

CENTRAL CONTRA COSTA SANITARY DISTRICT

Wastewater 2023 Cost of Service Study

Report / April 26, 2023



RAFTELIS

April 26, 2023

Mr. Roger Bailey
General Manager
Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553

Subject: Wastewater Cost of Service Rate Study Report

Dear Mr. Bailey:

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Wastewater Cost-of-Service Rate Study Report (Report) for the Central Contra Costa Sanitary District (Central San) to establish wastewater rates that are equitable and align with Proposition 218 requirements.

The major objectives of the study include the following:

1. Review current wastewater rate structure, including accessory dwelling units
2. Review the current customer classifications
3. Update the cost-of-service analysis for wastewater
4. Develop fair and equitable wastewater rates
5. 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 2023. The proposed rates were revised to enhance equity among customer classes and encourage efficient use of services for greater environmental sustainability. The 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,

RAFTELIS FINANCIAL CONSULTANTS, INC.



Sudhir Pardiwala
Executive Vice President



Nancy Phan
Manager

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

In late 2022, 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 five-year study period from Fiscal Year (FY) 2024 to 2026 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. The O&M projections are based on Central San’s long-range financial plan and anticipated revenues and expenses as of January 2023 in order to prepare rates for publication in the Proposition 218 notices which were mailed in March.

In addition to the 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 has already obtained a low-interest State Revolving Fund (SRF) loan and anticipates applying for additional SRF loans to fund future projects. Central San anticipates that bonds may be necessary to fund a portion of the Capital Improvement Program (CIP), as it is currently anticipated that SRF funding may become more difficult to obtain. The FY 2022-23 10-year CIP is budgeted at \$1.135 billion and will be funded primarily through rate revenues, capacity fees, and ad valorem tax revenue. Annual payments on existing debt service are \$13.25 million (declining to about \$9 million annually through FY 2027-28, and further declining until the maturity date in FY 2029-30).

Central San’s financial plan indicates that revenue adjustments of 2.2% are required for FY 2024 and 4% for FY 2025, as shown in **Table 1-1**. The adjustments are needed to meet the operating and capital expenses as well as meet reserves targets. Central San currently has four separate funds: Running Expense Fund, Sewer Construction Fund, Self-Insurance/Emergency Fund, and a Debt Service Fund. The current reserve policy includes 41.7% of the next year’s O&M expenses, and 50% of the next year’s non-debt funded CIP expenses... 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 any other unexpected expenses.

**Table 1-1:
Proposed Revenue Adjustments**

Fiscal Year	Revenue Adjustments
2024	2.2%
2025	4.0%

1.3 COST OF SERVICE PROCESS AND METHODOLOGY

In this study, 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 cost 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 the District retain its current wastewater rate structure, which includes fixed charges for residential customers and a flow charge per hundred cubic feet (HCF) for most other non-residential customers. 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 are subject to a minimum annual charge equal to the Multi-Family Residential (MFR) annual charge.

Table 1-2 shows the current and proposed wastewater rates in FY 2024 and FY 2025.

**Table 1-2:
Current and Proposed Wastewater Rates**

User Group	Current Effective July 1, 2022	Proposed Effective July 1, 2023	Proposed Effective July 1, 2024
Residential (per residential unit)			
Single Family Dwellings	\$690.00	\$697.00	\$725.00
Multi-Family Dwellings (Apartments, Condominiums, Duplexes, Second Living Units, Mobile Homes)	\$654.00	\$622.00	\$647.00
Accessory Dwelling Units (previously included in Multi-Family)	\$654.00	\$339.00	\$353.00
Non-Residential (per hcf)			
Low (Retail, Office, Churches, Fraternal & Service Organizations, State and Local Institutions, Tax Exempt, Utilities with Special Tax Status, Independent Living Facilities, Rest Homes, & Convalescent Hospitals, and other businesses with a combined BOD + TSS of less than 350 mg/l)	\$7.20	\$7.63	\$7.94
Medium-Low (Delicatessens, Yogurt Shops, Ice Cream Shops, Coffee Shops, Bar, customers with shared water meters with less than 50% food service, other businesses with BOD + TSS less than or equal to 700 mg/l)	\$8.83	\$9.32	\$9.69
Medium (customers with shared water meters with 50% or more food service, other businesses with BOD + TSS less than or equal to 1,000 mg/l)	\$11.07	\$10.99	\$11.43
Medium-High (Restaurants, Supermarkets, Hotels and Motels, customers with shared meters which include bakeries, other businesses with BOD + TSS greater than 1,000 mg/l)	\$12.35	\$12.04	\$12.52
High (Bakeries, Restaurants with on-site breweries, Restaurants with food-waste grinders or emulsifiers, other businesses with BOD + TSS greater than 1,300 mg/l)	\$16.37	\$14.48	\$15.06
Minimum Annual Charge	\$654.00	\$622.00	\$647.00
Schools			
Schools - Daycare, Preschool, University (per hundred cubic feet)	\$7.20	\$7.63	\$7.94

Schools – Elementary	\$8.58 per student	\$8.94 per student	\$9.30 per student
Schools – Intermediate, High School	\$16.95 per student	\$17.89 per student	\$18.61 per student
Permitted Industrial Users (includes hospitals, food processing, breweries, and wineries)			
Wastewater Flow (per hundred cubic feet)	\$5.57	\$7.28	\$7.57
Biochemical Oxygen Demand (per 1,000 pounds)	\$1,473.00	\$1,268.00	\$1,338.00
Suspended Solids (per 1,000 pounds)	\$769.00	\$644.00	\$670.00
Fixed charge	\$108.20	\$248.00	\$258.00
Special Discharge Permits & Contractual Agreements:	Determined Individually	Determined Individually	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 2024 and FY 2025 to current rates. Single Family Residential (SFR) customers would experience a \$7 annual increase for FY 2024 and a \$28 annual increase for FY 2025. MFR customers would experience a \$32 reduction for FY 2024 and a \$25 increase for 2025. A new rate class would be created for Accessory Dwelling Units (ADUs). Those units would be charged \$339 per unit for FY 2024 and that amount would be increased by \$14 for FY 2025. ADUs are currently charged as one MFR unit.

**Table 1-3:
Residential Annual Wastewater Bill Impacts**

	Current	Proposed Effective July 1, 2023	Proposed Effective July 1, 2024	Proposed July 1, 2023 Increase or (Decrease)	Proposed July 1, 2023 Increase or (Decrease)
SFR	\$690	\$697	\$725	\$7	\$28
MFR	654	622	647	(32)	25
ADU	--	339	353	--	14

Table 1-4 shows the typical non-residential bill impacts for Central San’s largest non-residential rate classes for FY 2024 and FY 2025 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**

Non-residential Customer Class	Average Annual Usage (HCF)	July 1, 2022 Average Bill	July 1, 2023 Average Bill	July 1, 2024 Average Bill	July 1, 2023 Difference	July 1, 2024 Difference	July 1, 2023 Difference	July 1, 2024 Difference
Low (offices, retail, etc.)	722	5,198	5,509	5,733	310	224	6.0%	4.1%
Medium High (Restaurants)	799	9,868	9,620	10,003	(248)	384	-2.5%	4.0%

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 the District, 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% of those materials.

2.2 EXISTING WASTEWATER RATES

The current wastewater rate structure consists of fixed charges for residential customers and a flow charge per HCF for most all other 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. All 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 82 percent of the total rate revenue from residential fixed charges, with the remaining 18 percent generated by non-residential charges.

**Table 2-1:
Existing Wastewater Rate Structure**

User Group	Current Rates Effective July 1, 2022
Residential (per residential unit)	
Single Family Dwellings	\$690.00
Multi-Family Dwellings (Apartments, Condominiums, Duplexes, Mobile Homes, Accessory Dwelling Units)	\$654.00
Non-Residential (per hcf)	
Low (Retail, Office, Churches, Fraternal & Service Organizations, State and Local Institutions, Tax Exempt, Utilities with Special Tax Status, Independent Living Facilities, Rest Homes, & Convalescent Hospitals, and other businesses with a combined BOD + TSS of less than 350 mg/l)	\$7.20
Medium-Low (Delicatessens, Yogurt Shops, Ice Cream Shops, Coffee Shops, Bars, customers with shared water meters with less than 50% food service, and other businesses with BOD + TSS less than or equal to 700 mg/l)	\$8.83
Medium (customers with shared water meters with 50% or more food service, other businesses with BOD + TSS less than or equal to 1,000 mg/l)	\$11.07
Medium-High (Restaurants, Supermarkets, Hotels and Motels, customers with shared meters which include bakeries, other businesses with BOD + TSS greater than 1,000 mg/l)	\$12.35
High (Bakeries, Restaurants with on-site breweries, Restaurants with food-waste grinders or emulsifiers, other businesses with BOD + TSS greater than 1,300 mg/l)	\$16.37
Minimum Annual Charge	\$654.00
Schools	
Schools - Daycare, Preschool, University (per hundred cubic feet)	\$7.20
Schools – Elementary (per student)	\$8.58
Schools – Intermediate, High School (per student)	\$16.95
Permitted Industrial Users (includes hospitals, food processing, breweries, and wineries)	
Wastewater Flow (per hundred cubic feet)	\$5.57
Biochemical Oxygen Demand (per 1,000 pounds)	\$1,473.00
Suspended Solids (per 1,000 pounds)	\$769.00
Fixed charge	\$108.20

2.3 WASTEWATER ACCOUNTS AND USAGE CHARACTERISTICS

Customer accounts and usage information in FY 2022 are used as the basis for projecting wastewater revenues during the study period, from FY 2023 to FY 2028. 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 2028. **Table 2-2** shows the estimated total residential customer accounts by customer class for the planning period from FY 2023 to FY 2028.

**Table 2-2:
Projected Residential Customer Accounts**

Accounts Info	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Single Family Residences	98,825	99,230	99,627	99,965	100,305	100,706
Multi-family Units	43,818	43,998	44,174	44,324	44,474	44,652

Table 2-3 shows the projected water usage by customer class and projected student counts for the planning period from FY 2023 to FY 2028.

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

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Non-residential						
Low	1,319,853	1,325,264	1,330,565	1,335,089	1,339,629	1,344,987
Medium-Low	113,821	114,288	114,745	115,135	115,526	115,989
Medium	124,002	124,510	125,008	125,433	125,860	126,363
Medium-High	347,642	349,067	350,464	351,655	352,851	354,262
High	8,994	9,031	9,067	9,098	9,129	9,165
Industrial						
Industrial	249,683	250,707	251,710	252,565	253,424	254,438
Total Water Usage	2,163,995	2,172,867	2,181,559	2,188,976	2,196,419	2,205,204
K-12 Schools						
Schools (Elementary) - student count	23,908	24,006	24,102	24,184	24,266	24,363
Schools (Intermediate) - student count	12,931	12,984	13,036	13,080	13,125	13,177
Schools (High School) - student count	19,544	19,624	19,703	19,770	19,837	19,916
Total Student Count	56,383	56,614	56,841	57,034	57,228	57,457

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 which 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 Running 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 transferred to the Sewer Construction Fund in order to fund capital expenses.

**Table 2-4:
Revenue Summary under Current Rate Structure**

Running Expense Revenue ¹	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Sewer Service Charge ²	\$60,824,664	\$70,255,023	\$74,378,256	\$78,123,838	\$82,009,863	\$85,988,644
Service Charges - Concord	\$17,600,000	\$17,587,922	\$18,321,043	\$19,282,156	\$20,104,733	\$20,753,331
Permit/Inspection/Right-of-Way Fees	\$1,774,500	\$1,827,735	\$1,882,567	\$1,939,044	\$1,997,215	\$2,057,131
Lease Rental Income	\$740,000	\$762,200	\$785,066	\$808,618	\$832,877	\$857,863
Household Hazardous Waste Reimbursement	\$1,048,000	\$1,079,440	\$1,111,823	\$1,145,178	\$1,179,533	\$1,214,919
Stormwater/ Pollution Prevention/Pretreatment	\$415,000	\$427,450	\$440,274	\$453,482	\$467,086	\$481,099
Interest Income	\$262,000	\$405,516	\$449,743	\$465,013	\$487,924	\$511,058
Recycled Water	\$445,000	\$458,350	\$472,101	\$486,264	\$500,852	\$515,878
All Other	\$316,000	\$325,480	\$335,244	\$345,301	\$355,660	\$366,330
TOTAL REVENUES	\$83,425,164	\$93,129,116	\$98,176,117	\$103,048,894	\$107,935,743	\$112,746,253

Self Insurance Sub-Fund Revenue ¹	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Sewer Service Charge ²	\$464,483	\$2,188,072	\$2,332,745	\$2,494,347	\$2,665,976	\$2,849,693
TOTAL REVENUES	\$464,483	\$2,188,072	\$2,332,745	\$2,494,347	\$2,665,976	\$2,849,693

Sewer Construction Fund Revenue ¹	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Sewer Service Charge ²	\$52,548,289	\$43,343,145	\$39,538,382	\$36,026,446	\$32,365,382	\$28,671,050
Property Tax ³	\$0	\$13,519,597	\$13,952,324	\$14,391,641	\$15,285,430	\$10,075,375
Capacity Fee Revenue	\$4,502,000	\$5,890,902	\$4,993,247	\$6,051,240	\$5,129,153	\$6,215,943
Pump Zone Revenue	\$134,000	\$1,210,050	\$983,988	\$1,218,029	\$1,017,073	\$1,340,473
Concord Capital Revenue	\$7,500,000	\$2,925,615	\$12,312,989	\$10,364,561	\$13,604,062	\$16,652,760
Interest Income	\$140,000	\$524,093	\$748,932	\$661,996	\$748,120	\$821,172
Permit and Inspection Fees	\$347,000	\$353,940	\$361,019	\$368,239	\$375,604	\$383,116
All Other	\$0	\$0	\$2,000,000	\$0	\$0	\$0
Existing SRF Proceeds	\$14,680,747	\$31,500,000	\$33,075,000	\$51,597,000	\$41,335,000	\$18,246,000
TOTAL REVENUES	\$79,852,035	\$99,267,342	\$107,965,881	\$120,679,152	\$109,859,824	\$82,405,889

1. Based on budgeted and projected revenues as of January 2023.

2. Current Rate Structure (i.e. does not include proposed rate increases.) 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 1.75 to 6.5 percent per year to project O&M expenditures.

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

**Table 2-5:
Projected O&M Expenses¹ by Function**

	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Executive Management	\$2,778,211	\$2,984,301	\$3,142,768	\$3,288,667	\$3,440,903	\$3,585,876
Administration	\$20,283,344	\$22,080,769	\$23,107,942	\$24,046,044	\$25,024,812	\$25,953,605
Engineering & Technical Services	\$15,208,367	\$16,045,339	\$17,328,528	\$18,485,626	\$19,696,465	\$20,831,109
Operations	\$45,051,909	\$48,172,330	\$50,848,976	\$53,306,337	\$55,875,534	\$58,312,601
Recycled Water	\$1,697,217	\$1,664,585	\$1,754,993	\$1,839,134	\$1,927,099	\$2,011,476
TOTAL EXPENSES	\$85,019,048	\$90,947,324	\$96,183,207	\$100,965,808	\$105,964,813	\$110,694,667

**Table 2-6:
Projected O&M Expenses¹ by Category**

	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Salaries & Wages	\$42,748,849	\$45,634,397	\$48,714,718	\$51,394,028	\$54,220,698	\$56,796,182
Employee Benefits	\$12,312,215	\$14,163,515	\$15,286,221	\$16,337,554	\$17,421,487	\$18,467,171
Unfunded Liabilities	\$1,379,784	\$1,385,810	\$1,393,236	\$1,399,711	\$1,405,994	\$1,412,720
Purchased Property Services	\$6,850,450	\$7,124,468	\$7,338,203	\$7,558,348	\$7,785,098	\$8,018,651
Other Purchased Services	\$7,893,758	\$8,209,509	\$8,455,794	\$8,709,469	\$8,970,754	\$9,239,878
Supplies & Materials						
Utilities	\$6,108,400	\$6,383,279	\$6,670,525	\$6,954,023	\$7,249,569	\$7,539,552
Chemicals	\$2,346,000	\$2,451,570	\$2,561,890	\$2,677,176	\$2,797,649	\$2,923,543
Other Supplies and Materials	\$3,951,602	\$4,109,666	\$4,232,957	\$4,359,945	\$4,490,743	\$4,625,465
Other Expenses	\$1,427,990	\$1,485,110	\$1,529,663	\$1,575,554	\$1,622,821	\$1,671,505
TOTAL EXPENSES	\$85,019,048	\$90,947,324	\$96,183,207	\$100,965,808	\$105,964,813	\$110,694,667

2.5.2 Capital Improvement Program

Central San has developed a comprehensive wastewater CIP to address current wastewater system needs. As **Table 2-7** indicates, the total estimated wastewater CIP for the study period of FY 2023 to FY 2028 is \$568.1

million. Central San applied an inflation rate of five percent per year for FY 2024 and 2025 and an inflation rate of four percent per year for FY 2026, and inflation rate of 3 percent per year for FY 2027 and beyond. The financial plan calls for Central San to fund capital costs through a combination of rate revenues supplemented with debt financing. Funding the capital costs through rates is especially prudent because Central San’s capital costs are fairly uniform over the planning period, and rates will provide the necessary cash to fund those projects and save on interest costs. However, issuing debt will spread the costs over a longer term and minimize the revenue adjustments needed in the short term. The proposed rate adjustments are primarily used to fund an increase in capital expenditures.

**Table 2-7:
Capital Improvement Plan¹**

	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Treatment Plant	\$34,452,900	\$36,500,000	\$62,300,000	\$64,650,000	\$68,250,000	\$56,350,000
Collection System	\$33,165,000	\$39,084,000	\$42,068,000	\$35,867,000	\$30,142,000	\$30,460,000
General Improvements	\$3,415,500	\$2,550,000	\$2,140,000	\$2,240,000	\$2,090,000	\$2,090,000
Recycled Water	\$7,843,500	\$603,000	\$2,818,000	\$4,818,000	\$318,000	\$2,418,000
Contingency ²	\$1,500,000					
TOTAL	\$80,376,900	\$78,737,000	\$109,326,000	\$107,575,000	\$100,800,000	\$91,318,000

1. Based on budgeted and projected revenues as of January 2023
2. Contingency will be included in individual projects beginning in FY 2024

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 Adjustments
2024	2.2%
2025	4.0%
2026	4.0%
2027	4.0%
2028	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 \$13.2 million for FY 2023 and are anticipated to drop to approximately \$9 million per year in FY 2024, before declining further to \$1.9 million in FY 2029-30. These debt service figures do not include payments on the SRF loan. **Table 2-9** shows the existing debt service of the wastewater utility.

**Table 2-9:
Existing Debt Schedule**

	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
2018 Bonds	\$2,509,797	\$2,504,267	\$1,923,875	\$1,918,875	\$1,915,250	\$1,907,875
2021 COPs	\$10,739,625	\$6,649,875	\$6,886,000	\$7,126,125	\$7,378,500	\$7,202,375
Existing SRF Loan ¹	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL	\$13,249,422	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250

1. Payments not anticipated until FY 2029

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 or 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 service 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. A portion of the annual Sewer Service Charge is allocated to the Sewer Construction Fund and is considered to be Non-Operating Income by Central San. 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 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 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Operating Revenues						
Sewer Service Charges (O&M) ¹	\$60,824,664	\$70,255,023	\$74,378,256	\$78,123,838	\$82,009,863	\$85,988,644
Sewer charges - City of Concord	\$17,600,000	\$17,587,922	\$18,321,043	\$19,282,156	\$20,104,733	\$20,753,331
Permit and Inspection Fees	\$1,774,500	\$1,827,735	\$1,882,567	\$1,939,044	\$1,997,215	\$2,057,131
Interest Income	\$442,318	\$405,516	\$449,743	\$465,013	\$487,924	\$511,058
Other Service Charges, Income, Reimbursements	\$2,964,000	\$3,052,920	\$3,144,508	\$3,238,843	\$3,336,008	\$3,436,089
Total Operating Revenue	\$83,605,482	\$93,129,116	\$98,176,117	\$103,048,894	\$107,935,743	\$112,746,253
O&M Costs	\$85,019,048	\$90,947,324	\$96,183,207	\$100,965,808	\$105,964,813	\$110,694,667
Total Operating Income (Loss)	-\$1,413,566	\$2,181,792	\$1,992,910	\$2,083,086	\$1,970,930	\$2,051,586
Non-Operating Revenue						
Sewer Service Charges (Capital) ¹	\$52,548,289	\$44,512,586	\$45,256,791	\$46,500,499	\$47,964,326	\$49,605,951
Capital charges - City of Concord	\$7,500,000	\$2,925,615	\$12,312,989	\$10,364,561	\$13,604,062	\$16,652,760
Interest Earnings (capital reserve)	\$140,000	\$524,093	\$748,932	\$661,996	\$748,120	\$821,172
Capacity Fees	\$4,636,000	\$7,100,952	\$5,977,235	\$7,269,269	\$6,146,226	\$7,556,416
Other Income	\$347,000	\$353,940	\$2,361,019	\$368,239	\$375,604	\$383,116
Total Non-Operating Revenue	\$65,171,289	\$55,417,186	\$66,656,966	\$65,164,564	\$68,838,338	\$75,019,415
Tax Revenues	\$21,584,000	\$22,231,520	\$22,898,466	\$23,585,420	\$24,292,983	\$25,021,772
Debt Service (net of credits)	\$13,249,422	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250
Debt Coverage Calculations						
Net Revenue + Tax Revenues	\$85,341,723	\$79,830,498	\$91,548,342	\$90,833,070	\$95,102,251	\$102,092,773
Debt Coverage Ratio	6.44	8.72	10.39	10.04	10.23	11.21
Adjusted Net Revenue ² + Tax Revenues	\$73,205,723	\$69,803,931	\$73,258,118	\$73,199,240	\$75,351,963	\$77,883,597
Debt Coverage - Parity	5.53	7.63	8.32	8.09	8.11	8.55
Required Coverage Ratio	2.00	2.00	2.00	2.00	2.00	2.00

Table is based on anticipated revenues and expenses as of January 2023

1. Includes proposed rate increases

2. Adjusted Net Revenue = Net Revenue less Central San Capacity Fees and City of Concord Capital Charges

2.5.6 Operating Financial Plan

Table 2-11 shows the operating financial plan for FY 2023 through FY 2028 based on the revenue and expenses information presented above. The plan includes the revenue adjustments shown in **Table 2-8**.

Table 2-11:
Operating Financial Plan

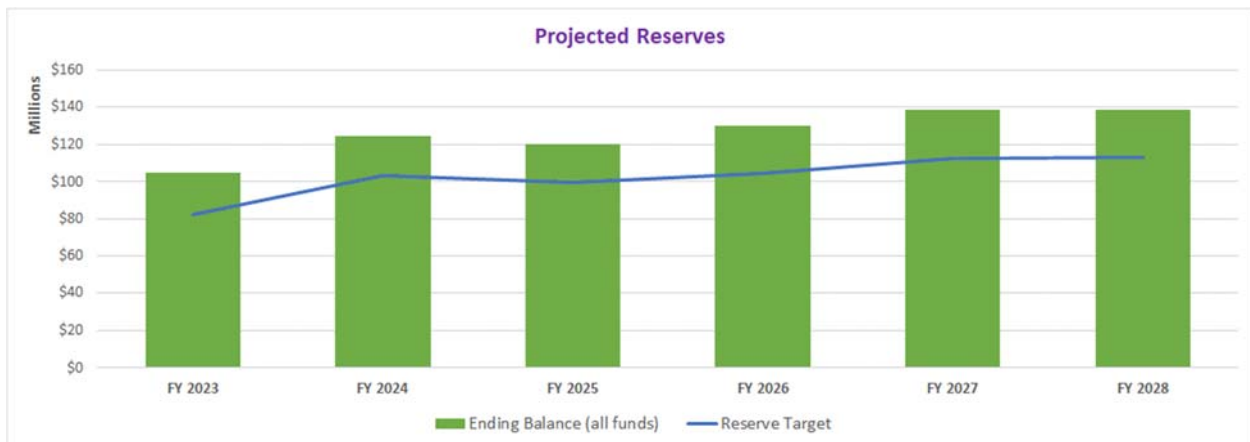
	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
Revenue from Existing Rates - O&M	\$60,824,664	\$70,255,023	\$74,378,256	\$78,123,838	\$82,009,863	\$85,988,644
Revenue from Existing Rates - Capital	\$52,548,289	\$43,343,145	\$39,538,382	\$36,026,446	\$32,365,382	\$28,671,050
Additional Revenue from Rates	\$0	\$1,169,441	\$5,718,409	\$10,474,053	\$15,598,944	\$20,934,901
Service Charges - Concord	\$17,600,000	\$17,587,922	\$18,321,043	\$19,282,156	\$20,104,733	\$20,753,331
Permit/Inspection/Right-of-Way Fees	\$1,774,500	\$1,827,735	\$1,882,567	\$1,939,044	\$1,997,215	\$2,057,131
Lease Rental Income	\$740,000	\$762,200	\$785,066	\$808,618	\$832,877	\$857,863
Household Hazardous Waste Reimbursement	\$1,048,000	\$1,079,440	\$1,111,823	\$1,145,178	\$1,179,533	\$1,214,919
Stormwater/Pollution Prevention/Pretreatments	\$415,000	\$427,450	\$440,274	\$453,482	\$467,086	\$481,099
Interest Income	\$442,318	\$405,516	\$449,743	\$465,013	\$487,924	\$511,058
Recycled Water	\$445,000	\$458,350	\$472,101	\$486,264	\$500,852	\$515,878
All Other	\$316,000	\$325,480	\$335,244	\$345,301	\$355,660	\$366,330
TOTAL REVENUE	\$136,153,771	\$137,641,702	\$143,432,908	\$149,549,393	\$155,900,069	\$162,352,204
O&M Expenses						
Executive Management	\$2,778,211	\$2,984,301	\$3,142,768	\$3,288,667	\$3,440,903	\$3,585,876
Administration	\$20,283,344	\$22,080,769	\$23,107,942	\$24,046,044	\$25,024,812	\$25,953,605
Engineering & Technical Services	\$15,208,367	\$16,045,339	\$17,328,528	\$18,485,626	\$19,696,465	\$20,831,109
Operations	\$45,051,909	\$48,172,330	\$50,848,976	\$53,306,337	\$55,875,534	\$58,312,601
Recycled Water	\$1,697,217	\$1,664,585	\$1,754,993	\$1,839,134	\$1,927,099	\$2,011,476
TOTAL EXPENSES	\$85,019,048	\$90,947,324	\$96,183,207	\$100,965,808	\$105,964,813	\$110,694,667
Less Sewer Construction Fund SSC Revenue	-\$52,548,289	-\$43,343,145	-\$39,538,382	-\$36,026,446	-\$32,365,382	-\$28,671,050
NET OPERATING INCOME	\$32,470,759	\$47,604,179	\$56,644,825	\$64,939,362	\$73,599,431	\$82,023,617

2.5.7 Reserves

Central San currently has four separate funds/reserves: running expense fund, sewer construction fund, self-insurance/emergency fund, a debt service 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 is 41.7 percent of next year’s O&M expenses, 50 percent of next year’s non-debt funded CIP expenses, 100 percent of next year’s debt service payment, \$1.5 million for self-insurance, and \$7.5 million for emergencies. The self-insurance reserve is set at \$1.5 million to cover three potential incidents. The emergency reserve is set at \$7.5 million to cover the liability insurance deductible for losses resulting from damage to wastewater assets during disasters. The estimated FY 2023 total ending balance for the Running Expense Fund and Sewer Construction Fund is approximately \$105 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 running 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.

Figure 2-1:
Projected Reserves– Running Expense and Sewer Construction Funds



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

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

**Figure 2-2:
Projected Reserves**

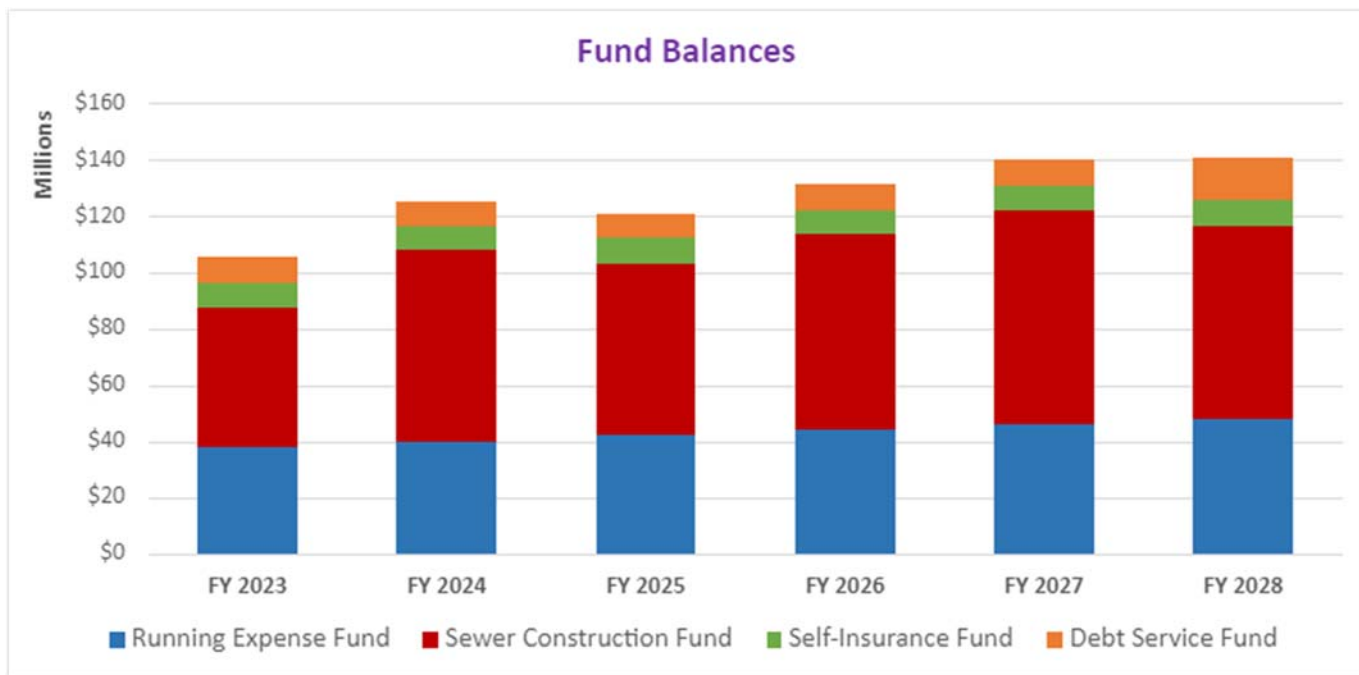


Table 2-12 shows the total fund balances for the different funds within Central San, as well as the current and proposed targets.

**Table 2-12:
Projected Reserves**

		Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
RUNNING EXPENSE FUND							
Beginning Balance		\$39,311,316	\$37,897,750	\$40,079,542	\$42,072,452	\$44,155,538	\$46,126,468
Net Income		-\$1,413,566	\$2,181,792	\$1,992,910	\$2,083,086	\$1,970,930	\$2,051,586
Ending Balance		\$37,897,750	\$40,079,542	\$42,072,452	\$44,155,538	\$46,126,468	\$48,178,054
Over (Under) Target		\$9,095	\$9,618	\$10,096	\$10,597	\$11,070	\$11,561
Proposed O&M Target	41.66%	\$37,888,655	\$40,069,924	\$42,062,356	\$44,144,941	\$46,115,398	\$48,166,493
SEWER CONSTRUCTION FUND							
Beginning Balance		\$49,504,247	\$49,326,382	\$67,443,255	\$60,956,649	\$69,132,598	\$75,922,170
Revenue							
Sewer Service Charge		\$52,548,289	\$44,512,586	\$45,256,791	\$46,500,499	\$47,964,326	\$49,605,951
Property Tax Revenue ²		\$0	\$13,519,597	\$13,952,324	\$14,391,641	\$15,285,430	\$10,075,375
Capacity Fee Revenue		\$4,636,000	\$7,100,952	\$5,977,235	\$7,269,269	\$6,146,226	\$7,556,416
Concord Capital Revenue		\$7,500,000	\$2,925,615	\$12,312,989	\$10,364,561	\$13,604,062	\$16,652,760
Interest Income		\$140,000	\$524,093	\$748,932	\$661,996	\$748,120	\$821,172
Permit and Inspection Fees		\$347,000	\$353,940	\$361,019	\$368,239	\$375,604	\$383,116
All Other		\$347,000	\$353,940	\$2,361,019	\$368,239	\$375,604	\$383,116
SRF Proceeds		\$14,680,747	\$31,500,000	\$33,075,000	\$51,597,000	\$41,335,000	\$18,246,000
Total Revenue		\$80,199,035	\$100,790,723	\$114,045,309	\$131,521,444	\$125,834,372	\$103,723,906
Expenses							
Capital Projects - Non-Debt funded ³		\$65,696,153	\$52,673,850	\$90,531,915	\$78,345,495	\$84,044,800	\$96,079,215
Capital Projects - Debt Funded ³		\$14,680,747	\$30,000,000	\$30,000,000	\$45,000,000	\$35,000,000	\$15,000,000
Total Expenses		\$80,376,900	\$82,673,850	\$120,531,915	\$123,345,495	\$119,044,800	\$111,079,215
Ending Balance		\$49,326,382	\$67,443,255	\$60,956,649	\$69,132,598	\$75,922,170	\$68,566,861
Over (Under) Target		\$22,989,457	\$22,177,298	\$21,783,901	\$27,110,198	\$27,882,563	\$27,794,572
Proposed Capital Target	50.0%	\$26,336,925	\$45,265,958	\$39,172,748	\$42,022,400	\$48,039,608	\$40,772,289

1. Table is based on anticipated revenues and expenses as of January 2023
2. Property tax revenue is net of Debt Service payments
3. Escalated

	Budgeted FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	Projected FY 2027	Projected FY 2028
SELF INSURANCE FUND						
Beginning Balance	\$10,633,117	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000
Revenue						
Sewer Service Charge	\$464,483	\$2,188,072	\$2,332,745	\$2,494,347	\$2,665,976	\$2,849,693
All Other	\$72,400	\$121,303	\$125,991	\$124,474	\$124,451	\$124,715
Total Revenue	\$536,883	\$2,309,375	\$2,458,736	\$2,618,821	\$2,790,427	\$2,974,408
Expenses						
Insurance Premiums	\$1,745,000	\$1,875,875	\$2,016,566	\$2,167,808	\$2,330,394	\$2,505,174
Loss Payments	\$425,000	\$433,500	\$442,170	\$451,013	\$460,033	\$469,234
Total Expenses	\$2,170,000	\$2,309,375	\$2,458,736	\$2,618,821	\$2,790,427	\$2,974,408
Ending Balance	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000
Over (Under) Target	\$0	\$0	\$0	\$0	\$0	\$0
Self Insurance Target	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000	\$9,000,000
DEBT SERVICE FUND						
Beginning Balance	\$0	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250
Revenue						
Sewer Service Charge	\$819,564	\$0	\$0	\$0	\$0	\$0
Tax Revenue	\$21,584,000	\$8,711,923	\$8,946,142	\$9,193,779	\$9,007,553	\$14,946,397
Interest	\$0	\$97,952	\$98,858	\$99,971	\$102,697	\$100,937
Total Revenue	\$22,403,564	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$15,047,334
Expenses						
Debt Service	\$13,249,422	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250
Total Expenses	\$13,249,422	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250
Ending Balance	\$9,154,142	\$8,809,875	\$9,045,000	\$9,293,750	\$9,110,250	\$15,047,334

3. COST OF SERVICE ANALYSIS

This section of the Report 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 in order 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 and 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 PROPOSED CUSTOMER CLASSIFICATIONS

As part of the study, Raftelis reviewed the current customer classifications. Central San indicated that increasing numbers of ADUs were being permitted and requested a review of parcels with ADUs to determine if it was still appropriate to place those units in the same rate class as apartments, condominiums, duplexes, and mobile homes. Central San provided residential water consumption data for calendar years 2018 and 2019. This data set included Contra Costa County's use code for each parcel. Contra Costa County uses use code 11 as "Single Family Residential, 1 [unit] on 1 site" and use code 13 as "2 or more [units] on 1 or more sites." Central San has indicated that they have found use code 13 to be a good indication of an Accessory Dwelling Unit or similar structure. Central San also provided the annual charge that was levied against the parcel. For the analysis, the combination of county use code and annual charge was used to classify parcels as the inclusion of the annual charge helped identify parcels with recently added ADUs. **Table 3-1** shows the average water consumption of parcels with and without an ADU. The results show that an ADU uses 50 percent of the water of a single-family residence.

**Table 3-1:
Average Water Consumption of Parcels With and Without ADUs**

	Average Calendar Year 2018 and 2019 Winter Quarter Water Consumption (HCF/year)
All use code 11 parcels billed by Central San as a single family residence (SFR)	413
All use code 13 parcels billed by Central San as an SFR plus and ADU	619

Central San has historically billed elementary, intermediate, and high schools on a per-student basis. This was reviewed during the prior COS study and a recommendation was made to increase the rates based on the per-student wastewater generation values then used. Subsequent to the implementation of the updated school rates for FY 2016, Central San reviewed actual water consumption for each of the school sites. As a result of this review, the rates for high schools were reduced to better match the average actual consumption. Several schools with water consumption significantly lower than the per-student based estimates were moved to consumption-based billing. Central San has contacted school districts within its service area who confirmed that the number of on-site instruction days and hours are back to pre-pandemic levels.

3.2 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 55 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 275 milligrams per liter (mg/l) of BOD and TSS, respectively, which is also a reasonable estimate of residential strength concentration.

The estimated loadings by customer class are shown in **Table 3-2**, including the assumed BOD and TSS loadings.

**Table 3-2:
FY 2024 Plant Balance**

	Flow (HCF)	BOD (lbs/year)	TSS (lbs/year)
Influent Data			
Total Plant	18,938,503	22,934,862	28,491,246
Less: I&I	2,311,273	1,363,992	2,417,240
Net Plant	16,627,230	21,570,870	26,074,006
Concord and Clayton	6,100,267	7,616,012	9,900,816
Non-Residential			
Low	1,099,849	954,073	950,140
Medium Low	146,248	325,926	241,298
Medium	128,662	446,309	256,930
Medium High	297,701	1,208,043	787,309
High	1,145	6,041	5,399
Industrial	213,101	267,223	0
Schools (Elementary)	24,552	19,924	15,326
Schools (Intermediate)	26,558	21,552	16,579
Schools (High School)	40,140	32,574	25,057
Total Non-Residential	1,977,956	3,281,664	2,298,039
Residential			
SFR	8,549,006	10,673,193	13,875,151
MFR	6,294,719	7,858,779	10,216,413
	2,254,287	2,814,414	3,658,739

3.3 CATEGORIZATION OF REVENUE REQUIREMENTS BY FUNCTION

The wastewater utility is comprised of various facilities each designed and operated to fulfill a given function. In order 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 various nutrients from the flow. The separation of costs by function allows allocation of such costs to the functional cost components. **Table 3-3** shows the FY 2024 O&M expenses by the different functional categories, as classified by staff. Administration and Engineering expenses are reclassified into Collection and Treatment portions in proportion to the Flow and Treatment costs.

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

O&M Expense Allocation	Total
Executive Management - Flow portion	\$554,867
Executive Management - Treatment portion	\$1,665,856
Administration - Flow portion	\$5,707,858
Administration - Treatment portion	\$17,136,490
Engineering & Technical Services	\$16,045,339
Operations	\$48,172,330
Recycled Water	\$1,664,585
TOTAL O&M EXPENSES	\$90,947,324

Table 3-4 shows the replacement value of the total wastewater assets by the different asset classes, as taken from a 2014 analysis provided by Central San Asset Management group.

**Table 3-4:
Categorization of Wastewater Assets by Function**

	Replacement Cost
Collection System	\$2,794,785,669
Treatment Plant	\$685,029,522
General Improvements	\$39,218,237
Recycled Water	\$77,609,035
TOTAL ASSETS	\$3,596,642,463

3.4 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. Collection system and pump station costs are allocated to flow and customer parameters to recognize 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 allocated to flow, BOD, and TSS since the treatment plant is designed to treat those three components. 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.

Operating costs are allocated based on the design criteria of each facility. Collection system costs are allocated entirely to flow since the collection system is designed to handle wastewater flow. However, since these costs are almost entirely fixed, a portion of the flow related operating costs is allocated to customers recognizing that irrespective of the quantity of flow, costs associated with cleaning and maintaining the collection system are incurred and therefore all customers need to share in this cost irrespective of their flow. Since treatment plants are designed to treat flow, BOD and TSS, treatment costs are allocated to those three parameters: based on the

design of each component of the treatment system. 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.

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 on the basis of plant investment recognizing that over a period of time these allocations will provide costs to be passed on to customers equitably.

Table 3-5 shows the different allocations to the Flow, BOD, TSS, and Customer O&M functional cost categories. The allocations are calculated based on the functions of each category, provided by Central San.

**Table 3-5:
Allocation to Cost Components – O&M**

O&M Allocation Factors	Flow	BOD	TSS	Customer	General	TOTAL
Administration - Collection portion	60%			40%		100%
Administration - Treatment portion	40%	38%	22%			100%
Engineering - Collection portion	40%			60%		100%
Engineering - Treatment portion	40%	38%	22%			100%
Collection System Operations	60%			40%		100%
Plant Operations Department	40%	38%	22%			100%
Pumping Stations	60%			40%		100%

Table 3-6 shows the allocation of O&M expenses (shown in **Table 3-3**) to the different cost components based on the allocation percentages shown in **Table 3-5**.

**Table 3-6:
Allocation of O&M Expenses to Cost Components**

O&M Expense Allocation	Flow	BOD	TSS	Customer	Recycled Water	General	TOTAL
Executive Management - Flow portion	\$332,920	\$0	\$0	\$221,947	\$0	\$0	\$554,867
Executive Management - Treatment portion	\$666,342	\$633,025	\$366,488	\$0	\$0	\$0	\$1,665,856
Administration - Flow portion	\$2,283,143	\$0	\$0	\$3,424,715	\$0	\$0	\$5,707,858
Administration - Treatment portion	\$6,854,596	\$6,511,866	\$3,770,028	\$0	\$0	\$0	\$17,136,490
Engineering & Technical Services	\$9,627,203	\$0	\$0	\$6,418,136	\$0	\$0	\$16,045,339
Operations	\$19,268,932	\$18,305,485	\$10,597,913	\$0	\$0	\$0	\$48,172,330
Recycled Water	\$0	\$0	\$0	\$0	\$1,664,585	\$0	\$1,664,585
TOTAL O&M EXPENSES	\$39,033,137	\$25,450,377	\$14,734,429	\$10,064,797	\$1,664,585	\$0	\$90,947,324
Allocation %	43%	28%	16%	11%	2%	0%	

Table 3-7 shows the different allocations, provided by Central San, to the cost components such as Flow, BOD, TSS, etc. of the treatment plant assets.

**Table 3-7:
Allocation of O&M to Cost Components – Treatment Plant**

Treatment Plant	Replacement Cost	Flow	BOD	TSS	Customer	General
<u>Wet Weather Facilities</u>						
Holding Basins	\$152,500	100%	0%	0%		
Bypass Facilities	\$6,803,307	100%	0%	0%		
<u>Primary Treatment</u>						
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%		
<u>Secondary Treatment</u>						
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%		
<u>Disinfection</u>						
UV	\$42,439,793	100%	0%	0%		
Hypochlorite	\$1,635,558	100%	0%	0%		
Chlorine/Dechlorine	\$2,993,400	100%	0%	0%		
<u>Final Effluent</u>						
FE Channel	\$91,100	100%	0%	0%		
FE Pumping	\$2,984,750	100%	0%	0%		
Outfall	\$70,770,040	100%	0%	0%		
<u>Solids Handling</u>						
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%		
<u>Utilities</u>						
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%
<u>Support System</u>						
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%	26%	15%	0%	30%

Table 3-8 shows the different allocations to the cost components such as Flow, BOD, TSS, etc. of each capital asset class.

**Table 3-8:
Allocation to Cost Components – Capital**

Assets Allocation Factors	Flow	BOD	TSS	Customer	General	TOTAL
Collection System	100%					100%
Treatment Plant	29%	26%	15%	0%	30%	100%
General Improvements					100%	100%
Recycled Water	100%					100%

Table 3-9 shows the allocation of the replacement value of the wastewater assets (shown in **Table 3-4**) to the different cost components based on the allocation percentages shown in **Table 3-8**.

**Table 3-9:
Allocation of Wastewater Assets to Cost Components**

Assets Allocation	Flow	BOD	TSS	Customer	General	TOTAL
Collection System	\$2,794,785,669	\$0	\$0	\$0	\$0	\$2,794,785,669
Treatment Plant	\$200,515,694	\$174,923,961	\$103,455,021	\$0	\$206,134,846	\$685,029,522
General Improvements	\$0	\$0	\$0	\$0	\$39,218,237	\$39,218,237
Recycled Water	\$77,609,035	\$0	\$0	\$0	\$0	\$77,609,035
TOTAL ASSETS	\$3,072,910,398	\$174,923,961	\$103,455,021	\$0	\$245,353,083	\$3,596,642,463
Allocation %	85%	5%	3%	0%	7%	

3.5 ALLOCATION OF REVENUE REQUIREMENTS

The total revenue requirements net of revenue credits from miscellaneous sources, is by definition, the net revenue requirement or net cost of providing service, as shown in **Table 3-10**. 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 2024, and accordingly FY 2024 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 3-10 shows the allocation of revenue requirements to operating and capital components to determine the revenue required from rates. The total FY 2024 cost of service to be recovered from Central San’s wastewater customers is estimated at approximately \$117.1 million, of which approximately \$64.6 million is operating costs and the remaining \$52.5 million is capital costs, which consists of capital expenditures and existing 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 2024. Adjustments are also made to account for cash balances to ensure adequate collection of revenue and to determine annual revenues needed from rates.

**Table 3-10:
Allocation of Revenue Requirements**

	Operating	Capital	Total
Revenue Requirements			
Executive Management	\$2,778,211		\$2,778,211
Administration	\$20,283,344		\$20,283,344
Engineering & Technical Services	\$15,208,367		\$15,208,367
Operations	\$45,051,909		\$45,051,909
Recycled Water	\$1,697,217		\$1,697,217
Capital Expense		\$80,376,900	\$80,376,900
Insurance Premiums	\$1,745,000		\$1,745,000
Loss Payments	\$425,000		\$425,000
All Other	\$0		\$0
Subtotal Revenue Requirements	\$87,189,048	\$80,376,900	\$167,565,948
Less: Revenues from Other Sources			
Service Charges - Concord	\$17,600,000		\$17,600,000
Permit/Inspection/Right-of-Way Fees	\$1,774,500		\$1,774,500
Lease Rental Income	\$740,000		\$740,000
Household Hazardous Waste Reimbursement	\$1,048,000		\$1,048,000
Stormwater/ Pollution Prevention/Pretreatment	\$415,000		\$415,000
Other Services	\$0		\$0
Sales	\$0		\$0
Interest Income	\$442,318		\$442,318
Recycled Water	\$445,000		\$445,000
All Other	\$316,000		\$316,000
Property Tax ¹		\$0	\$0
Capacity Fee Revenue		\$4,502,000	\$4,502,000
Pump Zone Revenue		\$134,000	\$134,000
Concord Capital Revenue		\$7,500,000	\$7,500,000
Interest Income		\$140,000	\$140,000
Permit and Inspection Fees		\$347,000	\$347,000
Recycled Water		\$0	\$0
All Other		\$0	\$0
Existing Bond Proceeds		\$0	\$0
Existing SRF Proceeds		\$14,680,747	\$14,680,747
Proposed Bond Proceeds		\$0	\$0
Proposed SRF		\$0	\$0
SIF Allocation from O&M Fund	\$0		\$0
All Other	\$72,400		\$72,400
Subtotal Revenues from Other Sources	\$22,853,218	\$27,303,747	\$50,156,965
Less: Adjustments			
Adjustment for Annual Cash Balance	\$2,227,119	\$524,865	\$2,751,984
Subtotal Adjustments	\$2,227,119	\$524,865	\$2,751,984
Revenue to be Recovered from Rates	\$62,108,711	\$52,548,289	\$114,657,000

1. Existing debt service is paid by property tax revenue. The property tax revenue shown in this table is net of the debt service expenses.

3.6 DEVELOPMENT OF UNIT COSTS OF SERVICE

In order 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.

The unit costs of service are developed by dividing the total annual costs by the appropriate service units, such as flow, BOD and TSS generated in the system and accounts for billing costs. **Table 3-11** 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 3-2** and from the customer data shown in **Tables 2-2** and **2-3**.

**Table 3-11:
Projected FY2024 Customer Class Service Units¹**

Customer Class	Flow	BOD	TSS	Dwelling Units	Students
Residential					
SFR	6,294,719	7,858,779	10,216,413	99,230	
ADU	41,868	52,271	67,952	1,320	
MFR	2,254,287	2,814,414	3,658,739	43,998	
Total Residential	8,590,874	10,725,464	13,943,103	144,547	
Non-Residential					
Low	1,099,849	954,073	950,140		
Medium Low	119,622	251,134	183,126		
Medium	155,287	521,101	315,102		
Medium High	297,701	1,208,043	787,309		
High	1,145	6,041	5,399		
Industrial	213,101	267,223	0		
Schools (Elementary)	24,552	19,924	15,326		24,006
Schools (Intermediate)	26,558	21,552	16,579		12,984
Schools (High School)	40,140	32,574	25,057		19,624
Total Non-Residential	1,977,956	3,281,664	2,298,039		56,614
GRAND TOTAL	10,568,830	14,007,128	16,241,142	144,547	56,614

¹ Non-residential flow estimates include a 90% reduction factor to account for water usage that does not contribute to wastewater flow.

The total operating and capital revenue requirements (from **Table 3-10**) are allocated to the different cost components based on the percentages calculated in **Tables 3-6** and **3-9**, respectively. The General component is

allocated proportionally back to the remaining costs components. **Table 3-12** shows the calculation of the unit cost for each cost component, using the units of service from **Table 3-11**.

**Table 3-12:
Development of Unit Costs**

	Flow	BOD	TSS	Customer	Recycled Water	General	TOTAL
Operating Revenue Requirements	\$27,826,207	\$14,163,683	\$8,200,027	\$10,843,878	\$1,074,917	\$0	\$62,108,711
Capital Revenue Requirements	\$44,896,368	\$2,555,704	\$1,511,516	\$0	\$0	\$3,584,700	\$52,548,289
Total Revenue Requirements	\$72,722,575	\$16,719,387	\$9,711,543	\$10,843,878	\$1,074,917	\$3,584,700	\$114,657,000
Allocation of General Cost	\$2,347,017	\$539,594	\$313,426	\$349,971	\$34,691	(\$3,584,700)	\$0
Total Cost of Service	\$75,069,592	\$17,258,981	\$10,024,969	\$11,193,849	\$1,109,608	\$0	\$114,657,000
Unit of Service	10,568,533	13,993,247	16,232,631	143,247	10,568,533	143,247	
Units	hcf	lbs/yr	lbs/yr	DU/accounts	hcf	DU/accounts	
Unit Cost	\$7.10	\$1.23	\$0.62	\$78.14	\$0.10	\$7.75	
Units	hcf	lbs/yr	lbs/yr	DU/accounts	hcf	DU/accounts	

3.7 ALLOCATION OF COSTS TO CUSTOMER CLASS

The unit cost of each of the cost categories shown in **Table 3-12** is then applied to the projected FY 2024 service units of each customer class to derive customer class costs. **Table 3-13** shows the allocation of costs to each customer class, based on the service units from **Table 3-11** and the unit cost from **Table 3-12**.

**Table 3-13:
Allocation of Costs to Customer Class**

	Flow	BOD	TSS	Customer	Recycled Water	TOTAL
Residential						
SFR	\$44,712,162	\$9,692,855	\$6,309,465	\$7,749,129	\$660,893	\$69,124,505
ADU	\$297,391	\$64,469	\$41,966	\$0	\$4,396	\$408,222
MFR	\$16,012,481	\$3,471,240	\$2,259,569	\$3,435,895	\$236,681	\$25,415,867
Total Residential	\$61,022,034	\$13,228,565	\$8,611,000	\$11,185,024	\$901,970	\$94,948,594
Non-Residential						
Low	\$7,812,365	\$1,157,769	\$577,292	\$0	\$115,475	\$9,662,901
Medium Low	\$849,693	\$309,743	\$113,095	\$0	\$12,559	\$1,285,091
Medium	\$1,103,025	\$644,220	\$194,601	\$7,263	\$16,304	\$1,965,413
Medium High	\$2,114,608	\$1,489,989	\$490,403	\$0	\$31,256	\$4,126,256
High	\$8,797	\$8,167	\$3,550	\$0	\$130	\$20,644
Industrial	\$1,513,680	\$329,587	\$0	\$1,562	\$22,374	\$1,867,203
Schools (Elementary)	\$173,572	\$24,458	\$9,421	\$0	\$2,566	\$210,017
Schools (Intermediate)	\$187,870	\$26,473	\$10,196	\$0	\$2,777	\$227,315
Schools (High School)	\$283,947	\$40,011	\$15,411	\$0	\$4,197	\$343,566
Total Non-Residential	\$14,047,558	\$4,030,416	\$1,413,970	\$8,824	\$207,638	\$19,708,406
GRAND TOTAL	\$75,069,592	\$17,258,981	\$10,024,969	\$11,193,849	\$1,109,608	\$114,657,000

The residential class has the highest assignment of costs at \$97 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 so as 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. A review of water consumption data for parcels with and without ADUs indicates that a separate rate class for ADUs is appropriate.

The proposed residential charges consist of two components: a fixed component to be billed on each dwelling unit, since a significant portion of the wastewater system costs are fixed and therefore do not vary based on the amount of flow entering the wastewater system, and a variable component to be billed on the estimated flow. Based on a review with staff of Central San’s cost structure, the estimated total variable costs, include chemicals, utilities, and net capital costs, in the system are approximately 54 percent². These costs are applied per unit of wastewater flow. The remaining 46 percent of the total system costs, considered fixed costs, are applied per dwelling unit. **Table 4-1** shows the cost-of-service calculation of wastewater charges for SFR and MFR customers for FY 2024 based on the COS analysis. The COS analysis is based on the status quo revenue requirement, meaning that the revenue adjustments in **Table 2-8** are not yet applied. The annual charges for Residential customers in **Table 4-1** are adjusted by the revenue adjustments stated for FY 2024 and FY 2025 to determine the proposed rates.

Table 4-1:
Calculated Residential Wastewater Charges – FY 2024 (Status Quo)

	Revenue Required	Dwelling Units	WW Flow (hcf/yr)	Fixed Cost (dwelling unit)	Variable Cost (dwelling unit)	Total Annual Charge
Residential						
SFR	\$69,129,536	99,230	6,294,719	\$294.49	\$388.36	\$683.00
ADU	\$408,222	1,320	41,868	\$137.97	\$194.18	\$333.00
MFR	\$25,418,098	43,998	2,254,287	\$294.49	\$313.68	\$609.00

² The average chemical and utilities cost is approximately 9 percent of the expenses, as shown in Table 2-6. Net capital cost is approximately 45 percent, as shown in Table 3-10.

According to the financial plan, the total revenue adjustment in FY 2024 is 2.2 percent and in FY 2025 is 4.0 percent (refer to **Table 2-8**). Thus, residential wastewater charges need to increase 2.2 percent in FY 2024 to meet the revenue requirements, meaning that SFR charges would be \$697 per dwelling unit, MFR charges would be \$622 per dwelling unit, and ADU charges would be \$339 per unit. **Table 4-2** shows the proposed FY 2024 and FY 2025 residential wastewater charges with the appropriate revenue adjustments determined in the financial plan. In FY 2025, the SFR charge would be \$725 instead of \$697, the MFR charge would be \$647 instead of \$622, and the ADU charge would be \$353 instead of \$339.

**Table 4-2:
Proposed FY 2024 and FY 2025 Residential Wastewater Charges**

Residential Annual Charges (per Residential Unit)	Current	Effective July 1, 2023	Effective July 1, 2024
SFR	\$690	\$697	\$725
MFR	\$654	\$622	\$647
ADU	\$654	\$339	\$353

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 3-13** and the estimated flow by customer class as shown in **Table 3-11**. 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 2024 and FY 2025 Non-Residential Wastewater Rates**

User Group	Current Effective July 1, 2022	Proposed Effective July 1, 2023	Proposed Effective July 1, 2024
Non-Residential (per hcf)			
Low (Retail, Office, Churches, Fraternal & Service Organizations, State and Local Institutions, Tax Exempt, Utilities with Special Tax Status, Independent Living Facilities, Rest Homes, & Convalescent Hospitals, and other businesses with a combined BOD + TSS of less than 350 mg/l)	\$7.20	\$7.63	\$7.94
Medium-Low (Delicatessens, Yogurt Shops, Ice Cream Shops, Coffee Shops, Bar, customers with shared water meters with less than 50% food service, other businesses with BOD + TSS less than or equal to 700 mg/l)	\$8.83	\$9.32	\$9.69

Medium (customers with shared water meters with 50% or more food service, other businesses with BOD + TSS less than or equal to 1,000 mg/l)	\$11.07	\$10.99	\$11.43
Medium-High (Restaurants, Supermarkets, Hotels and Motels, customers with shared meters which include bakeries, other businesses with BOD + TSS greater than 1,000 mg/l)	\$12.35	\$12.04	\$12.52
High (Bakeries, Restaurants with on-site breweries, Restaurants with food-waste grinders or emulsifiers, other businesses with BOD + TSS greater than 1,300 mg/l)	\$16.37	\$14.48	\$15.06
Minimum Annual Charge	\$654.00	\$622.00	\$647.00
Schools			
Schools - Daycare, Preschool, University (per hundred cubic feet)	\$7.20	\$7.63	\$7.94
Schools – Elementary	\$8.58 per student	\$8.94 per student	\$9.30 per student
Schools – Intermediate, High School	\$16.95 per student	\$17.89 per student	\$18.61 per student
Permitted Industrial Users (includes hospitals, food processing, breweries, and wineries)			
Wastewater Flow (per hundred cubic feet)	\$5.57	\$7.28	\$7.57
Biochemical Oxygen Demand (per 1,000 pounds)	\$1,473.00	\$1,268.00	\$1,338.00
Suspended Solids (per 1,000 pounds)	\$769.00	\$644.00	\$670.00
Fixed charge	\$108.20	\$248.00	\$258.00
Special Discharge Permits & Contractual Agreements:	Determined Individually	Determined Individually	Determined Individually

4.4 CUSTOMER IMPACTS

RFC 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 2024 and FY 2025 to current rates. SFR customers would experience a \$7 annual increase for FY 2024 and a \$28 annual increase for FY 2025. MFR customers would experience a \$32 reduction for FY 2024 and a \$25 increase for 2025. A new rate class would be created for Accessory Dwelling Units and those units would be charged \$339 per unit for FY 2024 and that amount would be increased by \$14 for FY 2025. ADUs are currently charged as one MFR unit.

**Table 4-4:
Residential Annual Wastewater Bill Impacts**

	Current	Proposed Effective July 1, 2023	Proposed Effective July 1, 2024	Proposed July 1, 2023 Increase or (Decrease)	Proposed July 1, 2023 Increase or (Decrease)
SFR	\$690	\$697	\$725	\$7	\$28
MFR	654	622	647	(32)	25
ADU	--	339	353	--	14

Table 4-5 shows the typical non-residential bill impacts for Central San’s largest non-residential rate classes for FY 2024 and FY 2025 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**

Non-residential Customer Class	Average Annual Usage (HCF)	July 1, 2022 Average Bill	July 1, 2023 Average Bill	July 1, 2024 Average Bill	July 1, 2023 Difference	July 1, 2024 Difference	July 1, 2023 Difference	July 1, 2024 Difference
	Low (offices, retail, etc.)	722	5,198	5,509	5,733	310	224	6.0%
Medium High (Restaurants)	799	9,868	9,620	10,003	(248)	384	-2.5%	4.0%

5. APPENDIX

Cost of Service Model Assumptions

Inflation Factors	2023	2024	2025	2026	2027	2028
Running Expenses						
Salaries & Wages	5.00%	5.00%	5.00%	3.75%	3.75%	3.75%
Salary-Step Increases/Longevity	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
Pensionable Salary	90.40%	86.33%	86.33%	86.33%	86.33%	86.33%
Purchased Services/Expenses	4.00%	4.00%	3.00%	3.00%	3.00%	3.00%
Supplies & Materials	4.00%	4.00%	3.00%	3.00%	3.00%	3.00%
Chemicals	4.75%	4.50%	4.50%	4.50%	4.50%	4.50%
Utilities	4.75%	4.50%	4.50%	4.25%	4.25%	4.00%
Insurance & Risk Management	4.00%	4.00%	3.00%	3.00%	3.00%	3.00%
Benefits						
Medical & Health Insurance	5.34%	6.50%	6.25%	6.00%	5.80%	5.60%
Dental Insurance	3.80%	3.75%	3.75%	3.75%	3.75%	3.75%
Workers' Compensation Insurance	5.00%	5.00%	5.00%	5.00%	4.00%	4.00%
Benefits Vacancy	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Capital						
Capital Inflation Rate	0.00%	5.00%	5.00%	4.00%	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 Cost	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
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%	2.00%	2.40%	2.40%	2.60%	2.60%
Bond Interest Rate	3.50%	4.00%	4.00%	4.00%	4.00%	4.50%
Revenue/Growth						
Growth Rate	0.41%	0.41%	0.40%	0.34%	0.34%	0.40%
New Connections (RUE)	700	700	700	600	600	700

Reserve Requirements						
Running Expense	41.67%	41.67%	41.67%	41.67%	41.67%	41.67%
Sewer Construction	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
Self-Insurance: Subfund A	\$1.5 M	\$1.5 M	\$1.5 M	\$1.5 M	\$1.5 M	\$1.5 M
Self-Insurance: Subfund C	\$7.5 M	\$7.5 M	\$7.5 M	\$7.5 M	\$7.5 M	\$7.5 M
Debt Service: Bond	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Debt Service: CoP	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Debt Service: SRF	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%