

# City of Vacaville, CA

Report

## Comprehensive Water & Sewer Utility Rate Study





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# Section 1 – Executive Summary

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## 1.1 Introduction

Willdan Financial Services (Willdan) is pleased to submit to the City of Vacaville (City) the Water and Sewer Rate Study report (Report) for your consideration. Willdan has completed the study of the City's water and sewer rates and summarized the results of the investigations, analyses, and conclusions in this Report.

### 1.1.1 Water System Background

The City provides potable water to users within the city limits from water treatment plants, groundwater wells, booster pump stations, and reservoirs, via a network of water transmission and distribution mains.

The City's water supply comes from several sources, including Solano Project surface water from Lake Berryessa, State Water Project (SWP) surface water and Settlement Water from the North Bay Aqueduct (NBA), and groundwater currently being provided from nine of the City's twelve wells. Surface water from Lake Berryessa is provided through contract between the US Bureau of Reclamation and the Solano County Water Agency (SCWA) and is delivered by Solano Irrigation District (SID). This water is treated at either the North Bay Regional Water Treatment Plant (NBR Plant) or at the City Diatomaceous Earth Filter Water Treatment Plant (DE Plant). Groundwater is treated at the wellhead with chlorine to disinfect for pathogens and is then placed directly into the distribution system. All water is treated to meet Federal and State drinking water standards prior to customer use.

The City's distribution system consists of one main pressure zone, which primarily serves development with building pad elevations between 93 and 226 feet, and several upper pressure zones, which serve development above 226 feet. The system includes approximately 340 miles of distribution and transmission system mains that range in size from 2 to 30 inches in diameter. Approximately 31 miles of that length consists of pipelines 18 inches in diameter or larger. In addition, water is stored by the City in various elevated storage reservoirs, including six reservoirs in the main zone and five reservoirs in the upper pressure zones.

### 1.1.2 Sewer System Background

Along with water treatment and distribution services, the City also provides sewer treatment and collection services. The City has an adopted Sewer System Management Plan that responds to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems and provides a general framework for collection system operation, maintenance, and overflow prevention.

The City treats collected wastewater at the Easterly Wastewater Treatment Plant (EWWTP), located east of the City, near Elmira, which provides treatment of wastewater from



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residential, commercial, and industrial dischargers throughout the City. The treatment process consists of headworks, primary sedimentation basins, activated sludge aeration basins, secondary clarifiers, tertiary filtration, chlorination contact basins, and dichlorination facilities. The aeration basins provide nitrification and denitrification in addition to biological secondary treatment. The effluent from EWWTP is discharged into Old Alamo Creek adjacent to the EWWTP site, which ultimately ends up in the Sacramento-San Joaquin River Delta.

The City owns and operates the collection system, which consists of gravity and pressure sewers, lift stations, and associated facilities. The City performs routine wastewater collection system flow monitoring at various permanent metering locations throughout the city and at the EWWTP. Additionally, the City maintains a collection system model for the purpose of simulating peak flow conditions in major sewers to determine existing and future needs for collection system improvements.

### **1.1.3 Rate Study Background**

The City has focused a significant amount of attention and effort on strategic planning measures in all areas of utility operations to ensure that it is able to provide uninterrupted service to its customers, and so that it remains prepared for the future. As part of its ongoing strategic planning efforts, the City commissioned Willdan to perform a water and sewer rate study to analyze the revenue sources and expenditures of the water and sewer utility systems and provide recommendations for proposed rate and/or rate structure adjustments to meet the financial and administrative goals and objectives of the City. The primary objectives of the rate study include:

- Full recovery of costs related to utility operations (i.e., operating and maintenance costs, debt, and other expenditure requirements);
- Cost-based rate structures;
- Consistency with American Water Works (AWWA) and Water Environment Federation (WEF) guidelines;
- Equity among customer classes;
- Meeting substantive and procedural Proposition 218 requirements;
- Administrative efficiency (i.e., easy to understand and implement); and
- 5-Year capital funding plan.

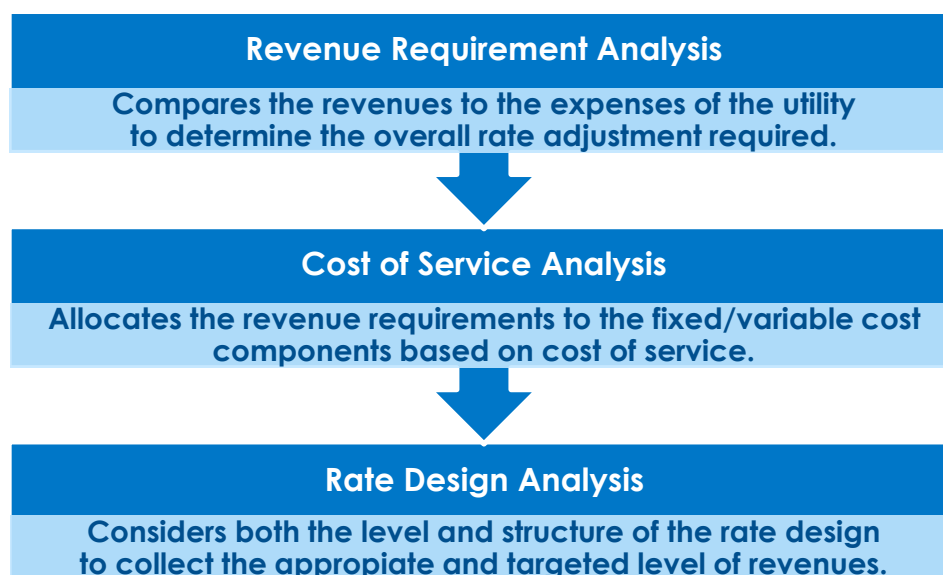
## **1.2 Overview of the Rate Study Process**

This study includes the development and presentation of a pro-forma water and sewer financial plan for a 5-year planning period, as well as the development of cost-based rates through a cost-of-service and rate design analysis. Utility rates must be set at a level such that operating, maintenance, debt, and capital expenses are funded with the revenues received from customers. In addition, the revenues generated from utility rates must only be



used for this purpose and for each system separately. This is a significant point, as failure to achieve the revenues needed can lead to unacceptable service levels and inadequately maintained facilities. Therefore, a rate study typically consists of the following three interrelated analyses:

- I. **Financial Planning/Revenue Requirement Analysis:** Creates a five-year plan to support an orderly, efficient program of on-going maintenance and operating costs, capital improvement and replacement activities, debt financing, and retirement of outstanding debt. In addition, the plan should fund and maintain appropriate reserve balances based on industry standards, as well as the City's fiscal policies and specific needs.
- II. **Cost-of-Service Analysis:** Identifies and apportions annual revenue requirements (i.e., expenditures) to operational and functional cost components based on the demand placed on the utility system. The purpose of this analysis is to develop rates that generate revenues relatively proportionate to the share of each utility's costs. This objective is consistent with industry standards as well as the requirements of Proposition 218 (Prop 218).
- III. **Rate Design:** Develops an equitable and proportionate fixed/variable schedule of rates for the City's customer base. The policy objectives are coordinated with Prop 218 requirements and cost-of-service objectives to achieve a balance between customer equity and financial stability goals. The balance of fixed and variable charges considers the need for a stable revenue source (the fixed charge) and the variable component of the rate structure accounts for customers placing higher costs on the system (through higher water and sewer use) by incurring a higher bill reflective of their impact on the system.





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This rate study utilizes generally accepted rate-making principles and standards established by industry experts such as the AWWA in its “M1 - Principles of Water Rates Fees and Charges” manual and WEF in its “Financing and Charges for Sewer Systems, Manual of Practice No. 27”. The principles established by these entities are used as guidelines in the development of the proposed rates for water and sewer. A discussion of some of the key principles of ratemaking is presented in the following subsection of this Report.

### 1.3 Summary of Proposed Rates

The rate study methodology applied in the development of updated water and sewer rates, outlined in this Report, consisted of reviewing the historical operating results of the water and sewer utility systems, analyzing the budget to identify the net revenue requirements to be recovered from user rate revenues, performing general cost-of-service allocations based on the rate components and functional cost categories, and revising the rates based on the applicable costs and expenditures to be recovered from user rates. In addition, an analysis of the system customers and usage characteristics was performed to identify the rate determinants since they drive the recommended rates, which are the primary sources for generating revenues. The allocated revenue requirements were utilized in conjunction with the rate determinants and rate structure to develop the proposed water and sewer rates.

The findings and conclusions of the rate analysis, as well as the resulting revised rate recommendations, were utilized to develop a projection of future operating results for a 5-year planning period from Fiscal Year (FY) 2026 (beginning July 1, 2025) through FY 2030 (ending June 30, 2030), herein referred to as the “Projection Period”. The purpose for developing the 5-year projections is to demonstrate the financial capability of the water and sewer revenues to support system operations and fund planned capital improvements. The analyses, findings and accompanying recommendations are presented in the subsequent sections of the Report.

The water and sewer rate analyses described in the Report are performed based on the general guidelines of the defined objectives, as well as common industry standards for setting utility rates. In addition to focusing on these major objectives, the rate analyses performed herein will consider other factors in designing rates. As will be discussed in detail later in the Report, such other rate considerations generally include sensitivity to the impact on existing customers, the relative comparability with neighboring utilities and the City’s existing rate structure. The proposed water and sewer rates for assumed implementation effective July 1, 2025 (or other such date as determined by the City) for FY 2025/26 (FY 2026, herein referred to as the “Test Year”) are provided in **Tables 1 and 2**, respectively. The existing rates are provided in **Tables 3 and 4**, respectively.



**Table 1 – Proposed Bi-Monthly Water Rates**

<b>Description</b>	<b>Rate</b>
<b>Bi-Monthly Fixed Charge by Meter Size:</b>	
5/8 Inch	\$ 50.40
3/4 Inch	\$ 69.97
1.0 Inch	\$ 109.11
1.5 Inch	\$ 206.97
2.0 Inch	\$ 324.39
3.0 Inch	\$ 598.37
4.0 Inch	\$ 989.77
6.0 Inch	\$ 1,968.27
8.0 Inch	\$ 3,142.47
Fire Protection	\$ 100.26
<b>Volumetric Rate Per 100 Cubic Feet:</b>	
All Flow	\$ 2.04



**Table 2 – Proposed Bi-Monthly Sewer Rates**

Description	Rate
<b>Bi-Monthly Fixed Charge:</b>	
Single-Family (per dwelling unit)	\$ 100.04
Multi-Family (per dwelling unit)	\$ 106.85
Non-Residential (per account) <sup>[1]</sup>	\$ 61.59
Industrial (per EDU) <sup>[2]</sup>	\$ 151.62
<b>Volumetric Rates Per 100 Cubic Feet:</b>	
Single-Family	\$ 2.14
Multi-Family <sup>[3]</sup>	\$ -
Non-Residential - Low Strength	\$ 4.40
Non-Residential - Medium Strength	\$ 9.42
Non-Residential - High Strength	\$ 12.60
Specific Industrial	\$ -
<b>Notes:</b>	
<p>[1] All "Non-Residential" customers will now pay a bi-monthly fixed fee per account under the proposed rate structure. "Non-Residential" customers do not pay a bi-monthly fixed fee under the existing rate structure.</p> <p>[2] For specific industrial customers that are billed monthly instead of bi-monthly, they will pay half of the bi-monthly rate per EDU.</p> <p>[3] Under the proposed rate structure, "Multi-Family" customers will now only pay a flat fee per dwelling unit regardless of usage.</p>	



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## Section 2 – Revenue Sufficiency Analysis

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### 2.1 Financial Planning Principles

While the individual rates for each of the utility systems vary based on a variety of factors, rates should be consistent with common rate-making principles within the utility industry. The guiding principle is that rates designed for any utility should provide a reasonable balance between several key factors. In general, the utility rates should:

- Generate a stable revenue stream that, when combined with other sources of funds, is sufficient to meet the expenditure requirements and goals of the system;
- Be based upon the proportionate cost of providing the service and not exceed the cost of providing the service – in compliance with California Proposition 218;
- Be equitable – that is, they should generate revenue from customer classes in a manner which is reasonably in proportion to the cost to provide service to that customer class;
- Be easy to understand by customers; and
- Be easy to administer by the utility.

Striking the appropriate balance between the principles of ratemaking is the result of a detailed process of evaluation of revenue requirements and cost-of-service, and how those translate into the rate design alternatives which meet legal requirements and the specific objectives of the utility under the circumstances in which it operates.

### 2.2 Existing Rates

The City has established user rates for water and sewer service that are applied to retail customers of the system. The rates charged for water and sewer services are approved by the City Council and are not subject to administrative review or approval by any other local or state agency. The City has historically adjusted rates, as necessary, to provide for recovery of financial obligations including operating expenses, debt service, capital expenditures and any other expenses and transfers.

The existing water rates consist of 1) a bi-monthly fixed charge that designates the minimum amount a customer will pay regardless of their water usage, and 2) a uniform volumetric rate per 100 cubic feet. The bi-monthly fixed charge varies based on the meter size. The volumetric rate is the same for all customer types and is uniform, such that the rate per 100 cubic feet remains the same regardless of the amount of water usage. The existing rates for water service are provided in **Table 3**.



**Table 3 – Existing Bi-Monthly Water Rates**

<b>Description</b>	<b>Rate</b>
<b>Bi-Monthly Fixed Charge by Meter Size:</b>	
5/8 Inch	\$ 34.90
3/4 Inch	\$ 52.30
1.0 Inch	\$ 87.14
1.5 Inch	\$ 174.24
2.0 Inch	\$ 278.90
3.0 Inch	\$ 522.92
4.0 Inch	\$ 871.48
6.0 Inch	\$ 1,742.98
8.0 Inch	\$ 2,788.62
Fire Protection	\$ 82.54
<b>Volumetric Rate Per 100 Cubic Feet:</b>	
All Flow	\$ 1.75

The existing sewer rates consist of 1) a bi-monthly fixed charge that applies to all residential customers by dwelling unit regardless of their usage, and 2) a volumetric rate component per 100 cubic feet that recovers the costs of collection and treatment of wastewater by customer type. The existing rates for sewer service are provided in **Table 4**.



**Table 4 – Existing Bi-Monthly Sewer Rates**

Description	Rate
<b>Bi-Monthly Fixed Charge:</b>	
Single-Family (per dwelling unit)	\$ 113.22
Multi-Family (per dwelling unit)	\$ 90.58
Non-Residential (per account)	\$ -
Industrial (per EDU)	\$ 127.50
<b>Volumetric Rates Per 100 Cubic Feet:</b>	
Single-Family	\$ 0.84
Multi-Family	\$ 0.84
Non-Residential - Low Strength	\$ 4.91
Non-Residential - Medium Strength	\$ 9.82
Non-Residential - High Strength	\$ 13.26
Specific Industrial	\$ -

## 2.3 Revenue Sufficiency Process

In evaluating whether the existing rates will generate sufficient revenue to meet the expenditure requirements of the water and sewer systems, the annual expenditures required for each utility (herein referred to as the “Revenue Requirements”) must be developed. The Revenue Sufficiency Analysis compares the forecasted revenues for each utility system under existing rates (including customer growth) to the projected Revenue Requirements.

### 2.3.1 Budget

The Revenue Sufficiency Analysis performed as part of this study and summarized in this Report utilizes the City’s Adopted Budget for FY 24/25 (the “Budget” for FY ending June 30, 2025) as one variable to determine the gross Revenue Requirements to be recovered from user rates over the Projection Period. The Budget, as prepared by the City, is provided on a line-item basis, and is used for projecting the budgeted financial needs for the Test Year and the remainder of the Projection Period. In developing the rate analysis, certain adjustments are made such that expenditures are categorized into either Operating and Maintenance (O&M) expenses or non-operating expenses. In addition, only recurring costs included in the current Budget were included as part of the Revenue Sufficiency Analysis for the entirety of the Projection Period. One-time costs were identified and evaluated in discussions with City Staff and removed if appropriate. Recurring annual costs were escalated using suitable indexes or escalation factors, again in discussion with City Staff. The O&M expenses are



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primarily those ongoing costs for labor, materials, chemicals, electricity, supplies, services, etc., required to manage and operate the utility system on a day-to-day basis while maintaining a dependable level of service. The O&M requirements are generally a function of a budgetary process and are directly related to the level of service provided to customers of the utility system. The non-operating expenses include such items as capital outlay and any other expenses & transfers.

The Budget also identifies estimated revenues to be derived from sources other than the retail water and sewer user rates. Such other revenue sources include interest earnings on investments, water meter sales and various other miscellaneous service charges. The revenues generated from the other sources are applied to the gross Revenue Requirements to reduce the amount of revenue required from user rates. The result is the net Revenue Requirement.

### **2.3.2 Capital Improvement Plan (CIP)**

The City provided a list of anticipated capital projects to be funded over the Projection Period. These are also included in the development of the gross Revenue Requirements. The capital projects provided by and identified by the City in the CIP are required in order to maintain uninterrupted service to customers by investing in improvements, repairs, or replacements of aging system components as they wear over time. The CIP also includes projects necessary to maintain compliance with State mandated standards for water quality. The City provided cost estimates for the identified capital projects by the fiscal year in which they are estimated to be undertaken for each system. The funding for these capital projects was then used in the analysis, along with O&M and non-operating expenses, to determine the gross Revenue Requirements for both the water and sewer systems. The capital projects included in the CIP (represented in \$1,000s), along with the assumed funding sources by fiscal year, for the Projection Period are provided in **Tables 5 and 6**.



**Table 5 – Water CIP (\$1,000s)**

Description	Projected for Fiscal Year Ending June 30,						Total
	2025	2026	2027	2028	2029	2030	
<b>Water:</b>							
Well 2B Equiping	\$ 1,808	\$ 2,051	\$ -	\$ -	\$ -	\$ -	\$ 3,860
Well 1 & 9 Emergency Rehab	750	-	-	-	-	-	750
Annual Well Rehab	-	-	750	750	750	750	3,000
Well No. 9 Chromium Treatment	1,670	3,341	3,341	-	-	-	8,352
Well No. 14 Chromium Treatment	1,670	3,341	3,341	-	-	-	8,352
Well No. 15 Potential Chromium Treatment	-	-	-	500	625	-	1,125
Well No. 16 Chromium Treatment	1,670	3,341	3,341	750	750	-	9,852
Onsite Chlorination (Wells 14, 15, and 16)	191	217	231	-	-	-	638
DE Plant - Rehab	-	-	1,910	2,034	2,166	2,307	8,416
Browns Valley Reservoir - Mixing System	400	-	-	-	-	-	400
Butcher Reservoir #1 - Interior Coating/Vault Improvements	230	1,784	-	-	-	-	2,014
Butcher Reservoir #2 - Interior Coating/Vault Improvements	-	-	2,173	-	-	-	2,173
Vine Street BPS - Rehabilitation	-	-	-	-	-	1,114	1,114
Vine Street Reservoir - Interior/ Exterior Coatings	-	-	-	-	-	1,045	1,045
Waterline Rehab & Replacement Program (WR)	350	397	1,570	2,573	2,740	2,918	10,549
Buck Avenue Pipelines (18") (West of Chestnut)	-	-	-	1,436	1,529	1,628	4,593
Stinson/West Monte Vista - Water Upsize	1,551	-	-	-	-	-	1,551
Downtown Specific Plan - Waterline Upsizing	6,953	-	-	-	-	-	6,953
Valve Replacement Program	265	301	320	341	363	387	1,976
Blow-off Relocation Program	-	-	-	386	-	-	386
Blow-off to Hydrant Program	-	-	-	-	411	-	411
PRV Rehabilitation Program	-	-	-	129	-	-	129
Meter replacements	213	1,000	1,000	425	425	306	3,369
<b>Total Water Projects</b>	<b>\$17,722</b>	<b>\$15,771</b>	<b>\$17,975</b>	<b>\$ 9,323</b>	<b>\$ 9,759</b>	<b>\$10,454</b>	<b>\$81,006</b>
<b>Funding Source</b>							
Cash Funding Source	\$ 7,271	\$ 10,760	\$ 12,965	\$ 8,698	\$ 9,072	\$ 10,454	\$ 59,220
Grant Funding Source	3,332	-	-	-	-	-	3,332
Debt Funding Source	-	-	-	-	-	-	-
DIF Funding Source	7,119	5,011	5,011	625	688	-	18,454
<b>Total Water Projects</b>	<b>\$17,722</b>	<b>\$15,771</b>	<b>\$17,975</b>	<b>\$ 9,323</b>	<b>\$ 9,759</b>	<b>\$10,454</b>	<b>\$81,006</b>

**Table 6 – Sewer CIP (\$1,000s)**

Description	Projected for Fiscal Year Ending June 30,						Total
	2025	2026	2027	2028	2029	2030	
<b>Sewer</b>							
Leisure Town LS Improvements	\$ 2,608	\$ 2,777	\$ -	\$ -	\$ -	\$ -	\$ 5,385
Vaca Valley LS Improvements	-	-	2,958	3,150	-	-	6,108
Lift Station Rehab Program	266	284	302	322	343	365	1,881
EWWTM Maintenance Program	533	567	604	643	685	730	3,761
Sewer Line Rehab & Replacement Program	1,065	1,134	1,208	1,286	1,370	1,459	7,523
Stinson/West Monte Vista - Water Upsize	4,975	-	-	-	-	-	4,975
Downtown Specific Plan - Waterline Upsizing	4,697	-	-	-	-	-	4,697
Birch Street Area Sewer Improvements	2,409	2,566	2,732	-	-	-	7,707
Identified Critical Repairs	-	1,276	1,359	-	-	-	2,635
Main Street / Elmira Road	-	-	-	2,768	2,948	3,140	8,856
I & I Study	53	57	60	64	69	73	376
I & I Reduction Program	373	397	423	450	480	511	2,633
Large Diameter CCTV	213	227	242	257	274	292	1,505
<b>Total Sewer Projects</b>	<b>\$ 17,191</b>	<b>\$ 9,284</b>	<b>\$ 9,888</b>	<b>\$ 8,941</b>	<b>\$ 6,168</b>	<b>\$ 6,569</b>	<b>\$ 58,040</b>
<b>Funding Source</b>							
Cash Funding Source	\$ 10,540	\$ 6,664	\$ 7,097	\$ 7,366	\$ 6,168	\$ 6,569	\$ 44,404
Grant Funding Source	1,336	-	-	-	-	-	1,336
Debt Funding Source	-	-	-	-	-	-	-
DIF Funding Source	5,315	2,620	2,790	1,575	-	-	12,300
<b>Total Sewer Projects</b>	<b>\$ 17,191</b>	<b>\$ 9,284</b>	<b>\$ 9,888</b>	<b>\$ 8,941</b>	<b>\$ 6,168</b>	<b>\$ 6,569</b>	<b>\$ 58,040</b>



### 2.3.3 Debt Service

The City currently has outstanding debt for both the water and sewer utilities. A minimum debt service coverage ratio of 1.20 times the net revenue is required to be maintained on an annual basis, based on the City's current bond covenants. In simple terms, this means the utilities must have \$1.20 in net operating revenues for every \$1.00 in debt they are committed to paying on existing debt. The debt service coverage is calculated by dividing net operating revenues (revenue less operations and maintenance expenses) by annual debt service. The annual existing debt payments over the Projection Period are provided in **Table 7**.

**Table 7 – Annual Debt Service Payments**

Description	Projected for Fiscal Year Ending June 30,				
	2026	2027	2028	2029	2030
<b>Water Annual Debt Service</b>					
Siemens Meter Replacement	\$ 763,900	\$ 387,595	\$ -	\$ -	\$ -
<b>Total Water Annual Debt Service</b>	<b>\$ 763,900</b>	<b>\$ 387,595</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Sewer Annual Debt Service</b>					
Tertiary SRF - Denitrification	\$ 2,145,315	\$ 2,145,315	\$ 2,145,315	\$ 2,145,315	\$ 2,145,315
Tertiary SRF - Laboratory	316,028	316,028	316,028	316,028	316,028
Tertiary SRF - Filtration	4,644,270	4,644,270	4,644,270	4,644,270	4,644,270
<b>Total Sewer Annual Debt Service</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>
<b>Total Annual Debt Service Payment</b>	<b>\$7,869,513</b>	<b>\$7,493,208</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>	<b>\$7,105,613</b>

### 2.3.4 Gross and Net Revenue Requirement

The proposed water and sewer rates developed in the Report are designed for assumed implementation in FY 2025/26 (the Test Year as previously defined). The projected Test Year gross and net Revenue Requirements are estimated by utilizing the Budget, actual debt service requirements as provided in the applicable debt service schedules, capital estimates and assumed funding sources for capital projects as provided by the City, along with anticipated transfers to reserves for funding capital projects. The Test Year Revenue Requirements that are used for developing the user rates proposed herein are detailed in **Appendix A** at the end of this report and summarized in **Table 8**.

**Table 8 – Test Year Revenue Requirements – FY 2026**

Description	Water	Sewer	Total
Total O&M	\$ 25,923,786	\$ 30,321,297	\$ 56,245,083
Debt Service	763,900	7,105,613	7,869,513
Other Expenditures & Transfers	4,004,013	1,593,237	5,597,250
<b>Gross Revenue Requirement</b>	<b>\$30,691,699</b>	<b>\$39,020,148</b>	<b>\$69,711,847</b>
Less Other Revenues	(934,000)	(1,241,000)	(2,175,000)
<b>Net Revenue Requirement</b>	<b>\$29,757,699</b>	<b>\$37,779,148</b>	<b>\$67,536,847</b>



The projected Revenue Requirements for the water and sewer systems over the entire Projection Period are provided in **Tables 9 and 10**.

**Table 9 – Water Revenue Requirements for the Projection Period**

Description	Projected for Fiscal Year Ending June 30,				
	2026	2027	2028	2029	2030
Total O&M	\$ 25,923,786	\$ 27,010,632	\$ 27,851,741	\$ 28,719,750	\$ 29,615,560
Existing Debt Service	763,900	387,595	-	-	-
Future Debt Service	-	-	-	-	-
Other Expenditures & Transfers	4,004,013	10,396,845	11,693,023	12,660,442	13,690,362
<b>Gross Revenue Requirement</b>	<b>\$ 30,691,699</b>	<b>\$ 37,795,071</b>	<b>\$ 39,544,764</b>	<b>\$ 41,380,192</b>	<b>\$ 43,305,922</b>
Less Other Revenues	(934,000)	(934,000)	(934,000)	(934,000)	(934,000)
<b>Net Revenue Requirement</b>	<b>\$ 29,757,699</b>	<b>\$ 36,861,071</b>	<b>\$ 38,610,764</b>	<b>\$ 40,446,192</b>	<b>\$ 42,371,922</b>

**Table 10 – Sewer Revenue Requirements for the Projection Period**

Description	Projected for Fiscal Year Ending June 30,				
	2026	2027	2028	2029	2030
Total O&M	\$ 30,321,297	\$ 31,295,579	\$ 32,283,185	\$ 33,304,167	\$ 34,360,134
Existing Debt Service	7,105,613	7,105,613	7,105,613	7,105,613	7,105,613
Future Debt Service	-	-	-	-	-
Other Expenditures & Transfers	1,593,237	3,073,206	4,295,543	5,625,601	7,078,508
<b>Gross Revenue Requirement</b>	<b>\$ 39,020,148</b>	<b>\$ 41,474,398</b>	<b>\$ 43,684,341</b>	<b>\$ 46,035,381</b>	<b>\$ 48,544,255</b>
Less Other Revenues	(1,241,000)	(1,241,000)	(1,241,000)	(1,241,000)	(1,241,000)
<b>Net Revenue Requirement</b>	<b>\$ 37,779,148</b>	<b>\$ 40,233,398</b>	<b>\$ 42,443,341</b>	<b>\$ 44,794,381</b>	<b>\$ 47,303,255</b>

## 2.4 Customers & Billable Flows

The rate study is heavily reliant upon a detailed analysis of system customers and accompanying usage and demand characteristics. The existing utility customer base and metered/billable flows provide the determinants utilized in the cost-of-service analysis, and ultimately in calculating the bi-monthly user rates and charges, which become the foundation for projecting future revenues generated by the water and sewer systems.

It is important to note that the customer and flow analysis focuses primarily on the customer classifications that will be subject to and impacted by the user rates and charges to be developed in the Report. This consists of the general service (retail) customers that currently pay for utility services pursuant to the existing user rates and charges as previously detailed. For the purposes of the rate study, it is these customers and their accompanying usage characteristics that will generate revenues based upon the proposed user rates and charges.



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## 2.4.1 Customer Billing Analysis

For the rate study, detailed bi-monthly billing information was provided for each customer. This data offered a breakdown of water and sewer customers by class, usage characteristics and billed charges. The historical billing data was queried from the City's electronic billing records. An analysis of the billing data was conducted to obtain an understanding of existing customers, customer classes, demand and usage characteristics, and metered usage per customer class. In accordance with the data, as well as discussions with the City staff, the utility system provides service to various identifiable retail customer classes consisting of:

- Single-Family Residential
- Multi-Family Residential
- Commercial/Non-Residential
- Industrial, and
- Institutional.

Each of these customer classes embodies certain common characteristics in their utility use and service demand profiles that provide the basis for establishing an equitable allocation of system costs. The billing data was utilized to identify the number of customer accounts and dwelling units within each class, the applicable equivalent residential units (ERUs) based on meter size, the metered/billable usage profiles, and sewer strength characteristics.

The historical customer data was also utilized to establish growth trends for each customer classification. The growth trends were then used to project the average number of customers within each class for the Test Year plus the remaining years of the Projection Period.

## 2.5 Financial Projections Under Existing Rates

The projected customers and accompanying billable flows were applied to the existing rates to develop a projection of user revenues that would be generated under existing rates. The revenues then compared to the projected revenue requirements/expenditures to determine if revenue adjustments are needed. Based on this comparison, it is projected that under the existing rates, neither the water nor sewer systems would meet their collective projected O&M financial obligations, debt service payments or coverage requirements, cost of capital projects, and transfers that are anticipated to be funded with cash reserves. Therefore, revenue increases are required to generate additional cash to fund projected costs of operations and capital projects, meet debt service requirements, and maintain adequate cash reserves. In addition, the City has established an objective of maintaining at least 180 days of cash reserves to help fund ongoing operations in the event of periodic fluctuations in cash flow, and to address unexpected needs that may require cash funding. The cash-flow statements outlining the projected operating results under existing rates are summarized in **Tables 11** and **12** for the water and sewer systems, respectively. The proposed rates and projected financial results are addressed in the subsequent sections of this Report.



**Table 11 – Water System Projected Operating Results Under Existing Rates (\$1,000s)**

Description	Projected for Fiscal Year Ending June 30, (\$1,000s)				
	Existing 2026	2027	2028	2029	2030
<b>Revenues:</b>					
Water Sales	\$ 24,193	\$ 24,363	\$ 24,538	\$ 24,715	\$ 24,896
Other Revenues	934	934	934	934	934
<b>Total Revenues</b>	<b>\$ 25,127</b>	<b>\$ 25,297</b>	<b>\$ 25,472</b>	<b>\$ 25,649</b>	<b>\$ 25,830</b>
O&M Expenses	(25,646)	(26,386)	(27,148)	(27,933)	(28,742)
<b>Net Income For Debt</b>	<b>\$ (519)</b>	<b>\$ (1,089)</b>	<b>\$ (1,676)</b>	<b>\$ (2,284)</b>	<b>\$ (2,911)</b>
<b>Debt Service:</b>					
Existing	\$ (764)	\$ (388)	\$ -	\$ -	\$ -
Future	-	-	-	-	-
<b>Total Debt Service</b>	<b>\$ (764)</b>	<b>\$ (388)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Net Results</b>	<b>\$ (1,283)</b>	<b>\$ (1,476)</b>	<b>\$ (1,676)</b>	<b>\$ (2,284)</b>	<b>\$ (2,911)</b>
<b>Debt Coverage</b>	<b>0.00</b>	<b>0.00</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Fund Balance Activity:</b>					
<b>Operating Fund - Water</b>					
Beginning Fund Balance	\$ 1,502	\$ 219	\$ (1,257)	\$ (2,933)	\$ (5,218)
Deposit/(Withdrawal) from Operations	(1,283)	(1,476)	(1,676)	(2,284)	(2,911)
Deposit/(Withdrawal) fr/(to) Capital Fund	-	-	-	-	-
Deposit/(Withdrawal) fr/(to) Equip Replacement Fund	-	-	-	-	-
<b>Ending Fund Balance</b>	<b>\$ 219</b>	<b>\$ (1,257)</b>	<b>\$ (2,933)</b>	<b>\$ (5,218)</b>	<b>\$ (8,129)</b>
<b>Capital Fund - Water</b>					
Beginning Fund Balance	\$ 8,922	\$ (1,838)	\$ (14,803)	\$ (23,501)	\$ (32,573)
Net Transfers In/(Out)	-	-	-	-	-
Cash Funded Capital Projects	(10,760)	(12,965)	(8,698)	(9,072)	(10,454)
<b>Ending Fund Balance</b>	<b>(1,838)</b>	<b>(14,803)</b>	<b>(23,501)</b>	<b>(32,573)</b>	<b>(43,027)</b>
<b>Equipment Replacement Fund - Water</b>					
Beginning Fund Balance	\$ (126)	\$ (306)	\$ (471)	\$ (894)	\$ (1,368)
Net Transfers In/(Out)	-	-	-	-	-
Approved Loans	-	-	-	-	-
Lease Payments	(105)	(90)	(174)	(224)	(155)
Vehicle Purchases	(75)	(75)	(250)	(250)	(250)
<b>Ending Fund Balance</b>	<b>(306)</b>	<b>(471)</b>	<b>(894)</b>	<b>(1,368)</b>	<b>(1,773)</b>
<b>Total Ending Fund Balance</b>	<b>\$ (1,925)</b>	<b>\$ (16,530)</b>	<b>\$ (27,328)</b>	<b>\$ (39,158)</b>	<b>\$ (52,929)</b>
<b>Total Days Cash on Hand</b>	<b>(27.39)</b>	<b>(228.67)</b>	<b>(367.42)</b>	<b>(511.67)</b>	<b>(672.16)</b>



**Table 12 – Sewer System Projected Operating Results Under Existing Rates (\$1,000s)**

Description	Projected for Fiscal Year Ending June 30, (\$1,000s)				
	Existing 2026	2027	2028	2029	2030
<b>Revenues:</b>					
Wastewater Sales	\$ 35,297	\$ 35,481	\$ 35,660	\$ 35,841	\$ 36,026
Other Revenues	1,241	1,241	1,241	1,241	1,241
<b>Total Revenues</b>	<b>\$ 36,538</b>	<b>\$ 36,722</b>	<b>\$ 36,901</b>	<b>\$ 37,082</b>	<b>\$ 37,267</b>
O&M Expenses	(30,197)	(31,058)	(31,944)	(32,857)	(33,796)
<b>Net Income For Debt</b>	<b>\$ 6,341</b>	<b>\$ 5,664</b>	<b>\$ 4,957</b>	<b>\$ 4,226</b>	<b>\$ 3,471</b>
<b>Debt Service:</b>					
Existing	\$ (7,106)	\$ (7,106)	\$ (7,106)	\$ (7,106)	\$ (7,106)
Future	-	-	-	-	-
<b>Total Debt Service</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>
<b>Net Results</b>	<b>\$ (765)</b>	<b>\$ (1,441)</b>	<b>\$ (2,149)</b>	<b>\$ (2,880)</b>	<b>\$ (3,635)</b>
<b>Debt Coverage</b>	<b>0.89</b>	<b>0.80</b>	<b>0.70</b>	<b>0.59</b>	<b>0.49</b>
<b>Fund Balance Activity:</b>					
<b>Operating Fund - Sewer</b>					
Beginning Balance	\$ 24,421	\$ 23,656	\$ 22,215	\$ 20,066	\$ 17,186
Deposit/(Withdrawal) from Operations	(765)	(1,441)	(2,149)	(2,880)	(3,635)
Deposit/(Withdrawal) fr/(to) Capital Fund	-	-	-	-	-
Deposit/(Withdrawal) fr/(to) Equip Replacement Fund	-	-	-	-	-
<b>Ending Fund Balance</b>	<b>23,656</b>	<b>22,215</b>	<b>20,066</b>	<b>17,186</b>	<b>13,552</b>
<b>Capital Fund - Sewer</b>					
Beginning Fund Balance	\$ 9,823	\$ 3,159	\$ (3,939)	\$ (11,305)	\$ (17,472)
Net Transfers In/(Out)	-	-	-	-	-
Cash Funded Capital Projects	(6,664)	(7,097)	(7,366)	(6,168)	(6,569)
<b>Ending Fund Balance</b>	<b>3,159</b>	<b>(3,939)</b>	<b>(11,305)</b>	<b>(17,472)</b>	<b>(24,041)</b>
<b>Equipment Replacement Fund - Sewer</b>					
Beginning Fund Balance	\$ (732)	\$ (1,240)	\$ (1,854)	\$ (2,383)	\$ (3,088)
Net Transfers In/(Out)	-	-	-	-	-
Lease Payments	(441)	(440)	(401)	(350)	(325)
Vehicle Purchases	(67)	(174)	(128)	(355)	(242)
<b>Ending Fund Balance</b>	<b>(1,240)</b>	<b>(1,854)</b>	<b>(2,383)</b>	<b>(3,088)</b>	<b>(3,655)</b>
<b>Ending Fund Balance</b>	<b>\$ 25,575</b>	<b>\$ 16,423</b>	<b>\$ 6,378</b>	<b>\$ (3,375)</b>	<b>\$(14,145)</b>
<b>Total Days Cash on Hand</b>	<b>309.14</b>	<b>193.01</b>	<b>72.88</b>	<b>(37.49)</b>	<b>(152.76)</b>



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## Section 3 – Cost-of-Service (COS) Analysis

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### 3.1 General

The costs incurred by a utility system are generally driven by specific service requirements imposed on the system by its customers. For water systems, the primary service requirements that drive costs include annual flow volumes, peaking flow volumes (i.e., peak day, and peak hour), the number of customers and the types of customers served. For sewer systems, the primary service requirements that drive costs include annual sewer volumes, sewer strength such as Biochemical oxygen demand (BOD) and Total Suspended Solids (TSS), and the number and types of customers served.

There are several different options that can be used to perform a COS analysis, and the allocation methodology depends upon the basis applied. The water COS analysis performed for this rate study utilizes a common industry approach known as the base-extra capacity method. The sewer COS analysis involves an examination of the types of customers being served in accordance with the California State Water Resources Control Board (SWRCB) *Revenue Program Guidelines for Wastewater Agencies*.

### 3.2 Water Cost-of-Service

The COS utilizes the Revenue Requirements for the Test Year as a cost basis. The Test Year Revenue Requirements, as identified in the previous section of the Report, are functionally unbundled, classified and allocated to customer classes to determine the proportionate COS by class. More detail relating to the water COS approach can be found in **Appendix B**.

#### 3.2.1 Peaking Factors

System-wide peaking factors are used to derive the cost component allocation bases for Base Delivery and Max Day costs. Base Delivery represents average daily demand during the year, which has been normalized to a factor of 1.00. Based on data provided by City staff, the average water demand was 14.45 million gallons per day (MGD) and the Max Day water demand was 25.69 MGD in the most recent full year. The Max Day peaking factor shows that the system-wide Max Day demand is 1.78 (25.69 Max Day MGD divided by 14.45 Base Delivery) times greater than the average daily demand. The system-wide peaking factors are shown in **Table 13**.

The Max Day allocations are calculated as follows:

$$\text{Base Delivery: } 14.45 / 25.69 \times 100\% = 56.25\%$$

$$\text{Max Day: } (25.69 - 14.45) / 25.69 \times 100\% = 43.75\%$$



**Table 13 – Peaking Factors System-Wide**

Description	Demand (MGD)	Factor	Base	Max Day	Total
Avg Day	14.45	1.00	100.00%	0.00%	<b>100.00%</b>
Max Day	25.69	1.78	56.25%	43.75%	<b>100.00%</b>

Max Day customer-specific peaking factors are then developed, based on the maximum monthly usage divided by average monthly usage for each customer class. Since daily peaking statistics are not available for individual customer classes, the maximum month peaking factor from the customer/billing data is used as a proxy for the Max Day peaking factors. Using the customer billing data, peaking factors by customer class were calculated as shown in **Table 14**.

**Table 14 – Peaking Factors by Customer Class**

Description	Max Day Peaking Fator
<b>All Customers</b>	
All Flow	1.56
<b>Fire Protection</b>	
All Flow	0.00

Once peaking factors are determined, the Max Day demand of each customer class is calculated and shown in **Table 15**. Total annual usage is derived from the customer data and then converted to an average daily usage by dividing the total annual usage by 365 days in a year. Total Max Day capacity is developed by multiplying the customer-specific peaking factor (from **Table 14**) by the average daily usage to arrive at the total capacity required to meet each class's Max Day demand. The extra capacity required to meet Max Day demand is calculated by subtracting the average daily usage from the total required capacity for Max Day. The calculation of additional capacity to meet the Max Day demand for each customer class is shown in **Table 15**.



**Table 15 – Usage and Extra Capacity**

Description	Flows		Max Day		
	Total Annual Flow (CCF)	Average Daily Flow (CCF)	Peaking Factor	Total Capacity (CCF/Day)	Additional Capacity (CCF/Day)
<b>All Customers</b>					
All Flow	7,093,094	19,433	1.56	30,325	10,892
<b>Fire Protection</b>					
All Flow	-	-	-	-	-
<b>Total</b>	<b>7,093,094</b>	<b>19,433</b>		<b>30,325</b>	<b>10,892</b>

### 3.2.2 Functional Unbundling of Revenue Requirements

The water system costs are unbundled into operating components consisting of Supply/Treatment, Transmission, Distribution, Customer, and Administration functions. These are the primary services provided by most water utility systems to their customers. A brief description of each component is as follows:

- **Supply/Treatment** – the costs associated with obtaining and converting raw water to potable water;
- **Transmission** – the costs associated with major pumping and large diameter line facilities that transmit potable water throughout the system at-large;
- **Distribution** – the costs associated with smaller diameter lines that carry water to individual customer properties;
- **Customer** – the costs associated with metering, billing, and providing other services to customers (e.g., printing, delivering and collecting utility bills, recordkeeping, etc.);
- **Administration** – various overhead and other non-operating costs.

The allocation of the functionally unbundled revenue requirements for the Test Year are summarized in **Table 16**.



**Table 16 – Functionally Unbundled Cost Allocations**

Description	Test Year 2026
Total O&M	\$ 25,923,786
Existing Debt Service	763,900
Future Debt Service	-
Other Expenditures & Transfers	4,004,013
<b>Gross Revenue Requirement</b>	<b>\$30,691,699</b>
Less Other Revenues	(934,000)
<b>Net Revenue Requirement</b>	<b>\$29,757,699</b>
<b>Functional Unbundled Revenue Requirement</b>	
Treatment	\$ 6,211,443
Transmission & Distribution	6,517,748
Admin	8,592,786
Source of Supply	4,601,809
Existing Debt	763,900
CIP	10,760,361
Capital Outlay	75,000
Non-Rate Revenue	(934,000)
Fund Balance <sup>[1]</sup>	(6,831,348)
<b>Total</b>	<b>\$29,757,699</b>
<b>Notes:</b>	
[1] Represents a transfer from reserves to provide funding for capital outlay and CIP costs.	

### 3.2.3 Classification of Water System Costs

As previously addressed, the functionally unbundled water system Revenue Requirements are then classified using the base-extra capacity cost allocation method. Applying this methodology, costs are classified into the following categories:

- **Base Costs** – capital costs and O&M expenses associated with service to customers under average demand conditions. This category does not include any costs attributable to variations in water use resulting from peaks in demand. Base costs tend to vary directly with the total quantity of water used.
- **Maximum Day/Extra Capacity Costs** – costs attributable to facilities that are designed to meet peaking requirements. These costs include capital and operating costs for additional plant and system capacity beyond that required for average usage. For the purposes of this analysis, the max/extra capacity costs are further separated into systemwide facilities and distribution facilities.
- **Meter Costs** - costs associated with meter maintenance, meter service, and other meter maintenance and operation-related costs.



- **Customer Costs** – costs associated with any aspect of customer service such as billing, collection, accounting, and recordkeeping. These costs are independent of the amount of water used and the size of the customer's meter and are not subject to peak demand factors.

As the name would indicate, using the base-extra capacity method, the costs are separated between those attributed to base capacity (and demand) and those attributed to extra capacity (and demand). Other components such as treatment, transmission, and distribution are allocated based on flows and peaking factors. All customer service-related costs are allocated 100% to customer billing.

Based on discussions with City staff, the general makeup of the customer base is not expected to change, so it is anticipated that the allocation percentages and factors will not change materially during the Projection Period. However, it is important to note that COS analyses are based on the data at a specific point in time (i.e., the most recent fiscal year). To the extent that weather conditions, economic conditions and customer usage characteristics change during the Projection Period, the cost allocators can be impacted. The system-wide costs by service characteristics are shown in **Table 17**.

**Table 17 - Classification of Unbundled Revenue Requirements**

Component	Billing & Collection	Meters & Services	Base	Extra Capacity Max Day	Fire Protection	Total
Treatment	\$ -	\$ -	\$ 3,493,786	\$ 2,717,657	\$ -	\$ 6,211,443
Transmission & Distribution	-	-	3,666,075	2,851,673	-	6,517,748
Admin	2,633,689	5,782,687	-	-	176,410	8,592,786
Source of Supply	-	-	2,588,406	2,013,403	-	4,601,809
Existing Debt	-	763,900	-	-	-	763,900
CIP	-	9,942,573	459,986	357,802	-	10,760,361
Capital Outlay	-	-	75,000	-	-	75,000
Non-Rate Rev & Fund Balance	(545,039)	(3,412,411)	(2,128,106)	(1,643,284)	(36,508)	(7,765,348)
<b>Total</b>	<b>\$ 2,088,650</b>	<b>\$ 13,076,749</b>	<b>\$ 8,155,147</b>	<b>\$ 6,297,251</b>	<b>\$ 139,902</b>	<b>\$ 29,757,699</b>

### 3.2.4 Allocation to Customer Classes and Unit Cost Development

The functionalized and classified Revenue Requirements are allocated to customer classes utilizing a unit cost approach as follows:

- **Base Costs** – Based on relative percentage of Base Annual Usage.
- **Maximum Day/Extra Capacity System Costs** – Based on relative percentage of Extra Capacity for the entire system.
- **Maximum Day/Extra Capacity Distribution Costs** – Based on relative percentage of Extra Capacity for the distribution system.
- **Meter Maintenance and Operating Costs** – Based on the relative percentage of Equivalent Residential Units (ERUs) the system serves through the varying



capacity of different water meter sizes. These are costs representing the potential demand that a respective customer class can place on the water system due to the capacity of their assigned water meters, relative to other sized meters.

- **Customer Costs** – Based on the relative percentage customers being served.

The units of service for each component of cost by customer class (if applicable) are provided in **Table 18**. The units of service consist of the number of accounts, ERUs (the total customer accounts being served and the calculation of system ERUs based on a factor of meter-size is provided in **Table 22**), annual flows in 100 cubic feet (CCF) and Max Day extra capacity in CCF/Day. Accounts are based on the number of customers as provided in the customer data. ERUs are based on meter equivalencies in accordance with AWWA standards. For reference, **Table 21**, showing meter equivalency factors, follows in the next section (**3.2.5**) of this Report. Base Delivery is the total annual usage projected for the test year based on historical customer data. Max Day is the extra capacity demand result as previously developed in **Table 15**.

**Table 18 – Units of Service**

Description	Bi-Monthly Accounts	Bi-Monthly ERUs	Base (CCF)	Max Day (CCF/Day)
<b>All Customers</b>	<b>30,641</b>	<b>55,684</b>	<b>7,093,094</b>	<b>10,892</b>
All Flow			7,093,094	10,892
<b>Fire Protection</b>	<b>262</b>	<b>262</b>	-	-
All Flow			-	-
<b>Total</b>	<b>30,903</b>	<b>55,946</b>	<b>7,093,094</b>	<b>10,892</b>

The Revenue Requirement for each cost component is divided by its respective unit of service to calculate a unit cost. The unit cost for each cost component is demonstrated in **Table 19**.

**Table 19 – Cost Per Unit**

Description	Billing & Collection	Meters & Services	Base	Extra Capacity Max Day	Fire Protection	Total
Total Revenue Requirement	\$ 2,088,650	\$ 13,076,749	\$ 8,155,147	\$ 6,297,251	\$ 139,902	<b>\$ 29,757,699</b>
Units of Service	30,903	55,684	7,093,094	10,892	262	
	Bills/Bi-Monthly	ERU/Bi-Monthly	CCF	CCF/Day	ERU/Bi-Monthly	
<b>Cost Per Unit</b>	<b>\$ 11.26</b>	<b>\$ 39.14</b>	<b>\$ 1.1497</b>	<b>\$ 578.18</b>	<b>\$ 89.00</b>	
	<b>Bills/Bi-Monthly</b>	<b>ERU/Bi-Monthly</b>	<b>CCF</b>	<b>CCF/Day</b>	<b>ERU/Bi-Monthly</b>	



The allocation of the Revenue Requirement to each customer class is determined by multiplying the Units of Service for each customer class (from **Table 18**) by the Cost per Unit for each cost component (from **Table 19**). The resulting total cost to be recovered from each customer class by cost component is shown in **Table 20**. To calculate the Account and ERU COS by Customer Class, the bi-monthly Units of Service from **Table 18** are first multiplied by six (6), representing the number of billing periods, to determine the total annual Accounts and ERUs being served, then that result is multiplied by the Cost per Unit shown in **Table 19**. For the Base Delivery and Max Day Costs, the Units of Service from **Table 18** are multiplied by the Costs per Unit from **Table 19**.

**Table 20 – Cost of Service by Customer Class and Cost Component**

Rate Class	Bi-Monthly Accounts	Bi-Monthly ERUs	Base (CCF)	Max Day (CCF/Day)	Total Costs
<b>All Customers</b>	<b>\$ 2,070,942</b>	<b>\$ 13,076,749</b>	<b>\$ 8,155,147</b>	<b>\$ 6,297,251</b>	<b>\$ 29,600,089</b>
All Flow			\$ 8,155,147	\$ 6,297,251	
<b>Fire Protection</b>	<b>\$ 17,708</b>	<b>\$ 139,902</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 157,610</b>
All Flow			\$ -	\$ -	
<b>Total</b>	<b>\$ 2,088,650</b>	<b>\$ 13,216,651</b>	<b>\$ 8,155,147</b>	<b>\$ 6,297,251</b>	<b>\$ 29,757,699</b>

### 3.2.5 Rate Design by Unit Cost

The unit costs developed in the previous section are used to develop the proposed rates for the Test Year. The fixed rate components are based on accounts, ERUs and the allocated customer-related costs. The volumetric rate component is based on the annual usage and extra capacity requirements (Max Day).

The first component of the fixed meter charge is calculated on an ERU basis. It is common practice in the utility rate-making industry to establish a rate structure that includes an incremental service availability charge (meter charge, sometimes also called a fixed charge) such that customers placing a greater potential demand requirement on the system (those with larger meters) will pay proportionately more for the service availability component.

The methodology for incrementing the service availability charge is based upon standardized meter/capacity criteria established by the AWWA relative to the size and capacity of water meters. The AWWA equivalent meter capacity criteria are commonly used to establish a standard unit of measure for customers, referred to as an ERU. Based upon established standards, an ERU is equivalent to one single-family residential connection with a 5/8-inch water meter (the typical standard meter size for a single-family residential customer in the City of Vacaville). The applicable ERU factors for larger water meters are based upon the incremental increase in potential hydraulic capacity of those meters as compared to the standard meter size. These factors are derived from actual flow testing results as performed and defined by the AWWA and commonly utilized by the water and



sewer utility industry. The AWWA equivalency factors can be applied to the meter charge for a 5/8-inch meter to calculate the applicable meter charges for each meter size. A full summary of the AWWA meter-size equivalency factors and how they are determined is provided in **Table 21**. **Table 22** provides an illustration of how the AWWA meter-size equivalency factors are applied to the total customer accounts by meter-size to determine the total ERUs that the water system serves.

**Table 21 - AWWA Meter Equivalency Factors**

Description	Meter Capacity (GPM)	AWWA Factors [1]
<b>Meter Size</b>		
5/8 Inch	20	1.00
3/4 Inch	30	1.50
1.0 Inch	50	2.50
1.5 Inch	100	5.00
2.0 Inch	160	8.00
3.0 Inch	300	15.00
4.0 Inch	500	25.00
6.0 Inch	1,000	50.00
8.0 Inch	1,600	80.00
<b>Notes:</b>		
[1] Meter-size equivalency factors are established by the AWWA and identified in AWWA Standards C700, M1 and M22.		

**Table 22 – Total Bi-Monthly Accounts & Equivalent Meters**

Description	AWWA Factor	Total Accounts by Meter Size	Total Equivalent Residential Units
	[A]	[B]	[C]=[A]*[B]
<b>Meter Size</b>			
5/8 Inch	1.00	12,739	12,739
3/4 Inch	1.50	10,100	15,150
1.0 Inch	2.50	6,763	16,908
1.5 Inch	5.00	395	1,975
2.0 Inch	8.00	359	2,872
3.0 Inch	15.00	193	2,895
4.0 Inch	25.00	69	1,725
6.0 Inch	50.00	14	700
8.0 Inch	80.00	9	720
<b>All Customer Total</b>		<b>30,641</b>	<b>55,684</b>
<b>Plus:</b>			
Fire Protection	1.00	262	262
<b>Total</b>		<b>30,903</b>	<b>55,946</b>



The second component of the fixed charge is the customer charge. Unlike meter-related costs, customer costs do not vary based on meter size. Therefore, the customer unit cost of **\$11.26** is applied equally to each customer account. The two fixed charge components are added together to develop the total proposed fixed charge for each respective meter size. The proposed fixed charges for the Test Year are shown in **Table 23**.

**Table 23 – Bi-Monthly Fixed Charge Calculation**

Meter Size	Capacity Ratio	Meter Charge	Customer Charge	Proposed Charge
<b>General Service</b>				
5/8 Inch	1.00	\$ 39.14	\$ 11.26	\$ <b>50.40</b>
3/4 Inch	1.50	\$ 58.71	\$ 11.26	\$ <b>69.97</b>
1.0 Inch	2.50	\$ 97.85	\$ 11.26	\$ <b>109.11</b>
1.5 Inch	5.00	\$ 195.70	\$ 11.26	\$ <b>206.97</b>
2.0 Inch	8.00	\$ 313.12	\$ 11.26	\$ <b>324.39</b>
3.0 Inch	15.00	\$ 587.10	\$ 11.26	\$ <b>598.37</b>
4.0 Inch	25.00	\$ 978.50	\$ 11.26	\$ <b>989.77</b>
6.0 Inch	50.00	\$ 1,957.01	\$ 11.26	\$ <b>1,968.27</b>
8.0 Inch	80.00	\$ 3,131.21	\$ 11.26	\$ <b>3,142.47</b>
<b>Fire Service</b>				
All Customers	1.00	\$ 89.00	\$ 11.26	\$ <b>100.26</b>

The water volumetric rates are made up of two different rate components. The first component is for base usage and related costs. The second component represents peak usage and peaking costs (the Max Day cost component). The Max Day peak demand costs for each customer class (from **Table 20**) are divided by the annual usage to calculate the peaking demand unit costs shown in **Table 24**.

**Table 24 – Peaking Unit Cost Calculation**

Rate Class	Peaking Costs	Annual Use (CCF)	Peaking Unit Cost
	[A]	[B]	[C]=[A]/[B]
<b>All Customers</b>			
All Flow	\$ 6,297,251	7,093,094	\$ 0.89
<b>Fire Protection</b>			
All Flow	\$ -	-	\$ -
<b>Total</b>	<b>\$ 6,297,251</b>	<b>7,093,094</b>	

The peaking unit costs are then added to the base unit cost of **\$1.15** per 100 cubic feet as previously identified in **Table 19** to calculate the proposed volumetric rates for each customer class as shown in **Table 25**.



**Table 25 – Volumetric Rate Calculation**

<b>Rate Class</b>	<b>Base</b>	<b>Peaking</b>	<b>Proposed Rate (\$/CCF)</b>
<b>All Customers</b>			
All Flow	\$ 1.15	\$ 0.89	<b>\$ 2.04</b>
<b>Fire Protection <sup>[1]</sup></b>			
All Flow	\$ 1.15	\$ 0.89	<b>\$ 2.04</b>

**Notes:**

[1] Since there is no usage or peaking affiliated with "Fire Protection", these customers will be billed at the same rate per CCF as "All Customers" if usage does occur. Fire Protection is used on an as needed basis for fire suppression purposes only. Therefore, no usage has been included in this analysis.



### 3.2.6 Cost-of-Service and Revenue Check

Once the rates are developed from the unit cost analysis, as shown in **Sections 3.2.4 and 3.2.5**, they are then applied to the customer service units identified in **Table 18**. The unit cost rates are applied to the customer service units to ensure that the rates calculated under the base-extra capacity method generate revenues from each customer class equitably and in a manner that reflects the costs associated with serving them. The revenues generated by customer class and the cost allocated to each customer class are provided in **Table 26**.

**Table 26 – Proposed Rate Revenues vs COS**

Description	Bi-Monthly Accounts	Bi-Monthly ERUs	Bi-Monthly Customer Charge/Account	Bi-Monthly Meter Charge/ERU	Total Fixed Charge Revenues
	[A1]	[B1]	[C1]	[D1]	[E1]=[A1]*[C1]+[B1]*[D1]*6
<b>All Customers</b>	30,641	55,684	\$ 11.26	\$ 39.14	\$ 15,147,691
<b>Fire Protection</b>	262	262	\$ 11.26	\$ 89.00	\$ 157,610
<b>Total</b>	<b>30,903</b>	<b>55,946</b>			<b>\$ 15,305,301</b>
Description	Annual Use (CCF)	Proposed Rate (\$/CCF)	Total Volumetric Revenues	Total Revenues	Allocated Costs
	[A2]	[B2]	[C2]=[A2]*[B2]	[D2]=[E1]+[C2]	[E2]
<b>All Customers</b>	7,093,094	\$ 2.04	\$ 14,452,398	\$ 29,600,089	\$ 29,600,089
<b>Fire Protection</b>	-	\$ 2.04	\$ -	\$ 157,610	\$ 157,610
<b>Total</b>	<b>7,093,094</b>		<b>\$ 14,452,398</b>	<b>\$ 29,757,699</b>	<b>\$ 29,757,699</b>



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## 3.3 Sewer Cost-of-Service

As with the water system, the COS analysis for the sewer utility utilizes the revenue requirements for the Test Year as the cost basis. The Test Year Revenue Requirements are functionally unbundled, classified and allocated to customer classes to determine the COS by class. As stated in **Section 3.1**, the sewer COS analysis involves an examination of sewer volumes, strength factors (i.e., BOD and TSS), and the number and type of customers served in accordance with the California State Water Resources Control Board (SWRCB) *Revenue Program Guidelines for Wastewater Agencies*. More detail relating to the sewer COS approach can be found in **Appendix C**.

### 3.3.1 Functional Unbundling of Revenue Requirements

The sewer system costs are unbundled into Collection, Treatment, Customer and Administration functions. A brief description of each component is as follows:

- **Collection** – costs associated with lines and facilities that transport wastewater from customer properties to treatment facilities;
- **Treatment** – costs associated with treating wastewater for disposal reclamation and/or discharge;
- **Customer** – costs associated with billing, and providing other services to customers (e.g., printing, delivering and collecting utility bills, recordkeeping, etc.).
- **Administration** – various overhead and other non-operating costs

The allocation of the functionally unbundled revenue requirements for the Test Year are summarized in **Table 27**.



**Table 27 - Functional Unbundled Cost Allocations**

Description	Test Year 2026
Total O&M	\$ 30,321,297
Existing Debt Service	7,105,613
Future Debt Service	-
Other Expenditures & Transfers	1,593,237
<b>Gross Revenue Requirement</b>	<b>\$39,020,148</b>
Less Other Revenues	(1,241,000)
<b>Net Revenue Requirement</b>	<b>\$37,779,148</b>
<b>Functional Unbundled Revenue Requirement</b>	
Treatment	\$ 10,443,360
Collection	7,113,467
Administration	12,764,470
CIP	6,664,131
Capital Outlay	66,775
Existing Debt	7,105,613
New Debt	-
Non-Rate Revenue	(1,241,000)
Fund Balance <sup>[1]</sup>	(5,137,668)
<b>Non-Rate Rev &amp; Fund Balance</b>	<b>\$37,779,148</b>
<b>Notes:</b>	
[1] Represents a transfer from reserves to provide funding for capital outlay and CIP costs.	

### 3.3.2 Classification of Revenue Requirements

The functionally unbundled Revenue Requirements for the sewer system are classified into fixed and volumetric customer components based on methodology consistent with the WEF Manual of Practice No. 27. As discussed for the water COS analysis, it is anticipated that the allocation percentages will not change materially during the Projection Period. However, it is important to note that COS analyses are based on the data at a specific point in time (i.e., the most recent fiscal year). To the extent that weather conditions, economic conditions and customer usage characteristics change during the Projection Period, the cost allocators can be impacted. The system-wide costs by service characteristic are shown in **Table 28**.



**Table 28 - Classification of Unbundled Revenue Requirements**

Component	Customer Service	Volume	Capacity	Strength - SS	Strength - BOD	Total
Treatment	\$ -	\$ -	\$ -	\$ 5,426,203	\$ 5,017,157	\$ 10,443,360
Collection	-	3,556,734	3,556,733	-	-	7,113,467
Administration	12,764,470	-	-	-	-	12,764,470
CIP	666,413	2,998,859	2,998,859	-	-	6,664,131
Capital Outlay	-	33,387	33,388	-	-	66,775
Existing Debt	5,516,088	-	-	825,892	763,633	7,105,613
New Debt	-	-	-	-	-	-
Non-Rate Rev & Fund Balance	(2,736,921)	(951,789)	(951,789)	(903,125)	(835,044)	(6,378,668)
<b>Total</b>	<b>\$16,210,050</b>	<b>\$ 5,637,191</b>	<b>\$ 5,637,191</b>	<b>\$ 5,348,970</b>	<b>\$ 4,945,746</b>	<b>\$37,779,148</b>

### 3.3.3 Allocation to Customer Classes and Unit Cost Development

The functionalized and classified Revenue Requirements are allocated to customer classes utilizing a unit cost approach as follows:

- **Collection** – Based on relative percentage of annual sewer usage;
- **Treatment** – Based on relative percentage of sewer strength discharge (BOD and TSS);
- **Customer** – Based on relative percentage of ERUs by customer class.

The units of service for each component of cost by customer class (if applicable) are provided in **Table 29**. The units of service consist of the number of customer accounts and associated ERUs, annual flows in 100 cubic feet, and sewer strength discharge. Customer accounts are based on the number of customers as provided in the customer data. ERUs for residential customers are based on the number of dwelling units; non-residential low strength, medium strength, and high strength are based on the number of accounts; and the ERUs for specific industrial customers are based on sewer flows and strength factors associated with sewer discharge. Collection is the total annual sewer flows projected for the Test Year. BOD and TSS reflect the strength per pound of the sewer discharge collected by the City from each customer class based on standards for wastewater discharge included in the SWRCB Guidelines.



**Table 29 – Units of Service**

Description	Total Accounts	Total ERUs	CCF Flow <sup>[1]</sup>	BOD Factor <sup>[2]</sup>	BOD Pounds	TSS Factor <sup>[2]</sup>	TSS Pounds
<b>Residential Classes</b>							
<b>Single-Family Residential <sup>[3]</sup></b>							
Single Family	27,866	27,866	2,670,979	225	3,749,045	225	3,749,045
2nd Unit	7	7	882	225	1,238	225	1,238
Low Income Discount	190	190	13,904	225	19,516	225	19,516
Temporary Residential	71	71	5,046	225	7,083	225	7,083
Out Of City Elmira	58	58	5,559	225	7,803	225	7,803
<b>Sub-Total Single-Family Residential</b>	<b>28,192</b>	<b>28,192</b>	<b>2,696,370</b>	<b>225</b>	<b>3,784,684</b>	<b>225</b>	<b>3,784,684</b>
<b>Multi-Family Residential</b>							
Multifamily	441	7,779	453,629	225	636,724	225	636,724
Condo	119	844	62,878	225	88,257	225	88,257
Mobile Home	13	1,083	62,046	225	87,089	225	87,089
<b>Sub-Total Multi-Family Residential</b>	<b>573</b>	<b>9,706</b>	<b>578,553</b>	<b>225</b>	<b>812,070</b>	<b>225</b>	<b>812,070</b>
<b>Non-Residential Classes</b>							
<b>Low Strength</b>							
Commercial	53	53	23,462	225	44,026	225	44,026
Office Retail	313	313	85,454	150	106,903	150	106,903
Other Commercial	95	95	36,231	225	67,987	225	67,987
Temporary Commercial	2	2	318	225	597	225	597
Automotive	69	69	24,314	180	36,500	280	56,778
Car Wash	13	13	46,585	20	7,770	150	58,278
Laundry	7	7	11,417	150	14,283	110	10,474
Medical Dental	36	36	17,241	130	18,693	80	11,503
Hotel	2	2	6,381	310	16,497	120	6,386
Hotel 133	14	14	24,454	310	63,223	120	24,474
Mixed Use	10	10	6,655	250	13,876	250	13,876
Church	39	39	12,634	225	23,708	225	23,708
City	77	77	6,051	130	6,560	100	5,047
Other Public	20	20	21,529	130	23,342	100	17,955
VV USD	25	25	34,899	130	37,837	100	29,106
School	10	10	10,007	130	10,850	100	8,346
Institutional	17	17	77,081	130	83,571	100	64,286
Industrial General	35	35	27,932	225	52,414	225	52,414
<b>Sub-Total Low Strength</b>	<b>837</b>	<b>837</b>	<b>472,645</b>	<b>182</b>	<b>628,639</b>	<b>160</b>	<b>602,143</b>
<b>Medium Strength</b>							
Hotel 167	7	7	11,070	500	46,162	600	55,394
Hotel Restaurant	2	2	4,130	500	17,222	600	20,667
Mixed Use Restaurant	53	53	74,522	500	310,757	600	372,908
<b>Sub-Total Medium Strength</b>	<b>62</b>	<b>62</b>	<b>89,722</b>	<b>500</b>	<b>374,141</b>	<b>600</b>	<b>448,969</b>
<b>High Strength</b>							
Mortuary	2	2	113	800	754	800	754
Markets W/Disposal	12	12	22,283	800	148,672	800	148,672
Restaurant To Go	19	19	10,798	1,000	90,055	600	54,033
Restaurant Sit Down	71	71	49,713	1,000	414,606	600	248,764
<b>Sub-Total High Strength</b>	<b>104</b>	<b>104</b>	<b>82,907</b>	<b>900</b>	<b>654,088</b>	<b>700</b>	<b>452,223</b>
<b>Specific Industrial</b>							
Genentech	1	1,702	210,908	292	384,188	64	84,206
CSP At Solano	1	1,890	310,201	123	238,021	90	174,162
CMF	1	1,049	162,439	110	111,468	101	102,348
Mariani Packing Company	1	184	39,033	44	10,714	47	11,445
RXD Nova Pharmaceuticals	1	110	24,391	43	6,543	28	4,260
Matheson Tri Gas	1	28	7,519	5	235	5	235
<b>Sub-Total Specific Industrial</b>	<b>6</b>	<b>4,963</b>	<b>754,491</b>	<b>103</b>	<b>751,169</b>	<b>56</b>	<b>376,655</b>
<b>Sewer System Total</b>	<b>29,774</b>	<b>43,864</b>	<b>4,674,688</b>		<b>7,004,790</b>		<b>6,476,744</b>

**Notes:**

[1] All flows were provided from the sewer billing data.

[2] Average strength factors for BOD and TSS are based on the State Water Resources Control Board Revenue Program Guidelines, Appendix G.

[3] For single-family residential customers, the variable charge is based on the lowest average winter water use during a period determined by the City (in which consumption is typically lower due to reduced outdoor watering) for each respective residence. This established sewer charge then remains in effect for one year, with the base winter period re-calculated annually to reflect actual use for each year. This is consistent with the way single-family residential customers are currently billed for sewer service.



The Revenue Requirement for each cost component is divided by its respective unit of service to calculate a unit cost. The unit cost for each cost component is demonstrated in **Table 30**.

**Table 30 – Cost Per Unit**

Description	Customer	Volume	Capacity	Strength - BOD	Strength - SS	Total
Total Revenue Requirement	\$ 16,210,050	\$ 5,637,191	\$ 5,637,191	\$ 5,348,970	\$ 4,945,746	<b>\$37,779,148</b>
Units of Service	43,864	4,674,688	4,674,688	7,004,790	6,476,744	
	ERUs/Bi-Monthly	CCF	CCF	Pounds	Pounds	
<b>Cost Per Unit</b>	<b>\$ 61.59</b>	<b>\$ 1.21</b>	<b>\$ 1.21</b>	<b>\$ 0.76</b>	<b>\$ 0.76</b>	
	<b>per ERU/Bi-Monthly</b>	<b>CCF</b>	<b>CCF</b>	<b>Pounds</b>	<b>Pounds</b>	

The allocation of the Revenue Requirement to each customer class is based on the unit costs for each component multiplied by the units of service for each customer class. The total costs to be recovered from each customer class by rate component are shown in **Table 31**.

**Table 31 – Cost of Service by Customer Class and Cost Component**

Rate Class	Customer	Volume	Capacity	Strength - BOD	Strength - SS	Total
<b>Residential</b>						
Single-Family Residential	\$ 10,418,424	\$ 3,251,544	\$ 3,251,544	\$ 2,890,046	\$ 2,890,046	\$ 22,701,603
Multi-Family Residential	3,586,876	697,675	697,675	620,109	620,110	6,222,446
<b>Non-Residential</b>						
Low Strength	309,315	569,961	569,961	480,039	459,806	2,389,082
Medium Strength	22,912	108,195	108,195	285,700	342,840	867,843
High Strength	38,433	99,977	99,977	499,472	345,325	1,083,185
Specific Industrial	1,834,089	909,838	909,838	573,604	287,620	4,514,990
<b>Total</b>	<b>\$16,210,050</b>	<b>\$ 5,637,191</b>	<b>\$ 5,637,191</b>	<b>\$ 5,348,970</b>	<b>\$ 4,945,746</b>	<b>\$37,779,148</b>

### 3.3.4 Cost-of-Service and Revenue Check

Once the unit costs are developed and the costs associated with each customer class based on the units of service are determined in **Section 3.3.3**, rates can be developed to ensure that each customer class is generating sufficient revenues to cover their allocated cost of service. The proposed rate structure for the sewer rates are as follows:

- **Single-Family Residential Customers** – For single-family residential customers, the proposed rates will consist of a fixed charge regardless of the amount of sewer usage and a volumetric rate per 100 cubic feet. The volumetric rate per 100 cubic feet will be applied based on the lowest average winter water use during a period determined by the City (in which consumption is typically lower due to reduced outdoor watering) for each respective residence. This established sewer charge then remains in effect for one year, with the base winter period re-calculated annually by the City to reflect actual use for each year. This is consistent with the way single-family residential customers are currently billed for sewer service.



- **Multi-Family Residential Customers** – For multi-family residential customers, the proposed rates will now consist of only a flat fixed charge based on the number of dwelling units. Under the existing rates, multi-family customers are billed a fixed charge per dwelling unit and a volumetric rate per 100 cubic feet.
- **Commercial/Non-Residential Customers** – For commercial/non-residential customers, the proposed rates will consist of a fixed charge and a volumetric rate per 100 cubic feet based on each customer class's respective sewer strength discharge (i.e., low strength, medium strength, and high strength).
- **Specific Industrial Customers** – For specific industrial customers, the proposed rates will consist of a rate per ERU. The total billable ERUs that apply to each respective specific industrial customer is determined by multiplying the total sewer volume by the Strength Factor (SF), which is calculated based on the following formula:

$$\begin{aligned} \text{Volume} &= (\text{Total CCF} / 10 \text{ CCF}) \\ &\times \\ \text{SF} &= (0.44 + [\text{BOD mg/L}]/200\text{mg/L})(0.28) + ([\text{TSS mg/L}]/200\text{mg/L})(0.28) \\ &= \\ &\text{Total ERUs} \end{aligned}$$

The proposed rates utilize the same methodology currently being used as the existing rate structure to calculate each respective specific industrial customer's billable ERUs.

The revenues generated by customer class vs the cost allocated to each customer class are provided in **Table 32**.

**Table 32 – Proposed Rate Revenues vs COS**

Description	Bi-Monthly ERUs	Proposed Bi-Monthly Fixed Fee	Total Fixed Fee Revenue	Billable Annual Volume (CCF)	Proposed Volumetric Rate	Total Volumetric Rate Revenues	Total Calculated Revenues	Total COS
	[A]	[B]	[C]=[A]*[B]*6	[D]	[E]	[F]=[D]*[E]	[G]=[C]+[F]	[H]
<b>Residential</b>								
Single-Family Residential	28,192	\$ 100.04	\$ 16,921,511	2,696,370	\$ 2.14	\$ 5,780,092	\$ 22,701,603	\$ 22,701,603
Multi-Family Residential	9,706	\$ 106.85	\$ 6,222,446	N/A	N/A	\$ -	\$ 6,222,446	\$ 6,222,446
<b>Non-Residential</b>								
Low Strength	837	\$ 61.59	\$ 309,315	472,645	\$ 4.40	\$ 2,079,767	\$ 2,389,082	\$ 2,389,082
Medium Strength	62	\$ 61.59	\$ 22,912	89,722	\$ 9.42	\$ 844,931	\$ 867,843	\$ 867,843
High Strength	104	\$ 61.59	\$ 38,433	82,907	\$ 12.60	\$ 1,044,751	\$ 1,083,185	\$ 1,083,185
Specific Industrial	4,963	\$ 151.62	\$ 4,514,990	N/A	N/A	\$ -	\$ 4,514,990	\$ 4,514,990
<b>Total</b>	<b>43,864</b>		<b>\$28,029,608</b>	<b>3,341,644</b>		<b>\$ 9,749,540</b>	<b>\$37,779,148</b>	<b>\$37,779,148</b>



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## Section 4 – Proposed Test Year Rates

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### 4.1 General

The methodology used to calculate the recommended water and sewer rates proposed herein involves applying the projected customer units of service to the user rates developed in the preceding COS and rate analyses to calculate the estimated revenues (separately for water and sewer) that would be generated. Then, these projected revenues are compared to the estimated Test Year Revenue Requirements, and the water and/or sewer rates are adjusted on a percentage basis as necessary until the revenues generated are sufficient to meet the revenue needs of each utility system, respectively.

When reviewing potential rate structure options in conjunction with the need for additional revenues, it was determined that revenue adjustments are needed, and the existing rate structure needs to be adjusted based on the COS analysis. The proposed water and sewer rates for the Test Year are provided again in **Tables 33 and 34**, respectively.



**Table 33 – Proposed Bi-Monthly Water Rates**

<b>Description</b>	<b>Rate</b>
<b>Bi-Monthly Fixed Charge by Meter Size:</b>	
5/8 Inch	\$ 50.40
3/4 Inch	\$ 69.97
1.0 Inch	\$ 109.11
1.5 Inch	\$ 206.97
2.0 Inch	\$ 324.39
3.0 Inch	\$ 598.37
4.0 Inch	\$ 989.77
6.0 Inch	\$ 1,968.27
8.0 Inch	\$ 3,142.47
Fire Protection	\$ 100.26
<b>Volumetric Rate Per 100 Cubic Feet:</b>	
All Flow	\$ 2.04



**Table 34 – Proposed Bi-Monthly Sewer Rates**

Description	Rate
<b>Bi-Monthly Fixed Charge:</b>	
Single-Family (per dwelling unit)	\$ 100.04
Multi-Family (per dwelling unit)	\$ 106.85
Non-Residential (per account) <sup>[1]</sup>	\$ 61.59
Industrial (per EDU) <sup>[2]</sup>	\$ 151.62
<b>Volumetric Rates Per 100 Cubic Feet:</b>	
Single-Family	\$ 2.14
Multi-Family <sup>[3]</sup>	\$ -
Non-Residential - Low Strength	\$ 4.40
Non-Residential - Medium Strength	\$ 9.42
Non-Residential - High Strength	\$ 12.60
Specific Industrial	\$ -

**Notes:**

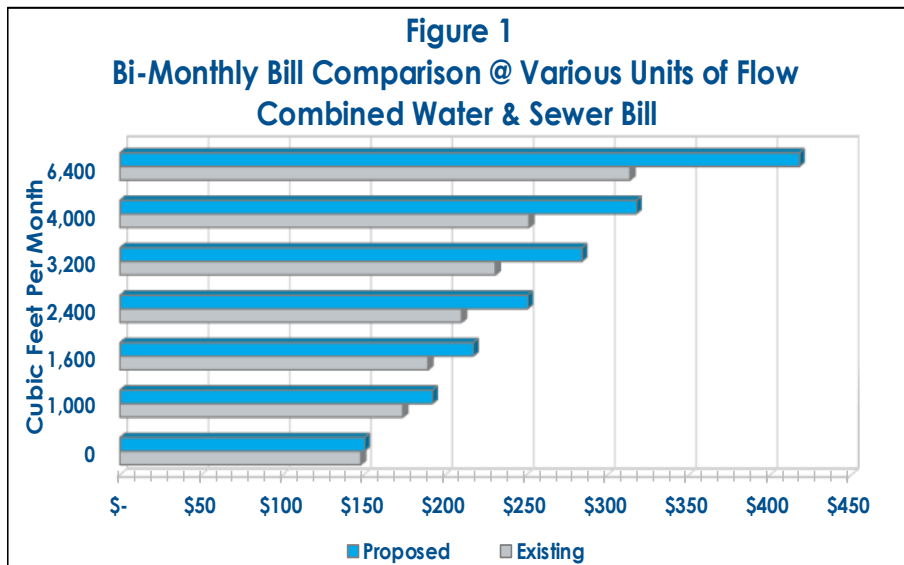
[1] All "Non-Residential" customers will now pay a bi-monthly fixed fee per account under the proposed rate structure. "Non-Residential" customers do not pay a bi-monthly fixed fee under the existing rate structure.

[2] For specific industrial customers that are billed monthly instead of bi-monthly, they will pay half of the bi-monthly rate per EDU.

[3] Under the proposed rate structure, "Multi-Family" customers will now only pay a flat fee per dwelling unit regardless of usage.



## 4.2 Typical Bi-Monthly Bill Comparison



In addition to reviewing the effect that a change in the rates will have on the system revenues, it is also important for City utility management to understand the impact that a change will have on the existing customers. **Tables 35, 36 and 37** provide a comparison of several bi-monthly bills at various flow levels for water and sewer, as well

as the combined utility bills under the existing and proposed rates. A graphical illustration of a bill comparison at various units of flow is provided in **Figure 1** for a single-family residential customer with both water and sewer service. It was determined after conducting a historical billing analysis that an average single-family residential customer uses approximately 2,400 cubic feet bi-monthly. Based on the proposed rates, a typical City single-family residential customer will experience an increase of **\$40.52** (\$210.28 current bill vs \$250.80 proposed bill) in their combined bi-monthly water and sewer bill, or an increase of **\$20.26 monthly**.

**Table 35 – Single-Family Residential Water Rate Impact**

Description	Bi-Monthly Flow (CF)	Bi-Monthly Charges		\$ Amount Difference
		Existing	Proposed	
<b>SF Residential</b>				
5/8 Inch	0	\$ 34.90	\$ 50.40	\$ 15.50
5/8 Inch	200	\$ 38.40	\$ 54.48	\$ 16.08
5/8 Inch	1,000	\$ 52.40	\$ 70.78	\$ 18.38
5/8 Inch	1,600	\$ 62.90	\$ 83.01	\$ 20.11
5/8 Inch	2,400	\$ 76.90	\$ 99.31	\$ 22.41
5/8 Inch	3,200	\$ 90.90	\$ 115.61	\$ 24.71
5/8 Inch	4,000	\$ 104.90	\$ 131.91	\$ 27.01
5/8 Inch	4,800	\$ 118.90	\$ 148.21	\$ 29.31
5/8 Inch	5,600	\$ 132.90	\$ 164.51	\$ 31.61
5/8 Inch	6,400	\$ 146.90	\$ 180.81	\$ 33.91
5/8 Inch	7,200	\$ 160.90	\$ 197.11	\$ 36.21
5/8 Inch	8,000	\$ 174.90	\$ 213.41	\$ 38.51
5/8 Inch	8,800	\$ 188.90	\$ 229.71	\$ 40.81
5/8 Inch	9,600	\$ 202.90	\$ 246.01	\$ 43.11
5/8 Inch	10,400	\$ 216.90	\$ 262.31	\$ 45.41



**Table 36 – Single-Family Residential Sewer Rate Impact**

Description	Bi-Monthly Flow (CF)	Bi-Monthly Charges		\$ Amount Difference
		Existing	Proposed	
<b>SF Residential</b>				
5/8 Inch	0	\$ 113.22	\$ 100.04	\$ (13.18)
5/8 Inch	200	\$ 114.90	\$ 104.32	\$ (10.58)
5/8 Inch	1,000	\$ 121.62	\$ 121.47	\$ (0.15)
5/8 Inch	1,600	\$ 126.66	\$ 134.34	\$ 7.68
5/8 Inch	2,400	\$ 133.38	\$ 151.49	\$ 18.11
5/8 Inch	3,200	\$ 140.10	\$ 168.63	\$ 28.53
5/8 Inch	4,000	\$ 146.82	\$ 185.78	\$ 38.96
5/8 Inch	4,800	\$ 153.54	\$ 202.93	\$ 49.39
5/8 Inch	5,600	\$ 160.26	\$ 220.08	\$ 59.82
5/8 Inch	6,400	\$ 166.98	\$ 237.23	\$ 70.25
5/8 Inch	7,200	\$ 173.70	\$ 254.38	\$ 80.68
5/8 Inch	8,000	\$ 180.42	\$ 271.53	\$ 91.11
5/8 Inch	8,800	\$ 187.14	\$ 288.68	\$ 101.54
5/8 Inch	9,600	\$ 193.86	\$ 305.83	\$ 111.97
5/8 Inch	10,400	\$ 200.58	\$ 322.98	\$ 122.40

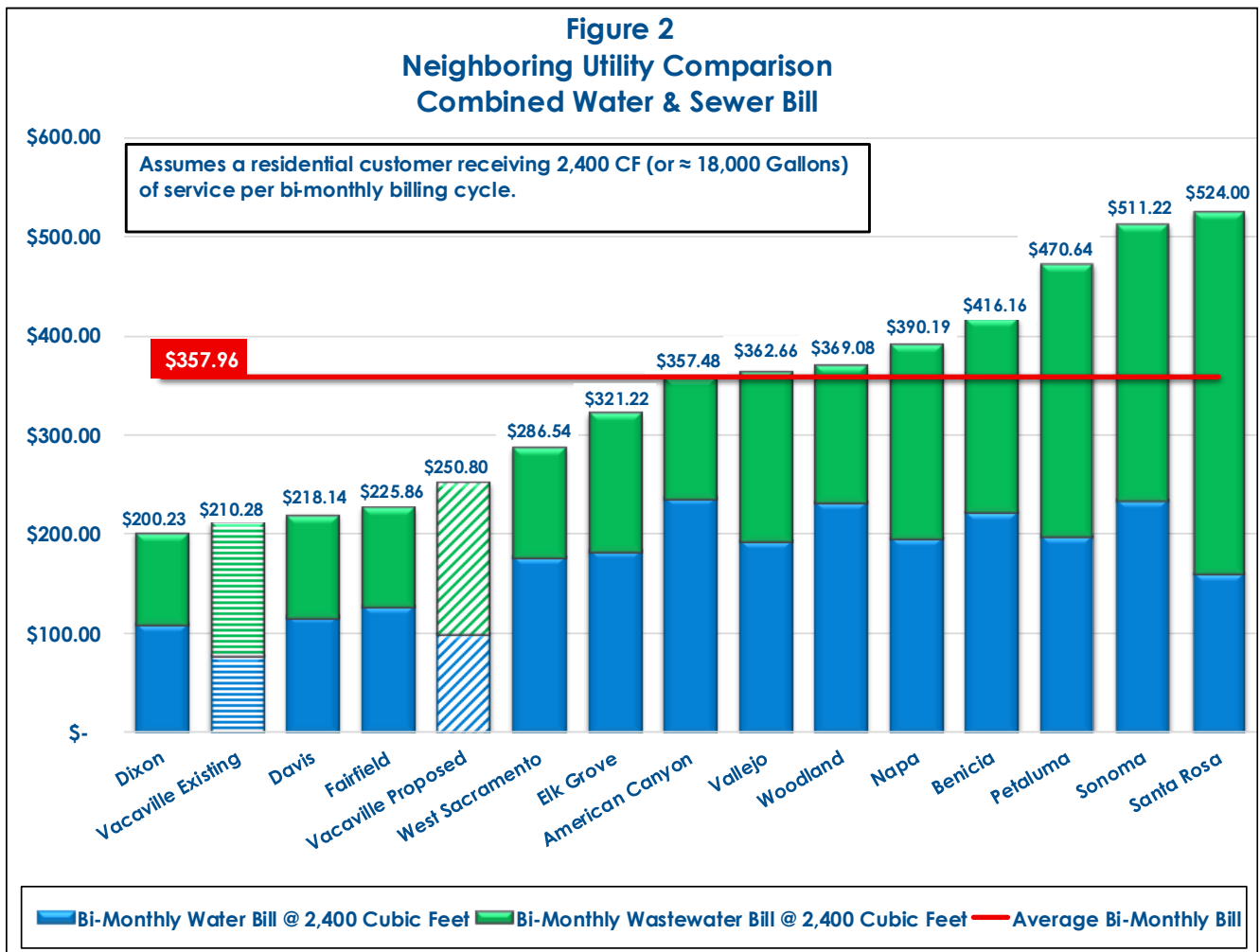
**Table 37 – Single-Family Residential Combined Rate Impact**

Description	Bi-Monthly Flow (CF)	Bi-Monthly Charges		\$ Amount Difference
		Existing	Proposed	
<b>SF Residential</b>				
5/8 Inch	0	\$ 148.12	\$ 150.44	\$ 2.32
5/8 Inch	200	\$ 153.30	\$ 158.80	\$ 5.50
5/8 Inch	1,000	\$ 174.02	\$ 192.25	\$ 18.23
5/8 Inch	1,600	\$ 189.56	\$ 217.35	\$ 27.79
5/8 Inch	2,400	\$ 210.28	\$ 250.80	\$ 40.52
5/8 Inch	3,200	\$ 231.00	\$ 284.24	\$ 53.24
5/8 Inch	4,000	\$ 251.72	\$ 317.69	\$ 65.97
5/8 Inch	4,800	\$ 272.44	\$ 351.14	\$ 78.70
5/8 Inch	5,600	\$ 293.16	\$ 384.59	\$ 91.43
5/8 Inch	6,400	\$ 313.88	\$ 418.04	\$ 104.16
5/8 Inch	7,200	\$ 334.60	\$ 451.49	\$ 116.89
5/8 Inch	8,000	\$ 355.32	\$ 484.94	\$ 129.62
5/8 Inch	8,800	\$ 376.04	\$ 518.39	\$ 142.35
5/8 Inch	9,600	\$ 396.76	\$ 551.84	\$ 155.08
5/8 Inch	10,400	\$ 417.48	\$ 585.29	\$ 167.81



### 4.3 Rate Comparison with Other Utilities

In order to provide the City with additional insight regarding the proposed rate levels, the analysis includes a comparison of both the existing and proposed user rates relative to the user rates imposed by other water and sewer utility systems located in the same region. A summary analysis is provided comparing the cost of bi-monthly water and sewer service for a typical single-family residential customer calculated under the existing and proposed rates of the City with those of the other utilities. The rates utilized for the other neighboring utilities shown in **Figure 2** were in effect as of January 2025 and are exclusive of local taxes, outside surcharges, franchise fees, regulatory fees, or other rate adjustments. A summary comparison with other utilities for a single-family residential customer receiving 2,400 cubic feet of service per bi-monthly billing is illustrated in **Figure 2**.





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It should be noted that when making comparisons of water and sewer service with other providers, several factors affect the level of rates and charges. Such factors may include:

- 1) Terms of wholesale service agreements;
- 2) Time since last rate update for comparison providers;
- 3) Level of treatment required before the distribution of water to the ultimate customers;
- 4) Level of treatment and effluent disposal or discharge methods of sewer service;
- 5) Anticipated capital improvement programs and capital financing methods;
- 6) Plant capacity utilization, age of facilities, and assistance in construction by federal or state grants, connection fees, developer contributions, etc.;
- 7) General Fund and/or administrative fee transfers made by other systems which may account for differences in the level of rates charged; and
- 8) Bond covenants and funding requirements of the rates.

For the utilities included in the rate comparisons, no analysis has been carried out with consideration of the above-mentioned factors as they relate to the reported water and sewer rates currently being charged.



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## Section 5 – Projected Operating Results

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### 5.1 General

As a conclusion to the study, individual pro-forma operating statements are developed for both the water and sewer systems. The statements summarize the projected financial results based on the system revenues, expenses and other Revenue Requirements anticipated in future years.

The individual operating statements cover the 5-fiscal year Projection Period through June 30, 2030, and are prepared on a cash-flow basis. In addition, the individual statements include the applicable annual percentage rate adjustments necessary to meet the projected Revenue Requirements. The annual rate adjustments are considered separately for both water and sewer and are further separated by the fixed charge and volumetric rate components. The following discussions describe the development of the major components of the projected operating results.

### 5.2 Projected User Rate Revenues

The user rate and charge revenues are estimated by applying the existing and proposed rates to the projected customer units of service. The revenues for the Projection Period are estimated separately for both water and sewer. The resulting revenues are then compared to the projected Revenue Requirements (i.e., O&M expenses, debt service, capital outlay, CIP, transfers, etc.) in each fiscal year to determine if the revenues are sufficient to satisfy the expenditure needs of the system. To the extent that there are revenue shortfalls in any given year of the Project Period, the water and/or sewer rates developed from the COS and Rate analyses outlined previously in **Section 3** of this Report are adjusted on a percentage basis, as necessary, to generate the required level of revenues. The projected water, sewer and combined user rate revenues are provided in **Table 38**.



**Table 38 – Projected User Rate Revenues**

Description	Existing	Proposed	Projected			
	2026	2026	2027	2028	2029	2030
<b>Water Revenue</b>						
Single Family	\$ 16,468,742	\$ 20,711,788	\$ 25,734,446	\$ 27,039,067	\$ 28,411,478	\$ 29,856,065
Multi Family	2,458,211	2,869,397	3,529,408	3,670,587	3,817,456	3,970,075
Commercial	2,029,315	2,397,938	2,949,518	3,067,504	3,190,241	3,317,776
Institutional	2,514,483	2,937,930	3,613,703	3,758,252	3,908,631	4,064,899
Industrial	721,840	840,646	1,033,996	1,075,354	1,118,386	1,163,107
<b>Total Water Revenue</b>	<b>\$24,192,591</b>	<b>\$29,757,699</b>	<b>\$36,861,071</b>	<b>\$38,610,764</b>	<b>\$40,446,192</b>	<b>\$42,371,922</b>
<b>Sewer Revenue</b>						
Single-Family Residential	\$ 21,416,640	\$ 22,701,603	\$ 24,255,724	\$ 25,671,045	\$ 27,184,658	\$ 28,801,699
Multi-Family Residential	5,761,002	6,222,446	6,595,809	6,925,425	7,271,929	7,635,905
Low Strength	2,360,300	2,389,082	2,530,410	2,655,493	2,786,154	2,931,847
Medium Strength	863,137	867,843	918,815	963,993	1,011,925	1,064,405
High Strength	1,099,346	1,083,185	1,146,719	1,202,645	1,263,649	1,328,904
Specific Industrial	3,796,695	4,514,990	4,785,921	5,024,740	5,276,066	5,540,495
<b>Total Sewer Revenue</b>	<b>\$35,297,120</b>	<b>\$37,779,148</b>	<b>\$40,233,398</b>	<b>\$42,443,341</b>	<b>\$44,794,381</b>	<b>\$47,303,255</b>
<b>Total Combined Revenue</b>	<b>\$59,489,711</b>	<b>\$67,536,847</b>	<b>\$77,094,469</b>	<b>\$81,054,105</b>	<b>\$85,240,573</b>	<b>\$89,675,177</b>

The projected revenues include the annual water and sewer rate adjustments anticipated for the remaining years of Projection Period beyond the Test Year. The proposed user rates from which the projected operating results are developed for the entire 5-fiscal year Projection Period are provided in **Tables 39 and 40**. The rates identified in the preceding tables reflect the cost of providing service to individual customer classes based on the types of customers being served, peak demand factors, volume of flow, and strength characteristics.

**Table 39 – Proposed Bi-Monthly Water Rates**

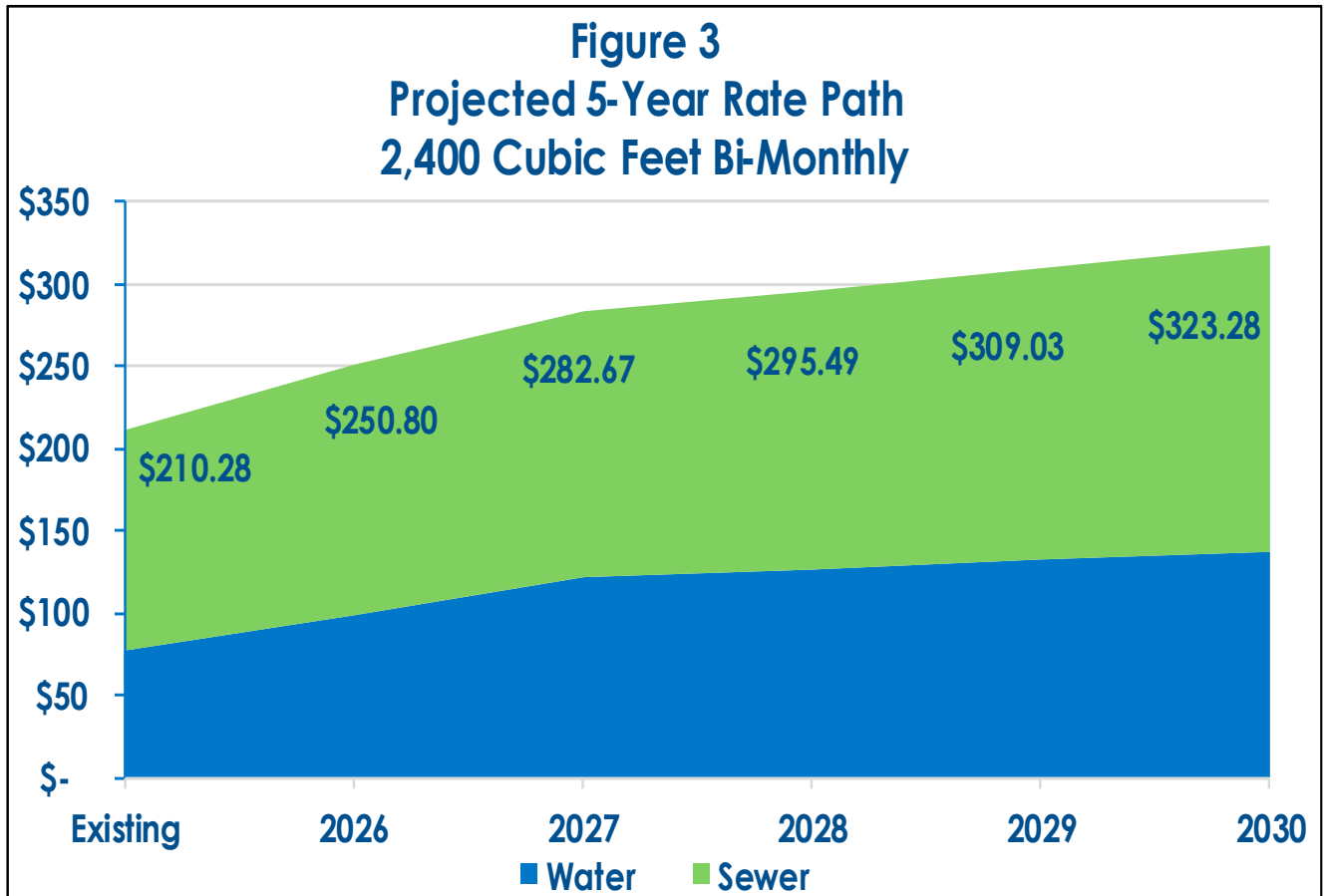
Description	Existing Rates	Projected For Fiscal Year Ending June 30:				
		2026	2027	2028	2029	2030
<b>Bi-Monthly Fixed Charge by Meter Size:</b>						
5/8 Inch	\$ 34.90	\$ 50.40	\$ 62.00	\$ 64.48	\$ 67.06	\$ 69.74
3/4 Inch	\$ 52.30	\$ 69.97	\$ 86.07	\$ 89.52	\$ 93.10	\$ 96.82
1.0 Inch	\$ 87.14	\$ 109.11	\$ 134.22	\$ 139.59	\$ 145.17	\$ 150.97
1.5 Inch	\$ 174.24	\$ 206.97	\$ 254.58	\$ 264.76	\$ 275.36	\$ 286.36
2.0 Inch	\$ 278.90	\$ 324.39	\$ 399.01	\$ 414.97	\$ 431.57	\$ 448.82
3.0 Inch	\$ 522.92	\$ 598.37	\$ 736.01	\$ 765.45	\$ 796.08	\$ 827.90
4.0 Inch	\$ 871.48	\$ 989.77	\$ 1,217.46	\$ 1,266.16	\$ 1,316.82	\$ 1,369.44
6.0 Inch	\$ 1,742.98	\$ 1,968.27	\$ 2,421.06	\$ 2,517.91	\$ 2,618.65	\$ 2,723.31
8.0 Inch	\$ 2,788.62	\$ 3,142.47	\$ 3,865.38	\$ 4,020.00	\$ 4,180.85	\$ 4,347.93
Fire Protection	\$ 82.54	\$ 100.26	\$ 123.32	\$ 128.26	\$ 133.39	\$ 138.72
<b>Volumetric Rate Per 100 Cubic Feet:</b>						
All Flow	\$ 1.75	\$ 2.04	\$ 2.51	\$ 2.61	\$ 2.71	\$ 2.82



**Table 40 – Proposed Bi-Monthly Sewer Rates**

Description	Existing Rates	Projected For Fiscal Year Ending June 30:				
		2026	2027	2028	2029	2030
<b>Bi-Monthly Fixed Charge:</b>						
Single-Family (per dwelling unit)	\$ 113.22	\$ 100.04	\$ 106.04	\$ 111.34	\$ 116.91	\$ 122.76
Multi-Family (per dwelling unit)	\$ 90.58	\$ 106.85	\$ 113.26	\$ 118.92	\$ 124.87	\$ 131.12
Non-Residential (per account) <sup>[1]</sup>	\$ -	\$ 61.59	\$ 65.29	\$ 68.55	\$ 71.98	\$ 75.58
Industrial (per EDU) <sup>[2]</sup>	\$ 127.50	\$ 151.62	\$ 160.72	\$ 168.76	\$ 177.20	\$ 186.07
<b>Volumetric Rates Per 100 Cubic Feet:</b>						
Single-Family	\$ 0.84	\$ 2.14	\$ 2.27	\$ 2.38	\$ 2.50	\$ 2.63
Multi-Family <sup>[3]</sup>	\$ 0.84	\$ -	\$ -	\$ -	\$ -	\$ -
Non-Residential - Low Strength	\$ 4.91	\$ 4.40	\$ 4.66	\$ 4.89	\$ 5.13	\$ 5.40
Non-Residential - Medium Strength	\$ 9.82	\$ 9.42	\$ 9.97	\$ 10.46	\$ 10.98	\$ 11.55
Non-Residential - High Strength	\$ 13.26	\$ 12.60	\$ 13.34	\$ 13.99	\$ 14.70	\$ 15.46
Specific Industrial	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Notes:</b>						
[1] All "Non-Residential" customers will now pay a bi-monthly fixed fee per account under the proposed rate structure. "Non-Residential" customers do not pay a bi-monthly fixed fee under the existing rate structure.						
[2] For specific industrial customers that are billed monthly instead of bi-monthly, they will pay half of the bi-monthly rate per EDU.						
[3] Under the proposed rate structure, "Multi-Family" customers will now only pay a flat fee per dwelling unit regardless of usage.						

The projected user rates provided herein for the periods beyond the Test Year are intended for strategic planning purposes, and to provide the City with the estimated future rates that may be needed to satisfy the projected cash flow requirements. The rates are developed in accordance with the assumed customer, flow, expenditure, and revenue estimates projected in this rate study. It is important to note that, since it is necessary to utilize numerous assumptions to develop the projected operating results, to the extent that actual customers, flows and/or system expenditures differ from those assumed herein, additional rate adjustments may be required. For informative purposes, a calculation of the typical bi-monthly bill for a representative City single-family residential customer based on the projected rates, as well as the accompanying change in the bi-monthly bill for each year of the Projection Period is included herein. An illustration of the projected typical bill rate path is provided in **Figure 3**.



### 5.3 Debt Service Coverage

The water and sewer operating statements also include a calculation of the annual debt service coverage. Debt service coverage is generally viewed as an indicator of the financial strength of the utility. The debt service coverage ratio is broadly calculated by dividing the net revenues by the annual debt service requirement. For the purposes of the debt service coverage calculation developed herein, the net revenues consist of the total operating revenues (user rate revenues plus other revenues) less O&M expenses. In accordance with the requirements of the outstanding loan agreements, the City must maintain coverage of at least 120% (1.20 times) of the annual debt service payment. The pro-forma operating statements indicate that the water and sewer systems are expected to meet or exceed the minimum level of debt service coverage required in each fiscal year of the Projection Period. It is important to note that the coverage results are provided for informative purposes only and are not intended as a legally supportable calculation for representation to bondholders. The debt service coverage for the water and sewer enterprise systems respectively over the projection period is provided in **Table 41**.



**Table 41 – Water and Sewer Utility System Projected Debt Service Coverage Ratio**

Fiscal Year	Water System <sup>[1]</sup>		Sewer System	
	Projected	Minimum	Projected	Minimum
2026	6.24	1.20	1.22	1.20
2027	27.82	1.20	1.43	1.20
2028	<b>N/A</b>	1.20	1.60	1.20
2029	<b>N/A</b>	1.20	1.79	1.20
2030	<b>N/A</b>	1.20	2.00	1.20

**Notes:**

[1] There are no outstanding debt obligations associated with the water system starting in fiscal year 2028.

## 5.4 Summary of Projected Operating Results

The cash-flow statements outlining the projected operating results are summarized in **Tables 42** and **43** for the water and sewer systems, respectively. The results demonstrate that the proposed rates and charges along with the other respective system revenues are anticipated to be sufficient to satisfy the projected Revenue Requirements and capital needs for each respective utility system.



**Table 42 – Water System Projected Operating Results**

Description	Projected for Fiscal Year Ending June 30, (\$1,000s)				
	Proposed 2026	2027	2028	2029	2030
<b>Revenues:</b>					
Water Sales	\$ 29,758	\$ 36,861	\$ 38,611	\$ 40,446	\$ 42,372
Other Revenues	934	934	934	934	934
<b>Total Revenues</b>	<b>\$ 30,692</b>	<b>\$ 37,795</b>	<b>\$ 39,545</b>	<b>\$ 41,380</b>	<b>\$ 43,306</b>
O&M Expenses	(25,924)	(27,011)	(27,852)	(28,720)	(29,616)
<b>Net Income For Debt</b>	<b>\$ 4,768</b>	<b>\$ 10,784</b>	<b>\$ 11,693</b>	<b>\$ 12,660</b>	<b>\$ 13,690</b>
<b>Debt Service:</b>					
Existing	\$ (764)	\$ (388)	\$ -	\$ -	\$ -
Future	-	-	-	-	-
<b>Total Debt Service</b>	<b>\$ (764)</b>	<b>\$ (388)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Net Results</b>	<b>\$ 4,004</b>	<b>\$ 10,397</b>	<b>\$ 11,693</b>	<b>\$ 12,660</b>	<b>\$ 13,690</b>
<b>Debt Coverage</b>	<b>6.24</b>	<b>27.82</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Fund Balance Activity:</b>					
<b>Operating Fund - Water</b>					
Beginning Fund Balance	\$ 1,322	\$ 3,338	\$ 570	\$ 3,165	\$ 6,304
Deposit/(Withdrawal) from Operations	4,004	10,397	11,693	12,660	13,690
Deposit/(Withdrawal) fr/(to) Capital Fund	(1,838)	(12,965)	(8,698)	(9,072)	(12,242)
Deposit/(Withdrawal) fr/(to) Equip Replacement Fund	(150)	(200)	(400)	(450)	(450)
<b>Ending Fund Balance</b>	<b>\$ 3,338</b>	<b>\$ 570</b>	<b>\$ 3,165</b>	<b>\$ 6,304</b>	<b>\$ 7,302</b>
<b>Capital Fund - Water</b>					
Beginning Fund Balance	\$ 8,922	\$ -	\$ -	\$ -	\$ -
Net Transfers In/(Out)	1,838	12,965	8,698	9,072	12,242
Cash Funded Capital Projects	(10,760)	(12,965)	(8,698)	(9,072)	(10,454)
<b>Ending Fund Balance</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,787</b>
<b>Equipment Replacement Fund - Water</b>					
Beginning Fund Balance	\$ 54	\$ 24	\$ 59	\$ 36	\$ 12
Net Transfers In/(Out)	150	200	400	450	450
Approved Loans	-	-	-	-	-
Lease Payments	(105)	(90)	(174)	(224)	(155)
Vehicle Purchases	(75)	(75)	(250)	(250)	(250)
<b>Ending Fund Balance</b>	<b>24</b>	<b>59</b>	<b>36</b>	<b>12</b>	<b>57</b>
<b>Total Ending Fund Balance</b>	<b>\$ 3,362</b>	<b>\$ 630</b>	<b>\$ 3,201</b>	<b>\$ 6,316</b>	<b>\$ 9,147</b>
<b>Total Days Cash on Hand</b>	<b>47.34</b>	<b>8.51</b>	<b>41.95</b>	<b>80.27</b>	<b>112.73</b>



**Table 43 – Sewer System Projected Operating Results**

Description	Projected for Fiscal Year Ending June 30, (\$1,000s)				
	Proposed 2026	2027	2028	2029	2030
<b>Revenues:</b>					
Wastewater Sales	\$ 37,779	\$ 40,233	\$ 42,443	\$ 44,794	\$ 47,303
Other Revenues	1,241	1,241	1,241	1,241	1,241
<b>Total Revenues</b>	<b>\$ 39,020</b>	<b>\$ 41,474</b>	<b>\$ 43,684</b>	<b>\$ 46,035</b>	<b>\$ 48,544</b>
O&M Expenses	(30,321)	(31,296)	(32,283)	(33,304)	(34,360)
<b>Net Income For Debt</b>	<b>\$ 8,699</b>	<b>\$ 10,179</b>	<b>\$ 11,401</b>	<b>\$ 12,731</b>	<b>\$ 14,184</b>
<b>Debt Service:</b>					
Existing	\$ (7,106)	\$ (7,106)	\$ (7,106)	\$ (7,106)	\$ (7,106)
Future	-	-	-	-	-
<b>Total Debt Service</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>	<b>\$ (7,106)</b>
<b>Net Results</b>	<b>\$ 1,593</b>	<b>\$ 3,073</b>	<b>\$ 4,296</b>	<b>\$ 5,626</b>	<b>\$ 7,079</b>
<b>Debt Coverage</b>	<b>1.22</b>	<b>1.43</b>	<b>1.60</b>	<b>1.79</b>	<b>2.00</b>
<b>Fund Balance Activity:</b>					
<b>Operating Fund - Sewer</b>					
Beginning Balance	\$ 22,847	\$ 14,953	\$ 15,433	\$ 15,920	\$ 16,424
Deposit/(Withdrawal) from Operations	1,593	3,073	4,296	5,626	7,079
Deposit/(Withdrawal) fr/(to) Capital Fund	(8,979)	(1,979)	(3,279)	(4,417)	(5,991)
Deposit/(Withdrawal) fr/(to) Equip Replacement Fund	(507)	(614)	(530)	(705)	(567)
<b>Ending Fund Balance</b>	<b>14,953</b>	<b>15,433</b>	<b>15,920</b>	<b>16,424</b>	<b>16,945</b>
<b>Capital Fund - Sewer</b>					
Beginning Fund Balance	\$ 9,823	\$ 12,138	\$ 7,020	\$ 2,932	\$ 1,182
Net Transfers In/(Out)	8,979	1,979	3,279	4,417	5,991
Cash Funded Capital Projects	(6,664)	(7,097)	(7,366)	(6,168)	(6,569)
<b>Ending Fund Balance</b>	<b>12,138</b>	<b>7,020</b>	<b>2,932</b>	<b>1,182</b>	<b>604</b>
<b>Equipment Replacement Fund - Sewer</b>					
Beginning Fund Balance	\$ 718	\$ 718	\$ 718	\$ 718	\$ 718
Net Transfers In/(Out)	507	614	530	705	567
Approved Loans	-	-	-	-	-
Lease Payments	(441)	(440)	(401)	(350)	(325)
Vehicle Purchases	(67)	(174)	(128)	(355)	(242)
<b>Ending Fund Balance</b>	<b>718</b>	<b>718</b>	<b>718</b>	<b>718</b>	<b>718</b>
<b>Ending Fund Balance</b>	<b>\$ 27,809</b>	<b>\$ 23,171</b>	<b>\$ 19,571</b>	<b>\$ 18,324</b>	<b>\$ 18,267</b>
<b>Total Days Cash on Hand</b>	<b>334.76</b>	<b>270.25</b>	<b>221.27</b>	<b>200.82</b>	<b>194.04</b>



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## Section 6 – Conclusions and Recommendations

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### 6.1 Disclaimers

#### 6.1.1 General Disclaimer

In the development of the proposed user rates and charges, certain historical reviews and analyses have been performed, together with the application of assumptions based on prudent financial, operational, and ratemaking relationships. The cost criteria and customer usage characteristics associated with general ratemaking procedures are representative of averages and are not intended as indicators of any individual customer.

In the preparation of the rate study, certain assumptions have been made with respect to conditions that may occur in the future. While it is believed that these assumptions are reasonable for the purpose of this update, they are dependent upon future events and actual conditions may differ from those assumed. In addition, the study has used and relied upon certain information that was provided by other parties not associated with Willdan. Such information includes, among other things, the City's audited financial statements, annual operating budgets, periodic reports, and other information and data provided by the City, its independent auditors, and other sources. While the sources are believed to be reliable, there has been no independent verification of the information, and no assurances are offered with respect thereto. To the extent that future conditions differ from those assumed herein or provided by others, the actual results may vary from those projected.

#### 6.1.2 Municipal Advisory Disclaimer

Unless the City of Vacaville, California (the "City") has a written engagement from Willdan Financial Services ("Willdan") for municipal advisory services, Willdan is not advising or recommending any action be taken by the recipient of this information with respect to any prospective, new, or existing municipal financial products or issuance of municipal securities (including with respect to the structure, timing, terms and other similar matters concerning such financial products or issues). The City shall discuss any such information and material contained in Willdan's work product with any and all internal and/or external advisors and experts, including its own municipal advisor, that it deems appropriate before acting on the information and material.

For the avoidance of doubt and without limiting the foregoing, in connection with any revenue projections, cash-flow analyses, feasibility studies and/or other analyses Willdan may provide the City with respect to financial, economic or other matters relating to a prospective, new or existing issuance of municipal securities of the City, (A) any such projections, studies and analyses shall be based upon assumptions, opinions or views (including, without limitation, any assumptions related to revenue growth) established by the City, in conjunction with such of its municipal, financial, legal and other advisers as it deems appropriate; and (B) under no circumstances shall Willdan be asked to provide, nor shall it



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provide, any advice or recommendations or subjective assumptions, opinions or views with respect to the actual or proposed structure, terms, timing, pricing or other similar matters with respect to any municipal financial products or municipal securities issuances, including any revisions or amendments thereto.

## 6.2 Conclusions

As previously addressed, the purpose of this study is to provide a review of the City's existing utility rates to determine if rate adjustments are necessary to meet the budgeted and/or projected financial needs in future years. This Report is the result of the collaborative efforts of representatives from both the City and Willdan. City staff were diligent and cooperative in their efforts to ensure the availability and quality of source data on financial and operating matters. Based on the reviews, analyses and assumptions discussed herein, it is concluded that:

1. The proposed user rates and charges are anticipated to generate sufficient revenues to meet the Revenue Requirements of each respective system based upon the projected expenditures, capital project timing and costs, transfers, and billable customer units estimated for the Test Year. The proposed rates are based on an assumed implementation date of July 1, 2025. To the extent that the actual implementation date varies from the assumed implementation date, additional rate adjustments and/or appropriations from existing reserves may be necessary.
2. The estimated revenues and resulting rate adjustments for the remaining years of the Projection Period beyond the Test Year are developed based on the customer growth assumptions generated from the historical analyses and discussions with City staff.
3. Customer growth for the water and sewer systems is projected based on historical customer data as provided by the City as well as discussions with the City staff regarding developer activity and anticipated construction. If it turns out that the customer growth assumptions are not realized, the resulting revenues could be different than projected.
4. The projection of billable water and sewer flows is based on historical trends regarding the average flow per user for each customer class. The average water and sewer flow per account is developed from historical customer data and is assumed to remain relatively constant for the Projection Period. The historical billing data provided by the City was utilized to identify the average flow statistics for system customers. For the analyses developed herein, it is assumed that the average usage statistics for the Projection Period will be consistent with recent historical average usage levels as realized in recent years, or as otherwise assumed based on discussions with staff. When applying the estimated average usage statistics, it is assumed that the water and sewer



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sales will increase with the estimated growth in customers. However, it is important to note that annual variations in rainfall and other climatological factors may influence the level of future water demands and the accompanying billable sewer flows for the City.

5. Future capital improvement projects are assumed to occur as reported by the City in its CIP. To the extent that the timing of such projects may change from that estimated herein, the cost of such projects and resulting impact on future rates and charges may vary from those indicated.
6. The proposed rates and rate structure are consistent with industry standards for rate-setting practices, comply with Proposition 218 and conform to the City's financial policies with respect to:
  - a. Equitably recovering costs;
  - b. Being based upon the proportionate cost of providing services; and
  - c. Generating sufficient revenue to recover system Revenue Requirements, meet debt service coverage requirements, fund capital needs, and meet reserve requirements.

## 6.3 Recommendations

Based on the reviews, analyses and assumptions addressed herein, as well as the resulting conclusions provided above, it is respectfully recommended that the City:

1. Adopt the proposed water and sewer rates.
2. Enact the proposed rates to become effective as of July 1, 2025 (or other such date as determined by the City). Based on the timing of the project and the required public hearing procedures and noticing requirements, it is expected that the proposed water and sewer rates will become effective on the recommended date.
3. Readdress the COS analysis portion of this study every three to five years to ensure costs are recovered consistently with COS principles and customer characteristics.

We appreciate the opportunity to be of service to the City in this engagement. In addition, we would like to thank City staff for the valuable assistance provided during the completion of the rate study.

Respectfully Yours,

WILLDAN FINANCIAL SERVICES

# APPENDIX

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## DETAIL FOR THE COMPREHENSIVE WATER & SEWER UTILITY RATE STUDY



COMPREHENSIVE WATER & SEWER UTILITY RATE STUDY FOR THE  
CITY OF VACAVILLE, CALIFORNIA



# APPENDIX A

## Revenue Requirement for User Rates

**APPENDIX - A**  
**CITY OF VACAVILLE, CA**  
**Development of Rate Revenue Requirements**

Line No:	Description	[A]	[B]	[C]=[A]*[B]	[D]	[E]=[A]*[D]
		Test Year for Rate Revenue Requirement				
		FY 2026	% to Water	Water	% to Sewer	Sewer
1	<b>Total Operating Revenues</b>	\$ 69,711,847		\$ 30,691,699		\$ 39,020,148
	Less:					
	<b>Other Operating Revenues</b>					
2	4001 Taxes - Property Taxes-Se	\$ 82,000	100%	\$ 82,000	0%	\$ -
3	4403 Radio Transmitter Lease	80,000	100%	80,000	0%	-
4	4907 Cfs - Finance	227,000	100%	227,000	0%	-
5	5001 Utility Service Charges	11,100,000	100%	11,100,000	0%	-
6	5002 Volume Charges	12,000,000	100%	12,000,000	0%	-
7	5005 Cross Connection/Backflow	480,000	100%	480,000	0%	-
8	5221 Other Revenue	65,000	100%	65,000	0%	-
9	4103 Permits - Industry Permit	7,000	0%	-	100%	7,000
10	4301 Interest - Investments In	300,000	0%	-	100%	300,000
11	4907 Cfs - Finance	227,000	0%	-	100%	227,000
12	5001 Utility Service Charges	23,230,000	0%	-	100%	23,230,000
13	5002 Volume Charges	7,000,000	0%	-	100%	7,000,000
14	5006 Pretreatment	707,000	0%	-	100%	707,000
15	5008 Sewer Variable Charges	3,480,000	0%	-	100%	3,480,000
16	<b>Total Other Operating Revenues</b>	<b>2,175,000</b>		<b>934,000</b>		<b>1,241,000</b>
17	<b>Total Rate Revenue Requirement</b>	\$ <b>67,536,847</b>	<b>44%</b>	\$ <b>29,757,699</b>	<b>56%</b>	\$ <b>37,779,148</b>

# APPENDIX B

## Water Cost-of-Service Analysis

**APPENDIX - B**  
**CITY OF VACAVILLE, CA**  
**Allocation of Test Year Costs to Water Function**

<b>Test Year Revenue Requirement</b>		
<b>Line No:</b>	<b>Expense Group</b>	<b>FY 2026</b>
1	Treatment	\$6,211,443
2	Transmission & Distribution	6,517,748
3	Admin	8,592,786
4	Source of Supply	4,601,809
5	Transfers	0
6	Existing Debt	763,900
7	New Debt	0
8	CIP	10,760,361
9	Capital Outlay	75,000
<b>10</b>	<b>Total</b>	<b>\$37,523,047</b>

# APPENDIX - B

## CITY OF VACAVILLE, CA

### Water Customer and Equivalent Residential Unit Calculation - Test Year FY 2026

#### Meter Equivalencies

Line No:	Meter Size	Class --> Billing Basis-->	[A - 1]	[B - 1]	[C - 1]	[D - 1]	[E - 1]
			Single Family Units	Multi Family Units	Commercial Units	Institutional Units	Industrial Units
1	0.625		1.00	1.00	1.00	1.00	1.00
2	0.75		1.50	1.50	1.50	1.50	1.50
3	1.00		2.50	2.50	2.50	2.50	2.50
4	1.50		5.00	5.00	5.00	5.00	5.00
5	2.00		8.00	8.00	8.00	8.00	8.00
6	3.00		15.00	15.00	15.00	15.00	15.00
7	4.00		25.00	25.00	25.00	25.00	25.00
8	6.00		50.00	50.00	50.00	50.00	50.00
9	8.00		80.00	80.00	80.00	80.00	80.00
10	Fire Protection		1.00	1.00	1.00	1.00	1.00

#### Customer Accounts

Line No:	Meter Size	Class --> Billing Basis-->	[A - 2]	[B - 2]	[C - 2]	[D - 2]	[E - 2]	Total
			Single Family Units	Multi Family Units	Commercial Units	Institutional Units	Industrial Units	
11	0.625		12,413	48	206	72	-	12,739
12	0.75		9,803	105	89	101	2	10,100
13	1.00		5,963	275	291	217	17	6,763
14	1.50		56	62	172	89	16	395
15	2.00		8	56	167	117	11	359
16	3.00		-	76	43	69	5	193
17	4.00		-	31	4	33	1	69
18	6.00		-	6	-	7	1	14
19	8.00		-	7	-	1	1	9
20	Fire Protection		-	28	173	45	16	262
21	<b>Total Monthly Customers</b>		<b>28,243</b>	<b>694</b>	<b>1,145</b>	<b>751</b>	<b>70</b>	<b>30,903</b>

#### Total Equivalent Residential Units

Line No:	Meter Size	Class --> Billing Basis-->	[A - 1] * [A - 2]	[B - 1] * [B - 2]	[C - 1] * [C - 2]	[D - 1] * [D - 2]	[E - 1] * [E - 2]	Total
			Single Family Units	Multi Family Units	Commercial Units	Institutional Units	Industrial Units	
22	0.625		12,413	48	206	72	-	12,739
23	0.75		14,705	158	134	152	3	15,150
24	1.00		14,908	688	728	543	43	16,908
25	1.50		280	310	860	445	80	1,975
26	2.00		64	448	1,336	936	88	2,872
27	3.00		-	1,140	645	1,035	75	2,895
28	4.00		-	775	100	825	25	1,725
29	6.00		-	300	-	350	50	700
30	8.00		-	560	-	80	80	720
31	Fire Protection		-	28	173	45	16	262
32	<b>Total Monthly Customers</b>		<b>42,369</b>	<b>4,454</b>	<b>4,181</b>	<b>4,482</b>	<b>460</b>	<b>55,946</b>

**APPENDIX - B**  
**CITY OF VACAVILLE, CA**  
**Water Max Day/Hour Allocation Factors - Test Year FY 2026**

Line No:	Description	[A]	[B]	[C]	[D]	[E]	[F]
		Flow	Peak Month (CCF)	Average Month (CCF)	Max Day/Avg Day Factor	Max Day Total Capacity (CCF/Day)	Max Day Extra Capacity (CCF/Day)
<b>Operating Statistics:</b>		<b>MGD</b>	<b>Factor</b>				
1	Avg Day Flow (MGD)	14.45	1.00				
2	Max Day Flow (MGD)	25.69	1.78				
<b>Cost Allocation Factors:</b>		<b>Base</b>	<b>Max Day</b>	<b>Max Hour</b>			
4	Base/Max Day	56.25%	43.75%	0.00%			
<b>Peaking Factors:</b>					<b>[B] / [C]</b>		
<b>All Customers</b>							
5	All Flow		826,146	529,425	1.56		
<b>Fire Protection</b>							
6	All Flow		-	-	0.00		
					<b>Maximum Day</b>		
						<b>[D] x [B]</b>	<b>[E] - [B]</b>
	<b>Estimated Max Day/Hour Flows:</b>	<b>Total Annual Flow (CCF)</b>	<b>Average Daily Flow (CCF)</b>		<b>Peaking Factor</b>	<b>Total Capacity</b>	<b>Extra Capacity</b>
<b>All Customers</b>							
7	All Flow	7,093,094	19,433		1.56	30,325	10,892
<b>Fire Protection</b>							
8	All Flow	-	-		0.00	-	-
9	<b>Total</b>	<b>7,093,094</b>	<b>19,433</b>			<b>30,325</b>	<b>10,892</b>

# APPENDIX - B

## CITY OF VACAVILLE, CA

### Water Units of Service by Cost Component - Test Year FY 2026

Line No:	Description	[A]	[B]	[C]	[D]
		Bi-Monthly ERUs	Bi-Monthly Accounts	Base (CCF)	Max Day (CCF/Day)
1	<b>All Customers</b>	<b>55,684</b>	<b>30,641</b>	<b>7,093,094</b>	<b>10,892</b>
2	All Flow			7,093,094	10,892
3	<b>Fire Protection</b>	<b>262</b>	<b>262</b>	-	-
4	All Flow			-	-
5	<b>Total</b>	<b>55,946</b>	<b>30,903</b>	<b>7,093,094</b>	<b>10,892</b>

**APPENDIX - B**  
**CITY OF VACAVILLE, CA**  
**Allocation of Water Costs - Test Year FY 2026**

Line No:	Description	Water Costs	Base	Extra Capacity Max Day	Meters & Services	Billing & Collection	Fire Protection	Total (Check)
<b>Allocation Factors:</b>								
1	Treatment		56.248%	43.752%	0.000%	0.000%	0.000%	100.00%
2	Transmission & Distribution		56.248%	43.752%	0.000%	0.000%	0.000%	100.00%
3	Admin		0.000%	0.000%	67.297%	30.650%	2.053%	100.00%
4	Source of Supply		56.248%	43.752%	0.000%	0.000%	0.000%	100.00%
5	Transfers		0.000%	0.000%	100.000%	0.000%	0.000%	100.00%
6	Existing Debt		0.000%	0.000%	100.000%	0.000%	0.000%	100.00%
7	New Debt		0.000%	0.000%	100.000%	0.000%	0.000%	100.00%
8	CIP		4.275%	3.325%	92.400%	0.000%	0.000%	100.00%
9	Capital Outlay		100.000%	0.000%	0.000%	0.000%	0.000%	100.00%
<b>Allocation of Costs:</b>								
10	Treatment	\$ 6,211,443	\$ 3,493,786	\$ 2,717,657	\$ -	\$ -	\$ -	\$ 6,211,443
11	Transmission & Distribution	6,517,748	3,666,075	2,851,673	-	-	-	6,517,748
12	Admin	8,592,786	-	-	5,782,687	2,633,689	176,410	8,592,786
13	Source of Supply	4,601,809	2,588,406	2,013,403	-	-	-	4,601,809
14	Transfers	-	-	-	-	-	-	-
15	Existing Debt	763,900	-	-	763,900	-	-	763,900
16	New Debt	-	-	-	-	-	-	-
17	CIP	10,760,361	459,986	357,802	9,942,573	-	-	10,760,361
18	Capital Outlay	75,000	75,000	-	-	-	-	75,000
19	Non-Rate Rev & Fund Balance	(7,765,348)	(2,128,106)	(1,643,284)	(3,412,411)	(545,039)	(36,508)	(7,765,348)
20	<b>Total</b>	<b>\$ 29,757,699</b>	<b>\$ 8,155,147</b>	<b>\$ 6,297,251</b>	<b>\$ 13,076,749</b>	<b>\$ 2,088,650</b>	<b>\$ 139,902</b>	<b>\$ 29,757,699</b>
<b>Total Units of Service</b>			<b>7,093,094.00</b>	<b>10,891.50</b>	<b>55,683.50</b>	<b>30,903.00</b>	<b>262.00</b>	
<b>Units</b>			<b>CCF</b>	<b>CCF/Day</b>	<b>ERU/Bi-Monthly</b>	<b>Bills/Bi-Monthly</b>	<b>ERU/Bi-Monthly</b>	
<b>Cost Per Unit</b>			<b>\$ 1.1497</b>	<b>\$ 578.1801</b>	<b>\$ 39.1401</b>	<b>\$ 11.2645</b>	<b>\$ 88.9960</b>	
<b>Units</b>			<b>CCF</b>	<b>CCF/Day</b>	<b>ERU/Bi-Monthly</b>	<b>Bills/Bi-Monthly</b>	<b>ERU/Bi-Monthly</b>	

# APPENDIX - B

## CITY OF VACAVILLE, CA

### Water Cost of Service by Cost Component and Customer Class - Test Year FY 2026

Line No:	Description	[A]	[B]	[C]	[D]	[F]
		Bi-Monthly ERUs	Bi-Monthly Accounts	Base (CCF)	Max Day (CCF/Day)	Total
1	<b>All Customers</b>	\$13,076,749	\$ 2,070,942	\$ 8,155,147	\$ 6,297,251	\$29,600,089
2	All Flow			\$ 8,155,147	\$ 6,297,251	
3	<b>Fire Protection</b>	\$ 139,902	\$ 17,708	\$ -	\$ -	\$ 157,610
4	All Flow			\$ -	\$ -	
5	<b>Total</b>	<b>\$13,216,651</b>	<b>\$ 2,088,650</b>	<b>\$ 8,155,147</b>	<b>\$ 6,297,251</b>	<b>\$29,757,699</b>

**APPENDIX - B**  
**CITY OF VACAVILLE, CA**  
**Water Rate Calculation - Test Year FY 2026**

Line No:	Description	[A]	[B]	[C]	[D]	[E]	[F]
		Capacity Ratio	Meter Charge	Customer Charge	Proposed Charge	Existing Charge	Difference
<b>General Service</b>							
1	5/8 Inch	1.00	\$ 39.14	\$ 11.26	\$ 50.40	\$ 34.90	\$ 15.50
2	3/4 Inch	1.50	\$ 58.71	\$ 11.26	\$ 69.97	\$ 52.30	\$ 17.67
3	1.0 Inch	2.50	\$ 97.85	\$ 11.26	\$ 109.11	\$ 87.14	\$ 21.97
4	1.5 Inch	5.00	\$ 195.70	\$ 11.26	\$ 206.97	\$ 174.24	\$ 32.73
5	2.0 Inch	8.00	\$ 313.12	\$ 11.26	\$ 324.39	\$ 278.90	\$ 45.49
6	3.0 Inch	15.00	\$ 587.10	\$ 11.26	\$ 598.37	\$ 522.92	\$ 75.45
7	4.0 Inch	25.00	\$ 978.50	\$ 11.26	\$ 989.77	\$ 871.48	\$ 118.29
8	6.0 Inch	50.00	\$ 1,957.01	\$ 11.26	\$ 1,968.27	\$ 1,742.98	\$ 225.29
9	8.0 Inch	80.00	\$ 3,131.21	\$ 11.26	\$ 3,142.47	\$ 2,788.62	\$ 353.85

<b>Fire Service</b>							
1	All Customers	1.00	\$ 89.00	\$ 11.26	\$ 100.26	\$ 82.54	\$ 17.72

Line No:	Customer Class	Base	Peaking	Proposed Rate (\$/CCF)	Existing Rate (\$/CCF)	Difference	Tier Differential
<b>All Customers</b>							
1	All Flow	\$ 1.15	\$ 0.89	\$ 2.04	\$ 1.75	\$ 0.29	\$ 1.00

Line No:	Customer Class	Annual Use (CCF)	Peaking Costs	Peaking Unit Cost
<b>All Customers</b>				
1	All Flow	7,093,094	\$ 6,297,251	\$ 0.8878
<b>Fire Protection</b>				
2	All Flow	-	\$ -	\$ -
3	<b>Total</b>	<b>7,093,094</b>	<b>\$ 6,297,251</b>	

# APPENDIX C

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## Sewer Cost-of-Service Analysis

**APPENDIX - C**  
**CITY OF VACAVILLE, CA**  
**Allocation of Test Year Costs to Sewer Function**

Test Year Revenue Requirement		
Line No:	Expense Group	FY 2026
1	Collection	\$7,113,467
2	Treatment	10,443,360
3	Administration	12,764,470
4	Existing Debt	7,105,613
5	New Debt	0
6	CIP	6,664,131
7	Capital Outlay	66,775
<b>8</b>	<b>Total</b>	<b>\$ 44,157,816</b>

# APPENDIX - C

## CITY OF VACAVILLE, CA

### Sewer Customer Account & Strength Characteristics by Customer Class - Test Year FY 2026

Line No:	Description	Total Accounts	Total ERUs	CCF Flow <sup>[1]</sup>	BOD Factor <sup>[2]</sup>	BOD Pounds	TSS Factor <sup>[2]</sup>	TSS Pounds
<b>Residential Classes</b>								
<b>Single-Family Residential <sup>[3]</sup></b>								
1	Single Family	27,866	27,866	2,670,979	225	3,749,045	225	3,749,045
2	2nd Unit	7	7	882	225	1,238	225	1,238
3	Low Income Discount	190	190	13,904	225	19,516	225	19,516
4	Temporary Residential	71	71	5,046	225	7,083	225	7,083
5	Out Of City Elmira	58	58	5,559	225	7,803	225	7,803
6	<b>Sub-Total Single-Family Residential</b>	<b>28,192</b>	<b>28,192</b>	<b>2,696,370</b>	<b>225</b>	<b>3,784,684</b>	<b>225</b>	<b>3,784,684</b>
<b>Multi-Family Residential</b>								
7	Multifamily	441	7,779	453,629	225	636,724	225	636,724
8	Condo	119	844	62,878	225	88,257	225	88,257
9	Mobile Home	13	1,083	62,046	225	87,089	225	87,089
10	<b>Sub-Total Multi-Family Residential</b>	<b>573</b>	<b>9,706</b>	<b>578,553</b>	<b>225</b>	<b>812,070</b>	<b>225</b>	<b>812,070</b>
<b>Non-Residential Classes</b>								
<b>Low Strength</b>								
11	Commercial	53	53	23,462	225	44,026	225	44,026
12	Office Retail	313	313	85,454	150	106,903	150	106,903
13	Other Commercial	95	95	36,231	225	67,987	225	67,987
14	Temporary Commercial	2	2	318	225	597	225	597
15	Automotive	69	69	24,314	180	36,500	280	56,778
16	Car Wash	13	13	46,585	20	7,770	150	58,278
17	Laundry	7	7	11,417	150	14,283	110	10,474
18	Medical Dental	36	36	17,241	130	18,693	80	11,503
19	Hotel	2	2	6,381	310	16,497	120	6,386
20	Hotel 133	14	14	24,454	310	63,223	120	24,474
21	Mixed Use	10	10	6,655	250	13,876	250	13,876
22	Church	39	39	12,634	225	23,708	225	23,708
23	City	77	77	6,051	130	6,560	100	5,047
24	Other Public	20	20	21,529	130	23,342	100	17,955
25	VV USD	25	25	34,899	130	37,837	100	29,106
26	School	10	10	10,007	130	10,850	100	8,346
27	Institutional	17	17	77,081	130	83,571	100	64,286
28	Industrial General	35	35	27,932	225	52,414	225	52,414
29	<b>Sub-Total Low Strength</b>	<b>837</b>	<b>837</b>	<b>472,645</b>	<b>182</b>	<b>628,639</b>	<b>160</b>	<b>602,143</b>
<b>Medium Strength</b>								
30	Hotel 167	7	7	11,070	500	46,162	600	55,394
31	Hotel Restaurant	2	2	4,130	500	17,222	600	20,667
32	Mixed Use Restaurant	53	53	74,522	500	310,757	600	372,908
33	<b>Sub-Total Medium Strength</b>	<b>62</b>	<b>62</b>	<b>89,722</b>	<b>500</b>	<b>374,141</b>	<b>600</b>	<b>448,969</b>
<b>High Strength</b>								
34	Mortuary	2	2	113	800	754	800	754
35	Markets W/Disposal	12	12	22,283	800	148,672	800	148,672
36	Restaurant To Go	19	19	10,798	1,000	90,055	600	54,033
37	Restaurant Sit Down	71	71	49,713	1,000	414,606	600	248,764
38	<b>Sub-Total High Strength</b>	<b>104</b>	<b>104</b>	<b>82,907</b>	<b>900</b>	<b>654,088</b>	<b>700</b>	<b>452,223</b>
<b>Specific Industrial</b>								
39	Genentech	1	1,702	210,908	292	384,188	64	84,206
40	CSP At Solano	1	1,890	310,201	123	238,021	90	174,162
41	CMF	1	1,049	162,439	110	111,468	101	102,348
42	Mariani Packing Company	1	184	39,033	44	10,714	47	11,445
43	RXD Nova Pharmaceuticals	1	110	24,391	43	6,543	28	4,260
44	Matheson Tri Gas	1	28	7,519	5	235	5	235
45	<b>Sub-Total Specific Industrial</b>	<b>6</b>	<b>4,963</b>	<b>754,491</b>	<b>103</b>	<b>751,169</b>	<b>56</b>	<b>376,655</b>
40	<b>Sewer System Total</b>	<b>29,774</b>	<b>43,864</b>	<b>4,674,688</b>		<b>7,004,790</b>		<b>6,476,744</b>

**Notes:**

[1] All flows were provided from the sewer billing data.

[2] Average strength factors for BOD and TSS are based on the State Water Resources Control Board Revenue Program Guidelines, Appendix G.

[3] For single-family residential customers, the variable charge is based on the lowest average winter water use during a period determined by the City (in which consumption is typically lower due to reduced outdoor watering) for each respective residence. This established sewer charge then remains in effect for one year, with the base winter period re-calculated annually to reflect actual use for each year. This is consistent with the way single-family residential customers are currently billed for sewer service.

# APPENDIX - C

## CITY OF VACAVILLE, CA

### Allocation of Sewer Costs - Test Year FY 2026

Line No:	Description	Sewer Costs	Volume	Capacity	Strength - BOD	Strength - SS	Customer	Total (Check)
<b>Allocation Factors:</b>								
1	Treatment		0.000%	0.000%	51.958%	48.042%	0.000%	100.00%
2	Collection		50.000%	50.000%	0.000%	0.000%	0.000%	100.00%
3	Administration		0.000%	0.000%	0.000%	0.000%	100.000%	100.00%
4	CIP		45.000%	45.000%	0.000%	0.000%	10.000%	100.00%
5	Capital Outlay		50.000%	50.000%	0.000%	0.000%	0.000%	100.00%
6	Existing Debt		0.000%	0.000%	11.623%	10.747%	77.630%	100.00%
7	New Debt		0.000%	0.000%	11.623%	10.747%	77.630%	100.00%

<b>Allocation of Costs:</b>								
8	Treatment	\$ 10,443,360	\$ -	\$ -	\$ 5,426,203	\$ 5,017,157	\$ -	\$ 10,443,360
9	Collection	7,113,467	3,556,734	3,556,733	-	-	-	7,113,467
10	Administration	12,764,470	-	-	-	-	12,764,470	12,764,470
11	CIP	6,664,131	2,998,859	2,998,859	-	-	666,413	6,664,131
12	Capital Outlay	66,775	33,387	33,388	-	-	-	66,775
13	Existing Debt	7,105,613	-	-	825,892	763,633	5,516,088	7,105,613
14	New Debt	-	-	-	-	-	-	-
15	Non-Rate Rev & Fund Balance	(6,378,668)	(951,789)	(951,789)	(903,125)	(835,044)	(2,736,921)	(6,378,668)
16	<b>Total</b>	<b>\$ 37,779,148</b>	<b>\$ 5,637,191</b>	<b>\$ 5,637,191</b>	<b>\$ 5,348,970</b>	<b>\$ 4,945,746</b>	<b>\$ 16,210,050</b>	<b>\$ 37,779,148</b>

<b>Total Units of Service</b>			<b>4,674,688</b>	<b>4,674,688</b>	<b>7,004,790</b>	<b>6,476,744</b>	<b>43,864</b>
<b>Units</b>			<b>CCF</b>	<b>CCF</b>	<b>Pounds</b>	<b>Pounds</b>	<b>ERUs/Bi-Monthly</b>
<b>Cost Per Unit</b>			<b>\$ 1.21</b>	<b>\$ 1.21</b>	<b>\$ 0.76</b>	<b>\$ 0.76</b>	<b>\$ 61.59</b>
<b>Units</b>			<b>CCF</b>	<b>CCF</b>	<b>Pounds</b>	<b>Pounds</b>	<b>ERUs/Bi-Monthly</b>

# APPENDIX - C

## CITY OF VACAVILLE, CA

### Sewer Cost of Service by Cost Component and Customer Class - Test Year FY 2026

Line No:	Description	[A]	[B]	[C]	[D]	[E]	[F]
		Volume	Capacity	Strength - BOD	Strength - SS	Customer	Total
1	Single-Family Residential	\$ 3,251,544	\$ 3,251,544	\$ 2,890,046	\$ 2,890,046	\$ 10,418,424	\$ 22,701,603
2	Multi-Family Residential	697,675	697,675	620,109	620,110	3,586,876	6,222,446
3	Low Strength	569,961	569,961	480,039	459,806	309,315	2,389,082
4	Medium Strength	108,195	108,195	285,700	342,840	22,912	867,843
5	High Strength	99,977	99,977	499,472	345,325	38,433	1,083,185
6	Specific Industrial	909,838	909,838	573,604	287,620	1,834,089	4,514,990
7	<b>Total</b>	<b>\$ 5,637,191</b>	<b>\$ 5,637,191</b>	<b>\$ 5,348,970</b>	<b>\$ 4,945,746</b>	<b>\$ 16,210,050</b>	<b>\$ 37,779,148</b>

# APPENDIX - C

## CITY OF VACAVILLE, CA

### Sewer Rate Calculation - Test Year FY 2026

Line No:	Customer Class	[A] Fixed Rate Costs	[B] Bi-Monthly ERUs	[C]=[A]/[B]/6 Proposed Bi-Monthly Fixed Fee	[D] Existing Bi-Monthly Fixed Fee	[E]=[C]-[D] Bi-Monthly Fixed Fee Difference	[F] Volumetric Rate Costs	[G] Billable Annual Volume (CCF)	[H]=[F]/[G] Proposed Volumetric Rate	[I] Existing Volumetric Rate	[J]=[H]-[I] Volumetric Rate Difference
<b>Residential Classes</b>											
1	Single-Family Residential [3]	\$ 16,921,511	28,192	\$ 100.04	\$ 113.22	\$ (13.18)	\$ 5,780,092	2,696,370	\$ 2.14	\$ 0.84	\$ 1.30
2	Multi-Family Residential	\$ 6,222,446	9,706	\$ 106.85	\$ 90.58	\$ 16.27	N/A	N/A	N/A	\$ 0.84	N/A
<b>Non-Residential Classes</b>											
3	Low Strength	\$ 309,315	837	\$ 61.59	\$ -	\$ 61.59	\$ 2,079,767	472,645	\$ 4.40	\$ 4.91	\$ (0.51)
4	Medium Strength	\$ 22,912	62	\$ 61.59	\$ -	\$ 61.59	\$ 844,931	89,722	\$ 9.42	\$ 9.82	\$ (0.40)
5	High Strength	\$ 38,433	104	\$ 61.59	\$ -	\$ 61.59	\$ 1,044,751	82,907	\$ 12.60	\$ 13.26	\$ (0.66)
6	Specific Industrial	\$ 4,514,990	4,963	\$ 151.62	\$ 127.50	\$ 24.12	N/A	N/A	N/A	N/A	N/A

# APPENDIX - C

## CITY OF VACAVILLE, CA

### Sewer Revenue vs Cost of Service by Customer Class Check - Test Year FY 2026

Line No:	Customer Class	[A]	[B]	[C]=[A]*[B]*6	[D]	[E]	[F]=[D]*[E]	[G]=[C]+[F]	[H]	[I]=[H]-[G]
		Bi-Monthly ERUs	Proposed Bi-Monthly Fixed Fee	Total Fixed Fee Revenue	Billable Annual Volume (CCF)	Proposed Volumetric Rate	Total Volumetric Rate Revenues	Total Calculated Revenues	Total COS	Difference Calc vs COS
1	Single-Family Residential	28,192	\$ 100.04	\$ 16,921,511	2,696,370	\$ 2.14	\$ 5,780,092	\$ 22,701,603	\$ 22,701,603	\$ -
2	Multi-Family Residential	9,706	\$ 106.85	\$ 6,222,446	N/A	N/A	\$ -	\$ 6,222,446	\$ 6,222,446	\$ -
3	Low Strength	837	\$ 61.59	\$ 309,315	472,645	\$ 4.40	\$ 2,079,767	\$ 2,389,082	\$ 2,389,082	\$ -
4	Medium Strength	62	\$ 61.59	\$ 22,912	89,722	\$ 9.42	\$ 844,931	\$ 867,843	\$ 867,843	\$ -
5	High Strength	104	\$ 61.59	\$ 38,433	82,907	\$ 12.60	\$ 1,044,751	\$ 1,083,185	\$ 1,083,185	\$ -
6	Specific Industrial	4,963	\$ 151.62	\$ 4,514,990	N/A	N/A	\$ -	\$ 4,514,990	\$ 4,514,990	\$ -
7	<b>Total</b>	<b>43,864</b>		<b>\$ 28,029,608</b>	<b>3,341,644</b>		<b>\$ 9,749,540</b>	<b>\$ 37,779,148</b>	<b>\$ 37,779,148</b>	<b>\$ -</b>



27368 Via Industria, Suite 200  
Temecula, CA 92590  
800.755.6864 | Fax: 888.326.6864  
[www.willdan.com](http://www.willdan.com)