CITY OF BEAUMONT
2024 Sewer Rate Study

REPORT / July 18, 2023

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July 18, 2023

Ms. Jennifer Ustation
Director of Finance
City of Beaumont

Subject: 2024 Sewer Rate Study Report

Dear Ms. Ustation

Raftelis is pleased to provide this sewer rate study report to the City of Beaumont (City). The City's overarching goals for the study included:

- Fair and reasonable sewer rates and fees for a five-year period
- Ten-Year financial plan to provide necessary revenue for the City's CIP needs
- Updated financing and rate schedule models

The report describes the methodologies and rationale used to achieve the City's goals and develop projected sewer rates for the period FY 2024 - FY 2028.

Sincerely,

John Wright
Senior Manager

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Glossary

Terms	Descriptions
AWWA Manual M1	*American Water Works Association, Manual of Water Supply Practices M1, Principles of Water Rates, Fees, and Charges,7th Edition*
BOD	Biochemical Oxygen Demand
CCF	Hundred cubic feet or 100 cubic feet, 1 CCF = 748 gallons
CIP	Capital Improvement Program
COS	Cost-of-Service
FY	Fiscal Year (July 1 – June 30)
Industrial Admin.	Industrial administration is the process of testing the discharges of high discharge strength customers in the Industrial customer class to ensure compliance with City and other regulatory requirements
I/I	Infiltration and Inflow
MF & MH-Rural	Multi-Family and Mobile Home-Rural
mg/l	Milligrams per Liter. A reflection of the strength of customer wastewater discharges for BOD, TSS or TDS
Monthly Service Charge	A fixed monthly charge assessed on both the water and wastewater bills.
O&M	Operations and Maintenance
Raftelis	Raftelis Financial Consultants, Inc.
Rate Funded (PAYGO) CIP	Capital improvement expenditures funded by rate revenues that are often referred to a "pay-as-you-go" (PAYGO) CIP.
Return Flow	The amount of billed sewer discharges that are received at the City of Beaumont's Wastewater Treatment Plant.
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
WEF Manual 27	Water Environment Federation, Manual of Practice No. 27, Financing and Charges for Sewer Systems,4th Edition
WWTP	Wastewater Treatment Plant

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1. Executive Summary

1.1. Background

On December 6, 2022, the City of Beaumont, CA (City) engaged Raftelis to assist with the completion of a sewer rate study. The City's overarching goals for the study included:

- Fair and reasonable sewer rates and fees for a five-year period
- Ten-Year financial plan to provide necessary revenue for the City's CIP needs
- Updated financing and rate schedule models

As an outcome of the study, Raftelis developed projected sewer rates for the five-year period FY 2024 - FY 2028. On June 6, 2023, the Beaumont City Council authorized the issuance of a Proposition 218 public notice in order to begin the process of implementing the proposed sewer rates developed as part of the study.

1.2. Rate Study Process and Approach

The sewer rate study was informed by the City's financial management and policy objectives, its current sewer rates, and projected costs, as well as the legal requirements in California (namely, Proposition 218). The resulting cost of service analyses and rate design process followed four key steps to derive proposed rates that fulfill the City's objectives, follow industry standard rate setting practices, and align with the intent of Proposition 218.

Step 1: Financial Planning and Revenue Requirement Determination

The rate-making process begins by creating a financial plan that estimates the amount of sewer rate revenue that will be required to cover the sewer utility's projected operating costs (the revenue requirement). The revenue requirement is determined for a base year, also known as a test-year or rate-setting year. The base year for the sewer rate study is fiscal year (FY) 2024 which runs from July 1, 2023, to June 30, 2024.

Step 2: Cost-of-Service Analysis

After determining the annual revenue requirement as part of the financial planning process, the projected costs incurred to provide utility service are then distributed among customer classes in proportion to the demands and associated costs they impose on the utility system. This is accomplished in the cost-of-service (COS) analysis.

Step 3: Rate Design and Calculation

After allocating the revenue requirement for each system to its corresponding customer classes, the rate design process begins. Rates must be designed to recover the COS for each customer class as determined in the COS analysis.

Step 4: Report Preparation

A formal report creates an administrative record that documents the rate study results and describes the assumptions and calculations used to derive proposed rates.

Step 5: Proposition 218 Process

The financial step in the rate study process is to comply with the procedures specified in Proposition 218 for the adoption of new rates.

1.3. Sewer Rate Study Summary

Existing Rates

The sewer rates currently charged by the City are shown in Table 1-1. Under the current sewer rate structure,

residential customers and schools do not pay $/CCF commodity rates. Instead, the full cost of providing service to these customers is recovered through a monthly fixed charge. Commercial customers pay both a monthly service charge and $/CCF commodity rates based on the estimated strength of their sewer discharges. Industrial customers pay unique monthly service charges and $/CCF commodity rates that reflect the volume and strength of their sewer discharges.

Table 1-1: Current Sewer Rates

Line	(A) Customer Class	(B) Monthly Service Charge	(C) Commodity Rates ($/CCF)
1	**Residential**		
2	Single Family	$47.21	N/A
3	Multi-Family & Mobile Home-Rural ($/unit)	$29.24	N/A
4			
5	**Schools ($/student)**	$1.07	N/A
6			
7	**Commercial Customers**		
8	Commercial – Low Strength	$25.77	$2.77
9	Commercial – Medium Strength	$47.21	$3.75
10	Commercial – High Strength	$151.07	$7.31
11			
12	**Industrial Customers**		
13	Dura Plastics Products	N/A	$3.84
14	Perricone Juice	N/A	$2.94
15	Rudolph Food Company	$169.27	$0.00
16	CJ Foods #1	N/A	$11.07
17	CJ Foods #2	N/A	$5.71
18	Precision Stamping	$148.24	$0.00

Financial Plan Overview

The Microsoft Excel financial model developed for the City has the capability to produce sewer utility financial plans over a variety of time horizons (for example, 5 years, 10 years, or 15 years). Raftelis, with the assistance of City staff, focused on the creation of a detailed 5-year financial plan for the period FY 2024 - FY 2028. This five-year planning horizon corresponds to the sewer rate projection period specified in the City's RFP and also reflects the fact that the City does not have detailed capital improvement expenditure projections for the years after FY 2028. The results of the financial planning process are shown below. A detailed discussion of the financial planning and revenue requirement determination process is provided in Section 3 of this report.

Status Quo Financial Plan (No Rate Revenue Increases)

To demonstrate the need for sewer rate revenue increases a "status quo" financial plan was developed. The status quo financial plan presents the projected cash reserve outcomes of maintaining the City's current sewer rates (i.e., having no sewer rate revenue increases). Figure 1-1 shows the results of this analysis.

In FY 2025, the Operating Reserve ending cash balance falls below the minimum target. In FY 2026, the Operating Reserve ending cash balance turns negative and falls below $0. As shown in Figure 1-2, by FY 2028, the sewer utility's combined cash reserves, which consist of the Operating Reserve, the Capital Reserve, and the Repair and Replacement Reserve, are projected to fall below the combined target minimums. This demonstrates the insufficiency of the City's current sewer rates to support the sewer utility's financial needs over the next five years.

Figure 1-1: Status Quo Financial Plan – Operating Reserve

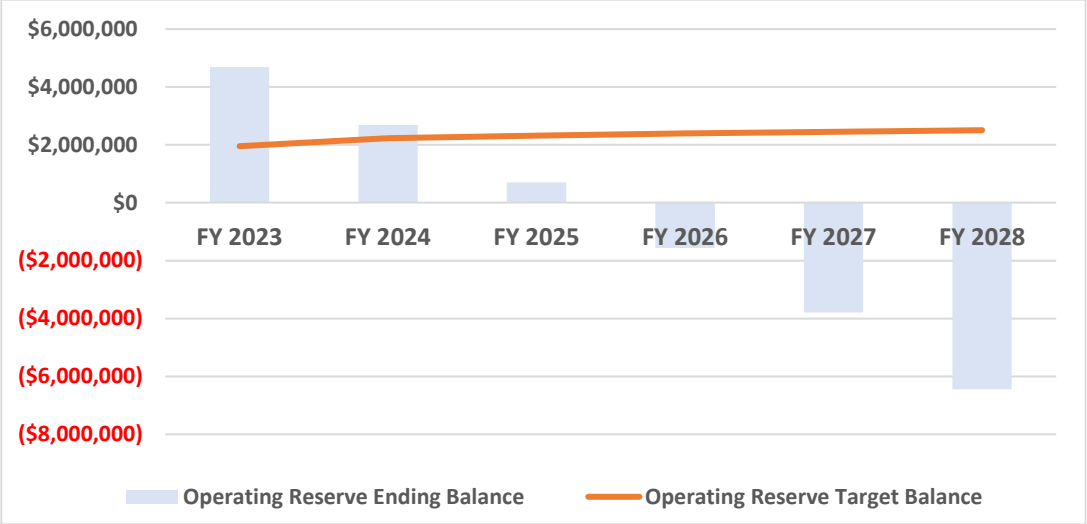
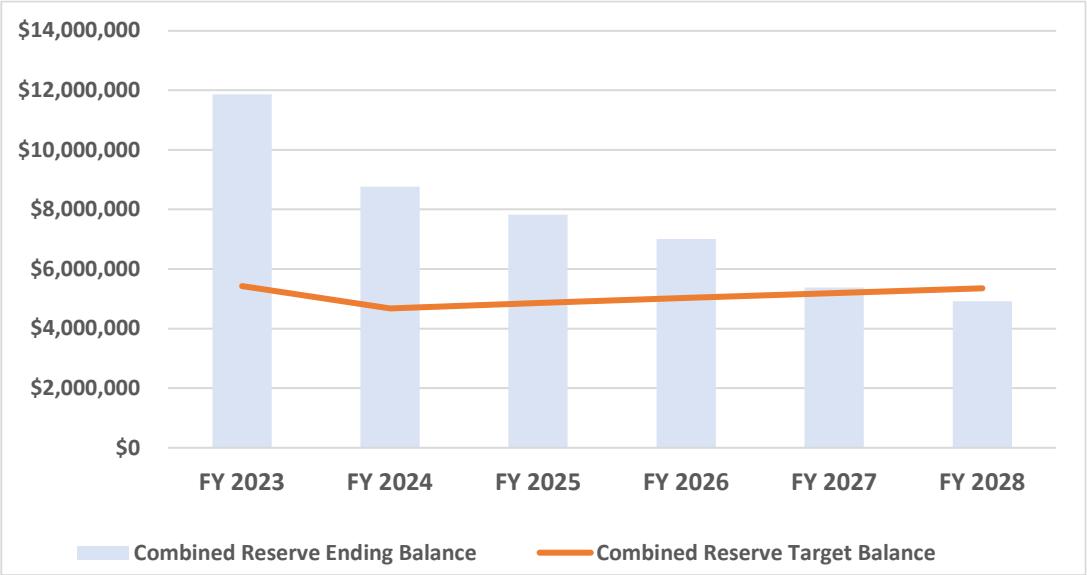


Figure 1-2: Status Quo Financial Plan: Combined Reserves



Proposed Financial Plan (Rate Revenue Increases)

Raftelis and City staff evaluated various sewer rate revenue adjustment scenarios before arriving at the proposed annual sewer rate revenue adjustments shown in Table 1-2. The percentages shown in Column B of Table 1-2 reflect the required total system rate revenue increase. The actual percentage increase in rates experienced by each customer class will vary based on the outcome of the COS analyses discussed in Section 4 of this report.

Table 1-2: Proposed Rate Revenue Increases

	(A)	(B)	(C)
Line	Fiscal Year	Proposed Rate Revenue Increase	Effective Date
1	FY 2024	6.0%	September 2023
2	FY 2025	5.0%	July 2024
3	FY 2026	3.0%	July 2025
4	FY 2027	2.0%	July 2026
5	FY 2028	2.0%	July 2027

Figure 1-3 shows the projected Operating Reserve cash outcomes of the proposed sewer rate revenue increases shown in Table 1-2. In all years, projected operating cash flows meet or exceed the City's target balances. Similarly, as shown in Figure 1-4, the sewer utility's combined cash reserves are projected to exceed target minimums. The combined cash reserves consist of the Operating Reserve, the Capital Reserve, and the Repair and Replacement Reserve. The primary funding source for the Capital Reserve are capacity fees paid by developers who connect to the sewer utility system. Capacity fees can only be used to pay for growth-related CIP costs. They cannot be used to fund on-going utility operating costs.

Figure 1-3: Financial Plan - Operating Reserve

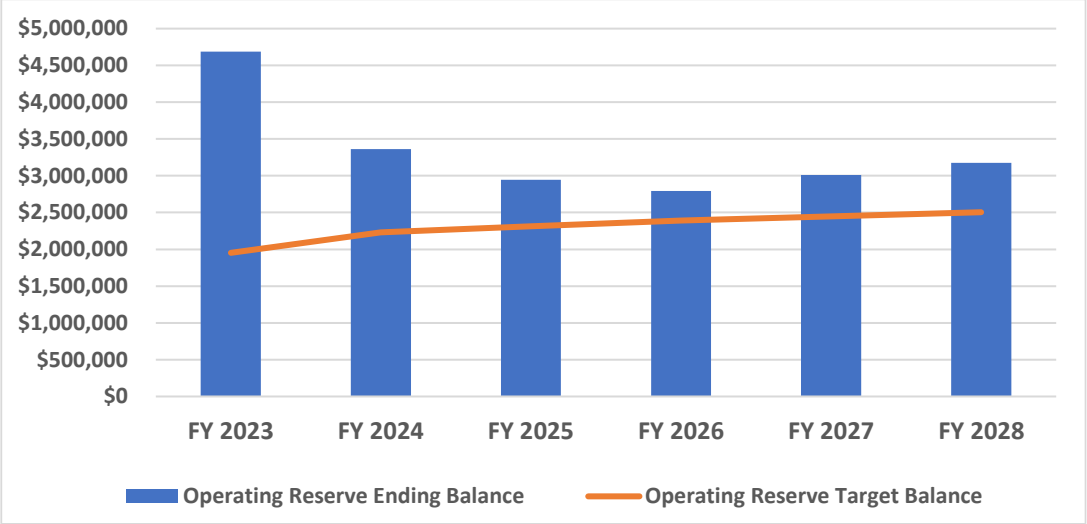
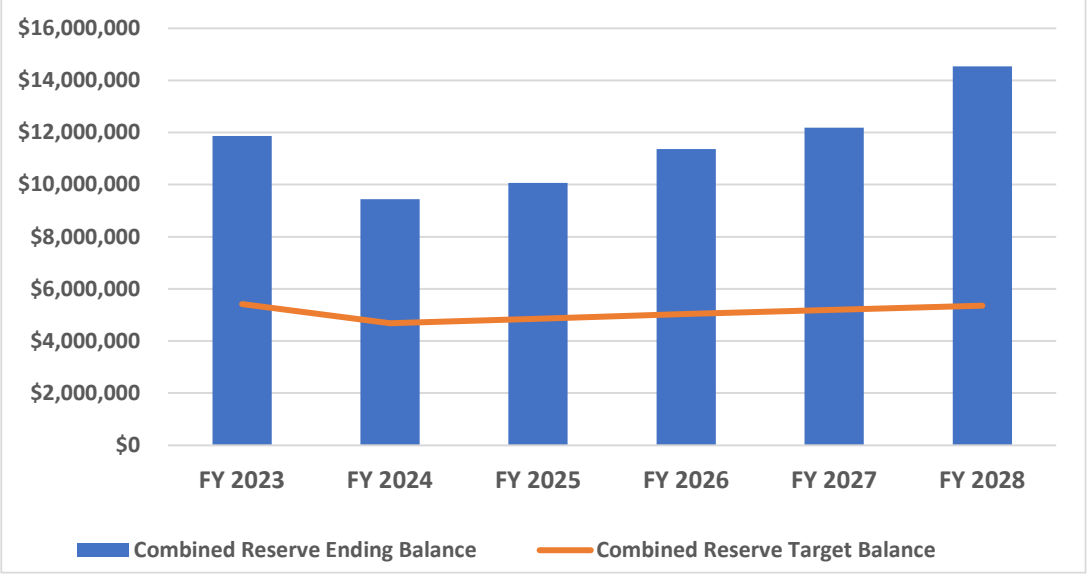


Figure 1-4: Financial Plan - Combined Reserves



Cost-of-Service Analysis

The COS analysis allocates the overall FY 2024 rate revenue requirement to each customer class based on the proportionate demands and associated costs they are projected to place on the utility system. It was conducted using industry-standard cost allocation principles as discussed in the Water Environment Federation publication, *Manual of Practice No. 27, Financing and Charges for Sewer Systems, Fourth Edition* (WEF Manual 27).

Table 1-3 shows the results of the FY 2024 COS analysis, which allocates the total FY 2024 revenue requirement of $13,893,236 (Line 13). The dollar amounts shown in Column B of Table 1-3 reflect the estimated proportional share of the FY 2024 revenue requirement that must be recovered from each customer class based on the proportionate demands they are projected to impose on the City's sewer utility system. A detailed discussion of the financial planning and revenue requirement determination process is provided in Section 4 of this report.

Table 1-3: FY 2024 Sewer Customer Class Cost-of-Service

Line	(A) Customer Class	(B) Cost-of-Service	(C) % of Total
1	Single Family	$10,451,116	75.2%
2	Multi-Family F & Mobile Home–Rural	$830,664	6.0%
3	Schools	$164,852	1.2%
4	Commercial – Low Strength	$477,828	3.4%
5	Commercial – Medium Strength	$260,108	1.9%
6	Commercial – High Strength	$365,735	2.6%
7	Dura Plastics Products	$12,372	0.1%
8	Perricone Juice	$563,776	4.1%
9	Rudolph Food Company	$6,647	0.0%
10	CJ Foods #1	$697,050	5.0%
11	CJ Foods #2	$56,439	0.4%
12	Precision Stamping	$6,647	0.0%
13	Total	$13,893,236	100.0%

Proposed Rates

The FY 2024 sewer rates shown in Table 1-4 are designed to recover the total FY 2024 COS from each customer class. In general, the structure of the proposed rates is similar to the current rate structure. Specifically, residential customers and schools continue to pay a monthly service charge but no $/CCF commodity rates. Commercial and industrial customers pay both a monthly service charge and a $/CCF commodity rate that reflect the assumed strength of their sewer discharges. Key items to note about the rates shown in Table 1-4 include:

- **Column C**: FY 2024 rates are based on the COS analysis which allocated the required 6.0% total system rate revenue increase to customer classes based on their proportionate demands. The 6.0% annual increase over the rate revenues produced by current rates is shown in Line 1 of Table 1-2.

- **Column D**: FY 2025 rates reflect a 5.0% increase over FY 2024 COS rates based on the financial plan increase of 5.0% is shown in Line 2 of Table 1-2.

- **Column E**: FY 2026 rates reflect a 3.0% increase over FY 2025 rates based on the financial plan increase of 3.0% is shown in Line 3 of Table 1-2.

- **Column F**: FY 2027 rates reflect a 2.0% increase over FY 2026 rates based on the financial plan increase of 2.0% is shown in Line 4 of Table 1-2.

- **Column G**: FY 2028 rates reflect a 2.0% increase over FY 2027 rates based on the financial plan increase of 2.0% is shown in Line 5 of Table 1-2.

Table 1-4: Proposed Sewer Rates for FY 2022 – FY 2028

Line	(A) Customer Class	(B) Current	(C) FY 2024 Effective 9/1/23	(D) FY 2025 Effective 7/1/24	(E) FY 2026 Effective 7/1/25	(F) FY 2027 Effective 7/1/26	(G) FY 2028 Effective 7/1/27
	Monthly Service Charge						
1	**Residential**						
2	Single Family	$47.21	$50.22	$52.73	$54.31	$55.40	$56.51
3	MF & MH–Rural ($/unit)	$29.24	$28.55	$29.98	$30.88	$31.50	$32.13
4							
5	**Schools ($/student)**	$1.07	$1.10	$1.15	$1.19	$1.21	$1.23
6							
7	**Commercial Customers**						
8	Commercial - Low Strength	$25.77	$6.14	$6.45	$6.64	$6.77	$6.91
9	Commercial - Medium Strength	$47.21	$6.14	$6.45	$6.64	$6.77	$6.91
10	Commercial - High Strength	$151.07	$6.14	$6.45	$6.64	$6.77	$6.91
11							
12	**Industrial Customers**						
13	Dura Plastics Products	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
14	Perricone Juice	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
15	Rudolph Food Company	$169.27	$553.02	$580.67	$598.09	$610.05	$622.26
16	CJ Foods #1	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
17	CJ Foods #2	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
18	Precision Stamping	$148.24	$553.02	$580.67	$598.09	$610.05	$622.26
19							
20	**Proposed Commodity Rates ($/CCF)**						
21	(A)	(B)	(C)	(D)	(E)	(F)	(G)
22			FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
23	Customer Class	Current	Effective 9/1/23	Effective 7/1/24	Effective 7/1/25	Effective 7/1/26	Effective 7/1/27
24	**Residential**						
25	Single Family	N/A	N/A	N/A	N/A	N/A	N/A
26	MF & MH–Rural ($/unit)	N/A	N/A	N/A	N/A	N/A	N/A
27							
28	**Schools ($/student)**	N/A	N/A	N/A	N/A	N/A	N/A
29							
30	**Commercial Customers**						
31	Commercial - Low Strength	$2.77	$4.91	$5.16	$5.31	$5.42	$5.53
32	Commercial - Medium Strength	$3.75	$5.91	$6.20	$6.39	$6.52	$6.65
33	Commercial - High Strength	$7.31	$9.88	$10.38	$10.69	$10.90	$11.12
34							
35	**Industrial Customers**						
36	Dura Plastics Products	$3.84	$5.13	$5.38	$5.54	$5.65	$5.77
37	Perricone Juice	$2.94	$10.87	$11.42	$11.76	$11.99	$12.23
38	Rudolph Food Company	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
39	CJ Foods #1	$11.07	$13.37	$14.04	$14.46	$14.75	$15.04
40	CJ Foods #2	$5.71	$8.20	$8.61	$8.87	$9.04	$9.22
41	Precision Stamping	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Estimated Bill Impacts

Table 1-5 shows estimated customer sewer bills for the period FY 2024 – FY 2028 based on the proposed sewer rates presented in Table 1-4. Key items to note about the rates shown in Table 1-5 include:

- **Residential Customers and School Estimated Bills (Lines 1 -5)**: Residential customers and schools do not pay commodity rates. The monthly bills for these customers are based on the proposed change in monthly service charges.

- **Commercial Customer Estimated Bills (Lines 7-10)**: . Commercial customer bills reflect both commodity charges and monthly service charges. The estimated bills for commercial customers assume monthly billed sewer discharges of 40 CCF. This assumption was made for low, medium, and high strength commercial customers. Each commercial customer will have a unique amount of billed sewer discharges. Therefore, the bill impacts shown in Table 1-5 are but one example of an infinite range of potential outcomes.

- **Industrial Customer Bills (Lines 12-18)**: The estimated bills for commercial customers reflect the estimated projected billed discharges applicable to each customer. Industrial customer bills reflect both commodity charges and monthly service charges.

Table 1-5: Estimated Change in Monthly Sewer Bills

Line	Customer Class	Projected Monthly Bills (A) Current	(B) FY 2024	(C) FY 2025	(D) FY 2026	(E) FY 2027	(F) FY 2028
1	**Residential**						
2	Single Family	$47.21	$50.22	$52.74	$54.32	$55.40	$56.51
3	MF & MH–Rural ($/unit)	$29.24	$28.55	$29.97	$30.87	$31.49	$32.12
4							
5	**Schools ($/student)**	$1.07	$1.10	$1.15	$1.19	$1.21	$1.23
6							
7	**Commercial Customers**						
8	Commercial - Low Strength	$136.57	$202.65	$212.78	$219.17	$223.55	$228.02
9	Commercial - Medium Strength	$197.21	$242.45	$254.57	$262.21	$267.45	$272.80
10	Commercial - High Strength	$443.47	$401.18	$421.24	$433.87	$442.55	$451.40
11							
12	**Industrial Customers**						
13	Dura Plastics Products	$358.33	$1,031.00	$1,082.55	$1,115.02	$1,137.32	$1,160.07
14	Perricone Juice (Note 1)	$13,852.50	$46,981.34	$49,330.41	$50,810.32	$51,826.53	$52,863.06
15	Rudolph Food Company	$169.27	$553.02	$580.67	$598.09	$610.05	$622.26
16	CJ Foods #1	$47,608.33	$58,087.53	$60,991.91	$62,821.67	$64,078.10	$65,359.66
17	CJ Foods #2	$2,891.67	$4,703.25	$4,938.41	$5,086.56	$5,188.29	$5,292.06
18	Precision Stamping	$148.24	$553.02	$580.67	$598.09	$610.05	$622.26
19							
20		Change in Monthly Bills					
21		(G)	(H)	(I)	(J)	(K)	(L)
22	Customer Class	Current	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
23	**Residential**						
24	Single Family	---	$3.01	$2.51	$1.58	$1.09	$1.11
25	MF & MH–Rural ($/unit)	---	($0.69)	$1.43	$0.90	$0.62	$0.63
26							
27	**Schools ($/student)**	--	$0.03	$0.05	$0.03	$0.02	$0.02
28							
29	**Commercial Customers**						
30	Commercial - Low Strength	--	$66.08	$10.13	$6.38	$4.38	$4.47
31	Commercial - Medium Strength	--	$45.24	$12.12	$7.64	$5.24	$5.35
32	Commercial - High Strength	--	($42.29)	$20.06	$12.64	$8.68	$8.85
33							
34	**Industrial Customers**						
35	Dura Plastics Products	--	$672.66	$51.55	$32.48	$22.30	$22.75
36	Perricone Juice (Note 1)	--	$33,128.84	$2,349.07	$1,479.91	$1,016.21	$1,036.53
37	Rudolph Food Company	--	$383.75	$27.65	$17.42	$11.96	$12.20
38	CJ Foods #1	--	$10,479.20	$2,904.38	$1,829.76	$1,256.43	$1,281.56
39	CJ Foods #2	--	$1,811.58	$235.16	$148.15	$101.73	$103.77
40	Precision Stamping	--	$404.78	$27.65	$17.42	$11.96	$12.20

Note 1: The monthly bills for Perricone Juice (Line 14) and the monthly bill changes (Line 36) reflect the discharge volumes and strength loadings specified in an agreement between Perricone Juice and the City.

2. Study Background

2.1. Sewer Utility Overview

The City of Beaumont is located in Riverside County. The City is located approximately 11 miles north of the City of Hemet, 5 miles east of the City of Banning, 12 miles east of City of Monero Valley, and 7 miles southeast of the City of Yucaipa. The City currently encompasses an area greater than 26,000 acres, with an approximate population of 52,000 residents.

The City's sewer utility provides wastewater collection and treatment services to approximately 17,852 sewer customer accounts. The collection system consists of approximately 200 miles of mains and 10 lift stations that convey flows to the Beaumont Sewer Treatment Plant (WWTP). The WWTP treats, on average, approximately 3.66 mgd of wastewater flows, collecting flows from 11 different tributary basins.

Improvements to the WWTP's treatment technologies were completed in 2022. The improvements were necessary to meet the environmental mandates of the Santa Ana Regional Water Quality Control Board and the projected demands of customer growth. On September 27, 2018, the City issued $90 million in bonds to pay for the construction of the new plant and related system improvements. Approximately $17.8 million of the costs come from capacity fees. The remaining $3.1 million was funded from Community Facilities District tax proceeds. The entire project budget is $110.9 million.

2.2. Rate Study Overview

The City's most recent sewer rate study was completed in June 2018 by an independent third-party consulting firm. The 2018 study resulted in proposed sewer rates for the period FY 2019 - FY 2023. On October 6, 2022, the City issued a Request for Proposals (RFP) seeking an independent consultant to complete a new sewer rate study. After conducting a competitive selection process, the City selected Raftelis. A professional service agreement between the City and Raftelis was executed on December 6, 2022. The objectives of the sewer rate study, as described in the City's RFP, were:

- Fair and reasonable sewer rates and fees for a five-year period
- Ten-Year financial plan to provide necessary revenue for the City's CIP needs
- Updated financing and rate schedule models

2.3. Report Contents

This report contains the following sections:

Section 1: Executive Summary: Summarizes the results for the financial planning, cost of service analysis, and rate design portions of the sewer rate study.

Section 2: Study Background: Provides an overview of the sewer rate study.

Section 3: Financial Planning and Requirement Determination: Discussion of the development of the sewer utility financial plan and revenue requirement projections for the FY 2024 – FY 2028 financial planning period.

Section 4: Cost-of-Service Analysis: Discussion of the process used to functionalize, allocate, and distribute the FY 2024 sewer rate revenue requirement to customer classes.

Section 5: Rate Design: Discussion of the process used to develop the recommended sewer rate structure and proposed sewer rates for the period FY 2024 – FY 2028.

2.4. Proposition 218

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

Proposition 218 requires that municipal utility rates cannot be "arbitrary and capricious," meaning that the rate-setting methodology must be sound and that there must be a nexus between the costs and the rates charged in addition to meeting the substantive requirements set forth therein. These provisions require that a property-related fee must meet all of the following requirements:

- Revenues derived from the fee must not exceed the funds required to provide the property-related service.
- Revenues from the fee must not be used for any purpose other than that for which the fee is imposed.
- The amount of a fee imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel.
- The fee may not be imposed for a service, unless the service is actually used by, or immediately available to, the owner of the property subject to the fee. A fee based on potential or future use of a service is not permitted and stand-by charges must be classified as assessments subject to the ballot protest and proportionality requirements for assessments.
- No fee may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners.

The five substantive requirements in Article XIII D are structured to place limitations on (1) the use of the revenue collected from property-related fees and (2) the allocation of costs recovered by such fees to ensure that they are proportionate to the cost of providing the service attributable to each parcel.

Industry standard rate setting methodologies for sewer and water utilities are, in many ways, similar to the requirements of Proposition 218. As stated in the WEF Manual 27, "the process of identifying the service characteristics of the utility's customers and distributing costs in proportion to their service demands are critical steps in the development of equitable rates and charges." Similarly, the American Water Works publication, *Manual of Water Supply Practice M1, Principles of Water Rates, Fees, and Charges,7th Edition*, states that "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers."

California Courts have made clear that, while agencies are authorized to use industry-standard rate setting methodologies set forth in WEF Manual 27 and AWWA Manual M1 rates for sewer and water service must meet the substantive requirements of Proposition 218.

2.5. Reliance on City Provided Data

During the study, City staff provided Raftelis with a variety of technical information including demand, cost, and revenue data. Raftelis did not independently assess or test the accuracy of such data – historic or projected. Raftelis has relied on this data in the formulation of our findings and subsequent recommendations, as well as in the preparation of this report. Raftelis also relied on cost allocation data provided by the Department as needed to complete the COS and rate design analysis.

3. Financial Plan & Revenue Requirement Projection

3.1. Overview of the Financial Planning Process

The primary goal of the financial planning process is to identify the total amount of annual sewer rate revenue required to support the sewer utility's financial needs. The critical steps in developing a sewer utility financial plan include:

- **Projecting Sewer Units of Service (Demand Forecast)**: The demand forecast projects the "units of service" subject to each specific rate or charge. Units of service include number of customer accounts and bills, the quantity of customer water consumption and associated billed sewer discharge volumes (flow), and the quantity of sewer discharges based on customer strength loading characteristics (pounds).

- **Projecting Sewer Rate Revenues at Existing Rates**: This step in the financial planning process determines how much rate revenue will be generated annually if there are *no rate increases*. The level of rate revenues at existing rates is compared to projected expenditures to determine the annual funding shortfall that must be met by the appropriate combination of rate revenue increases or external debt financing.

- **Projecting Miscellaneous Non-Rate Revenue**: Miscellaneous non-rate revenue items can include interest income from cash reserves, grants, capacity fee receipts, and miscellaneous ancillary fees. Miscellaneous non-rate revenues assist in closing the annual funding shortfall and reduce the revenue requirement from rates (i.e., the level of amount of rate revenue that must be recovered from customers).

- **Projecting Operating and Maintenance Expenses and Existing Debt Service**: This step in the financial planning process projects the O&M expenses that will be incurred to provide utility service as well as required debt service payments on existing debt obligations.

- **Determining a Capital Financing Strategy**: In many utilities, the key driver of the annual funding shortfall is projected CIP expenditures. In this step in the financial planning process, the utility determines the optimal mix of annual rate revenue increases and external debt financing to cover the funding shortfall. An outcome of this process is the identification of rate revenue funded CIP expenditures, required debt proceeds, and projected debt service costs.

- **Identifying Cash Reserve and Debt Service Coverage Targets**: Utilities must not only have sufficient revenues to pay for projected costs, but they must also maintain prudent cash reserves and meet both contractually obligated and target debt service coverage requirements. The sewer revenue requirement from rates therefore must include the cost of meeting both cash reserve and debt service coverage targets.

- **Determining Annual Revenue Requirement from Rates**: The final outcome of the financial planning process is the determination of the annual amount of rate revenue that must be recovered from customers to pay for all projected Sewer Enterprise costs and meet financial targets.

3.2. Focus on the Sewer Utility Operating Reserve

The City tracks its sewer utility activities through three types of cash reserve funds:

- **Operating Reserve**: The financial plan discussed in this report is focused on the Operating Reserve. This reserve reflects ongoing sewer utility activities such as revenues earned from rates and the costs incurred to provide services. They include operating costs, rate funded capital improvement program (CIP) expenditures, and debt service payments.

- **Capital Reserve**: The Capital Reserve reflects revenues and costs associated with the funding of growth-related CIP expenditures. The primary funding source for growth-related CIP expenditures are capacity fees paid by developers who connect to the sewer utility system. Capacity fees can only be used to pay for growth-related CIP costs. They cannot be used to fund on-going utility operating costs. As part of the sewer rate study, a projection of cash reserves for the period FY 2023 – FY 2028 was prepared.

- **Repair and Replacement Reserve**: The Repair and Replacement reserve is used to track the cost of non-growth repair and replacement CIP expenditures. The source of funding for the Repair and Replacement Reserve is rate revenues earned from customers that are transferred in from the Operating Reserve. The Operating Reserve revenue requirement includes the transfer of rate revenues to the Repair and Replacement Reserve.

3.3. Financial Plan Components

Projected Units of Service (Demand Forecast)

The financial plan assumes the growth in customer billing units shown in Table 3-1. The growth rates developed in consultation with City staff based on recent historical trends and projected development during the FY 2024-FY 2028 financial planning horizon.

Table 3-1: Projected Growth in Billing Units

Line	(A) Customer Type	(B) Billing Unit	(C) Estimated FY 2023	(D) Projected FY 2024	(E) Projected FY 2025	(F) Projected FY 2026	(G) Projected FY 2027	(H) Projected FY 2028
1	Residential	EDUs	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
2	Schools	Students	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
3	Commercial	Accounts	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
4	Industrial	Accounts	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3-2 shows the projected customer billing units for the FY 2024-FY 2028 financial planning horizon. The City bills the monthly sewer service charge for residential customers based on equivalent dwelling units (EDUs). Schools are billed on a per student basis. Commercial and industrial customers are billed on a per account basis. The projected billing units shown in

Table 3-2 reflect the growth rates shown in Table 3-1 projected forward from a baseline of actual FY 2022 billing units.

Table 3-3 shows the projected accounts for the FY 2024-FY 2028 financial planning horizon. The projected accounts shown in Table 3-3 reflect the growth rates shown in Table 3-1 projected forward from a baseline of actual FY 2022 accounts.

Table 3-4 shows projected customer billed sewer discharges for the FY 2024 – FY 2028 financial planning horizon. The City determines the monthly billed sewer discharges for commercial and industrial customers based on their winter average billed water consumption during the previous year. The months used to calculate the winter average

are January – April. The City obtains monthly billed water consumption data for each customer from the Beaumont Cherry Valley Water District. Note that the billed water consumption for residential customers and schools is marked "N/A" (Lines 1 – 6 in Table 3-4). This is because the entire cost of providing sewer service to residential customers and schools is recovered via monthly fixed charges. Thus, they do not have actual billed sewer discharge volumes.

Table 3-2: Projected Customer Billing Units

Line	(A) Customer Class	(B) Billing Units	(C) Estimated FY 2023	(D) Projected FY 2024	(E) Projected FY 2025	(F) Projected FY 2026	(G) Projected FY 2027	(H) Projected FY 2028
1	**Residential**							
2	Single Family	EDUs	17,084	17,341	17,601	17,865	18,133	18,405
3	Multi-Family & Mobile Home-Rural	EDUs	2,388	2,424	2,460	2,497	2,535	2,573
4	Total Residential	EDUs	19,473	19,765	20,061	20,362	20,668	20,978
5								
6	**Schools**	Students	12,332	12,517	12,705	12,896	13,089	13,285
7								
8	**Commercial**							
9	Commercial - Low Strength	Accounts	290	295	299	304	308	313
10	Commercial - Medium Strength	Accounts	63	64	65	66	67	68
11	Commercial - High Strength	Accounts	63	64	65	66	67	68
12	Total Commercial	Accounts	416	422	429	435	442	448
13								
14	**Industrial**							
15	Dura Plastics Products	Accounts	1	1	1	1	1	1
16	Perricone Juice	Accounts	1	1	1	1	1	1
17	Rudolph Food Company	Accounts	1	1	1	1	1	1
18	CJ Foods #1	Accounts	1	1	1	1	1	1
19	CJ Foods #2	Accounts	1	1	1	1	1	1
20	Precision Stamping	Accounts	1	1	1	1	1	1
21	Total Industrial	Accounts	6	6	6	6	6	6

Table 3-3: Projected Customer Accounts

Line	(A) Customer Class	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Residential**						
2	Single Family	17,084	17,341	17,601	17,865	18,133	18,405
3	Multi-Family & Mobile Home-Rural	72	73	74	75	76	78
4	Total Residential	17,157	17,414	17,675	17,940	18,209	18,482
5							
6	**Schools**	10	10	10	10	10	10
7							
8	**Commercial**						
9	Commercial - Low Strength	290	295	299	304	308	313
10	Commercial - Medium Strength	63	64	65	66	67	68
11	Commercial - High Strength	63	64	65	66	67	68
12	Total Commercial	416	422	429	435	442	448
13							
14	**Industrial**						
15	Dura Plastics Products	1	1	1	1	1	1

16	Perricone Juice	1	1	1	1	1	1
17	Rudolph Food Company	1	1	1	1	1	1
18	CJ Foods #1	1	1	1	1	1	1
19	CJ Foods #2	1	1	1	1	1	1
20	Precision Stamping	1	1	1	1	1	1
21	Total Industrial	6	6	6	6	6	6
22							
23	Total	17,589	17,852	18,120	18,391	18,667	18,947

Table 3-4: Projected Billed Discharges (CCF)

Line	(A) Customer Class	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Residential**						
2	Single Family	N/A	N/A	N/A	N/A	N/A	N/A
3	Multi-Family & Mobile Home-Rural	N/A	N/A	N/A	N/A	N/A	N/A
4	Total Residential	N/A	N/A	N/A	N/A	N/A	N/A
5							
6	**Schools**	N/A	N/A	N/A	N/A	N/A	N/A
7							
8	**Commercial**						
9	Commercial - Low Strength	91,472	92,844	94,237	95,650	97,085	98,541
10	Commercial - Medium Strength	42,593	43,232	43,881	44,539	45,207	45,885
11	Commercial - High Strength	35,980	36,519	37,067	37,623	38,188	38,760
12	Total Commercial	170,045	172,596	175,185	177,812	180,480	183,187
13							
14	**Industrial**						
15	Dura Plastics Products	1,119	1,119	1,119	1,119	1,119	1,119
16	Perricone Juice	56,457	51,233	51,233	51,233	51,233	51,233
17	Rudolph Food Company	0	0	0	0	0	0
18	CJ Foods #1	51,631	51,631	51,631	51,631	51,631	51,631
19	CJ Foods #2	6,075	6,075	6,075	6,075	6,075	6,075
20	Precision Stamping	0	0	0	0	0	0
21	Total Industrial	115,282	110,058	110,058	110,058	110,058	110,058
22							
23	Total	285,327	282,653	285,242	287,870	290,537	293,244

Projected Revenues at Existing Rates

The sewer rates currently charged by the City are shown in Table 3-5. The rates were used in the development of projection of sewer rate revenues under existing rates as described below.

Table 3-5: Current Sewer Rates

Line	(A) Customer Class	(B) Monthly Service Charge	(C) Commodity Rates ($/CCF)
1	**Residential**		
2	Single Family	$47.21	N/A
3	Multi-Family & Mobile Home-Rural ($/unit)	$29.24	N/A
4			
5	**Schools ($/student)**	$1.07	N/A
6			
7	**Commercial Customers**		
8	Commercial – Low Strength	$25.77	$2.77

9	Commercial – Medium Strength	$47.21	$3.75
10	Commercial – High Strength	$151.07	$7.31
11			
12	**Industrial Customers**		
13	Dura Plastics Products	N/A	$3.84
14	Perricone Juice	N/A	$2.94
15	Rudolph Food Company	$169.27	$0.00
16	CJ Foods #1	N/A	$11.07
17	CJ Foods #2	N/A	$5.71
18	Precision Stamping	$148.24	$0.00

Table 3-6 shows a summary of detail of projected rate revenues for the period FY 2023 – FY 2028 assuming that existing sewer rates remain unchanged. The projection of revenues at existing rates, when compared to projected expenditures, allows for the quantification of the funding gap that must be filled by rate revenue increases, external debt financing, or some other form of funding. The revenues shown in Table 3-6 were calculated by multiplying the projected units of service for each year by the existing sewer rates.

Table 3-6: Projected Revenue at Existing Rates

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Customer Class	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Total Rate Revenues	$12,948,348	$13,106,827	$13,283,295	$13,462,410	$13,644,211	$13,828,740

Projected Non-Operating Income

In addition to revenues produced by the City's sewer rates, the City also earns non-operating revenues from miscellaneous sources. Revenue from non-operating sources reduces the annual revenue requirement and the rates that must ultimately be paid by customers. Table 3-7 shows the projection of these non-operating revenues. Line 1 labeled "Miscellaneous" includes revenues earned from activities such as inspections, fines and forfeitures, and special sewer services. Line 2 of Table 3-7 reflects the projected interest income on Operating Reserves based on an assumption of a 2.5% interest rate earned on cash reserve balances.

Table 3-7: Non-Operating Revenues

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Revenue	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Miscellaneous	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
2	Interest Income	$130,575	$94,890	$71,121	$62,089	$60,941	$63,609
3	Total	$326,113	$295,316	$276,558	$272,662	$276,778	$284,842

Projected Inflation Rates / Cost Escalation Factors

The financial plan projects both operating costs and capital improvement costs for the FY 2024 – FY 2028 financial planning period, starting from a baseline of the City's FY 2023 sewer utility budget. The costs contained in the FY 2023 budget were escalated using the factors shown in Table 3-8. These factors reflect an estimate of inflation during each year of the planning horizon and were developed in consultation with City staff.

Table 3-8: Projected Inflation Rates / Cost Escalation Factors

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Customer Class	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	General	N/A	5.0%	5.0%	4.0%	3.0%	2.0%
2	Personnel	N/A	2.5%	2.5%	2.5%	2.5%	2.5%
3	Administrative	N/A	5.0%	3.0%	3.0%	3.0%	2.0%

4	Operating (Fleet Costs, Program Costs, Repairs and Maintenance, Supplies, Special Services, Equipment Leasing)	N/A	5.0%	3.0%	3.0%	3.0%	2.0%
5	Utilities	N/A	5.0%	5.0%	5.0%	5.0%	5.0%
6	Capital	N/A	5.0%	5.0%	4.0%	3.0%	3.0%

Projected Operating Expenses

Projected sewer utility operating expenses for the FY 2024 – FY 2028 financial planning period are shown in Table 3-9. Personal service costs (Line 1) reflect salary and benefits costs for all sewer utility personnel (administrative, treatment, field operations, and customer service). Operating costs (Line 2) reflect the cost of fleet operations, special programs, repairs and maintenance, supplies, special services, and equipment leasing). Capital outlay costs (Line 3) reflect the purchase of vehicles, the purchase of equipment, and contingencies. The amounts shown in Table 3-9 were projected forward starting from a baseline of the City's FY 2023 sewer utility budget using the escalation factors shown in Table 3-8.

Table 3-9: Projected Operating Expenses (O&M Expenses)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Item	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Personnel Services	$2,545,415	$2,981,044	$3,149,003	$3,221,580	$3,295,776	$3,491,615
2	Operating Costs	$4,705,585	$4,908,364	$5,885,115	$6,016,699	$6,152,230	$6,245,294
3	Capital Outlay	$558,023	$1,037,473	$220,500	$322,771	$335,995	$285,256
4	Total	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164

Projected Debt Service Expenditures

In 2018, the Beaumont Public Improvement issued $81.1 million of revenue bonds to finance improvements at the City's WWTP. The projected debt service payments shown in Table 3-10 reflect the contractually required debt service payments associated with these revenue bonds during the FY 2024 – FY 2028 financial planning period (Line 1). There is no proposed debt service (Line 2).

Table 3-10: Projected Debt Service Payments

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Item	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Existing Debt Service	$5,073,213	$5,073,713	$5,070,713	$5,069,088	$5,073,463	$5,073,588
2	Proposed Debt Service	$0	$0	$0	$0	$0	$0
3	Total	$5,073,213	$5,073,713	$5,070,713	$5,069,088	$5,073,463	$5,073,588

Projected Contribution to the Repair & Replacement Reserve

In 2023, the City established a sewer utility Repair and Replacement Reserve to accumulate funds to pay for future CIP expenditures related to the repair and replacement of existing infrastructure such as underground pipelines and lift stations. The initial contribution to this fund was $1 million via a transfer of cash from the Operating Reserve. As shown in Table 3-11, the financial plan for FY 2024 – FY 2028 features an annual contribution of approximately $2.0 million being transferred into the Repair and Replacement Reserve from the Operating Reserve. The estimate of $2.0 million represents 85% of the annual depreciation expense for collection and conveyance system assets assuming a 60 year useful life. The exact equation is as follows:

*($141,085,109 original cost / 60 years = $2,351,418 annual depreciation expense) * .85 = $1.998,706*

Table 3-11: Projected Contribution to the Repair & Replacement Reserve

(A)	(B)	(C)	(D)	(E)	(F)	(G)

Line	Item	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Repair & Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
2	Total	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706

Projected Rate Funded (PAYGO) CIP Expenditures

The annual revenue requirement from rates includes both an annual contribution to the Repair and Replacement Reserve (Table 3-11) and the cost of rate funded CIP which is often referred to as pay-as-you-go or "PAYGO" CIP. Table 3-12 shows the projected rate funded (PAYGO) CIP expenditures for the FY 2024 – FY 2028 financial planning horizon. The projects shown in Table 3-12 were provided by City staff in current year 2023 dollars (i.e., without estimated construction cost inflation). Starting in FY 2024 (Column C), the projected cost for each project has been inflated using the cost escalation factors shown in Line 6 of Table 3-8

Table 3-12: Projected Rate Funded (PAYGO) CIP Expenditures

	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Line	Item	Estimated FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
1	Office Expansion	$0	$0	$0	$573,300	$0	$0
2	Crane Truck	$0	$0	$0	$0	$0	$364,928
3	CCTV Main Line Inspection System	$0	$241,962	$0	$0	$0	$0
4	4th Street Manhole Replacement	$200,000	$0	$0	$0	$0	$0
5	Oak Valley Lift Station Access Point	$210,000	$0	$0	$0	$0	$0
6	Vactor Dump Station	$450,000	$0	$0	$0	$0	$0
7	Total	$860,000	$241,962	$0	$573,300	$0	$364,928

Projected Total CIP Expenditures

Table 3-13 summarizes projected sewer utility CIP expenditures for the FY 2024 – FY 2028 financial planning period which are based on the projects identified in the City of Beaumont's Draft 2021 Wastewater Master Plan. The financial plan does not feature the use of external debt financing. Instead, four types of CIP expenditure funding sources are projected to be used:

- **Rate Funded (PAYGO) CIP Expenditures (Lines 1-8)**: These CIP expenditures are funded directly from the operational cash flows earned from rate revenues. As such, they are reflected in the Operating Reserve. Rate Funded (PAYGO) CIP expenditures can be for both non-growth CIP that does not increase the capacity of sewer system to serve new customers and growth-related CIP that does increase system capacity.

- **Capacity Fee Funded CIP Expenditures (Lines 10-13)**: Capacity fees can only be used to fund growth-related CIP expenditures that increase the capacity of the sewer system to serve new customers. Capacity fee receipts/revenues and the cost of growth-related CIP expenditures are reflected in the Capital Reserve.

- **CIP Expenditures Funded CIP Expenditures (Lines 15-28)**: As noted previously, in 2023, the City established a sewer utility Repair and Replacement Reserve to accumulate funds to pay for future CIP expenditures related to the repair and replacement of existing infrastructure such as underground pipelines and lift stations. Funding for the Repair and Replacement Reserve is provided by cash transfers from the Operating Reserve Fund.

- **Grant Funded CIP Expenditures (Lines 30-32)**: The FY 2024 – FY 2028 financial plan projects the receipt of $2.3 million dollars of grant funding for CIP expenditures (Line 31). The grant funding will be used to pay for a growth-related CIP project. Therefore, they are reflected in the Capital Reserve.

Table 3-13: Projected Total CIP Expenditures

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Rate Funded (PAYGO) CIP**						
2	Office Expansion	$0	$0	$0	$573,300	$0	$0
3	Crane Truck	$0	$0	$0	$0	$0	$364,928
4	CCTV Main Line Inspection System	$0	$241,962	$0	$0	$0	$0
5	4th Street Manhole Replacement	$200,000	$0	$0	$0	$0	$0
6	Oak Valley Lift Station Access Point	$210,000	$0	$0	$0	$0	$0
7	Vactor Dump Station	$450,000	$0	$0	$0	$0	$0
8	Total	$860,000	$241,962	$0	$573,300	$0	$364,928
9							
10	**Capacity Fee Funded CIP**						
11	Mesa Lift Station Construction	$3,650,000	$2,835,000	$0	$0	$0	$0
12	1211 Petition with Adaptive Management & Mitigation Plan	$0	$2,205,000	$0	$0	$0	$0
13	Total	$3,650,000	$5,040,000	$0	$0	$0	$0
14							
15	**CIP Funded by the Repair & Replacement Reserve**						
16	Apron Lane Pipeline Replacement	$0	$0	$303,188	$0	$0	$0
17	Edgar Ave Pipeline Replacement	$0	$0	$650,475	$0	$0	$0
18	Lift Station Condition	$0	$0	$441,000	$458,640	$472,399	$486,571
19	On-going Pipeline Replacement Program	$0	$0	$551,250	$573,300	$708,599	$729,857
20	I&I System Repairs - Phase 3	$0	$0	$220,500	$0	$0	$0
21	UV Bulb Replacement	$0	$0	$165,375	$0	$0	$0
22	RO Module Replacement	$0	$0	$0	$343,980	$0	$0
23	Vactor Truck	$0	$0	$0	$0	$826,699	$0
24	Huber 4MM Coarse Screen Retrofit	$0	$52,500	$0	$0	$0	$0
25	Sewer Bridge Coating/Inspection	$0	$0	$55,125	$0	$0	$0
26	Lift Station Spare Pump Program	$300,000	$0	$0	$0	$0	$0
27	VFD	$250,000	$0	$0	$0	$0	$0
28	Total	$550,000	$52,500	$2,386,913	$1,375,920	$2,007,697	$1,216,428
29							
30	**Grant Funded CIP**						
31	Mesa Lift Station Construction	$100,000	$2,415,000	$0	$0	$0	$0
32	Total	$100,000	$2,415,000	$0	$0	$0	$0
33							
34	Grand Total	$5,160,000	$7,749,462	$2,386,913	$1,949,220	$2,007,697	$1,581,356

Target Cash Reserves and Debt Service Coverage

The target minimum cash reserve and debt service coverage metrics reflected in the financial plan are shown in Table 3-14.

Table 3-14: Target for Cash Reserves and Debt Service Coverage

Line	(A) Description	(B) Minimum Target

1	Operating Reserve	Ending balance equivalent to 25% of annual operating expenses
2	Capital Reserve	Ending balance equivalent to 75% of the four-year rolling average of projected growth-related CIP expenditures
3	Repair and Replacement Reserve	Ending Balance equivalent to 100% of annual collection and conveyance system depreciation expense assuming a 60 year useful life
4	Revenue Bond Debt Service Coverage	1.20x contractually required debt service coverage 1.50x minimum target debt service coverage* Capacity fees are included in the revenues used to calculate debt service coverage

Status Quo Financial Plan (No Rate Revenue Increases)

To demonstrate the need for sewer rate revenue increases a "status quo" financial plan was developed. The status quo financial plan presents the projected cash reserve outcomes of maintaining the City's current sewer rates (i.e., having no sewer rate revenue increases).

Table 3-15 shows the results of this analysis.

In FY 2025, the Operating Reserve ending cash balance falls below the minimum target (Line 56). In FY 2026, the Operating Reserve ending cash balance turns negative and falls below $0 (Line 54). These outcomes are presented in a graphical format in

Figure 3-1: Status Quo Financial Plan - Operating Reserve

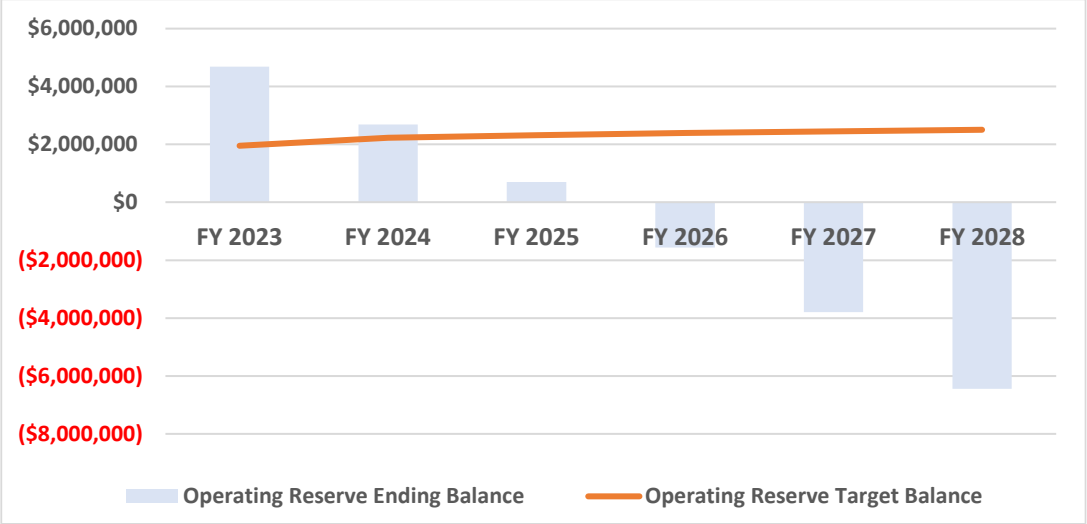
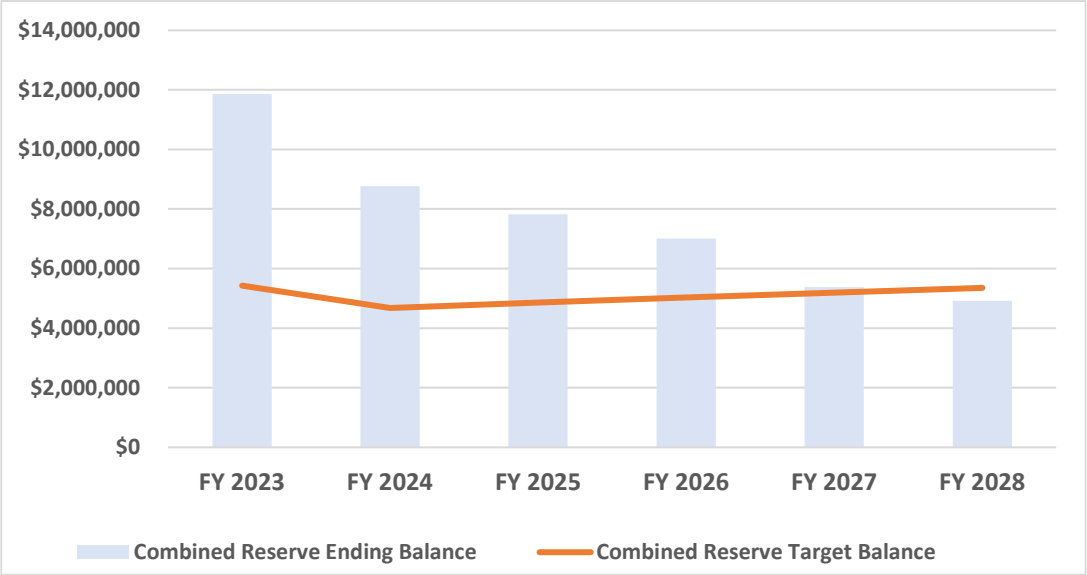


Figure 3-2: Status Quo Financial Plan - Combined Reserves



. Further, as shown in Figure 3-2, by FY 2028, the sewer utility's combined cash reserves consisting of the Operating Reserve, the Capital Reserve, and the Repair and Replacement Reserve, are projected to fall below target minimums. This demonstrates the insufficiency of the City's current sewer rates to support the sewer utility's financial needs over the next five years.

It is also important to note that under the status quo financial plan, the sewer utility fails to meet the minimum of 1.50x debt service coverage target in FY 2024 and the contractually required debt service coverage of 1.20x in FY 2027.

Table 3-15: Status Quo Financial Plan - Operating Reserve

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Rate Revenue**						
2	Annual Rate Revenue % Increase	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3							
4	Revenue at Existing Rates	$12,948,348	$13,106,827	$13,283,295	$13,462,410	$13,644,211	$13,828,740
5	Revenue from Rate Increases	$0	$0	$0	$0	$0	$0
6	Total Rate Revenue	$12,948,348	$13,106,827	$13,283,295	$13,462,410	$13,644,211	$13,828,740
7							
8	**Non-Operating Revenue**						
9	Miscellaneous	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
10	Interest Income	$130,575	$89,963	$41,365	$0	$0	$0
11	Total Non-Operating Revenue	$326,113	$290,389	$246,802	$210,572	$215,837	$221,233
12							
13	**Total Revenue**	$13,274,461	$13,397,216	$13,530,097	$13,672,982	$13,860,048	$14,049,973
14							
15	**Operating Expenses**						
16	Personnel Services	$2,545,415	$2,981,044	$3,149,003	$3,221,580	$3,295,776	$3,491,615
17	Operating Costs	$4,705,585	$4,908,364	$5,885,115	$6,016,699	$6,152,230	$6,245,294
18	Capital Improvements	$558,023	$1,037,473	$220,500	$322,771	$335,995	$285,256
19	Total Operating Expenses	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164
20							
21	**Capital Costs**						
22	Existing Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
23	Rate Funded (PAYGO) CIP	$860,000	$241,962	$0	$573,300	$0	$364,928
24	Transfer to Repair & Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
25	Total Capital Costs	$6,933,213	$6,553,323	$6,308,811	$6,373,821	$6,311,149	$6,676,183
26							
27	**Total Expenditures**	$14,742,236	$15,480,204	$15,563,430	$15,934,871	$16,095,149	$16,698,348
28	**Net Operating Cash Flow (Change in Cash)**	**($1,467,774)**	**($2,082,989)**	**($2,033,333)**	**($2,261,889)**	**($2,235,101)**	**($2,648,375)**
29							
30	**Debt Service Coverage Calculation**						
31	Net Revenues Available for Debt Service	$5,465,438	$4,470,335	$4,275,478	$4,111,932	$4,076,048	$4,027,808
32	Add: Capacity Fees	$3,783,021	$2,586,380	$2,026,956	$1,905,618	$1,149,502	$1,917,477
33	Net Revenues Available for Debt Service	$9,248,459	$7,056,714	$6,302,434	$6,017,550	$5,225,550	$5,945,285
34							
35	Annual Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
36	Calculated Coverage	1.82	1.64	1.46	1.58	1.21	1.38
37							
38	**Operating Reserve Cash Balance**						
39	Beginning Balance	$6,022,186	$4,684,987	$2,691,961	$699,993	($1,561,896)	($3,796,997)
40							
41	**Sources of Funds**						
42	Rate Revenues	$12,948,348	$13,106,827	$13,283,295	$13,462,410	$13,644,211	$13,828,740
43	Non-Operating Revenue	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
44	Interest Income	$130,575	$89,963	$41,365	$0	$0	$0
45	Total Sources	$13,274,461	$13,397,216	$13,530,097	$13,672,982	$13,860,048	$14,049,973
46							
47	**Uses of Funds**						
48	Operating Expenses	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164
49	Existing Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
50	Rate Funded (PAYGO) CIP	$860,000	$241,962	$0	$573,300	$0	$364,928
51	Transfer to Repair & Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
52	Total Uses	$14,742,236	$15,480,204	$15,563,430	$15,934,871	$16,095,149	$16,698,348
53							
54	Ending Balance	$4,554,412	$2,601,998	$658,628	($1,561,896)	($3,796,997)	($6,445,372)
55	Minimum Target	$1,952,256	$2,231,720	$2,313,655	$2,390,263	$2,446,000	$2,505,541
56	Variance from Target	$2,732,731	$460,241	($1,613,662)	($3,952,159)	($6,242,997)	($8,950,913)

Figure 3-1: Status Quo Financial Plan - Operating Reserve

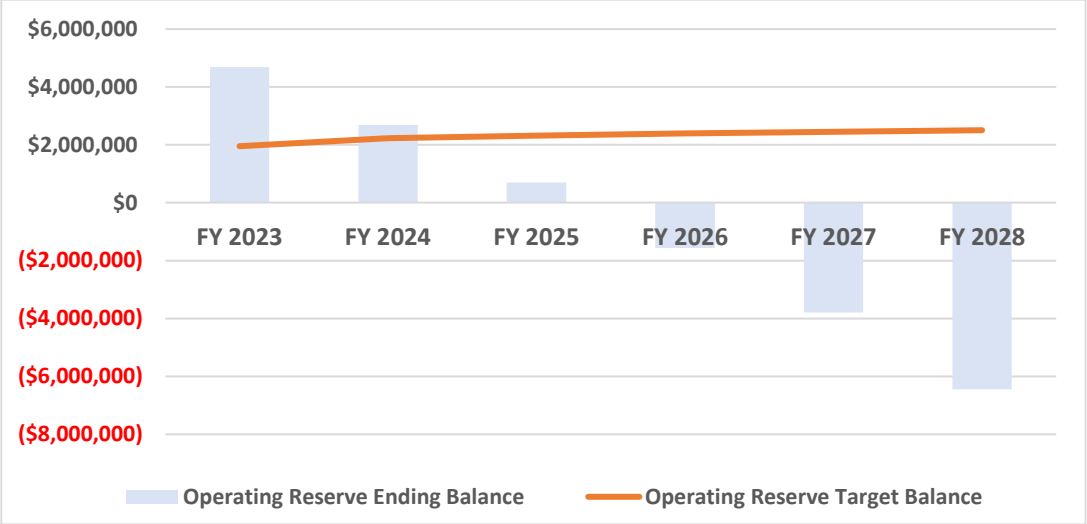
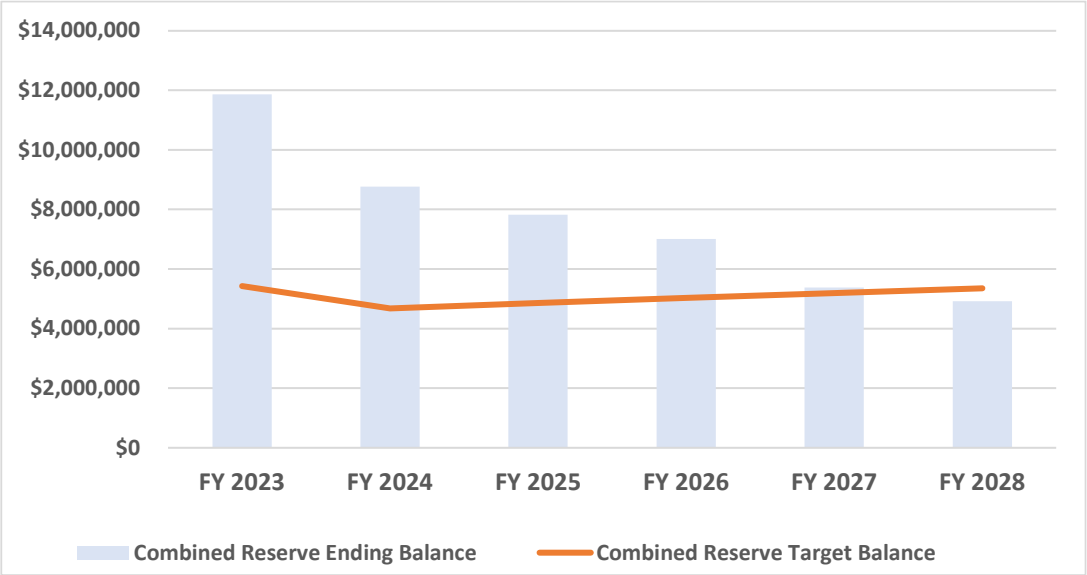


Figure 3-2: Status Quo Financial Plan - Combined Reserves



Proposed Financial Plan (Rate Revenue Increases)

The proposed financial plan features annual sewer rate revenue adjustments shown in Table 3-16. The percentages shown in Column B of Table 3-16 reflect the required total system rate revenue increase. The actual percentage increase in rates experienced by each customer class will vary based on the outcome of the COS analyses discussed in Section 4 of this report.

Table 3-16: Proposed Rate Revenue Increases

Line	(A) Fiscal Year	(B) Proposed Rate Revenue Increase	(C) Effective Date
1	FY 2024	6.0%	September 2023
2	FY 2025	5.0%	July 2024
3	FY 2026	3.0%	July 2025
4	FY 2027	2.0%	July 2026
5	FY 2028	2.0%	July 2027

The outcome of increasing rate revenues in the manner shown in Table 3-16 can be observed in the proposed financial plan presented in Table 3-17.

- The proposed Operating Reserve ending meets or exceeds the minimum target in all years of the FY 2024 – FY 2028 financial planning horizon (Line 57 of Table 3-18) and Figure 3-3.

- Debt service coverage exceeds the contractually obligated minimum of 1.20x and meets or exceeds the minimum target of 150x in each year of the FY 2024 – FY 2028 financial planning horizon (Line 36 of Table 3-17: Financial Plan – Operating Reserve (Table 3-17).

- As shown in
- Figure 3-4, combined cash reserves consisting of the Operating Reserve, the Capital Reserve, and the Repair and Replacement Reserve, are projected to exceed combined target minimums. The primary funding source for the Capital Reserve are capacity fees paid by developers who connect to the sewer utility system. Capacity fees can only be used to pay for growth-related CIP costs. They cannot be used to fund on-going utility operating costs.

Table 3-17: Financial Plan – Operating Reserve

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Rate Revenue**						
2	Annual Rate Revenue % Increase	0.0%	6.0%	5.0%	3.0%	2.0%	2.0%
3							
4	Revenue at Existing Rates	$12,948,348	$13,106,827	$13,283,295	$13,462,410	$13,644,211	$13,828,740
5	Revenue from Rate Increases	$0	$655,341	$1,501,012	$1,970,762	$2,310,208	$2,664,856
6	Total Rate Revenue	$12,948,348	$13,762,168	$14,784,307	$15,433,172	$15,954,419	$16,493,596
7							
8	**Non-Operating Revenue**						
9	Miscellaneous	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
10	Interest Income	$130,575	$98,155	$76,921	$69,957	$70,755	$75,437
11	Total Non-Operating Revenue	$326,113	$298,580	$282,358	$280,529	$286,591	$296,670
12							
13	**Total Revenue**	$13,274,461	$14,060,749	$15,066,665	$15,713,701	$16,241,010	$16,790,265
14							
15	**Operating Expenses**						
16	Personnel Services	$2,545,415	$2,981,044	$3,149,003	$3,221,580	$3,295,776	$3,491,615
17	Operating Costs	$4,705,585	$4,908,364	$5,885,115	$6,016,699	$6,152,230	$6,245,294
18	Capital Improvements	$558,023	$1,037,473	$220,500	$322,771	$335,995	$285,256
19	Total Operating Expenses	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164
20							
21	**Capital Costs**						
22	Existing Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
23	Rate Funded (PAYGO) CIP	$860,000	$241,962	$0	$573,300	$0	$364,928
24	Transfer to Repair & Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
25	Total Capital Costs	$6,933,213	$6,553,323	$6,308,811	$6,373,821	$6,311,149	$6,676,183
26							
27	**Total Expenditures**	$14,742,236	$15,480,204	$15,563,430	$15,934,871	$16,095,149	$16,698,348
28	**Net Operating Cash Flow(Change in Cash)**	**($1,467,774)**	**($1,419,456)**	**($496,765)**	**($221,170)**	**$145,862**	**$91,918**
29							
30	**Debt Service Coverage Calculation**						
31	Net Revenues Available for Debt Service	$5,465,438	$5,133,868	$5,812,046	$6,152,651	$6,457,011	$6,768,101
32	Add: Capacity Fees	$3,783,021	$2,586,380	$2,026,956	$1,905,618	$1,149,502	$1,917,477
33	Net Revenues Available for Debt Service	$9,248,459	$7,720,247	$7,839,002	$8,058,269	$7,606,513	$8,685,578
34							
35	Annual Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
36	Calculated Coverage	1.82	1.79	1.82	2.12	1.76	2.01
37							
38	**Operating Reserve Cash Balance**						
39	Beginning Balance	$6,022,186	$4,684,987	$3,363,686	$2,943,842	$2,792,628	$3,009,245
40							
41	**Sources of Funds**						
42	Rate Revenues	$12,948,348	$13,762,168	$14,784,307	$15,433,172	$15,954,419	$16,493,596
43	Non-Operating Revenue	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
44	Interest Income	$130,575	$98,155	$76,921	$69,957	$70,755	$75,437
45	Total Sources	$13,274,461	$14,060,749	$15,066,665	$15,713,701	$16,241,010	$16,790,265
46							
47	**Uses of Funds**						
48	Operating Expenses	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164
49	Existing Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
50	Rate Funded (PAYGO) CIP	$860,000	$241,962	$0	$573,300	$0	$364,928
51	Transfer to Repair & Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
52	Total Uses	$14,742,236	$15,480,204	$15,563,430	$15,934,871	$16,095,149	$16,698,348
53							
54	Ending Balance	$4,554,412	$3,265,531	$2,866,921	$2,722,671	$2,938,490	$3,101,162
56	Minimum Target	$1,952,256	$2,231,720	$2,313,655	$2,390,263	$2,446,000	$2,505,541
57	Variance from Target	$2,732,731	$1,131,965	$630,187	$402,366	$563,245	$671,058

Figure 3-3: Financial Plan - Operating Reserve

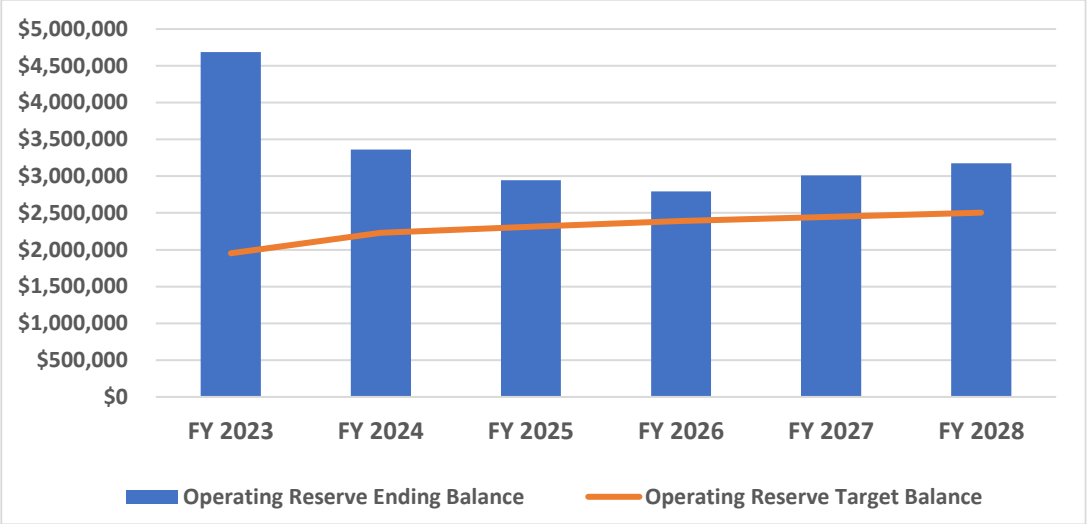
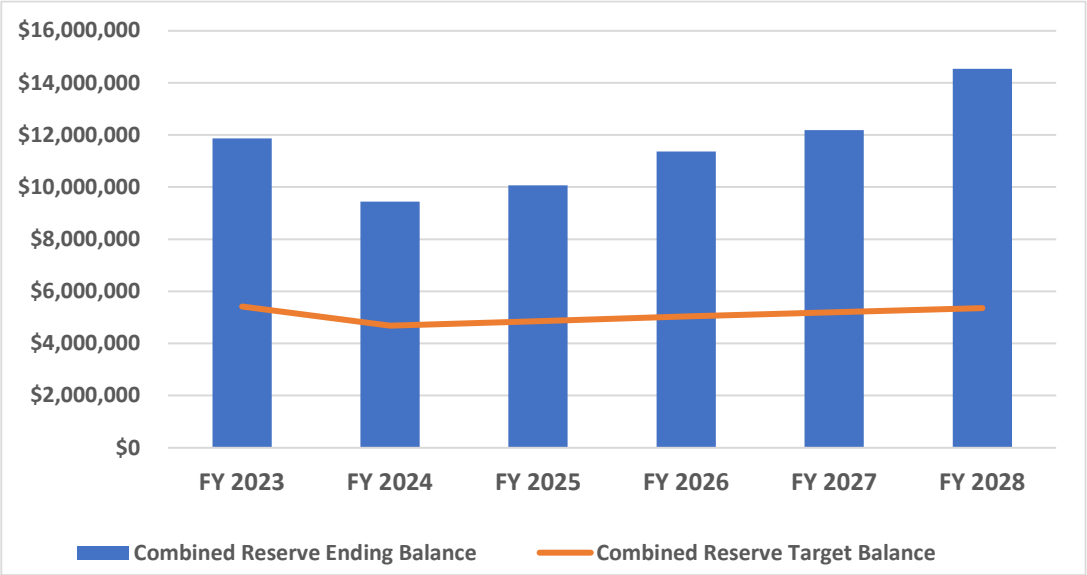


Figure 3-4: Financial Plan - Combined Cash Reserves



Projection of Other Cash Reserve Balances

As noted previously the financial plan and revenue requirement from rates discussed in this report is focused on the Operating Reserve. The Operating Reserve reflects ongoing sewer utility activities such as revenues earned from rates and the costs incurred to provide services. This fact notwithstanding, an outcome of the financial planning process was the development of projections for the Capital Reserve and the Repair and Replacement Reserve.

Table 3-18 shows the projected Capital Reserve cash balances for the FY 2024 – FY 2028 financial planning horizon. The Capital Reserve reflects revenues and costs associated with the funding of growth-related CIP expenditures. The primary funding source for growth-related CIP expenditures are capacity fees paid by developers who connect to the sewer utility system. The projection of capacity fee receipts shown in Line 4 of Table 3-18 was prepared by City staff.

Table 3-19 shows the projected Repair and Replacement Reserve cash balances for the FY 2024 – FY 2028 financial planning horizon. The Repair and Replacement reserve is used to track the cost of non-growth repair and

replacement CIP expenditures. The source of funding for the Repair and Replacement Reserve is rate revenues earned from customers that are transferred in from the Operating Reserve. The amount of this annual transfer as show in Line 4 of Table 3-19 is discussed in the narrative presented regarding Table 3-11.

Table 3-18: Projected Capital Reserve

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	Beginning Balance	$6,431,327	$6,726,794	$3,640,103	$5,013,284	$5,784,942	$6,322,905
2							
3	**Sources of Funds**						
4	Capacity Fees	$3,783,021	$2,586,380	$2,026,956	$1,905,618	$1,149,502	$1,917,477
5	Grants	$100,000	$2,415,000	$0	$0	$0	$0
6	Interest Income	$162,446	$127,986	$106,832	$133,311	$149,480	$172,528
7	Total Sources	$4,045,467	$5,129,366	$2,133,788	$2,038,930	$1,298,982	$2,090,005
8							
9	**Uses of Funds**						
10	Operating Reserve Portion of Existing Debt Service	$0	$761,057	$760,607	$1,267,272	$761,019	$761,038
11	Capacity Fee Funded CIP	$3,650,000	$5,040,000	$0	$0	$0	$0
12	Grant Funded CIP	$100,000	$2,415,000	$0	$0	$0	$0
13	Total Uses	$3,750,000	$8,216,057	$760,607	$1,267,272	$761,019	$761,038
14							
15	Ending Balance	$6,726,794	$3,640,103	$5,013,284	$5,784,942	$6,322,905	$7,651,871
16	Minimum Target	$1,118,250	$93,969	$190,757	$290,449	$393,131	$498,894
17	Variance from Target	$5,608,544	$3,546,134	$4,822,527	$5,494,493	$5,929,773	$7,152,977

Table 3-19: Projected Repair and Replacement Reserve

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	Beginning Balance	$0	$455,625	$2,437,549	$2,105,428	$2,788,634	$2,849,247
2							
3	**Sources of Funds**						
4	Transfer-In from Rate Revenues	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
5	Interest Income	$5,625	$35,718	$56,086	$60,421	$69,603	$81,010
6	Total Sources	$1,005,625	$2,034,424	$2,054,792	$2,059,126	$2,068,309	$2,079,715
7							
8	**Uses of Funds**						
9	Repair & Replacement CIP	$550,000	$52,500	$2,386,913	$1,375,920	$2,007,697	$1,216,428
10	Total Uses	$550,000	$52,500	$2,386,913	$1,375,920	$2,007,697	$1,216,428
11							
12	Ending Balance	$455,625	$2,437,549	$2,105,428	$2,788,634	$2,849,247	$3,712,534
14	Minimum Target	$2,351,418	$2,351,418	$2,351,418	$2,351,418	$2,351,418	$2,351,418
15	Variance from Target	($1,895,793)	$86,130	($245,990)	$437,216	$497,829	$1,361,116

Summary Projection of Combined Cash Reserves

Table 3-20 presented a summary of the sewer utility's combined cash reserves for the FY 2024 – FY 2028 financial planning horizon. A definition of the minimum targets for each reserve are presented in Table 3-14.

Table 3-20: Summary Projection of Combined Cash Reserves

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Ending Balance**						
2	Operating Reserve	$4,554,412	$3,265,531	$2,866,921	$2,722,671	$2,938,490	$3,101,162
3	Capital Reserve	$6,726,794	$3,640,103	$5,013,284	$5,784,942	$6,322,905	$7,651,871
4	Repair & Replacement Reserve	$455,625	$2,437,549	$2,105,428	$2,788,634	$2,849,247	$3,712,534
5	Total	$11,736,830	$9,343,183	$9,985,633	$11,296,248	$12,110,642	$14,465,568
6							
7	**Minimum Targets**						
8	Operating Reserve	$1,952,256	$2,231,720	$2,313,655	$2,390,263	$2,446,000	$2,505,541
9	Capital Reserve	$1,118,250	$93,969	$190,757	$290,449	$393,131	$498,894
10	Repair & Replacement Reserve	$2,351,418	$2,351,418	$2,351,418	$2,351,418	$2,351,418	$2,351,418
11	Total	$5,421,924	$4,677,108	$4,855,830	$5,032,130	$5,190,550	$5,355,854
12							
13	**Variance from Minimum Target**						
14	Operating Reserve	$2,602,156	$1,033,811	$553,266	$332,409	$492,490	$595,621
15	Capital Reserve	$5,608,544	$3,546,134	$4,822,527	$5,494,493	$5,929,773	$7,152,977
16	Repair & Replacement Reserve	($1,895,793)	$86,130	($245,990)	$437,216	$497,829	$1,361,116
17	Total	$6,314,906	$4,666,075	$5,129,803	$6,264,118	$6,920,092	$9,109,714

Revenue Requirement Projection

The final outcome (and primary purpose) of the financial planning process is the determination of the projected revenue requirement from rates. Table 3-21 shows this projection for the FY 2024 – FY 2028 financial planning horizon.

Table 3-21: Revenue Requirement Projection

Line	(A) Item	(B) Estimated FY 2023	(C) Projected FY 2024	(D) Projected FY 2025	(E) Projected FY 2026	(F) Projected FY 2027	(G) Projected FY 2028
1	**Operating Expenses**						
2	Personnel Services	$2,545,415	$2,981,044	$3,149,003	$3,221,580	$3,295,776	$3,491,615
3	Operating Costs	$4,705,585	$4,908,364	$5,885,115	$6,016,699	$6,152,230	$6,245,294
4	Capital Outlay	$558,023	$1,037,473	$220,500	$322,771	$335,995	$285,256
5	Total Operating Expenses	$7,809,023	$8,926,881	$9,254,618	$9,561,050	$9,784,000	$10,022,164
6							
7	**Capital Costs**						
8	Existing Debt Service	$5,073,213	$4,312,656	$4,310,106	$3,801,816	$4,312,443	$4,312,549
9	Rate Funded (PAYGO) CIP	$860,000	$241,962	$0	$573,300	$0	$364,928
10	Transfer to Repair and Replacement Reserve	$1,000,000	$1,998,706	$1,998,706	$1,998,706	$1,998,706	$1,998,706
11	Total Capital Costs	$6,933,213	$6,553,323	$6,308,811	$6,373,821	$6,311,149	$6,676,183
12							
13	Total Expenditures	$14,742,236	$15,480,204	$15,563,430	$15,934,871	$16,095,149	$16,698,348
14							
15	Net Operating Cash Flow (Change in Cash)	($1,467,774)	($1,419,456)	($496,765)	($221,170)	$145,862	$91,918
16	Gross Revenue Requirement from Rates	$13,274,461	$14,060,749	$15,066,665	$15,713,701	$16,241,010	$16,790,265
17							
18	**Less: Non- Operating Revenues**						
19	Miscellaneous	$195,537	$200,426	$205,437	$210,572	$215,837	$221,233
20	Interest Income	$130,575	$98,155	$76,921	$69,957	$70,755	$75,437
21	Total Non-Operating Revenue	$326,113	$298,580	$282,358	$280,529	$286,591	$296,670
22							
24	Net Revenue Requirement from Rates	$12,948,348	$13,762,168	$14,784,307	$15,433,172	$15,954,419	$16,493,596

4. Cost-of-Service Analysis

4.1. Cost-of-Service Methodology

This section details the sewer cost of service (COS) analysis. A COS analysis distributes a utility's revenue requirements from rates (costs) to each customer class based on their proportionate share of total system sewer demand. The COS analysis completed by Raftelis follows industry standard cost allocation principles as presented in the Water Environment Federation's *Manual of Practice No. 27, Financing and Charges for Sewer Systems, Fourth Edition*. (WEF Manual No. 27).

4.2. Cost-of-Service Process

The framework and methodology used to develop the COS analysis and to apportion the revenue requirement to each customer class is informed by the processes outlined in WEF Manual No. 27. COS analyses are tailored specifically to meet the unique needs of each customer class's use of the sewer system. Five key steps are often completed in a COS analysis to recover costs from customers in an equitable and defensible manner:

- **Revenue Requirement Determination**: The first step in the COS analysis is to determine the amount of revenue required from rates (i.e., costs). The revenue requirement is determined during the financial planning process discussed in Section 3 of this report.

- **Cost Functionalization**: When possible, the revenue requirement is assigned to sewer system functions such as treatment, lift stations, and collection and conveyance, etc. The functionalization process answers the question of what types of functional activities are being paid for by the costs included in the revenue requirement.

- **Cost Allocation to Cost Causation Components**: Functionalized costs are then allocated to cost causation components based on the types of customer demands they are incurred to meet. Cost causation components often include flow (the volume of sewer discharges), and strength loading characteristics such as COD and TSS. The allocation process answers the question of what types of customer demands are being paid for by the costs included in the revenue requirement.

- **Unit COS Development**: In order to allocate the revenue requirement to customer classes, a unit cost of service must be determined for cost causation component. For example, the $/CCF for flow, or $/pound for BOD or TSS. The unit COS for each cost causation component is determined by dividing the revenue requirement allocated to each cost component by the appropriate total system units of service.

- **Revenue Requirement Distribution to Customer Classes**: The revenue requirement for each customer class is determined by multiplying the unit COS for each cost causation component by the customer class units of service determined for each customer class.

4.3. FY 2024 Revenue Requirement

Table 4-1 shows a detail of the FY 2024 Operating Reserve revenue requirement from rates expressed on an operating cost and capital cost basis. The net revenue requirement before adjustment shown in Column D, Line 13 of Table 4-1 matches Line 24 of Table 3-21.

Line 24 of Table 4-1 shows adjustment that increases the revenue requirement by $131,068. This adjustment is required because the FY 2024 rate revenue increase of 6.0% will not become effective at the start of FY 2024 on July 1, 2023. Instead, the rate revenue increase of 6.0% will become effective on September 1, 2023. The adjustment of $131,068 ensures that the sewer utility will recover the level of rate revenue requited to fully cover its costs in FY 2024.

Table 4-1: FY 2024 Revenue Requirement

Line	(A) Revenue Requirement Component	(B) Operating Costs	(C) Capital Costs	(D) Total Costs
1	O&M			
2	Personnel Services	$2,981,044		$2,981,044
3	Operating Costs	$4,908,364		$4,908,364
4	Capital Outlay	$1,037,473		$1,037,473
5	Total Operating Expenses	$8,926,881	$0	$8,926,881
6				
7	Capital			
8	Existing Debt Service		$4,312,656	$4,312,656
9	Rate Funded (PAYGO) CIP		$241,962	$241,962
10	Tranter to Repair & Replacement Reserve		$1,998,706	$1,998,706
11	Net Change in Cash Reserve		($1,419,456)	($1,419,456)
12	Total Capital Costs		$5,133,868	$5,133,868
13				
14	Gross Revenue Requirement	$8,926,881	$5,133,868	$14,060,749
15				
16	Less: Non-Operating Revenues			
17	Miscellaneous	$200,426		$200,426
18	Interest Income	$98,155		$98,155
19	Total Non-Operating Revenues	$298,580	$0	$298,580
20				
21	Net Revenue Requirement Before Adjustment	$8,628,300	$5,133,868	$13,762,168
22				
23	Revenue Requirement Adjustments			
24	Adjustment for Mi-Year Effective Data		$131,068	$131,068
25	Total Revenue Requirement Adjustment	$0	$131,068	$131,068
26				
27	Net Revenue Requirement from Rates	$8,628,300	$5,264,936	$13,893,236

4.4. FY 2024 Revenue Requirement Allocations

FY 2024 Capital Cost Allocation

Functionalization of Asset Values: As a first step in the FY 2024 capital cost allocation process, the functions associated with the sewer utility assets were identified based on the City's asset accounting records. The estimated value of the City's sewer assets as of FY 2022 was based on the metric replacement cost less depreciation. A detail of these assets is shown in Table 4-2. The estimated replacement cost less depreciation of the assets (Column F) was determined using historical construction cost data for the Los Angeles region as obtained from the publication, Engineering News-Record.

Table 4-2: Functionalized Sewer System Assets

Line	(A) Asset Function	(B) Original Cost	(C) Original Cost Less Depreciation	(D) Replacement Cost	(E) Replacement Cost Less Depreciation	(F) Replacement Cost Less Depreciation % of Total
1	Treatment	$254,104,711	$225,417,691	$294,170,308	$246,207,054	61.07%
2	Lift Stations	$34,241,213	$17,840,374	$49,299,280	$24,539,591	6.09%
3	General	$28,690,611	$23,118,124	$36,007,492	$24,906,543	6.18%
4	Land	$2,002,560	$2,002,560	$2,278,393	$2,278,393	0.57%
5	Collection and Conveyance	$141,085,109	$58,167,402	$262,543,603	$105,248,515	26.10%
6	Total	$460,124,203	$326,546,152	$644,299,076	$403,180,096	100.00%

Allocation of Assets to Cost Causation Components: The second step in the FY 2024 capital cost allocation process was to associate each asset function (Table 4-2) with a cost causation component. Cost causation components reflect the types of demand that must be met to serve sewer customers. For example, as shown in Line 1 of Table 4-3, assets associated with the treatment function were allocated 40% to the flow cost causation component (Column C), and 20% to the strength components of Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS) or Total Dissolved Solids (TDS) as shown in Line 1, Columns D, E, and F of Table 4-3. The percentage allocations shown in Table 4-3 were determined in consultation with City staff.

Table 4-3: Asset Allocation to Cost Causation Components

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Line	Asset Function	Value	Flow	BOD	TSS	TDS	Industrial Admin.	Customer Service	General & Admin.
1	Treatment	$246,207,054	40%	20%	20%	20%	0%	0%	0%
2	Lift Stations	$24,539,591	100%						0%
3	General	$24,906,543							100%
4	Land	$2,278,393	50%	25%	25%	0%	0%	0%	0%
5	Collection and Conveyance	$105,248,515	90%	5%	5%	0%	0%	0%	0%
6	Total	$403,180,096							
7									
8	Treatment	$246,207,054	$98,482,821	$49,241,411	$49,241,411	$49,241,411	$0	$0	$0
9	Lift Stations	$24,539,591	$24,539,591	$0	$0	$0	$0	$0	$0
10	General	$24,906,543	$0	$0	$0	$0	$0	$0	$24,906,543
11	Land	$2,278,393	$1,139,197	$569,598	$569,598	$0	$0	$0	$0
12	Collection and Conveyance	$105,248,515	$94,723,664	$5,262,426	$5,262,426	$0	$0	$0	$0
13	Total	$403,180,096	$218,885,273	$55,073,435	$55,073,435	$49,241,411	$0	$0	$24,906,543
14									
15	% Allocation	100.0%	54.3%	13.7%	13.7%	12.2%	0.0%	0.0%	6.2%

Allocation of the FY 2024 Capital Cost Revenue Requirement to Cost Causation Components: The FY 2024 capital cost revenue requirement, before any adjustments, is $5,130,603 as show in Column C, Line 12 14, and 21, of Table 4-1. Table 4-4 shows the allocation of this amount to cost causation components using the percentage allocations developed for the City's existing sewer utility assets as show in Table 4-3. Note that the final aggregate allocation percentages shown in Line 8 of Table 4-4 match those shown in Line 15 of Table 4-3.

Table 4-4: Capital Costs Allocation to Cost Causation Components

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
Line	Capital Cost Component	Flow	BOD	TSS	TDS	Industrial Admin.	Customer Service	General & Admin.	Total
1	Existing Debt Service	$2,341,328	$589,098	$589,098	$526,716	$0	$0	$266,415	$4,312,656
2	Non-Growth PAYGO Capital	$131,360	$33,051	$33,051	$29,551	$0	$0	$14,947	$241,962
3	Repair and Replacement Reserve	$1,085,091	$273,018	$273,018	$244,107	$0	$0	$123,471	$1,998,706
4	Net Operating CF (Change in Cash)	($770,618)	($193,894)	($193,894)	($173,362)	$0	$0	($87,687)	($1,419,456)
5	Mid-Year Adjustment	$71,157	$17,904	$17,904	$16,008	$0	$0	$8,097	$131,068
6	Total Capital Costs	$2,858,318	$719,178	$719,178	$643,020	$0	$0	$325,243	$5,264,936
7									
8	% Allocation	54.3%	13.7%	13.7%	12.2%	0.0%	0.0%	6.2%	100.0%

FY 2024 Operating Cost Allocation

Functionalization of Operating Costs: Unlike sewer utility assets, the City's accounting system does not allow operating costs to be directly assigned to functions such as treatment, lift stations, and collection and conveyance, etc. This fact notwithstanding, operating costs can be assigned to high level categories that approximate functions. Table 4-5 shows these functional assignments which were developed in consultation with City staff.

Table 4-5: Functionalized Operating Costs

Line	(A) Operating Costs	(B) Amount	(C) % of Total
1	**Personnel Services**		
2	Allocation to Administration	$814,763	25.0%
3	Allocation to Treatment	$977,715	30.0%
4	Allocation to Field Operations	$1,303,620	40.0%
5	Allocation to Customer Service	$162,953	5.0%
6	Total Personnel Services	$3,259,050	100.0%
7			
8	**Operating Costs**		
9	Allocation to Treatment	$2,555,019	60.0%
10	Allocation to Field Operations	$1,703,346	40.0%
11	Total Operating Costs	$4,258,364	100.0%
12			
13	**Capital Outlay**		
14	Equipment	$702,500	67.7%
15	Vehicles	$124,973	12.0%
16	Contingency Costs	$210,000	20.2%
17		$1,037,473	100.0%
18			
19	**Additional Operating Costs**		
20	New Positions	$179,993	48.4%
21	Contribution to Repair & Replace	$192,001	51.6%
22	Total Additional Operating Costs	$371,994	100.0%
23			
24	**Total Operating Costs**	$8,926,881	

Allocation of Operating Costs to Cost Causation Components: The City's FY 2024 operating cost revenue requirement, before any adjustments, is $8,926,881 as shown in Column B, Lines 5 and 14 of Table 4-1. Sewer utility operating costs are tracked in approximately 63 general ledger accounts within the City's financial accounting system. City staff and Raftelis reviewed each operating expense item to determine the most appropriate assignment to cost causation components. The aggregate outcome of these allocation is show in Line 30 of Table 4-6.

Table 4-6: Operating Cost Allocation to Cost Causation Components

Line	(A) Operating Costs	(B) Flow	(C) BOD	(D) TSS	(E) TDS	(F) Industrial Admin.	(G) Customer Service	(H) General & Admin.	(I) Total
1	**Personnel Services**								
2	Allocation to Administration	$0	$0	$0	$0	$40,738	$0	$774,024	$814,763
3	Allocation to Treatment	$391,086	$195,543	$195,543	$195,543	$0	$0	$0	$977,715
4	Allocation to Field Operations	$1,173,258	$65,181	$65,181	$0	$0	$0	$0	$1,303,620
5	Allocation to Customer Service	$0	$0	$0	$0	$0	$162,953	$0	$162,953
6	Total Personnel Services	$1,564,344	$260,724	$260,724	$195,543	$40,738	$162,953	$774,024	$3,259,050
7	% Allocation	48.0%	8.0%	8.0%	6.0%	1.3%	5.0%	23.8%	100.0%
8									
9	**Operating Costs**								
10	Allocation to Treatment	$1,022,007	$511,004	$511,004	$511,004	$0	$0	$0	$2,555,019
11	Allocation to Field Operations	$1,533,011	$85,167	$85,167	$0	$0	$0	$0	$1,703,346
12	Total Operating Costs	$2,555,019	$596,171	$596,171	$511,004	$0	$0	$0	$4,258,364
13	% Allocation	60.0%	14.0%	14.0%	12.0%	0.0%	0.0%	0.0%	100.0%
14									
15	**Capital Outlay**								
16	Equipment	$381,385	$95,960	$95,960	$85,798	$0	$0	$43,397	$702,500
17	Vehicles	$67,847	$17,071	$17,071	$15,263	$0	$0	$7,720	$124,973
18	Contingency Costs	$114,008	$28,685	$28,685	$25,648	$0	$0	$12,973	$210,000
19	Total Capital Outlay	$563,241	$141,716	$141,716	$126,709	$0	$0	$64,090	$1,037,473
20	% Allocation	54.3%	13.7%	13.7%	12.2%	0.0%	0.0%	6.2%	100.0%
21									
22	**Additional Operating Costs**								
23	New Positions	$97,718	$24,587	$24,587	$21,983	$0	$0	$11,119	$179,993
24	Contribution to Repair & Replace	$104,237	$26,227	$26,227	$23,450	$0	$0	$11,861	$192,001
25	Total Additional Operating Costs	$201,954	$50,813	$50,813	$45,433	$0	$0	$22,980	$371,994
26	% Allocation	54.3%	13.7%	13.7%	12.2%	0.0%	0.0%	6.2%	100.0%
27									
28	**Total Operating Costs**	$4,884,558	$1,049,425	$1,049,425	$878,688	$40,738	$162,953	$861,095	$8,926,881
29									
30	% Allocation	54.7%	11.8%	11.8%	9.8%	0.5%	1.8%	9.6%	100.0%

FY 2024 Non-Operating Revenue Allocation

The net revenue requirement from rates is determined by calculating a gross revenue requirement consisting of operating and capital costs. Non-operating revenues from miscellaneous items serve as an offset to the gross revenue requirement (i.e., they reduce the gross revenue requirement) and reduce the amount of rate revenues that must be collected from customers. Table 4-7 shows the allocation of non-operating revenues to cost causation components. Both miscellaneous non-operating revenues and interest income (Lines 1 and 2) were allocated using the aggregate operating cost allocations shown in Line 30 of Table 4-6.

Table 4-7: Non-Operating Revenues Allocation to Cost Causation Components

Line	(A) Non-Operating Revenue	(B) Flow	(C) BOD	(D) TSS	(E) TDS	(F) Industrial Administration	(G) Customer Service	(H) General & Administrative	(I) Total
1	Miscellaneous	$109,668	$23,562	$23,562	$19,728	$915	$3,659	$19,333	$200,426
2	Interest Income	$53,708	$11,539	$11,539	$9,662	$448	$1,792	$9,468	$98,155
3	Total Non-Operating Revenue	$163,375	$35,100	$35,100	$29,390	$1,363	$5,450	$28,801	$298,580
4									
5	% Allocation	54.7%	11.8%	11.8%	9.8%	0.5%	1.8%	9.6%	100.0%

Summary of FY 2024 Revenue Requirement Allocations

A final summary of the FY 2024 revenue requirement to cost causation components is presented in

Table 4-8. The mid-year adjustment $131,068 (discussed for Table 4-1) was allocated based on the capital cost allocation percentages shown in Line 8 of Table 4-4.

Table 4-8: Summary Allocation to Cost Causation Components

Line	(A) Revenue Requirement Component	(B) Flow	(C) BOD	(D) TSS	(E) TDS	(F) Industrial Admin.	(G) Customer Service	(H) General & Admin.	(I) Total
1	**Operating Costs**								
2	Personnel Services	$1,564,344	$260,724	$260,724	$195,543	$40,738	$162,953	$774,024	$3,259,050
3	Operating Costs	$2,555,019	$596,171	$596,171	$511,004	$0	$0	$0	$4,258,364
4	Capital Outlay	$563,241	$141,716	$141,716	$126,709	$0	$0	$64,090	$1,037,473
5	Additional Operating Costs	$201,954	$50,813	$50,813	$45,433	$0	$0	$22,980	$371,994
6	Total Operating Costs	$4,884,558	$1,049,425	$1,049,425	$878,688	$40,738	$162,953	$861,095	$8,926,881
7									
8	**Capital Costs**								
9	Existing Debt Service	$2,341,328	$589,098	$589,098	$526,716	$0	$0	$266,415	$4,312,656
10	Rate Funded (PAYGO) CIP	$131,360	$33,051	$33,051	$29,551	$0	$0	$14,947	$241,962
11	Transfer to R&R Reserve	$1,085,091	$273,018	$273,018	$244,107	$0	$0	$123,471	$1,998,706
12	Net Op. CF Chg. in Cash)	($770,618)	($193,894)	($193,894)	($173,362)	$0	$0	($87,687)	($1,419,456)
13	Mid-Year Adjustment	$71,157	$17,904	$17,904	$16,008	$0	$0	$8,097	$131,068
14	Net CF (Change in Cash)	$2,858,318	$719,178	$719,178	$643,020	$0	$0	$325,243	$5,264,936
15									
16	**Gross Revenue Requirement**	$7,742,876	$1,768,602	$1,768,602	$1,521,708	$40,738	$162,953	$1,186,337	$14,191,817
17	Less: Non-Operating Revenue	$163,375	$35,100	$35,100	$29,390	$1,363	$5,450	$28,801	$298,580
18	**Net Revenue Requirement**	$7,579,500	$1,733,502	$1,733,502	$1,492,319	$39,376	$157,502	$1,157,536	$13,893,236
19									
20	% Allocation	54.6%	12.5%	12.5%	10.7%	0.3%	1.1%	8.3%	100.0%

4.5. Units of Service Determination

Customer Contributed Units of Service

The work completed in Section 4.4 determined the costs that must be allocated to each cost causation component. In order to allocate these costs to specific customer classes and eventually determine proposed FY 2024 sewer rates, the units of service for each cost causation component must be estimated.

Table 4-9 provides a summary allocation of the units of service determined for each customer class. Important points to note about Table 4-9 include:

- **Single Family Residential (Line 1)**: Although single family residential customers do not pay $/CCF commodity rates under the existing or proposed sewer rate structure, the volume of flow and the strength loadings they contribute to the City of Beaumont's WWTP must be estimated in order to equitably reflect the proportionate demands they place on the utility system.

  The hypothetical annual billed sewer discharges shown in Column B were based on FY 2022 single family winter average billed water consumption during the months of January – April using data provided by the Beaumont Cherry Valley Water District. The estimated return flow percentage of 47.5% (Column C) reflects the estimated billed sewer discharges returning to the WWTP. The value of 47.5% was required to approximate the total volume of customer sanitary sewer discharges reaching the WWTP *after* calculating the return flows for all other customer classes.

  The Column E and F strength loading assumption of 250 mg/l (milligrams per liter) for BOD and TSS were based on data published by the California State Water Resources Control Board in its Revenue Program Guidelines, March 1998 edition. The TDS estimate of 300 mg/l shown in Column G was provided by City staff. The permitted TDS limit for the City's wastewater discharge basin is 300 mg/l.

- **Multi-Family and Mobile Home-Rural (Line 2)**: Although multi-family, mobile home or rural customers do not pay $/CCF commodity rates under the existing or proposed sewer rate structure, the volume of flow and the strength loadings they contribute to the WWTP must be estimated in order to equitably reflect the proportionate demands they place on the utility system.

  The hypothetical annual billed sewer discharges shown in Column B were based on FY 2022 winter average billed water consumption during the months of January – April using data provided by the Beaumont Cherry Valley Water District. The estimated return flow percentage of 100% (Column C) reflects the estimated billed sewer discharge returning to the WWTP. The value of 100% assumes that the water consumption of multi-family residential customers is for non-discretionary indoor purposes and therefore returns entirely to the WWTP.

  The Column E and F strength loading assumption of 250 mg/l for BOD and TSS were based on data published by the California State Water Resources Control Board in its Revenue Program Guidelines, March 1998 edition. The TDS estimate of 300 mg/l shown in Column G was provided by City Staff. The permitted TDS limit for the City's wastewater discharge basin is 300/mg/l.

- **Schools (Line 5)**: Although schools do not pay $/CCF commodity rates under the existing or proposed sewer rate structure, the volume of flow and the strength loadings they contribute to the WWTP must be estimated in order to equitably reflect the proportionate demands they place on the utility system.

  The annual billed sewer discharges shown in Column B were based on FY 2022 billed water consumption during the months of January – April using data provided by the Beaumont Cherry Valley Water District. The estimated return flow percentage of 80% reflects the estimated billed sewer discharge returning to the City of Beaumont's WWTP. The value of 80% reflects the fact that even during the winter months, some level of school water consumption is used for outdoor irrigation purposes and does not return to the WWTP.

  The Column E and F strength loading assumptions of 100 mg/l for BOD and 130 mg/l for TSS were based on data published by the California State Water Resources Control Board in its Revenue Program Guidelines, March 1998 edition. The TDS estimate of 300 mg/l shown in Column G was provided by City staff. The permitted TDS limit for the City's wastewater discharge basin is 300 mg/l.

- **Commercial Low, Medium, and High Strength (Lines 7 – 10)**: The annual billed sewer discharges shown in Column B were based on FY 2022 billed water consumption during the months of January – April using data provided by the Beaumont Cherry Valley Water District. The estimated return flow percentage of 85% reflects the estimated billed sewer discharge returning to the WWTP as estimated in the City of Beaumont's Draft 2021 Wastewater Master Plan (see for example, Section 3.2.2 on page 155).

  The Column E and F strength loading assumptions for BOD and TSS were based on data, for a selection of different types of commercial sewer customers, published by the California State Water Resources Control Board in its Revenue Program Guidelines, March 1998 edition. A detail of this information which shows how the strength loadings were determined for commercial low, medium, and high strength customers is shown in Table 4-10. The TDS estimates shown in Column G were developed in consultation with City staff and reflect the current best estimate of TDS discharge strengths. Medium and high strength customers are estimated to exceed the 300 mg/l permitted TDS limit for the City's wastewater discharge basin.

- **Industrial Customers (Lines 13 – 18)**: The flow and strength loading for each industrial customer were provided by City staff. The estimated return flow percentage of 85% reflects the estimated billed sewer discharge returning to the City of Beaumont's WWTP as estimated in the City of Beaumont's Draft 2021 Wastewater Master Plan (see for example, Section 3.2.2 on page 155). The flow and strength loading assumptions for each industrial customer were provided by City staff based on their testing of customer sanitary sewer discharges.

Table 4-9: Customer Wastewater Treatment Plant Contributions

Line	(A) Customer Class	(B) Billed Flow (CCF)	(C) Return Flow Factor %	(D) Contributions (CCF)	(E) BOD (mg/L)	(F) TSS (mg/L)	(G) TDS (mg/L)	(H) BOD Pounds	(I) TSS Pounds	(J) TDS Pounds
1	**Residential**									
2	Single Family	2,871,072	47.5%	1,363,387	250	250	300	2,127,831	2,127,831	2,553,397
3	MF & MH-Rural	125,154	100.0%	125,154	250	250	300	195,327	195,327	234,393
4										
5	**Schools**	36,279	80.0%	29,023	130	100	300	23,554	18,119	54,356
6										
7	**Commercial**									
8	Low Strength	92,844	85.0%	78,917	140	115	300	68,973	56,656	147,799
9	Medium Strength	43,232	85.0%	36,748	235	175	600	53,911	40,146	137,644
10	High Strength	36,519	85.0%	31,042	933	667	900	180,866	129,190	174,407
11										
12	**Industrial**									
13	Dura Plastics Products	1,119	85.0%	951	71	138	480	422	819	2,850
14	Perricone Juice	51,233	85.0%	43,548	1,420	410	1,200	386,042	111,463	326,233
15	Rudolph Food Company	0	85.0%	0	0	0	0	0	0	0
16	CJ Foods #1	51,631	85.0%	43,886	1,775	602	1,700	486,301	164,931	465,753
17	CJ Foods #2	6,075	85.0%	5,164	575	83	1,500	18,535	2,676	48,353
18	Precision Stamping	0	85.0%	0	140	115	300	0	0	0
19										
20	Total	3,315,158		1,757,819				3,541,762	2,847,158	4,145,183

Table 4-10: Basis for Commercial BOD and TSS Strength Loadings

Line	(A) Customer Type	(B) BOD (mg/L)	(C) TSS (mg/L)
1	Commercial Low Strength		
2	Professional Office	130	80
3	Department and Retail Store	150	150
4	Average	140	115
5			
6	Commercial Medium Strength		
7	Repair Shop with Service Station	180	280
8	Bars without Dining Facilities	200	200
9	Hospital and Convalescent	250	100
10	Hotel/Motel without Dining	310	120
11	Average	235	175
12			
13	Commercial High Strength		
14	Market with Garbage Disposal	800	800
15	Bakery, Wholesale	1,000	600
16	Restaurant	1,000	600
17	Average	933	667

Allocation of Infiltration and Inflow

Before the final calculation of customer class units of service can be finalized, a basis for determining the annual amount of Infiltration and Inflow (I/I) received at the City of Beaumont's WWTP must be determined. The COS analysis assumes that 4% of the volumes received at the City's wastewater treatment plant were associated with I/I. Infiltration is water entering the wastewater collection system through leaky sewer pipelines. Inflow is water introduced into the wastewater collection and conveyance system through direct connections such as manhole covers. I/I volumes and strength loadings (if applicable) are allocated to customers because there is a cost to treat the I/I received at the WWTP. This cost must be borne by the customers whose rates pay for the wastewater utility system.

There is no industry-standard, one-size-fits-all approach for the allocation of I/I in every situation. Methods for allocating I/I to customer classes range from relying entirely on the proportionate share of contributed volume from each customer class (100% volume) to relying entirely on the proportionate share of customer accounts/wastewater service connections (100% accounts). The COS analysis allocated I/I to customer classes based 67% on accounts and 33% on contributed volumes. The rationale for this approach is that the majority of infiltration entering the wastewater system is from leaky connections from service lines that connect to individual customer premises. Table 4-11 the percentage allocation of flow based on this allocation approach (Column B). I/I was not assigned any strength loadings. Therefore, no allocation of strength between accounts and flow is necessary for BOD, TSS, or TDS (Columns D, E, and F).

Table 4-11: Allocation of Infiltration and Inflow

Line	(A) Allocation of I/I to Accounts & Volume	(B) Percentage Allocation	(C) Estimated Flow (CCF)	(D) Estimated COD Pounds	(E) Estimated TSS Pounds	(F) Estimated TDS Pounds
1	% Allocated on Accounts	67%	23,894	0	0	0
2	% Allocated on Flow	33%	47,788	0	0	0
3	Total	100%	71,681	0	0	0

Table 4-12 shows the final calculation of the FY 2024 total system units of service (Line 20) and the individual units of service for each customer class (Lines 2 – 17).

Table 4-12: Units of Service

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(H)
		Flow (CCF)				Strength (Pounds)				
Line	Customer Class	Contributed to Treatment Plant	I/I Allocated on Accounts	I/I Allocated on Volume	Total Units of Flow	BOD	TSS	TDS	Accounts	EDUs
1	**Residential**									
2	Single Family	1,363,387	46,418	18,532	1,428,338	2,127,831	2,127,831	2,553,397	17,341	17,341
3	MF & MH-Rural	125,154	196	1,701	127,051	195,327	195,327	234,393	73	2,424
4	Total Residential	1,488,541	46,614	20,234	1,555,389	2,323,158	2,323,158	2,787,790	17,414	19,765
4										
5	**Schools**	29,023	27	395	29,444	23,554	18,119	54,356	10	
6										
7	**Commercial**									
8	Commercial - Low	78,917	789	1,073	80,779	68,973	56,656	147,799	295	
9	Commercial - Medium	36,748	171	500	37,418	53,911	40,146	137,644	64	
10	Commercial - High	31,042	171	422	31,634	180,866	129,190	174,407	64	
11	Total Commercial	146,706	1,131	1,994	149,831	303,750	225,993	459,850	422	
12										
13	**Industrial**									
12	Dura Plastics Products	951	3	13	967	422	819	2,850	1	
13	Perricone Juice	43,548	3	592	44,143	386,042	111,463	326,233	1	
14	Rudolph Food Company	0	3	0	3	0	0	0	1	
15	CJ Foods #1	43,886	3	597	44,485	486,301	164,931	465,753	1	
16	CJ Foods #2	5,164	3	70	5,236	18,535	2,676	48,353	1	
17	Precision Stamping	0	3	0	3	0	0	0	1	
18	Total Industrial	93,549	16	1,272	94,837	891,300	279,889	843,188	6	
19										
20	Total	1,757,819	47,788	23,894	1,829,501	3,541,762	2,847,158	4,145,183	17,852	19,675

4.6. Unit Cost-of-Service Determination

Having established the units of service shown in

Table 4-12, a unit COS can be calculated for each cost causation component. Table 4-13 shows this calculation which for both variable costs (flow and strength in Columns B – F) and fixed costs (Columns F and G). Key things to note about
Table 4-12 include:

- The revenue requirement amounts shown on Line 4 were originally presented in Line 18 of Table 4-8.
- As shown on Line 6 General administrative costs (Column H) were allocated to the customer cost causation component (Line 7 of Column G) because these costs do not vary with the volume or strength of customer sewer discharges.
- The units of service shown on Line 9 can be traced to Line 20 on
- Table 4-12.
- The final calculation of the unit COS for each cost causation component is shown in Line 11 of Table 4-13. The specific calculation is:

Cost Causation Component Total COS (Line 9) / Units of Service (Line 10) = Unit COS (line 11)

Table 4-13: Units Cost-of-Service Calculation

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
		Variable				Fixed			
Line	Revenue Requirement Component	Flow	BOD	TSS	TDS	Ind. Admin	Customer	G&A	Total
1	Total Operating Expenses	$4,884,558	$1,049,425	$1,049,425	$878,688	$40,738	$162,953	$861,095	$8,926,881
2	Total Capital Costs	$2,858,318	$719,178	$719,178	$643,020	$0	$0	$325,243	$5,264,936
3	Total Non-Operating Revenues	($163,375)	($35,100)	($35,100)	($29,390)	($1,363)	($5,450)	($28,801)	($298,580)
4	Total Revenue Requirement	$7,579,500	$1,733,502	$1,733,502	$1,492,319	$39,376	$157,502	$1,157,536	$13,893,236
5									
6	Allocation of G&A	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	
7	Allocation of G&A	$0	$0	$0	$0	$0	$1,157,536	($1,157,536)	$0
8									
9	Total System Cost of Service	$7,579,500	$1,733,502	$1,733,502	$1,492,319	$39,376	$1,315,038		
10	Total System Units of Service	1,829,501	3,541,762	2,847,158	4,145,183	6	17,852		
11	Unit Cost of Service	$4.14	$0.49	$0.61	$0.36	$6,562.59	$73.66		
12	Units	$/CCF	$/lb.	$/lb.	$/lb.	$/Account	$/Account		

4.7. Customer Class Cost-of-Service

The final step in the COS analysis is the determination of the FY 2024 COS for each customer class as shown in Table 4-14. The is accomplished by the straightforward process of multiplying the unit COS for each cost causation component (Line 11 of Table 4-13) by the customer class units of service summarized in
Table 4-12.

Table 4-14: Customer Class Cost-of-Service

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
		Variable				Fixed			% of
Line	Class	Flow	BOD	TSS	TDS	Ind Admin	Customer	Total	Total
1	**Residential**								
2	Single Family	$5,917,508	$1,041,459	$1,295,537	$919,255	$0	$1,277,357	$10,451,116	75.2%
3	MF & MH-Rural	$526,364	$95,602	$118,926	$84,384	$0	$5,388	$830,664	6.0%
4	Total Residential	$6,443,872	$1,137,061	$1,414,463	$1,003,640	$0	$1,282,745	$11,281,780	81.2%
5									
6	**Schools**	$121,987	$11,528	$11,032	$19,569	$0	$737	$164,852	1.2%
7									
8	**Commercial**								
9	Commercial - Low	$334,661	$33,759	$34,495	$53,210	$0	$21,704	$477,828	3.4%
10	Commercial - Medium	$155,020	$26,386	$24,443	$49,554	$0	$4,705	$260,108	1.9%
11	Commercial - High	$131,059	$88,524	$78,658	$62,789	$0	$4,705	$365,735	2.6%
12	Commercial	$620,741	$148,669	$137,596	$165,552	$0	$31,114	$1,103,672	7.9%
13									
14	**Industrial**								
15	Dura Plastics Products	$4,005	$206	$499	$1,026	$6,563	$74	$12,372	0.1%
16	Perricone Juice	$182,880	$188,947	$67,865	$117,448	$6,563	$74	$563,776	4.1%
17	Rudolph Food Company	$11	$0	$0	$0	$6,563	$74	$6,647	0.0%
18	CJ Foods #1	$184,300	$238,018	$100,419	$167,677	$6,563	$74	$697,050	5.0%
19	CJ Foods #2	$21,694	$9,072	$1,629	$17,408	$6,563	$74	$56,439	0.4%
20	Precision Stamping	$11	$0	$0	$0	$6,563	$74	$6,647	0.0%
21	Industrial	$392,902	$436,243	$170,411	$303,558	$39,376	$442	$1,342,932	9.7%
22									
23	Total	$7,579,500	$1,733,502	$1,733,502	$1,492,319	$39,376	$1,315,038	$13,893,236	100.0%

5. Rate Design

5.1. Monthly Service Charge

The monthly service charge is used to recover the cost of customer service functions and the general and administrative costs incurred to operate the sewer utility. In the case of industrial customers, the monthly service charge is also used to recover the cost of industrial customer administration which involves routine testing of the discharges of high discharge strength customers in the Industrial customer class to ensure compliance with City and other regulatory requirements. Table 5-1 shows the calculation of the proposed FY 2024 monthly service charge. Key points to note include:

- The total revenue requirement that must be recovered from each customer class (Column D) can be traced to Table 4-14.

- Residential customers and schools to not pay commodity charges. Therefore, variable costs allocated to these customer types (Column A) must be recovered through the monthly service charge.

- The billing units shown in Column E can be traced to
- Table 4-12

- The process calculating the rates shown in Column G is:

Revenue requirement (Column D) / Billing Units (Column E) = Proposed $/Month Service Charge (Column G)

Table 5-1: FY 2024 Monthly Service Charge Calculation

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
		Revenue Requirement								
Line	Customer Class	Variable	Fixed	Total	Billing Units	Type of Billing Unit	Proposed $/Month	Current $/Month	$ Change	% Change
1	**Residential**									
2	Single Family	$9,173,759	$1,277,357	$10,451,116	17,341	EDU	$50.22	$47.21	$3.01	6.4%
3	MF & MH-Rural ($/Unit)	$825,276	$5,388	$830,664	2,424	EDU	$28.55	$29.24	($0.69)	-2.4%
4										
5	**Schools ($/Student)**	$164,115	$737	$164,852	12,517	Students	$1.10	$1.07	$0.03	2.6%
6										
7	**Commercial**									
8	Commercial - Low		$21,704	$21,704	295	Accounts	$6.14	$25.77	($19.63)	-76.2%
9	Commercial - Medium		$4,705	$4,705	64	Accounts	$6.14	$47.21	($41.07)	-87.0%
10	Commercial - High		$4,705	$4,705	64	Accounts	$6.14	$151.07	($144.93)	-95.9%
11										
12	**Industrial**									
13	Dura Plastics Products		$6,636	$6,636	1	Accounts	$553.02	$0.00	$553.02	0.0%
14	Perricone Juice		$6,636	$6,636	1	Accounts	$553.02	$0.00	$553.02	0.0%
15	Rudolph Food Company		$6,636	$6,636	1	Accounts	$553.02	$169.27	$383.75	226.7%
16	CJ Foods #1		$6,636	$6,636	1	Accounts	$553.02	$0.00	$553.02	0.0%
17	CJ Foods #2		$6,636	$6,636	1	Accounts	$553.02	$0.00	$553.02	0.0%
18	Precision Stamping		$6,636	$6,636	1	Accounts	$553.02	$148.24	$404.78	273.1%
19										
20	**Total**	$10,163,150	$1,354,414	$11,517,564						

5.2. Commodity Rate

The commodity rate, which is billed on a $/CCF basis, is used to recover the volume of flows and the strength of customer sewer discharges. Table 5-2 shows the calculation of the proposed FY 2024 commodity charges. Key points to note include:

- The total revenue requirement that must be recovered from each customer class (Column D) can be traced to Table 4-14.
- Residential customers and schools to not pay commodity charges. Therefore, these customer classes are not show in in Table 5-2.
- The billing units shown in Column E can be traced to Column B of Table 4-9.
- The process calculating the rates shown in Column G is:

Revenue requirement (Column D) / Billing Units (Column E) = Proposed $/Month Service Charge (Column G)

Table 5-2: FY 2024 Commodity Rate Calculation

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
		Revenue Requirement								
Line	Customer Class	Variable	Fixed	Total	Billing Units	Type of Billing Unit	Proposed $/CCF	Current $/CCF	$ Change	% Change
1	**Commercial**									
2	Commercial – Low	$456,124		$456,124	92,844	CCF	$4.91	$2.77	$2.14	77.4%
3	Commercial – Medium	$255,403		$255,403	43,232	CCF	$5.91	$3.75	$2.16	57.5%
4	Commercial – High	$361,030		$361,030	36,519	CCF	$9.88	$7.31	$2.57	35.1%
5										
6	**Industrial**									
7	Dura Plastics Products	$5,736		$5,736	1,119	CCF	$5.13	$3.84	$1.28	33.4%
8	Perricone Juice	$557,140		$557,140	51,233	CCF	$10.87	$2.94	$7.93	269.3%
9	Rudolph Food Company	$11		$11	0	CCF	$0.00	$0.00	$0.00	0.0%
10	CJ Foods #1	$690,414		$690,414	51,631	CCF	$13.37	$11.07	$2.31	20.8%
11	CJ Foods #2	$49,803		$49,803	6,075	CCF	$8.20	$5.71	$2.49	43.5%
12	Precision Stamping	$11		$11	0	CCF	$0.00	$0.00	$0.00	0.0%
13										
14	Total	$2,375,672	$0	$2,375,672	3,315,158					

5.3. Proposed FY 2024 – FY 2028 Rate Increases

Having established the FY 2024 monthly service charge (Table 5-1) and the FY 2024 commodity charges (Table 5-2), the rates for FY 2025 – FY 2028 must be calculated. The increase in rates each year is tied to the overall annual rate revenue process determined as part of the financial planning process. Table 5-3 shows these increases. Table 5-4 shows the projected rates for FY 2024 – FY 2028.

Table 5-3: Proposed Rate Revenue Increases

	(A)	(B)	(C)
Line	Fiscal Year	Proposed Rate Revenue Increase	Effective Date
1	FY 2024	6.0%	September 2023
2	FY 2025	5.0%	July 2024
3	FY 2026	3.0%	July 2025
4	FY 2027	2.0%	July 2026
5	FY 2028	2.0%	July 2027

Table 5-4: Proposed Sewer Rates for FY 2022 – FY 2028

Line	(A) Customer Class	(B) Current	(C) FY 2024 Effective 9/1/23	(D) FY 2025 Effective 7/1/24	(E) FY 2026 Effective 7/1/25	(F) FY 2027 Effective 7/1/26	(G) FY 2028 Effective 7/1/27
	Monthly Service Charge						
1	**Residential**						
2	Single Family	$47.21	$50.22	$52.73	$54.31	$55.40	$56.51
3	MF & MH–Rural ($/unit)	$29.24	$28.55	$29.98	$30.88	$31.50	$32.13
4							
5	**Schools ($/student)**	$1.07	$1.10	$1.15	$1.19	$1.21	$1.23
6							
7	**Commercial Customers**						
8	Commercial - Low Strength	$25.77	$6.14	$6.45	$6.64	$6.77	$6.91
9	Commercial - Medium Strength	$47.21	$6.14	$6.45	$6.64	$6.77	$6.91
10	Commercial - High Strength	$151.07	$6.14	$6.45	$6.64	$6.77	$6.91
11							
12	**Industrial Customers**						
13	Dura Plastics Products	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
14	Perricone Juice	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
15	Rudolph Food Company	$169.27	$553.02	$580.67	$598.09	$610.05	$622.26
16	CJ Foods #1	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
17	CJ Foods #2	N/A	$553.02	$580.67	$598.09	$610.05	$622.26
18	Precision Stamping	$148.24	$553.02	$580.67	$598.09	$610.05	$622.26
19							
20	**Proposed Commodity Rates ($/CCF)**						
21	(A)	(B)	(C)	(D)	(E)	(F)	(G)
22			FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
23	Customer Class	Current	Effective 9/1/23	Effective 7/1/24	Effective 7/1/25	Effective 7/1/26	Effective 7/1/27
24	**Residential**						
25	Single Family	N/A	N/A	N/A	N/A	N/A	N/A
26	MF & MH–Rural ($/unit)	N/A	N/A	N/A	N/A	N/A	N/A
27							
28	**Schools ($/student)**	N/A	N/A	N/A	N/A	N/A	N/A
29							
30	**Commercial Customers**						
31	Commercial - Low Strength	$2.77	$4.91	$5.16	`$5.31	$5.42	$5.53
32	Commercial - Medium Strength	$3.75	$5.91	$6.20	$6.39	$6.52	$6.65
33	Commercial - High Strength	$7.31	$9.88	$10.38	$10.69	$10.90	$11.12
34							
35	**Industrial Customers**						
36	Dura Plastics Products	$3.84	$5.13	$5.38	$5.54	$5.65	$5.77
37	Perricone Juice	$2.94	$10.87	$11.42	$11.76	$11.99	$12.23
38	Rudolph Food Company	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
39	CJ Foods #1	$11.07	$13.37	$14.04	$14.46	$14.75	$15.04
40	CJ Foods #2	$5.71	$8.20	$8.61	$8.87	$9.04	$9.22
41	Precision Stamping	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

5.4. Customer Bill Impacts

Table 5-5 shows estimated customer sewer bills for the period FY 2024 – FY 2028 based on the proposed sewer rates presented in Table 1-4. Key items to note about the rates shown in Table 5-5Table 1-5 include the following:

- **Residential Customers and School Estimated Bills (Lines 1 -5)**: Residential customers and schools do not pay commodity rates. The monthly bills for these customers are based on the proposed change in monthly service charges.

- **Commercial Customer Estimated Bills (Lines 7-10)**: . Commercial customer bills reflect both commodity charges and monthly service charges. The estimated bills for commercial customers assume monthly billed sewer discharges of 40 CCF. This assumption was made for low, medium, and high strength commercial customers. Each commercial customer will have a unique amount of billed sewer discharges. Therefore, the bill impacts shown in Table 1-5 are but one example of an infinite range of potential outcomes.

- **Industrial Customer Bills (Lines 12-18)**: The estimated bills for commercial customers reflect the estimated projected billed discharges applicable to each customer. Industrial customer bills reflect both commodity charges and monthly service charges.

Table 5-5: Estimated Change in Monthly Sewer Bills

Line	Customer Class	Projected Monthly Bills (A) Current	(B) FY 2024	(C) FY 2025	(D) FY 2026	(E) FY 2027	(F) FY 2028
1	**Residential**						
2	Single Family	$47.21	$50.22	$52.74	$54.32	$55.40	$56.51
3	MF & MH–Rural ($/unit)	$29.24	$28.55	$29.97	$30.87	$31.49	$32.12
4							
5	**Schools ($/student)**	$1.07	$1.10	$1.15	$1.19	$1.21	$1.23
6							
7	**Commercial Customers**						
8	Commercial - Low Strength	$136.57	$202.65	$212.78	$219.17	$223.55	$228.02
9	Commercial - Medium Strength	$197.21	$242.45	$254.57	$262.21	$267.45	$272.80
10	Commercial - High Strength	$443.47	$401.18	$421.24	$433.87	$442.55	$451.40
11							
12	**Industrial Customers**						
13	Dura Plastics Products	$358.33	$1,031.00	$1,082.55	$1,115.02	$1,137.32	$1,160.07
14	Perricone Juice (Note 1)	$13,852.50	$46,981.34	$49,330.41	$50,810.32	$51,826.53	$52,863.06
15	Rudolph Food Company	$169.27	$553.02	$580.67	$598.09	$610.05	$622.26
16	CJ Foods #1	$47,608.33	$58,087.53	$60,991.91	$62,821.67	$64,078.10	$65,359.66
17	CJ Foods #2	$2,891.67	$4,703.25	$4,938.41	$5,086.56	$5,188.29	$5,292.06
18	Precision Stamping	$148.24	$553.02	$580.67	$598.09	$610.05	$622.26
19							
20		Change in Monthly Bills					
21		(G)	(H)	(I)	(J)	(K)	(L)
22	Customer Class	Current	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
23	**Residential**						
24	Single Family	---	$3.01	$2.51	$1.58	$1.09	$1.11
25	MF & MH–Rural ($/unit)	---	($0.69)	$1.43	$0.90	$0.62	$0.63
26							
27	**Schools ($/student)**	--	$0.03	$0.05	$0.03	$0.02	$0.02
28							
29	**Commercial Customers**						
30	Commercial - Low Strength	--	$66.08	$10.13	$6.38	$4.38	$4.47
31	Commercial - Medium Strength	--	$45.24	$12.12	$7.64	$5.24	$5.35
32	Commercial - High Strength	--	($42.29)	$20.06	$12.64	$8.68	$8.85
33							
34	**Industrial Customers**						
35	Dura Plastics Products	--	$672.66	$51.55	$32.48	$22.30	$22.75
36	Perricone Juice (Note 1)	--	$33,128.84	$2,349.07	$1,479.91	$1,016.21	$1,036.53
37	Rudolph Food Company	--	$383.75	$27.65	$17.42	$11.96	$12.20
38	CJ Foods #1	--	$10,479.20	$2,904.38	$1,829.76	$1,256.43	$1,281.56
39	CJ Foods #2	--	$1,811.58	$235.16	$148.15	$101.73	$103.77
40	Precision Stamping	--	$404.78	$27.65	$17.42	$11.96	$12.20

Note 1: The monthly bills for Perricone Juice (Line 14) and the monthly bill changes (Line 36) reflect the discharge volumes and strength loadings specified in an agreement between Perricone Juice and the City.