

# UTILITY SURCHARGE RATE STUDY

BLACK & VEATCH PROJECT NO. 414735

PREPARED FOR



Channel Islands  

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CALIFORNIA STATE UNIVERSITY

California State University at Channel Islands

12 JUNE 2023



**BLACK & VEATCH**

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## Legal Notice

Black & Veatch has prepared this report for the California State University at Channel Islands (CSUCI), and it is based on information provided by CSUCI. CSUCI has not requested Black & Veatch to make an independent analysis, verify the information provided to us, or render an independent judgment of the validity of the information provided by others. Because of this, Black & Veatch cannot, and does not, guarantee the accuracy thereof to the extent that such information, data, or opinions were based on information provided by others.

In conducting these analyses and in forming an opinion of the projection of future financial operations summarized in this report, Black & Veatch made certain assumptions on the conditions, events, and circumstances that may occur in the future. The methodology utilized in performing the analyses follows generally accepted practices for such projections. Such assumptions and methodologies are reasonable and appropriate for the purpose for which they are used. While we believe the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that occur. Such factors may include the utilities' ability to execute the capital improvement program as scheduled and within budget, regional climate and weather conditions affecting the demand for water, discharge of sewage flow, and adverse legislative, regulatory, or legal decisions (including environmental laws and regulations) affecting the utilities' ability to manage the system and meet water quality requirements.

## 1.0 Executive Summary

California State University (CSU) at Channel Islands (CSUCI) commissioned Black & Veatch Management Consulting, LLC (Black & Veatch) to perform a Water and Sewer Utility Surcharge Rate Study (Study) for its Water, Recycled Water, and Sewer Utilities. The Study included the development of a five-year financial plan, a cost-of-service analysis, and the design of rates. The specific objectives of the Study were to:

- Evaluate the adequacy of projected revenues under existing rates to meet projected revenue requirements.
- Develop sound financial plans for the utilities covering five years for ongoing operations and planned capital improvements.
- Allocate the utilities' projected revenue requirements to the customers in accordance with their respective service requirements.
- Develop a suitable rate schedule that produces revenues adequate to meet financial needs while recognizing customer costs of service and regulatory considerations such as Proposition 218 and applicable judicial decisions.

### 1.1 Background

Established in 2002, CSUCI receives wholesale water, recycled water, and sewer service from the Camrosa Water District (CWD), which then passes these services to several customers, including two private housing communities and several university-related programs, such as housing and dining services.

CSUCI has historically charged for services at a pass-through rate, only billing for the direct cost of metered or estimated utility consumption. These rates have not included the indirect costs incurred by CSUCI for providing utility services to these customers. To meet CSU's financial policy, the CSUCI implemented the Study to meet the requirement to "implement a utilities chargeback system to recover direct and indirect costs of utilities provided to self-supporting and external organizations."

### 1.2 Financial Plan

CSUCI intends to recover direct and indirect costs associated with providing utility services to all customers. Therefore, the utilities must develop financial plans to project future rate revenues under existing rates, operations, maintenance (O&M) expenses, long-term debt service, and capital improvement program (CIP) requirements. In the projection of rate revenues, annual projections of customers and water consumption rely upon CSUCI's historical data and estimates of growth.

The Study develops financial plans that project operating revenue, expenses, and capital financing costs for the utilities over a five-year planning period beginning July 1, 2023, and ending June 30, 2028.

#### 1.2.1 Water Utility

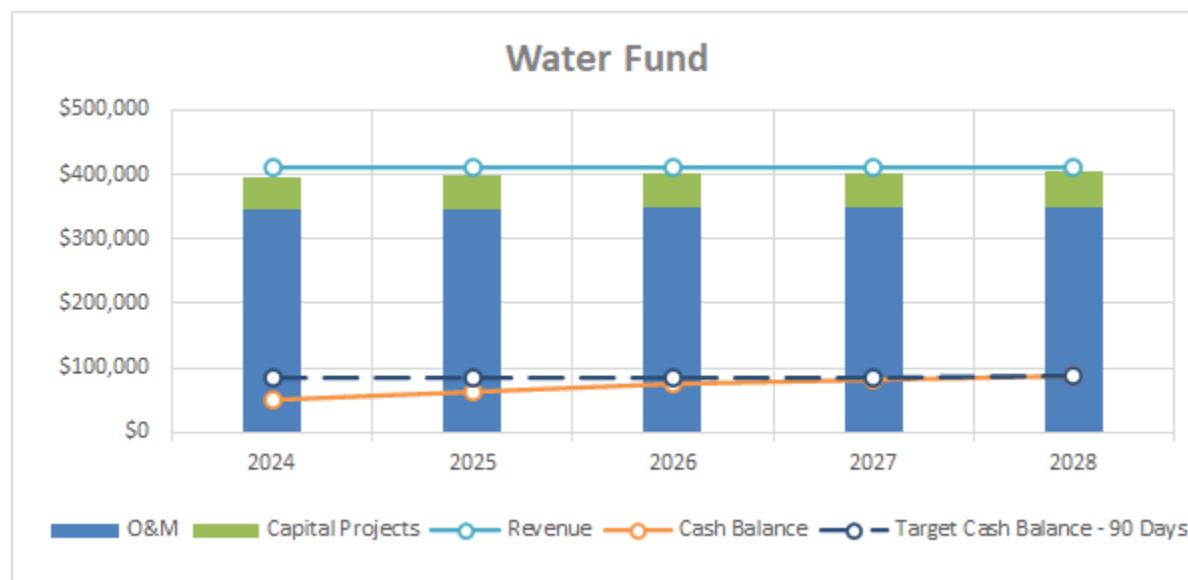
The Water Utility's revenue requirements are summarized below:

- Operation and Maintenance Expenses: The Water Utility anticipates O&M expenses to increase from \$346.5k in FY 2024 to \$349.8k in FY 2028. Purchased water costs represent an average of 91.9% of O&M expenses.
- Debt Service: The Water Utility has no existing debt service, and no future debt is planned.

- Capital Improvements: The Water Utility plans to execute an average of \$52.7k annually in capital projects from FY 2024 to FY 2028.
- Reserves: The Water Utility plans to set up an operating fund reserve to help cover fluctuations in day-to-day expenses. The scheduled target is 90 days of O&M expenses.

The Water Utility is proposing revenue adjustments to allow it to operate the enterprise on a revenue-neutral basis and meet reserve targets, as shown in Figure 1-1.

Figure 1-1 Water Operating Cashflow



### 1.2.2 Recycle Water Utility

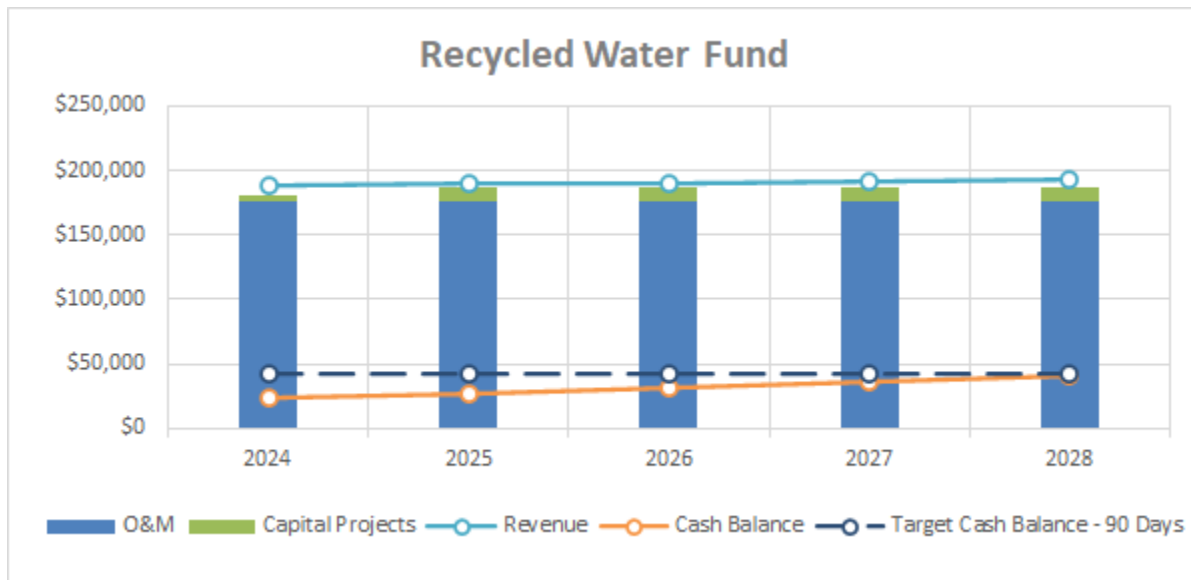
The Recycled Water Utility’s revenue requirements are summarized below:

- Operation and Maintenance Expenses: The Recycled Water Utility anticipates O&M expenses to increase from \$176.2k in FY 2024 to \$176.6k in FY 2028. Recycled water purchase cost pass-through represents an average of 98.2% of O&M expenses.
- Debt Service: The Recycled Water Utility has no existing debt service, and no future debt is planned.
- Capital Improvements: The Recycled Water Utility plans to execute an average of \$9.5k per year in capital projects from FY 2024 to FY 2028.
- Reserves: The City plans to set up an operating fund reserve to help cover fluctuations in day-to-day expenses. The scheduled target is 90 days of O&M expenses.

The Recycled Water Utility is proposing revenue adjustments to allow it to operate the enterprise on a revenue-neutral basis and meet reserve targets, as shown in Figure 1-2.



Figure 1-2 Recycled Water Operating Cash Flow



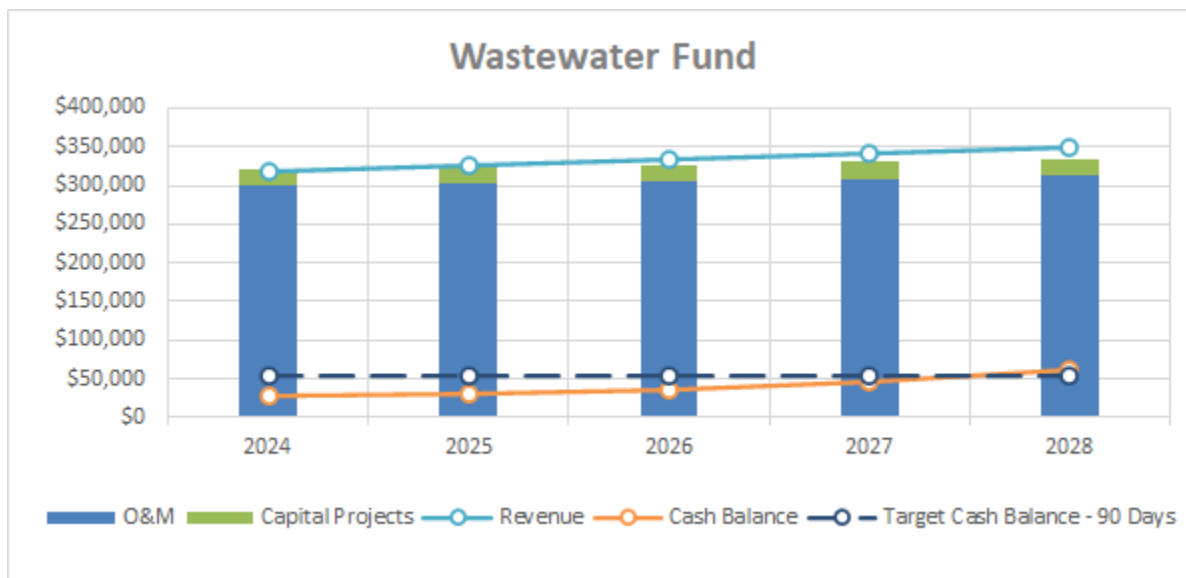
### 1.2.3 Sewer Utility

The Sewer Utility’s revenue requirements are summarized below:

- Operation and Maintenance Expenses: The Sewer Utility anticipates O&M expenses to increase from \$300.4k in FY 2024 to \$312.0k in FY 2028. Wastewater treatment cost pass-through represents an average of 72.6% of O&M expenses.
- Debt Service: The Sewer Utility has no existing debt service, and no future debt is planned.
- Capital Improvements: The Sewer Utility plans to execute an average of \$21.1k per year in capital projects from FY 2024 to FY 2028.
- Reserves: The Sewer Utility plans to set up an operating fund reserve to help cover fluctuations in day-to-day expenses. The scheduled target is 90 days of O&M expenses.

The Sewer Utility is proposing revenue adjustments to allow it to operate the enterprise on a revenue-neutral basis and meet reserve targets, as shown in Figure 1-3.

Figure 1-3 Sewer Operating Cash Flow



### 1.3 Adequacy of Existing Rates to Meet Costs of Service

Based on the financial plans and reserve policy, Black & Veatch recommends the revenue adjustments in Table 1-1 to meet the projected revenue requirements for FY 2024 to FY 2028. These do not represent proposed rate increases to customers. Rather, these represent the overall revenue increases the utilities need to meet their overall obligations and maintain current service levels.

Table 1-1 Proposed Revenue Adjustments

Fiscal Year	Effective Month	Water Utility	Recycled Water Utility	Wastewater Utility
FY 2024	July	0.00%	5.50%	6.75%
FY 2025	July	0.00%	5.50%	6.75%
FY 2026	July	0.00%	5.50%	6.75%
FY 2027	July	0.00%	5.50%	6.75%
FY 2028	July	0.00%	5.50%	6.75%

### 1.4 Cost-of-Service Analysis

The cost-of-service analysis allocates the costs to the various customer classes of service in a fair and equitable manner. The methodologies used in the Study are specific to the respective utility operations. The following is a brief description of the methodologies.

The water and recycled water cost-of-service allocations performed in this Study use the Base-Extra Capacity Method endorsed by the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges, M1 (M1) manual. Under cost-of-service principles, costs are allocated to the different customer classes in proportion to their water system use. As recommended by AWWA, Black & Veatch distributed O&M and capital costs to the base (average load conditions), extra capacity (peaking), and customer-related parameters. This allocation methodology produces unit costs for allocation to individual customer classes based on the projected customer service requirements.

The sewer cost-of-service allocation performed in this Study follows the Functional Cost Allocation Method endorsed by the Water Environment Federation (WEF) Financing and Charges for Wastewater

Systems, Manual of Practice 27 (MoP27) manual. As recommended by WEF, Black & Veatch distributed functional costs to volume and customer-related parameters. Like the methodology used for water systems, the sewer cost of service analysis allocates costs to the different customer classes in proportion to their use of the sewer system. This allocation methodology produces unit costs for allocation to individual customer classes based on the projected customer service requirements.

## 1.5 Rate Design

The Right to Vote on Taxes Act, also known as Proposition 218, was passed by California voters in 1996 and added Article XIIC and Article XIID to the California Constitution. These articles provide the regulatory framework that guides and informs the rate-setting process. The cost-of-service analyses provide the cost nexus for the proposed rate structures. The regulatory framework helps ensure cost recovery is proportionate to the cost of providing the service.

### 1.5.1 Water and Recycled Water Utilities

To minimize impacts, retain simplicity, and ensure the reasonable stability of revenue, Black & Veatch recommends the following rate structure.<sup>1</sup>

- **Monthly Fixed Charge:** The utilities should retain the monthly fixed charge based on customer meter sizes. The monthly fixed charge recovers all operating and capital components associated with indirect costs incurred by CSUCI.

Table 1-2 summarizes the recommended five-year rate schedules for the monthly fixed charge for the Water Utility.

**Table 1-2 Proposed Five-Year Water Rate Schedule**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Fixed Charge (\$/Month)</b>					
3/4"	7.42	7.42	7.42	7.42	7.42
1"	12.36	12.36	12.36	12.36	12.36
1-1/2"	24.72	24.72	24.72	24.72	24.72
2"	39.55	39.55	39.55	39.55	39.55
3"	79.11	79.11	79.11	79.11	79.11
4"	123.60	123.60	123.60	123.60	123.60
6"	247.21	247.21	247.21	247.21	247.21
8"	395.53	395.53	395.53	395.53	395.53
10"	593.29	593.29	593.29	593.29	593.29

Table 1-3 summarizes the recommended five-year rate schedules for the monthly fixed charge for the Recycled Water Utility.

<sup>1</sup> In addition, CSUCI will continue to assess the water and recycled water consumption charge which recovers the direct costs associated with CWD. The consumption charge is set by CWD.

**Table 1-3 Proposed Five-Year Recycled Water Rate Schedule**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Fixed Charge (\$/Month)</b>					
3/4"	6.09	6.43	6.78	7.15	7.55
1"	10.15	10.71	11.30	11.92	12.58
1-1/2"	20.31	21.43	22.60	23.85	25.16
2"	32.49	34.28	36.17	38.16	40.26
3"	64.99	68.56	72.33	76.31	80.51
4"	101.55	107.13	113.02	119.24	125.80
6"	203.09	214.26	226.05	238.48	251.60
8"	324.95	342.82	361.67	381.57	402.55
10"	487.42	514.23	542.51	572.35	603.83

### 1.5.2 Sewer Utility

To minimize impacts, retain simplicity, and ensure the reasonable stability of revenue, Black & Veatch recommends the following rate structure.<sup>2</sup>

- Monthly Fixed Charge: The Sewer Utility should retain the monthly fixed charge based on meter sizes for all customers. The monthly fixed charge recovers all operating and capital components associated with indirect costs incurred by CSUCI.

Table 1-4 summarizes the recommended five-year rate schedules for the monthly fixed charge for the Sewer Utility.

**Table 1-4 Proposed Five-Year Sewer Rate Schedules**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Service Charge (\$/Month)</b>					
3/4"	7.91	8.45	9.02	9.63	10.28
1"	13.19	14.08	15.03	16.04	17.13
1-1/2"	26.38	28.16	30.06	32.09	34.25
2"	42.20	45.05	48.09	51.34	54.80
3"	84.40	90.10	96.18	102.67	109.60
4"	131.88	140.78	150.28	160.43	171.26
6"	263.76	281.56	300.57	320.86	342.51
8"	422.01	450.50	480.91	513.37	548.02
10"	633.02	675.75	721.36	770.05	822.03

<sup>2</sup> In addition, CSUCI will continue to assess the sewer equivalent dwelling unit (EDU) charge which recovers the direct costs associated with CWD. The EDU charge is set by CWD.

## Water and Recycled Water Utilities

### 2.0 Revenue and Revenue Requirements

To meet the costs associated with providing water services to its customers, the Water and Recycled Water Utilities derive revenue from water user charges (rates). Black & Veatch has projected the future revenue generated in the Study by analyzing historical and future system growth in terms of the number of customers and water consumption. This section also projects the expenses, or revenue requirements, necessary to operate and maintain the system, invest in capital improvements, and cover other water and recycled water systems expenses.

#### 2.1 Customer and Water Consumption

##### 2.1.1 Customers

The Water Utility's customer base includes 11 customers that are treated as one customer class:

- Anacapa Village, Channel Islands Power, Freudian Sip, Islands Café, Lighthouse Café, Santa Rosa Village, Santa Cruz Village, Student Union, Carden School, University Glen, and Anacapa Canyon.

The Recycled Water Utility's customer base includes 7 customers that are treated as one customer class:

- Anacapa Village, Potrero Field, Santa Rosa Village, Santa Cruz Village, Student Union, University Glen, and Anacapa Canyon.

CSUCI provides potable water services and recycled water services through metered connections. CSUCI bills customers based on the number of bills determined by meter size and the number of meter connections times 12. Therefore, a customer may have more than one metered connection. In the analysis, the number of bills is used to determine the fixed charge. The projected total number of bills is expected to remain constant for both the Water Utility and Recycled Water Utility. The largest change will incur in FY 2024 with the addition of Anacapa Canyon. After that addition, the customer base is expected to remain flat for the Study period.

Table 2-1 summarizes the projected Water and Recycled Water Utilities bills.

**Table 2-1 Customer Bills**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(bills)	(bills)	(bills)	(bills)	(bills)
<b>Water</b>						
1	All Customers	5,808	5,808	5,808	5,808	5,808
2	Total	5,808	5,808	5,808	5,808	5,808
<b>Recycled Water</b>						
3	All Customers	216	216	216	216	216
4	Total	216	216	216	216	216

##### 2.1.2 Water Consumption

Table 2-2 shows the projected water and recycled water consumption for the Study period. Black & Veatch assumed a steady water consumption pattern in determining projected and recycled water consumption. CSUCI currently bills water consumption in hundred cubic feet (HCF).

**Table 2-2 Water Consumption**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(HCF)	(HCF)	(HCF)	(HCF)	(HCF)
<b>Water</b>						
1	All Customers	71,908	71,908	71,908	71,908	71,908
2	Total (HCF)	71,908	71,908	71,908	71,908	71,908
3	Total (Acre-Feet)	165	165	165	165	165
<b>Recycled Water</b>						
4	All Customers	66,902	66,902	66,902	66,902	66,902
5	Total (HCF)	66,902	66,902	66,902	66,902	66,902
6	Total (Acre-Feet)	154	154	154	154	154

## 2.2 Revenue under Existing Rates

Water and recycled water user rates serve as the primary source of revenue for the Water and Recycled Water Utilities. Therefore, the level of future rate revenue is important in developing a long-range financial plan. The projected system growth in terms of the number of bills and water consumption is multiplied by the applicable rates to determine water and recycled water rate revenue.

Table 2-3 shows the current Water and Recycled Water Utilities rate schedules. It is important to note that CWD determines the usage charge.

**Table 2-3 Existing Water and Recycled Water Rates**

Description	Fiscal Year	Fiscal Year
	2024	2024
<b>Fixed Charge (\$/Month)</b>	Water	Recycled Water
3/4"	7.04	8.60
1"	12.03	12.51
1-1/2"	24.48	22.25
2"	39.50	33.99
3"	87.05	71.19
4"	149.49	120.02
6"	224.51	178.70
8"	374.47	295.99
<b>Usage Charges (\$/HCF)</b>		
All Customers	4.45	2.59

The revenue generated from the pass-through is paid to CWD for services and therefore does not remain with CSUCI. The projected Water Utility revenues are constant at \$410.9k between FY 2024 and FY 2028, while the projected Recycled Water Utility revenue is constant at \$188.0k from FY 2024 to FY 2028. Table 2-4 summarizes projected water and recycled water rate revenue under existing rates.

Table 2-4 Projected Revenue under Existing Rates

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
<b>Water</b>						
1	All Customers	91,050	91,050	91,050	91,050	91,050
2	All Customers (Pass-through)	319,900	319,900	319,900	319,900	319,900
3	Total	\$ 410,950	\$ 410,950	\$ 410,950	\$ 410,950	\$ 410,950
<b>Recycled Water</b>						
4	All Customers	14,700	14,700	14,700	14,700	14,700
5	All Customers (Pass-through)	173,300	173,300	173,300	173,300	173,300
6	Total	\$ 188,000	\$ 188,000	\$ 188,000	\$ 188,000	\$ 188,000

## 2.3 Other Revenue

Usually, utilities generate other sources of operating revenue from backflow tests, hydrant flow tests, meter tests, engineering plan reviews, water installation and relocation, interest on investments, and other miscellaneous revenues. CSUCI does not have other operating revenues.

## 2.4 Operating and Maintenance Expenses

Table 2-5 summarizes the Water and Recycled Water Utilities' projected O&M expense for the Study period. These expenses include costs related to salaries and benefits and materials and services.

- **Salaries & Benefits** - These costs are associated with salaries and benefits paid to employees who dedicate time to provide utility services. The staff consists of managers, plumbers, irrigation specialists, and budget analysts handling meter readings, leak detection, pipeline repair, water tank inspections, fire system maintenance, fixtures inspections, customer billing, and budget projection and advisement.
- **Materials & Services (CWD)** - These costs are associated with purchasing water from Camrosa Water District to service CSUCI customers. These represent 91.9% of the total operating costs for the Water Utility and 98.2% for the Recycled Water Utility.

Table 2-5 O&amp;M Expenses

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
<b>Water</b>						
1	Salaries & Benefits	26,600	27,400	28,200	29,000	29,900
2	Materials & Services (CWD)	319,900	319,900	319,900	319,900	319,900
3	Total	\$ 346,500	\$ 347,300	\$ 348,100	\$ 348,900	\$ 349,800
<b>Recycled Water</b>						
4	Salaries & Benefits	2,900	3,000	3,100	3,200	3,300
5	Materials & Services (CWD)	173,300	173,300	173,300	173,300	173,300
6	Total	\$ 176,200	\$ 176,300	\$ 176,400	\$ 176,500	\$ 176,600

As shown in Table 2-5, the Water Utility's O&M expenses increases from \$346.5k in FY 2024 to \$349.8k in FY 2028, while the Recycled Water Utility's O&M expenses increases from \$176.2k in FY 2024 to \$176.6k in FY 2028.

## 2.5 Capital Improvement Program

The Water and Recycled Water Utilities developed a capital expenditure budget to address identified water and recycled water system needs. These expenditures were identified in the ISES Corporation assessment in 2021. The expenditures are identified by function but include inspections, maintenance, and rehabilitation and replacement requirements.

Table 2-6 summarizes the Water and Recycled Water Utilities capital projects for FY 2024 through FY 2028. The Water Utility is projecting \$263.7k in asset reinvestment, and the Recycled Water Utility is projecting \$47.7k over the Study period, including capital and replacement projects.

**Table 2-6 Capital Improvement Projects**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
<b>Water</b>						
1	Source of Supply	10,000	10,300	10,500	10,800	11,100
2	Transmission & Distribution	35,000	35,900	36,900	37,900	38,900
3	Meters & Services	5,000	5,100	5,300	5,400	5,600
4	Total	\$ 50,000	\$ 51,300	\$ 52,700	\$ 54,100	\$ 55,600
<b>Recycled Water</b>						
5	Transmission & Distribution	5,000	10,300	10,500	10,800	11,100
6	Total	\$ 5,000	\$ 10,300	\$ 10,500	\$ 10,800	\$ 11,100

## 2.6 Reserves

A utility typically establishes reserves for several reasons, such as covering shortfalls in operating revenues and day-to-day operating costs and easing the burden on ratepayers associated with large rate increases. Since CSUCI is at the first step of setting up independent enterprises, Black & Veatch recommends the establishment of an operating reserve to address monthly cash flow variability.

An operating reserve represents working capital the utility maintains to cover day-to-day expenses and maintain enough funds to cover accounts receivables if there are supplier issues, periods of lower-than-expected water sales, or unforeseen cost increases. The reserve will maintain a minimum balance of 90 days of operating expenses once fully funded

Having an operating reserve will help the Water and Recycled Water Utilities with liquidity, provide operational flexibility, and demonstrate fiscal responsibility.

## 2.7 Projected Operating Results

The revenue requirements of the Water and Recycled Water Utilities consist of O&M expenses, capital expenditures, and reserve requirements.

To fully understand the current condition of the Water and Recycled Water Utilities, it is important to examine the cash flow projections under the status quo scenario, as shown in Figure 2-1 and Figure 2-2. The status quo conditions indicate that both utilities operate below the target cash balance of 90 days of operating expenses. In this scenario, the Water and Recycled Water Utilities would not impose any revenue increases over the Study Period and continue to incur O&M expenses and pay for the execution of the planned capital expenditures.



Figure 2-1 Status Quo Cash Flow (Water)

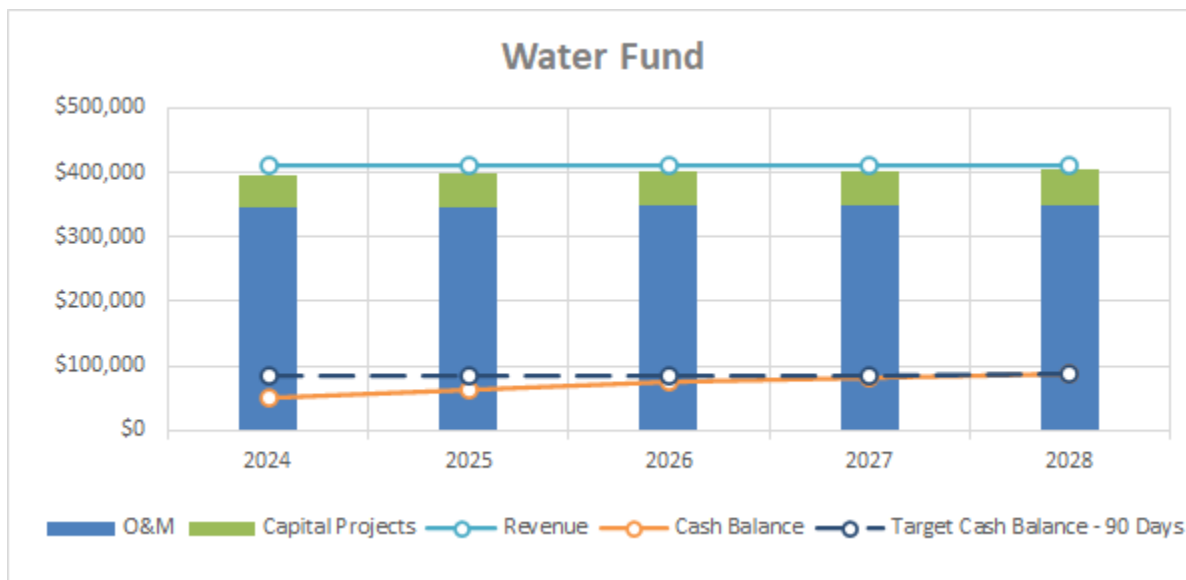
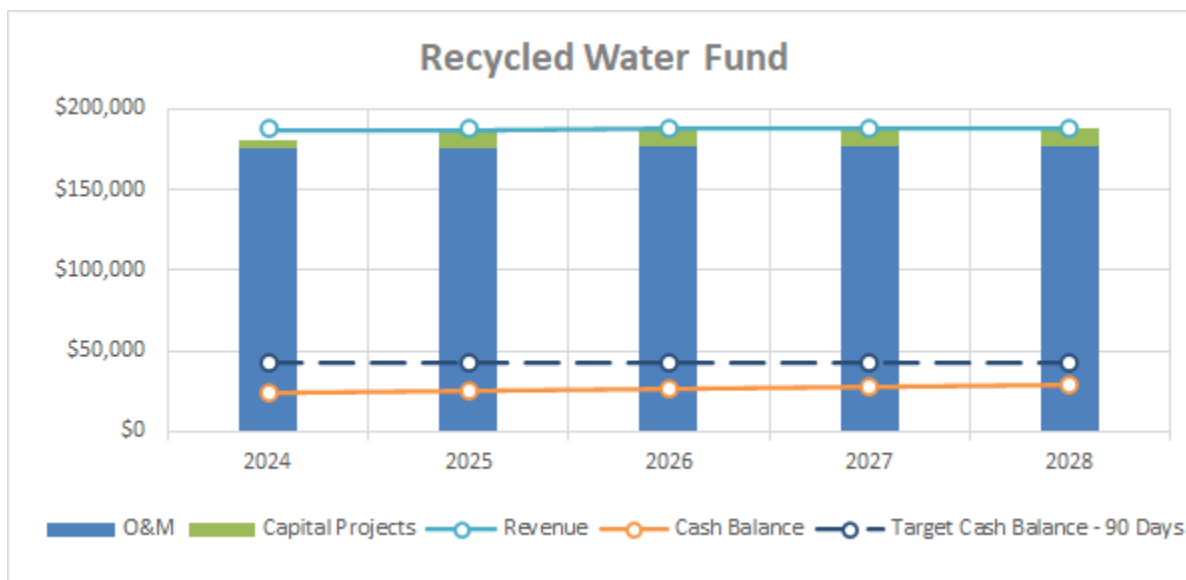


Figure 2-2 Status Quo Cash Flow (Recycled Water)



The analyses performed for the Study indicate that CSUCI should implement the proposed revenue increases shown in Table 2-7 and Table 2-8 if it wishes to keep the Water and Recycled Water Utilities in a balanced financial condition. The revenue increases represent the total revenue adjustment needed to meet revenue requirements. The revenue adjustment does not represent adjustments to the individual rates but reflects the overall level of revenue needed to meet the Water and Recycled Water Utilities’ obligations.

The suggested revenue increases help the Water and Recycled Water Utilities meet the following goals:

- Meet budgeted operating obligations in the five FYs.
- Meet planned capital investments in the five FYs.

- Achieve an operating reserve of 90 days of operating expenses by FY 2025.

Table 2-7 and Table 2-8 summarize the proposed financial plans for the Study Period. The financial plans consist of 1) Revenue and 2) Revenue Requirements.

#### Revenue

- Line 1 is the revenue under existing rates.
- Lines 2 through 6 are the additional revenues generated from the required annual revenue increases. The additional revenue generated directly reflects the number of months the increase is effective for; therefore, the realized revenue might be calculated at less than that stated.
- Line 8 is the total revenue generated from user charges.
- Line 12 represents other operating revenues. The pass-through revenue identified in Table 2-4 is shown in Line 9.
- Line 13 represents the total revenues for the utilities.

#### Revenue Requirements

- Line 16 represents the O&M expenses. The O&M expenses include the costs from CWD, which is directly offset by Line 9.
- Line 18 represents the capital expenditures identified in Table 2-6.
- Line 19 represents the total revenue requirements for the utilities.

Line 22 represents the net cumulative cash balance within the financial plans. To the extent possible, the net cumulative cash balance intends to match Line 23. The cash balance reserve is required to ensure the utility can continue in the event of a supplier interruption, market price fluctuations of critical equipment or supplies, or an abrupt drop in account receivables. The reserve target minimum is 90 days of O&M expenses.

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Table 2-7 Financial Plan (Water)

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Revenue</b>						
Rate Revenue						
1	Revenue from Existing Rates	91,100	91,100	91,100	91,100	91,100
	Year Months Rate Adj					
2	2024 12 0.00%	0	0	0	0	0
3	2025 12 0.00%		0	0	0	0
4	2026 12 0.00%			0	0	0
5	2027 12 0.00%				0	0
6	2028 12 0.00%					0
7	Increased Rev Due to Adj's	0	0	0	0	0
8	Subtotal	\$ 91,100	\$ 91,100	\$ 91,100	\$ 91,100	\$ 91,100
Other Operating Revenue						
9	Passthrough Revenues	319,900	319,900	319,900	319,900	319,900
10	Other Income	0	0	0	0	0
11	Interest Income	0	0	0	0	0
12	Subtotal	\$ 319,900	\$ 319,900	\$ 319,900	\$ 319,900	\$ 319,900
13	<b>Total Revenue</b>	<b>\$ 411,000</b>	<b>\$ 411,000</b>	<b>\$ 411,000</b>	<b>\$ 411,000</b>	<b>\$ 411,000</b>
<b>Revenue Requirements</b>						
Operating & Maintenance						
14	O&M Expenses	26,600	27,400	28,200	29,000	29,900
15	CWD Passthrough	319,900	319,900	319,900	319,900	319,900
16	Subtotal	\$ 346,500	\$ 347,300	\$ 348,100	\$ 348,900	\$ 349,800
Capital Projects						
17	Capital Improvement Program	50,000	51,400	52,700	54,200	55,600
18	Subtotal	\$ 50,000	\$ 51,400	\$ 52,700	\$ 54,200	\$ 55,600
19	<b>Total Revenue Requirements</b>	<b>\$ 396,500</b>	<b>\$ 398,700</b>	<b>\$ 400,800</b>	<b>\$ 403,100</b>	<b>\$ 405,400</b>
20	Net Annual Cash Balance	14,500	12,300	10,200	7,900	5,600
21	Beginning Fund Balance	37,500	52,000	64,300	74,500	82,400
22	Net Cumulative Fund Balance	\$ 52,000	\$ 64,300	\$ 74,500	\$ 82,400	\$ 88,000
23	Min. Operating Resvs (90 Days)	85,400	85,600	85,800	86,000	86,300

Table 2-8 Financial Plan (Recycled Water)

Line No.	Description	Fiscal Year Ending June 30,									
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028					
<b>Revenue</b>											
Rate Revenue											
1	Revenue from Existing Rates	14,700	14,700	14,700	14,700	14,700					
Months											
	Year	Effective	Rate Adj								
2	2024	12	5.50%	800	800	800					
3	2025	12	5.50%		900	900					
4	2026	12	5.50%		900	900					
5	2027	12	5.50%			1,000					
6	2028	12	5.50%			1,000					
7	Increased Rev Due to Adj's			800	1,700	2,600					
8	Subtotal	\$	15,500	\$	16,400	\$	17,300	\$	18,300	\$	19,300
Other Operating Revenue											
9	Passthrough Revenues	173,300	173,300	173,300	173,300	173,300					
10	Other Income	0	0	0	0	0					
11	Interest Income	0	0	0	0	0					
12	Subtotal	\$	173,300	\$	173,300	\$	173,300	\$	173,300	\$	173,300
13	<b>Total Revenue</b>	<b>\$</b>	<b>188,800</b>	<b>\$</b>	<b>189,700</b>	<b>\$</b>	<b>190,600</b>	<b>\$</b>	<b>191,600</b>	<b>\$</b>	<b>192,600</b>
<b>Revenue Requirements</b>											
Operating & Maintenance											
14	O&M Expenses	2,900	3,000	3,100	3,200	3,300					
15	CWD Passthrough	173,300	173,300	173,300	173,300	173,300					
16	Subtotal	\$	176,200	\$	176,300	\$	176,400	\$	176,500	\$	176,600
Capital Projects											
17	Capital Improvement Program	5,000	10,300	10,500	10,800	11,100					
18	Subtotal	\$	5,000	\$	10,300	\$	10,500	\$	10,800	\$	11,100
19	<b>Total Revenue Requirements</b>	<b>\$</b>	<b>181,200</b>	<b>\$</b>	<b>186,600</b>	<b>\$</b>	<b>186,900</b>	<b>\$</b>	<b>187,300</b>	<b>\$</b>	<b>187,700</b>
20	Net Annual Cash Balance	7,600	3,100	3,700	4,300	4,900					
21	Beginning Fund Balance	16,700	24,300	27,400	31,100	35,400					
22	Net Cumulative Fund Balance	\$	24,300	\$	27,400	\$	31,100	\$	35,400	\$	40,300
23	Min. Operating Resvs (90 Days)	42,700	42,700	42,700	42,700	42,700					

Figure 2-3 presents the proposed Water Utility financial plan, and Figure 2-4 presents the Recycled Water Utility financial plan.

Figure 2-3 Water Cash Flow

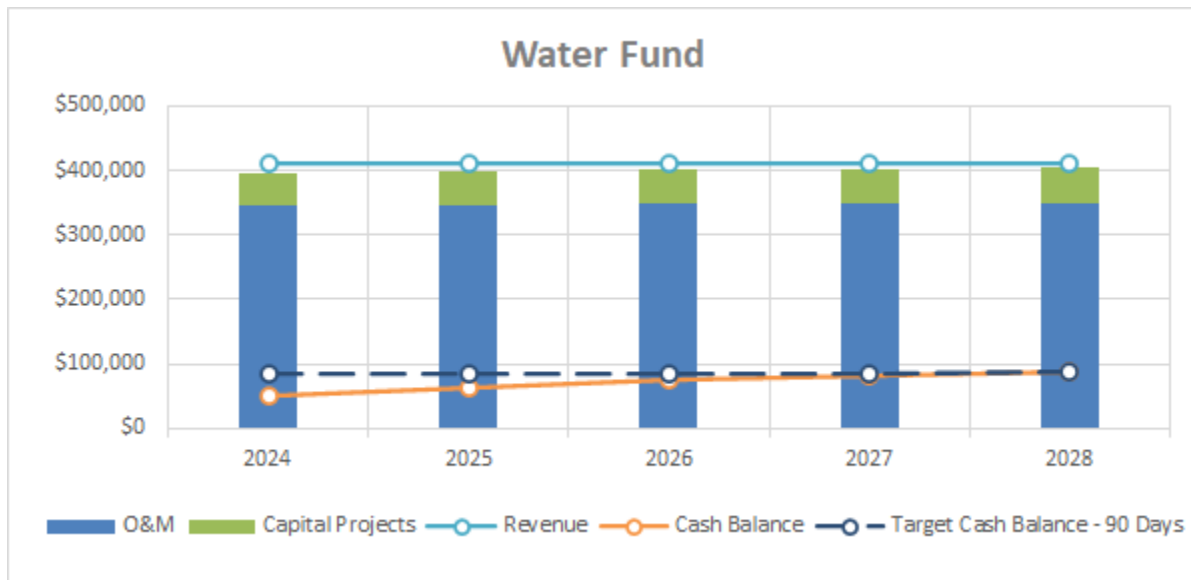
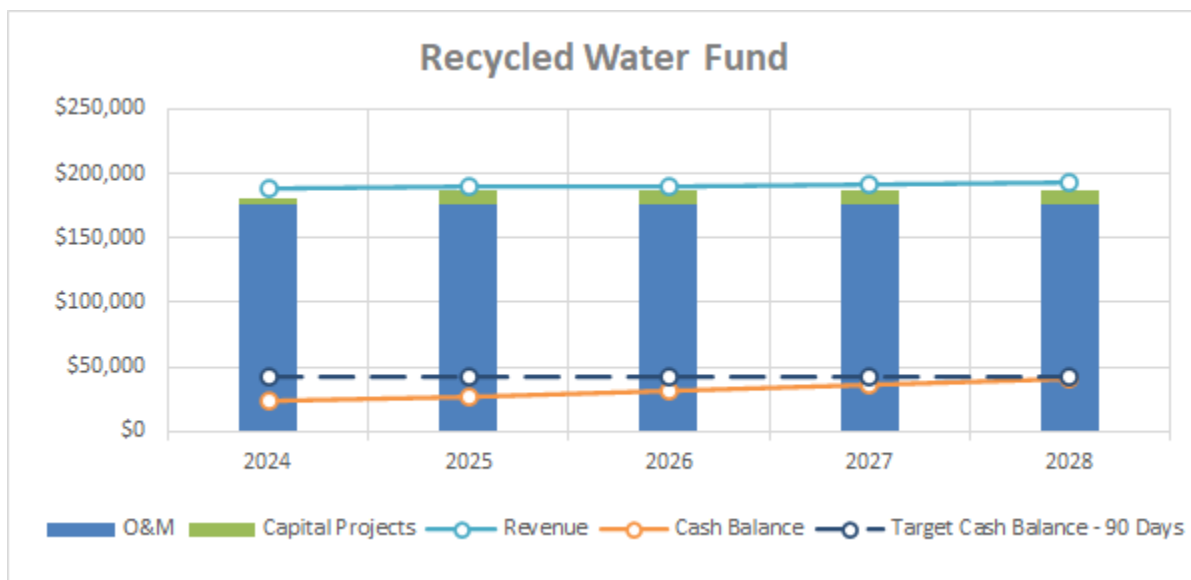


Figure 2-4 Recycled Water Cash Flow



### 3.0 Cost-of-Service Analysis

The cost-of-service analysis requires recovery of CSUCI's needed revenues from water and recycled water service rates, allocated to the customer class according to the service rendered. An equitable rate structure allocates the capture of revenue requirements to the customer class based on the quantity of water consumed, peak flows, and the number of bills.

In analyzing the Water and Recycled Water Utilities' cost of service for allocation to its customer class, Black & Veatch selected the annual revenue requirements for FY 2024 as the Test Year (TY) 2024 requirements to demonstrate the development of cost-of-service water and recycled water rates. Table 3-1 summarizes the total costs of service that need to be recovered from water user rates. Table 3-2 summarizes the total costs of service that need to be recovered from recycled water user rates.

**Table 3-1 Cost of Service Revenue from Rates (Water)**

Line No.	Description	Operating Expense	Capital Cost	Total Cost
		(\$)	(\$)	(\$)
<b>Revenue Requirements</b>				
1	O&M Expenses	346,500	0	346,500
2	Debt Service	0	0	0
3	Capital Projects	0	50,000	50,000
4	Subtotal	\$ 346,500	\$ 50,000	\$ 396,500
<b>Less Revenue Requirements Met from Other Sources</b>				
5	Passthrough Revenues	319,900	0	319,900
6	Other Income	0	0	0
7	Interest Income	0	0	0
8	Subtotal	\$ 319,900	\$ 0	\$ 319,900
<b>Adjustments</b>				
9	Adj for Annual Cash Balance	(14,500)	0	(14,500)
10	Adj to Annualize Rate Increase	0	0	0
11	Subtotal	\$ (14,500)	\$ 0	\$ (14,500)
12	COS to be Recovered from Rates	\$ 41,100	\$ 50,000	\$ 91,100

**Table 3-2 Cost of Service Revenue from Rates (Recycled Water)**

Line No.	Description	Operating Expense	Capital Cost	Total Cost
		(\$)	(\$)	(\$)
<b>Revenue Requirements</b>				
1	O&M Expenses	176,200	0	176,200
2	Debt Service	0	0	0
3	Capital Projects	0	5,000	5,000
4	Subtotal	\$ 176,200	\$ 5,000	\$ 181,200
<b>Less Revenue Requirements Met from Other Sources</b>				
5	Passthrough Revenues	173,300	0	173,300
6	Other Income	0	0	0
7	Interest Income	0	0	0
8	Subtotal	\$ 173,300	\$ 0	\$ 173,300
<b>Adjustments</b>				
9	Adj for Annual Cash Balance	(7,600)	0	(7,600)
10	Adj to Annualize Rate Increase	0	0	0
11	Subtotal	\$ (7,600)	\$ 0	\$ (7,600)
12	COS to be Recovered from Rates	\$ 10,500	\$ 5,000	\$ 15,500

The total revenue requirement shown in Line 4 corresponds with Table 2-7, Line 16, and Table 2-8, Line 16. As shown in Line 8, respectively, we deduct revenues from other sources to derive the net revenue requirement recovered through rates, which correspond with Table 2-7, Line 12, and Table 2-8, Lines 12 and 10.

Line 11 represents the net annual cash balance during the TY. If the enterprise is drawing down funds already in the utility, this number is positive. The number will be negative if the enterprise is replacing funds. In the case of the Water Utility, the \$14.5k figure indicates that the forecast is projecting a positive cash balance for the year. In the case of the Recycled Water Utility, the \$7.6k figure indicates that the forecast is projecting a positive cash balance for the year.

### 3.1 Functional Cost Components

The first step in conducting a cost-of-service analysis involves analyzing the cost of providing water and recycled water service by system function to allocate the costs to the customer class properly and, subsequently, design rates. As a basis for allocating costs of service to the customer class, the study separates costs into the following four basic functional cost components: (1) Base; (2) Extra Capacity; (3) Customer; and (4) Direct Assignment, described as follows:

- Base costs represent operating and capital costs of the system associated with service to customers to the extent required under constant or average annual load conditions without the elements necessary to meet water consumption variations or peak demands.
- Extra Capacity costs represent operating and capital costs incurred to meet peaking demands. Peaking demands represent water consumption more than the average rate of use.

- Customer costs are those expenditures that tend to vary in proportion to the number of customers connected to the system. These include meter reading, billing, collecting, accounting, maintenance, and capital costs associated with meters and services.
- Direct costs are specifically incurred to serve specific customers and are so charged. These costs are specific to CWD direct costs.

### 3.1.1 Allocation to Cost Components

The next step of the cost-of-service process involves allocating each cost element to functional cost components based on the parameter or parameters having the most significant influence on the magnitude of that cost element. O&M expenses are allocated directly to appropriate cost components. A detailed allocation of related capital investment is used as a proxy for allocating capital and replacement costs. The separation of costs into functional components provides a means for distributing such costs to the customers based on their respective responsibilities for each type of service.

### 3.1.2 System Base, Max Day, and Max Hour Allocations

The water and recycled water systems consist of various facilities designed and operated to fulfill a given function. For the systems to provide adequate service to its customers, it must be capable of meeting the annual volume requirements and the maximum demand rates placed on the system. Because not all customers and types of customers exert maximum demand simultaneously, the capacities of the various facilities must meet the maximum coincidental demand of all customer classes. Each water and recycled water service facility within the systems has an underlying average demand exerted by the customers to whom the base cost component applies. For those facilities designed solely to meet average day demand, 100% of the costs go to the base cost component. Extra capacity requirements associated with coincidental demands consist of maximum daily and hourly demand subcomponents.

The first step in determining the allocation percentages for volume-related cost allocations is to assign system peaking factors. The base element equals the average daily demand (ADD) and is assigned a value of 1.0. Based on Camrosa Water District's Integrated Facilities Master Plan, the Water Utility's maximum day (max day) demand is estimated at 1.93 times the ADD. The maximum hourly (max hour) demand is estimated at 2.32 times the ADD. Based on Camrosa Water District's Integrated Facilities Master Plan, the Recycled Water Utility's max day demand is estimated at 2.20 times the ADD. The max hour demand is estimated at 4.40 times the ADD.

The costs associated with facilities required to meet maximum day demand are allocable to base and maximum day extra capacity, as shown below for the Water Utility. Recycled Water Utility would use a similar allocation based on its maximum day and hour ratios.

- Base =  $(1.0/1.93) \times 100 = 51.8\%$
- Max Day =  $(1.93 - 1.0)/1.93 \times 100 = 48.2\%$

These calculations indicate that the average or base use requires 51.8% of the capacity of facilities designed and generated to meet maximum day demand, and the remaining 48.2% meets maximum day extra capacity requirements.

The costs associated with facilities required to meet maximum hour demand are allocable to base, maximum day extra capacity, and maximum hour extra capacity as follows:

- Base =  $(1.0/2.32) \times 100 = 43.2\%$



- Max Day =  $(1.93 - 1.0)/2.32 \times 100 = 40.2\%$
- Max Hour =  $(2.32 - 1.93)/2.32 \times 100 = 16.7\%$

### 3.1.3 Allocation of Operating and Maintenance Expenses

In allocating O&M expenses for TY 2024, costs are directly allocated to the cost components to the extent possible. The Water and Recycled Water Utilities book operating costs by functional categories. Therefore, Black & Veatch used the factors noted in Section 3.1 to allocate the operating expenses to the cost components. The allocation basis for water and recycled water are shown in Table 3-3 and Table 3-5, respectively. Table 3-4 and Table 3-6 represent the allocation of O&M to the cost components. Next, revenues are subtracted from other sources, as shown in Table 3-1 and Table 3-2, Lines 8 and 11. The analysis deducts any drawdown of available cash balances and normalizes the rate adjustments for a full year to determine the net O&M costs for each utility.

**Table 3-3 Allocation Basis for O&M Expenses (Water)**

Line No.	Description	Common to All Customers					Camrosa Water District (%)	Fire Protection (%)	Allocation Basis
		Base	Extra Capacity		Customer				
		Base (%)	Max. Day (%)	Max. Hour (%)	Meters (%)	Cust/Bill. (%)			
<b>Operating Expenses</b>									
1	Salary & Wages	42.2%	40.2%	16.7%	0.0%	0.0%	0.0%	1.0%	T&D
2	Fringe Benefits	42.2%	40.2%	16.7%	0.0%	0.0%	0.0%	1.0%	T&D
3	Collection & Billing	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	Customer
4	Materials & Services	42.2%	40.2%	16.7%	0.0%	0.0%	0.0%	1.0%	T&D
5	Materials & Services (CWD)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	CWD

**Table 3-4 Allocation of O&M Expenses (Water)**

Line No.	Description	Total Costs (\$)	Common to All Customers					Camrosa Water District (\$)	Fire Protection (\$)
			Base	Extra Capacity		Customer			
			Base (\$)	Max. Day (\$)	Max. Hour (\$)	Meters (\$)	Cust/Bill. (\$)		
<b>Operating Expenses</b>									
1	Salary & Wages	11,700	4,900	4,700	2,000	0	0	0	100
2	Fringe Benefits	8,000	3,400	3,200	1,300	0	0	0	100
3	Collection & Billing	6,900	0	0	0	0	6,900	0	0
4	Materials & Services	0	0	0	0	0	0	0	0
5	Materials & Services (CWD)	319,900	0	0	0	0	0	319,900	0
6	Total O&M Expenses	\$ 346,500	\$ 8,300	\$ 7,900	\$ 3,300	\$ 0	\$ 6,900	\$ 319,900	\$ 200
Less Other Revenue									
7	Pass Throughs (CWD)	319,900	0	0	0	0	0	319,900	0
8	Miscellaneous Revenues	0	0	0	0	0	0	0	0
9	Other Adjustments	(14,500)	(4,500)	(4,300)	(1,800)	0	(3,800)	0	(100)
10	Net Operating Expenses	\$ 41,100	\$ 12,800	\$ 12,200	\$ 5,100	\$ 0	\$ 10,700	\$ 0	\$ 300

**Table 3-5 Allocation Basis for O&M Expenses (Recycled Water)**

Line No.	Description	Common to All Customers					Camrosa Water District (%)	Allocation Basis
		Base	Extra Capacity		Customer			
		Base (%)	Max. Day (%)	Max. Hour (%)	Meters (%)	Cust/Bill. (%)		
<b>Operating Expenses</b>								
1	Salary & Wages	22.7%	27.3%	50.0%	0.0%	0.0%	0.0%	T&D
2	Fringe Benefits	22.7%	27.3%	50.0%	0.0%	0.0%	0.0%	T&D
3	Collection & Billing	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	Customer
4	Materials & Services	22.7%	27.3%	50.0%	0.0%	0.0%	0.0%	T&D
5	Materials & Services (CWD)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	CWD

**Table 3-6 Allocation of O&M Expenses (Recycled Water)**

Line No.	Description	Total Costs	Common to All Customers					Camrosa Water District
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust./Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
<b>Operating Expenses</b>								
1	Salary & Wages	1,300	200	400	700	0	0	0
2	Fringe Benefits	900	200	200	500	0	0	0
3	Collection & Billing	800	0	0	0	0	800	0
4	Materials & Services	0	0	0	0	0	0	0
5	Materials & Services (CWD)	173,300	0	0	0	0	0	173,300
10	Total O&M Expenses	\$ 176,300	\$ 400	\$ 600	\$ 1,200	\$ 0	\$ 800	\$ 173,300
Less Other Revenue								
11	Pass Throughs (CWD)	173,300	0	0	0	0	0	173,300
12	Miscellaneous Revenues	0	0	0	0	0	0	0
13	Other Adjustments	(7,600)	(1,100)	(1,500)	(3,000)	0	(2,000)	0
14	Net Operating Expenses	\$ 10,600	\$ 1,500	\$ 2,100	\$ 4,200	\$ 0	\$ 2,800	\$ 0

### 3.1.4 Allocation of Capital Investments

In allocating the capital investment for TY 2024, the existing fixed assets (which serve as a proxy for the current capital investments) are allocated directly to cost components to the extent possible. Since CSUCI could not separate utility fixed assets in the fixed asset register, the analysis relied on planned capital project functions. The allocation basis for water and recycled water is shown in Table 3-7 and Table 3-9, respectively. Table 3-8 and Table 3-9 shows the total allocation of existing system investment serving water and recycled water customers. The total capital investment of \$50.0k is shown on Line 14 for the Water Utility and \$5.0k on Line 13 for the Recycled Water Utility.

**Table 3-7 Allocation Basis for Capital Costs (Water)**

Line No.	Description	Common to All Customers					Fire Protection	Allocation Basis
		Base	Extra Capacity		Customer			
		Base	Max. Day	Max. Hour	Meters	Cust./Bill.		
		(%)	(%)	(%)	(%)	(%)		
<b>Plant Assets</b>								
1	Land	49.2%	28.2%	11.6%	10.0%	0.0%	1.0%	Average Net Plant
2	Source of Supply	99.0%	0.0%	0.0%	0.0%	0.0%	1.0%	Source of Supply
3	Pumping	50.8%	48.2%	0.0%	0.0%	0.0%	1.0%	Pumping
4	Reservoirs	10.0%	0.0%	89.0%	0.0%	0.0%	1.0%	Reservoirs
5	Treatment	50.8%	48.2%	0.0%	0.0%	0.0%	1.0%	Treatment
6	Transmission & Distribution	42.2%	40.2%	16.7%	0.0%	0.0%	1.0%	T&D
7	Meters & Services	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	Meters & Services
8	Hydrants	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	Hydrants
9	General Plant	49.2%	28.2%	11.6%	10.0%	0.0%	1.0%	Average Net Plant

**Table 3-8 Allocation of Capital Costs (Water)**

Line No.	Description	Total Costs	Common to All Customers					Fire Protection
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
<b>Plant Assets</b>								
1	Land	0	0	0	0	0	0	0
2	Source of Supply	10,000	9,900	0	0	0	0	100
3	Pumping	0	0	0	0	0	0	0
4	Reservoirs	0	0	0	0	0	0	0
5	Treatment	0	0	0	0	0	0	0
6	Transmission & Distribution	35,000	14,700	14,100	5,800	0	0	400
7	Meters & Services	5,000	0	0	0	5,000	0	0
8	Hydrants	0	0	0	0	0	0	0
9	General Plant	0	0	0	0	0	0	0
10	Total Plant Assets	\$ 50,000	\$ 24,600	\$ 14,100	\$ 5,800	\$ 5,000	\$ 0	\$ 500
11	Capital Cost	\$ 50,000	\$ 24,600	\$ 14,100	\$ 5,800	\$ 5,000	\$ 0	\$ 500
<b>Less Other Revenue</b>								
12	Miscellaneous Revenues	0	0	0	0	0	0	0
13	Other Adjustments	0	0	0	0	0	0	0
14	Net Capital Expenses	\$ 50,000	\$ 24,600	\$ 14,100	\$ 5,800	\$ 5,000	\$ 0	\$ 500

**Table 3-9 Allocation Basis for Capital Costs (Recycled Water)**

Line No.	Description	Common to All Customers					Allocation Basis
		Base	Extra Capacity		Customer		
		Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(%)	(%)	(%)	(%)	(%)	
<b>Plant Assets</b>							
1	Land	22.0%	28.0%	50.0%	0.0%	0.0%	Average Net Plant - RW
2	Source of Supply	100.0%	0.0%	0.0%	0.0%	0.0%	Source of Supply
3	Pumping	45.5%	54.5%	0.0%	0.0%	0.0%	Pumping
4	Reservoirs	10.0%	0.0%	90.0%	0.0%	0.0%	Reservoirs
5	Treatment	45.5%	54.5%	0.0%	0.0%	0.0%	Treatment
6	Transmission & Distribution	22.7%	27.3%	50.0%	0.0%	0.0%	T&D
7	Meters & Services	0.0%	0.0%	0.0%	100.0%	0.0%	Meters & Services
8	General Plant	22.0%	28.0%	50.0%	0.0%	0.0%	Average Net Plant - RW

**Table 3-10 Allocation of Capital Costs (Recycled Water)**

Line No.	Description	Total Costs	Common to All Customers				
			Base	Extra Capacity		Customer	
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
<b>Plant Assets</b>							
1	Land	0	0	0	0	0	0
2	Source of Supply	0	0	0	0	0	0
3	Pumping	0	0	0	0	0	0
4	Reservoirs	0	0	0	0	0	0
5	Treatment	0	0	0	0	0	0
6	Transmission & Distribution	5,000	1,100	1,400	2,500	0	0
7	Meters & Services	0	0	0	0	0	0
8	General Plant	0	0	0	0	0	0
9	Total Plant Assets	\$ 5,000	\$ 1,100	\$ 1,400	\$ 2,500	\$ 0	\$ 0
10	Capital Cost	\$ 5,000	\$ 1,100	\$ 1,400	\$ 2,500	\$ 0	\$ 0
<b>Less Other Revenue</b>							
11	Miscellaneous Revenues	0	0	0	0	0	0
12	Other Adjustments	0	0	0	0	0	0
13	Net Capital Expenses	\$ 5,000	\$ 1,100	\$ 1,400	\$ 2,500	\$ 0	\$ 0

## 3.2 Units of Service

To properly recognize the cost of service, the customer class receives its share of base, maximum day, peak hour, and customer costs. Following the allocation of costs, the total cost responsibility for the customer class is developed using unit costs of service for each cost function and assigning those costs to the customer class based on their respective service requirements. The number of units of service required for the customer class provides a means for the proportionate distribution of costs previously allocated to respective cost categories.

Table 3-11 summarizes the estimated TY 2024 units of service for the customers. Base costs vary with the volume of water consumed and distributed to the customers on that basis. Extra Capacity costs are those associated with meeting peak demand rates of water use and distributed to the customers based on the respective class capacity requirements more than average rates of use. Black & Veatch followed the capacity factor methodology outlined in Appendix A of the AWWA M1 Manual to derive peak consumption information from the monthly consumption records in CSUCI's billing data, which helps estimate the maximum day and peak hour ratios. The number of bills for each customer serves as the basis for distributing customer billing requirements. Customer meter requirements are allocated for each customer class on an equivalent meter (EM) basis. The estimated number of equivalent meters for each customer relies on the total number of meters serving respective classes and the hydraulic capacity ratio of the meters to the 5/8 x 3/4-inch meter. The equivalent meter ratios adopted in this analysis are consistent with the AWWA M1 Manual.

## 3.3 Cost of Service Allocations

The Study applies the unit costs of service to the customer class's service requirements to determine the cost of service for the customer class. The total unit costs of service applied to the respective requirements for the customer class result in the total cost of service for the customer class.

### 3.3.1 Units Costs of Service

The TY 2024 unit cost of service for each functional cost component is simply the total cost divided by the applicable units of service, as shown in Table 3-13 and Table 3-15. On Line 4, the total costs represent the cost that rates need to recover, as demonstrated in Table 3-1, Line 12 for the Water Utility, and Table 3-2, Line 12 for the Recycled Water Utility. The net O&M cost includes O&M less revenue from other sources and adjustments. The net capital cost includes capital revenue from other sources and adjustments. Line 5 represents the unit costs for the entire water and recycled water systems. After that, the unit costs are used to allocate the costs to the customer class.

### 3.3.2 Distribution of Costs of Service to Customer Classes

Applying the unit costs to the units to the customer class produces the customer class costs. This process is illustrated in Table 3-14 and Table 3-16, in which unit costs are applied to the customer class units of service for TY 2024. The costs attributable to the customer class reflect the functional cost components described in Section 3.1. The customer class places a burden on the system in different ways, and thus the allocation of the units represents this burden.

An example of the application of unit costs is shown below for illustrative purposes.

	Base Component	
Unit Cost (Table 3-13, Line 5)	\$	0.52 per HCF
All Customer Consumption (Table 3-14, Line 1)		71,908 HCF
Total Allocated Cost	\$	37,400

Please note that the numbers within the tables are rounded, yet the calculations are done based on non-rounded values; therefore, results might vary.

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**Table 3-11 Units of Service (Water)**

Line No.	Description	Consumption		Maximum Day			Maximum Day			Meters	Cust/Bills	Fire Protection
		Annual	Avg. Day	Factor	Total	Extra	Factor	Total	Extra			
	Column Reference	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Units of Measure	(HCF)	(HCF/day)		(HCF/day)	(HCF/day)		(HCF/day)	(HCF/day)	(EMs)	(bills)	(EMs)
1	All Customers	71,908	197	213%	420	223	283%	558	138	1,024	5,808	
2	Subtotal	71,908	197		420	223		558	138	1,024	5,808	
<b>Fire Service</b>												
3	Public Fire				722	722		5,775	5,053	0	0	2,000
4	Subtotal	0	0		722	722		5,775	5,053	0	0	2,000
5	Total System	71,908	197		1,142	945		6,333	5,191	1,024	5,808	2,000

**Table 3-12 Units of Service (Recycled Water)**

Line No.	Description	Consumption		Maximum Day			Maximum Day			Meters	Cust/Bills
		Annual	Avg. Day	Factor	Total	Extra	Factor	Total	Extra		
	Column Reference	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Units of Measure	(HCF)	(HCF/day)		(HCF/day)	(HCF/day)		(HCF/day)	(HCF/day)	(EMs)	(bills)
1	All Customers	66,902	183	181%	332	148	242%	444	112	212	216
2	Subtotal	66,902	183		332	148		444	112	212	216
3	Total System	66,902	183		332	148		444	112	212	216

**Table 3-13 Units Cost of Service (Water)**

Line No.	Description	Total Costs	Common to All Customers					Camrosa Water District	Fire Protection
			Base	Extra Capacity		Customer			
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.		
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
<b>Water</b>									
1	Net Operating Expense	41,100	12,800	12,200	5,100	0	10,700	0	300
2	Capital Costs	50,000	24,600	14,100	5,800	5,000	0	0	500
3	Total Cost of Service	\$ 91,100	\$ 37,400	\$ 26,300	\$ 10,900	\$ 5,000	\$ 10,700	\$ 0	\$ 800
4	Units of Service (Total)		71,908	945	5,191	1,024	5,808	71,908	2,000
			HCF	HCF/Day	HCF/Day	Eq. Meters	Bills	HCF	Eq. Meters
5	Cost per Unit		\$ 0.52	\$ 27.84	\$ 2.10	\$ 4.88	\$ 1.84	\$ 0.00	\$ 0.40
			per HCF	per HCF/Day	per HCF/Day	per Eq. Meter	per Bill	per HCF	per Eq. Meter

**Table 3-14 Distribution of Costs to Customer Classes (Water)**

Line No.	Description	Total Costs	Common to All Customers					Camrosa Water District	Fire Protection
			Base	Extra Capacity		Customer			
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.		
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
<b>All Customers</b>									
1	Units		71,908	223	138	1,024	5,808	71,908	0
2	Allocation of costs of service	59,600	37,400	6,200	300	5,000	10,700	0	0
<b>Fire Service</b>									
<b>Public Fire</b>									
3	Units			722	5,053				2,000
4	Allocation of costs of service	31,500		20,100	10,600				800
5	<b>TOTAL COSTS OF SERVICE</b>	<b>\$ 91,100</b>	<b>\$ 37,400</b>	<b>\$ 26,300</b>	<b>\$ 10,900</b>	<b>\$ 5,000</b>	<b>\$ 10,700</b>	<b>\$ 0</b>	<b>\$ 800</b>

**Table 3-15 Units Cost of Service (Recycled Water)**

Line No.	Description	Total Costs	Common to All Customers					Camrosa Water District
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
<b>Water</b>								
1	Net Operating Expense	10,500	1,400	2,100	4,200	0	2,800	0
2	Capital Costs	5,000	1,100	1,400	2,500	0	0	0
3	<b>Total Cost of Service</b>	<b>\$ 15,500</b>	<b>\$ 2,500</b>	<b>\$ 3,500</b>	<b>\$ 6,700</b>	<b>\$ 0</b>	<b>\$ 2,800</b>	<b>\$ 0</b>
4	Units of Service (Total)		66,902	148	112	212	216	66,902
5	Cost per Unit		HCF	HCF/Day	HCF/Day	Eq. Meters	Bills	HCF
		\$	0.04	\$ 23.57	\$ 59.92	\$ 0.00	\$ 12.96	\$ 0.00
			per HCF	per HCF/Day	per HCF/Day	per Eq. Meter	per Bill	per HCF

**Table 3-16 Distribution of Costs to Customer Classes (Recycled Water)**

Line No.	Description	Total Costs	Common to All Customers					Camrosa Water District
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
All Customers								
1	Units		66,902	148	112	212	216	66,902
2	Allocation of costs of service	15,500	2,500	3,500	6,700	0	2,800	0
3	TOTAL COSTS OF SERVICE	\$ 15,500	\$ 2,500	\$ 3,500	\$ 6,700	\$ 0	\$ 2,800	\$ 0



## 4.0 Rate Design

The initial consideration in deriving rate schedules for water and recycled water service is establishing equitable charges to the customer class that are commensurate with the cost of providing that service. While the cost-of-service allocations to the customer class should not be construed as literal or exact determinations, they offer a guide to the necessity and extent of rate adjustments. Practical considerations sometimes modify rate adjustments by considering additional factors such as the extent of bill impacts, existing contracts, and historical local policies and practices.

### 4.1 Existing Rates

The existing rates of the Water and Recycled Water Utilities consist of a fixed component in the form of a monthly fixed charge and a variable component in the form of a consumption charge. The fixed charge is based on meter size. The consumption charge is based on units of consumption (1 unit = 1 HCF = 748 gallons). Table 2-3, presented earlier in this report, summarizes the existing water and recycled water rates.

### 4.2 Proposed Rates

The cost-of-service analysis described in the preceding sections of this report provides a basis for the design of proposed water and recycled water rates.

#### 4.2.1 Monthly Fixed Charge

Black & Veatch used meter ratios based on maximum operating capacities by meter size as shown in AWWA M1, Table B-1, which recognizes that as meter size increases, so does the capacity. For example, customers with a 4" meter expect to be able to use more water (at a higher flow capacity) than customers with a ¾" meter. Consequently, CSUCI's water system must maintain assets sized accordingly and capable of providing customers the level of service expected from their meter connection when the tap turns on. The monthly fixed charge recovers all costs associated with CSUCI direct costs and maintenance and capacity costs associated with public fire protection, regardless of the level of water consumed.

Table 4-1 demonstrates the water cost elements incorporated into the monthly fixed charge for FY 2024. Table 4-2 shows the Water Utility five-year fixed service charge rate schedule.

**Table 4-1 Costs within the Monthly Fixed Charge for FY 2024 (Water)**

Meter Size	Fixed Costs			Public Fire Service			Total Service Charge
	Unit Cost	Meter Ratio	Adjusted Unit Cost	Unit Cost	Meter Ratio	Adjusted Unit Cost	
	per EM			per EM			\$/Month
5/8" x 3/4"	4.85	1.00	4.85	2.56	1.00	2.56	7.42
1"	4.85	1.67	8.09	2.56	1.67	4.27	12.36
1-1/2"	4.85	3.33	16.17	2.56	3.33	8.55	24.72
2"	4.85	5.33	25.88	2.56	5.33	13.68	39.55
3"	4.85	10.67	51.75	2.56	10.67	27.35	79.11
4"	4.85	16.67	80.86	2.56	16.67	42.74	123.60
6"	4.85	33.33	161.73	2.56	33.33	85.48	247.21
8"	4.85	53.33	258.76	2.56	53.33	136.76	395.53
10"	4.85	80.00	388.15	2.56	80.00	205.14	593.29

**Table 4-2 Proposed Monthly Fixed Charge (Water)**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Fixed Charge (\$/Month)</b>					
3/4"	7.42	7.42	7.42	7.42	7.42
1"	12.36	12.36	12.36	12.36	12.36
1-1/2"	24.72	24.72	24.72	24.72	24.72
2"	39.55	39.55	39.55	39.55	39.55
3"	79.11	79.11	79.11	79.11	79.11
4"	123.60	123.60	123.60	123.60	123.60
6"	247.21	247.21	247.21	247.21	247.21
8"	395.53	395.53	395.53	395.53	395.53
10"	593.29	593.29	593.29	593.29	593.29

Table 4-3 demonstrates the recycled water cost elements incorporated into the monthly fixed charge for FY 2024. Table 4-4 shows the Recycled Water Utility five-year fixed service charge rate schedule.

**Table 4-3 Costs within the Monthly Fixed Charge for FY 2024 (Recycled Water)**

Meter Size	Fixed Costs			Total Service Charge
	Unit Cost	Meter Ratio	Adjusted Unit Cost	
	per EM		\$	\$/Month
5/8" x 3/4"	6.09	1.00	6.09	6.09
1"	6.09	1.67	10.15	10.15
1-1/2"	6.09	3.33	20.31	20.31
2"	6.09	5.33	32.49	32.49
3"	6.09	10.67	64.99	64.99
4"	6.09	16.67	101.55	101.55
6"	6.09	33.33	203.09	203.09
8"	6.09	53.33	324.95	324.95
10"	6.09	80.00	487.42	487.42

**Table 4-4 Proposed Monthly Fixed Charge (Recycled Water)**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Fixed Charge (\$/Month)</b>					
3/4"	6.09	6.43	6.78	7.15	7.55
1"	10.15	10.71	11.30	11.92	12.58
1-1/2"	20.31	21.43	22.60	23.85	25.16
2"	32.49	34.28	36.17	38.16	40.26
3"	64.99	68.56	72.33	76.31	80.51
4"	101.55	107.13	113.02	119.24	125.80
6"	203.09	214.26	226.05	238.48	251.60
8"	324.95	342.82	361.67	381.57	402.55
10"	487.42	514.23	542.51	572.35	603.83

## Sewer Utility

### 5.0 Revenue and Revenue Requirements

To meet the costs associated with providing sewer services to its customers, the Sewer Utility derives revenue from sewer user charges (rates). Black & Veatch has projected the future revenue generated in the Study by analyzing historical and future system growth in terms of the number of customers and sewage flow. This section also projects the expenses, or revenue requirements, necessary to operate and maintain the system, invest in capital improvements, and cover other sewer system expenses.

#### 5.1 Customer and Sewage Flow Projections

##### 5.1.1 Customer Classes

The Sewer Utility’s customer base includes 11 customers that are treated as one customer class:

- Anacapa Village, Channel Islands Power, Freudian Sip, Islands Café, Lighthouse Café, Santa Rosa Village, Santa Cruz Village, Student Union, Carden School, University Glen, and Anacapa Canyon.

CSUCI provides sewer services through connections. While the sewer connections do not have meters, the usage through the water meter is assumed to contribute to sewage flow; therefore, meter connections are important in this analysis. CSUCI bills customers based on the number of bills determined by meter size and the number of connections times 12. In the analysis, the number of bills is used to determine the fixed charge. The projected total number of bills is expected to remain constant for the Sewer Utility. The largest change will incur in FY 2024 with the addition of Anacapa Canyon. After that addition, the customer base is expected to remain flat for the Study period.

Table 5-1 summarizes the projected number of bills for the Sewer Utility.

**Table 5-1 Customer Bills**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(bills)	(bills)	(bills)	(bills)	(bills)
<b>Sewer</b>						
1	All Customers	5,808	5,808	5,808	5,808	5,808
2	Total	5,808	5,808	5,808	5,808	5,808

##### 5.1.2 Sewage Flow

Table 5-2 shows the projected sewage flow for the Study period. Black & Veatch assumed a steady sewage flow pattern in determining the projected sewage flow. CWD uses sewage flow to determine EDUs. In FY 2023, CWD estimated 131 gallons per day (gpd) per EDU.

**Table 5-2 Sewage Flow**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(HCF)	(HCF)	(HCF)	(HCF)	(HCF)
<b>Sewer</b>						
1	All Customers	71,908	71,908	71,908	71,908	71,908
2	Total (HCF)	71,908	71,908	71,908	71,908	71,908
3	Total (Acre-Feet)	165	165	165	165	165

## 5.2 Revenue under Existing Rates

Sewer user rates serve as the primary source of revenue for the Sewer Utility. Therefore, the level of future rate revenue is important in developing a long-range financial plan. Rate revenue is determined by multiplying the projected system growth by the number of bills and EDUs by the applicable rates to determine sewer rate revenue.

Table 5-3 shows the Sewer Utility’s current schedule of charges. It is important to note that CWD determines the EDU charge.

**Table 5-3 Existing Sewer Rates**

Description	Fiscal Year
	2024
<b>Fixed Charge (\$/Month)</b>	Wastewater
3/4"	7.04
1"	12.03
1-1/2"	24.48
2"	39.50
3"	87.05
4"	149.49
6"	224.51
8"	374.47
<b>EDU Charges (\$/EDU)</b>	
All Customers	43.05

Table 5-4 summarizes projected sewer rate revenue under existing rates. The projected Sewer Utility revenues are constant at \$313.4k between FY 2024 and FY 2028. The revenue generated from the pass-through is paid to CWD for services and therefore does not remain with CSUCI.

**Table 5-4 Projected Revenue under Existing Rates**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
	<b>Sewer</b>					
1	All Customers	91,050	91,050	91,050	91,050	91,050
2	All Customers (Pass-through)	222,300	222,300	222,300	222,300	222,300
3	Total	\$ 313,350	\$ 313,350	\$ 313,350	\$ 313,350	\$ 313,350

## 5.3 Other Revenue

Usually, utilities generate other sources of operating revenue from sewer lateral video inspections, sewer clean-out installations, engineering plan review, sewer installation and relocation, interest on investments, and other miscellaneous revenues. CSUCI does not have other operating revenues.

## 5.4 Operating and Maintenance Expenses

Table 5-5 summarizes the Sewer Utility's projected O&M expense for the Study period. These expenses include costs related to salaries and benefits and materials and services.

- **Salaries & Benefits** - These costs are associated with salaries and benefits paid to employees that dedicate partial time to service the utilities. The staff consists of managers, plumbers, and budget analysts handling meter readings, sewer jetting, collection main repair, pump station inspections, fixtures inspections, customer billing, and budget projection and advisement.
- **Materials & Services** - These costs are associated with collection system maintenance services provided by Ventura Regional Sanitation District for CSUCI customers.
- **Materials & Services (CWD)** - These costs are associated with wastewater treatment services from Camrosa Water District for CSUCI customers. These costs represent 72.6% of total operating costs.

**Table 5-5 O&M Expenses**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
<b>Sewer</b>						
1	Salaries & Benefits	26,600	27,400	28,200	29,000	29,900
2	Materials & Services	51,500	53,500	55,500	57,600	59,800
3	Materials & Services (CWD)	222,300	222,300	222,300	222,300	222,300
4	Total	\$ 300,400	\$ 303,200	\$ 306,000	\$ 308,900	\$ 312,000

As shown in Table 5-5, Sewer Utility's O&M expenses increase from \$300.4k in FY 2024 to \$312.0k in FY 2028.

## 5.5 Capital Improvement Program

The Sewer Utility developed a capital expenditure budget to address identified sewer system needs. These expenditures were identified in the ISES Corporation assessment in 2021. The expenditures are identified by function but include inspections, maintenance, and rehabilitation and replacement requirements.

Table 5-6 summarizes the Sewer Utility capital projects for FY 2024 through FY 2028. The Sewer Utility is projecting \$105.5k in investment over the Study period, including capital and replacement projects.

**Table 5-6 Capital Improvement Projects**

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
		(\$)	(\$)	(\$)	(\$)	(\$)
<b>Wastewater</b>						
1	Collection	20,000	20,500	21,100	21,700	22,200
2	Total	\$ 20,000	\$ 20,500	\$ 21,100	\$ 21,700	\$ 22,200

## 5.6 Reserves

A utility typically establishes reserves for several reasons, such as covering shortfalls in operating revenues and day-to-day operating costs and easing the burden on ratepayers associated with large rate

increases. Black & Veatch recommends the establishment of an operating reserve to help CSUCI manage revenues and expense obligation fluctuations.

An operating reserve represents working capital the utility maintains to cover day-to-day expenses and maintain enough funds to cover accounts receivables if there are supplier issues, periods of lower-than-expected sewer sales, or unforeseen cost increases. The reserve will maintain a minimum balance of 90 days of operating expenses once fully funded.

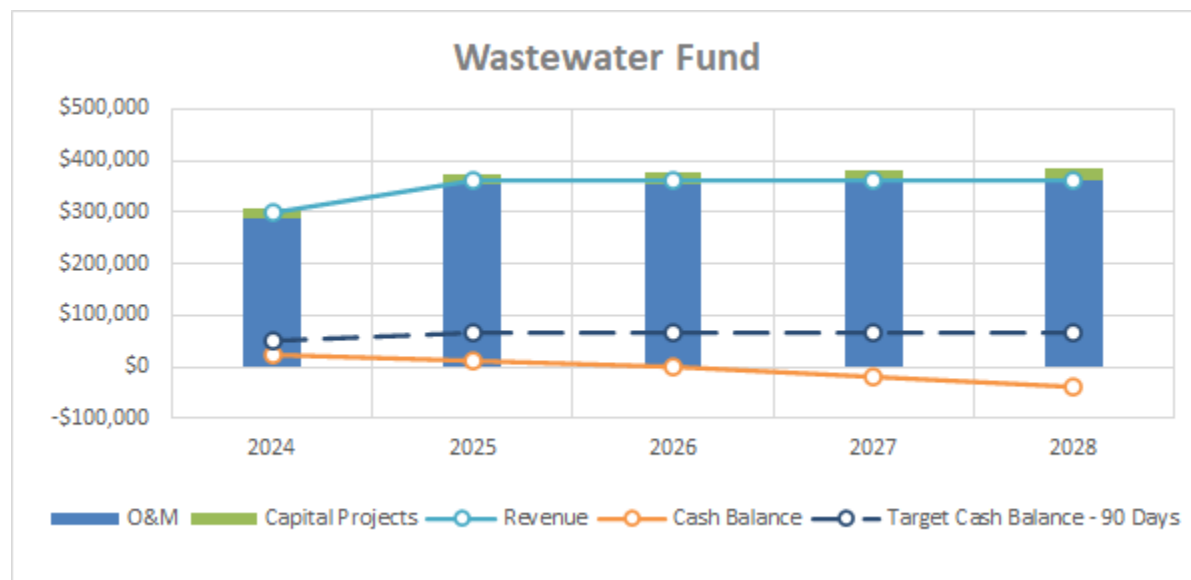
Having an operating reserve will help the Sewer Utility with liquidity, provide operational flexibility, and demonstrate fiscal responsibility.

### 5.7 Projected Operating Results

The revenue requirements of the Sewer Utility consist of O&M expenses, capital expenditures, and reserve requirements.

To fully understand the current condition of the Sewer Utility, it is important to examine the cash flow projections under the status quo scenario, as shown in Figure 5-1. The status quo conditions project that the utility would operate below the target cash balance of 90 days of operating expenses and, without revenue adjustments, would be in a deficit position by FY 2027. In this scenario, the Sewer Utility would not impose any revenue increases over the Study Period and continue to incur O&M expenses and pay for the execution of the planned capital expenditures.

Figure 5-1 Status Quo Cash Flow (Sewer)



The analyses performed for the Study indicate that CSUCI should implement the proposed revenue increases shown in Table 5-7 if it wishes to keep the Sewer Utility in a balanced financial condition. The revenue increases represent the total revenue adjustment needed to meet revenue requirements. The revenue adjustment does not represent adjustments to the individual rates but reflects the overall level of revenue needed to meet the Sewer Utility’s obligations.

The suggested revenue increases help the Sewer Utility meet the following goals:

- Meet budgeted operating obligations in the five FYs.

- Meet planned capital investments in the five FYs.
- Achieve an operating reserve of 90 days of operating expenses by FY 2025.

Shown in Table 5-7 is a summary of the proposed financial plan for the Study Period. The financial plan consists of 1) Revenue and 2) Revenue Requirements.

#### Revenue

- Line 1 is the revenue under existing rates.
- Lines 2 through 6 are the additional revenue generated from the required annual revenue increases. The additional revenue generated directly reflects the number of months the increase is effective for; therefore, the amount might be calculated at less than that stated amount.
- Line 8 is the total revenue generated from user charges.
- Line 12 represents other operating revenues.
- Line 13 represents the total revenues for the utility.

#### Revenue Requirements

- Line 16 represents the O&M expenses. The O&M expenses include the costs from CWD, which is directly offset by Line 9.
- Line 18 represents the capital expenditures identified in Table 5-6.
- Line 19 represents the total revenue requirements for the utility.

Line 22 represents the net cumulative cash balance within the financial plan. To the extent possible, the net cumulative cash balance intends to match Line 23. The cash balance reserve is required to ensure the utility can continue in the event of a supplier interruption, market price fluctuations of critical equipment or supplies, or an abrupt drop in account receivables. The reserve target minimum is 90 days of O&M expenses.

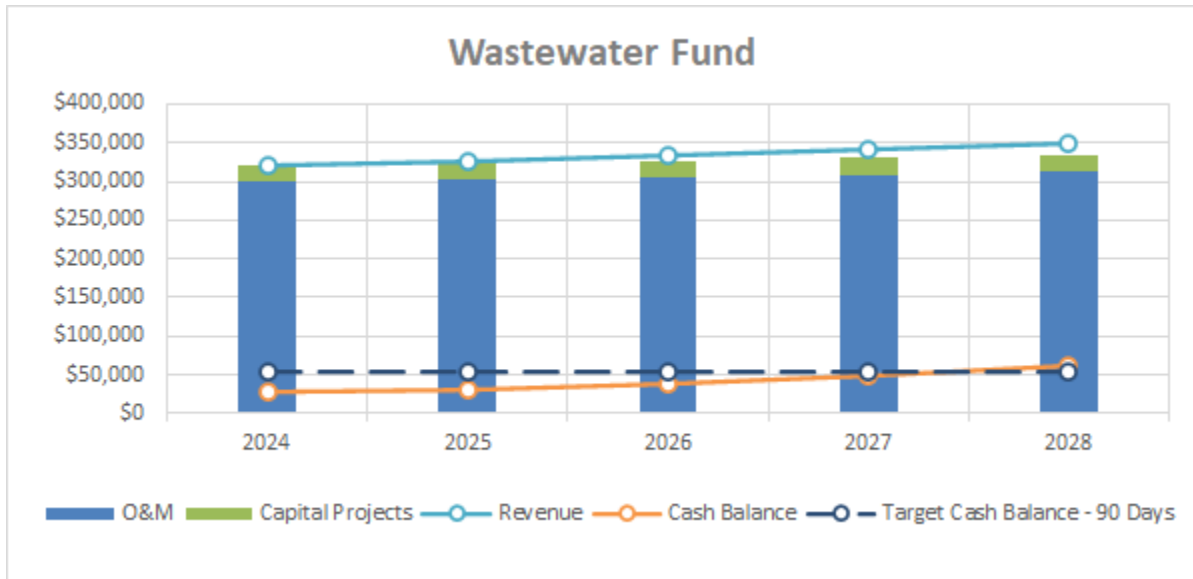
Table 5-7 Financial Plan (Sewer)

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Revenue</b>						
Rate Revenue						
1	Revenue from Existing Rates	91,100	91,100	91,100	91,100	91,100
Months						
	Year	Effective	Rate Adj			
2	2024	12	6.75%	6,100	6,100	6,100
3	2025	12	6.75%		6,600	6,600
4	2026	12	6.75%			7,000
5	2027	12	6.75%			7,500
6	2028	12	6.75%			8,000
7	Increased Rev Due to Adj's			6,100	12,700	19,700
8	Subtotal	\$		97,200	\$	103,800
					\$	110,800
					\$	118,300
					\$	126,300
Other Operating Revenue						
9	Passthrough Revenues	222,300	222,300	222,300	222,300	222,300
10	Other Income	0	0	0	0	0
11	Interest Income	0	0	0	0	0
12	Subtotal	\$		222,300	\$	222,300
					\$	222,300
					\$	222,300
13	<b>Total Revenue</b>	<b>\$</b>		<b>319,500</b>	<b>\$</b>	<b>326,100</b>
					<b>\$</b>	<b>333,100</b>
					<b>\$</b>	<b>340,600</b>
					<b>\$</b>	<b>348,600</b>
<b>Revenue Requirements</b>						
Operating & Maintenance						
14	O&M Expenses	78,100	80,900	83,700	86,600	89,700
15	CWD Passthrough	222,300	222,300	222,300	222,300	222,300
16	Subtotal	\$		300,400	\$	303,200
					\$	306,000
					\$	308,900
					\$	312,000
Capital Projects						
17	Capital Improvement Program	20,000	20,500	21,100	21,700	22,200
18	Subtotal	\$		20,000	\$	20,500
					\$	21,100
					\$	21,700
					\$	22,200
19	<b>Total Revenue Requirements</b>	<b>\$</b>		<b>320,400</b>	<b>\$</b>	<b>323,700</b>
					<b>\$</b>	<b>327,100</b>
					<b>\$</b>	<b>330,600</b>
					<b>\$</b>	<b>334,200</b>
20	Net Annual Cash Balance	(900)	2,400	6,000	10,000	14,400
21	Beginning Fund Balance	29,200	28,300	30,700	36,700	46,700
22	Net Cumulative Fund Balance	\$		28,300	\$	30,700
					\$	36,700
					\$	46,700
					\$	61,100
23	Min. Operating Resvs (90 Days)	54,800	54,800	54,800	54,800	54,800

Figure 5-2 presents the proposed financial plan.



Figure 5-2 Sewer Cash Flow



## 6.0 Cost-of-Service Analysis

The cost-of-service analysis requires that the utility recover needed revenues from rates for sewer service, which are allocated to the customer class according to the service rendered. An equitable rate structure allocates the capture of revenue requirements to the customer class based on the number of bills and sewage volume.

In analyzing the Sewer Utility's cost of service for allocation to its customer class, Black & Veatch selected the annual revenue requirements for FY 2024 as the Test Year 2024 requirements to demonstrate the development of cost-of-service sewer rates. Table 6-1 summarizes the total costs of service that need to be recovered from sewer user rates.

**Table 6-1 Cost of Service Revenue from Rates (Sewer)**

Line No.	Description	Operating Expense	Capital Cost	Total Cost
		(\$)	(\$)	(\$)
<b>Revenue Requirements</b>				
1	O&M Expenses	300,400	0	300,400
2	Debt Service	0	0	0
3	Capital Projects	0	20,000	20,000
4	Subtotal	\$ 300,400	\$ 20,000	\$ 320,400
<b>Less Revenue Requirements Met from Other Sources</b>				
5	Passthrough Revenues	222,300	0	222,300
6	Other Income	0	0	0
7	Interest Income	0	0	0
8	Subtotal	\$ 222,300	\$ 0	\$ 222,300
<b>Adjustments</b>				
9	Adj for Annual Cash Balance	900	0	900
10	Adj to Annualize Rate Increase	0	0	0
11	Subtotal	\$ 900	\$ 0	\$ 900
12	COS to be Recovered from Rates	\$ 77,200	\$ 20,000	\$ 97,200

The total revenue requirement is shown in Line 4, which corresponds with Table 5-7, Line 16. As shown in Line 8, we deduct revenues from other sources to derive the net revenue requirement recovered through rates, corresponding with Table 5-7, Line 12.

Line 11 represents the net annual cash balance during the TY. If the enterprise is drawing down funds already in the utility, this number is positive. The number will be negative if the enterprise is replacing funds. In the case of the Sewer Utility, the \$900 figure indicates that the forecast is projecting a negative cash balance for the year.

### 6.1 Functional Cost Components

The first step in conducting a cost-of-service analysis involves analyzing the cost of providing sewer service by system function to allocate the costs to the customer class properly and, subsequently, design rates. As a basis for allocating costs of service among the customer class, costs are separated into the

following three basic functional cost components: (1) Volume; (2) Customer; and (3) Direct Assignment, described as follows:

- Volume costs represent the operating and capital costs of the system associated with collection. The collection costs vary directly with the quantity of sewage flow.
- Customer costs are those expenditures that tend to vary in proportion to the number of customers connected to the system. These include meter reading, billing, collecting, accounting, maintenance, and capital costs associated with meters and services.
- Directly assigned costs are specifically identified as those incurred to serve specific customers. These costs are specific to CWD direct costs.

## 6.2 Allocation to Cost Components

The next step of the cost-of-service process involves allocating each cost element to functional cost components based on the parameter or parameters having the most significant influence on the magnitude of that cost element. O&M expenses are allocated directly to appropriate cost components. A detailed allocation of related capital investment is used as a proxy for allocating capital and replacement costs. The separation of costs into functional components provides a means for distributing such costs to customer classes based on their respective responsibilities for each type of service.

### 6.2.1 Volume Allocations

The sewer system consists of various facilities designed and operated to fulfill a given function. For the system to provide adequate service to its customers, it must be capable of meeting the annual volume requirements placed on the system. Each sewer service facility within the system has an underlying volume demand exerted by all customers for whom the volume cost component applies. For those facilities designed solely to meet volume demand, 100% of the costs go to the base cost component.

### 6.2.2 Allocation of Operating and Maintenance Expenses

In allocating O&M expenses for TY 2024, costs are directly allocated to the cost components to the extent possible. The Sewer Utility books operating costs by functional categories. Therefore, Black & Veatch used the factors noted in Section 5.1 to allocate the operating expenses to the cost components. The allocation basis for sewer is shown in Table 6-2. Table 6-3 represents the allocation of O&M to the cost components. Next, revenues are subtracted from other sources, as shown in Table 6-1, Lines 8 and 11. The analysis deducts any drawdown of available cash balances and normalizes the rate adjustments for a full year to determine the net O&M costs for the utility.

**Table 6-2 Allocation Basis for O&M Expenses (Sewer)**

Line No.	Description	Common to All Customers		Camrosa Water District	Allocation Basis
		Volume	Customer		
		(%)	(%)	(%)	
<b>Operating Expenses</b>					
1	Salary & Wages	100.0%	0.0%	0.0%	Collection
2	Fringe Benefits	100.0%	0.0%	0.0%	Collection
3	Collection & Billing	0.0%	100.0%	0.0%	Customer
4	Materials & Services (CWD)	0.0%	0.0%	100.0%	CWD
5	Materials & Services (All)	100.0%	0.0%	0.0%	Collection

**Table 6-3 Allocation of O&M Expenses (Sewer)**

Line No.	Description	Total Costs	Common to All Customers		Camrosa Water District
			Volume	Customer	
		(\$)	(\$)	(\$)	(\$)
<b>Operating Expenses</b>					
1	Salary & Wages	11,700	11,700	0	0
2	Fringe Benefits	8,000	8,000	0	0
3	Collection & Billing	6,900	0	6,900	0
4	Materials & Services (CWD)	222,300	0	0	222,300
5	Materials & Services (All)	51,500	51,500	0	0
6	Total O&M Expenses	\$ 300,400	\$ 71,200	\$ 6,900	\$ 222,300
Less Other Revenue					
7	Pass Throughs (CWD)	222,300	0	0	222,300
8	Miscellaneous Revenues	0	0	0	0
9	Other Adjustments	900	800	100	0
10	Net Operating Expenses	\$ 77,200	\$ 70,400	\$ 6,800	\$ 0

### 6.2.3 Allocation of Capital Investments

In allocating the capital investment for TY 2024, the existing fixed assets (which serve as a proxy for the current capital investments) are allocated directly to cost components to the extent possible. Since CSUCI could not separate utility fixed assets in the fixed asset register, the analysis relied on planned capital project functions. The allocation basis is shown in Table 6-4. Table 6-5 shows the total allocation of existing system investment serving sewer customers. The total capital investment of \$20.0k is shown on Line 14.

**Table 6-4 Allocation Basis for Capital Costs (Sewer)**

Line No.	Description	Common to All Customers		Allocation Basis
		Volume	Customer	
		(%)	(%)	
<b>Plant Assets</b>				
1	Land	100.0%	0.0%	Average Net Plant - WW
2	Collection	100.0%	0.0%	Collection
3	Pump Station	100.0%	0.0%	Lift Station
4	Treatment	100.0%	0.0%	Treatment
5	General Plant	100.0%	0.0%	Average Net Plant - WW

Table 6-5 Allocation of Capital Costs (Sewer)

Line No.	Description	Total Costs	Common to All Customers	
			Volume	Customer
		(\$)	(\$)	(\$)
<b>Plant Assets</b>				
1	Land	0	0	0
2	Collection	20,000	20,000	0
3	Pump Station	0	0	0
4	Treatment	0	0	0
5	General Plant	0	0	0
6	Total Plant Assets	\$ 20,000	\$ 20,000	\$ 0
7	Capital Cost	\$ 20,000	\$ 20,000	\$ 0
Less Other Revenue				
8	Miscellaneous Revenues	0	0	0
9	Other Adjustments	0	0	0
10	Net Capital Expenses	\$ 20,000	\$ 20,000	\$ 0

### 6.3 Units of Service

To properly recognize the cost of service, the customer class receives its share of volume and customer costs. Following the allocation of costs, the total cost responsibility for the customer class is developed using unit costs of service for each cost function and assigning those costs to the customer class based on the respective service requirements. The number of units of service required for the customer class provides a means for the proportionate distribution of costs previously allocated to respective cost categories.

Table 6-6 summarizes the estimated TY 2024 units of service for the customers. Volume costs vary with the volume of contributed sewage flow and are distributed to the customers on that basis. The number of bills for each customer serves as the basis for distributing customer cost requirements.

### 6.4 Cost of Service Allocations

The Study applies the unit costs of service to the customer class's respective service requirements to determine the cost of service for the customer class. The total unit costs of service applied to the respective requirements for the customer class result in the total cost of service for the customer class.

#### 6.4.1 Units Costs of Service

The TY 2024 unit cost of service for each functional cost component is simply the total cost divided by the applicable units of service, as shown in Table 6-7. On Line 4, the total costs represent the cost that rates need to recover, as demonstrated in Table 6-1, Line 12. The net O&M cost includes O&M less revenue from other sources and adjustments. The net capital cost includes capital revenue from other sources and adjustments. Line 5 represents the unit costs for the entire sewer system regardless of the customer class. After that, the unit costs are used to allocate the costs to the customer class.

#### 6.4.2 Distribution of Costs of Service to Customer Classes

Applying the unit costs to the units to the customer class produces the customer class costs. This process is illustrated in Table 6-8, in which unit costs are applied to the customer class units of service

for TY 2024. The costs attributable to the customer class reflect the functional cost components described in Section 5.1. The customer class places a burden on the system in different ways, and thus the allocation of the units represents this burden.

An example of the application of unit costs is shown below for illustrative purposes.

	Base Component
Unit Cost (Table 6-7, Line 5)	\$ 1.26 per HCF
All Customer Consumption (Table 6-8, Line 1)	71,908 HCF
Total Allocated Cost	\$ 90,400

Please note that the numbers within the tables are rounded, yet the calculations are done based on non-rounded values; therefore, results might vary.

**Table 6-6 Units of Service (Sewer)**

Line No.	Description	No. of Connections	Volume	Bills
	Column Reference	(1)	(2)	(3)
	Units of Measure	(EDUs)	HCF	bills
1	All Customers	5,165	71,908	5,808
2	Subtotal	5,165	71,908	5,808
3	Total System	5,165	71,908	5,808

**Table 6-7 Units Cost of Service (Sewer)**

Line No.	Description	Total Costs	Common to All Customers		Camrosa Water District
			Volume	Customer	
		(\$)	(\$)	(\$)	(\$)
	<b>Wastewater</b>				
1	Net Operating Expense	77,200	70,400	6,800	0
2	Capital Costs	20,000	20,000	0	0
3	Total Cost of Service	\$ 97,200	\$ 90,400	\$ 6,800	\$ 0
4	Units of Service (Total)		71,908	5,808	5,165
			HCF	Bills	EDU
5	Cost per Unit		\$ 1.26	\$ 1.17	\$ 0.00
			per HCF	per Bill	per EDU

**Table 6-8 Distribution of Costs to Customer Classes (Sewer)**

Line No.	Description	Total Costs	Common to All Customers		Camrosa Water District
			Volume	Customer	
		(\$)	(\$)	(\$)	(\$)
All Customers					
1	Units		71,908	5,808	71,908
2	Allocation of costs of service	97,200	90,400	6,800	0
3	<b>TOTAL COSTS OF SERVICE</b>	<b>\$ 97,200</b>	<b>\$ 90,400</b>	<b>\$ 6,800</b>	<b>\$ 0</b>

## 7.0 Rate Design

The initial consideration in deriving rate schedules for sewer service is establishing equitable charges to the customer class that are commensurate with the cost of providing that service. While the cost-of-service allocations to the customer class should not be construed as literal or exact determinations, they offer a guide to the necessity and extent of rate adjustments. Practical considerations sometimes modify rate adjustments by considering additional factors such as the extent of bill impacts, existing contracts, and historical local policies and practices.

### 7.1 Existing Rates

The existing rates of the Sewer Utility consist of a fixed component in the form of a monthly fixed charge and a monthly service charge component in the form of an EDU charge. The fixed charge is based on meter size. The EDU charge is based on equivalent dwellings, which is determined based on units of consumption. Table 5-3, presented earlier in this report, summarizes the existing sewer rates.

### 7.2 Proposed Rates

The cost-of-service analysis described in the preceding sections of this report provides a basis for the design of proposed sewer rates.

#### 7.2.1 Monthly Fixed Charge

Black & Veatch used meter ratios based on maximum operating capacities by meter size as shown in AWWA M1, Table B-1, which recognizes that as meter size increases, so does the capacity. For example, customers with a 4" meter expect to be able to use more water (at a higher flow capacity) and generate more sewage flow than customers with a ¾" meter. Consequently, CSUCI's sewer system must maintain assets sized accordingly and capable of providing customers the level of service expected from their meter connection when the tap turns on. The monthly fixed charge recovers all costs associated with CSUCI direct costs regardless of the level of sewage flow.

Table 7-1 demonstrates the sewer cost elements incorporated into the monthly fixed charge for FY 2024. Table 7-2 shows the Sewer Utility five-year fixed service charge rate schedule.

**Table 7-1 Costs within the Monthly Fixed Charge for FY 2024 (Sewer)**

Meter Size	Fixed Costs			Total Service Charge
	Unit Cost	Meter Ratio	Adjusted Unit Cost	
	per EM		\$	\$/Month
5/8" x 3/4"	7.91	1.00	7.91	7.91
1"	7.91	1.67	13.19	13.19
1-1/2"	7.91	3.33	26.38	26.38
2"	7.91	5.33	42.20	42.20
3"	7.91	10.67	84.40	84.40
4"	7.91	16.67	131.88	131.88
6"	7.91	33.33	263.76	263.76
8"	7.91	53.33	422.01	422.01
10"	7.91	80.00	633.02	633.02



**Table 7-2 Proposed Monthly Fixed Charge (Sewer)**

Customer Class	Fiscal Year Ending June 30,				
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>Fixed Charge (\$/Month)</b>					
3/4"	7.91	8.45	9.02	9.63	10.28
1"	13.19	14.08	15.03	16.04	17.13
1-1/2"	26.38	28.16	30.06	32.09	34.25
2"	42.20	45.05	48.09	51.34	54.80
3"	84.40	90.10	96.18	102.67	109.60
4"	131.88	140.78	150.28	160.43	171.26
6"	263.76	281.56	300.57	320.86	342.51
8"	422.01	450.50	480.91	513.37	548.02
10"	633.02	675.75	721.36	770.05	822.03