pattern of usage by each class. For example, Single-Family Residential use produces periods of peak demands during summer months, for which the system must be designed to meet to address these customers indoor and outdoor water needs. No revisions to the number of types of customer classes are recommended at this time.

The Fairgrounds are the largest customer in terms of demand and service-related capacity placed on the City's water system. Based on historical methodology, costs are allocated separately between the Fairgrounds and all other City customers. This methodology is further discussed below.

## COST-OF-SERVICE ALLOCATIONS

A cost-of-service analysis is a process of determining how much services cost for each customer class. To provide water service, infrastructure must be constructed, operated, and maintained, which must be paid for from cash or debt. The type and size of infrastructure depends on how much service customers require. Water systems are designed to provide sufficient capacity to meet customer demands for service wherever, whenever, and for as long as demanded.

Although each customer places unique demands on the system, water system design is based on the maximum or peak demand for service placed on the system by all customers during the peak demand period. The size of the infrastructure that is needed will depend on the maximum demand. Higher demands will require larger, more costly infrastructure as well as increased operating and O&M costs. The goal of a cost-of-service analysis is to allocate the cost of the capacity to meet the peak demand in proportion to how much of the capacity is required by each customer. The proportions correspond to the maximum amount of capacity provided by the infrastructure. This means that customers that place greater demands on the infrastructure – customers with greater service needs will be apportioned a greater share of the operating and capital costs of the infrastructure required to meet that demand. This reasoning drives the practice of allocating costs separately between the Fairgrounds and remaining City customers.

**Figure IV-1** allocates the FY 2024-25 revenue requirement between the Fairgrounds and the City customers. **Figure IV-2** summarizes the percentage allocations used in apportioning the revenue requirement between the Fairgrounds and the City customers. A discussion of the methodology behind the allocation of costs follows.

**Figure IV-1. Allocation of FY 2024-25 Revenue Requirement to Fairgrounds**

	Rev. Req't FY 2024-25	Fairgrounds Allocation Factor	Fairgrounds Proportion	City Proportion
<b>O&amp;M Expenses</b>				
Administrative Personnel	\$341,657	Staff Allocation	\$90,334	\$251,323
Operations Personnel	\$502,653	Staff Allocation	\$132,901	\$369,751
O&M - Tools, Supplies, Insurance	\$306,100	Distribution Sizing	\$120,959	\$185,141
O&M - Admin Expenses	\$542,960	Hydraulic Capacity	\$52,231	\$490,729
O&M Variable	\$28,640	Distribution Sizing	\$11,317	\$17,323
Contractual Services	\$161,850	Total Use	\$19,541	\$142,309
Water Supply	\$1,902,040	Total Use	\$229,638	\$1,672,402
Water Treatment	\$461,090	Staff Allocation	\$121,912	\$339,178
Total Allocable O&M	\$4,246,990		\$778,833	\$3,468,157
<i>Fairgrounds O&amp;M Composite</i>			18.3%	81.7%
<b>Capital Outlay</b>	\$26,390	Hydraulic Capacity	\$10,428	\$15,962
<b>Capital Expenses (PAYGo)</b>	\$465,551	Hydraulic Capacity	\$44,785	\$420,766
<b>Subtotal - O&amp;M and Capital</b>	\$4,738,931		\$834,046	\$3,904,884
<b>Non-Operating Revenue</b>	(\$74,000)	FG O&M Composite	(\$13,570)	(\$60,430)
<b>Transfers to/(from) Reserves</b>	\$164,601	FG O&M Composite	\$30,185	\$134,416
<b>Total Revenue Requirement</b>	<b>\$4,829,532</b>		<b>\$850,661</b>	<b>\$3,978,871</b>
% of Total	100.0%		17.6%	82.4%

**Figure IV-2. Fairgrounds Allocation Factors**

Fairgrounds (FG) Allocation Factors	Fairgrounds	City	Total	Notes
Staff Allocation	26.4%	73.6%	100.0%	Historical City assumption
Hydraulic Capacity	9.6%	90.4%	100.0%	Percentage of Equivalent Meter Units
Distribution Sizing	39.5%	60.5%	100.0%	Historical City assumption
Total Water Use	12.1%	87.9%	100.0%	Percentage of avg. CY 2020-2022 recorded water use
FG O&M Composite	18.3%	81.7%	100.0%	Calculated in Figure 1

## Fairgrounds Allocation Factors

### Staff Allocation

The City estimates roughly 26% of personnel staffing costs can be attributed to serving the Fairgrounds. This allocation was used in the previous 2019 study and confirmed with City staff as part of the current analysis.

### Hydraulic Capacity

The City's water system provides water to 1,869 metered connections. Of these meters, the Fairgrounds receive water and requires available capacity for one – 8" meter and two -10" meters. Connections are converted to Equivalent Meter Units (EMUs) to apportion the revenue requirement costs for operations

and maintenance (O&M) administrative expenses, water supply expenses, and capital improvement costs. An EMU represents the number of 5/8-inch meters to which a larger meter is equivalent. For example, a 1-inch meter provides 2.50 times as much capacity as a 5/8" meter. The capacity multipliers are based on the meter data provided by the City of the manufacturer's nominal capacity. The Fairgrounds make up 320 EMUs of the total 3,327 EMUs served by the system, as shown in **Figure IV-3**. This accounts for 9.6% of the overall hydraulic capacity.

**Figure IV-3. Capacity Calculations of City's Water Meters**

Applicable Service Size	Total Meters	Capacity Multiplier	EMUs
	<b>a</b>	<b>c</b>	<b>a * c</b>
5/8" Meters	1,131	1.00	1,131
3/4" Meters	387	1.50	581
1" Meters	250	2.50	625
1.5" Meters	46	5.00	230
2" Meters	49	8.00	392
3" Meters	3	16.00	48
4" Meters	0	25.00	0
8" Meters	1	80.00	80
10" Meters	2	120.00	240
<b>Total</b>	<b>1,869</b>	<b>Total EMUs</b>	<b>3,327</b>

**Distribution System Sizing**

The City's water distribution system sizing was calculated assuming 39.5% of the peak demand of the system was due to the Fairgrounds. The revenue requirement costs for O&M tools, supplies, and insurance, O&M variable costs (e.g. fuel and electricity), and capital outlay (e.g. machinery and vehicle replacement) were allocated, using the assumption Fairgrounds accounted for 39.5% of these overall costs. This allocation was used in the previous 2019 study and confirmed with City staff as part of the current analysis.

**Total Water Use**

The Fairgrounds average water use accounts for 12.1% of the overall water demand recorded for calendar years 2020-2022. **Figure IV-4** summarizes the average annual consumption by water customers over the three-year period. This allocation was applied to raw water supply and contractual services expenses, which vary based on the level of water demanded.

**Figure IV-4. Water Use Analysis**

Customer Class	2020-2022 Average Annual Water Use (HCF)
Single Family	208,179
Multi Family	52,877
Non-Residential	93,244
Fairgrounds	48,649
<b>Total Consumption</b>	<b>402,949</b>

### **Operations & Maintenance Composite**

Non-operating revenue and transfers to reserves were allocated to the Fairgrounds and City customers based on each's proportionate share of the total O&M costs, as derived in **Figure IV-1**.

### **Results of Initial Allocation**

Fairgrounds was apportioned 17.6% of the overall revenue requirement. The Fairgrounds allocation has increased since the previous cost-of-service study, which yielded an overall allocation of 14.9%. The increase can be attributed to an increased share of the Fairgrounds share of the raw water supply costs. This expense is the largest expense category in the cost allocation exercise and the Fairgrounds share increased from the previous study's share of 10.9% to 12.1%. Thus, the Fairgrounds share of the revenue requirement to be recovered through the FY 2024-25 rates will be \$850,661 (17.6%) and the remaining City customer's share will be \$3,978,871 (82.4%).

### **Demand Service Allocation Factors**

A cost-of-service analysis categorizes costs between the demand and customer service functions. Within the demand service function, further allocations are made to varying levels of service ranging from base, non-seasonal, indoor demand, which are the least discretionary, to the highest level of seasonal peak demand for outdoor water use and irrigation during the peak hour of the peak day, which are the most discretionary. With these further allocations, rates can be designed for each customer class's Water Use Charges.

The costs allocated to the customer service function are differentiated between those that are related to accounts and those that are related to capacity. Those two categories are used in deriving the Service Charges.

As described below, there are three levels of demand used for the demand service function cost-of-service analysis.

#### **Average (Base) Day demand**

Average Day demand is the average of calendar year (CY) 2020-2022 customer billing data. The City's Average Day demand represents only 44% of the current peak demand.

#### **Maximum Day demand**

Maximum Day demand includes Average Day demand plus peak day demand in the irrigation season. The Maximum Day demand for each customer class relies on the maximum monthly demand averaged over the three year period of CY 2020-22. The monthly demand was prorated to a daily volume by dividing by the number of days in the subject month. If peaking did not exceed Maximum Day demand, the City's facilities could be sized at 67% of current peak demands.

**Maximum Hour demand**

Maximum Hour demand represents the Maximum Hour demand on the Maximum Day. The City does not maintain data on its Maximum Hour demand. Hence, this value is estimated based on the State of California’s design requirements for new and existing source capacity.<sup>3</sup> Facilities that are needed for Maximum Hour demands are sized at a minimum of 1.5 times Maximum Day Demand.

Allocation percentages were calculated for each demand service level using load factors derived from customer billing data for CY 2020-22 (Average and Maximum Day) and engineering design criteria (Maximum Hour). Load factors are the ratio of higher levels of demand to the Average Day demand. **Figure IV-5** summarizes the units of service and load factors for each of the service levels.

**Load Factors**

The load factors are the ratio of the flows for the peak service levels (i.e., Maximum Day, and Maximum Hour) compared to the Average Day, non-seasonal flow. The load factors represent how much higher Maximum Day and Maximum Hour flows are compared with Average Day demand.

**Figure IV-5. Service Level Demands and Load Factors**

	Levels of Demand		
	Average Day	Maximum Day	Maximum Hour
<b>Demand by Customer Category</b>			
Single Family Residential	570	713	1,070
Multi Family Residential	145	181	271
Commercial	116	142	213
Irrigation	139	252	378
Fairgrounds	133	388	581
Total	1,104	1,676	2,513
<b>Ratio of Flows to Avg Day</b>			
Single Family Residential	1.00	1.25	1.88
Multi Family Residential	1.00	1.25	1.87
Commercial	1.00	1.22	1.84
Irrigation	1.00	1.81	2.71
Fairgrounds	1.00	2.91	4.36
Level of Service	1,104	1,676	2,513
Avg Day Demand	1,104	1,104	1,104
<b>Ratio of Level of Service to Avg Day</b>	<b>1.00</b>	<b>1.52</b>	<b>2.28</b>

Note: Daily totals are shown

The load factors indicate how much additional capacity is required to supply higher levels of service and serve as the source of the allocation percentages that are needed to allocate costs. They are derived in **Figure IV-6**. For example, the Maximum Day load factor for the system is 1.52. Of that total 1.52 load, 0.52 is in excess of Average Day demand and is related to the Maximum Day peak, which is 34% of the total

<sup>3</sup> “If daily water usage data are available, identify the day with the highest usage during the past ten years to obtain Maximum Daily Demand (MDD); determine the average hourly flow during MDD and multiply by a peaking factor of at least 1.5 to obtain the [peak hour demand].” 22 CCR § 64554.

Maximum Day load (i.e.,  $0.52/1.52 = 34\%$ ). For purposes of allocating costs associated with meeting Average Day demands, 34% is allocated to the Maximum Day service and 66% is allocated to the Average Day service.

**Figure IV-6. Demand Service Levels**

Allocation Basis	Load Factors	Demand Service Levels			Totals
		Average Day	Maximum Day	Maximum Hour	
Average Day <i>Allocation %</i>	1.00	1.00 <i>100%</i>			1.00 <i>100%</i>
Maximum Day <i>Allocation %</i>	1.52	1.00 <i>66%</i>	0.52 <i>34%</i>		1.52 <i>100%</i>
Maximum Hour <i>Allocation %</i>	2.28	1.00 <i>44%</i>	0.52 <i>23%</i>	0.76 <i>33%</i>	2.28 <i>100%</i>

Maximum Day demand includes Average Day, and Maximum Day components. And Maximum Hour demand has all three service levels of demand. While system capacity is essentially designed to meet peak demands, and peak users should assume cost responsibility for the capacity required to serve this peak demand, it is important to understand that the cost of facilities that are sized for peak demands is not borne by only customers that peak, all levels of demand utilize the facility.

Using distribution pipelines as an example, they are sized to meet Maximum Hour demands. Even though they are sized for the highest level of service, lower peak demands are also accommodated by these pipelines. Hence, the cost of the pipelines is not allocated 100% to the Maximum Hour service level. The cost is apportioned across the lower service levels, too. Thus, the costs of peaking are shared by all customers and not exclusively allocated to those who peak the most.

### Cost-of-Service Allocations and Allocation Factors

The allocation factors in **Figure IV-7** were used to apportion the Fairgrounds allocation of costs in **Figure IV-8** and to apportion the City customers' allocation of costs in **Figure IV-9**. **Figure IV-7** includes the demand service level factors previously derived in **Figure IV-6**, in addition to Customer Service and Composite allocations. The Customer Service factors are either 100% customer account or 100% capacity allocations. The CIP Composite and O&M Composite allocations are based on the subtotals of the O&M and capital costs that were directly allocated to either the demand or customer service categories.

**Figure IV-7. Cost-of-Service Allocation Factors**

System-Wide Cost Allocation Factors	Demand Services			Customer Services		Total
	Average Day	Maximum Day	Maximum Hour	Accounts	Capacity	
<u>Demand Services</u>						
Base Day	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Max Day	65.9%	34.1%	0.0%	0.0%	0.0%	100.0%
Max Hour	43.9%	22.7%	33.3%	0.0%	0.0%	100.0%
<u>Customer Services</u>						
Capacity	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Accounts	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
<u>Composite Allocations</u>						
City O&M Composite	54.7%	3.3%	0.0%	0.0%	42.0%	100.0%
CIP Composite	43.2%	19.0%	13.3%	19.4%	5.1%	100.0%
FG O&M Composite	39.8%	5.3%	0.0%	0.0%	54.9%	100.0%

**Figure IV-8. Fairgrounds Cost-of-Service Allocations**

	Fairgrounds Rev. Req't FY 2024-25	Allocation Factor	Commodity Charge			Service Charge	
			Average Day	Maximum Day	Maximum Hour	Accounts	Capacity
<b>O&amp;M Expenses</b>							
Administrative Personnel	\$90,334	Capacity	\$0	\$0	\$0	\$0	\$90,334
Operations Personnel	\$132,901	Capacity	\$0	\$0	\$0	\$0	\$132,901
O&M - Tools, Supplies, Insurance	\$120,959	Capacity	\$0	\$0	\$0	\$0	\$120,959
O&M - Admin Expenses	\$52,231	Capacity	\$0	\$0	\$0	\$0	\$52,231
O&M Variable	\$11,317	Capacity	\$0	\$0	\$0	\$0	\$11,317
Contractual Services	\$19,541	Capacity	\$0	\$0	\$0	\$0	\$19,541
Water Supply	\$229,638	Base Day	\$229,638	\$0	\$0	\$0	\$0
Water Treatment	\$121,912	Max Day	\$80,323	\$41,590	\$0	\$0	\$0
Total Allocable O&M	\$778,833		\$309,960	\$41,590	\$0	\$0	\$427,284
<i>Fairgrounds O&amp;M Composite</i>		<i>FG O&amp;M Composite</i>	39.8%	5.3%	0.0%	0.0%	54.9%
<b>Capital Outlay</b>	\$10,428	Capacity	\$0	\$0	\$0	\$0	\$10,428
<b>Capital Expenses (PAYGo)</b>	\$44,785	CIP Composite	\$19,357	\$8,493	\$5,970	\$8,691	\$2,273
<b>Subtotal - O&amp;M and Capital</b>	\$834,046		\$329,318	\$50,082	\$5,970	\$8,691	\$439,985
		<i>Expense Composite</i>	39.5%	6.0%	0.7%	1.0%	52.8%
<b>Non-Operating Revenue</b>	(\$13,570)	FG O&M Composite	(\$5,401)	(\$725)	\$0	\$0	(\$7,445)
<b>Transfers to/(from) Reserves</b>	\$30,185	FG O&M Composite	\$12,013	\$1,612	\$0	\$0	\$16,560
<b>Total Revenue Requirement</b>	\$850,661		\$335,930	\$50,970	\$5,970	\$8,691	\$449,100
						<b>\$392,870</b>	<b>\$8,691</b>
						% of total revenue requirement	<b>46.2%</b>
						<i>Voluemetric Charge COS</i>	<i>Service Charge COS</i>
							<b>53.8%</b>

Source: Fairgrounds revenue requirement from Figure IV-1.

**Figure IV-9. City Customers Cost-of-Service Allocations**

	City		Commodity Charge			Service Charge	
	Rev. Req't FY 2024-25	Allocation Factor	Average Day	Maximum Day	Maximum Hour	Accounts	Capacity
<b>O&amp;M Expenses</b>							
Administrative Personnel	\$251,323	Capacity	\$0	\$0	\$0	\$0	\$251,323
Operations Personnel	\$369,751	Capacity	\$0	\$0	\$0	\$0	\$369,751
O&M - Tools, Supplies, Insurance	\$185,141	Capacity	\$0	\$0	\$0	\$0	\$185,141
O&M - Admin Expenses	\$490,729	Capacity	\$0	\$0	\$0	\$0	\$490,729
O&M Variable	\$17,323	Capacity	\$0	\$0	\$0	\$0	\$17,323
Contractual Services	\$142,309	Capacity	\$0	\$0	\$0	\$0	\$142,309
Water Supply	\$1,672,402	Base Day	\$1,672,402	\$0	\$0	\$0	\$0
Water Treatment	\$339,178	Max Day	\$223,470	\$115,708	\$0	\$0	\$0
<b>Total Allocable O&amp;M</b>	<b>\$3,468,157</b>		<b>\$1,895,872</b>	<b>\$115,708</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,456,576</b>
	<i>City O&amp;M Composite</i>		<i>54.7%</i>	<i>3.3%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>42.0%</i>
<b>Capital Outlay</b>	\$15,962	Capacity	\$0	\$0	\$0	\$0	\$15,962
<b>Capital Expenses (PAYGo)</b>	\$420,766	CIP Composite	\$181,868	\$79,794	\$56,091	\$81,659	\$21,354
<b>Subtotal - O&amp;M and Capital</b>	<b>\$3,904,884</b>		<b>\$2,077,740</b>	<b>\$195,502</b>	<b>\$56,091</b>	<b>\$81,659</b>	<b>\$1,493,892</b>
	<i>Expense Composite</i>		<i>53.2%</i>	<i>5.0%</i>	<i>1.4%</i>	<i>2.1%</i>	<i>38.3%</i>
<b>Non-Operating Revenue</b>	<b>(\$60,430)</b>	City O&M Composite	<b>(\$33,034)</b>	<b>(\$2,016)</b>	\$0	\$0	<b>(\$25,380)</b>
<b>Transfers to/(from) Reserves</b>	\$134,416	Base Day	\$134,416	\$0	\$0	\$0	\$0
<b>Total Revenue Requirement</b>	<b>\$3,978,871</b>		<b>\$2,179,122</b>	<b>\$193,486</b>	<b>\$56,091</b>	<b>\$81,659</b>	<b>\$1,468,513</b>
	0.0%				<b>\$2,428,699</b>	<b>\$81,659</b>	<b>\$1,468,513</b>
			% of total revenue requirement		<b>61.0%</b>		<b>39.0%</b>
					<i>Voluemtric Charge COS</i>		<i>Service Charge COS</i>

Source: City customers revenue requirement from Figure IV-1.

The expenses that are allocated to the Demand Service Levels are recovered from the City's Commodity Charges. Further, the allocations to individual customer classes are proportioned in **Figure IV-10** to each customer class's water demand levels in each category of service. For example, the Single Family Residential class is allocated 58.76% of the Average Day costs based on its share of 58.76% of the Average Day flow (570 HCF of the total flow of 971 HCF).

**Figure IV-10. Customer Class Cost-of-Service Allocations for Demand Service Levels**

City	Average	Max	Max	
Consumption Charge Cost of Service	Day	Day	Hour	Total
<b>Revenue Requirement Categories</b>				
O&M Expenses	\$1,895,872	\$115,708	\$0	\$2,011,580
Capital Outlay	\$0	\$0	\$0	\$0
Capital Expenses (PayGo)	\$181,868	\$79,794	\$56,091	\$317,753
Non-Operating Revenue	(\$33,034)	(\$2,016)	\$0	(\$35,050)
Transfers to/(from) Reserves	\$134,416	\$0	\$0	\$134,416
<b>Total Consumption Charge COS</b>	<b>\$2,179,122</b>	<b>\$193,486</b>	<b>\$56,091</b>	<b>\$2,428,699</b>
<b>Units of Service (hcf)</b>				
Single Family Residential	570	713	1,070	
Multi Family Residential	145	181	271	
Commercial	116	142	213	
Irrigation	139	252	378	
	971	1,288	1,932	
<b>Proportional Allocation Factors</b>				
Single Family Residential	58.76%	55.36%	55.36%	
Multi Family Residential	14.92%	14.03%	14.03%	
Commercial	11.95%	11.02%	11.02%	
Irrigation	14.36%	19.59%	19.59%	
	100.00%	100.00%	100.00%	
<b>Revenue Requirement Allocations</b>				
Single Family Residential	\$1,280,520	\$107,114	\$31,052	\$1,418,687
Multi Family Residential	\$325,220	\$27,147	\$7,870	\$360,237
Commercial	\$260,398	\$21,329	\$6,183	\$287,910
Irrigation	\$312,984	\$37,895	\$10,986	\$361,865
	\$2,179,122	\$193,486	\$56,091	\$2,428,699

Figure IV-11 summarizes the small shift in the Service Charge revenues to the Commodity Charge revenues to align with the cost-of-service. The exercise performed indicates the proportion of Service Charge revenues will decrease from 43% to 42% of total rate revenues, while the share of Commodity Charge revenues will increase from 56% to 57%.

Rates need to be designed to generate each class’s share of the revenue requirement related to volumetric charges. The next section provides the recommended modifications to the Service Charge and Commodity Charges needed to meet the cost of service.

**Figure IV-11. Cost-of-Service Revenue Summary**

Components of Rate Structure	Revenue at		Cost of Service		Difference	
	Current Rates FY 2023-24		Proposed Rates FY 2024-25		COS Minus Current	
<b>Single-Family Residential</b>						
Commodity Revenue	\$1,373,266	58%	\$1,418,687	59%	\$45,421	3.3%
Service Charge Revenue	\$1,010,762	42%	\$997,352	41%	(\$13,411)	-1.3%
<b>Subtotal - SFR</b>	<b>\$2,384,028</b>	<b>100%</b>	<b>\$2,416,039</b>	<b>100%</b>	<b>\$32,010</b>	<b>1.3%</b>
<b>Multi-Family Residential</b>						
Commodity Revenue	\$325,737	58%	\$360,237	61%	\$34,500	10.6%
Service Charge Revenue	\$240,067	42%	\$230,007	39%	(\$10,060)	-4.2%
<b>Subtotal - MFR</b>	<b>\$565,804</b>	<b>100%</b>	<b>\$590,244</b>	<b>100%</b>	<b>\$24,439</b>	<b>4.3%</b>
<b>Commercial</b>						
Commodity Revenue	\$298,277	63%	\$287,910	63%	(\$10,367)	-3.5%
Service Charge Revenue	\$178,794	37%	\$170,196	37%	(\$8,598)	-4.8%
<b>Subtotal - Commercial</b>	<b>\$477,071</b>	<b>100%</b>	<b>\$458,107</b>	<b>100%</b>	<b>(\$18,965)</b>	<b>-4.0%</b>
<b>Irrigation</b>						
Commodity Revenue	\$355,844	69%	\$361,865	70%	\$6,021	1.7%
Service Charge Revenue	\$158,462	31%	\$152,617	30%	(\$5,845)	-3.7%
<b>Subtotal - Irrigation</b>	<b>\$514,306</b>	<b>100%</b>	<b>\$514,482</b>	<b>100%</b>	<b>\$176</b>	<b>0.0%</b>
<b>Fairgrounds</b>						
Commodity Revenue	\$339,848	45%	\$392,870	46%	\$53,021	15.6%
Service Charge Revenue	\$407,808	55%	\$457,792	54%	\$49,984	12.3%
<b>Subtotal - Fairgrounds</b>	<b>\$747,656</b>	<b>100%</b>	<b>\$850,661</b>	<b>100%</b>	<b>\$103,005</b>	<b>13.8%</b>
<b>Total</b>						
Commodity Revenue	\$2,692,972	57%	\$2,821,569	58%	\$128,596	4.8%
Service Charge Revenue	\$1,995,894	43%	\$2,007,963	42%	\$12,070	0.6%
<b>Total</b>	<b>\$4,688,866</b>	<b>100%</b>	<b>\$4,829,532</b>	<b>100%</b>	<b>\$140,666</b>	<b>3.0%</b>

Note: FY 2023-24 revenues assume 12 months of rates implemented on January 1, 2024.

## V. WATER RATE DESIGN

The City has historically charged water customers the combination of a fixed Service Charge and a variable Commodity Charge based on metered water use. As previously discussed, this is a common set of charges that is prevalent throughout the water industry. This chapter explains the derivation of the Commodity and Service Charge rates that reflect the projected cost of service.

### CURRENT RATES

The City’s current water rate structure is composed of two components: Service Charges and Commodity Charges.

#### Current Service Charges

The Service Charges are fixed rates that are charged on a fixed rate graduated in proportion to the capacity of the service provided for all customers. All customers are billed on a bi-monthly basis. **Figures V-1** summarizes the current Service Charges, which were last increased on January 1, 2024.

**Figure V-1. Current Service Charges**

Bi-Monthly Fixed Service Charges	Current Rates
Meter Size	
5/8"	\$88.04
3/4"	\$132.06
1"	\$220.08
1 1/2"	\$440.16
2"	\$704.24
3"	\$1,408.46
4"	\$2,200.72
Fairgrounds	\$67,968.00

#### Current Commodity Charges

The Commodity Charges are the product of rates per unit of metered water use multiplied times the metered water use during the bi-monthly billing period. Water is metered in “units” of HCF of metered water use, whereby one unit or HCF equals 748 gallons. Commodity Charges are charged to five distinct customer classes, Single Family Residential, Multi-Family Residential, Commercial/Institutional, Irrigation, and Fairgrounds customers.

For Single Family Residential customers, the Commodity Charges consist of two tiers that charge higher rates as the level of consumption increases. For all other customers, the Commodity Charge is a uniform rate per HCF of metered water use. **Figure V-2** reflects all current Commodity Charge rates.

All components of the rate structure were reviewed, including the composition of the customer classes, the structures of the Service Charges, Commodity Charges, and Demand Management Rates.

**Figure V-2. Current Commodity Charges**

Bi-Monthly Commodity Charges	Current Rates (\$/HCF)
Single Family Residential	
Tier 1 (0-20 hcf)	\$6.22
Tier 2 (21+ hcf)	\$7.47
Multi-Family Residential	\$6.41
Commercial/Insitutional	\$6.52
Irrigation	\$6.96
Fairgrounds	\$6.52

## SERVICE CHARGE DESIGN

Service Charges are fixed rates that are billed each billing period to recover the cost of the service functions. The cost-of-service analysis determined how much of the revenue requirement is attributable to the customer service function. The function has two components – customer services (accounts) and customer capacity – each of which is itemized in the cost-of-service analyses in **Figure IV-8** and **Figure IV-9**. Costs attributable to customer services are allocated to customers in proportion to the number of meters. Costs attributable to customer capacity are allocated to customers in proportion to the capacity of their services. The sum of the two components equals the Service Charge rate per connection.

**Figure V-3** lists the units of service corresponding to each of the cost components. Capacity costs associated with the distribution system are apportioned among the connections in proportion to the capacity associated with each connection. Connections are converted to Equivalent Meter Units (EMU’s) to apportion the customer capacity cost component. An EMU represents the number of 5/8-inch meters to which a larger meter is equivalent. For example, a 1-inch meter provides 2.50 times as much capacity as a 5/8-inch meter. The capacity multipliers are based on the meter data provided by the City of the manufacturer’s nominal capacity. There are 3,327 total EMUs. In effect, the 1,869 services of assorted sizes have the equivalent capacity as 3,327 5/8-inch meters. Specifically, there are 1,866 meters providing 3,007 total EMUs of capacity for City customers, excluding the Fairgrounds.

**Figure V-3. Service Charge Units of Service**

Applicable Service Size	Total Meters	Capacity Multiplier	EMUs
	<b>a</b>	<b>c</b>	<b>a * c</b>
5/8" Meters	1,131	1.00	1,131
3/4" Meters	387	1.50	581
1" Meters	250	2.50	625
1.5" Meters	46	5.00	230
2" Meters	49	8.00	392
3" Meters	3	16.00	48
4" Meters	0	25.00	0
<b>City Total</b>	<b>1,866</b>	<b>City Total EMUs</b>	<b>3,007</b>
8" Meters	1	80.00	80
10" Meters	2	120.00	240
<b>Grand Total</b>	<b>1,869</b>	<b>Total EMUs</b>	<b>3,327</b>

Note: Capacity multiplier assumes 5/8" meter = 1 EMU = 20 gallons per minute.

**Figure V-4** derives the unit costs for the customer service and customer capacity cost components for City customers. Each service is allocated \$7.29 per bi-monthly period for the customer service cost component. That amount represents the costs the City incurs to maintain each meter regardless of the capacity of the service (e.g., customer billing, administration overhead). Each service is also allocated \$81.41 per bi-monthly period per EMU. That amount represents a portion of the cost of providing distribution system capacity for each account, and increases based on the capacity of the meter.

**Figure V-4. Service Charge Unit Costs**

FY 2024-25 City Service Expenses	Customer Service Component	Customer Capacity Component
Cost Allocation	\$81,659	\$1,468,513
<b>Units of Service</b>	<b>1,866</b>	<b>3,007</b>
	Meters	EMUs
Annual Unit Cost	\$43.76	\$488.45
<b>Bi-Monthly Unit Cost</b>	<b>\$7.29</b>	<b>\$81.41</b>
	per Meter	per EMU

**Figure V-5** combines the customer service and capacity components into a single Service Charge for each size service and compares proposed rates to the current rates.

**Figure V-5. Proposed Bi-Monthly Service Charge Rates – FY 2024-25**

Service Size	Service Component	Capacity Component			COS Service Charges	Total	
	(\$/bi-mo.)	\$/EMU	Capacity Multiplier	Capacity Total	(\$/bi-mo.)	Current Charge	\$ Difference
	a	b	c	d = b * c	e = a + d	f	g = e - f
5/8" Meters	\$7.29	\$81.41	1.00	\$81.41	<b>\$88.70</b>	\$88.04	\$0.66
3/4" Meters	\$7.29	\$81.41	1.50	\$122.11	<b>\$129.41</b>	\$132.06	(\$2.65)
1" Meters	\$7.29	\$81.41	2.50	\$203.52	<b>\$210.81</b>	\$220.08	(\$9.27)
1 1/2" Meters	\$7.29	\$81.41	5.00	\$407.04	<b>\$414.33</b>	\$440.16	(\$25.83)
2" Meters	\$7.29	\$81.41	8.00	\$651.26	<b>\$658.55</b>	\$704.24	(\$45.69)
3" Meters	\$7.29	\$81.41	16.00	\$1,302.52	<b>\$1,309.82</b>	\$1,408.46	(\$98.64)
4" Meters	\$7.29	\$81.41	25.00	\$2,035.19	<b>\$2,042.49</b>	\$2,200.72	(\$158.23)

Note: Rounding differences caused by stored values in electronic models may exist.

With the proposed rates, all meter sizes would see an increase. The increase in rates reflects the 3.2% increase to service charge revenues to be collected from Single-Family Residential, Multi-Family Residential, Commercial, and Irrigation customers, shown in **Figure IV-11**. The proposed rates reflect a change from the previous methodology by which Service Charges were calculated only based on the capacity ratio of each meter. In contrast, the proposed rates include a service component assessed equally to all City customers, regardless of meter size to recover service-related costs and a capacity component to recover capacity-related costs.

**Figure V-6** shows the proposed five-year schedule of Service Charge rates. The Fairgrounds Service Charge for FY 2024-25 is result of dividing the Service Charge cost allocation in **Figure IV-8**, \$457,792, into equal bi-monthly increments to generate the charge shown below.

**Figure V-6. Current and Proposed Service Charge Rates**

Bi-Monthly Fixed Service Charges	Current Rates	Proposed Rates				
		FY 2024-25 eff. 7/1/2024	FY 2025-26 eff. 7/1/2025	FY 2026-27 eff. 7/1/2026	FY 2027-28 eff. 7/1/2027	FY 2028-29 eff. 7/1/2028
	rate increase:	varies	2%	2%	2%	2%
Meter Size						
5/8"	\$88.04	\$88.70	\$90.47	\$92.28	\$94.13	\$96.01
3/4"	\$132.06	\$129.41	\$132.00	\$134.64	\$137.33	\$140.08
1"	\$220.08	\$210.81	\$215.03	\$219.33	\$223.72	\$228.19
1 1/2"	\$440.16	\$414.33	\$422.62	\$431.07	\$439.69	\$448.48
2"	\$704.24	\$658.55	\$671.72	\$685.15	\$698.85	\$712.83
3"	\$1,408.46	\$1,309.82	\$1,336.02	\$1,362.74	\$1,389.99	\$1,417.79
4"	\$2,200.72	\$2,042.49	\$2,083.34	\$2,125.01	\$2,167.51	\$2,210.86
Fairgrounds	\$67,968.00	\$76,298.59	\$77,824.56	\$79,381.05	\$80,968.67	\$82,588.04

## WATER USE CHARGE DESIGN

As previously discussed, the City's Commodity Charges are different for its customer classes. Single Family Commodity charges are tiered, which is appropriate because of the variation in demands within a comparatively homogenous class of customers. The tiered rate structure corresponds to levels of service that range from low, essential needs to high, discretionary needs. The rate for each tier is set to reflect the

cost of providing for the amount of peaking that is required. Calculating the tiered rates for residential customers needs to ensure that the rates reflect the cost of providing service across the range of tiers.

All other customers pay uniform Commodity charges, which is appropriate because these customers each have varying levels of demand and less predictable peaking patterns of demand.

### Single Family Residential Commodity Charges

The City’s Single Family Residential customers are currently charged a two-tier increasing block rate structure.<sup>4</sup> Tier quantity and the location of the breakpoint between tiers results from evaluating the City’s historical water consumption. The breakpoint was calculated using the total Single Family Residential daily demand consumption divided by the number of accounts, as shown in **Figure V-7**.

**Figure V-7. Breakpoint Locations – Single Family Residential**

Customer (hcf per month)	Average	Maximum	Maximum
	Day	Day	Hour
<b>Single-Family Residential</b>			
hcf per day	570	713	1,070
hcf per month	17,112	21,392	
# of Accounts	1,558	1,558	
Average flow per Acct (hcf/mo)	11	14	15+
<b>Average flow per Acct (hcf/bi-mo)</b>	<b>22</b>	<b>28</b>	<b>29+</b>

The Average Day breakpoint of 22 HCF per bi-monthly period was set as the breakpoint between the first and second tier to delineate peaking and average levels of demand, following the City’s current practice.

With breakpoints that correspond to the service levels in the cost-of-service analysis, it is possible to calculate the rate per tier by dividing the cost of service per tier by the water demand in each tier. The resulting rates represent the *unit cost* of service for each tier.<sup>5</sup>

**Figure V-8** shows the calculations of the incremental cost per tier. The costs in each column were determined in **Figure IV-10**, such that the allocation of \$1,418,687 for Single-Family Residential is distributed to the three demand service levels. To maintain the two-tier structure, the Maximum Day and Maximum Hour service level volumes and allocations were added together. The unit costs are the result of the cost of service at each tiered demand service level divided by the level of respective demand. The incremental rates are additive. In other words, demand in Tier 1 only pays the Average Day rate. Demand in Tier 2 pays the Average Day rate plus the Maximum Day and Maximum Hour increments. The bi-monthly rates for Single Family Commodity Charges resulting from the cost-of-service are shown in **Figure V-8**.

<sup>4</sup> For simplicity, we use the term “tiered rates” synonymously with “increasing block rates.” “Inclining block rates” is commonly used for “increasing block rates.” However, because an incline can slope both up or down, it is ambiguous in this context and therefore is not used in this study.

<sup>5</sup> In this report, “rates” and “unit costs” are synonymous.

**Figure V-8. Calculation of Proposed Commodity Charge Rates – Single Family Residential**

Single Family Residential COS per Unit	Average Day	Maximum Day	Maximum Hour	Maximum Total
Cost of Service - Commodity	\$1,280,520	\$107,114	\$31,052	\$1,418,687
COS Revised	<u>Tier 1</u> \$1,280,520	<u>Tier 2</u> \$138,166		
Monthly Demand per Tier				
Average Day - Tier 1 (0 - 11 hcf)	80,760			
Max Day - Tier 2 (12 - 14 hcf)	16,743	16,743		
Max Hour - Tier 3 (15+ hcf)	107,174	107,174		
	<u>204,677</u>	<u>123,917</u>		
Cost-of-Service per Unit (hcf)	\$6.26	\$1.11		
<b>Bi-Monthly Tiers</b>				
<b>Tier 1 (0 - 22 hcf)</b>	<b>\$6.26</b>			
<b>Tier 2 (23+ hcf)</b>	<b>\$7.37</b>			

Note: Rounding differences caused by stored values in electronic models may exist

### Uniform Commodity Charges

We recommend the City apply the same uniform rate structure for all Multi-Family, Commercial/Institutional, Irrigation, and Fairgrounds customers. The proposed adjustments for FY 2024-25 are intended to increase the uniform rate to re-align with the cost of service for each customer class. **Figure V-9** derives the uniform Commodity Charge for each class based on their respective share of water demand and the cost allocations derived in **Figure IV-8** for Fairgrounds and **Figure IV-10** for City customers.

**Figure V-9. Calculation of Commercial/Multi Family Uniform Commodity Charges**

Customer Class	Multi-Family	Commercial	Irrigation	Fairgrounds
Cost of Service Commodity Charge	\$360,237	\$287,910	\$361,865	\$392,870
Annual water use (hcf)	52,877	42,338	50,888	48,649
Unit rate per hcf	<u>\$6.81</u>	<u>\$6.80</u>	<u>\$7.11</u>	<u>\$8.08</u>

### Commodity Charges Summary

The five-year schedule of proposed Commodity Charges for Single Family Residential, Multi-Family Residential, Commercial, Irrigation, and Fairgrounds customers is shown in **Figure V-10**. After rates are revised to meet the cost-of-service in FY 2024-25, all rates will increase uniformly by 2% each of the next four fiscal years.

**Figure V-10. Current and Proposed Commodity Charges**

Bi-Monthly Commodity Charges	Current Rates (\$/hcf)	Bi-Monthly Commodity Charges rate increase:	Proposed Rates (\$/hcf)					
			FY 2025-26 eff. 7/1/2024 varies	FY 2026-27 eff. 7/1/2025 2%	FY 2027-28 eff. 7/1/2026 2%	FY 2028-29 eff. 7/1/2027 2%	FY 2029-30 eff. 7/1/2028 3%	
Single Family Residential		Single Family Resid.						
Tier 1 (0-20 hcf)	\$6.22	Tier 1 (0-22 hcf)	\$6.26	\$6.39	\$6.52	\$6.65	\$6.78	
Tier 2 (21+ hcf)	\$7.47	Tier 2 ( 23+ hcf)	\$7.37	\$7.52	\$7.67	\$7.82	\$7.98	
Multi-Family Residential	\$6.41	Multi-Family Resid.	\$6.81	\$6.95	\$7.09	\$7.23	\$7.37	
Commercial/Insitutional	\$6.52	Commercial/Instit.	\$6.80	\$6.94	\$7.08	\$7.22	\$7.36	
Irrigation	\$6.96	Irrigation	\$7.11	\$7.25	\$7.40	\$7.55	\$7.70	
Fairgrounds	\$6.52	Fairgrounds	\$8.08	\$8.24	\$8.40	\$8.57	\$8.74	

### Drought Rate Factors

During prolonged shortages, customers are required to conserve or even ration their water use. The magnitude of the water savings can significantly reduce water sales revenue from commodity charges.

Currently the City has Demand Management Rates in place which go into effect during declared water shortages. The rates apply a surcharge to both the Service Charges and Commodity Charges. The Demand Management Rates applied to Service Charges are graduated by meter size. The surcharge applied to all Commodity Charges is a uniform rate per HCF, which is the same for all customer classes.

HF&H recommends a set of drought rate factors that would be applied solely to the Commodity Charges and implemented during declared water shortage stages in accordance with the City’s Water Shortage Contingency Plan (WSCP), state mandated reductions in the level of potable water usage, or other natural disaster or event that results in a water shortage and an unforeseen drop in water demand that requires reductions in water use.

The drought rate factors were developed to reflect variations in the level of outdoor and discretionary water use of each customer class. Customer classes with more discretionary water use for landscaping and irrigation activities would be required to reduce demand more during periods of shortage. As a result, customer classes with larger discretionary water use habits, and a greater ability to conserve water, would see larger increases via the proposed drought rate factors. It is proposed that the shortage reductions would vary by customer class, based on their respective abilities to conserve water. A customer class’s ability to conserve is directly related to the proportion of their current water use which is highly discretionary and considered a non-beneficial use (e.g., water used for landscape purposes, “outdoor” water use) and less discretionary use for health and safety (e.g., water used for cooking, cleaning, bathing, “indoor” water use). Each class’s reduction was determined by reducing their proportion of water that is for “outdoor” water use (seasonal water use) 3.0 times more than their “indoor” (average winter water use) water use. At Stage 6, it is assumed all Irrigation use would be suspended. A three-year analysis of 2020-2022 water use data informed the proposed factors associated with each water conservation stage.

The drought rate factors would be applied to each of the Commodity Charges. The higher rates will generate the revenue which was lost due to conservation and has been calculated to keep the City revenue neutral so they can cover the portion of fixed costs paid through the consumption rate revenues.

**Analysis**

Based on CY 2020-2022 metered water use data, the resulting reductions are summarized in **Figure V-11**. The reductions shown represent the customer class reductions required to achieve the reduction associated with each shortage stage. The customer class reductions are greater or less than the overall average for each stage depending on how much of each class’s water demand is seasonal.

**Figure V-11. WSCP Required Water Use Reductions by Class**

Class	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
	Shortage Up to					
	(10% Reduction)	(20% Reduction)	(30% Reduction)	(40% Reduction)	(50% Reduction)	(56% Reduction)
Single Family	8%	16%	24%	31%	39%	43%
Multi-Family	9%	18%	27%	37%	46%	51%
Commercial	8%	16%	24%	32%	40%	43%
Irrigation	17%	34%	52%	69%	86%	100%
Fairgrounds	14%	29%	43%	58%	72%	83%

**Figure V-12A** and **Figure V-12B** show the calculation of each customer class’s respective shortage reduction required during each shortage stage. The annual demand for each class is separated into indoor and outdoor water use where indoor water use is defined as the minimum average monthly period multiplied times 12 to get the annualized indoor water use over 12 months. Subtracting indoor water use from the total annual water use determines the seasonal outdoor water use. March represented the lowest period of use for the City’s customers.

The percentage reductions for each customer class required to achieve the overall reduction for a particular stage are derived so that outdoor water use is reduced 3.0 times indoor water use. In a Stage 1 shortage, a 5.7% reduction in indoor water use and a 17.2% reduction in outdoor water use are required to achieve an overall 10% reduction. Applying the same reduction factors to each class results in different overall reductions for the class based on the relative proportions of their indoor and outdoor water use. In each stage reduction each customer class is required to conserve different percentages. This is because of the variation in water use patterns among the customer classes. Note, the larger reduction for Multi-Family versus Single Family customers is due to the inclusion of Multi-Family Residential accounts with irrigation. These customers are identified separately by the City but their potable irrigation water is recorded on the same meter as domestic use.

**Figure V-12A. Calculation of 10-30% Shortage Reductions by Stage and Customer Class**

10% Shortage Level 1 Reduction (up to 10% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	5.7%	17.2%	9,753	6,536	16,288	8%
Multi-Family	52,877	37,220	15,657	5.7%	17.2%	2,133	2,692	4,825	9%
Commercial	42,338	34,252	8,086	5.7%	17.2%	1,963	1,390	3,353	8%
Irrigation	50,888	-	50,888	0.0%	17.2%	-	8,749	8,749	17%
Fairgrounds	48,649	11,886	36,763	5.7%	17.2%	681	6,320	7,002	14%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>14,530</b>	<b>25,687</b>	<b>40,216</b>	<b>10.0%</b>
20% Shortage Level 2 Reduction (up to 20% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	11.5%	34.4%	19,505	13,071	32,577	16%
Multi-Family	52,877	37,220	15,657	11.5%	34.4%	4,266	5,384	9,650	18%
Commercial	42,338	34,252	8,086	11.5%	34.4%	3,926	2,780	6,706	16%
Irrigation	50,888	-	50,888	0.0%	34.4%	-	17,497	17,497	34%
Fairgrounds	48,649	11,886	36,763	11.5%	34.4%	1,362	12,641	14,003	29%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>29,060</b>	<b>51,373</b>	<b>80,433</b>	<b>20.0%</b>
30% Shortage Level 3 Reduction (up to 30% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	17.3%	51.8%	29,358	19,674	49,032	24%
Multi-Family	52,877	37,220	15,657	17.3%	51.8%	6,421	8,103	14,524	27%
Commercial	42,338	34,252	8,086	17.3%	51.8%	5,909	4,185	10,093	24%
Irrigation	50,888	-	50,888	0.0%	51.8%	-	26,336	26,336	52%
Fairgrounds	48,649	11,886	36,763	17.3%	51.8%	2,050	19,026	21,076	43%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>43,738</b>	<b>77,323</b>	<b>121,062</b>	<b>30.0%</b>

The service charges are fixed and generate 41.6% of the total rate revenue regardless of shortages. The remaining 58.4% of revenue is generated by the volumetric rates. In deriving the Drought Rate Factors, the factors will only apply to the volumetric rates because short-term reductions in water use correlate with short-term fluctuations in variable costs. Conversely, short-term reductions in water use would not affect fixed costs, or costs that would require a long-term change in customer demand (e.g. population decline) to be affected. Each customer class has its own set of Drought Rate Factors corresponding to its reduction in each stage of shortage.

The formula for the Drought Rate Factors comprises conservation and variable cost components. The conservation component adjusts to account for the required reduction in water demand. A portion, not all, of the costs (e.g., power, water purchases) covered by Commodity Charge rates are variable and will not be incurred when less water is used during short-term demand reductions. To ensure the Drought Rate Factors do not result in excess revenue collection, the variable cost component of the calculation reduces the factor to account for the portion of variable costs, which is covered by the quantity charges, and will not be incurred when demand decreases.

**Figure V-12B. Calculation of 40-56% Shortage Reductions by Stage and Customer Class**

40% Shortage Level 4 Reduction (up to 40% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	22.9%	68.8%	39,040	26,162	65,202	31%
Multi-Family	52,877	37,220	15,657	22.9%	68.8%	8,538	10,775	19,313	37%
Commercial	42,338	34,252	8,086	22.9%	68.8%	7,857	5,565	13,422	32%
Irrigation	50,888	-	50,888	0.0%	68.8%	-	35,021	35,021	69%
Fairgrounds	48,649	11,886	36,763	22.9%	68.8%	2,727	25,300	28,027	58%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>58,162</b>	<b>102,823</b>	<b>160,985</b>	<b>40.0%</b>
50% Shortage Level 5 Reduction (up to 50% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	28.7%	86.1%	48,843	32,731	81,573	39%
Multi-Family	52,877	37,220	15,657	28.7%	86.1%	10,682	13,481	24,163	46%
Commercial	42,338	34,252	8,086	28.7%	86.1%	9,830	6,962	16,792	40%
Irrigation	50,888	-	50,888	0.0%	86.1%	-	43,814	43,814	86%
Fairgrounds	48,649	11,886	36,763	28.7%	86.1%	3,411	31,653	35,064	72%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>72,766</b>	<b>128,641</b>	<b>201,407</b>	<b>50.0%</b>
56% Shortage Level 6 Reduction (up to 56% reduction)									
Class	Baseline Annual Demand (HCF)			Reductions					
	Total	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Total	Total
Single Family	208,198	170,183	38,015	30.0%	100.0%	51,055	38,015	89,070	43%
Multi-Family	52,877	37,220	15,657	30.0%	100.0%	11,166	15,657	26,823	51%
Commercial	42,338	34,252	8,086	30.0%	100.0%	10,276	8,086	18,361	43%
Irrigation	50,888	-	50,888	0.0%	100.0%	-	50,888	50,888	100%
Fairgrounds	48,649	11,886	36,763	30.0%	100.0%	3,566	36,763	40,329	83%
<b>Total</b>	<b>402,949</b>	<b>253,541</b>	<b>149,408</b>			<b>76,062</b>	<b>149,408</b>	<b>225,471</b>	<b>56.0%</b>

The Drought Rate Factors are the product of the conservation component multiplied by the variable cost component. Each component is defined as follows:

**Drought Rate Factor** = Conservation Component multiplied times Variable Cost Component, where

**Conservation Component** =  $1/(1 - a)$ , where

$a$  = required percentage reduction, which varies by customer class.

**Variable Cost Component** =  $(b - (c * a))/b$ , where

$a$  = required percentage reduction, which varies by customer class.

$b$  = percentage of revenue from total service charges and volumetric rates for all customer classes that is attributable to volumetric rates, an amount that is 58.4% based on the cost-of-service analysis.

$c$  = percentage of total revenue requirement covered by service charges and volumetric rates that varies based on fluctuations in demand, an amount that is currently 49.5%.<sup>6</sup>

The following example illustrates how the formula determined the 1.028 Drought Rate Factor in **Figure V-13** for the Single Family Residential customer class in a Stage 2 shortage in which an overall conservation goal of 20% is required.

**Conservation Component:**  $1/(1 - a) = 1/(1 - 0.15647) = 1.18549$ , where

$a$  = required percentage reduction is 15.647% for the Residential customer class (see **Figure V-13** where a rounded 16% is shown).

**Variable Cost Component:**  $(b - (c * a))/b = (0.58423 - (0.49524 * 0.15647))/0.58423 = 0.867365$ , where

$a$  = 15.647% reduction for Residential customers in a Stage 2 shortage.

$b$  = 58.423% of total rate revenue is generated by quantity charges; and

$c$  = 49.524% of revenue requirement is related to variable costs.

**Drought Rate Factor** =  $1.18549 * 0.867365 = 1.028$ , as it is shown in **Figure V-13** (Single Family, Stage 2 Shortage).

The Single Family Residential Water Use Charge rates in effect under non-shortage conditions would be multiplied by 1.028 (or an additional 2.8%) to derive the Commodity Charge rates to be in effect during a Stage 2 water shortage. **Figure V-13** shows the Drought Rate Factors that would be applied to the rates that would normally be in effect absent declared shortages. The Stage 6 value for Irrigation customers is shown as "n/a" because all Irrigation water use is assumed to be suspended at this shortage stage. Hence, a factor would be applied.

**Figure V-13. Drought Rate Factors by WSCP-Defined Shortage Stage**

Class	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
	Shortage	Shortage	Shortage	Shortage	Shortage	Shortage
	Up to					
	(10% Reduction)	(20% Reduction)	(30% Reduction)	(40% Reduction)	(50% Reduction)	(56% Reduction)
Single Family	1.013	1.028	1.047	1.069	1.098	1.114
Multi-Family	1.015	1.034	1.058	1.088	1.128	1.157
Commercial	1.013	1.029	1.048	1.071	1.100	1.117
Irrigation	1.032	1.080	1.163	1.336	1.944	n/a
Farigrounds	1.026	1.062	1.116	1.207	1.393	1.738

<sup>6</sup> The cost of SFPUC water is the largest example of a variable cost, which varies with water demand.

**Implementation**

The recommended Drought Rate Factors in **Table V-13** are implemented only during periods of declared water shortage emergencies. Once a mandatory shortage is declared, the City Council has discretion to enact Drought Rate Factors corresponding to the level of shortage reduction implemented using the factors provided in **Table V-13** or calculated using the formula for a specific level of reduction. The adjustments can go in either direction from stage to stage depending on whether the level of reduction is increasing or decreasing during the shortage. At least 30 days prior to making the adjustment, notice must be provided to rate payers, which can be included in the customer’s bills. No protest process is required. These adjustments would be temporary, and rates would return to the regular schedule at the conclusion of the water shortage emergency.

The Drought Rate Factors could be applied when the City requires its customers to reduce water use. At such times, the Drought Rate Factors would be multiplied times the Commodity Charges proposed in the current rate study. The City can choose to enact Drought Rate Factors when the water emergency demand levels will fall short of the respective year of modeled demand.

The Drought Rate Factors only apply to the tiered and uniform Commodity Charges and not to Service Charge rates, which are independent of water demand. The Drought Rate Factors are multiplied times the non-water shortage, normal-year Water Use Charge rates proposed in this report. The Drought Rate Factors would be adopted as part of the rate notification in the Proposition 218 implementation process. Once adopted, the City could apply the Drought Rate Factors as needed during conservation stages.

As a further example, **Figure V-14** has Commodity Charge rates after applying the Drought Rate Factors to the rates proposed for FY 2024-25. The table shows the proposed Drought Rate Factors followed by the rates that correspond to each stage of conservation.

**Figure V-14. Sample Rates With Drought Rate Factors – FY 2024-25 Rates**

Water Emergency Shortage Stage	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	
Single Family Drought Rate Factors	1.013	1.028	1.047	1.069	1.098	1.114	
Multi-Family Drought Rate Factors	1.015	1.034	1.058	1.088	1.128	1.157	
Commercial Drought Rate Factors	1.013	1.029	1.048	1.071	1.100	1.117	
Irrigation Drought Rate Factors	1.032	1.080	1.163	1.336	1.944	N/A	
Fairgrounds Drought Rate Factors	1.026	1.062	1.116	1.207	1.393	1.738	
Sample FY 2024-25 Rates	Sample Rates with Drought Rate Factors Applicable to % Reductions						
<b>Single Family Residential</b>							
Tier 1 (0-22 hcf)	\$6.26	\$6.34	\$6.44	\$6.55	\$6.69	\$6.87	\$6.97
Tier 2 ( 23+ hcf)	\$7.37	\$7.47	\$7.58	\$7.72	\$7.88	\$8.09	\$8.21
<b>Multi-Family Residential</b>							
Commercial/Institutional	\$6.81	\$6.91	\$7.04	\$7.20	\$7.41	\$7.68	\$7.88
<b>Irrigation</b>							
Irrigation	\$7.11	\$7.33	\$7.68	\$8.27	\$9.50	\$13.82	N/A
<b>Fairgrounds</b>							
Fairgrounds	\$8.08	\$8.29	\$8.58	\$9.02	\$9.75	\$11.26	\$14.05

Note that if reductions in water use are higher or lower than the specified stages set in the WSCP due to state mandated reductions in the level of potable water usage, or other natural disaster or event that results in a water shortage and an unforeseen drop in water demand, the Drought Rate Factors will be adjusted in accordance with the formula above.

## VI. COMPARISON TO WATER AGENCIES

### Neighboring Agency Comparison

The Finance Committee (January 2024) asked to take a closer look at comparing water rates to similar agencies. **Figure VI-1** compares single-family customer water rates of smaller coastal cities in the San Diego region, assuming water use totaling 22 HCF in a bi-monthly period, the average bi-monthly water use of the city’s single family residential customers. The current and recommended FY 2024-25 rates for Del Mar are included.

**Figure VI-1. Neighboring Agency Water Bi-Monthly Bill Comparison**

Water Agency	Fixed Charge	Volumetric Charge	Total Water Bill	Water Treatment	Population Served	Miles of Water Mains	Population Per Mile
Sweetwater Authority (National City)	\$26.09	\$140.06	<b>\$166.15</b>	Purdue WTP	200,000	388	515
Olivenhain MWD (Solana Beach, 40% Encinitas)	\$72.62	\$103.94	<b>\$176.56</b>	OMWD	87,000	466	187
San Dieguito WD (60% Encinitas)	\$72.68	\$110.26	<b>\$184.94</b>	Badger WFD	37,856	168	225
Sante Fe Irrigation District (Fairbanks Ranch, Rancho Santa Fe, Solana Beach)	\$98.51	\$110.44	<b>\$208.95</b>	Badger WFD	19,800	150	132
Del Mar (Current)	\$88.04	\$139.34	<b>\$227.38</b>	City of SD	3,830	27	142

Note: All agencies compared received water via SDCWA.

Some factors that are likely to contribute to the City having the highest water rates are as follows:

1. All agencies aside from the City have their own water filtration plants, providing them with more control over their water treatment costs. In contrast, Del Mar must rely on the City of San Diego to treat the water at the Miramar filtration plant before it is pumped to Del Mar for its use.
2. A population per miles of water mains ratio was developed to compare each agency. The City has the lowest ratio. Therefore 3,830 people must pay for the maintenance and eventual replacement of 27 miles of water mains. In other words, the City population is less concentrated along the miles of water mains maintained compared to other agencies and the costs of water service are spread over the smallest population of agencies compared.

While the City currently has the highest water bills, the variance between the City bill and neighboring agencies should decrease in the future as other agencies increase their rates more rapidly. Based on this study, proposed increases in the next five years will be only 2-3%. In contrast, other agencies are proposing 5% to 10 % per year rate increases in part to address neglected CIP programs needing critical financing. The City has been taken a proactive approach to its CIP program over the years of addressing critical needs without having to suddenly raise rates.

Also, during the proposed rate period, the City is scheduled to investigate an automated meter reading program which may reduce future rate increases. Santa Fe Irrigation District, who installed an automated meter reading system previously, benefits from this infrastructure as their rates are lower within the comparison.

## VII. WASTEWATER REVENUE REQUIREMENTS

A spreadsheet model was developed to derive revenue requirements for a ten-year planning period, FY 2024-25 through FY 2033-34. The revenue requirements represent the costs that must be covered by revenue from rates and other sources. The City’s budget for FY 2024-25 served as the starting point for projecting the City’s expenses and revenues. The escalation factors summarized in **Figure VII-1** were incorporated in the model for projecting expenses and revenues for the duration of the Study Period. For brevity, only the first five years of modeling assumptions are shown. Factors driving these annual increases are discussed in more detail following **Figure VII-2**.

**Figure VII-1. Key Modeling Assumptions**

Assumptions	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
General Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
Salaries and Wages	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Benefits	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Utilities	Per Budget	4.0%	4.0%	4.0%	4.0%	4.0%
Construction Cost Inflation	Per Budget	3.9%	3.4%	3.4%	3.4%	3.4%
Growth in Residential Accounts	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%
Growth in Commercial Accounts	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%
Interest on Fund Balance	1.00%	1.0%	1.0%	1.0%	1.0%	1.0%
Interest on Fund Balance - Debt Reserve	0.41%	0.4%	0.4%	0.4%	0.4%	0.4%
Treatment Costs	Per Budget	5.0%	5.0%	4.0%	4.0%	4.0%

The application of these projections to O&M and capital expenses are summarized graphically in **Figure VII-2** and are described below in more detail.

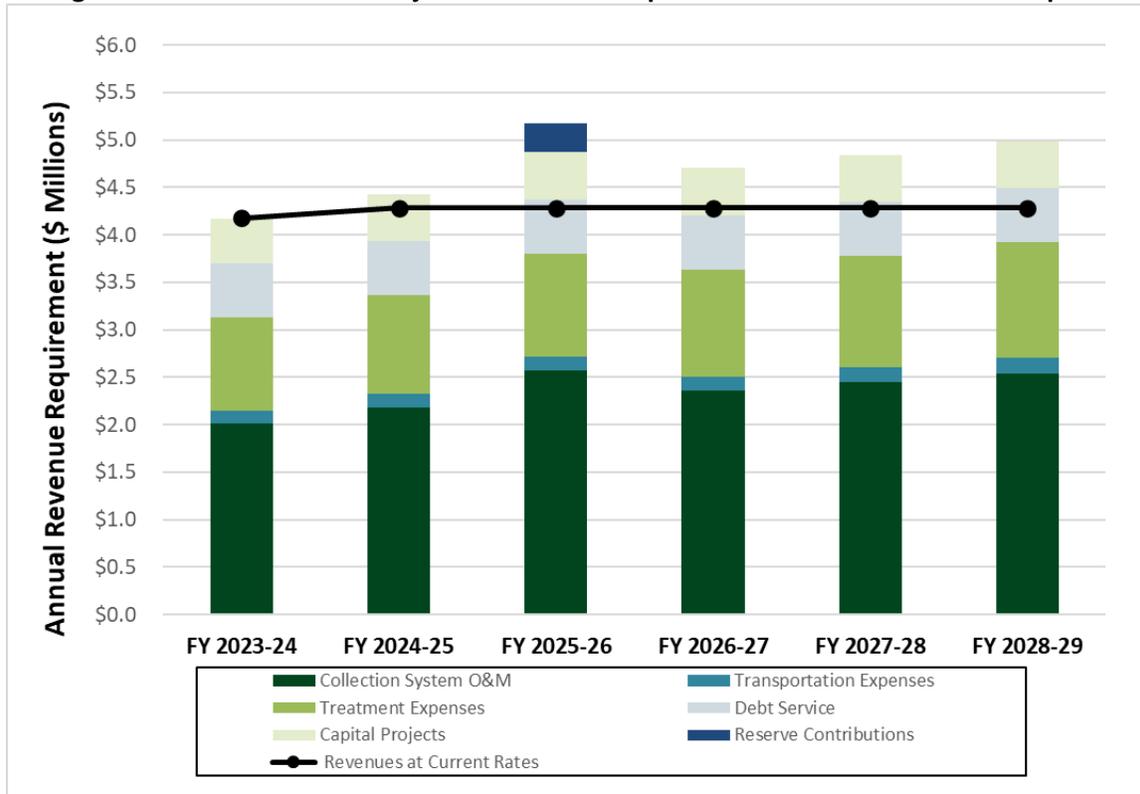
### Operating & Maintenance (O&M) Expenses

The City’s Collection System Operations and Maintenance (O&M) expenses include salaries, benefits, materials, supplies, insurance, vehicle maintenance, utilities, and administrative expenses, and City administrative charges. Expense projections were calculated using assumptions reviewed with City staff. Collectively, this category represents approximately 50% of the total revenue requirement. These O&M expenses are projected to increase annually by an average of 5% over the five-year period, averaging \$2.4 million per fiscal year from FY 2024-25 through FY 2028-29. No additional headcount in staffing is assumed during the five-year rate setting period.

### Wastewater Transportation Expenses

The City pays Solana Beach and San Diego Metro for conveyance of wastewater to their respective treatment plants. These costs are determined by the respective agency and billed to the City for reimbursement. Transportation expenses attributable to San Diego Metro service comprise approximately 10% of the total amount of this categorical expense. Future San Diego Metro service expenses were assumed to remain flat as the City relies more on the Solana Beach force main to deliver wastewater to the SEJPA treatment plant. Transportation costs resulting from the Solana Beach force main are assumed to increase 5% annually, based on input from City staff. Wastewater transportation expenses make up approximately 3% of the total revenue requirement and average \$153,000 per fiscal year.

**Figure VII-2. Total Annual Projected Revenue Requirements for Wastewater Enterprise**



### Wastewater Treatment Expenses

San Diego Metro and SEJPA charge the City for its share of wastewater treatment expenses. according to the City’s share of flow contributed to each treatment plant. Like transportation expenses paid to San Diego Metro, treatment expenses have also been assumed to remain constant during the five-year period. The City’s treatment expenses paid to SEJPA account for 95% of the categorical expense. Based on input from City staff, SEJPA treatment expenses are assumed to increase 5% annually. Note, increases to future costs have not accounted for any increases due to growth, as the City does not anticipate an expansion of its ratepayers.

Treatment expenses make up the second largest portion of the revenue requirement paid for with City wastewater rates. Across both treatment agencies, annual projected expenses will average more than \$1.1 million. The combined sum of wastewater transportation and treatment expenses accounts for more than 25% of the total revenue requirement. In other words, more than one-quarter of all City wastewater expenses are controlled by third parties, which are passed on to ratepayers.

### Debt Service

The City has existing debt service that was previously issued to fund various capital infrastructure improvements. The pump station at 21<sup>st</sup> street was funded through a Clean Water State Revolving Fund (CWSRF) Loan in 2013. This debt service is scheduled to conclude in 2032. In 2015, the City issued debt service to fund the San Elijo pipeline, through IBank. This debt service will be repaid over a 20-year period, ending in 2035. Annual debt service payments average \$567,700 during the five-year period.

No future debt service issuance has been assumed in this study.

### Capital Project Costs

Capital Improvement Program (CIP) expenditure projections average \$499,361 annually during the five-year period. All projects have been assumed to be cash funded. **Figure VII-3** provides a detailed listing of the Wastewater Enterprise five-year CIP. The City’s focus continues to be on addressing risk-based sections of its system through the Annual High Priority 1 Repairs and Annual Medium Priority Repairs programs to maintain system reliability. All project costs shown have been escalated using an assumed Construction Cost Index of 3.8% for FY 2024-25 and 3.4% thereafter based on historical changes in the Engineering News Record-Construction Cost Index.

**Figure VII-3. Wastewater Five-Year Capital Improvement Plan**

Capital Projects	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	Total
<b>Wastewater Enterprise Fund</b>						
Annual High Priority 1 Repairs	\$375,000	\$375,000	\$400,000	\$400,000	\$0	<b>\$1,550,000</b>
Annual Medium Priority 2 Repairs	\$0	\$0	\$0	\$0	\$400,000	<b>\$400,000</b>
Wastewater Overflow Containment	\$0	\$0	\$0	\$0	\$0	<b>\$0</b>
San Diego Forcemain Cleanout Project	\$50,000	\$150,000	\$0	\$0	\$0	<b>\$200,000</b>
Condition Assessment	\$0	\$60,000	\$0	\$0	\$0	<b>\$60,000</b>
San Dieguito Drive Pump Station Rehabilitation	\$0	\$0	\$0	\$0	\$0	<b>\$0</b>
Little Orphan Alley PS Removal	\$0	\$0	\$0	\$0	\$40,000	<b>\$40,000</b>
Total Capital Projects	\$425,000	\$585,000	\$400,000	\$400,000	\$440,000	<b>\$2,250,000</b>
Construction Cost Index	1.039	1.074	1.111	1.149	1.188	
<b>Total Inflated CIP</b>	<b>\$441,621</b>	<b>\$628,562</b>	<b>\$444,409</b>	<b>\$459,530</b>	<b>\$522,681</b>	<b>\$2,496,803</b>
						Average Annual PAYGo-Funded CIP \$499,361

### Reserve Contributions

Based on conversations with the City, it was assumed the City would spend nearly all the \$300,000 balance in this reserve during FY 2024-25. The City plans to replenish this amount in FY 2025-26 to satisfy the target balance.

## RESERVES

The City uses its reserves to stabilize rates against annual fluctuations in capital expenditures, variances between projected and actual water demands, and unanticipated expenditures and other expenditure variances. In some years, there is surplus revenue that is available to replenish reserves. In other years, reserves are drawn down to cover the cost of service.

Reserves are required to stabilize rates and to provide for contingencies. Reserves can be drawn on in years when the City’s Wastewater Enterprise Fund experiences above average costs and augmented during years when costs are below average. The City’s reserves are used for operating and capital purposes. Each of these purposes has its own requirements that lead to a minimum and optimum target balance. Note, the types of reserves held by the Wastewater Enterprise mirror the reserves held by the Water Enterprise, including the target balance.

Rates must be set so that the fund balance achieves the target balance.

## **Operating Reserve**

The operating component of the reserves provides working capital for month-to-month O&M expenditures. With sufficient working capital, the City can operate without cash flow constraints. The City's approved reserve policy is 45 days of operating expenses. The City's Reserves should never drop below this minimum balance.

## **Self-Insurance Reserve**

The City maintains a Self-Insurance Fund for the Water utility with a targeted minimum balance of \$50,000. The purpose of the reserve is solely to pay out claims related to Wastewater utility damage.

## **Pension Reserve**

The City has a fully funded Pension Reserve to pay for the Water Enterprise's share of staff costs. The targeted minimum balance is set to \$200,000.

## **Debt Service Reserve**

A target balance of \$561,800 is maintained to satisfy the City's current debt obligations. Once each of the obligations is paid off, the funds will become available to the City. The obligations are scheduled to mature in FY 2032-33 and FY 2035-36. This reserve is unique to only the Wastewater Enterprise as the Water Enterprise has no existing obligations.

## **Capital Reserve**

The capital improvement component of the reserves provides working capital for the City's capital improvement program. The fund balance needs to be sufficient to at least pay contractors without delays caused by cash flow limitations. The fund balance can be larger so that the City can fund larger construction projects on a pay-as-you-go basis, thereby eliminating financing costs. The City's approved policy requires a reserve threshold of \$350,000. This total is less than the five-year average of annual capital improvement expenses, \$465,551. The City could contemplate increasing this reserve to account for rising construction costs.

## **Equipment Replacement Reserve**

This reserve is maintained to fund capital outlay projects, such as the replacement or purchase of new vehicles, large maintenance items, machinery, and equipment. An approved policy reserve target of \$300,000 is maintained. The reserve provides an emergency source of funding in the event of an unanticipated breakdown or failure.

## **Rate Stabilization Fund**

The Rate Stabilization Fund provides funding which the City can draw upon prior to passing funding for unanticipated events onto its customers. For example, in the event of a water shortage, the City could utilize reserves from the Rate Stabilization Fund as a short-term solution while flows remain lower. The reserve helps to offset the financial burden ratepayers might experience when the City is required to raise rates. The current approved reserve target is set at \$200,000.

## REVENUE INCREASES

Rates are set to generate sufficient revenue to cover annual expenses. In addition, rates are set to maintain adequate reserves. **Figure VII-4** summarizes the projected revenue from current rates, annual revenue requirements, annual variances, and the rate increases necessary to cover the City's costs.

**Figure VII-4. Rate Increase Calculations**

	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Revenue from Current Rates	\$4,283,285	\$4,283,285	\$4,283,285	\$4,283,285	\$4,283,285
Revenue Requirement	(\$4,430,849)	(\$4,870,204)	(\$4,704,142)	(\$4,843,548)	(\$4,988,655)
Non-Operating Revenue	\$37,000	\$38,110	\$39,253	\$40,431	\$41,644
Transfer to Reserves	(\$60,768)	\$0	\$0	\$0	\$0
Net Revenue Requirement	(\$4,454,617)	(\$4,832,094)	(\$4,664,889)	(\$4,803,118)	(\$4,947,011)
Revenue Surplus/(Shortfall)	(\$171,331)	(\$548,809)	(\$381,603)	(\$519,832)	(\$663,725)
<b>Proposed Revenue Increase</b>	<b>4.0%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>2.0%</b>	<b>2.0%</b>
Revenue at Proposed Rates	\$4,454,617	\$4,543,709	\$4,634,583	\$4,727,275	\$4,821,820
<b>Revenue Surplus/(Shortfall)</b>	<b>\$0</b>	<b>(\$288,385)</b>	<b>(\$30,305)</b>	<b>(\$75,843)</b>	<b>(\$125,190)</b>

Rate increases account for rate revenue and future revenue requirements. The revenue requirement (shown in greater detail in **Figure VII-2**) increases due to wastewater transportation and treatment costs and capital expenditures. The proposed revenue increases serve to decrease the projected shortfalls facing the City. As shown in Figure VII-4, the City's reserves have been used to keep the revenue increases low (i.e., there are projected revenue shortfalls in FY 2025-26 through FY 2028-29 after accounting for the revenue increases, which will be covered by reserves).

The rates are derived in Chapter V. With these rate increases, the City is able to pay for its annual O&M and capital expenses and maintain adequate reserves, as further discussed below.

## DEBT SERVICE COVERAGE

**Figure VII-5** shows the debt service coverage provided by the revenue increases in **Figure VII-4**. The City is required to maintain a minimum coverage ratio of 1.20. A higher ratio provides a greater margin of safety to bondholders and enhances the credit rating on bonds. Moreover, a higher credit rating benefits ratepayers by reducing the cost of future borrowing, if needed.

**Figure VII-5. City Debt Coverage Ratio Calculations (with rate adjustments)**

	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
Revenue Sources	\$4,207,175	\$4,503,550	\$4,594,626	\$4,685,557	\$4,780,237	\$4,875,948
Operating Expenses	(\$3,132,620)	(\$3,362,640)	(\$3,502,545)	(\$3,637,044)	(\$3,777,024)	(\$3,922,717)
Net Revenue	\$1,074,555	\$1,140,910	\$1,092,081	\$1,048,513	\$1,003,212	\$953,231
Debt Service	\$532,491	\$535,037	\$537,657	\$540,353	\$543,127	\$545,983
<b>Debt Coverage Ratio</b>	<b>2.02</b>	<b>2.13</b>	<b>2.03</b>	<b>1.94</b>	<b>1.85</b>	<b>1.75</b>

Note: Revenue sources includes sewer rate revenues, non-operating revenues, and investment interest.

## RESERVE FUND BALANCE

**Figure VII-6** shows the annual fluctuations (solid green line) in the fund balance that are caused by the differences between the revenue requirement and revenue from rates with the rate increases; the dashed green line is the projected fund balance without rate increases. The revenue and rate increases in **Figure VII-4** were derived to balance increasing rates while maintaining a level of reserves that continues to meet the City's reserve target (blue line) through FY 2028-29.

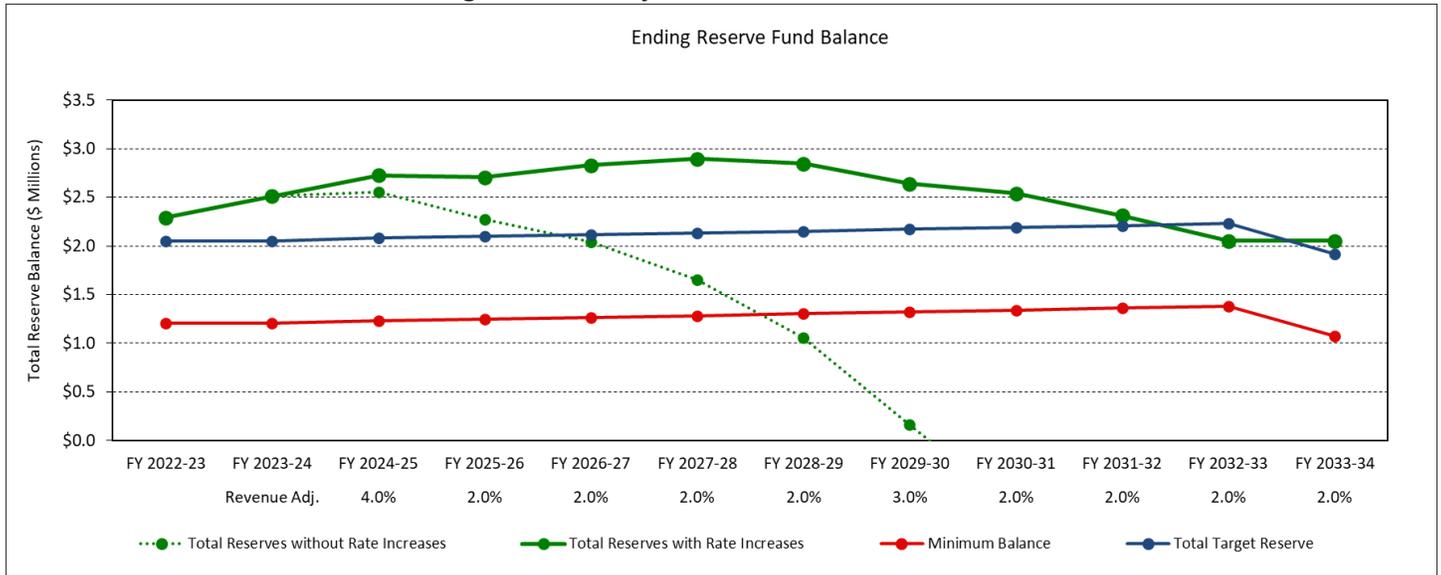
For purposes of rate setting, the following combined reserve target balances were established. The red line labeled, "Minimum Balance" represents the target balance for the Operating Reserve, Self-Insurance Reserve, Pension Reserve, and Debt Service Reserve. The blue line labeled, "Total Target Reserve" is the sum of the Minimum Balance plus the Capital Reserve, Equipment Replacement Reserve, and Rate Stabilization reserve targets.

The ten-year projection in **Figure III-6** demonstrates the use of reserves beyond FY 2028-29 as expense projections outpace revenue increases. Initially, after the 4% increase in FY 2024-25, revenue increases are kept to 2-3% annually through FY 2033-34. However, the cumulative growth of expenses, driven by 5% projected increases in water supply costs, overtakes revenue growth, requiring a greater share of reserves to support rate revenues. Consequently, reserves project to decline beginning in FY 2028-29, despite larger revenue increases. The reserve fund balance projects to fall below the Target Reserve by FY 2032-33.

While this is a similar scenario to the reserve fund balance projection of the Water Enterprise discussed in Section III, the maturity of the City's SRF loan obligation in FY 2032-33 reduces wastewater expenses and the overall target reserve threshold (see blue line). Therefore, the forecast for future wastewater rate increases is more positive when compared to the Water Enterprise. Over the ten-year period, wastewater rates would be increased cumulatively by 25.5% while water rates would be increased cumulatively by 38.3%. Further, the Wastewater Enterprise fund balance projects to meet the target reserve balance while the Water Enterprise fund balance would fall short of the target reserve by \$200,000, or 11%.

If revenue levels remain stagnant, the dashed green line reflects that without revenue increases, the year-end fund balance of \$2.2 million in FY 2022-23 is projected to drop below the City's Minimum Reserve by FY 2028-29.

**Figure VII-6. Projected Year-End Fund Balance**



## VIII. WASTEWATER RATE COST OF SERVICE ANALYSIS

### METHODOLOGY

The revenue requirement analysis establishes how much revenue is required from rates. The next step in the analysis is determining the cost of service. Cost-of-service analysis is used to derive rates that proportionally allocate the cost of service. This is achieved by allocating the revenue requirements to the components of the rate structure.

A cost-of-service analysis determines how much each customer and customer class should pay based on its respective share of service-related expenses and flow. The volume of wastewater discharged influences the design of the collection and treatment systems. The cost-of-service analysis allocates expenses to “cost components on the basis of operating considerations or design capacity of each facility.” Therefore, a larger proportion of expenses associated with wastewater flow on the sewer system are allocated to customers who place a greater burden on the system.

Note, the City’s agreements with its wastewater conveyance and treatment providers align costs with wastewater volume. Costs for these services are not affected by the strength of wastewater. Hence, the cost of service accounts only for flow and service-related expenses.

### CUSTOMER CLASSES

The cost-of-service analysis distributes the revenue requirements among customer classes in proportion to their service requirements. Like water rates, there is no industry standard that specifies which customer classes should be used. The law allows utilities to exercise discretion in determining the appropriate customer classes provided the rates yield charges that are proportional to the cost of providing service for each category. As a result, the allocation of costs needs to be tailored to the customer classes.

The City currently has multiple customer classes: Single Family Residential, Multi-Family Residential, Commercial, Institutional, Hotels/Motels without Restaurants, Hotels/Motels with Restaurants, Restaurants, Shopping Centers, Fairgrounds, and Fats, Oils, and Greases (FOG) Non-Compliance Customers.

These classes were last reviewed as part of the previous cost-of-service study in 2019.

### VOLUMETRIC RATES MODIFICATIONS

Changes to the customer classes affect how costs are allocated among all wastewater customers. HF&H recommends reducing all current Non-Residential customer classes to two classes: 1) Commercial; and 2) Fairgrounds. Simplifying the customer classes is possible because the third-party agencies, who bill the City for transportation and treatment of wastewater, charge for services according to the volume of wastewater. There is no distinction for these charges to reflect wastewater strength, as was considered under previous service agreements. Because these agencies do not make a wastewater strength distinction in their billing, there is no nexus for the City charging high strength wastewater customers a higher rate for sewer service. Therefore, all Commercial, Multi-Family, and Single-Family customers will be charged a uniform rate per volume of metered water use. Single-Family Residential bills will continue the practice of the sewer bill cap, set by winter water use. Also, Multi-Family Residential and Commercial

customers will continue to be charged for 90% of metered water use to account for volumes of water recorded that do not return to the sewer. The method for how sewer flows are calculated for billing purposes would remain, but how customers are charged would be revised from current practices.

Note, the proposed rates exclude revisions to the (FOG Non-Compliance surcharges. HF&H recommends the surcharges assessed FOG Non-Compliance customers be converted into miscellaneous fees charged to customers who are out of compliance with City requirements for its FOG program. The surcharges would recover the additional costs incurred by the City for non-compliance.

The result of these modifications to the volumetric rates affects the cost of service allocations discussed below.

## **COST-OF-SERVICE ALLOCATIONS**

The cost-of-service analysis allocation process follows the same process as the one performed for the allocation of water costs. The FY 2024-25 revenue requirement was summarized by function and these functional costs were allocated between the Fairgrounds and City customers. The proportionate shares of the revenue requirement were then further allocated among the fixed and variable components for cost recovery.

**Figure VIII-1** allocates the FY 2024-25 revenue requirement between the Fairgrounds and the City customers. **Figure VIII-2** summarizes the percentage allocations used in apportioning the revenue requirement between the Fairgrounds and the City customers. A discussion of the methodology behind the allocation of costs follows.

**Figure VIII-1. Allocation of FY 2024-25 Revenue Requirement to Fairgrounds**

Description	Rev. Req't FY 2024-25	Fairgrounds Allocation Factor	Fairgrounds Proportion	City Proportion
<b>Collection System O&amp;M</b>				
Administrative Personnel	\$401,129	Flow	\$58,275	\$342,854
Operations Personnel	\$478,591	Flow	\$69,528	\$409,063
O&M - Tools, Supplies, Insurance	\$1,115,230	Flow	\$162,017	\$953,213
O&M - Admin Expenses	\$27,180	Hydraulic Capacity	\$3,462	\$23,718
O&M Variable	\$135,320	Flow	\$19,659	\$115,661
Wastewater Treatment	\$1,039,550	Flow	\$151,022	\$888,528
Wastewater Conveyance	\$139,740	Flow	\$20,301	\$119,439
<b>Subtotal O&amp;M</b>	<b>\$3,336,740</b>		\$484,265	\$2,852,475
<i>Fairgrounds O&amp;M Composite</i>			22.2%	130.8%
<b>Debt Service</b>	\$568,848	System Sizing	\$94,998	\$473,851
<b>Subtotal O&amp;M + Admin</b>	<b>\$3,905,588</b>			
<b>Capital Outlay</b>	\$25,900	System Sizing	\$4,325	\$21,575
<b>Capital Expenses (PAYGO)</b>	\$499,361	System Sizing	\$83,393	\$415,967
<b>Subtotal Expenses</b>	<b>\$4,430,849</b>		\$666,981	\$3,763,868
<i>Expense Composite</i>				
<b>Non-Operating Revenues</b>	(\$37,000)	FG O&M Composite	(\$5,370)	(\$31,630)
<b>Transfers to/from Reserves</b>	\$60,768	FG O&M Composite	\$8,819	\$51,949
<b>Total Revenue Requirement</b>	<b>\$4,454,617</b>		<b>\$670,430</b>	<b>\$3,784,186</b>
			% of total revenue requirement	15.1%
				84.9%

**Figure VIII-2. Fairgrounds Allocation Factors**

Fairgrounds (FG) Allocation Factors	Fairgrounds	City	Total	Notes
Staff Allocation	26.4%	73.6%	100.0%	Historical City assumption
Hydraulic Capacity	12.7%	87.3%	100.0%	Percentage of EMUs
System Sizing	16.7%	83.3%	100.0%	Historical City assumption
Flow	14.5%	85.5%	100.0%	Percentage of CY 2019-2023 metered wastewater flow
FG O&M Composite	14.5%	85.5%	100.0%	Calculated in Figure VIII-1

## Fairgrounds Allocation Factors

### Staff Allocation

The City estimates roughly 26% of personnel staffing costs can be attributed to serving the Fairgrounds. This allocation was used in the previous 2019 study and confirmed with City staff as part of the current analysis.

### Hydraulic Capacity

The City has reported a count of 1,693 water meters tied to City sewer accounts. Of these water meters, the Fairgrounds receive water and requires available capacity for one – 8” meter and two -10” meters. The size of the water service and the capacity afforded to the service serves as a proxy for the capacity of

wastewater flow to be discharged into the City’s collection system. Connections are converted to Equivalent Meter Units (EMUs) to apportion the revenue requirement costs for operations and maintenance (O&M) administrative expenses. The capacity multipliers are the same as used in the water rate study and this aligns with historical practice. The Fairgrounds make up 320 EMUs of the total 2,512 EMUs served by the system, as shown in **Figure VIII-3**. This accounts for 12.7% of the overall hydraulic capacity.

**Figure VIII-3. Capacity Calculations for City Wastewater Service**

Applicable Service Size	Total Meters	Capacity Multiplier	EMUs
Single Family Customers	1,395	1.00	1,395
5/8" Meters	143	1.00	143
3/4" Meters	44	1.50	66
1" Meters	42	2.50	105
1.5" Meters	23	5.00	115
2" Meters	40	8.00	320
3" Meters	3	16.00	48
4" Meters	0	25.00	0
6" Meters	0	60.00	0
8" Meters	1	80.00	80
10" Meters	2	120.00	240
<b>Total</b>	<b>1,693</b>		<b>2,512</b>

**Collection System Sizing**

The City’s wastewater collection system sizing was calculated assuming 16.7% of the peak flows of the system were attributable to the Fairgrounds. The revenue requirement costs for debt service, capital outlay (e.g. machinery and vehicle replacement), and capital improvements were allocated, using the assumption Fairgrounds accounted for 16.7% of these overall costs. This allocation was used in the previous 2019 study and confirmed with City staff as part of the current analysis.

**Wastewater Flow**

The Fairgrounds average wastewater flow over the past five years accounts for 14.5% of the overall conveyed and treated. **Figure VIII-4** summarizes the average annual flows between the Fairgrounds and other City customers from 2019-2023. City flows are the difference of the flows from the Fairgrounds wastewater meter subtracted from the total flows recorded by SEJPA. This allocation was applied to wastewater treatment, conveyance, and utility expenses, which vary based on the level of wastewater volume. Based on previous studies, personnel and supplies costs were also allocated using this factor.

**Figure VIII-4. Wastewater Flow Analysis**

Metered Flow by Calendar Year	Recorded 2023	Recorded 2022	Recorded 2021	Recorded 2020	Recorded 2019	5-Year Average
Total Recorded Flow (MG)	146.10	135.44	111.21	145.37	160.42	139.71
Fairgrounds Flow (MG)	22.92	13.79	12.96	18.70	33.10	20.30
City Flow (MG)	123.18	121.65	98.25	126.67	127.31	119.41
Proportion of City Flow	84.3%	89.8%	88.3%	87.1%	79%	85.5%
<b>Proportion of Fairgrounds Flow</b>	<b>15.7%</b>	<b>10.2%</b>	<b>11.7%</b>	<b>12.9%</b>	<b>21%</b>	<b>14.5%</b>

Note: 2021 includes only ten months of recorded volumes due to instrument failure.

**Operations & Maintenance Composite**

Non-operating revenue and transfers to reserves were allocated to the Fairgrounds and City customers based on each’s proportionate share of the total O&M costs, as derived in **Figure VIII-1**.

**Results of Initial Allocation**

Fairgrounds was apportioned 15.1% of the overall revenue requirement. The Fairgrounds allocation has decreased since the previous cost-of-service study, which yielded an overall allocation of 17.25%. The decrease can be attributed to a reduced proportionate share of flow-related costs allocated to the Fairgrounds. While the five-year period of wastewater flows analyzes accounts for pre-pandemic, pandemic, and post-pandemic wastewater discharge patterns, the share of the Fairgrounds flow decreased from 16.5% to 14.5% from the previous study. The expenses allocated according to share of contributed wastewater flow are the largest portion of costs allocated. Therefore, it stands to reason that Fairgrounds is receiving a smaller share of costs because their proportionate burden placed on the system, the largest cost driver, decreased. Thus, the Fairgrounds share of the revenue requirement to be recovered through the FY 2024-25 rates will be \$670,430 (15.1%) and the remaining City customer’s share will be \$3,784,186 (84.9%).

**Cost-of-Service Allocations and Allocation Factors**

The allocation factors in **Figure VIII-5** were used to apportion the Fairgrounds allocation of costs in **Figure VIII-6** and to apportion the City customers’ allocation of costs in **Figure VIII-7**. The CIP Composite, Expense Composite, and Fairgrounds O&M Composite allocations are based on the subtotals of the O&M and capital costs that were directly allocated to either the service or flow categories.

**Figure VIII-5. Cost-of-Service Allocation Factors**

System-Wide Allocation Factors	Service	Flow	Total
Flow Only	0.0%	100.0%	100.0%
Customer Meters	100.0%	0.0%	100.0%
O&M Composite	60.6%	39.4%	100.0%
CIP Composite	18.1%	81.9%	100.0%
Expense Composite	48.5%	51.5%	100.0%
FG O&M Composite	60.6%	39.4%	100.0%

**Figure VIII-6. Fairgrounds Cost-of-Service Allocations**

Description	Fairgrounds		Cost Allocation	
	Rev. Req't FY 2024-25	Allocation Factor	Service	Flow
<b>Collection System O&amp;M</b>				
Administrative Personnel	\$58,275	Customer Meters	\$58,275	\$0
Operations Personnel	\$69,528	Customer Meters	\$69,528	\$0
O&M - Tools, Supplies, Insurance	\$162,017	Customer Meters	\$162,017	\$0
O&M - Admin Expenses	\$3,462	Customer Meters	\$3,462	\$0
O&M Variable	\$19,659	Flow Only	\$0	\$19,659
Wastewater Treatment	\$151,022	Flow Only	\$0	\$151,022
Wastewater Conveyance	\$20,301	Flow Only	\$0	\$20,301
<b>Subtotal O&amp;M</b>	<b>\$484,265</b>		<b>\$293,282</b>	<b>\$190,982</b>
<i>Fairgrounds O&amp;M Composite</i>	\$0	<i>O&amp;M Composite</i>	60.56%	39.44%
<b>Debt Service</b>	\$94,998	Flow Only	\$0	\$94,998
<b>Subtotal O&amp;M + Admin</b>	<b>\$579,262</b>		<b>\$293,282</b>	<b>\$285,980</b>
<b>Capital Outlay</b>	\$4,325	Customer Meters	\$4,325	\$0
<b>Capital Expenses (PAYGo)</b>	\$83,393	CIP Composite	\$15,095	\$68,298
<b>Subtotal Expenses</b>	<b>\$666,981</b>		<b>\$312,703</b>	<b>\$354,278</b>
<b>Non-Operating Revenues</b>	<b>(\$5,370)</b>	FG O&M Composite	<b>(\$3,252)</b>	<b>(\$2,118)</b>
<b>Transfers to/from Reserves</b>	\$8,819	Customer Meters	\$8,819	\$0
<b>Total Revenue Requirement</b>	<b>\$670,430</b>		<b>\$318,270</b>	<b>\$352,160</b>
	% of total revenue requirement		<b>47.5%</b>	<b>52.5%</b>
			Service Charge COS	Volumetric Charge COS

Source: Fairgrounds revenue requirement from Figure VIII-1.

**Figure VIII-7. City Customers Cost-of-Service Allocations**

Description	City		Cost Allocation	
	Rev. Req't FY 2024-25	Allocation Factor	Service	Flow
<b>Collection System O&amp;M</b>				
Administrative Personnel	\$342,854	Customer Meters	\$342,854	\$0
Operations Personnel	\$409,063	Customer Meters	\$409,063	\$0
O&M - Tools, Supplies, Insurance	\$953,213	Customer Meters	\$953,213	\$0
O&M - Admin Expenses	\$23,718	Customer Meters	\$23,718	\$0
O&M Variable	\$115,661	Flow Only	\$0	\$115,661
Wastewater Treatment	\$888,528	Flow Only	\$0	\$888,528
Wastewater Conveyance	\$119,439	Flow Only	\$0	\$119,439
<b>Subtotal O&amp;M</b>	<b>\$2,852,475</b>		<b>\$1,728,848</b>	<b>\$1,123,628</b>
<b>Debt Service</b>	\$473,851	Flow Only	\$0	\$473,851
<b>Subtotal O&amp;M + Admin</b>	<b>\$3,326,326</b>		<b>\$1,728,848</b>	<b>\$1,597,478</b>
<b>Capital Outlay</b>	\$21,575	Customer Meters	\$21,575	\$0
<b>Capital Expenses (PAYGo)</b>	\$415,967	CIP Composite	\$75,295	\$340,672
<b>Subtotal Expenses</b>	<b>\$3,763,868</b>		<b>\$1,825,718</b>	<b>\$1,938,150</b>
<b>Non-Operating Revenues</b>	<b>(\$31,630)</b>	Expense Composite	<b>48.5%</b> <b>(\$15,343)</b>	<b>51.5%</b> <b>(\$16,287)</b>
<b>Transfers to/from Reserves</b>	\$51,949	Customer Meters	\$51,949	\$0
<b>Total Revenue Requirement</b>	<b>\$3,784,186</b>		<b>\$1,862,324</b>	<b>\$1,921,863</b>
	% of total revenue requirement		<b>49.2%</b>	<b>50.8%</b>
			Service Charge COS	Volumetric Charge COS

Source: City customers revenue requirement from Figure VIII-1.

## Units of Service

The units of service provided by the City to its customers are the sum of the services provided to each of the City's customer classes.

Estimates of City customer flows (excluding the Fairgrounds) associated with each customer class are shown in **Figure VIII-8**. Flow volumes were calculated using recorded water use for CY 2022. Flow volumes were adjusted based on the City's current rate structure such that the billed sewer flows were used. Single Family Residential flow volumes accounted for the cap of the maximum of the lowest two-month bill period or 8 HCF while all Mult Family and Commercial flow volumes were adjusted to 90% of the total water use. All Commercial customers were grouped together based on the volumetric rate modification described previously. The Fairground's billed flow was generated from the CY 2023 metered data, recently made available, shown in **Figure VIII-4**, and shown as **Figure VIII-8** for convenience.

At the time the analysis was performed, 2023 water use data was not available so that City customers' flows could be analyzed independently from the flow volumes read by SEJPA. The Fairgrounds usage increased significantly during 2023, constituting a three-year high. Further, the proportionate share of the

Fairgrounds’ wastewater volumes relative to the total flows recorded grew closer to the 2019 proportion, aligning with pre-pandemic patterns, when more events were held, which caused the Fairgrounds to have higher flows. Post-pandemic, we assume the Fairgrounds share of wastewater volumes will continue to normalize such that their proportionate share will return closer to 20% of the overall volume. These assumptions are reflected in the cost of service and the rates derived.

**Figure VIII-8. Wastewater Flow Analysis**

Metered Flow by Calendar Year	Recorded 2023	Recorded 2022	Recorded 2021	Recorded 2020	Recorded 2019	5-Year Average
Total Recorded Flow (MG)	146.10	135.44	111.21	145.37	160.42	139.71
Fairgrounds Flow (MG)	22.92	13.79	12.96	18.70	33.10	20.30
City Flow (MG)	123.18	121.65	98.25	126.67	127.31	119.41
Proportion of City Flow	84.3%	89.8%	88.3%	87.1%	79%	85.5%
<b>Proportion of Fairgrounds Flow</b>	<b>15.7%</b>	<b>10.2%</b>	<b>11.7%</b>	<b>12.9%</b>	<b>21%</b>	<b>14.5%</b>

Note: 2021 includes only ten months of recorded volumes due to instrument failure.

Figure VIII-9 summarizes the units of service by customer class.

**Figure VIII-9. Summary of Units of Service by Customer Class**

Customer Class	EMUs	Billed Flow (HCF)
Single Family Residential	1,395	125,289
Multi Family Residential	457	37,931
Commercial (all customers)	340	40,403
City Customers Total	2,192	203,624
Fairgrounds	240	30,645

### Unit Costs of Service

The functionalized costs in **Figure VIII-6** and **Figure VIII-7** are divided by the respective units of service in **Figure VIII-9** to determine the unit costs. The Fairgrounds service charge is exclusive to a single account. The flow-related cost allocation of \$352,160 is divided by 30,645 HCF to determine a unit cost of \$11.49 per HCF.

The derivation of the unit costs applicable to the City customers is shown in **Figure VIII-10**. These unit costs are the costs of providing the units of service to all customer classes without exception, thereby ensuring that all customers pay their share in proportion to their respective units of service.

**Figure VIII-10. Unit Costs of Service (City)**

	Service	Flow	Total
Allocated Functional Costs	\$1,862,324	\$1,921,863	\$3,784,186
Units of Service	2,192	203,624	
<b>Unit Costs</b>	<b>\$849.60</b>	<b>\$9.44</b>	
	per EMU	per hcf	

**Figure VIII-11** summarizes the small shift away from the overall Volumetric Rate revenues to the Service Charge revenues to align with the cost-of-service. The exercise performed indicates the proportion of

Service Charge revenues will increase from 46.7% to 49.0% of total rate revenues, while the share of Volumetric Rate revenues will decrease from 53.3% to 51.0%. Similarly, the cost-of-service indicates the proportion of Fairgrounds Volumetric Rate revenue relative to total revenue will decrease slightly while the Service Charge revenue proportion increases.

Rates need to be designed to generate each class’s share of the revenue requirement related to volumetric charges. The next section provides the recommended modifications to the Service Charges and Volumetric Rates needed to meet the cost of service.

**Figure VIII-11. Cost-of-Service Revenue Summary**

Components of Rate Structure	Revenue at		Cost of Service		Difference	
	Current Rates FY 2023-24		Proposed Rates FY 2024-25		COS Minus Current	
<b>Single Family Residential</b>						
Fixed Charge Revenue	\$1,063,827	48.6%	\$1,185,192	50.1%	\$121,365	11.4%
Volumetric Rates Revenue	\$1,125,095	51.4%	\$1,182,515	49.9%	\$57,420	5.1%
Subtotal	\$2,188,922	100.0%	\$2,367,708	100.0%	\$178,785	8.2%
<b>Multi Family Residential</b>						
Fixed Charge Revenue	\$348,501	50.6%	\$388,267	52.0%	\$39,766	11.4%
Volumetric Rates Revenue	\$340,624	49.4%	\$358,008	48.0%	\$17,384	5.1%
Subtotal	\$689,125	100.0%	\$746,275	100.0%	\$57,150	8.3%
<b>Commercial</b>						
Fixed Charge Revenue	\$259,277	37.2%	\$288,864	43.1%	\$29,587	11.4%
Volumetric Rates Revenue	\$438,153	62.8%	\$381,339	56.9%	(\$56,814)	-13.0%
Subtotal	\$697,430	100.0%	\$670,204	100.0%	(\$27,227)	-3.9%
<b>Fairgrounds</b>						
Fixed Charge Revenue	\$330,144	46.6%	\$318,270	47.5%	(\$11,874)	-3.6%
Volumetric Rates Revenue	\$377,664	53.4%	\$352,160	52.5%	(\$25,503)	-6.8%
Subtotal	\$707,808	100.0%	\$670,430	100.0%	(\$37,377)	-5.3%
Total Fixed Charge Revenue	\$2,001,750	46.7%	\$2,180,594	49.0%	\$178,844	8.9%
Total Volumetric Charge Revenue	\$2,281,536	53.3%	\$2,274,023	51.0%	(\$7,513)	-0.3%
<b>Total Revenue</b>	<b>\$4,283,285</b>	<b>100.0%</b>	<b>\$4,454,617</b>	<b>100.0%</b>	<b>\$171,331</b>	<b>4.0%</b>

Note: FY 2023-24 revenues assume 12 months of rates implemented on January 1, 2024..

## IX. WASTEWATER RATE DESIGN

The City has historically charged water customers the combination of a fixed Service Charge and a variable volumetric charge based on the product of metered water use and the Volumetric Rates. As previously discussed, this is a common set of charges that is prevalent throughout the wastewater industry. This chapter explains the derivation of the Volumetric Rates and Service Charges that reflect the projected cost of service.

### CURRENT RATES

The City’s current wastewater rate structure is composed of two components: Service Charges and Volumetric Rates.

#### Current Service Charges

The Service Charges are fixed rates that are charged on a fixed rate graduated in proportion to the capacity of the water meter serving each customer. The City assumes all single-family accounts are served by a 5/8” meter, recognizing that certain customers have larger water meters due to fire flow requirements, which is immaterial to sewer flow impacts. All customers are billed on a bi-monthly<sup>7</sup> basis. **Figures IX-1** summarizes the current Service Charges, which were last increased on January 1, 2024.

**Figure IX-1. Current Service Charges**

Bi-Monthly Fixed Service Charges	Current Rates
Single-Family Residential (per DU)	\$127.10
Meter Size	
5/8"	\$127.10
3/4"	\$190.66
1"	\$317.74
1.5"	\$635.48
2"	\$1,016.76
3"	\$2,033.52
Fairgrounds	\$55,024.00

#### Current Volumetric Rates

Customers are billed based on metered water use per bi-monthly period multiplied by their respective Volumetric. Water is metered in “units” of HCF of metered water use, whereby one unit or HCF equals 748 gallons. Volumetric Rates are charged to the following customer classes: Single Family Residential, Multi-Family Residential, Commercial, Institutional, Irrigation, Hotels/Motels without Restaurants, Hotels/Motels with Restaurants, Restaurants, Shopping Centers, and Fairgrounds customers.

<sup>7</sup> Bi-monthly periods assume a billing period of 60 days.

The Fairgrounds have a wastewater flow meter and their bill reflects the volume of water recorded. Unless sub-metered, the City bills all other customers according to metered water use. Single Family Residential customers bills are subject to the maximum of the minimum bi-monthly water use or 8 HCF, for which the current volumetric rate of \$8.98 is applied. For Multi-Family Residential and all other types of commercial customers, the City bills based on 90% of metered water use, assuming 10% of flow does not return to the sewer.

No adjustments are recommended to the City’s current practices of a wastewater cap or to the 90% return to sewer factor applied to Multi-Family and commercial customers sewer bills.

**Figure IX-2. Current Volumetric Rates**

Bi-Monthly Volumetric Rates	Current Rates (\$/HCF)
Single Family Residential	\$8.98
Multi-Family Residential	\$8.98
Commercial	\$8.98
Institutional	\$8.98
Hotels/Motels w/o Restaurants	\$8.84
Hotels/Motels w/ Restaurants	\$12.73
Restaurants	\$15.06
Shopping Centers	\$10.45
Fairgrounds	\$10.27

## SERVICE CHARGE DESIGN

The bi-monthly Service Charges for City customers are calculated using the unit cost determined in **Figure VIII-10**. The charge is graduated in proportion to the water meter capacity, as is current practice. The unit cost is divided by 6 to generate the bi-monthly amount per meter.

**Figure IX-3. Proposed City Customers Bi-Monthly Service Charge Rates – FY 2024-25**

Service Size	\$/EMU	Capacity Multiplier	COS Total	Total	
				Current Charge	\$ Difference
	a	b	c = a * b	d	e = c - d
Single Family Meters	\$141.60	1.00	\$141.60	\$127.10	\$14.50
5/8" Meters	\$141.60	1.00	\$141.60	\$127.10	\$14.50
3/4" Meters	\$141.60	1.50	\$212.40	\$190.66	\$21.74
1" Meters	\$141.60	2.50	\$354.00	\$317.74	\$36.26
1.5" Meters	\$141.60	5.00	\$708.00	\$635.48	\$72.52
2" Meters	\$141.60	8.00	\$1,132.80	\$1,016.76	\$116.04
3" Meters	\$141.60	16.00	\$2,265.60	\$2,033.52	\$232.08

The bi-monthly Service Charge for Fairgrounds customers is the bi-monthly rate of the cost allocation calculated in **Figure VIII-6**, \$318,270. The bi-monthly rate of \$53,045.02 would be charged to each bill.

With the proposed rates, all Service Charges billed to City customers would see an increase, while the Fairgrounds would see a decrease. The increase in rates reflects the increase to service charge revenues calculated in **Figure VIII-9**. The Fairgrounds Service Charge is decreasing as the nominal share of Service Charge revenue is decreasing based on the cost of service, as previously identified in **Figure VIII-11**. **Figure IX-4** shows the proposed five-year schedule of Service Charges.

**Figure IX-4. Current and Proposed Service Charge Rates**

Bi-Monthly Fixed Service Charges	Current Rates  rate increase:	Proposed Rates				
		FY 2024-25 eff. 7/1/2024 varies	FY 2025-26 eff. 7/1/2025 2%	FY 2026-27 eff. 7/1/2026 2%	FY 2027-28 eff. 7/1/2027 2%	FY 2028-29 eff. 7/1/2028 2%
Single-Family Residential (per DU)	\$127.10	\$141.60	\$144.43	\$147.32	\$150.27	\$153.28
Meter Size						
5/8"	\$127.10	\$141.60	\$144.43	\$147.32	\$150.27	\$153.28
3/4"	\$190.66	\$212.40	\$216.65	\$220.98	\$225.40	\$229.91
1"	\$317.74	\$354.00	\$361.08	\$368.30	\$375.67	\$383.18
1.5"	\$635.48	\$708.00	\$722.16	\$736.60	\$751.33	\$766.36
2"	\$1,016.76	\$1,132.80	\$1,155.46	\$1,178.57	\$1,202.14	\$1,226.18
3"	\$2,033.52	\$2,265.60	\$2,310.91	\$2,357.13	\$2,404.27	\$2,452.36
Fairgrounds	\$55,024.00	\$53,045.02	\$54,105.92	\$55,188.04	\$56,291.80	\$57,417.64

## VOLUMETRIC RATES DESIGN

The Volumetric Rates were determined via the unit cost exercise in the previous Section. The resulting Volumetric Rate for each of the revised customer classes is shown in **Figure IX-5**, as well as the proposed rates for FY 2025-26 through FY 2028-29, assuming 2.0% annual increases are applied. Volumetric Rates are increasing to reflect the additional burdens placed on the sewer system.

**Figure IX-5. Current and Proposed Volumetric Rates**

Bi-Monthly Volumetric Rates	Current Rates  rate increase:	Revised Customers	Proposed Rates				
			FY 2024-25 eff. 7/1/2024 varies	FY 2025-26 eff. 7/1/2025 2%	FY 2026-27 eff. 7/1/2026 2%	FY 2027-28 eff. 7/1/2027 2%	FY 2028-29 eff. 7/1/2028 2%
Single Family Residential	\$8.98	Single Family Residential	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Multi-Family Residential	\$8.98	Multi-Family Residential	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Commercial	\$8.98	Commercial	\$9.44	\$9.63	\$9.82	\$10.02	\$10.22
Institutional	\$8.98						
Hotels/Motels w/o Restaurants	\$8.84						
Hotels/Motels w/ Restaurants	\$12.73						
Restaurants	\$15.06						
Shopping Centers	\$10.45						
Fairgrounds	\$10.27	Fairgrounds	\$11.49	\$11.72	\$11.95	\$12.19	\$12.43

## X. COMPARISON TO WASTEWATER AGENCIES

In the previous chapter, the Service Charges and Volumetric Rate structures were compared for the current and proposed rates. A further understanding of the differences between the two structures can be gained by comparing bills for each customer class.

### NEIGHBORING AGENCY COMPARISON

The Finance Committee (January 2024) asked to take a closer look at comparing wastewater rates to similar agencies. **Figure X-1** compares single-family customer wastewater rates of smaller coastal cities in the San Diego region, assuming a bi-monthly sewer flow volume of 16 HCF. The current and FY 2024-25 rates for Del Mar are included.

**Figure X-1. Neighboring Agency Wastewater Bi-Monthly Bill Comparison**

Wastewater Agency	Fixed Charge	Volumetric Charge	Total WW Bill	WW Transport	WW Treatment	Miles of Sewer Mains	Population Served	Population Per Mile
Encinitas Sanitary Division (City of Encinitas)	\$5.83	\$83.04	<b>\$88.87</b>	Encinitas	SEJPA	40	17,000	425
Cardiff Sanitary Division (City of Encinitas)	\$7.86	\$88.16	<b>\$96.02</b>	Encinitas	SEJPA	82	20,000	244
National City	\$102.36	\$0.00	<b>\$102.36</b>	City of SD	Metro	97	56,173	579
Solana Beach (San Elijo)	\$113.72	\$0.00	<b>\$113.72</b>	Solana Beach	SEJPA	50	12,941	259
Fairbanks Ranch CSD	\$205.00	\$0.00	<b>\$205.00</b>	Fairbanks Ranch	Fairbanks Ranch	16	3,148	197
Del Mar (current)	\$127.10	\$143.68	<b>\$270.78</b>	Solana Beach	SEJPA	25	3,830	153

Some factors that are likely to contribute to the City having the highest water rates are as follows:

1. The City must contract with the City of Solana Beach and the City of San Diego to transport wastewater to treatment plants. However, most of the other agencies are in close proximity to their wastewater treatment plants, saving them the expense of conveying wastewater.
2. A population per miles of water mains ratio was developed to compare each agency. The City has the lowest ratio. Therefore 3,830 people must pay for the maintenance and eventual replacement of 25 miles of sewer mains. In other words, the City population is less concentrated along the miles of sewer mains maintained compared to other agencies and the costs of water service are spread over the smallest population of agencies compared.

While the City currently has the highest wastewater bills, we anticipate other agencies will raise rates to be more in line with the City's rates in the near future. Based on this study, proposed increases in the next five years will be only 2-4%. In contrast, other agencies are proposing 5% to 19% per year rate increases, (i.e. the City of Encinitas) in part to address neglected CIP programs needing critical financing. Fairbanks Ranch CSD will be raising fees 24% on July 1, 2024. The City has been taking a proactive approach to its CIP program over the years of addressing critical needs without having to suddenly raise rates.

Also, during the proposed rate period, the City will continue to pursue cost saving measures, such as contracting out sewer cleaning services. Solana Beach contracts out sewer cleaning services and this may allow them to charge lower rates.

## XI. COMBINED UTILITY BILL IMPACTS

In the previous sections, the proposed water and wastewater rates were compared for the current and proposed rates. However, a customer’s level of water demand may fluctuate throughout the year and bill amounts correspond accordingly. Comparing bills provides customers with further understanding of how both water and wastewater bills may adjust under the proposed rates for their specific meter size. **Figure XI-1** through **Figure XI-6** show how combined water and wastewater bills at current rates compare to bills at the proposed rates across a range of water usage. The final difference rows in each figure state the nominal change the and percentage change that customers can expect at the billed levels of water use for a given meter size.

**Figure XI-1. Single Family Residential Bill Comparison**

Single Family Residential customers - (5/8" meter)				
Water Use	Low	Average	High	Very High
<b>Demand Assumptions</b>				
hcf/bi-monthly period	11	22	44	66
gallons per day	137	274	549	823
% of bills up to flow assumption	33%	61%	88%	95%
Assumed Sewer Cap (hcf)	8	16	32	48
<b>Utility Bill at Current Rates</b>				
Water Bill	\$156.46	\$227.38	\$391.72	\$556.06
Wastewater Bill	\$198.94	\$270.78	\$414.46	\$558.14
<b>Total Bill</b>	<b>\$355.40</b>	<b>\$498.16</b>	<b>\$806.18</b>	<b>\$1,114.20</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$157.56	\$226.42	\$388.56	\$550.70
Wastewater Bill	\$217.12	\$292.64	\$443.68	\$594.72
<b>Total Bi-Monthly Bill</b>	<b>\$374.68</b>	<b>\$519.06</b>	<b>\$832.24</b>	<b>\$1,145.42</b>
\$ Difference	\$19.28	\$20.90	\$26.06	\$31.22
% Difference	5.4%	4.2%	3.2%	2.8%

Percentage of bills based on 2022 billing data.

**Figure XI-2. Multi-Family Residential Bill Comparison**

<b>Multi Family Residential customers - (1" meter)</b>				
<b>Water Use</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very High</b>
<b>Demand Assumptions</b>				
hcf/bi-monthly period	23	46	92	138
gallons per day	287	574	1,147	1,721
Sewer volume (hcf)	21	41	83	124
% of bills up to flow assumption	53%	79%	88%	93%
<b>Utility Bill at Current Rates</b>				
Water Bill	\$367.51	\$514.94	\$809.80	\$1,104.66
Wastewater Bill	\$506.32	\$685.92	\$1,063.08	\$1,431.26
<b>Total Bill</b>	<b>\$873.83</b>	<b>\$1,200.86</b>	<b>\$1,872.88</b>	<b>\$2,535.92</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$367.44	\$524.07	\$837.33	\$1,150.59
Wastewater Bill	\$552.24	\$741.04	\$1,137.52	\$1,524.56
<b>Total Bi-Monthly Bill</b>	<b>\$919.68</b>	<b>\$1,265.11</b>	<b>\$1,974.85</b>	<b>\$2,675.15</b>
\$ Difference	\$45.85	\$64.25	\$101.97	\$139.23
% Difference	5.2%	5.4%	5.4%	5.5%

Percentage of bills based on 2022 billing data.

**Figure XI-3. Commercial/Institutional Customer Bill Comparison**

<b>Commercial/Institutional customers - (1" meter)</b>				
<b>Water Use</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very High</b>
<b>Demand Assumptions</b>				
hcf/bi-monthly period	26	52	313	573
Sewer volume (hcf)	23	47	282	516
<b>Utility Bill at Current Rates</b>				
Water Bill	\$389.60	\$559.12	\$898.16	\$1,237.20
Wastewater Bill	\$524.28	\$739.80	\$2,850.10	\$4,951.42
<b>Total Bill</b>	<b>\$913.88</b>	<b>\$1,298.92</b>	<b>\$3,748.26</b>	<b>\$6,188.62</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$387.61	\$564.41	\$918.01	\$1,271.61
Wastewater Bill	\$571.12	\$797.68	\$3,016.08	\$5,225.04
<b>Total Bi-Monthly Bill</b>	<b>\$958.73</b>	<b>\$1,362.09</b>	<b>\$3,934.09</b>	<b>\$6,496.65</b>
\$ Difference	\$44.85	\$63.17	\$185.83	\$308.03
% Difference	4.9%	4.9%	5.0%	5.0%

**Figure XI-4. Hotels with Restaurant Customer Bill Comparison**

<b>Hotels with Restaurant customers - (2" meter)</b>				
<b>Water Use</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very High</b>
<b>Demand Assumptions</b>				
hcf/bi-monthly period	26	226	544	863
Sewer volume (hcf)	23	203	490	777
<b>Utility Bill at Current Rates</b>				
Water Bill	\$873.76	\$2,177.76	\$4,251.12	\$6,331.00
Wastewater Bill	\$1,309.55	\$3,600.95	\$7,254.46	\$10,907.97
<b>Total Bill</b>	<b>\$2,183.31</b>	<b>\$5,778.71</b>	<b>\$11,505.58</b>	<b>\$17,238.97</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$835.35	\$2,195.35	\$4,357.75	\$6,526.95
Wastewater Bill	\$1,349.92	\$3,049.12	\$5,758.40	\$8,467.68
<b>Total Bi-Monthly Bill</b>	<b>\$2,185.27</b>	<b>\$5,244.47</b>	<b>\$10,116.15</b>	<b>\$14,994.63</b>
\$ Difference	\$1.96	(\$534.24)	(\$1,389.43)	(\$2,244.34)
% Difference	0.1%	-9.2%	-12.1%	-13.0%

**Figure XI-5. Restaurant Customer Bill Comparison**

<b>Restaurant - (2" meter)</b>				
<b>Water Use</b>	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very High</b>
<b>Demand Assumptions</b>				
hcf/bi-monthly period	72	146	273	400
Sewer volume (hcf)	65	131	246	360
<b>Utility Bill at Current Rates</b>				
Water Bill	\$1,173.68	\$1,656.16	\$2,484.20	\$3,312.24
Wastewater Bill	\$1,995.66	\$2,989.62	\$4,721.52	\$6,438.36
<b>Total Bill</b>	<b>\$3,169.34</b>	<b>\$4,645.78</b>	<b>\$7,205.72</b>	<b>\$9,750.60</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$1,148.15	\$1,651.35	\$2,514.95	\$3,378.55
Wastewater Bill	\$1,746.40	\$2,369.44	\$3,455.04	\$4,531.20
<b>Total Bi-Monthly Bill</b>	<b>\$2,894.55</b>	<b>\$4,020.79</b>	<b>\$5,969.99</b>	<b>\$7,909.75</b>
\$ Difference	(\$274.79)	(\$624.99)	(\$1,235.73)	(\$1,840.85)
% Difference	-8.7%	-13.5%	-17.1%	-18.9%

**Figure XI-6. Fairgrounds Customer Bill Comparison**

<b>Fairgrounds</b>				
	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Very High</b>
<b>Demand Assumptions</b>				
hcf/bi-monthly period	3,999	7,998	11,095	14,192
Sewer volume (hcf)	2,862	5,724	9,958	14,192
<b>Utility Bill at Current Rates</b>				
Water Bill	\$94,041.48	\$120,114.96	\$140,307.40	\$160,499.84
Wastewater Bill	\$84,416.74	\$113,809.48	\$157,292.66	\$200,775.84
<b>Total Bill</b>	<b>\$178,458.22</b>	<b>\$233,924.44</b>	<b>\$297,600.06</b>	<b>\$361,275.68</b>
<b>Bills at Proposed Rates</b>				
Water Bill	\$108,610.51	\$140,922.43	\$165,946.19	\$190,969.95
Wastewater Bill	\$85,929.40	\$118,813.78	\$167,462.44	\$216,111.10
<b>Total Bi-Monthly Bill</b>	<b>\$194,539.91</b>	<b>\$259,736.21</b>	<b>\$333,408.63</b>	<b>\$407,081.05</b>
\$ Difference	\$16,081.69	\$25,811.77	\$35,808.57	\$45,805.37
% Difference	9.0%	11.0%	12.0%	12.7%

The figures above provide information as to how a customer’s bi-monthly bill will increase or decrease for a single combined water and wastewater bill. Annually, customers can expect bills to modulate based on seasonal water demands or changing water needs. **Figure XI-7** through **Figure XI-9** provide additional context as to how City customers could see their combined utility bill payments for these services adjust over a full year. The analysis compares prospective bills at proposed rates for FY 2024-25 with bills at current rates, using recorded water use from CY 2022.

**Figure XI-7. Annual Single-Family Residential Customer Combined Bill Adjustments**

<b>Single Family Residential Customers</b>	
<b>Annual Bill</b>	
<b>Adjustment</b>	<b>% of accounts</b>
Decrease	0.6%
0-1% increase	0.6%
1-2% increase	12.1%
2-3% increase	11.8%
3-4% increase	23.4%
4-5% increase	21.6%
5-6% increase	18.5%
6-7% increase	11.6%
<b>Total</b>	<b>100.0%</b>

If customers use water at the same levels of past demand, their bills will likely increase. The majority of single family households will see an increase of at least 3% in their combined water and wastewater payments, based on the figure above, with the largest annual increase being 7% for the year. Increases greater than 5% are attributable to the increased fixed service charged for wastewater service. All accounts regardless of water use will be required to pay the fixed service charge.

**Figure XI-8. Annual Multi-Family Residential Customer Combined Bill Adjustments**

Multi Family Residential Customers	
Annual Bill Adjustment	% of accounts
4-5% increase	15.9%
5-6% increase	36.5%
6-7% increase	47.6%
<b>Total</b>	<b>100.0%</b>

Assuming future water usage follows 2022 patterns, multi-family accounts can expect an annual increase between 4-7% for the year.

**Figure XI-9. Annual Commercial Customer Combined Bill Adjustments**

Commercial Customers Customers	
Annual Bill Adjustment	% of accounts
15% to 22% decrease	7.5%
7% to 14% decrease	7.5%
0% to 6% decrease	4.2%
0-7% increase	80.8%
<b>Total</b>	<b>100.0%</b>

Commercial customer bills demonstrate the highest order of variability due to the adjustment in wastewater rates. Previously, customers charged more to account for their wastewater strength will see a significant decrease, as shown in **Figure XI-4** and **Figure XI-5**. Accounts connected to shopping centers, restaurants, and hotels with a restaurant will see the largest decrease in their combined utility bills. While these customers will likely see lower utility bills, the majority of customers (80.8%) can expect an increase of up to 7% of their annual utility bills for water and wastewater services. The increases capture the increases to Fixed Service charges for all wastewater customers and the increases to Volumetric Rates for customers previously categorized as Commercial or Institutional. The increases in bills reflect the higher Commodity Charges proposed, as well.