

Central Contra Costa Sanitary District
Wastewater Cost-of-Service
Rate Study

DRAFT REPORT / MARCH 28, 2025



March 28, 2025

Mr. Thomas Brightbill, P.E.
Senior Engineer, Planning and Development Services Division
Central Contra Costa Sanitary District
5019 Imhoff Place
Marinez, CA 94553

Subject: Wastewater Cost-of-Service Rate Study Report – FINAL DRAFT

Dear Mr. Brightbill:

Raftelis is pleased to provide this Wastewater Cost-of-Service Rate Study Report for the Central Contra Costa Sanitary District (Central San) to establish equitable wastewater rates that are consistent with cost-of-service principles.

The major objectives of the study include the following:

- Update the cost-of-service analysis for wastewater
- Develop fair and equitable wastewater rates
- Demonstrate the impacts of the proposed wastewater rates on typical customer bills

Central San has developed a long-range financial plan to determine the revenue needs of the wastewater utility in the next ten years. However, wastewater rates, based on that financial plan, are only calculated for the next two fiscal years beginning July 2025. This report summarizes the key findings and recommendations related to the development of wastewater rates.

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

Sincerely,



Sudhir Pardiwala, P.E.
Senior Principal



Theresa Jurotich, P.E., PMP
Manager

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1. Executive Summary

1.1. Introduction

In late 2024, the Central Contra Costa Sanitary District engaged Raftelis to conduct a comprehensive cost-of-service (COS) study to independently assess and evaluate Central San's existing wastewater rates. The objectives of the study include providing a fair, equitable, and reasonable rate structure; ensuring that there is a proportionate recovery of costs from the various customer classes; and developing rates that are aligned with cost-of-service principles. This report documents the resultant findings, analyses, and proposed changes from the study.

1.2. Financial Plan

In order to determine wastewater rates, Raftelis used the revenue requirements, including operations and maintenance (O&M) expenses, capital improvement expenses, debt service costs, and reserve requirements for a ten-year study period from Fiscal Year (FY) 2025 to 2035 provided in Central San's financial plan. O&M expenses include the cost of treatment, pumping, and collection facilities, pre-treatment, household hazardous waste collection, as well as the costs of providing technical services such as laboratory services, and other administrative costs of the wastewater system such as customer service and billing.

In addition to forecast changes in operating expenses, Central San is planning continuing increases in capital investments over the next ten years to replace portions of its complex infrastructure that has reached the end of its useful life and to remain in compliance with stringent environmental regulations. Central San anticipates using funds from an SRF loan secured in 2022 and issuing debt to help fund future projects. The FY 2025 to FY 2035 CIP is budgeted at \$1.341 billion and will be funded primarily through available rate revenues, capacity fees, and ad valorem tax revenue with the balance funded by debt. Annual payments on existing debt service are approximately \$9 million (declining to \$4.5 million in FY 2029 and ending in FY 2030 with a final payment of \$1.9 million). SRF loan proceeds from the SRF loan are anticipated to be used from FY 2025 through FY 2029, with repayment beginning in FY 2030. New bond issues are anticipated in FY 2031 and FY 2034, based on the current forecast (though timing may differ depending on the level of future rate adjustments).

Central San's financial plan indicates that overall revenue adjustments of 2.5% are required for FY 2026 and 4% for FY 2027, as shown in Table 1-1. The adjustments are needed to meet the operating and capital expenses as well as reserve targets. Central San currently has four separate funds: O&M Expense Fund, Sewer Construction Fund, Self-Insurance/Emergency Fund, and Debt Service Fund. The current reserve policy includes 41.7 percent (equivalent to 5 months) of next year's O&M expenses, 50 percent of next year's non-bond funded CIP expenses, 100 percent of next year's debt service payment, \$1.5 million for self-insurance to cover three potential incidents, and \$7.5 million for emergencies to cover the liability insurance deductible for losses resulting from damage to wastewater assets during disasters. A sound reserve policy – and meeting those policy targets – are key to a sustainable financial plan and allow Central San to have funds for working capital, natural disasters or emergencies, and other unexpected expenses.

Table 1-1: Proposed Revenue Adjustments

Fiscal Year	Overall Revenue Adjustment
2026	2.5%
2027	4.0%

1.3. Cost-of-Service Process and Methodology

Raftelis followed the guidelines for allocating costs detailed in the Water Environment Federation (WEF) Manual of Practice No. 27, Financing and Charges for Wastewater Systems. Raftelis started with evaluating the COS analysis methodology developed in the most recent studies conducted for Central San and updated the data and methodology where required to align with COS principles and Central San's current system.

The wastewater COS analysis consists of seven major steps, as outlined below:

1. Review customer class and strength characteristics and loadings of the non-residential class.
2. Conduct plant balance to estimate the flows and strength of the residential class.
3. Functionalize O&M expenses and capital costs into functional categories such as Collection, Treatment, and Billing and Customer Service.
4. Allocate each functional category into cost components such as Wastewater Flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Billing and Customer Service.
5. Develop total customer class characteristics by cost component.
6. Calculate the cost component unit rates by dividing the total cost in each cost component in Step 4 by the total customer class characteristics in Step 5.
7. Calculate the cost by customer class by multiplying the unit rates in Step 6 by the individual customer class characteristics in Step 5.

The steps described above provide the basis for allocating costs equitably amongst the different customer classes in proportion to the service received. Once costs to serve different customer classes are determined, rates are then designed to recover the costs equitably to address Proposition 218 requirements.

1.4. Proposed Wastewater Rates

Through our review, Raftelis recommends that Central San retain its current wastewater rate structure, which includes fixed charges for residential customers and a flow charge per hundred cubic feet (HCF) for most non-residential customers. Permitted industrial customers are charged based on a unit rate for flow, BOD, and TSS. Schools are charged a rate per average daily student attendance. Since a large majority of the costs of operating and maintaining the wastewater system are fixed, all non-residential customers (including industrial customers) are subject to a minimum annual charge equal to the Multi-Family Residential (MFR) annual charge. Permitted industrial customers pay a fixed charge for the costs of direct billing.

Table 1-2 shows the current and proposed wastewater rates in FY 2025 and FY 2026.

Table 1-2: Current and Proposed Wastewater Rates

User Group	Effective Date =	Current 1-Jul-24	Proposed 1-Jul-25	Proposed 1-Jul-26
Residential (per residential unit)				
Single Family Dwelling		\$725.00	\$754.00	\$784.00
Multi-Family Dwelling (Apartments, Condominiums, Duplexes, Second Living Units, Mobile Homes)		\$647.00	\$625.00	\$650.00
Accessing Dwelling Units		\$353.00	\$335.00	\$348.00
Non-Residential (per hcf of water)				
Low (Retail, Office, Churches, Daycare, Preschools, Universities, Rest Homes, and Automotive)		\$7.94	\$8.12	\$8.44
Medium-Low (Delis, Ice Cream and Yogurt Shops, Coffee Shops, Bars, and shared meters with 50% of less food service)		\$9.69	\$10.38	\$10.80
Medium (shared meters with 50% or more food service)		\$11.43	\$12.30	\$12.79
Medium-High (Hotels and Motels, Restaurants, Supermarkets, Shared meters with Bakeries or other High Strength Food Services)		\$12.52	\$13.54	\$14.08
High (Bakeries, Breweries, Restaurants withgrinders or emulsifiers, and Mortuaries)		\$15.06	\$16.70	\$17.37
Minimum Annual Charge		\$647.00	\$625.00	\$650.00
Schools (per student)				
Schools – Elementary		\$9.30	\$9.94	\$10.34
Schools – Intermediate, High School		\$18.61	\$19.59	\$20.37
Permitted Industrial Users (includes food processing, breweries, and wineries)				
Wastewater Flow (per hcf)		\$7.57	\$7.15	\$7.44
Biochemical Oxygen Demand (per 1,000 lbs)		\$1,338.00	\$1,586.76	\$1,650.23
Suspended Solids (per 1,000 lbs)		\$670.00	\$788.93	\$820.49
Fixed Charge		\$258.00	\$260.27	\$270.68
Special Discharge Permits & Contractual Agreements		Determined Individually		

1.4.1. Customer Impacts

Low and medium non-residential customers are the majority of the non-residential customers. Table 1-3 compares the residential bill impacts for FY 2026 and FY 2027 to prior year rates. Single Family Residential (SFR) customers would experience a \$29 annual increase for FY 2026 and a further \$30 annual increase for FY 2027. MFR customers would experience a \$22 reduction for FY 2026 and a \$25 increase for FY 2027. Accessory Dwelling Units (ADU) would experience an \$18 reduction for FY 2026 and a \$13 increase for FY 2027.

Table 1-3: Residential Annual Wastewater Bill Impacts

Customer Class	Current	Proposed 1-Jul-25	Proposed 1-Jul-26	Difference FY26 - FY25	Difference FY27-FY26
SFR	\$725.00	\$754.00	\$784.00	\$29.00	\$30.00
MFR	\$647.00	\$625.00	\$650.00	-\$22.00	\$25.00
ADU	\$353.00	\$335.00	\$348.00	-\$18.00	\$13.00

Table 1-4 shows the typical non-residential bill impacts for Central San's largest non-residential rate classes for FY 2026 and FY 2027 by comparing the average bill based on the proposed rates to the average bill based

on the current rates. The amounts are calculated based on the average annual water usage for each customer class.

Table 1-4: Typical Non-Residential Annual Wastewater Bill Impacts

Customer Class	Average Annual Use	Average Bill			Difference	
		Current	1-Jul-25	1-Jul-26	FY26 - FY25	FY27-FY26
Low	946	\$7,507.50	\$7,677.69	\$7,980.26	\$170.20	\$302.57
Medium High	3,184	\$39,862.28	\$43,109.84	\$44,829.14	\$3,247.57	\$1,719.30

2. Financial Plan

This section of the report provides a summary of the projected revenues, O&M and capital expenditures, capital improvement financing plan, debt service requirements, and the revenue adjustments required to ensure the financial stability of the wastewater enterprise as presented in Central San's financial plan. The financial plan is an Excel model maintained by Central San, and an extract is published in the annual budget book.

2.1. Wastewater System Infrastructure

Central San was established in 1946 as a special enterprise district and serves nearly 500,000 residents and 3,000 businesses in Alamo, Clyde, Danville, Lafayette, Martinez, Moraga, Orinda, Pacheco, Pleasant Hill, San Ramon, Walnut Creek, and unincorporated areas within central Contra Costa County, covering a 146 square mile area. Central San also treats wastewater from an additional 37 square miles for residents of Concord and Clayton under a 1974 contract with the City of Concord.

Approximately 35 million gallons per day (MGD) of wastewater is treated on average at Central San's Wastewater Treatment Plant, which also produces nearly 560 million gallons of recycled water each year for plant operations, industrial uses, and landscape irrigation. The wastewater utility is also responsible for the operation and maintenance of 18 wastewater pumping stations and 1,540 miles of sewer mains. Central San also operates a Household Hazardous Waste facility which collects over 2 million pounds of household hazardous waste per year and strives to reuse or recycle about 90 percent of those materials.

2.2. Existing Wastewater Rates

The current wastewater rate structure consists of fixed charges for residential customers and a flow and strength based rate per hundred cubic feet (hcf) for most different classes of non-residential customers. Schools are charged a per-student rate based on the average daily student attendance. Customers billed under the Industrial Formula are charged based on unit rates for flow, BOD, and TSS. Non-residential customers are subject to a minimum annual charge, which serves to recover a portion of the fixed costs. The current rate structure, shown in Table 2-1, generates approximately 83 percent of the total rate revenue from residential fixed charges, with the remaining 17 percent generated by non-residential charges. Concord and Clayton are billed for their flow-proportional share of O&M and Capital costs under the terms of a contract between Central San and Concord.

Table 2-1: Existing Wastewater Rate Structure

User Group	Effective Date =	Current 1-Jul-24
Residential (per residential unit)		
Single Family Dwelling		\$725.00
Multi-Family Dwelling (Apartments, Condominiums, Duplexes, Second Living Units, Mobile Homes)		\$647.00
Accessing Dwelling Units		\$353.00
Non-Residential (per hcf of water)		
Low (Retail, Office, Churches, Daycare, Preschools, Universities, Rest Homes, and Automotive)		\$7.94
Medium-Low (Delis, Ice Cream and Yogurt Shops, Coffee Shops, Bars, and shared meters with 50% of less food service)		\$9.69
Medium (shared meters with 50% or more food service)		\$11.43
Medium-High (Hotels and Motels, Restaurants, Supermarkets, Shared meters with Bakeries or other High Strength Food Services)		\$12.52
High (Bakeries, Breweries, Restaurants with grinders or emulsifiers, and Mortuaries)		\$15.06
Minimum Annual Charge		\$647.00
Schools (per student)		
Schools – Elementary		\$9.30
Schools – Intermediate, High School		\$18.61
Permitted Industrial Users (includes food processing, breweries, and wineries)		
Wastewater Flow (per hcf)		\$7.57
Biochemical Oxygen Demand (per 1,000 lbs)		\$1,338.00
Suspended Solids (per 1,000 lbs)		\$670.00
Fixed Charge		\$258.00
Special Discharge Permits & Contractual Agreements		Determined Individually

2.3. Wastewater Accounts and Usage Characteristics

Customer accounts and usage information in FY 2023 are used as the basis for projecting wastewater revenues during the study period, from FY 2025 to FY 2030. The projections are based on Central San's long-range financial plan. The number of wastewater accounts and water usage are projected to increase at approximately 0.4 percent per year through FY 2030. Table 2-2 shows the estimated total residential customer accounts by customer class for the planning period from FY 2025 to FY 2030.

Table 2-2: Projected Residential Customer Accounts

Customer	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
SFR	99,087	99,483	99,881	100,281	100,682	101,085
MFR	2,375	2,385	2,395	2,405	2,415	2,425
ADU	42,379	42,549	42,719	42,890	43,062	43,234

Table 2-3 shows the projected water usage by customer class and projected student counts for the planning period from FY 2025 to FY 2030.

Table 2-3: Annual Projected Water Usage (HCF) and Student Enrollment

Customer	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Non-Residential						
Low	1,247,131	1,252,120	1,257,128	1,262,156	1,267,205	1,272,274
Medium-Low	165,718	166,381	167,047	167,715	168,386	169,060
Medium	152,556	153,166	153,779	154,394	155,012	155,632
Medium-High	361,997	363,445	364,899	366,359	367,824	369,295
High	14,688	14,747	14,806	14,865	14,925	14,985
Industrial	150,315	150,916	151,520	152,126	152,735	153,346
Total Water Use, hcf	2,092,405	2,100,775	2,109,179	2,117,615	2,126,087	2,134,592
K-12 Schools						
Elementary (students)	24,467	24,565	24,663	24,762	24,861	24,960
Intermediate (students)	12,748	12,799	12,850	12,901	12,953	13,005
High School (students)	18,643	18,718	18,793	18,868	18,943	19,019
Total Student Count	55,858	56,082	56,306	56,531	56,757	56,984

2.4. Wastewater System Revenues

Central San's wastewater enterprise derives its required annual operating and capital revenues from a number of sources. The principal source of operating revenues is the wastewater service charges from Central San's wastewater customers. Other revenue sources include miscellaneous operating revenues such as permit and inspection fees, lease rental income, stormwater and pollution prevention fees, and interest earnings. Capital revenue sources include property tax revenue, capacity fee revenue, bond proceeds, and grants and loans. Wholesale service charges from the City of Concord provide another significant source of operating and capital revenues. The majority of the wastewater service charges are placed on the property tax roll; however, about 200 government-owned parcels and other parcels that do not receive property tax bills are billed directly by Central San.

Table 2-4 presents the details of the operating and capital-related revenues. Central San separates its revenue streams into a O&M Expense Fund, which includes all operating related revenues, and a Sewer Construction Fund, which includes capital-related expenses. A portion of the Sewer Service Charge revenue is allocated to the Sewer Construction Fund to fund capital expenses. The allocation of Sewer Service Charge between the O&M Expense Fund and Sewer Construction Fund is finalized during each annual budgeting process.

Table 2-4: Revenue Summary under Current Rates

O&M Expense Revenue(1)	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Sewer Service Charge(2)	\$71,129,396	\$77,308,022	\$81,463,979	\$85,848,524	\$91,293,618	\$95,815,979
Service Charges - Concord	\$19,025,266	\$20,249,679	\$21,260,570	\$22,222,518	\$22,335,629	\$23,593,713
Permit/Inspection/Right-of-W	\$1,828,000	\$1,882,840	\$1,939,325	\$1,997,505	\$2,057,430	\$2,119,153
Lease Rental Income	\$880,000	\$906,400	\$933,592	\$961,600	\$990,448	\$1,020,161
Interest Income	\$506,497	\$488,425	\$505,518	\$531,046	\$559,243	\$586,373
HHW Reimbursement	\$1,094,000	\$1,126,820	\$1,160,625	\$1,195,443	\$1,231,307	\$1,268,246
Stormwater/Pollution Preven	\$496,000	\$510,880	\$526,206	\$541,993	\$558,252	\$575,000
Recycled Water	\$530,000	\$545,900	\$562,277	\$579,145	\$596,520	\$614,415
Other Revenue	\$365,000	\$375,950	\$387,229	\$398,845	\$410,811	\$423,135
Total Revenues	\$95,854,159	\$103,394,916	\$108,739,321	\$114,276,619	\$120,033,258	\$126,016,174

Self Insurance Subfund Revenue(1)	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Sewer Service Charge(2)	\$2,300,206	\$2,370,040	\$2,439,321	\$2,517,046	\$2,595,590	\$2,676,192
Interest Income	\$96,810	\$101,534	\$100,035	\$100,004	\$100,269	\$100,142
Other Revenue	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982
Total Revenues	2,422,016	2,497,325	2,565,879	2,644,368	2,723,997	2,805,316

Sewer Construction Fund Revenue(1)	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Sewer Service Charge(2)	\$47,165,063	\$41,399,212	\$37,658,352	\$33,682,867	\$28,647,741	\$24,535,069
Property Tax(3)	\$12,857,000	\$16,239,974	\$17,209,922	\$22,646,611	\$18,973,359	\$13,668,645
Capacity Fee Revenue	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400
Concord Capital Revenue	\$9,283,194	\$13,322,259	\$19,172,468	\$21,456,919	\$32,501,018	\$38,142,221
Developer Fees	\$426,000	\$438,780	\$451,943	\$465,502	\$479,467	\$493,851
Interest Income	\$822,010	\$824,718	\$692,326	\$561,567	\$393,711	\$0
All Other	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159
Proposed SRF Proceeds	\$0	\$39,000,000	\$42,640,000	\$40,365,000	\$34,155,000	\$5,150,000
Total Revenues	\$76,281,667	\$116,953,373	\$123,553,473	\$124,906,958	\$120,878,821	\$87,718,344

(1) Based on budgeted and projected revenues as of January 2024.

(2) Revenue under existing rates. Increasing revenues due to projected growth.

(3) Net of Debt Service payments and contributions to reserves.

2.5. Wastewater System Expenditures

For sound financial operation of Central San's wastewater system, the revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include O&M expenses, capital improvement program (CIP) expenditures, principal and interest payments on existing debt, and other obligations.

2.5.1. Operation and Maintenance Expenses

O&M expenditures include the cost of treatment, pumping, and collection facilities. O&M expenses also include the costs of providing technical services such as laboratory services, engineering, and other administrative costs of the wastewater system such as customer service and billing. These costs are a normal

obligation of the system and are met from operating revenues as they are incurred. The comprehensive forecasted annual O&M expenditures for the study are based upon Central San's long-range financial plan, using inflationary factors and assumptions ranging from 1.5 to 6.2 percent per year to project O&M expenditures, which are shown in more detail in Appendix A.

As part of the secondary expansion required by the Clean Water Act of 1972, Central San, in partnership with CCWD and relying on written guidance from the State Water Quality Control Board (SWQCB), agreed to implement a water recycling project to serve the nearby oil refineries. After construction of the project, Central San's NPDES discharge requirements were relaxed to exclude the requirement of removing nutrients and Central San and CCWD could not come to agreement on the share of the costs, so the refinery project was never implemented. Since the facilities were grant-funded, the EPA ultimately required Central San to either use the recycled water facilities or repay that portion of the grant. Central San decided to implement a Recycled Water Program. After conducting many studies, Central San negotiated an agreement with CCWD and implemented the Zone 1 Recycled Water Project, which provides non-potable recycled water to irrigation and industrial customers near Central San's treatment plant. Central San's wastewater treatment plant continues to be the biggest user of Central San's supply of recycled water. Based on the history of the project, the funding, and the settlement agreement, Central San has considered the costs for the production of recycled water to be a wastewater cost.

Projected O&M expenditures for the study period are summarized by function and by category in Table 2-5 and Table 2-6, respectively.

Table 2-5: Projected O&M Expenses by Function

Function	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Executive Management	\$3,951,508	\$4,185,706	\$4,405,031	\$4,632,402	\$4,869,474	\$5,110,697
Administration	\$22,454,528	\$23,696,927	\$24,945,427	\$26,236,184	\$27,579,719	\$28,961,082
Engineering & Technical Services	\$15,595,648	\$16,280,203	\$17,073,498	\$17,908,526	\$18,786,922	\$19,702,081
Operations	\$51,851,982	\$54,808,359	\$57,650,972	\$60,602,605	\$63,682,635	\$66,884,217
Recycled Water	\$2,133,490	\$2,265,100	\$2,385,009	\$2,509,280	\$2,638,820	\$2,773,003
Total Expenses	\$95,987,156	\$101,236,296	\$106,459,938	\$111,888,997	\$117,557,569	\$123,431,079

Table 2-6: Projected O&M Expenses by Category

Category	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Salaries & Wages	\$47,486,626	\$50,098,390	\$52,853,802	\$55,760,761	\$58,827,603	\$62,063,121
Employee Benefits	\$14,921,530	\$16,675,850	\$17,911,030	\$19,157,619	\$20,439,298	\$21,756,794
Unfunded Liabilities	\$597,404	\$301,237	\$312,298	\$321,479	\$329,233	\$335,790
Purchased Property Services	\$8,331,410	\$8,581,352	\$8,838,793	\$9,103,957	\$9,377,075	\$9,658,388
Other Purchased Services	\$8,020,742	\$8,301,468	\$8,592,019	\$8,892,740	\$9,203,986	\$9,480,106
Supplies & Materials	\$14,967,135	\$15,565,820	\$16,188,453	\$16,835,991	\$17,509,431	\$18,209,808
Other Expenses	\$1,662,309	\$1,712,178	\$1,763,544	\$1,816,450	\$1,870,943	\$1,927,072
Total Expenses	\$95,987,156	\$101,236,296	\$106,459,938	\$111,888,997	\$117,557,569	\$123,431,079

2.5.2. Capital Improvement Program

Central San has developed a comprehensive wastewater CIP to address current and future forecasted wastewater system needs. As Table 2-7 indicates, the total estimated wastewater CIP for the study period of FY 2025 to FY 2030 is \$763.9 million. Central San applied an inflation rate of four percent for FY 2026, 3.5 percent per year for FY 2027 and FY 2028, then 3 percent per year for FY 2029 and beyond. The financial plan calls for Central San to fund capital costs through a combination of rate revenues supplemented with debt financing. Issuing debt will spread costs over the longer-term, provide inter-generational equity, and help smooth out rate adjustments.

Table 2-7: Capital Improvement Plan

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Treatment Plant	\$46,900,000	\$78,260,000	\$93,484,264	\$95,979,715	\$102,121,763	\$108,793,895
Collection System	\$23,327,000	\$36,922,080	\$34,695,601	\$30,387,078	\$32,732,438	\$28,808,813
General Improvements	\$5,235,000	\$6,578,000	\$6,431,490	\$3,982,908	\$4,102,313	\$3,929,818
Recycled Water	\$250,000	\$2,410,720	\$3,571,495	\$3,696,584	\$3,520,530	\$2,739,644
Contingency	\$5,000,000	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$80,712,000	\$124,170,800	\$138,182,850	\$134,046,284	\$142,477,043	\$144,272,169

2.5.3. Revenue Adjustments

Central San's financial plan projects the following revenue adjustments for the next five years, as shown in Table 2-8. The adjustments are necessary to meet projected expenditures and to maintain sufficient reserves balances.

Table 2-8: Revenue Adjustments Schedule

Fiscal Year	Revenue Adjustment
2026	2.5%
2027	4.0%
2028	5.0%
2029	5.0%
2030	4.0%

2.5.4. Debt Service Requirements

Debt service requirements consist of principal and interest payments on existing debt. Central San currently has debt service obligations associated with the outstanding 2018 bonds and the 2021 Certificates of Participation (COPs). Existing debt service payments are approximately \$8.8 million for FY 2025 and are anticipated to drop to approximately \$1.9 million in FY 2030, when the last payment on the 2018 bonds is made. Table 2-9 shows the existing debt service of the wastewater utility.

Table 2-9: Existing Debt Schedule

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
2018 Bonds	\$1,923,875	\$1,918,875	\$1,915,250	\$1,907,875	\$1,901,625	\$1,896,250
2021 COPs (for Reserve)	\$6,886,000	\$7,126,125	\$7,378,500	\$7,202,375	\$2,557,375	\$0
Total	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$4,459,000	\$1,896,250

Central San also anticipates using proceeds from an already secured SRF loan to help fund major capital improvements. Additional SRF proceeds totaling \$157 million are anticipated from the \$173.1 million loan. The first debt service payments related to the SRF loan totaling \$7,019,360 are expected in FY 2030. This brings the anticipated annual debt service in FY 2030 to \$8,915,610.

2.5.5. Debt Service Coverage

Central San must meet debt service coverage requirements on its outstanding bond issues. Coverage requirements typically vary between 100 percent and 160 percent but can be higher. Central San's target debt coverage is 200 percent, which means that Central San's Adjusted Net System Revenues shall amount to at least 200 percent of the Annual Debt Service. This is a Central San policy level requirement adopted for targeted credit ratings. Minimum debt coverage requirements specified in the bond documents may be lower. The system revenues include funds derived from the ownership and operation of the system including wastewater service charges from Central San's customers, miscellaneous service charges, revenues received from contracts, and interest income. Annual Debt Service includes annual principal and interest payments on outstanding debt. Adjusted net revenues equal the net revenues less capacity fee revenue and the capital charges from the City of Concord. As shown in Table 2-10, Central San exceeds the coverage requirement during each year of the study's planning period, which is one of several critical financial tests of the utility. The other financial tests include cash flow and reserve levels.

Table 2-10: Debt Coverage Calculation

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Revenues						
Sewer Service Charges	\$120,594,665	\$124,092,098	\$129,572,079	\$136,595,487	\$143,999,337	\$150,358,522
City of Concord - Sewer Charges	\$19,025,266	\$20,249,679	\$21,260,570	\$22,222,518	\$22,335,629	\$23,593,713
City of Concord - Capital Charges	\$9,283,194	\$13,322,259	\$19,172,468	\$21,456,919	\$32,501,018	\$38,142,221
Tax Revenues	\$24,711,875	\$25,453,231	\$26,216,828	\$27,003,333	\$27,813,433	\$28,647,836
Capacity Fees	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400
Other Income	\$5,645,000	\$44,814,350	\$48,628,781	\$46,533,444	\$40,508,497	\$11,694,102
less Debt Proceeds	\$0	-\$39,000,000	-\$42,640,000	-\$40,365,000	-\$34,155,000	-\$5,150,000
Estimated Interest Earned	\$1,505,809	\$1,534,936	\$1,477,934	\$1,471,403	\$1,533,259	\$1,461,984
Total Revenue	\$186,493,209	\$196,193,953	\$209,416,060	\$220,645,504	\$240,263,573	\$254,475,778
O&M Expenses						
	\$95,987,156	\$101,236,296	\$106,459,938	\$111,888,997	\$117,557,569	\$123,431,079
Debt Service						
	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$4,459,000	\$8,915,610
Debt Coverage Calculations						
Adjusted Net Revenue + Tax Revenue	\$75,495,459	\$75,907,998	\$78,056,254	\$81,572,189	\$84,477,586	\$87,175,078
Debt Coverage Ratio	8.57	8.39	8.40	8.95	18.95	9.78
Required Coverage Ratio	2.00	2.00	2.00	2.00	2.00	2.00

(1) Includes proposed rate adjustments.

(2) Adjusted Net Revenue = Net Revenue Less Central San Capacity Fee and City of Concord Capital Charges.

2.5.6. O&M Fund Financial Plan

Table 2-11 shows the O&M fund's financial plan for FY 2025 through FY 2030 based on the revenue and expenses information presented above. Note this table does not include property tax revenue, which is used to pay for debt service and the capital improvement plan. The plan includes the revenue adjustments shown in Table 2-8.

Table 2-11: O&M Fund Financial Plan

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Revenues from Existing Rates	\$120,594,665	\$121,077,274	\$121,561,652	\$122,048,437	\$122,536,949	\$123,027,239
Additional Revenue from Rates	\$0	\$3,014,824	\$8,010,427	\$14,547,051	\$21,462,388	\$27,331,283
Less Sewer Construction Fund SSC Rev.	-\$47,165,063	-\$44,414,036	-\$45,668,779	-\$48,229,918	-\$50,110,129	-\$51,866,351
Less Debt Service Fund SSC Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Less Self-Insurance Fund SSC Revenue	-\$2,300,206	-\$2,370,040	-\$2,439,321	-\$2,517,046	-\$2,595,590	-\$2,676,192
SSC Revenue to O&M Fund	\$71,129,396	\$77,308,022	\$81,463,979	\$85,848,524	\$91,293,618	\$95,815,979
City of Concord	\$19,025,266	\$20,249,679	\$21,260,570	\$22,222,518	\$22,335,629	\$23,593,713
Permit/Inspection/ROW Fees	\$1,828,000	\$1,882,840	\$1,939,325	\$1,997,505	\$2,057,430	\$2,119,153
Lease Rental Income	\$880,000	\$906,400	\$933,592	\$961,600	\$990,448	\$1,020,161
Household Hazardous Waste Reimb.	\$1,094,000	\$1,126,820	\$1,160,625	\$1,195,443	\$1,231,307	\$1,268,246
Stormwater/Pollution Prev./Pretreat.	\$496,000	\$510,880	\$526,206	\$541,993	\$558,252	\$575,000
Interest Income	\$506,497	\$488,425	\$505,518	\$531,046	\$559,243	\$586,373
Recycled Water	\$530,000	\$545,900	\$562,277	\$579,145	\$596,520	\$614,415
All Other	\$365,000	\$375,950	\$387,229	\$398,845	\$410,811	\$423,135
Total Revenue	\$95,854,159	\$103,394,916	\$108,739,321	\$114,276,619	\$120,033,258	\$126,016,174
O&M Expenses						
Executive Management	\$3,951,508	\$4,185,706	\$4,405,031	\$4,632,402	\$4,869,474	\$5,110,697
Administration	\$22,454,528	\$23,696,927	\$24,945,427	\$26,236,184	\$27,579,719	\$28,961,082
Engineering & Technical Services	\$15,595,648	\$16,280,203	\$17,073,498	\$17,908,526	\$18,786,922	\$19,702,081
Operations	\$51,851,982	\$54,808,359	\$57,650,972	\$60,602,605	\$63,682,635	\$66,884,217
Recycled Water	\$2,133,490	\$2,265,100	\$2,385,009	\$2,509,280	\$2,638,820	\$2,773,003
Total Expenses	\$95,987,156	\$101,236,296	\$106,459,938	\$111,888,997	\$117,557,569	\$123,431,079
Net O&M Fund Income	-\$132,997	\$2,158,620	\$2,279,382	\$2,387,623	\$2,475,689	\$2,585,095

2.5.7. Reserves

Central San's Board Policy BP 017 sets reserve requirements for each of the four separate funds: O&M expense fund, sewer construction fund, debt service fund, and self-insurance/emergency fund. The debt service fund is used to pay the annual debt service payments with property tax revenue. This fund does not carry a balance from year to year. The current reserves policy specifies 41.7 percent (equivalent to 5 months) of next year's O&M expenses, 50 percent of next year's non-bond funded CIP expenses, 100 percent of next year's debt service payment, \$1.5 million for self-insurance to cover three potential incidents, and \$7.5 million for emergencies to cover the liability insurance deductible or uncovered losses resulting from damage to wastewater assets during disasters. The estimated FY 2025 total ending balance for the O&M Expense Fund and Sewer Construction Fund is approximately \$120 million, as shown in Figure 2-1. These reserves also account for the cash flow needs associated with Central San's receipt of Sewer Service Charge revenue in two lump-sum payments in December and April of each year.

The reserve balance and the current and proposed targets¹ for the O&M expense fund and sewer construction fund are shown in Figure 2-1. The reserve levels are above the proposed targets for the entire study period. The reserve levels in the Sewer Construction Fund are necessary to cover CIP expenses in future years.

¹ Does not include the \$9.0 million for self-insurance and emergency reserve. That money is set aside in separate funds.

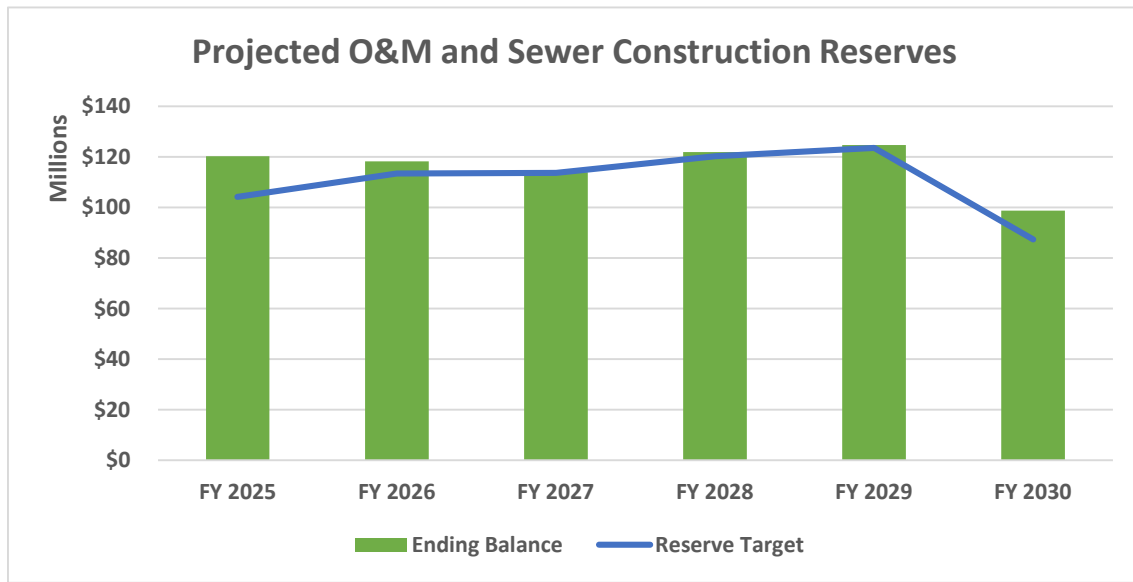
Figure 2-1: Projected Reserves – O&M Expense and Sewer Construction Funds

Figure 2-2 shows the total fund balance by the different funds maintained by Central San, including the O&M Expense, Sewer Construction Fund, and the Self-Insurance Fund, which includes the Emergency Fund.

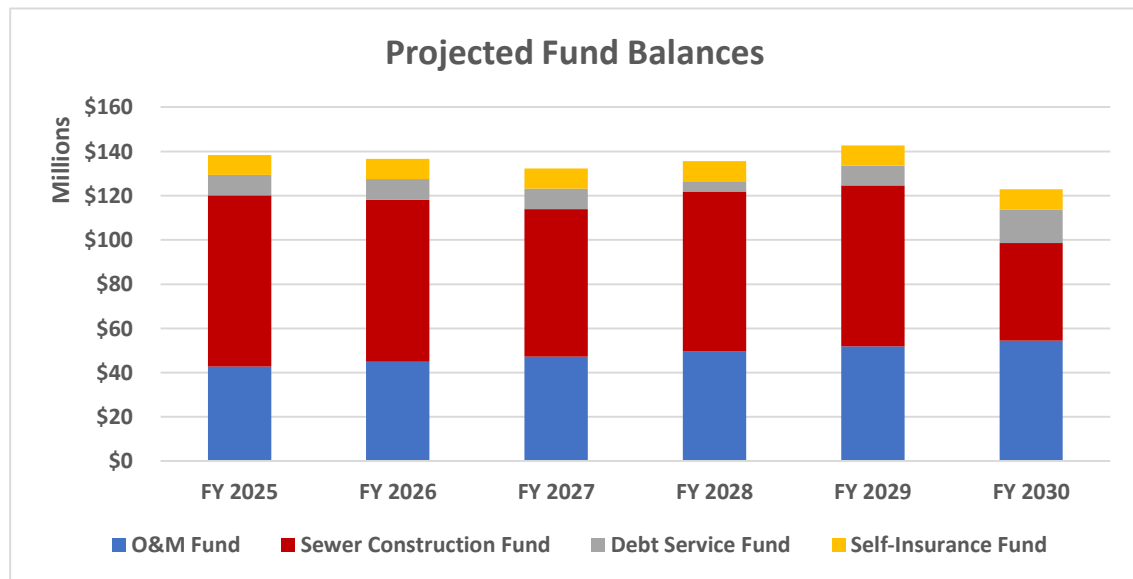
Figure 2-2: Projected Reserves

Table 2-12 shows the total fund balances for the different funds within Central San, as well as the reserve targets.

Table 2-12: Projected Reserves

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
O&M Expense Fund						
Beginning Balance	\$42,824,658	\$42,691,661	\$44,850,281	\$47,129,663	\$49,517,285	\$51,992,974
Net Income	-\$132,997	\$2,158,620	\$2,279,382	\$2,387,623	\$2,475,689	\$2,585,095
Ending Balance	\$42,691,661	\$44,850,281	\$47,129,663	\$49,517,285	\$51,992,974	\$54,578,070
Reserve Target	\$42,185,164	\$44,361,856	\$46,624,145	\$48,986,239	\$51,433,731	\$53,991,697
Over (Under) Target	\$628,318	\$647,167	\$666,583	\$686,580	\$707,177	\$728,393
Sewer Construction Fund						
Beginning Balance	\$76,947,498	\$77,517,164	\$73,331,476	\$66,790,303	\$72,401,278	\$72,670,969
Revenue						
Sewer Service Charge	\$47,165,063	\$44,414,036	\$45,668,779	\$48,229,918	\$50,110,129	\$51,866,351
Property Tax	\$12,857,000	\$16,239,974	\$17,209,922	\$22,646,611	\$18,973,359	\$13,668,645
Capacity Fee Revenue	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400	\$5,727,400
Concord Capital Revenue	\$9,283,194	\$13,322,259	\$19,172,468	\$21,456,919	\$32,501,018	\$38,142,221
Developer Fees	\$426,000	\$438,780	\$451,943	\$465,502	\$479,467	\$493,851
Interest Income	\$822,010	\$841,633	\$770,103	\$764,817	\$799,236	\$642,444
All Other	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159
Proposed SRF Proceeds	\$0	\$39,000,000	\$42,640,000	\$40,365,000	\$34,155,000	\$5,150,000
Total Revenue	\$76,281,667	\$119,985,112	\$131,641,676	\$139,657,259	\$142,746,734	\$115,692,071
Capital Projects						
Debt Funded	\$39,000,000	\$42,640,000	\$40,365,000	\$34,155,000	\$5,150,000	\$0
Non-Debt Funded	\$36,712,000	\$81,530,800	\$97,817,850	\$99,891,284	\$137,327,043	\$144,272,169
Total Capital Projects	\$75,712,000	\$124,170,800	\$138,182,850	\$134,046,284	\$142,477,043	\$144,272,169
Ending Balance	\$77,517,164	\$73,331,476	\$66,790,303	\$72,401,278	\$72,670,969	\$44,090,871
Reserve Target	\$62,085,400	\$69,091,425	\$67,023,142	\$71,238,521	\$72,136,085	\$33,281,484
Over (Under) Target	\$15,431,764	\$4,240,051	-\$232,839	\$1,162,756	\$534,885	\$10,809,387

	Budgeted FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028	Projected FY 2029	Projected FY 2030
Self Insurance Fund						
Beginning Balance	\$9,094,794	\$9,096,810	\$9,101,534	\$9,100,035	\$9,100,004	\$9,100,269
Revenue						
Sewer Service Charge	\$2,300,206	\$2,370,040	\$2,439,321	\$2,517,046	\$2,595,590	\$2,676,192
Interest Income	\$96,810	\$101,534	\$100,035	\$100,004	\$100,269	\$100,142
Other Revenue	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$28,982
Total Revenue	\$2,422,016	\$2,497,325	\$2,565,879	\$2,644,368	\$2,723,997	\$2,805,316
Expenses						
Insurance Premiums	\$0	\$0	\$0	\$0	\$0	\$0
Loss Payments	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$2,420,000	\$2,492,600	\$2,567,378	\$2,644,399	\$2,723,731	\$2,805,443
Total Expenses	\$2,420,000	\$2,492,600	\$2,567,378	\$2,644,399	\$2,723,731	\$2,805,443
Ending Balance	\$9,096,810	\$9,101,534	\$9,100,035	\$9,100,004	\$9,100,269	\$9,100,142
Reserve Target	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000
Over (Under) Target	\$1,267	\$1,305	\$1,344	\$1,384	\$1,426	\$1,469
Debt Service Fund						
Beginning Balance	\$6,000,000	\$9,125,493	\$9,397,093	\$9,212,528	\$4,534,536	\$8,990,120
Revenue						
Tax Revenue	\$11,854,875	\$9,213,257	\$9,006,907	\$4,356,722	\$8,840,074	\$14,979,191
Interest Income	\$80,493	\$103,343	\$102,278	\$75,536	\$74,510	\$133,025
Total Revenue	\$11,935,368	\$9,316,601	\$9,109,184	\$4,432,258	\$8,914,584	\$15,112,217
Expenses						
Debt Service	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$4,459,000	\$8,915,610
Total Expenses	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$4,459,000	\$8,915,610
Ending Balance	\$9,125,493	\$9,397,093	\$9,212,528	\$4,534,536	\$8,990,120	\$15,186,727
Reserve Target	\$9,045,000	\$9,293,750	\$9,110,250	\$4,459,000	\$8,915,610	\$15,053,702
Over (Under) Target	\$80,493	\$103,343	\$102,278	\$75,536	\$74,510	\$133,025

3. Cost-of-Service Analysis

This section discusses the allocation of O&M expenses and capital costs to the appropriate parameters consistent with industry standards, the determination of unit costs, and calculation of costs by customer class.

To allocate the cost of service among the different customer classes, costs first need to be allocated to the appropriate wastewater parameters. The following sections describe the allocation of the operating and capital costs of service to the appropriate parameters of the wastewater system.

The total cost of wastewater service is analyzed by system function to equitably distribute costs of service to the various classes of customers. For this analysis, wastewater utility costs of service are developed consistent with the guidelines for allocating costs detailed in the WEF Manual of Practice No. 27, Financing and Charges for Wastewater Systems.

The wastewater COS analysis consists of seven major steps, as outlined below:

1. Determine non-residential customer flow and strength loadings based on water usage
2. Conduct plant balance to estimate the flow and strength of the residential customer class taking into consideration infiltration and inflow (I&I)
3. Functionalize O&M and capital costs into functional categories such as Collection, Treatment, and Billing and Customer Service, etc.
4. Allocate each functional category into cost components such as Flow, Strength, and Billing/ Customer Service, etc.
5. Develop customer class characteristics by cost component
6. Calculate the cost component rates by dividing the total cost in each cost component in Step 4 by the customer class characteristics in Step 5
7. Calculate the cost by customer class by multiplying the unit cost in Step 6 by the customer class characteristics in Step 5

3.1. Plant Balance

The plant balance analysis is used to estimate and validate the wastewater loadings (flow and strength) generated by each customer class. While wastewater discharged into sewers for most customers is not metered when it enters the wastewater system, the total amount of flow and strength entering the treatment plant and treated every day is a known quantity. Additionally, non-residential customer flows and strengths can be estimated based on their water usage; non-residential customer strength concentrations are estimated according to industry accepted standards. Flow from the cities of Concord and Clayton is measured and the strength is assumed to be equal to Central San's strength concentration. The remaining loadings, net of the total less I&I, contract agencies, and non-residential and industrial, are assigned to residential customers. Based on this plant balance, the estimated residential flow is determined to be 48 gallons per capita per day, which is a reasonable estimate of the amount of indoor water usage per person. The estimated residential strength concentration is 200 and 260 milligrams per liter (mg/l) of BOD and TSS, respectively, which is also reasonable.

The estimated strengths and loadings by customer class are shown in Table 3-1, including the assumed BOD and TSS loadings.

Table 3-1: CY 2023 Plant Balance

Account Units			Flow per Unit (gal/day)	Use, Flow (hcf/yr)	Sewered Flow %	Flow (hcf)	Flow (mg)	BOD (mg/l)	TSS (mg/l)	BOD (lbs/yr)	TSS (lbs/yr)
Influent Data											
Total Plant						20,359,502	15,229	192	241	24,397,076	30,592,642
Less Concord & Clayton						6,638,212	2,340	95	160	8,287,621	10,773,907
Less I&I						3,128,291	4,965	200	260	1,855,152	3,124,466
Net Plant						10,592,999	7,924			14,254,303	16,694,268
Non-Residential											
			Water per Unit								
Low	2,703	Parcels	946	1,247,131	85%	1,060,061	1,247,131	137	136	904,738	900,947
Medium-Low	98	Parcels	3,465	165,718	85%	140,860	165,718	357	264	313,920	232,409
Medium	93	Parcels	3,362	152,556	85%	129,673	152,556	557	320	451,044	258,949
Medium-High	233	Parcels	3,184	361,997	85%	307,697	361,997	650	427	1,248,618	820,734
High	28	Parcels	1,075	14,688	85%	12,485	14,688	857	743	66,753	57,943
Subtotal Non-Residential	3,155			1,942,090		1,650,777	1,942,090			2,985,073	2,270,982
Schools											
			gpd/student or water per unit								
Schools (Elementary)	23,298	Students	4.5	25,019	100%	25,019	25,019	130	100	20,303	15,618
Schools (Intermediate & High School)	31,590	Students	8.9	67,847	100%	67,847	67,847	130	100	55,058	42,352
Schools (Metered)	8	Schools	1,635	6,383	85%	5,426	6,383	137	136	4,631	4,611
Subtotal Schools	54,896			99,249		98,291	99,249			79,992	62,581
Industrial	24	Parcels	12,835	150,315	100%	150,315	150,315	357	264	334,990	248,009
Residential											
			WW per unit								
SFR	99,813	Parcels	130	6,331,720	100%	6,331,720	6,331,720	200	260	7,904,975	10,276,467
MFR	44,828	Dwelling Units	105	2,296,836	100%	2,296,836	2,296,836	200	260	2,867,535	3,727,795
ADU	2,414	Dwelling Units	65	76,567	100%	76,567	76,567	200	260	95,592	124,269
Subtotal Residential	147,055			8,705,123		8,705,123	8,705,123			10,868,101	14,128,531
Total						10,604,506	7,932			14,268,156	16,710,103

3.2. Categorization of Revenue Requirements by Function

The wastewater utility is comprised of various facilities each designed and operated to fulfill a given function. To provide adequate service to its customers at all times, the utility must be capable of not only collecting the total amount of wastewater generated but also treating and removing nutrients and other constituents from the flow. The separation of costs by function allows allocation of such costs to the functional cost components. Table 3-2 shows the FY 2026 O&M expenses by the different functional categories, as classified by staff. Executive Management – Operations and Administration – Operations are treatment-related costs. Executive Management – Engineering & Tech Services and Administration – Engineering and Tech Services are collection-related costs.

Table 3-2: Categorization of Wastewater O&M Expenses by Function

O&M Expense Allocation	Total
Executive Management - Engineering & Tech Svcs	\$1,076,587
Executive Management - Operations	\$1,324,857
Administration - Engineering & Tech Svcs	\$10,761,455
Administration - Operations	\$13,243,137
Engineering - Collection System	\$5,362,997
Engineering - Treatment Plant	\$10,232,651
Operations - Collection System	\$19,192,135
Operations - Treatment Plant	\$32,659,847
Recycled Water	\$2,133,490
Subtotal	\$95,987,156

Table 3-3 shows the replacement value of the total wastewater assets by the different asset classes, as taken from a 2024 capacity fee calculation done by Central San staff.

Table 3-3: Categorization of Wastewater Assets by Function

Asset Category	Total
Treatment Plant	\$550,001,812
Collection System	\$1,496,233,924
General Improvements	\$80,080,829
Recycled Water	\$45,780,476
Land	\$57,397,472
Major Repairs	\$9,319,667
Total	\$2,238,814,181

3.3. Allocation of Functional Costs to Cost Components

O&M expenses and capital costs are functionalized as collection, treatment, billing, administrative, etc. These total costs are then allocated to the flow, BOD, TSS, and customer parameters based on the design of each facility. Smaller pipes in the collection system are typically oversized for maintenance purposes. Therefore, collection system costs are allocated to flow and customer parameters recognizing that a portion of the collection system cost is fixed and does not vary with the amount of wastewater flow. These allocations were initially determined based on Central San staff's estimate of the fixed costs of the collection system, which were determined by Raftelis to be reasonable. Treatment plant costs are mostly allocated to flow, BOD, and TSS since the treatment plant is designed to treat those three components. For example, the equipment in the primary clarifiers is designed to remove suspended solids. Along with suspended solids there is also some removal of BOD; therefore, the equipment is allocated to TSS and BOD based on the removal of those two parameters. Additionally, the primary tank structure is designed for flow; therefore, the structure is allocated to flow. Similarly other components of the treatment plant are analyzed to determine the appropriate allocation to flow, BOD and TSS. A small portion of engineering-treatment plant costs are allocated to Industrial billing because Central San has to hand calculate the charges for the Industrial customers. The treatment allocations were developed by District staff during a comprehensive review of the treatment plant functions in the prior COS study. Central San believes that the treatment cost structure has not changed significantly since then.

Capital costs include capital improvements financed from annual revenues, debt service and other sources. Capital costs related to specific facilities will vary significantly from year to year. Allocating these costs based on the functions of these specific facilities could cause the rates for the different customer classes to change from year to year. A reasonable method of assigning capital costs to functional components, widely practiced in the industry, is to allocate such costs based on plant investment recognizing that over a period of time these allocations will provide costs to be passed on to customers equitably.

Table 3-4 shows the different allocations to the functional cost categories. The allocations are calculated based on the functions of each category, provided by Central San.

Table 3-4: Allocation to Cost Components – O&M

O&M Expense Allocation	Flow	BOD	TSS	Accounts	Rec Water	Industrial Billing
Executive Management - Engineering & Tech Svcs	60.0%	0.0%	0.0%	40.0%	0.0%	0.0%
Executive Management - Operations	40.0%	38.0%	22.0%	0.0%	0.0%	0.0%
Administration - Engineering & Tech Svcs	60.0%	0.0%	0.0%	40.0%	0.0%	0.0%
Administration - Operations	40.0%	38.0%	22.0%	0.0%	0.0%	0.0%
Engineering - Collection System	60.0%	0.0%	0.0%	40.0%	0.0%	0.0%
Engineering - Treatment Plant	40.0%	38.0%	22.0%	0.0%	0.0%	0.1%
Operations - Collection System	60.0%	0.0%	0.0%	40.0%	0.0%	0.0%
Operations - Treatment Plant	40.0%	38.0%	22.0%	0.0%	0.0%	0.0%
Recycled Water	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%

Table 3-5 shows the allocation of O&M expenses (shown in Table 3-2) to the different cost components based on the allocation percentages shown in Table 3-4.

Table 3-5: Allocation of FY 2026 O&M Expenses to Cost Components

O&M Expense Allocation	Flow	BOD	TSS	Accounts	Rec Water	Industrial Billing	Total
Executive Management - Engineering & Tech Svcs	\$645,952	\$0	\$0	\$430,635	\$0	\$0	\$1,076,587
Executive Management - Operations	\$529,943	\$503,446	\$291,469	\$0	\$0	\$0	\$1,324,857
Administration - Engineering & Tech Svcs	\$6,456,873	\$0	\$0	\$4,304,582	\$0	\$0	\$10,761,455
Administration - Operations	\$5,297,255	\$5,032,392	\$2,913,490	\$0	\$0	\$0	\$13,243,137
Engineering - Collection System	\$3,217,798	\$0	\$0	\$2,145,199	\$0	\$0	\$5,362,997
Engineering - Treatment Plant	\$4,090,978	\$3,886,325	\$2,249,101	\$0	\$0	\$6,246	\$10,232,651
Operations - Collection System	\$11,515,281	\$0	\$0	\$7,676,854	\$0	\$0	\$19,192,135
Operations - Treatment Plant	\$13,063,939	\$12,410,742	\$7,185,166	\$0	\$0	\$0	\$32,659,847
Recycled Water	\$0	\$0	\$0	\$0	\$2,133,490	\$0	\$2,133,490
Total	\$44,818,019	\$21,832,905	\$12,639,226	\$14,557,270	\$2,133,490	\$6,246	\$95,987,156
Allocation %	46.69%	22.75%	13.17%	15.17%	2.22%	0.01%	100.00%

Table 3-6 shows the different allocations, provided by Central San, to the cost components such as Flow, BOD, TSS, etc. of the treatment plant assets. The general costs have been reallocated to the other functions in proportion to those costs.

Table 3-6: Allocation of O&M to Cost Components – Treatment Plant

Treatment Plant	Replacement Cost	Flow	BOD	TSS	Customer	General
Wet Weather Facilities						
Holding Basins	\$152,500	100%	0%	0%		
Bypass Facilities	\$6,803,307	100%	0%	0%		
Primary Treatment						
Headworks	\$9,954,350	100%	0%	0%		
Pre-Aeration	\$6,472,000	45%	10%	45%		
Primary Sedimentation	\$47,747,805	45%	10%	45%		
Odor Control	\$5,607,500	45%	10%	45%		
Secondary Treatment						
Primary Effluent	\$2,963,900	100%	0%	0%		
Aeration/Nitrification	\$77,580,885	25%	65%	10%		
Secondary Clarifiers	\$40,736,800	25%	65%	10%		
Odor Control	\$10,000	25%	65%	10%		
Disinfection						
UV	\$42,439,793	100%	0%	0%		
Hypochlorite	\$1,635,558	100%	0%	0%		
Chlorine/Dechlorine	\$2,993,400	100%	0%	0%		
Final Effluent						
FE Channel	\$91,100	100%	0%	0%		
FE Pumping	\$2,984,750	100%	0%	0%		
Outfall	\$70,770,040	100%	0%	0%		
Solids Handling						
SCB Building	\$31,217,600	0%	60%	40%		
Sludge Blending Process	\$3,613,500	0%	60%	40%		
Dewatering	\$21,759,734	0%	60%	40%		
Incineration	\$82,790,608	0%	60%	40%		
Odor Control	\$1,944,750	0%	60%	40%		
Utilities						
Steam Generation	\$5,246,292	25%	65%	10%		
Power Distribution	\$30,765,500					100%
Power Generation	\$12,377,450	10%	20%	40%		30%
Control Systems	\$4,191,600					100%
Communication Systems	\$600					100%
Fuel System	\$6,734,698	10%	20%	40%		30%
Service Air	\$1,871,300					100%
Water Systems	\$120,271,682	0%	0%	0%		100%
Support System						
Safety	\$357,400					100%
Shops	\$14,746,025					100%
Misc Facilities	\$14,210,784					100%
Site Work	\$13,986,311					100%
Total	\$685,029,522	\$200,515,694	\$174,923,961	\$103,455,021	\$0	\$206,134,846
Allocation, %		29.3%	25.5%	15.1%	0.0%	30.1%
Reallocate General		\$86,309,733	\$75,294,058	\$44,531,054	\$0	
Reallocated	\$685,029,522	\$286,825,427	\$250,218,019	\$147,986,076	\$0	
Reallocated, %		42%	37%	22%	0%	

Table 3-7 shows the different allocations to the cost components such as Flow, BOD, TSS, etc. of each capital asset class.

Table 3-7: Allocation to Cost Components – Capital

Asset Category	Flow	BOD	TSS	Accounts	Rec Water	Industrial Billing	General
Treatment Plant	41.9%	36.5%	21.6%	0.0%	0.0%	0.0%	0.0%
Collection System	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
General Improvements	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Recycled Water	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Land	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Major Repairs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Table 3-8 shows the allocation of the replacement value of the wastewater assets (shown in Table 3-3) to the different cost components based on the allocation percentages shown in Table 3-7.

Table 3-8: Allocation of Wastewater Assets to Cost Components

Asset Category	Flow	BOD	TSS	General	Total
Treatment Plant	\$230,288,622	\$200,896,983	\$118,816,207	\$0	\$550,001,812
Collection System	\$1,496,233,924	\$0	\$0	\$0	\$1,496,233,924
General Improvements	\$0	\$0	\$0	\$80,080,829	\$80,080,829
Recycled Water	\$45,780,476	\$0	\$0	\$0	\$45,780,476
Land	\$0	\$0	\$0	\$57,397,472	\$57,397,472
Major Repairs	\$0	\$0	\$0	\$9,319,667	\$9,319,667
Total	\$1,772,303,022	\$200,896,983	\$118,816,207	\$146,797,969	\$2,238,814,181
Allocation, %	79%	9%	5%	7%	100%

3.4. Allocation of Revenue Requirements

The net revenue requirement is the net cost of providing service, as shown in Table 3-9. This cost is then used as the basis to develop unit costs for the wastewater parameters and to allocate costs to the various customer classes in proportion to the services rendered. The concept of proportionate allocation to customer classes requires that allocations should take into consideration not only the volume of wastewater discharge used but also strength loadings associated with the wastewater flow. In this study, wastewater rates were calculated for FY 2026, and accordingly FY 2026 is defined as the Test Year. Test Year revenue requirements are used in the cost allocation process.

The annual revenue requirement or cost of service to be recovered from wastewater charges includes operation and maintenance and capital expenses. O&M expenses include costs directly related to the collection, treatment, and disposal of wastewater and maintenance of system facilities.

Table 3-9 shows the allocation of revenue requirements to operating and capital components to determine the revenue required from rates. The total FY 2026 cost of service to be recovered from Central San's wastewater customers is estimated at approximately \$124.1 million, of which approximately \$79.7 million is operating costs and the remaining \$44.4 million is capital costs, which consists of capital expenditures and debt service. The cost-of-service analysis is based upon the premise that the utility must generate annual revenues adequate

to meet the estimated annual revenue requirements. As part of the cost-of-service analysis, revenues from sources other than wastewater rates and charges (e.g., revenues from miscellaneous services) are deducted from the appropriate cost elements. Additional deductions are made to reflect interest income and other non-operating income during FY 2026. Adjustments are also made to account for transfers to or from cash balances to ensure adequate collection of revenue and to determine annual revenues needed from rates.

Table 3-9: Allocation of Revenue Requirements

	Operating	Capital-Related	Total
Revenue Requirements			
O&M Fund	\$101,236,296		\$101,236,296
Self Insurance Fund	\$2,492,600		\$2,492,600
Sewer Construction Fund		\$124,170,800	\$124,170,800
Debt Service Fund		\$9,045,000	\$9,045,000
Total Revenue Requirements	\$103,728,896	\$133,215,800	\$236,944,696
Less Revenues from Other Sources			
O&M Fund	\$26,086,894		\$26,086,894
Self Insurance Fund	\$127,284		\$127,284
Sewer Construction Fund		\$75,571,076	\$75,571,076
Debt Service Fund		\$9,316,601	\$9,316,601
Revenue from Other Sources	\$26,214,178	\$84,887,677	\$111,101,855
Transfers to(from) Cash Balances	\$2,163,345	-\$3,914,087	-\$1,750,743
Net Revenue Requirement	\$79,678,062	\$44,414,036	\$124,092,098

3.5. Development of Unit Costs of Service

To allocate costs of service to the different customer classes, unit costs of service are developed. Units of service for each cost component are developed in order to allocate costs of service to the different customer classes. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual service units of the respective component.

Table 3-10 shows the service units, such as annual flow, total pounds of BOD and TSS, dwelling units, accounts, etc. for each customer class. These service units are determined from the plant balance shown in Table 3-1 and from the customer data shown in Table 2-2 and Table 2-3.

Table 3-10: Projected FY 2026 Customer Class Service Units

Customer Class	Flow (hcf)	BOD (lbs)	TSS (lbs)	Dwelling Units or Parcels	Students	Industrial Accounts
Residential						
SRF	6,310,787	7,878,839	10,242,491	99,483		
MFR	2,180,067	2,721,753	3,538,279	42,549		
ADU	75,647	94,443	122,776	2,385		
Subtotal Residential	8,566,501	10,695,036	13,903,546	144,417		
Non-Residential (Commercial & Industrial Domestic)						
Low	1,064,302	908,358	904,551	2,703		
Medium-Low	141,424	315,175	233,339	98		
Medium	130,191	452,848	259,984	93		
Medium-High	308,928	1,253,613	824,017	233		
High	12,535	67,021	58,175	28		
Industrial	150,916	336,330	249,000	0		24
Schools						
Schools (Elementary)	26,379	21,407	16,467	49	24,565	
Schools (Intermediate & High School)	67,690	54,931	42,254	22	31,517	
Schools (Metered)	5,448	4,649	4,630	8		
Subtotal Non-Residential	1,907,813	3,414,331	2,592,419	3,234	56,082	24
Total	10,474,314	14,109,367	16,495,965	147,651	56,082	24

Note 1: ADUs are on the same parcel as the SFR. Total dwelling units or parcels without ADUs = 145,266.

Note 2: Non-Residential (commercial and industrial domestic) & metered school flow estimates include an 85 percent return to sewer factor.

The total operating and capital revenue requirements (from Table 3-9) are allocated to the different cost components based on the percentages calculated in Table 3-5 and Table 3-8, respectively. The General capital component is allocated proportionally back to the remaining capital costs components. Table 3-11 shows the calculation of the unit cost for each cost component, using the units of service from Table 3-10 as adjusted to not double count SFR and ADU parcels.

Table 3-11: Development of Unit Costs

	Flow	BOD	TSS	Customer	Recycled Water	Industrial Billing	General	Total
Net Operating	\$37,202,533	\$18,123,053	\$10,491,566	\$12,083,696	\$1,770,967	\$6,246	\$0	\$79,678,062
Net Capital	\$35,159,296	\$3,985,434	\$2,357,099	\$0	\$0	\$0	\$2,912,207	\$44,414,036
Net Revenue Requirement	\$72,361,829	\$22,108,487	\$12,848,666	\$12,083,696	\$1,770,967	\$6,246	\$2,912,207	\$124,092,098
Reallocation of General - Operating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Reallocation of General - Capital	\$2,467,148	\$279,660	\$165,399	\$0	\$0	\$0	-\$2,912,207	\$0
Total Cost of Service	\$74,828,977	\$22,388,147	\$13,014,065	\$12,083,696	\$1,770,967	\$6,246	\$0	\$124,092,098
Unit of Service	10,474,314	14,109,367	16,495,965	145,266	10,474,314	24		
units	hcf	lbs/yr	lbs/yr	parcels	hcf	acts		
Unit Cost, \$/unit	\$7.14	\$1.59	\$0.79	\$83.18	\$0.17	\$260.27		

3.6. Allocation of Costs to Customer Class

The unit cost of each cost category shown in Table 3-11 is then applied to the projected FY 2026 service units of each customer class to derive customer class costs. Table 3-12 shows the allocation of costs to each customer class, based on the service units from Table 3-10 and the unit cost from Table 3-11.

Table 3-12: Allocation of Costs to Customer Class

Customer Class	Flow	BOD	TSS	Recycled Water	Customer	Industrial Billing	Total
Residential							
SRF	\$45,084,545	\$12,501,810	\$8,080,548	\$1,067,010	\$8,275,318		\$75,009,231
MFR	\$15,574,500	\$4,318,762	\$2,791,433	\$368,600	\$3,539,363		\$26,592,659
ADU	\$540,427	\$149,859	\$96,861	\$12,790	\$0		\$799,938
Total Residential	\$61,199,473	\$16,970,431	\$10,968,843	\$1,448,399	\$11,814,681	\$0	\$102,401,827
Non-Residential							
Low	\$7,642,340	\$1,448,721	\$717,275	\$180,870	\$225,510		\$10,214,716
Medium Low	\$1,010,338	\$500,107	\$184,087	\$23,912	\$8,152		\$1,726,596
Medium	\$930,091	\$718,560	\$205,108	\$22,012	\$7,736		\$1,883,507
Medium High	\$2,206,997	\$1,989,180	\$650,087	\$52,233	\$19,382		\$4,917,879
High	\$89,550	\$106,346	\$45,896	\$2,119	\$2,329		\$246,241
Industrial	\$1,078,151	\$533,674	\$196,442	\$25,516	\$0	\$6,246	\$1,840,030
Schools (Elementary)	\$188,456	\$33,968	\$12,991	\$4,460	\$4,076		\$243,951
Schools (Intermediate & High School)	\$483,580	\$87,162	\$33,336	\$11,445	\$1,830		\$617,352
Total Non-Residential	\$13,629,504	\$5,417,717	\$2,045,222	\$322,568	\$269,015	\$6,246	\$21,690,271
Grand Total	\$74,828,977	\$22,388,147	\$13,014,065	\$1,770,967	\$12,083,696	\$6,246	\$124,092,098

The residential class has the highest assignment of costs at \$75 million and is responsible for 83 percent of the total cost of service. The non-residential classes are responsible for the remaining 17 percent of the annual cost of service.

Once the customer class cost responsibility is determined, the next step is to design customer rate schedules to recover the revenues required from each customer class, which is discussed in the next section. The rate design analysis will illustrate how revenues are collected within each class using the current rate structure and how these revenues compare to the indicated cost of service.

4. Proposed Wastewater Rates

4.1. Rate Design

The revenue requirements and cost-of-service analyses described in the preceding sections of this report provide a basis for the design of a wastewater rate structure. Rate design involves the development of rate schedules for each customer class to recover the annual cost of service determined for each customer class. This section of the report discusses the development of a schedule of wastewater rates for Central San's customer classes and analyzes the impact of the proposed changes in cost allocations and rate design on the customer classes.

The primary emphasis in the design of rate structures is ordinarily placed on achieving fairness and equity, with the objective of being able to ensure that each customer class pays its fair share of costs and to comply with regulatory requirements. The following subsections discuss how each rate component is calculated.

4.2. Proposed Residential Charges

Central San currently has a fixed charge structure for its residential wastewater customers. Since Central San bills on the tax roll and does not have access to all customers' water usage records, Raftelis recommends that Central San retains the fixed charge structure for residential customers.

Table 4-1 shows the cost-of-service calculation of wastewater charges for the residential customer classes for the Test Year, FY 2026 based on the COS analysis. The revenue requirement comes from Table 3-12 and the dwelling units come from Table 3-10.

Table 4-1: Calculated Residential Wastewater Charges – FY 2026

	Revenue Requirement	Dwelling Unit	FY 2026 Unit Rate	Current Unit Rate	Difference
Single Family Residential	\$75,009,231	99,483	\$754.00	\$725.00	4%
Multi Family Residential	\$26,592,659	42,549	\$624.99	\$647.00	-3%
Accessory Dwelling Units	\$799,938	2,385	\$335.41	\$353.00	-5%

Table 4-2 shows the proposed FY 2026 and FY 2027 residential wastewater charges with the appropriate revenue adjustments determined in the financial plan, rounded to the nearest dollar. The FY 2027 charge is the FY 2026 charge multiplied by the FY 2027 revenue adjustment of 4 percent.

Table 4-2: Current and Proposed FY 2026 and FY 2027 Residential Wastewater Charges

	Current Unit Rate	FY 2026 Unit Rate	FY 2027 Unit Rate
Single Family Residential	\$725.00	\$754.00	\$784.00
Multi Family Residential	\$647.00	\$625.00	\$650.00
Accessory Dwelling Units	\$353.00	\$335.00	\$348.00

4.3. Proposed Non-Residential Rates

Table 4-3 shows the proposed cost of service wastewater rates for non-residential customers. The rates are calculated based on the total revenue requirements per customer class identified in Table 3-12 and the estimated flow by customer class as shown in Table 3-10. Industrial customers will be charged on a unit rate basis. All non-residential customers are subject to a minimum annual charge equal to the MFR charge.

Table 4-3: Proposed FY 2026 and FY 2027 Non-Residential Wastewater Rates

User Group	Current Effective 1-Jul-24	Proposed 1-Jul-25	Proposed 1-Jul-26
Non-Residential (per hcf)			
Low (Retail, Office, Churches, Daycare, Preschools, Universities, Rest Homes, and Automotive)	\$7.94	\$8.12	\$8.44
Medium-Low (Delis, Ice Cream and Yogurt Shops, Coffee Shops, Bars, and shared meters with 50% of less food service)	\$9.69	\$10.38	\$10.80
Medium (shared meters with 50% or more food service)	\$11.43	\$12.30	\$12.79
Medium-High (Hotels and Motels, Restaurants, Supermarkets, Shared meters with Bakeries or other High Strength Food Services)	\$12.52	\$13.54	\$14.08
High (Bakeries, Breweries, Restaurants with grinders or emulsifiers, and Mortuaries)	\$15.06	\$16.70	\$17.37
Minimum Annual Charge	\$647.00	\$625.00	\$650.00
Schools (per student)			
Schools – Elementary	\$9.30	\$9.94	\$10.34
Schools – Intermediate, High School	\$18.61	\$19.59	\$20.37
Permitted Industrial Users (includes food processing, breweries, and wineries)			
Wastewater Flow (per hcf)	\$7.57	\$7.15	\$7.44
Biochemical Oxygen Demand (per 1,000 lbs)	\$1,338.00	\$1,586.76	\$1,650.23
Suspended Solids (per 1,000 lbs)	\$670.00	\$788.93	\$820.49
Fixed Charge	\$258.00	\$260.27	\$270.68
Special Discharge Permits & Contractual Agreements	Determined Individually		

4.4. Customer Impacts

Raftelis completed an analysis to evaluate the impact of the proposed rate structure on customers with various water usage levels.

4.4.1. Customer Impacts

Table 4-4 compares the residential bill impacts for FY 2026 and FY 2027. SFR customers would experience a \$29 annual increase for FY 2026 and a \$30 annual increase for FY 2027. MFR customers would experience a \$22 reduction for FY 2026 and a \$25 increase for FY 2027. ADU customers would experience an \$18 reduction for FY 2026 and a \$13 increase for FY 2027.

Table 4-4: Residential Annual Wastewater Bill Impacts

Customer Class	Current	Proposed 1-Jul-25	Proposed 1-Jul-26	Difference FY26 - FY25	Difference FY27-FY26
SFR	\$725.00	\$754.00	\$784.00	\$29.00	\$30.00
MFR	\$647.00	\$625.00	\$650.00	-\$22.00	\$25.00
ADU	\$353.00	\$335.00	\$348.00	-\$18.00	\$13.00

Table 4-5 shows the typical non-residential bill impacts for Central San's largest non-residential rate classes for FY 2026 and FY 2027 by comparing the average bill based on the proposed rates to the average bill based on the current rates. The amounts are calculated based on the average annual water usage for each customer class.

Table 4-5: Typical Non-Residential Annual Wastewater Bill Impacts

Customer Class	Average Annual Use	Current	Average Bill 1-Jul-25	Average Bill 1-Jul-26	Difference FY26 - FY25	Difference FY27-FY26
Low	946	\$7,507.50	\$7,677.69	\$7,980.26	\$170.20	\$302.57
Medium High	3,184	\$39,862.28	\$43,109.84	\$44,829.14	\$3,247.57	\$1,719.30

APPENDIX A:

Inflation, Growth, and Financing Term Assumptions



Inflation Factor	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
O&M Expenses						
Salaries & Wages	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Pensionable Salary	86.33%	86.33%	86.33%	86.33%	86.33%	86.33%
Purchased Property Services	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Other Purchased Services	3.50%	3.50%	3.50%	3.50%	3.00%	3.00%
Supplies & Materials	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Other Expenses	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Nutrients	103.00%	106.09%	109.27%	112.55%	115.93%	119.41%
Benefits						
71201 - Medical & Health Insurance	6.00%	6.00%	5.80%	5.60%	5.40%	5.20%
71202 - Dental Insurance	3.75%	3.75%	3.75%	3.75%	3.75%	3.75%
71205 - Workers' Compensation Insurance	5.00%	5.00%	4.00%	4.00%	4.00%	4.00%
71701 - Benefit Vacancy	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Capital						
Capital Inflation Rate	4.00%	3.50%	3.50%	3.00%	3.00%	3.00%
Max Debt as % of 10-Year CIP	60.00%	60.00%	60.00%	60.00%	60.00%	60.00%
Debt Financing Terms						
Bond Issuance Costs	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Portion of Debt Service Payment in First Year	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
SRF Interest Rate	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%
Bond Interest Rate	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Revenue/Growth						
Growth Rate	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%
New Connections (RUE)	700	700	700	700	700	700

Note: Salaries and wages includes both cost-of-living as well as advancements, longevity, and other increases.