



Los  
Altos

## CITY OF LOS ALTOS

*Draft Report*

## Sewer Rate Study

November 2022

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# Section 1. EXECUTIVE SUMMARY

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## Background

The City of Los Altos has a sewer collection system that serves the residents and businesses within the City, as well as a portion of the Town of Los Altos Hills. The sewer collection system has 140 miles of pipes; wastewater is then conveyed via a sewer trunk line to the Palo Alto Regional Water Quality Control Plant (RWQCP) for treatment. The City is one of several partner agencies that send wastewater to the RWQCP for treatment and disposal.

## Purpose

The City of Los Altos (City) retained NBS in 2022 to perform a comprehensive sewer rate study for a number of reasons, including developing rates that support the sewer utility's long-term financial health, reflect the cost of providing service to each customer class, and are defensible and equitable. This report is provided in part to assist the City in its effort to communicate transparently with the residents and businesses it serves.

In developing new sewer rates, NBS worked cooperatively with City staff in selecting appropriate rate alternatives. Based on input from City staff, the proposed rates are summarized in this study.

## Key Findings

### REVENUE REQUIREMENTS

As a part of this rate study, NBS projected revenues and expenditures on a cash flow basis for the next twenty years. Future system rehabilitation and replacement projects are expected to draw down existing reserves and affect annual sewer rates. Capital and operational reserve funding targets are intended to meet the utility's specific financial objectives and the rate adjustments aim to meet those minimum levels. The amount of rate revenue required, that will allow reserves to be maintained at the recommended levels, is known as the *net revenue requirement*.

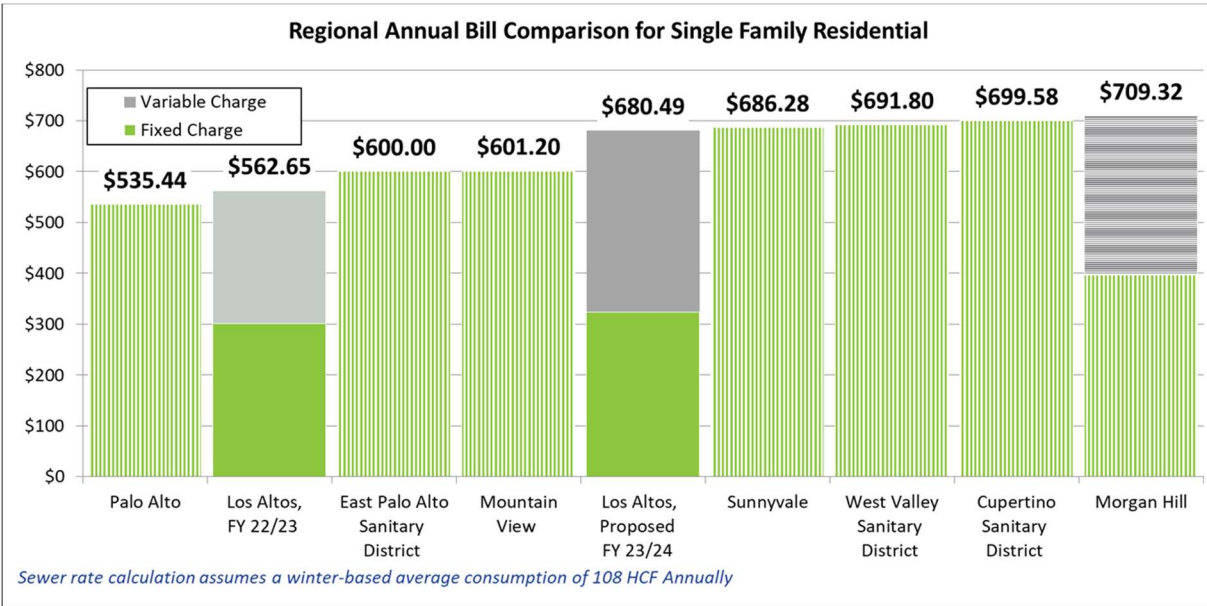
To keep meeting net revenue requirements, critical rate adjustments – or more accurately, adjustments in the total revenue collected from rates – are recommended over the next five years.

### SEWER RATES

The current sewer rate design includes an annual fixed service charge per equivalent dwelling unit (EDU) and a single volumetric rate based on average winter water consumption. After discussion and review of rate alternatives, City staff decided to maintain the existing rate structure.

**Figure 1** below shows the estimated annual sewer bill for a typical single-family customer in the City compared to annual bills in other nearby communities. Even after rates are adjusted, residential customer bills in Los Altos still compare favorably with other communities in the region. Many of these other communities may have or may currently be going through a rate study process; and as such, sewer rates in these communities may be higher in the future.

**FIGURE 1. REGIONAL ANNUAL SEWER BILL COMPARISON FOR SFR CUSTOMERS**



**FIXED CHARGES**

Fixed charges can be called base charges, minimum charges, etc. Although fixed charges are typically a significant percentage of a utility’s overall costs, utilities rarely collect 100 percent of their fixed costs through fixed charges. In general, customers prefer that charges include a volumetric component, as there is an inherent and widely recognized equity in a “pay-for-what-you-use” philosophy. Fixed charges are often charged on a per equivalent dwelling unit (EDU), or per account basis.

**VARIABLE CHARGES**

In contrast, variable costs such as the cost of electricity and chemicals used in the treatment facilities tend to change with the quantity of wastewater treated. For sewer utilities, variable charges are often based on winter water consumption and charged on a dollar-per-unit cost (per 100 cubic feet, or hcf, in the City’s case). Variable sewer rate structures typically include one rate (\$/hcf); sometimes variable rates are specific to customer classes (i.e., residential, commercial, etc.). The intent with a rate structure that varies by customer class is to reflect the cost of service differences between customer classes in rates, with respect to the amount of wastewater treated (flow based costs) as well as the costs of treating the level of sewer “strength” (i.e., the amount of chemical oxygen demand (COD) and total suspended solids (TSS) components). The cost per unit does not change with consumption and provides a simple and straightforward approach from the perspective of customer understanding, rate administration, and customer billing.

## Study Recommendations

A public hearing and protest balloting process are the next steps required to adopt new sewer rates. As a part of this process, NBS recommends the City take the following actions:

- **Approve and Accept This Study Report:** NBS recommends the City Council formally approve and adopt this report and its recommendations. This will provide the documentation and administrative record necessary to adopt and implement the proposed sewer rates.
- **Implement Proposed Rates:** Based on successfully meeting Proposition 218 balloting requirements, the City Council should proceed with implementing the rates proposed in this report for the next five years. These rates are intended to ensure the continued financial health of the City's sewer utility.

## Section 2. SEWER RATE STUDY

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### Key Sewer Rate Study Issues

The sewer rate study was undertaken with the goal of maintaining the strong financial health of the City's sewer utility. Additional study goals included reviewing the existing sewer rate structure and developing rate alternatives that promote equity among customer classes. The City has had various types of sewer rates over the last two decades – 100% fixed, 100% volumetric, and now a combination of the two.

NBS recommends the City maintain the existing rate structure of a single fixed charge and a variable charged based on the customer's previous year's winter water usage. The fixed and variable charges were developed based on the net revenue requirements, number of customer accounts and EDU's, water consumption and other City-provided information. Detailed tables showing the systematic development of the analysis are presented in Appendix B – Sewer Rate Study Summary Tables.

### Financial Plan

To identify the sewer utility's long-term financial needs, including funding for capital improvement projects, NBS developed a 10-year financial plan that forecasts sewer revenues, expenditures, and projected reserves. This plan is based on the City's current operating budget for the utility, discussions with City staff, and related information such as capital improvement plans and financial statements.

### KEY ASSUMPTIONS

The following are the key assumptions used in the rate analysis:

- **Funding Capital Projects** – The analysis assumes that capital project costs will be funded with reserves and sewer rates over the next five years.
- **Reserve Targets** – NBS has maintained reserve targets that are based on the City's specific needs and accommodate the timing of annual billing on the tax roll.
- **Inflation and Growth Projections** – The following inflation factors were applied to revenues and expenditures in the analysis, based on data from City staff as well as inflation averages from the Bureau of Labor Statistics:
  - General inflation is 4.0 percent annually.
  - Labor cost inflation is 5.0 percent annually.
  - PERS Obligation inflation is 5.57 percent based on City trends annually.
  - Energy cost inflation is 5.0 percent annually.
  - Palo Alto RWQCP cost inflation is approximately 6.76 percent annually.
  - No customer growth is anticipated.

The City of Palo Alto also provided a 10-year projection of costs for the Regional Water Quality Control Plant (RWQCP). The RWQCP cost projection includes the City's share of annual operating costs, debt service payments and capital improvement costs. RWQCP costs are allocated to the City of Los Altos based on annual metered flow sent to the treatment plant; typically, the City represents around 10 percent of total RWQCP flows.



## KEY OBJECTIVES

This financial plan addresses three primary objectives:

1. **Meeting Operating Costs:** The sewer utility must generate enough revenue to cover the expenses of sewer operations, including administration, maintenance of the collection system, and RWQCP treatment costs. Operating costs are approximately \$8.41 million in FY 2023/24.
2. **Meeting Capital Improvement Costs:** The sewer utility plans to adequately fund necessary capital improvements, which includes roughly \$23 million in planned capital improvements for the current fiscal year through the end of FY 2027/28.
3. **Maintaining Reserve Funds:** Currently, the sewer utility's reserves are higher than target levels. Recommended rate adjustments will help maintain unrestricted and restricted reserve fund balances over the next ten years, but due to the capital costs, the balances will fall below target levels in the last three years of the Prop 218 rate period. After discussions with City staff, the following reserve targets were maintained for this analysis:
  - **Operating Reserve** equals about 50 percent of the utility's budgeted annual operating expenses. This reserve target is equal to a six-month (or 180-day) cash cushion for normal operations. In FY 2023/24 the operating reserve target is \$4.2 million. This reserve is intended to ensure financial stability in the event of any short-term fluctuation in revenues and/or expenditures. Also of note, since the City collects sewer rates on the tax roll (and not on a monthly billing cycle), a higher reserve fund level will help carry the utility through semi-annual payments from Santa Clara County.
  - **Capital Rehabilitation and Replacement (R&R) Reserve** equal to average annual capital expenditures serves as a starting point for supporting long-term capital needs. For FY 2023/24, this reserve target is \$3.1 million. The primary purpose of capital reserves is to set aside a cash resource to address long-term capital rehabilitation and replacement needs.
  - **City of Palo Alto RWQCP Reserve** is intended to accumulate funds equal to one year of CIP costs that the City pays to Palo Alto (for RWQCP costs). Target reserve level is initially set at \$420,000.
  - **Debt Reserves** for the sewer utility's existing debt obligations has a target level of about \$500,000 from FY 2023/23-27/28. Starting in 2028, the City will have a new debt service payment to the City of Palo Alto for about an additional \$685,000 annually. Debt reserves increase in anticipation of new bonds being issued for projects at the RWQCP. Debt reserve funds are typically considered restricted funds.

Figure 2 summarizes the sources and uses of funds and net revenue requirements for the next five years. Figure 3 summarizes the utility's projected reserve funds and target balances for the next five years.

**FIGURE 2. SUMMARY OF SEWER REVENUE REQUIREMENTS**

Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget		Projected			
	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
<b>Sources of Wastewater Funds</b>						
Rate Revenue Under Prevailing Rates	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000
Additional Revenue from Rate Increases <sup>1</sup>	-	1,186,500	2,550,975	4,120,121	5,924,639	7,999,835
Sewer Service Charge not on Tax Roll	600,000	600,000	600,000	600,000	600,000	600,000
Non-Rate Revenues	55,000	92,867	77,309	54,434	64,031	65,862
<b>Total Sources of Funds</b>	<b>\$ 8,565,000</b>	<b>\$ 9,789,367</b>	<b>\$ 11,138,284</b>	<b>\$ 12,684,555</b>	<b>\$ 14,498,670</b>	<b>\$ 16,575,697</b>
<b>Uses of Wastewater Funds</b>						
Operating Expenses	\$ 6,406,182	\$ 8,414,226	\$ 7,859,922	\$ 8,148,292	\$ 8,436,706	\$ 9,038,089
Debt Service	468,090	468,007	492,102	492,306	491,782	1,178,338
Rate-Funded Capital Expenses	-	-	5,464,635	3,014,834	5,458,718	3,264,516
<b>Total Use of Funds</b>	<b>\$ 6,874,272</b>	<b>\$ 8,882,232</b>	<b>\$ 13,816,659</b>	<b>\$ 11,655,431</b>	<b>\$ 14,387,206</b>	<b>\$ 13,480,943</b>
<b>Projected Annual Rate Increase</b>	<b>0.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>
<i>Cumulative Rate Increases</i>	<i>0.00%</i>	<i>15.00%</i>	<i>32.25%</i>	<i>52.09%</i>	<i>74.90%</i>	<i>101.14%</i>
<b>Rate Revenue with Annual Rate Increase(s)</b>	<b>\$ 7,910,000</b>	<b>\$ 9,096,500</b>	<b>\$ 10,460,975</b>	<b>\$ 12,030,121</b>	<b>\$ 13,834,639</b>	<b>\$ 15,909,835</b>
Surplus (Deficiency) before Rate Increase	1,690,728	907,135	(2,678,375)	1,029,124	111,464	3,094,755
Surplus (Deficiency) after Rate Increase	1,690,728	2,093,635	(127,400)	5,149,245	6,036,104	11,094,590
<b>Net Revenue Requirement<sup>2</sup></b>	<b>\$ 6,219,272</b>	<b>\$ 8,189,365</b>	<b>\$ 13,139,350</b>	<b>\$ 11,000,998</b>	<b>\$ 13,723,175</b>	<b>\$ 12,815,081</b>

1. Assumes new rates are implemented July 1, 2023.

2. Total Use of Funds less non-rate revenues. This is the annual amount needed from wastewater rates.

**FIGURE 3. SUMMARY OF SEWER RESERVE FUNDS**

Beginning Reserve Fund Balances and Recommended Reserve Targets	Budget		Projected			
	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
<b>Un-Restricted Reserves</b>						
<b>Operating Reserve</b>						
Ending Balance	\$ 3,203,100	\$ 4,114,199	\$ 1,415,693	\$ 2,448,780	\$ 2,564,939	\$ 4,519,000
<i>Recommended Minimum Target</i>	<i>\$ 3,203,100</i>	<i>\$ 4,207,100</i>	<i>\$ 3,930,000</i>	<i>\$ 4,074,100</i>	<i>\$ 4,218,400</i>	<i>\$ 4,519,000</i>
<b>Capital Rehabilitation &amp; Replacement Reserve</b>						
Ending Balance	\$ 5,990,223	\$ 3,242,183	\$ 3,240,000	\$ 3,340,000	\$ 3,440,000	\$ 3,678,303
<i>Recommended Minimum Target</i>	<i>\$ 3,058,000</i>	<i>\$ 3,150,000</i>	<i>\$ 3,240,000</i>	<i>\$ 3,340,000</i>	<i>\$ 3,440,000</i>	<i>\$ 3,550,000</i>
<b>City of Palo Alto RWQCP R&amp;R Reserve</b>						
Ending Balance	\$ 390,000	\$ 390,000	\$ 390,000	\$ 290,000	\$ 190,000	\$ 410,000
<i>Recommended Minimum Target</i>	<i>\$ 390,000</i>	<i>\$ 420,000</i>	<i>\$ 440,000</i>	<i>\$ 470,000</i>	<i>\$ 490,000</i>	<i>\$ 520,000</i>
<b>Restricted Reserves</b>						
<b>Debt Reserve</b>						
Ending Balance	\$ 468,007	\$ 468,007	\$ 492,102	\$ 492,306	\$ 491,782	\$ 1,178,338
<i>Recommended Minimum Target</i>	<i>\$ 468,090</i>	<i>\$ 468,007</i>	<i>\$ 492,102</i>	<i>\$ 492,306</i>	<i>\$ 491,782</i>	<i>\$ 1,178,338</i>
<b>Total Ending Balance</b>	<b>\$ 10,051,330</b>	<b>\$ 8,214,389</b>	<b>\$ 5,537,795</b>	<b>\$ 6,571,086</b>	<b>\$ 6,686,721</b>	<b>\$ 9,785,640</b>
<i>Recommended Minimum Target</i>	<i>\$ 7,119,190</i>	<i>\$ 8,245,107</i>	<i>\$ 8,102,102</i>	<i>\$ 8,376,406</i>	<i>\$ 8,640,182</i>	<i>\$ 9,767,338</i>

A summary of the entire 10-year financial plan, showing revenue requirements, revenues, and recommended rate increases is presented in Appendix B, which includes a summary of the City’s capital improvement program, at the end of this report.

### Cost-of-Service Summary

Once the revenue requirements are determined, the cost-of-service analysis distributes the revenue requirements to cost classification components. These include the estimated amount of effluent (flow or volume), effluent strengths (COD and TSS), and customer-related costs (e.g., billing and administrative costs). Figure 4 shows the net revenue requirements of \$9,096,500 to be collected from sewer rates.

**FIGURE 4. RATE REVENUE REQUIREMENTS BY COST CLASSIFICATION**

Adjustment to Current Rate Level:	Total	Flow	COD	TSS	Customer
Adjusted Net Revenue Req'ts	\$ 9,096,500	\$ 4,801,228	\$ 1,524,318	\$ 1,524,318	\$ 1,246,636
Percent of Revenue		52.8%	16.8%	16.8%	13.7%

Actual sewer flow data from FY 2020/21 was used in the Study. The City uses average winter water consumption from the previous calendar year (lowest water consumption for three months) to estimate annual sewer usage<sup>1</sup>.

Figure 5 shows winter-average flow by customer class. The City's sewer customer classes are represented by the following types of customers: residential, multi-family residential, commercial, and public/institutional.

**FIGURE 5. SUMMARY OF FLOW TO TREATMENT PLANT**

Customer Class <sup>1</sup>	Number of Accounts	Annual Winter-Average Based Volume (HCF)	Percentage of Adjusted Volume
<b>Residential</b>			
Single Family Home	10,363	1,062,455	<b>80.3%</b>
Multifamily Residence (2 units)	65	2,744	<b>0.2%</b>
Multifamily Residence (3-4 units)	11	475	<b>0.0%</b>
Multifamily Residence (5+ units)	68	60,592	<b>4.6%</b>
Condominium Unit	1,033	52,954	<b>4.0%</b>
<b>Commercial</b>			
Commercial/Industrial	458	41,829	<b>3.2%</b>
Church	22	4,001	<b>0.3%</b>
Restaurant	69	78,160	<b>5.9%</b>
<b>Public/Institutional</b>			
Government	10	3,207	<b>0.2%</b>
Institutional	3	10,369	<b>0.8%</b>
Parks	4	2,119	<b>0.2%</b>
School	10	3,991	<b>0.3%</b>
<b>Total:</b>	<b>12,116</b>	<b>1,322,896</b>	<b>100%</b>

1. Customer billing data summarized from data Source: ~Data for Report\_2021.22\_JT.xlsx

Figure 6 compares the total number of accounts and equivalent dwelling units (EDUs) by customer class. EDUs are assigned to customers based on average winter water consumption. Typically, a single-family residential customer represents one EDU. Multi-family residential customers are assigned one EDU per unit (i.e., a triplex would be equal to three EDUs). Commercial customer EDUs are recalculated annually based on water consumption data from California Water Company (Cal Water).

Figure 7 develops the strength allocation factors of chemical oxygen demand (COD) and total suspended solids (TSS). This represents the strain each customer class puts on the treatment plant based on what the customer puts into the sewer system for treatment. For example, the food waste discharge at restaurants

<sup>1</sup> The City bills sewer usage on a per unit basis; one estimated sewer unit is equal to 748 gallons or one (1) hundred cubic feet (hcf).

will take more effort for the plant to treat than a single family home, which mostly discharges water from toilets, sinks, etc. into the sewer system.

**FIGURE 6. SUMMARY OF SEWER CUSTOMER ACCOUNTS AND EQUIVALENT DWELLING UNITS (EDU'S)**

Customer Class	Number of Accounts <sup>1</sup>	Percent of Total	Number of Equivalent Dwelling Units <sup>1</sup>	Percent of Total
<b>Residential</b>				
Single Family Home	10,363	85.5%	10,363	71.0%
Multifamily Residence (2 units)	65	0.5%	130	0.9%
Multifamily Residence (3-4 units)	11	0.1%	34	0.2%
Multifamily Residence (5+ units)	68	0.6%	716	4.9%
Condominium Unit	1,033	8.5%	1,033	7.1%
<b>Commercial</b>				
Commercial/Industrial	458	3.8%	902	6.2%
Church	22	0.2%	108	0.7%
Restaurant	69	0.6%	770	5.3%
<b>Public/Institutional</b>				
Government	10	0.1%	89	0.6%
Institutional	3	0.0%	283	1.9%
Parks	4	0.0%	58	0.4%
School	10	0.1%	109	0.7%
<b>Total:</b>	<b>12,116</b>	<b>100%</b>	<b>14,595</b>	<b>100%</b>
Vacant	15		4	
N/A	3		-	
<b>Grand Total:</b>	<b>12,134</b>		<b>14,599</b>	

1. Data Source: ~Data for Report\_2021.22\_JT.xlsx

**FIGURE 7. SUMMARY OF STRENGTH ALLOCATION FACTOR FOR COD AND TSS**

Customer Class	Adjusted Annual Volume Total (HCF)	Annual Flow (million gallons)	Chemical Oxygen Demand (COD)				Total Suspended Solids (TSS)		
			Average Strength Factor (mg/l) <sup>1</sup>	Calculated COD (lbs./yr.)	Adjusted COD (lbs./yr.)	Percent of Total	Average Strength Factor (mg/l) <sup>1</sup>	Adjusted TSS (lbs./yr.)	Percent of Total
<b>Residential</b>									
Single Family Home	959,544	717.79	622	3,723,506	4,049,292	72.0%	250	1,979,172	74.8%
Multifamily Residence (2 units)	2,478	1.85	622	9,617	10,458	0.2%	250	5,112	0.2%
Multifamily Residence (3-4 units)	429	0.32	622	1,664	1,809	0.0%	250	884	0.0%
Multifamily Residence (5+ units)	54,723	40.94	622	212,352	230,932	4.1%	250	112,873	4.3%
Condominium Unit	47,825	35.78	622	185,584	201,821	3.6%	250	98,644	3.7%
<b>Commercial</b>									
Commercial/Industrial	37,778	28.26	622	146,596	159,422	2.8%	250	77,921	2.9%
Church	3,614	2.70	622	14,023	15,250	0.3%	250	7,454	0.3%
Restaurant	70,589	52.80	1,888	831,453	904,200	16.1%	600	349,437	13.2%
<b>Public/Institutional</b>									
Government	2,896	2.17	419	7,570	8,233	0.1%	100	2,389	0.1%
Institutional	9,365	7.01	419	24,480	26,622	0.5%	100	7,727	0.3%
Parks	1,913	1.43	419	5,002	5,439	0.1%	100	1,579	0.1%
School	3,604	2.70	419	9,421	10,246	0.2%	100	2,974	0.1%
<b>Total:</b>	<b>1,194,758</b>	<b>894</b>		<b>5,171,268</b>	<b>5,623,725</b>	<b>100%</b>		<b>2,646,165</b>	<b>100%</b>

1. BOD strength factors (Source: Page G-21, SWRCB Revenue Program Guidelines Appendix G) converted to COD using formula referenced in Operation of Municipal Wastewater Treatment Plants, Chapter 17, pg. 9.

## Fixed and Variable Charges

The City’s sewer rates consist of a fixed annual base charge per equivalent dwelling unit (EDU), and a volumetric rate for water consumed. Water consumption charges are based on average winter water use from the prior year (using the three consecutive lowest months) <sup>2</sup>.

The existing rate structure collects 48 percent of revenue from volumetric charges and 52 percent of revenue from fixed charges; NBS recommends the City maintain this revenue allocation in the proposed rates. Figure calculates the fixed charge per EDU; and Figure calculates the volumetric charge per HCF. Figure shows the current and proposed sewer rates through FY 2027/28.

**FIGURE 8. SEWER RATE CALCULATION – FIXED CHARGES**

Fixed Charges (per EDU)	Total Revenue Requirements	% of Total Rev. Req't. from Fixed Charges	Fixed Charges	Number of Equivalent Dwelling Units	Rate per EDU
	<i>A</i>	<i>B</i>	<i>C = A * B</i>	<i>D</i>	<i>E = C / D</i>
<b>All Customers</b>	\$9,096,500	52%	\$4,730,180	14,595	<b>\$324.09</b>

**FIGURE 9. SEWER RATE CALCULATION – VOLUMETRIC CHARGES**

Volumetric Charges (per HCF)	Total Revenue Requirements	% of Total Rev. Req't. from Volumetric Charges	Volumetric Charges	Annual Billable Volume (hcf)	Rate per HCF
	<i>F</i>	<i>G = 1 - B</i>	<i>H = F * G</i>	<i>I</i>	<i>J = H / I</i>
<b>All Customers</b>	\$9,096,500	48%	\$4,366,320	1,322,896	<b>\$3.30</b>

**FIGURE 10. CURRENT (FY 2022/23) AND PROPOSED SEWER RATES (FY 2023/24 – FY 2027/28)**

Sewer Rate Schedule	Current Rates	Proposed Yearly Sewer Rates				
		Year 1	Year 2	Year 3	Year 4	Year 5
		FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Annual Fixed Service Charge per EDU	\$301.29	\$324.09	\$372.70	\$428.61	\$492.90	\$566.84
Volumetric Rate (\$/hcf) <sup>1,2</sup>	\$2.42	\$3.30	\$3.80	\$4.37	\$5.03	\$5.78

1. One Unit is equal to one HCF (Hundred Cubic Feet) or 748 gallons.

2. Rates are charged based on average winter water consumption (three lowest consecutive months from previous year).

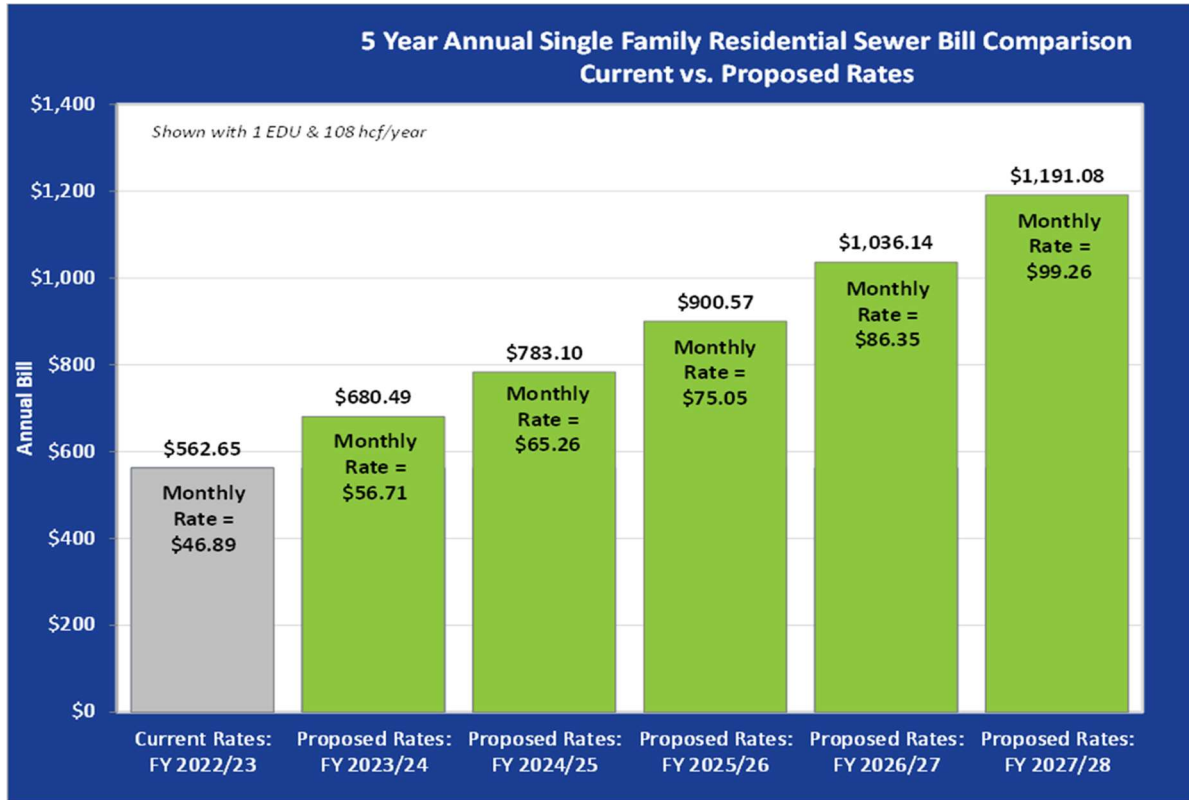
## Customer Bill Comparisons

### RESIDENTIAL SEWER CUSTOMERS

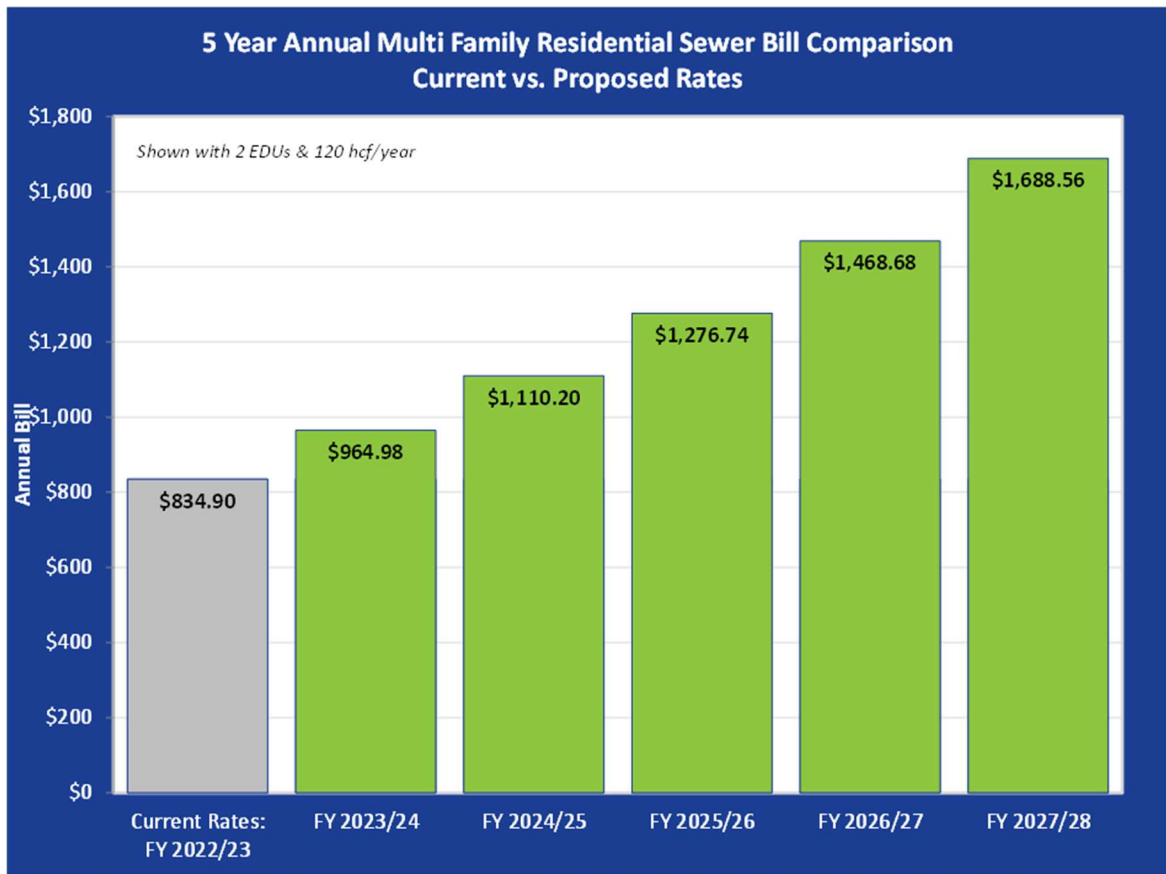
Figure compares typical single-family annual sewer bills over the next five years, under the current and proposed rates. Similarly, Figure compares typical multi-family annual sewer bills over the next five years, under the current and proposed rates.

<sup>2</sup> Average winter consumption is recalculated each year using the most recent winter water consumption (lowest consecutive 3 months).

**FIGURE 11. ANNUAL SINGLE-FAMILY SEWER BILL COMPARISON**



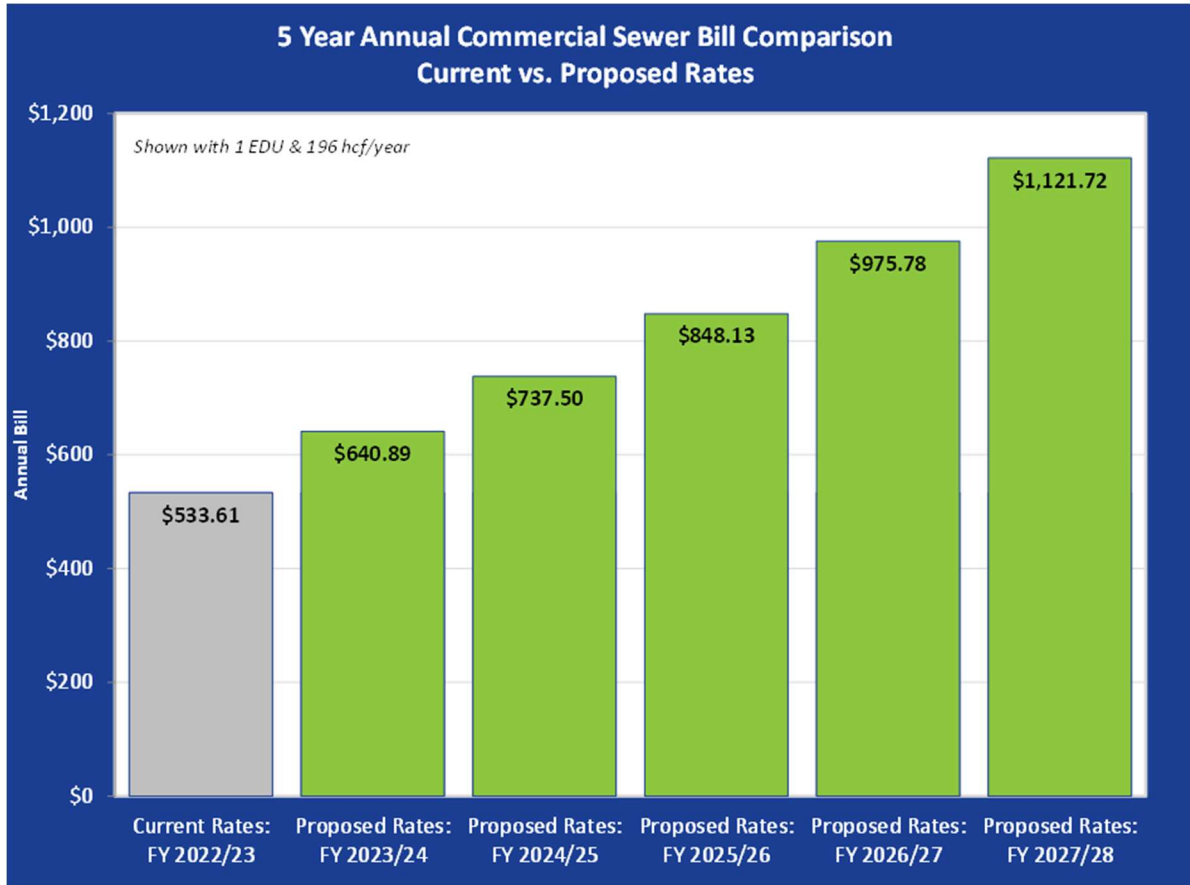
**FIGURE 12. ANNUAL MULTI-FAMILY SEWER BILL COMPARISON (2 UNITS)**



**COMMERCIAL SEWER CUSTOMERS**

Figure compares typical commercial annual sewer bills over the next five years, under the current and proposed rates.

FIGURE 13. ANNUAL COMMERCIAL SEWER BILL COMPARISON





## Section 3. NEXT STEPS

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### Next Steps

A public hearing and protest balloting process are the next steps required to adopt new sewer rates. As a part of this process, NBS recommends the City take the following actions:

- **Approve and Accept This Study Report:** NBS recommends the City Council formally approve and adopt this report and its recommendations. This will provide the documentation and administrative record necessary to adopt and implement the proposed sewer rates.
- **Implement Proposed Rates:** Based on successfully meeting Proposition 218 balloting requirements, the City Council should proceed with implementing the rates proposed in this report for the next five years. These rates are intended to ensure the continued financial health of the City's sewer utility.

### ANNUALLY REVIEW RATES AND REVENUE

Any time an agency adopts new utility rates, particularly when facing significant future capital costs, those new rates should be closely monitored over the next several years to ensure the revenue generated is sufficient to meet the annual revenue requirements. Changing economic and water consumption patterns underscore the need for this review, as well as potential and unseen changing revenue requirements, particularly those related to capital improvement and repair and replacement costs that can significantly affect annual cash flows.

### PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this report and the recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, including the City's utility budgets, capital improvement plans, the number of customer accounts, water consumption records, and other conditions and events projected to occur in the future. This information and these assumptions were provided by sources we believe to be reliable, although NBS has not independently verified this data.

While we believe NBS' use of such information and assumptions is reasonable for the purpose of this report and its recommendations, some assumptions will invariably not materialize as stated herein or may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others.

## Section 4. APPENDIX A – ABBREVIATIONS & ACRONYMS<sup>3</sup>

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AAF	Average Annual Flow
Alt.	Alternative
Avg.	Average
AWWA	American Water Works Association
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
CA	Customer
CAP	Capacity
CCI	Construction Cost Index
COD	Chemical Oxygen Demand
COM	Commodity
Comm.	Commercial
COS	Cost of Service
COSA	Cost of Service Analysis
CPI	Consumer Price Index
CIP	Capital Improvement Program
DU	Dwelling Unit
Excl.	Exclude
ENR	Engineering News Record
EDU	Equivalent Dwelling Unit
Exp.	Expense
FY	Fiscal Year (e.g., July 1st to June 30th)
FY 2022/23	July 1, 2022 through June 30, 2023
GPD	Gallons per Day
GPM	Gallons per Minute
HCF	Hundred Cubic Feet; equal to 748 gallons or 1 CCF
Ind.	Industrial
LAIF	Local Agency Investment Fund
Lbs.	Pounds
MFR	Multi-Family Residential
MGD	Million Gallons per Day
MG/L	Milligrams per Liter
Mo.	Month
Muni.	Municipal
NH <sub>3</sub>	Ammonia
N/A	Not Available or Not Applicable
O&M	Operational & Maintenance Expenses
Prop 13	Proposition 13 (1978) – Article XIII A of the California Constitution which limits taxes on real property to 1 percent of the full cash value of such property.
Prop 18	Proposition 218 (1996) – State Constitutional amendment expanded restrictions of local government revenue collections.
Req't	Requirement
Res.	Residential
Rev.	Revenue
R&R	Rehabilitation & Replacement
SFR	Single Family Residential
TSS / SS	Total Suspended Solids
V. / Vs. /vs.	Versus
WWTP	Waste Water Treatment Plant

*3 This appendix identifies abbreviations and acronyms that may be used in this report. This appendix has not been viewed, arranged, or edited by an attorney, nor should it be relied on as legal advice. The intent of this appendix is to support the recognition and analysis of this report. Any questions regarding clarification of this document should be directed to staff or an attorney specializing in this particular subject matter.*

## Section 5. APPENDIX B – SEWER RATE STUDY SUMMARY TABLES

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TABLE 1: FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget		Projected									
	FY 2022/23		FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33
<b>Sources of Funds (Sewer Revenues)<sup>1</sup></b>												
Rate Revenue:												
Sewer Service Charge on Tax Roll	7,910,000		7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000
Revenue from Rate Increases <sup>2</sup>	-		1,186,500	2,550,975	4,120,121	5,924,639	7,999,835	8,795,327	9,630,593	10,507,623	11,428,504	12,395,430
Subtotal: Rate Revenue After Rate Increases	7,910,000		9,096,500	10,460,975	12,030,121	13,834,639	15,909,835	16,705,327	17,540,593	18,417,623	19,338,504	20,305,430
Non-Rate Revenue:												
Sewer Service Charge not on Tax Roll	600,000		600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Other Revenues	15,000		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Interest Income <sup>3</sup>	40,000		77,867	62,309	39,434	49,031	50,862	69,431	70,964	95,188	100,867	133,654
Subtotal: Rate Revenue After Rate Increases	655,000		692,867	677,309	654,434	664,031	665,862	684,431	685,964	710,188	715,867	748,654
<b>Total Sources of Funds</b>	<b>\$ 8,565,000</b>		<b>\$ 9,789,367</b>	<b>\$ 11,138,284</b>	<b>\$ 12,684,555</b>	<b>\$ 14,498,670</b>	<b>\$ 16,575,697</b>	<b>\$ 17,389,758</b>	<b>\$ 18,226,557</b>	<b>\$ 19,127,811</b>	<b>\$ 20,054,371</b>	<b>\$ 21,054,083</b>
<b>Uses of Funds</b>												
Operating Expenses <sup>4</sup>												
Salaries and Benefits	\$ 1,238,770		\$ 1,301,458	\$ 1,367,324	\$ 1,436,526	\$ 1,509,237	\$ 1,585,632	\$ 1,665,900	\$ 1,750,236	\$ 1,838,848	\$ 1,931,952	\$ 2,029,777
Utilities	70,300		73,459	76,762	80,215	83,825	87,600	91,547	95,674	99,989	104,501	109,219
Repair and Services	2,154,324		2,259,415	2,369,656	2,485,300	2,606,612	2,733,871	2,867,371	3,007,418	3,154,335	3,308,459	3,470,146
City of Palo Alto RWQCP O&M	2,942,788		4,779,893	4,046,181	4,146,251	4,237,033	4,630,986	5,614,317	5,708,835	5,805,602	5,828,031	5,940,567
Subtotal: Operating Expenses	\$ 6,406,182		\$ 8,414,226	\$ 7,859,922	\$ 8,148,292	\$ 8,436,706	\$ 9,038,089	\$ 10,239,135	\$ 10,562,163	\$ 10,898,774	\$ 11,172,943	\$ 11,549,709
Other Expenditures:												
Existing Debt Service - Palo Alto RWQCP	\$ 468,090		\$ 468,007	\$ 492,102	\$ 492,306	\$ 491,782	\$ 1,178,338	\$ 1,178,647	\$ 1,178,182	\$ 1,125,683	\$ 1,125,477	\$ 1,125,358
Rate-Funded Capital Expenses	-		-	5,464,635	3,014,834	5,458,718	3,264,516	5,772,403	3,566,634	4,268,214	1,425,429	1,597,589
Subtotal: Other Expenditures	\$ 468,090		\$ 468,007	\$ 5,956,736	\$ 3,507,140	\$ 5,950,500	\$ 4,442,853	\$ 6,951,050	\$ 4,744,816	\$ 5,393,897	\$ 2,550,906	\$ 2,722,947
<b>Total Uses of Sewer Funds</b>	<b>\$ 6,874,272</b>		<b>\$ 8,882,232</b>	<b>\$ 13,816,659</b>	<b>\$ 11,655,431</b>	<b>\$ 14,387,206</b>	<b>\$ 13,480,943</b>	<b>\$ 17,190,184</b>	<b>\$ 15,306,979</b>	<b>\$ 16,292,670</b>	<b>\$ 13,723,849</b>	<b>\$ 14,272,656</b>
<b>Annual Surplus/(Deficit)</b>	<b>\$ 1,690,728</b>		<b>\$ 907,135</b>	<b>\$ (2,678,375)</b>	<b>\$ 1,029,124</b>	<b>\$ 111,464</b>	<b>\$ 3,094,755</b>	<b>\$ 199,574</b>	<b>\$ 2,919,578</b>	<b>\$ 2,835,141</b>	<b>\$ 6,330,522</b>	<b>\$ 6,781,427</b>
<b>Net Revenue Req<sup>t</sup>.</b>	<b>\$ 6,219,272</b>		<b>\$ 8,189,365</b>	<b>\$ 13,139,350</b>	<b>\$ 11,000,998</b>	<b>\$ 13,723,175</b>	<b>\$ 12,815,081</b>	<b>\$ 16,505,753</b>	<b>\$ 14,621,015</b>	<b>\$ 15,582,482</b>	<b>\$ 13,007,982</b>	<b>\$ 13,524,003</b>
<b>(Total Uses less Non-Rate Revenue)</b>	<b>\$ 7,910,000</b>		<b>\$ 9,096,500</b>	<b>\$ 10,460,975</b>	<b>\$ 12,030,121</b>	<b>\$ 13,834,639</b>	<b>\$ 15,909,835</b>	<b>\$ 16,705,327</b>	<b>\$ 17,540,593</b>	<b>\$ 18,417,623</b>	<b>\$ 19,338,504</b>	<b>\$ 20,305,430</b>
<b>Projected Annual Rate Revenue Increase</b>	<b>0.00%</b>		<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>5.00%</b>	<b>5.00%</b>	<b>5.00%</b>	<b>5.00%</b>	<b>5.00%</b>
<b>Cumulative Increase from Annual Revenue Increases</b>	<b>0.00%</b>		<b>15.00%</b>	<b>32.25%</b>	<b>52.09%</b>	<b>74.90%</b>	<b>101.14%</b>	<b>111.19%</b>	<b>121.75%</b>	<b>132.84%</b>	<b>144.48%</b>	<b>156.71%</b>
<b>Debt Coverage After Rate Increase</b>	<b>4.61</b>		<b>2.94</b>	<b>6.66</b>	<b>9.21</b>	<b>12.33</b>	<b>6.40</b>	<b>6.07</b>	<b>6.51</b>	<b>7.31</b>	<b>7.89</b>	<b>8.45</b>

1. Revenues are budgeted for 2022/2023. Source: Multiyear Budget to Actual Sewer.pdf  
 2. Revenue from rate increases assumes an implementation date of July 1, 2023 for new rates.  
 For each year thereafter, the assumption is that new rates will be implemented on July 1st. Rate revenue collected on property tax bills.  
 3. Interest earnings beginning in FY 2023/24 are calculated based on historical LAF returns.  
 4. Expenses are budgeted for 2022/2023. Source: Multiyear Budget to Actual Sewer.pdf

CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Financial Plan and Reserve Projections  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*  
TABLE 2: RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY	Budget		Projected									
	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33	
<b>Total Beginning Cash<sup>1</sup></b>	<b>\$ 11,414,637</b>											
<b>Un-Restricted Reserves:</b>												
<b>Operating Reserve</b>												
Beginning Reserve Balance <sup>2</sup>	\$ 3,203,100	\$ 3,203,100	\$ 4,114,199	\$ 1,415,693	\$ 2,448,780	\$ 2,564,939	\$ 4,519,000	\$ 4,728,246	\$ 5,281,100	\$ 5,449,400	\$ 5,586,500	
Plus: Net Cash Flow (After Rate Increases)	1,690,728	907,135	(2,678,375)	1,029,124	111,464	3,094,755	199,574	2,919,578	2,835,141	6,330,522	6,781,427	
Plus: Transfer of Debt Reserve Surplus	4,048	3,964	3,964	4,168	4,694	4,165	9,981	10,448	62,478	9,740	9,652	
Plus: Transfer of Capital R&R Reserve Surplus	-	-	-	-	-	-	-	-	-	-	-	
Less: Transfer Out to Debt Service Reserve	-	-	(24,095)	(204)	-	(686,556)	(309)	-	-	-	-	
Less: Transfer Out to Palo Alto RWQCP R&R Reserve	(90,000)	-	-	-	-	(330,000)	-	(180,000)	(140,000)	-	-	
Less: Transfer Out to Capital Replacement Reserve	(1,604,776)	-	-	-	-	(128,303)	-	(2,197,171)	(2,589,319)	(6,203,162)	(6,602,679)	
<b>Ending Operating Reserve Balance</b>	<b>\$ 3,203,100</b>	<b>\$ 4,114,199</b>	<b>\$ 1,415,693</b>	<b>\$ 2,448,780</b>	<b>\$ 2,564,939</b>	<b>\$ 4,519,000</b>	<b>\$ 4,728,246</b>	<b>\$ 5,281,100</b>	<b>\$ 5,449,400</b>	<b>\$ 5,586,500</b>	<b>\$ 5,774,900</b>	
<b>Target Ending Balance (6 months of O&amp;M)</b>	<b>\$ 3,203,100</b>	<b>\$ 4,207,100</b>	<b>\$ 3,930,000</b>	<b>\$ 4,074,100</b>	<b>\$ 4,218,400</b>	<b>\$ 4,519,000</b>	<b>\$ 5,119,600</b>	<b>\$ 5,281,100</b>	<b>\$ 5,449,400</b>	<b>\$ 5,586,500</b>	<b>\$ 5,774,900</b>	
<b>Capital Rehabilitation &amp; Replacement Reserve</b>												
Beginning Reserve Balance <sup>2</sup>	\$ 7,443,447	\$ 5,990,223	\$ 3,242,183	\$ 3,240,000	\$ 3,340,000	\$ 3,440,000	\$ 3,678,303	\$ 3,650,000	\$ 5,957,171	\$ 6,459,319	\$ 10,193,162	
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-	-	-	
Plus: Transfer of Operating Reserve Surplus	1,604,776	-	-	-	-	128,303	-	2,197,171	2,589,319	6,203,162	6,602,679	
Plus: Transfer of Palo Alto RWQCP R&R Reserve Surplus	-	-	-	100,000	100,000	110,000	-	110,000	-	-	-	
Less: Transfer Out to Operating Replacement Reserve	-	-	-	-	-	-	-	-	-	-	-	
Less: Transfer Out for Capital Projects	(3,058,000)	(2,748,040)	(2,183)	-	-	-	(28,303)	-	(2,087,171)	(2,469,319)	(6,083,162)	
<b>Ending Capital Rehab &amp; Replacement Reserve Balance</b>	<b>\$ 5,990,223</b>	<b>\$ 3,242,183</b>	<b>\$ 3,240,000</b>	<b>\$ 3,340,000</b>	<b>\$ 3,440,000</b>	<b>\$ 3,678,303</b>	<b>\$ 3,650,000</b>	<b>\$ 5,957,171</b>	<b>\$ 6,459,319</b>	<b>\$ 10,193,162</b>	<b>\$ 10,712,679</b>	
<b>Capital R&amp;R Reserve (based on estimated annual CIP)</b>	<b>\$ 3,058,000</b>	<b>\$ 3,150,000</b>	<b>\$ 3,240,000</b>	<b>\$ 3,340,000</b>	<b>\$ 3,440,000</b>	<b>\$ 3,550,000</b>	<b>\$ 3,650,000</b>	<b>\$ 3,760,000</b>	<b>\$ 3,870,000</b>	<b>\$ 3,990,000</b>	<b>\$ 4,110,000</b>	
<b>City of Palo Alto RWQCP R&amp;R Reserve</b>												
Beginning Reserve Balance <sup>2</sup>	\$ 300,000	\$ 390,000	\$ 390,000	\$ 390,000	\$ 290,000	\$ 190,000	\$ 410,000	\$ 410,000	\$ 480,000	\$ 620,000	\$ 620,000	
Plus: Transfer of Operating Reserve Surplus	90,000	-	-	-	-	330,000	-	180,000	140,000	-	-	
Less: Transfer Out for Capital Projects	-	-	(100,000)	(100,000)	(100,000)	(110,000)	-	(110,000)	-	-	-	
<b>Ending Capital Rehab &amp; Replacement Reserve Balance</b>	<b>\$ 390,000</b>	<b>\$ 390,000</b>	<b>\$ 390,000</b>	<b>\$ 290,000</b>	<b>\$ 190,000</b>	<b>\$ 410,000</b>	<b>\$ 410,000</b>	<b>\$ 480,000</b>	<b>\$ 620,000</b>	<b>\$ 620,000</b>	<b>\$ 620,000</b>	
<b>RWQCP R&amp;R Reserve (average 1 year CIP costs)</b>	<b>\$ 390,000</b>	<b>\$ 420,000</b>	<b>\$ 440,000</b>	<b>\$ 470,000</b>	<b>\$ 490,000</b>	<b>\$ 520,000</b>	<b>\$ 550,000</b>	<b>\$ 590,000</b>	<b>\$ 620,000</b>	<b>\$ 320,000</b>	<b>\$ -</b>	
<b>Ending Balance - Excl. Restricted Reserves</b>	<b>\$ 9,583,323</b>	<b>\$ 7,746,382</b>	<b>\$ 5,045,693</b>	<b>\$ 6,078,780</b>	<b>\$ 6,194,939</b>	<b>\$ 8,607,303</b>	<b>\$ 8,788,246</b>	<b>\$ 11,718,271</b>	<b>\$ 12,528,719</b>	<b>\$ 16,399,662</b>	<b>\$ 17,107,579</b>	
<b>Min. Target Ending Balance - Excl. Restricted Reserves</b>	<b>\$ 6,651,100</b>	<b>\$ 7,777,100</b>	<b>\$ 7,610,000</b>	<b>\$ 7,884,100</b>	<b>\$ 8,148,400</b>	<b>\$ 8,589,000</b>	<b>\$ 9,319,600</b>	<b>\$ 9,631,100</b>	<b>\$ 9,939,400</b>	<b>\$ 9,896,500</b>	<b>\$ 9,884,900</b>	
<b>Ending Surplus/(Deficit) Compared to Reserve Targets</b>	<b>\$ 2,932,223</b>	<b>\$ (30,718)</b>	<b>\$ (2,564,307)</b>	<b>\$ (1,805,320)</b>	<b>\$ (1,953,461)</b>	<b>\$ 18,303</b>	<b>\$ (531,354)</b>	<b>\$ 2,087,171</b>	<b>\$ 2,589,319</b>	<b>\$ 6,503,162</b>	<b>\$ 7,222,679</b>	

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SUMMARY OF CASH ACTIVITY	Projected											
	Budget	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33
<b>Restricted Reserves:</b>												
<b>Connection Fee Reserve</b>												
Beginning Reserve Balance	\$ -	\$ 5,000	\$ 10,042	\$ 15,127	\$ 20,256	\$ 25,427	\$ 30,642	\$ 35,902	\$ 41,206	\$ 46,555	\$ 51,949	\$ 51,949
Plus: Interest Earnings	-	42	85	128	172	215	260	304	349	394	440	440
Plus: Connection Fee Revenue	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Connection Fee Fund Balance</b>	<b>\$ 5,000</b>	<b>\$ 10,042</b>	<b>\$ 15,127</b>	<b>\$ 20,256</b>	<b>\$ 25,427</b>	<b>\$ 30,642</b>	<b>\$ 35,902</b>	<b>\$ 41,206</b>	<b>\$ 46,555</b>	<b>\$ 51,949</b>	<b>\$ 57,389</b>	<b>\$ 57,389</b>
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Debt Reserve</b>												
Beginning Reserve Balance	\$ 468,090	\$ 468,007	\$ 468,007	\$ 492,102	\$ 492,306	\$ 491,782	\$ 1,178,338	\$ 1,178,647	\$ 1,178,182	\$ 1,125,683	\$ 1,125,477	\$ 1,125,477
Plus: Reserve Funding from Operating Reserve	-	-	24,095	204	-	-	686,556	309	-	-	-	-
Plus: Reserve Funding from Future Debt Obligations	-	-	-	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings	3,965	3,964	3,964	4,168	4,170	4,165	9,981	9,983	9,979	9,535	9,533	9,533
Less: Transfer of Surplus to Operating Reserve	(4,048)	(3,964)	(3,964)	(4,168)	(4,694)	(4,165)	(9,981)	(10,448)	(62,478)	(9,740)	(9,652)	(9,652)
<b>Ending Debt Reserve Balance</b>	<b>\$ 468,007</b>	<b>\$ 468,007</b>	<b>\$ 492,102</b>	<b>\$ 492,306</b>	<b>\$ 491,782</b>	<b>\$ 1,178,338</b>	<b>\$ 1,178,647</b>	<b>\$ 1,178,182</b>	<b>\$ 1,125,683</b>	<b>\$ 1,125,477</b>	<b>\$ 1,125,358</b>	<b>\$ 1,125,358</b>
Target Ending Balance	\$ 468,090	\$ 468,007	\$ 492,102	\$ 492,306	\$ 491,782	\$ 1,178,338	\$ 1,178,647	\$ 1,178,182	\$ 1,125,683	\$ 1,125,477	\$ 1,125,358	\$ 1,125,358
<b>Ending Balance - Restricted Reserves</b>	<b>\$ 473,007</b>	<b>\$ 478,049</b>	<b>\$ 507,229</b>	<b>\$ 512,561</b>	<b>\$ 517,209</b>	<b>\$ 1,208,980</b>	<b>\$ 1,214,549</b>	<b>\$ 1,219,388</b>	<b>\$ 1,172,238</b>	<b>\$ 1,177,427</b>	<b>\$ 1,182,747</b>	<b>\$ 1,182,747</b>
<b>Min. Target Ending Balance - Restricted Reserves</b>	<b>\$ 468,090</b>	<b>\$ 468,007</b>	<b>\$ 492,102</b>	<b>\$ 492,306</b>	<b>\$ 491,782</b>	<b>\$ 1,178,338</b>	<b>\$ 1,178,647</b>	<b>\$ 1,178,182</b>	<b>\$ 1,125,683</b>	<b>\$ 1,125,477</b>	<b>\$ 1,125,358</b>	<b>\$ 1,125,358</b>
<b>Ending Surplus/(Deficit) Compared to Reserve Targets</b>	<b>\$ 4,917</b>	<b>\$ 10,042</b>	<b>\$ 15,127</b>	<b>\$ 20,256</b>	<b>\$ 25,427</b>	<b>\$ 30,642</b>	<b>\$ 35,902</b>	<b>\$ 41,206</b>	<b>\$ 46,555</b>	<b>\$ 51,949</b>	<b>\$ 57,389</b>	<b>\$ 57,389</b>
<b>Annual Interest Earnings Rate</b> <sup>3</sup>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>	<b>0.85%</b>

1. The beginning Cash balance is equal to the amount in the Sewer Fund, Claim on Cash per source file: Beginning balance of FY22.xlsx  
 2. NBS assumes total unrestricted cash of \$11,414,637 is first used to fully fund operating reserve. The remainder is placed in Capital Rehabilitation & Replacement Reserve and City of Palo Alto R&R Reserve.  
 3. Historical interest earning rates were referenced on the California Treasurer's Office website for funds invested in LAIF. Future years earnings are historical 10 year average interest earnings rate.

CHART 1

## Sewer Revenue Requirements vs. Revenue Under Existing and Increased Rates

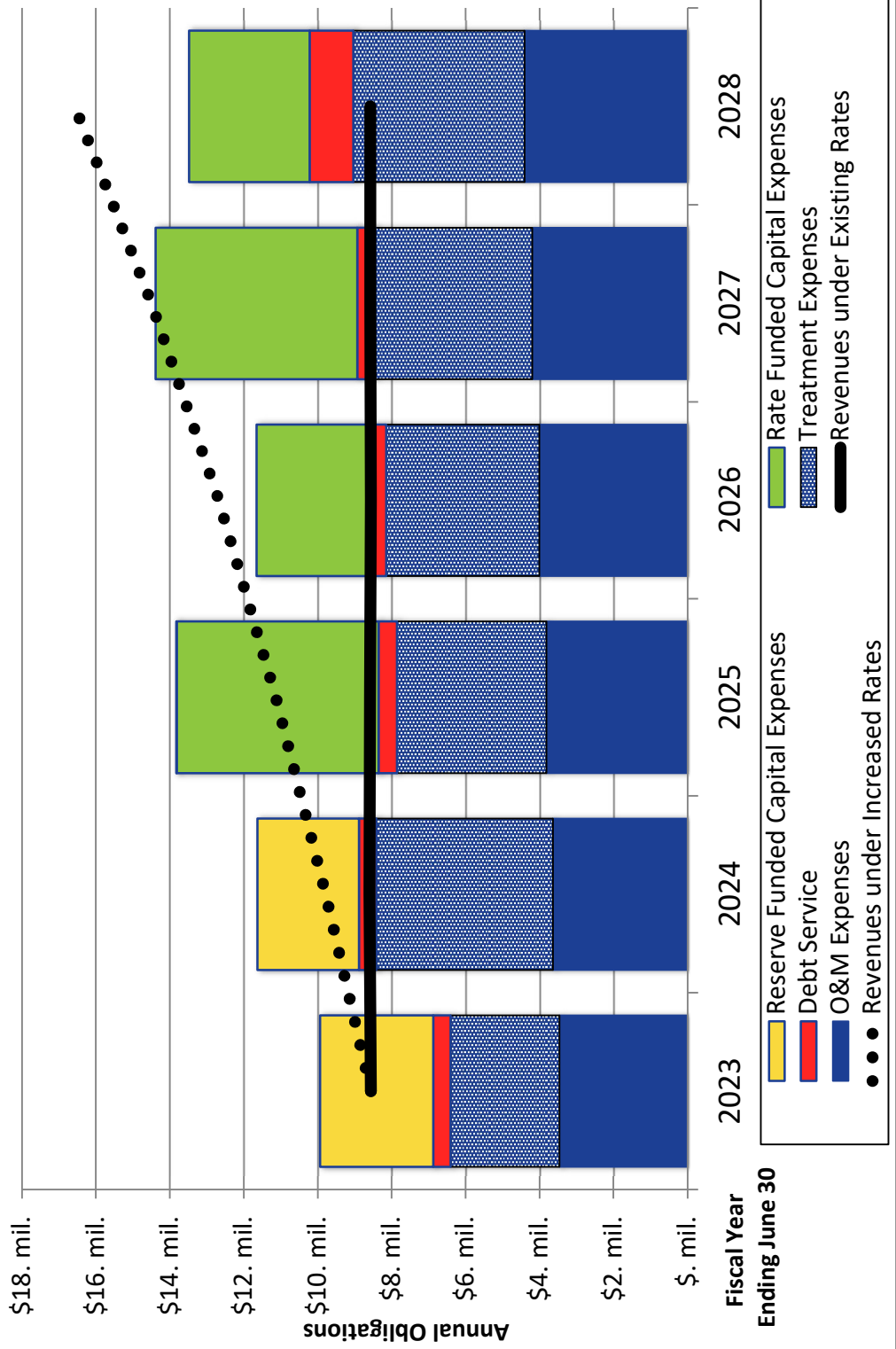


CHART 2

## Ending Cash Balances vs. Recommended Reserve Targets (Sewer Fund: Un-Restricted Reserves)

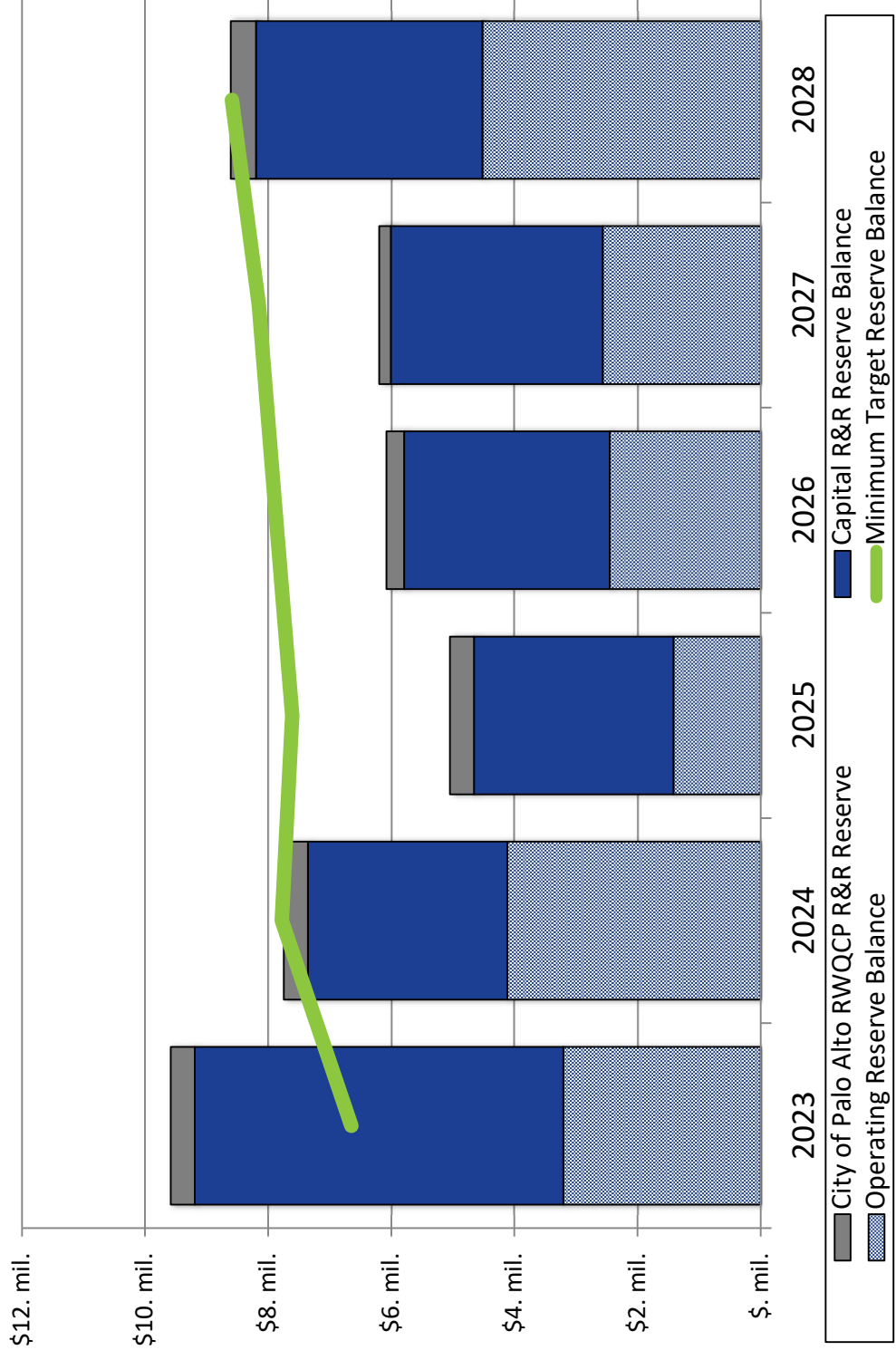
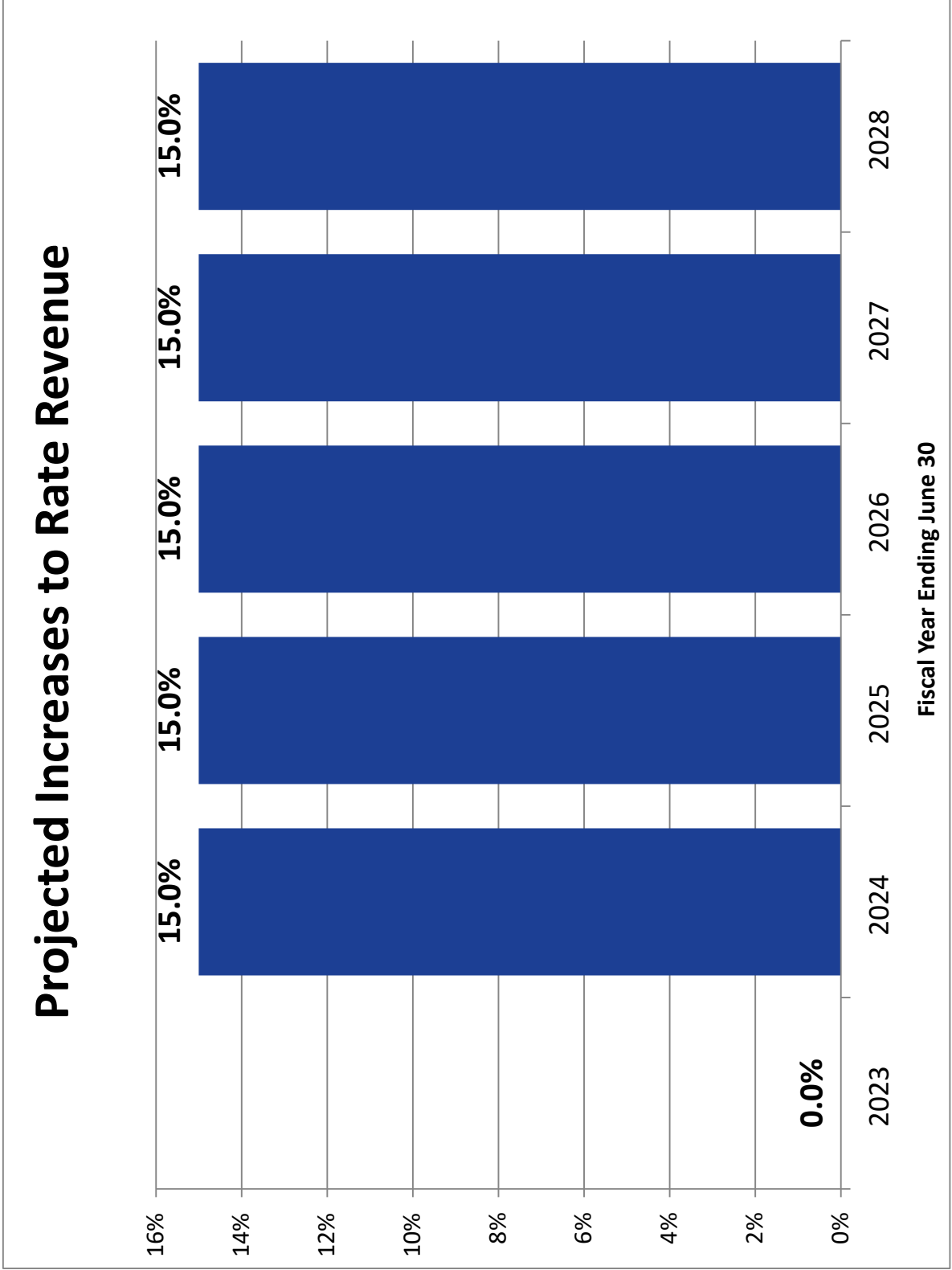




CHART 3



SEWER RATE STRUCTURE ANALYSIS  
Operating Revenue and Expenses

*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*

TABLE 4: REVENUE FORECAST

Budget

DESCRIPTION	Basis	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>SEWER REVENUE<sup>1</sup></b>												
Interest Income	FP	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer Fees- Tax Roll	1	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000	7,910,000
Sewer Fees- Not on Tax Roll	1	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Sewer Connection Fees	1	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Misc. Sewer Fees	1	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
<b>TOTAL: REVENUE</b>		<b>\$ 8,570,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>

TABLE 5: REVENUE SUMMARY

<b>SEWER REVENUE<sup>1</sup></b>												
Sewer Service Charges		\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000	\$ 7,910,000
Sewer Service Charges - Not on Tax Roll		600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
Sewer Connection Fee		5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Interest Earnings		40,000	-	-	-	-	-	-	-	-	-	-
Other Revenues		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
<b>TOTAL: REVENUE</b>		<b>\$ 8,570,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>	<b>\$ 8,530,000</b>

TABLE 6: SEWER FUND OPERATING EXPENSE FORECAST

DESCRIPTION <sup>1</sup>	Basis	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Sewer System Administration</b>												
<b>Salaries and Benefits</b>												
Salaries	3	\$ 136,891	\$ 143,736	\$ 150,922	\$ 158,468	\$ 166,392	\$ 174,711	\$ 183,447	\$ 192,619	\$ 202,250	\$ 212,363	\$ 222,981
Retirement	3	14,089	14,793	15,533	16,310	17,125	17,982	18,881	19,825	20,816	21,857	22,949
Pers Unfunded Liability	4	14,392	15,193	16,039	16,931	17,874	18,869	19,919	21,028	22,198	23,433	24,738
Dental Plan	3	1,439	1,511	1,586	1,666	1,749	1,837	1,928	2,025	2,126	2,232	2,344
Health Insurance	3	19,558	20,536	21,563	22,641	23,773	24,962	26,210	27,520	28,896	30,341	31,858
Life Insurance	3	199	209	219	230	242	254	267	280	294	309	324
Workers Comp Insurance	3	6,845	7,187	7,547	7,924	8,320	8,736	9,173	9,632	10,113	10,619	11,150
Medicare Tax	3	2,010	2,111	2,216	2,327	2,443	2,565	2,694	2,828	2,970	3,118	3,274
<b>Utilities</b>												
Telephone	2	500	520	541	562	585	608	633	658	684	712	740
Office Supplies	2	1,200	1,248	1,298	1,350	1,404	1,460	1,518	1,579	1,642	1,708	1,776
Postal Services	2	3,400	3,536	3,677	3,825	3,978	4,137	4,302	4,474	4,653	4,839	5,033
Mileage	7	100	105	110	116	122	128	134	141	148	155	163
Training and Meetings	2	5,500	5,720	5,949	6,187	6,434	6,692	6,959	7,238	7,527	7,828	8,141
<b>Repair and Services</b>												
Special Departmental Supplies	2	3,500	3,640	3,786	3,937	4,095	4,258	4,429	4,606	4,790	4,982	5,181
Professional Services <sup>2</sup>	3	534,212	560,923	588,969	618,417	649,338	681,805	715,895	751,690	789,274	828,738	870,175
City of Palo Alto RWQCP O&M	6	2,942,788	4,779,893	4,046,181	4,146,251	4,237,033	4,630,986	5,614,317	5,708,835	5,805,602	5,828,031	5,940,567
Other Services	3	1,054,045	1,106,747	1,162,085	1,220,189	1,281,198	1,345,258	1,412,521	1,483,147	1,557,305	1,635,170	1,716,928
<b>Miscellaneous</b>												
Liability Insurance	2	150,000	156,000	162,240	168,730	175,479	182,498	189,798	197,390	205,285	213,497	222,037
<b>TOTAL: Sewer System Administration Expenses</b>		<b>\$ 4,890,668</b>	<b>\$ 6,823,607</b>	<b>\$ 6,190,461</b>	<b>\$ 6,395,060</b>	<b>\$ 6,597,583</b>	<b>\$ 7,107,745</b>	<b>\$ 8,213,024</b>	<b>\$ 8,435,514</b>	<b>\$ 8,666,574</b>	<b>\$ 8,829,931</b>	<b>\$ 9,090,359</b>

TABLE 7: SEWER FUND OPERATING EXPENSE FORECAST

DESCRIPTION <sup>1</sup>	Basis	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Sewer System Maintenance</b>												
Salaries and Benefits												
Salaries	3	\$ 595,001	\$ 624,751	\$ 655,989	\$ 688,788	\$ 723,227	\$ 759,389	\$ 797,358	\$ 837,226	\$ 879,087	\$ 923,042	\$ 969,194
Overtime	3	56,000	58,800	61,740	64,827	68,068	71,472	75,045	78,798	82,738	86,874	91,218
Specialty Pay	3	6,522	6,848	7,191	7,550	7,928	8,324	8,740	9,177	9,636	10,118	10,624
Retirement	3	72,225	75,836	79,628	83,609	87,790	92,179	96,788	101,628	106,709	112,045	117,647
Pers Unfunded Liability	4	123,348	130,213	137,461	145,112	153,189	161,715	170,716	180,218	190,249	200,838	212,017
Quality of Life	3	5,720	6,006	6,306	6,622	6,953	7,300	7,665	8,049	8,451	8,874	9,317
Dental Plan	3	12,342	12,959	13,607	14,287	15,002	15,752	16,539	17,366	18,235	19,146	20,104
Health Insurance	3	142,427	149,548	157,026	164,877	173,121	181,777	190,866	200,409	210,430	220,951	231,999
Uniforms	2	2,958	3,076	3,199	3,327	3,460	3,599	3,743	3,893	4,048	4,210	4,379
Life Insurance	3	1,347	1,414	1,485	1,559	1,637	1,719	1,805	1,895	1,990	2,090	2,194
Worker's Comp Insurance	3	17,077	17,931	18,827	19,769	20,757	21,795	22,885	24,029	25,231	26,492	27,817
Medicare Tax	3	8,380	8,799	9,239	9,701	10,186	10,695	11,230	11,792	12,381	13,000	13,650
<b>Utilities</b>												
Utilities	5	10,400	10,920	11,466	12,039	12,641	13,273	13,937	14,634	15,366	16,134	16,941
Telephone	2	1,500	1,560	1,622	1,687	1,755	1,825	1,898	1,974	2,053	2,135	2,220
Radio & Radar	2	3,350	3,484	3,623	3,768	3,919	4,076	4,239	4,408	4,585	4,768	4,959
Office Supplies	2	850	884	919	956	994	1,034	1,076	1,119	1,163	1,210	1,258
Postal Services	2	300	312	324	337	351	365	380	395	411	427	444
Mileage	7	2,200	2,310	2,426	2,547	2,674	2,808	2,948	3,096	3,250	3,413	3,584
Training and Meetings	2	7,000	7,280	7,571	7,874	8,189	8,517	8,857	9,212	9,580	9,963	10,362
Memberships	2	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763
Gasoline & Oil	7	22,000	23,100	24,255	25,468	26,741	28,078	29,482	30,956	32,504	34,129	35,836
<b>Repair and Services</b>												
Vehicle Maintenance/Repair	2	35,000	36,400	37,856	39,370	40,945	42,583	44,286	46,058	47,900	49,816	51,809
Equipment Repairs	2	7,000	7,280	7,571	7,874	8,189	8,517	8,857	9,212	9,580	9,963	10,362
Building & Grounds	2	7,000	7,280	7,571	7,874	8,189	8,517	8,857	9,212	9,580	9,963	10,362
Rentals	2	10,000	10,400	10,816	11,249	11,699	12,167	12,653	13,159	13,686	14,233	14,802
Special Departmental Supplies	2	50,000	52,000	54,080	56,243	58,493	60,833	63,266	65,797	68,428	71,166	74,012
Professional Services	3	1,300	1,365	1,433	1,505	1,580	1,659	1,742	1,829	1,921	2,017	2,118
Other Services	3	302,267	317,380	333,249	349,912	367,407	385,778	405,067	425,320	446,586	468,915	492,361
<b>TOTAL: Sewer System Maintenance Expenses</b>		<b>\$ 1,515,514</b>	<b>\$ 1,590,618</b>	<b>\$ 1,669,462</b>	<b>\$ 1,752,231</b>	<b>\$ 1,839,124</b>	<b>\$ 1,930,345</b>	<b>\$ 2,026,111</b>	<b>\$ 2,126,649</b>	<b>\$ 2,232,200</b>	<b>\$ 2,343,012</b>	<b>\$ 2,459,350</b>
<b>GRAND TOTAL: SEWER EXPENSES</b>		<b>\$ 6,406,182</b>	<b>\$ 8,414,226</b>	<b>\$ 7,859,922</b>	<b>\$ 8,148,292</b>	<b>\$ 8,436,706</b>	<b>\$ 9,038,089</b>	<b>\$ 10,239,135</b>	<b>\$ 10,562,163</b>	<b>\$ 10,898,774</b>	<b>\$ 11,172,943</b>	<b>\$ 11,549,709</b>

**TABLE 8: FORECASTING ASSUMPTIONS**

INFLATION FACTORS <sup>3</sup>	Basis	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Customer Growth <sup>4</sup>	1	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
General Cost Inflation	2	--	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Labor & Benefits Cost Inflation	3	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
PERS Obligation Inflation <sup>5</sup>	4	--	5.57%	5.57%	5.57%	5.57%	5.57%	5.57%	5.57%	5.57%	5.57%	5.57%
Energy	5	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
RWQCP Treatment <sup>6</sup>	6	--	6.76%	6.76%	6.76%	6.76%	6.76%	6.76%	6.76%	6.76%	6.76%	6.76%
Fuel	7	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
No Escalation	8	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Revenue and expenses are budgeted for 2022/2023. Source: *Multiyear Budget to Actual Sewer.pdf*

2. Invoiced from O&M RWQCP. Confirmed by City staff this is included this accounting line item.

3. Inflation factors developed with the City and from Bureau of Labor Statistics for the region.

4. Customer growth is assumed to be zero.

5. PERS Obligation data source: *los-altos-city-miscellaneous-2016.pdf*.

6. Treatment Factor based on Palo Alto costs allocated to Los Altos; data project 10 years of O&M costs, which include inflation. From City staff on 11/14/22.

TABLE 9: CAPITAL FUNDING SUMMARY

Capital Funding Forecast	Projected											
	Budget	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33	FY 2033/34
Use of Capital Rehabilitation and Replacement Reserve	3,058,000	2,748,040	2,183	-	-	-	28,303	-	2,087,171	2,469,319	6,083,162	-
Rate Revenue	-	-	5,464,635	3,014,834	5,458,718	3,264,516	5,772,403	3,566,634	4,268,214	1,425,429	1,597,589	-
<b>Total Sources of Capital Funds</b>	<b>\$ 3,058,000</b>	<b>\$ 2,748,040</b>	<b>\$ 5,466,818</b>	<b>\$ 3,014,834</b>	<b>\$ 5,458,718</b>	<b>\$ 3,264,516</b>	<b>\$ 5,800,706</b>	<b>\$ 3,566,634</b>	<b>\$ 6,355,385</b>	<b>\$ 3,894,748</b>	<b>\$ 7,680,751</b>	<b>\$ -</b>
<b>Uses of Capital Funds:</b>												
Total Project Costs	\$ 3,058,000	\$ 2,748,040	\$ 5,466,818	\$ 3,014,834	\$ 5,458,718	\$ 3,264,516	\$ 5,800,706	\$ 3,566,634	\$ 6,355,385	\$ 3,894,748	\$ 7,680,751	\$ -
<b>Capital Funding Surplus (Deficiency)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

TABLE 10: CAPITAL IMPROVEMENT PROGRAM COSTS (IN CURRENT YEAR DOLLARS)

Project Description <sup>1,2</sup>	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Sewer System Repair Program	\$ 630,000	\$ 640,000	\$ 650,000	\$ 660,000	\$ 670,000	\$ 680,000	\$ 690,000	\$ 700,000	\$ 710,000	\$ 720,000	\$ -
Structural Reach Replacement	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000	800,000
Root Foaming	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
CIPP Corrosion Replacement	465,000	480,000	500,000	520,000	535,000	550,000	565,000	580,000	595,000	610,000	610,000
Fats, Oils, Grease Program (FOG)	66,000	68,000	70,000	72,000	74,000	76,000	78,000	80,000	82,000	84,000	84,000
GIS Updates	66,000	68,000	70,000	72,000	74,000	76,000	78,000	80,000	82,000	84,000	84,000
Sewer System Management Plan Update	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Sanitary Sewer Video Inspection	430,000	-	440,000	-	-	-	-	-	-	-	-
Adobe Creek Sewer Main Replacement	-	-	2,000,000	-	2,000,000	-	2,000,000	-	2,000,000	-	2,000,000
City of Palo Alto RWQCP Minor CIP Fund <sup>3</sup>	376,000	387,000	398,000	410,000	422,000	434,000	447,000	460,000	473,000	487,000	487,000
<i>Placeholder for Future Year Capital Projects<sup>4</sup></i>	-	-	-	-	-	-	-	-	-	-	-
<b>Total: CIP Program Costs</b>	<b>\$ 3,058,000</b>	<b>\$ 2,668,000</b>	<b>\$ 5,153,000</b>	<b>\$ 2,759,000</b>	<b>\$ 4,850,000</b>	<b>\$ 2,816,000</b>	<b>\$ 4,858,000</b>	<b>\$ 2,900,000</b>	<b>\$ 5,017,000</b>	<b>\$ 2,985,000</b>	<b>\$ 5,715,200</b>

CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Capital Improvement Plan Expenditures  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*

TABLE 11: CAPITAL IMPROVEMENT PROGRAM COSTS (IN FUTURE YEAR DOLLARS)

Project Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Sewer System Repair Program	\$ 630,000	\$ 659,200	\$ 689,585	\$ 721,200	\$ 754,091	\$ 788,306	\$ 823,896	\$ 860,912	\$ 899,407	\$ 939,437	\$ -
Structural Reach Replacement	800,000	824,000	848,720	874,182	900,407	927,419	955,242	983,899	1,013,416	1,043,819	-
Root Foaming	200,000	206,000	212,180	218,545	225,102	231,855	238,810	245,975	253,354	260,955	-
CIPP Corrosion Replacement	465,000	494,400	530,450	568,218	602,147	637,601	674,640	713,327	753,728	795,912	-
Fats, Oils, Grease Program (FOG)	66,000	70,040	74,263	78,676	83,288	88,105	93,136	98,390	103,875	109,601	-
GIS Updates	66,000	70,040	74,263	78,676	83,288	88,105	93,136	98,390	103,875	109,601	-
Sewer System Management Plan Update	25,000	25,750	26,523	27,318	84,413	-	-	-	95,008	-	-
Sanitary Sewer Video Inspection	430,000	-	466,796	-	-	-	-	-	2,533,540	-	-
Adobe Creek Sewer Main Replacement	-	-	2,121,800	-	2,251,018	-	2,388,105	-	599,182	-	2,687,833
City of Palo Alto RWQCP Minor CIP Fund <sup>3</sup>	376,000	398,610	422,238	448,018	474,965	503,125	533,741	565,742	599,182	635,425	-
<i>Placeholder for Future Year Capital Projects<sup>4</sup></i>	-	-	-	-	-	-	-	-	-	-	4,992,918
<b>Total: Capital Improvement Program Costs (Future-Year Dollars)</b>	<b>\$ 3,058,000</b>	<b>\$ 2,748,040</b>	<b>\$ 5,466,818</b>	<b>\$ 3,014,834</b>	<b>\$ 5,458,718</b>	<b>\$ 3,264,516</b>	<b>\$ 5,800,706</b>	<b>\$ 3,566,634</b>	<b>\$ 6,355,385</b>	<b>\$ 3,894,748</b>	<b>\$ 7,680,751</b>

TABLE 12: FORECASTING ASSUMPTIONS

Economic Variables	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Annual Construction Cost Inflation, Per Engineering News Record <sup>5</sup>	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2023	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34
Inflation Factor for City of Palo Alto RWQCP Minor CIP Fund <sup>3</sup>	0.00%	0.00%	2.84%	3.02%	2.93%	2.84%	3.00%	2.91%	2.83%	2.96%	0.00%
Cumulative Construction Cost Multiplier from 2023	1.00	1.00	1.03	1.06	1.09	1.12	1.16	1.19	1.22	1.26	1.26

1. Capital project costs were provided by City Staff in source file: *Jy\_21-22\_and\_22-23\_budget.pdf* for the sewer fund.  
 City of Palo Alto Wastewater Treatment Plant/Minor CIP Fund Source: 6/1/2022 Partners Meeting Presentation.pdf  
 2. Future project costs are inflated by 3.0% per year.  
 3. Inflation Factor determined based on file: *6/1/2022 Partners Meeting Presentation.pdf*  
 4. NBS has initially estimated Future Projects based on average annual project expenditures for the previous five years; City needs to confirm this amount.  
 5. For reference purposes, the annual Construction Cost Inflation percentage is the 10 year average change in the Construction Cost Index for 2012-2022 (3.0%). Source: *Engineering News Record website (http://enr.construction.com)*.

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TABLE 13: WASTEWATER UTILITY EXISTING DEBT OBLIGATIONS

Annual Repayment Schedules:	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33
1999 Bond - New Money for Incinerator Rehabilitation Utility Revenue Bond- Los Altos Share is 9.47% <sup>1</sup>											
Principal Payment	\$ 45,456	\$ 47,824	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest Payment	\$ 4,897	\$ 2,511	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization of Bond Discount and Issuance Cost of New Money Bonds <sup>4</sup>	\$ 823	\$ 755	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Subtotal: Annual Debt Service</b>	<b>\$ 51,176</b>	<b>\$ 51,089</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Coverage Requirement (%-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	0%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ 18,262	\$ 10,643	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
City of Palo Alto 1999 Refunding of 1990 Utility Revenue Bonds- Los Altos share 7.80% <sup>2</sup>											
Principal Payment	\$ 19,772	\$ 20,841	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest Payment	\$ 2,132	\$ 1,094	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Amortization of Issuance Costs and Bond Discount of 1999 Refunding of 1990 Bonds <sup>4</sup>	\$ 321	\$ 295	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Subtotal: Annual Debt Service</b>	<b>\$ 22,226</b>	<b>\$ 22,230</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	0%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ 7,938	\$ 4,631	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SWRCB SRF Loan- C-06-5044-110 UV Disinfection Facility- Los Altos share is 9.47% <sup>3</sup>											
Principal Payment	\$ 42,858	\$ 43,972	\$ 45,116	\$ 46,289	\$ 47,492	\$ 48,727	\$ 49,994	\$ 51,294	\$ -	\$ -	\$ -
Interest Payment	\$ 9,769	\$ 8,655	\$ 7,512	\$ 6,339	\$ 5,135	\$ 3,900	\$ 2,633	\$ 1,334	\$ -	\$ -	\$ -
<b>Subtotal: Annual Debt Service</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ 52,627</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ 37,591	\$ 35,422	\$ 32,892	\$ 29,902	\$ 26,314	\$ 21,928	\$ 16,446	\$ 9,398	\$ -	\$ -	\$ -
California Clean Water SRF Payment Schedule Project No. 8190-110- Sludge Dewatering and Loadout Facility- Los Altos share is 9.47% <sup>5</sup>											
Principal Payment	\$ 63,875	\$ 65,024	\$ 66,195	\$ 67,386	\$ 68,599	\$ 69,834	\$ 71,091	\$ 72,371	\$ 73,673	\$ 74,999	\$ 76,349
Interest Payment	\$ 39,525	\$ 38,375	\$ 37,205	\$ 36,013	\$ 34,800	\$ 33,565	\$ 32,308	\$ 31,029	\$ 29,726	\$ 28,400	\$ 27,050
<b>Subtotal: Annual Debt Service</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>	<b>\$ 103,399</b>
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018A Wastewater Utility Revenue Bonds with Capitalized Interest First Bond Issuance <sup>5</sup>											
Principal Payment	\$ -	\$ -	\$ 65,346	\$ 68,785	\$ 72,224	\$ 75,663	\$ 79,532	\$ 83,402	\$ 87,701	\$ 92,000	\$ 96,729
Interest Payment	\$ 156,249	\$ 156,249	\$ 156,249	\$ 151,262	\$ 147,737	\$ 144,040	\$ 140,160	\$ 136,086	\$ 131,809	\$ 127,316	\$ 122,598
<b>Subtotal: Annual Debt Service</b>	<b>\$ 156,249</b>	<b>\$ 156,249</b>	<b>\$ 219,961</b>	<b>\$ 220,047</b>	<b>\$ 219,961</b>	<b>\$ 219,703</b>	<b>\$ 219,692</b>	<b>\$ 219,488</b>	<b>\$ 219,510</b>	<b>\$ 219,316</b>	<b>\$ 219,327</b>
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171	\$ 184,171

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*Preliminary Draft. Subject to Material Revision, Do Not Cite or Distribute*

**TABLE 13: WASTEWATER UTILITY EXISTING DEBT OBLIGATIONS**

Annual Repayment Schedules:	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	FY 2032/33
2018A Wastewater Utility Revenue Bonds with Capitalized Interest Second Bond Issuance <sup>5</sup>											
Principal Payment	\$ -	\$ -	\$ 34,566	\$ 36,460	\$ 37,880	\$ 39,774	\$ 42,142	\$ 44,036	\$ 46,403	\$ 48,771	\$ 51,138
Interest Payment	\$ 82,413	\$ 82,413	\$ 81,549	\$ 79,773	\$ 77,914	\$ 75,973	\$ 73,925	\$ 71,771	\$ 69,510	\$ 67,130	\$ 64,633
<b>Subtotal: Annual Debt Service</b>	<b>\$ 82,413</b>	<b>\$ 82,413</b>	<b>\$ 116,114</b>	<b>\$ 116,232</b>	<b>\$ 115,794</b>	<b>\$ 115,747</b>	<b>\$ 116,067</b>	<b>\$ 115,806</b>	<b>\$ 115,913</b>	<b>\$ 115,901</b>	<b>\$ 115,771</b>
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210	\$ 97,210
CWSRF Loan with Palo Alto - Secondary Treatment Upgrades (STU) - Los Altos share is 9.47% <sup>6</sup>											
Principal Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Subtotal: Annual Debt Service</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 686,861</b>	<b>\$ 686,861</b>	<b>\$ 686,861</b>	<b>\$ 686,861</b>	<b>\$ 686,861</b>	<b>\$ 686,861</b>
Coverage Requirement (\$-Amount above annual payment)			120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401	\$ 81,401
<b>Grand Total: Existing Annual Debt Service (Palo Alto RWQCP)</b>	<b>\$ 468,090</b>	<b>\$ 468,007</b>	<b>\$ 492,102</b>	<b>\$ 492,306</b>	<b>\$ 491,782</b>	<b>\$ 1,178,338</b>	<b>\$ 1,178,647</b>	<b>\$ 1,178,182</b>	<b>\$ 1,125,683</b>	<b>\$ 1,125,477</b>	<b>\$ 1,125,358</b>
<b>Grand Total: Existing Annual Coverage Requirement</b>	<b>\$ 561,708</b>	<b>\$ 561,608</b>	<b>\$ 590,522</b>	<b>\$ 590,767</b>	<b>\$ 590,138</b>	<b>\$ 1,414,005</b>	<b>\$ 1,414,376</b>	<b>\$ 1,413,818</b>	<b>\$ 1,350,819</b>	<b>\$ 1,350,573</b>	<b>\$ 1,350,429</b>
<b>Grand Total: Existing Debt Reserve Target</b>	<b>\$ 145,192</b>	<b>\$ 413,479</b>	<b>\$ 499,073</b>	<b>\$ 496,083</b>	<b>\$ 492,495</b>	<b>\$ 488,109</b>	<b>\$ 482,627</b>	<b>\$ 475,579</b>	<b>\$ 466,181</b>	<b>\$ 466,181</b>	<b>\$ 466,181</b>

1. Debt Service Schedule from Bond Statement Source: Invoice\_7800004388 (Oct 2016) Q2.pdf page 10 of 10 of pdf.

2. Debt Service Schedule from Bond Statement Source: Invoice\_7800004388 (Oct 2016) Q2.pdf page 9 of 10 of pdf.

3. Debt Service Schedule from Bond Statement Source: Invoice\_7800004388 (Oct 2016) Q2.pdf page 8 of 10 of pdf.

4. Amortization of Issuance Costs and Bond Discounts share is same as share as bonds. Source: Invoice\_7800004733.4 (Apr 2017) Q4.pdf and Invoice\_7800004733.5 (Apr 2017) Q4.pdf

5. Source: Estimated Debt Service Schedule v2017.9.25.pdf

6. New bond service agreement with City of Palo Alto for STU project. From City staff on Oct. 24, 2022.



**EXHIBIT 4**

**CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Projected Sewer Rates Under Existing Rate Schedule  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute***

**TABLE 14: CURRENT WASTEWATER RATE SCHEDULE**

Base Charges	Rate per Dwelling Unit	Quantity Charge (per HCF) <sup>1</sup>
FY 22/23 Per-Parcel Sewer Service Charge	\$301.29	\$2.42

1. One Unit is equal to one HCF (Hundred Cubic Feet) or 748 gallons.  
Source: sewer\_service\_charge\_report\_fy2122.pdf, signed\_resolution\_no\_2021-28.pdf

CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Cost of Service Analysis  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*

TABLE 15: CLASSIFICATION OF EXPENSES

Budget Categories	Total Revenue Requirements FY 2023/24		Flow		Strength		Customer		Basis of Classification				
	\$		(VOL)	(VOL)	(COD)	(TSS)	(CA)	(VOL)	(COD)	(TSS)	(CA)		
<b>Sewer System Administration</b>													
<b>Salaries and Benefits</b>	\$												
Salaries	143,736	\$	50,307	\$	43,121	\$	43,121	\$	7,187	35.0%	30.0%	30.0%	5.0%
Retirement	14,793		5,178		4,438		4,438		740	35.0%	30.0%	30.0%	5.0%
Pers Unfunded Liability	15,193		5,318		4,558		4,558		760	35.0%	30.0%	30.0%	5.0%
Dental Plan	1,511		529		453		453		76	35.0%	30.0%	30.0%	5.0%
Health Insurance	20,536		7,188		6,161		6,161		1,027	35.0%	30.0%	30.0%	5.0%
Life Insurance	209		73		63		63		10	35.0%	30.0%	30.0%	5.0%
Workers Comp Insurance	7,187		2,516		2,156		2,156		359	35.0%	30.0%	30.0%	5.0%
Medicare Tax	2,111		739		633		633		106	35.0%	30.0%	30.0%	5.0%
<b>Utilities</b>													
Telephone	520		182		156		156		26	35.0%	30.0%	30.0%	5.0%
Office Supplies	1,248		-		-		-		1,248	0.0%	0.0%	0.0%	100.0%
Postal Services	3,536		-		-		-		3,536	0.0%	0.0%	0.0%	100.0%
Mileage	105		37		32		32		5	35.0%	30.0%	30.0%	5.0%
Training and Meetings	5,720		2,002		1,716		1,716		286	35.0%	30.0%	30.0%	5.0%
<b>Repair and Services</b>													
Special Departmental Supplies	3,640		2,730		364		364		182	75.0%	10.0%	10.0%	5.0%
Professional Services	560,923		308,507		56,092		56,092		140,231	55.0%	10.0%	10.0%	25.0%
City of Palo Alto RWQCP O&M	4,779,893		2,867,936		955,979		955,979		-	60.0%	20.0%	20.0%	0.0%
Other Services	1,106,747		664,048		-		-		442,699	60.0%	0.0%	0.0%	40.0%
<b>Miscellaneous</b>													
Liability Insurance	156,000		85,800		31,200		31,200		7,800	55.0%	20.0%	20.0%	5.0%
<b>SUB-TOTAL</b>	<b>\$ 6,823,607</b>	<b>\$ 4,003,089</b>	<b>\$ 1,107,121</b>	<b>\$ 1,107,121</b>	<b>\$ 606,277</b>	<b>\$ 1,107,121</b>	<b>\$ 58.7%</b>	<b>\$ 16.2%</b>	<b>\$ 16.2%</b>	<b>20.0%</b>	<b>16.2%</b>	<b>20.0%</b>	<b>8.9%</b>

CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Cost of Service Analysis  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*

TABLE 16: CLASSIFICATION OF EXPENSES

Budget Categories	Total Revenue Requirements FY 2023/24		Flow		Strength		Customer		Basis of Classification			
			(VOL)	(VOL)	(COD)	(TSS)	(CA)	(CA)	(VOL)	(COD)	(TSS)	(CA)
<b>Sewer System Maintenance</b>												
<b>Salaries and Benefits</b>	\$	624,751	\$	218,663	\$	187,425	\$	187,425	35.0%	30.0%	30.0%	5.0%
Salaries		58,800		20,580		17,640		17,640	35.0%	30.0%	30.0%	5.0%
Overtime		6,848		2,397		2,054		2,054	35.0%	30.0%	30.0%	5.0%
Specialty Pay		75,836		26,543		22,751		22,751	35.0%	30.0%	30.0%	5.0%
Retirement		130,213		45,575		39,064		39,064	35.0%	30.0%	30.0%	5.0%
Pers Unfunded Liability		6,006		2,102		1,802		1,802	35.0%	30.0%	30.0%	5.0%
Quality of Life		12,959		4,536		3,888		3,888	35.0%	30.0%	30.0%	5.0%
Dental Plan		149,548		52,342		44,865		44,865	35.0%	30.0%	30.0%	5.0%
Health Insurance		3,076		1,077		923		923	35.0%	30.0%	30.0%	5.0%
Uniforms		1,414		495		424		424	35.0%	30.0%	30.0%	5.0%
Life Insurance		17,931		6,276		5,379		5,379	35.0%	30.0%	30.0%	5.0%
Workers Comp Insurance		8,799		3,080		2,640		2,640	35.0%	30.0%	30.0%	5.0%
Medicare Tax												
<b>Utilities</b>		10,920		8,190		1,092		1,092	75.0%	10.0%	10.0%	5.0%
Utilities		1,560		546		468		468	35.0%	30.0%	30.0%	5.0%
Telephone		3,484		1,219		1,045		1,045	35.0%	30.0%	30.0%	5.0%
Radio & Radar		884		-		-		-	0.0%	0.0%	100.0%	0.0%
Office Supplies		312		-		-		-	0.0%	0.0%	100.0%	0.0%
Postal Services		2,310		809		693		693	35.0%	30.0%	30.0%	5.0%
Mileage		7,280		2,548		2,184		2,184	35.0%	30.0%	30.0%	5.0%
Training and Meetings		12,480		4,368		3,744		3,744	35.0%	30.0%	30.0%	5.0%
Memberships		23,100		23,100		-		-	100.0%	0.0%	0.0%	0.0%
Gasoline & Oil												
<b>Repair and Services</b>		36,400		27,300		3,640		3,640	75.0%	10.0%	10.0%	5.0%
Vehicle Maintenance/Repair		7,280		5,460		728		728	75.0%	10.0%	10.0%	5.0%
Equipment Repairs		7,280		5,460		728		728	75.0%	10.0%	10.0%	5.0%
Building & Grounds		10,400		7,800		1,040		1,040	75.0%	10.0%	10.0%	5.0%
Rentals		52,000		39,000		5,200		5,200	75.0%	10.0%	10.0%	5.0%
Special Departmental Supplies		1,365		1,024		137		137	75.0%	10.0%	10.0%	5.0%
Professional Services		317,380		174,559		31,738		31,738	55.0%	10.0%	10.0%	25.0%
Other Services												
<b>SUB-TOTAL</b>	\$	1,590,618	\$	685,047	\$	381,292	\$	381,292	43.1%	24.0%	24.0%	9.0%
<b>GRAND TOTAL - Sewer System</b>	\$	8,414,226	\$	4,688,136	\$	1,488,413	\$	1,488,413	55.7%	17.7%	17.7%	8.9%

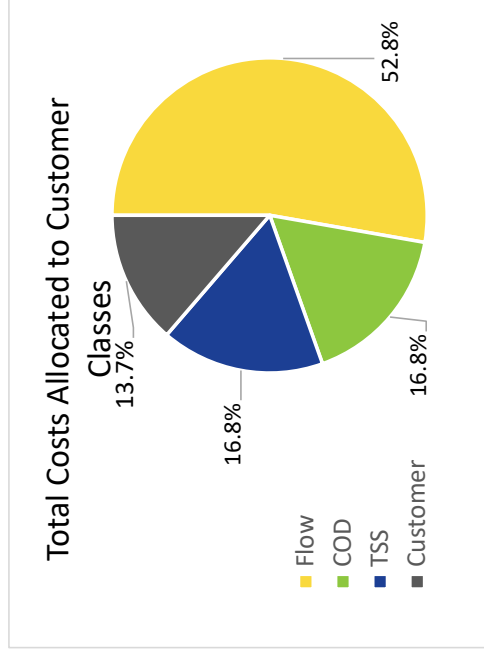
CITY OF LOS ALTOS  
SEWER RATE STRUCTURE ANALYSIS  
Cost of Service Analysis  
*Preliminary Draft Subject to Material Revision, Do Not Cite or Distribute*

TABLE 17: CLASSIFICATION OF EXPENSES

Budget Categories	Total Revenue Requirements		Flow		Strength		Customer		Basis of Classification			
	FY 2023/24	(VOL)	(VOL)	(COD)	(TSS)	(CA)	(VOL)	(COD)	(TSS)	(CA)		
<b>Debt Service Payments</b>												
Existing Annual Debt Service	\$ 468,007	\$ -	\$ -	\$ -	\$ -	\$ 468,007	0.0%	0.0%	0.0%	100.0%		
Future Annual Debt Service	-	-	-	-	-	-	0.0%	0.0%	0.0%	100.0%		
<b>Total Debt Service Payments</b>	<b>\$ 468,007</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 468,007</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>		
<b>Capital Expenditures</b>												
Rate Funded Capital Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	55.7%	17.7%	17.7%	8.9%		
<b>TOTAL REVENUE REQUIREMENTS</b>	<b>\$ 8,882,232</b>	<b>\$ 4,688,136</b>	<b>\$ 1,488,413</b>	<b>\$ 1,488,413</b>	<b>\$ 1,488,413</b>	<b>\$ 1,217,272</b>	<b>52.8%</b>	<b>16.8%</b>	<b>16.8%</b>	<b>13.7%</b>		
<b>Less: Non-Rate Revenues</b>												
Sewer Service Charge not on Tax Roll	\$ (600,000)	(316,686)	(100,543)	(100,543)	(100,543)	(82,227)	52.8%	16.8%	16.8%	13.7%		
Other Revenues	\$ (15,000)	(7,917)	(2,514)	(2,514)	(2,514)	(2,056)	52.8%	16.8%	16.8%	13.7%		
Interest Income	\$ (77,867)	(41,099)	(13,048)	(13,048)	(13,048)	(10,671)	52.8%	16.8%	16.8%	13.7%		
<b>NET REVENUE REQUIREMENTS</b>	<b>\$ 8,189,365</b>	<b>\$ 4,322,433</b>	<b>\$ 1,372,308</b>	<b>\$ 1,372,308</b>	<b>\$ 1,372,308</b>	<b>\$ 1,122,317</b>						
<b>Allocation of Revenue Requirements</b>	<b>100.0%</b>	<b>52.8%</b>	<b>16.8%</b>	<b>16.8%</b>	<b>16.8%</b>	<b>13.7%</b>						
Revenue Req. Check from Financial Plan	\$ -											

TABLE 18: ADJUSTMENT TO CLASSIFICATION OF EXPENSES

	Total	Flow	COD	TSS	Customer
Adjustment to Current Rate Level:	\$ 9,096,500	\$ 4,801,228	\$ 1,524,318	\$ 1,524,318	\$ 1,246,636
Adjusted Net Revenue Req'ts		52.8%	16.8%	16.8%	13.7%
Percent of Revenue					



Current Revenue	
Fixed	\$ 3,602,482
Variable	\$ 2,364,214
<b>Total</b>	<b>\$ 5,966,696</b>

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TABLE 19: DEVELOPMENT OF THE VOLUME ALLOCATION FACTOR

Customer Class <sup>1</sup>	Number of Accounts	Annual Winter-Average Based Volume (HCF)	Adjusted Annual Volume (HCF) <sup>2</sup>	Percentage of Adjusted Volume
<b>Residential</b>				
Single Family Home	10,363	1,062,455	959,544	80.3%
Multifamily Residence (2 units)	65	2,744	2,478	0.2%
Multifamily Residence (3-4 units)	11	475	429	0.0%
Multifamily Residence (5+ units)	68	60,592	54,723	4.6%
Condominium Unit	1,033	52,954	47,825	4.0%
<b>Commercial</b>				
Commercial/Industrial	458	41,829	37,778	3.2%
Church	22	4,001	3,614	0.3%
Restaurant	69	78,160	70,589	5.9%
<b>Public/Institutional</b>				
Government	10	3,207	2,896	0.2%
Institutional	3	10,369	9,365	0.8%
Parks	4	2,119	1,913	0.2%
School	10	3,991	3,604	0.3%
<b>Total:</b>	<b>12,116</b>	<b>1,322,896</b>	<b>1,194,758</b>	<b>100%</b>
			<i>1,194,758 Flow (hcf/yr.)</i>	
			<i>0.90 Flow Adjust.</i>	

1. Customer billing data summarized from data source: "Data for Report, 2021.22 JT.xlsx"  
2. Actual plant data from source file: Los Altos Monthly Flow BOD TSS NH3 pounds FY 19.20.21.xlsx

TABLE 20: DEVELOPMENT OF THE STRENGTH ALLOCATION FACTOR

Customer Class	Adjusted Annual Volume Total (HCF)	Annual Flow (million gallons)	Chemical Oxygen Demand (COD)			Total Suspended Solids (TSS)			
			Average Strength Factor (mg/l) <sup>1</sup>	Calculated COD (lbs./yr.)	Adjusted COD (lbs./yr.)	Percent of Total	Average Strength Factor (mg/l) <sup>1</sup>	Adjusted TSS (lbs./yr.)	Percent of Total
<b>Residential</b>									
Single Family Home	959,544	717.79	622	3,723,506	4,049,292	72.0%	250	1,979,172	74.8%
Multifamily Residence (2 units)	2,478	1.85	622	9,617	10,458	0.2%	250	5,112	0.2%
Multifamily Residence (3-4 units)	429	0.32	622	1,664	1,809	0.0%	250	884	0.0%
Multifamily Residence (5+ units)	54,723	40.94	622	212,352	230,932	4.1%	250	112,873	4.3%
Condominium Unit	47,825	35.78	622	185,584	201,821	3.6%	250	98,644	3.7%
<b>Commercial</b>									
Commercial/Industrial	37,778	28.26	622	146,596	159,422	2.8%	250	77,921	2.9%
Church	3,614	2.70	622	14,023	15,250	0.3%	250	7,454	0.3%
Restaurant	70,589	52.80	1,888	831,453	904,200	16.1%	600	349,437	13.2%
<b>Public/Institutional</b>									
Government	2,896	2.17	419	7,570	8,233	0.1%	100	2,389	0.1%
Institutional	9,365	7.01	419	24,480	26,622	0.5%	100	7,727	0.3%
Parks	1,913	1.43	419	5,002	5,439	0.1%	100	1,579	0.1%
School	3,604	2.70	419	9,421	10,246	0.2%	100	2,974	0.1%
<b>Total:</b>	<b>1,194,758</b>	<b>894</b>		<b>5,171,268</b>	<b>5,623,725</b>	<b>100%</b>		<b>2,646,165</b>	<b>100%</b>

1. BOD strength factors (Source: Page G-21, SWRCB Revenue Program Guidelines-Appendix G) converted to COD using formula referenced in Operation of Municipal Wastewater Treatment Plants, Chapter 17, pg. 9.

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TABLE 21: DEVELOPMENT OF THE CUSTOMER ALLOCATION FACTOR

Customer Class	Number of Accounts <sup>1</sup>	Percent of Total	Number of Equivalent Dwelling Units <sup>1</sup>	Percent of Total
<b>Residential</b>				
Single Family Home	10,363	85.5%	10,363	71.0%
Multifamily Residence (2 units)	65	0.5%	130	0.9%
Multifamily Residence (3-4 units)	11	0.1%	34	0.2%
Multifamily Residence (5+ units)	68	0.6%	716	4.9%
Condominium Unit	1,033	8.5%	1,033	7.1%
<b>Commercial</b>				
Commercial/Industrial	458	3.8%	902	6.2%
Church	22	0.2%	108	0.7%
Restaurant	69	0.6%	770	5.3%
<b>Public/Institutional</b>				
Government	10	0.1%	89	0.6%
Institutional	3	0.0%	283	1.9%
Parks	4	0.0%	58	0.4%
School	10	0.1%	109	0.7%
<b>Total:</b>	<b>12,116</b>	<b>100%</b>	<b>14,595</b>	<b>100%</b>
Vacant	15		4	
N/A	3		-	
<b>Grand Total:</b>	<b>12,134</b>		<b>14,599</b>	

1. Data Source: ~Data for Report\_2021.22\_IT.xlsx

Type	COD <sup>2</sup>
Professional Office	419
Schools & College	419
Residential - Low	537
Residential - High	622
Restaurant	1,888

1. BOD strength factors source: Page G-21, SWRCB Revenue Program Guidelin

2. COD conversion formula source: *Operation of Municipal Wastewater Treat*  
 Figure 17-2. Conversion formula based on regression of actual treatment pl  
 relationship between BOD and COD.

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TABLE 22: COST OF SERVICE ALLOCATIONS BY CUSTOMER CLASS

Cost Classification Components <sup>1</sup>	Volume	Treatment		Customer Related	Cost-of-Service Net Revenue Requirement	% of COS Net Revenue Req't.
		COD	TSS			
<b>Net Revenue Requirements</b>	<b>\$ 4,801,228</b>	<b>\$ 1,524,318</b>	<b>\$ 1,524,318</b>	<b>\$ 1,246,636</b>	<b>\$ 9,096,500</b>	<b>--</b>
<i>% of Net Revenue Requirements</i>	<i>52.8%</i>	<i>16.8%</i>	<i>16.8%</i>	<i>13.7%</i>	<i>100.0%</i>	
<b>Residential</b>						
Single Family Home	\$ 3,856,003	\$ 1,097,566	\$ 1,140,098	\$ 1,066,267	\$ 7,159,933	78.7%
Multifamily Residence (2 units)	9,959	2,835	2,945	6,688	22,426	0.2%
Multifamily Residence (3-4 units)	1,723	490	509	1,132	3,854	0.0%
Multifamily Residence (5+ units)	219,908	62,594	65,020	6,997	354,519	3.9%
Condominium Unit	192,188	54,704	56,824	106,287	410,003	4.5%
<b>Commercial</b>						
Commercial/Industrial	151,813	43,212	44,886	47,124	287,035	3.2%
Church	14,522	4,134	4,294	2,264	25,213	0.3%
Restaurant	283,669	245,085	201,292	7,100	737,145	8.1%
<b>Public/Institutional</b>						
Government	11,638	2,232	1,376	1,029	16,275	0.2%
Institutional	37,634	7,216	4,451	309	49,609	0.5%
Parks	7,689	1,474	909	412	10,485	0.1%
School	14,483	2,777	1,713	1,029	20,002	0.2%
<b>Total</b>	<b>\$ 4,801,228</b>	<b>\$ 1,524,318</b>	<b>\$ 1,524,318</b>	<b>\$ 1,246,636</b>	<b>\$ 9,096,500</b>	<b>100%</b>

1. Revenue requirement for each customer class is determined by multiplying the revenue requirement from each cost classification by the allocation factors for each customer class.

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TABLE 23: SEWER RATE CALCULATION

Customer Class	Number of Accounts	No. of Equivalent Dwelling Units	Annual Billable Volume (hcf)	Annual Rev. Req t <sup>1</sup>			Annual Fixed Charge (\$ Per EDU) <sup>2</sup>	Volumetric Charge Per hcf <sup>3</sup>	
				Total	Fixed	Volumetric			
<b>Residential</b>									
Single Family Home	10,363	10,363	1,062,455	\$7,159,933	3,723,165	3,436,768	\$324.09	\$3.30	
Multifamily Residence (2 units)	65	130	2,744	\$22,426	11,662	10,765	\$324.09	\$3.30	
Multifamily Residence (3-4 units)	11	34	475	\$3,854	2,004	1,850	\$324.09	\$3.30	
Multifamily Residence (5+ units)	68	716	60,592	\$354,519	184,350	170,169	\$324.09	\$3.30	
Condominium Unit	1,033	1,033	52,954	\$410,003	213,201	196,801	\$324.09	\$3.30	
<b>Commercial</b>									
Commercial/Industrial	458	902	41,829	287,035	149,258	137,777	\$324.09	\$3.30	
Church	22	108	4,001	25,213	13,111	12,102	\$324.09	\$3.30	
Restaurant	69	770	78,160	737,145	383,316	353,830	\$324.09	\$3.30	
<b>Public/Institutional</b>									
Government	10	89	3,207	16,275	8,463	7,812	\$324.09	\$3.30	
Institutional	3	283	10,369	49,609	25,797	23,812	\$324.09	\$3.30	
Parks	4	58	2,119	10,485	5,452	5,033	\$324.09	\$3.30	
School	10	109	3,991	20,002	10,401	9,601	\$324.09	\$3.30	
<b>Total</b>	<b>12,116</b>	<b>14,595</b>	<b>1,322,896</b>	<b>\$9,096,500</b>	<b>\$4,730,180</b>	<b>\$4,366,320</b>	<b>--</b>	<b>--</b>	
				<b>100%</b>	<b>52%</b>	<b>48%</b>			
				<i>Percent of Revenue from Fixed vs. Volumetric Charges</i>					

1. Annual revenue requirement adjusted to 52 percent collected from fixed rates and the rest from volumetric rates.

2. Annual fixed charge calculated by dividing the total fixed revenue by the total number of EDUs.

3. Volumetric charge per unit of usage (HCF) calculated by dividing the total variable revenue by the annual billable volume.



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TABLE 24: SEWER RATE CALCULATION FOR FIXED CHARGES

Fixed Charges (per EDU)	Total Revenue Requirements	% of Total Rev. Req't. from Fixed Charges	Fixed Charges	Number of Equivalent Dwelling Units	Rate per EDU
	A	B	C = A * B	D	E = C / D
All Customers	\$9,096,500	52%	\$4,730,180	14,595	<b>\$324.09</b>

TABLE 25: SEWER RATE CALCULATION FOR VOLUMETRIC CHARGES

Volumetric Charges (per HCF)	Total Revenue Requirements	% of Total Rev. Req't. from Volumetric Charges	Volumetric Charges	Annual Billable Volume (hcf)	Rate per HCF
	F	G = I - B	H = F * G	I	J = H / I
All Customers	\$9,096,500	48%	\$4,366,320	1,322,896	<b>\$3.30</b>

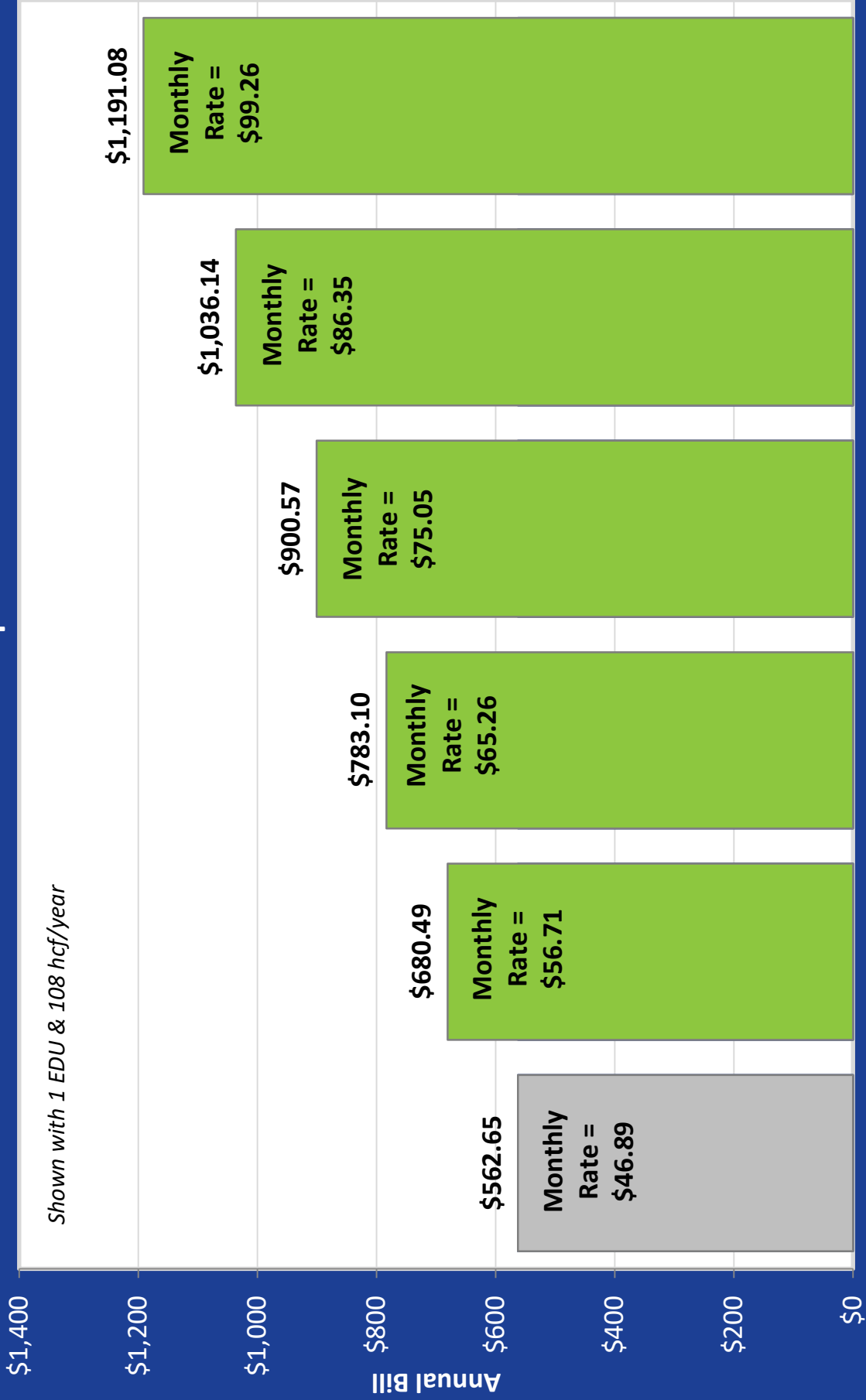
TABLE 26: CURRENT VS. PROPOSED SEWER RATES

Sewer Rate Schedule	Current Rates	Proposed Yearly Sewer Rates				
		Year 1	Year 2	Year 3	Year 4	Year 5
		FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Annual Fixed Service Charge per EDU	\$301.29	\$324.09	\$372.70	\$428.61	\$492.90	\$566.84
Volumetric Rate (\$/hcf) <sup>1,2</sup>	\$2.42	\$3.30	\$3.80	\$4.37	\$5.03	\$5.78

1. One Unit is equal to one HCF (Hundred Cubic Feet) or 748 gallons.  
 2. Rates are charged based on average winter water consumption (three lowest consecutive months from previous year).

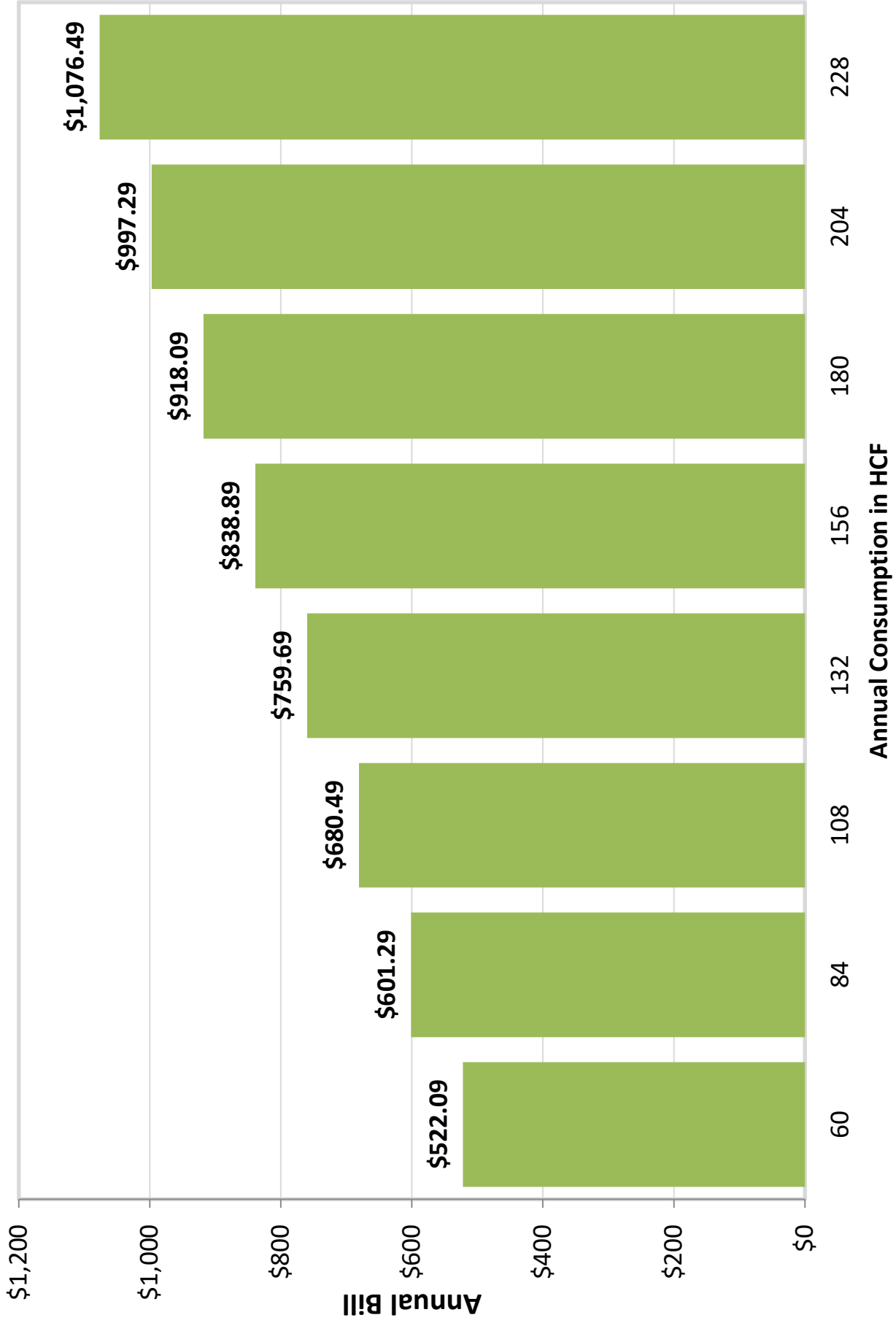
# 5 Year Annual Single Family Residential Sewer Bill Comparison

## Current vs. Proposed Rates



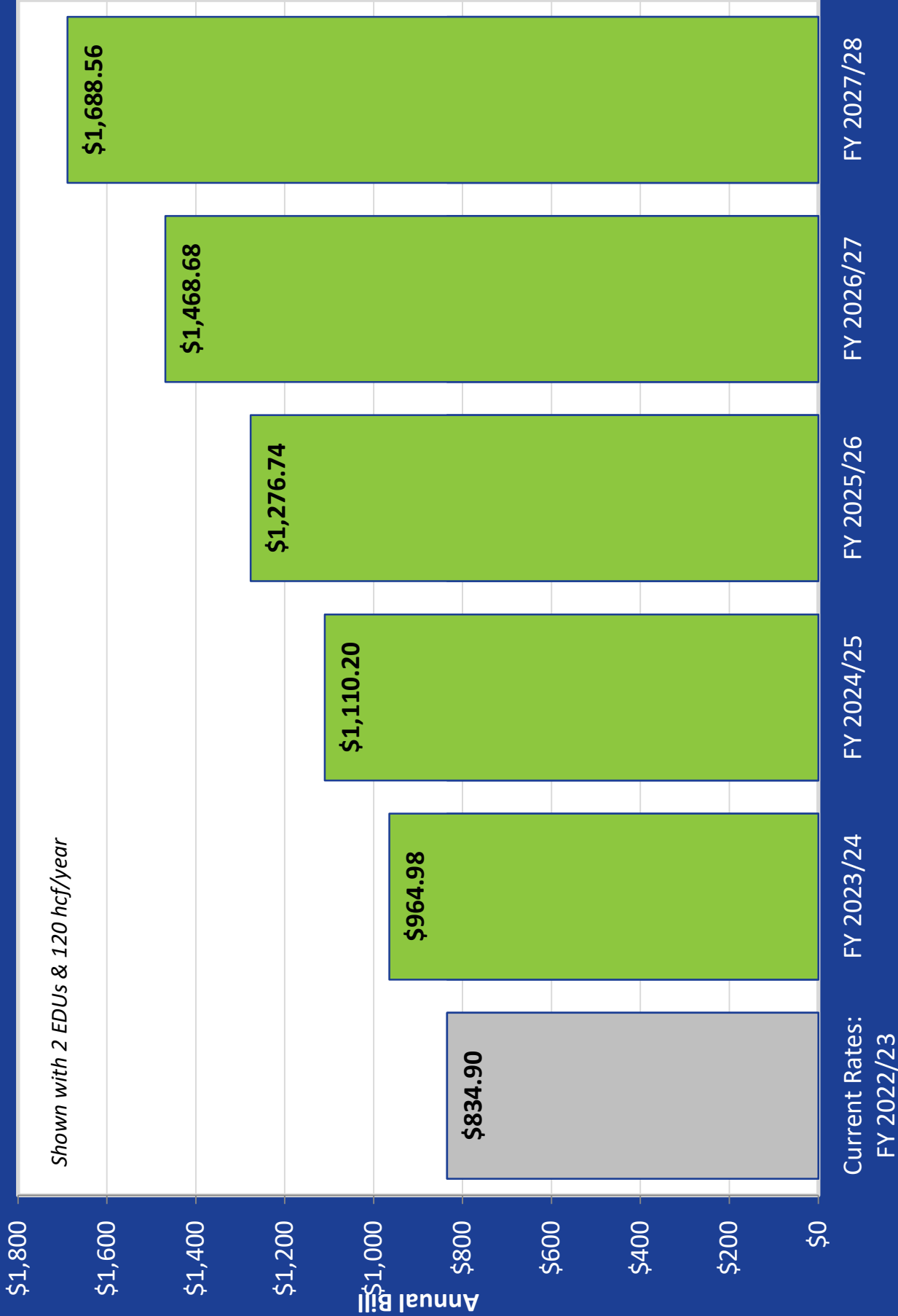
Current Rates: FY 2022/23    Proposed Rates: FY 2023/24    Proposed Rates: FY 2024/25    Proposed Rates: FY 2025/26    Proposed Rates: FY 2026/27    Proposed Rates: FY 2027/28

## Annual Single Family Residential Sewer Bill Comparison Current vs. Proposed Rates with Various Consumption Levels



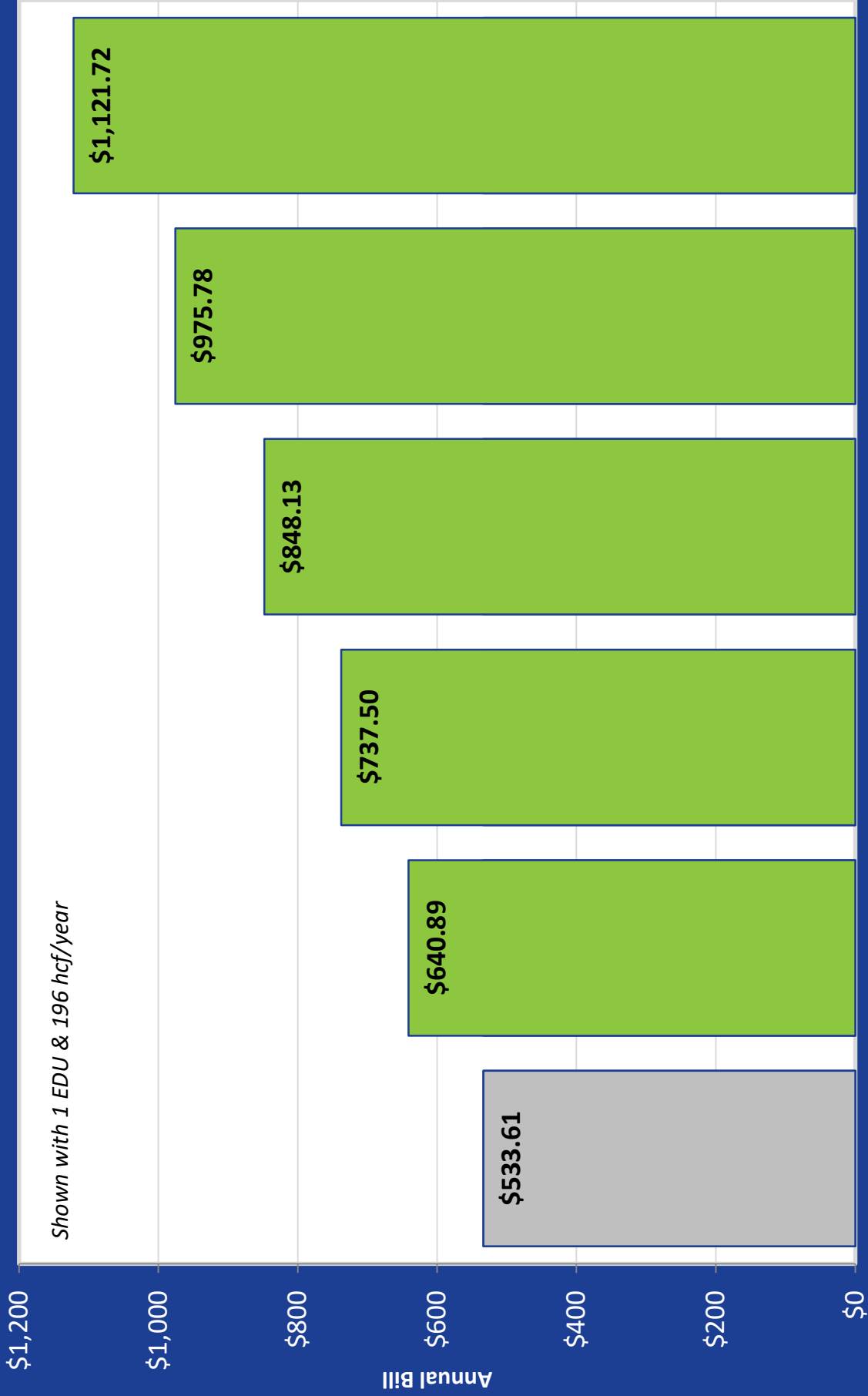
# 5 Year Annual Multi Family Residential Sewer Bill Comparison

## Current vs. Proposed Rates



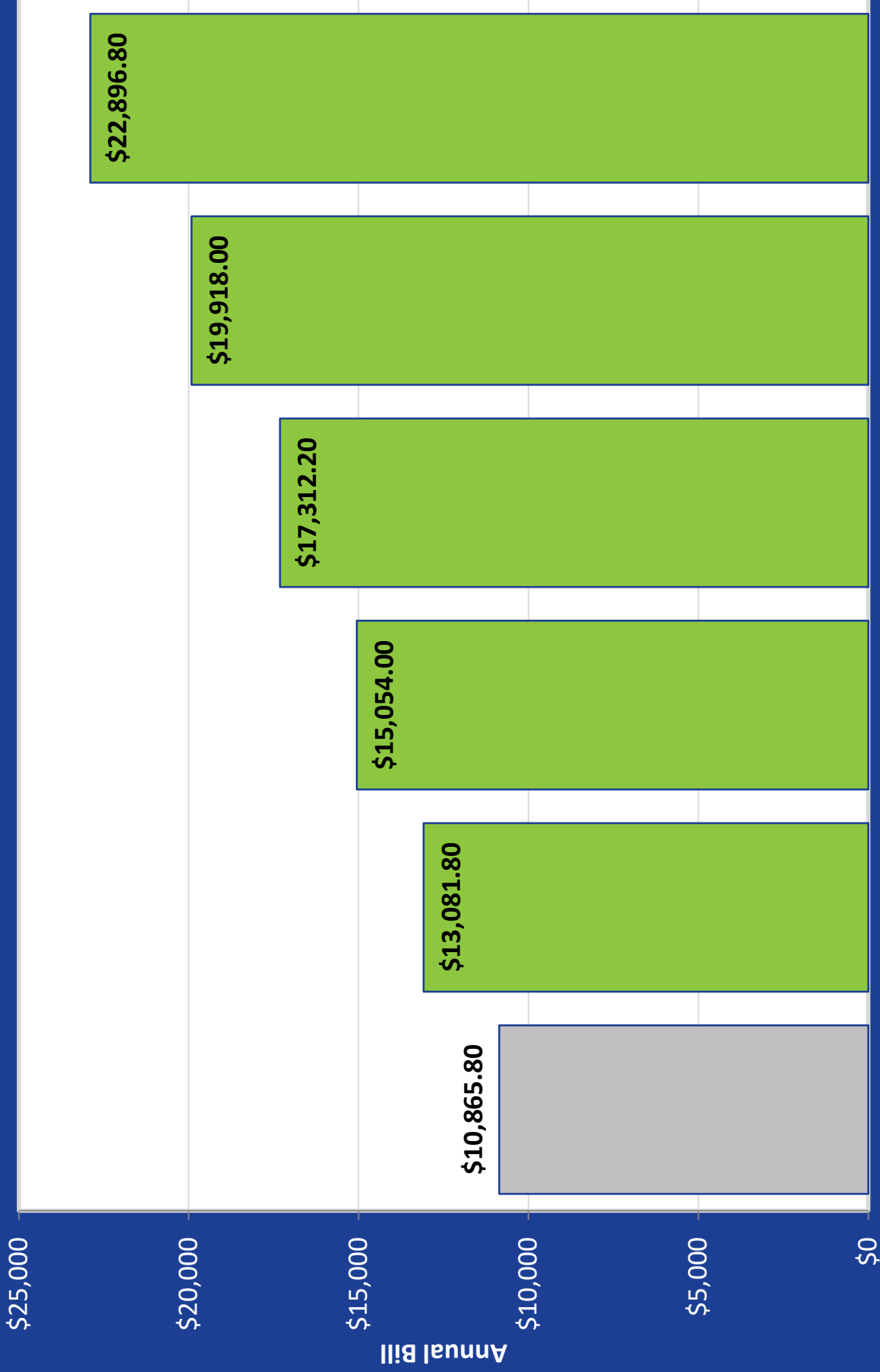
# 5 Year Annual Commercial Sewer Bill Comparison

## Current vs. Proposed Rates



Current Rates: FY 2022/23    Proposed Rates: FY 2023/24    Proposed Rates: FY 2024/25    Proposed Rates: FY 2025/26    Proposed Rates: FY 2026/27    Proposed Rates: FY 2027/28

## 5 Year Annual Restaurant Sewer Bill Comparison Current vs. Proposed Rates (20 EDUs & 2,000 hcf)



Current Rates: FY 2022/23    Proposed Rates: FY 2023/24    Proposed Rates: FY 2024/25    Proposed Rates: FY 2025/26    Proposed Rates: FY 2026/27    Proposed Rates: FY 2027/28