



DISCUSSION ITEMS

Agenda Item # 9

AGENDA REPORT SUMMARY

Meeting Date: March 13, 2018

Subject: Sanitary Sewer Rate Study

Prepared by: Christopher Lamm, Engineering Services Manager

Reviewed by: Susanna Chan, Public Works Director

Approved by: Chris Jordan, City Manager

Attachment:

1. Sewer Rate Study

Initiated by:

City Council

Previous Council Consideration:

April 23, 2013

Fiscal Impact:

Sewer charges constitute the majority revenue for the City's sanitary sewer enterprise fund. The attached report describes the fund and impacts of the recommended rate increases.

Environmental Review:

Not applicable

Policy Question(s) for Council Consideration:

- None

Summary:

- The City of Los Altos retained NBS in 2017 to perform a comprehensive Sewer Rate Structure Analysis and for the administration of Proposition 218 Process.
- It is recommended that the existing methodology (annual fixed or based charge per equivalent dwelling unit plus a single volumetric rate based on average winter water consumption) be used to calculate the sewer rate charges for FY 2018/19 through FY 2022/23. Rate increases per year will be 2.5% the first year and 3% the four following years.
- Sub metering would allow the City's multi-family residential and commercial condominium customers to have more control over their annual sewer bills by promoting awareness of actual water consumption. Sub metering could apply to 9 percent of the City's sewer accounts.

Staff Recommendation:

Move to approve the Sewer Rate Study Report prepared by NBS



Subject: Sanitary Sewer Rate Study

Purpose

Approve the Sewer Rate Study Report prepared by NBS.

Background

On April 23, 2013, Council approved a Sewer Rate Study Report prepared by Harris and Associates, using a hybrid sewer service charge model. The 5-year rate study report recommended rate increases from FY 2014/15 – FY 2017/18 ranged from 5.0% - 7.0% per year. These rates were adopted and adjusted through the Proposition 218 process. The hybrid methodology approved in 2013 includes a fixed or base charge plus a water consumption charge that is calculated using the three wettest months of the previous calendar year. The sewer charges calculated with the hybrid model ensure that operation and maintenance (O & M) costs as well as Capital Improvement costs for the City's sanitary sewer system are being met. Additionally, the sewer charges cover the old and new debt service obligations from revenue bonds issued by Palo Alto for the Regional Water Quality Control Plant (RWQCP). Fiscal year 2017/18 is the last year of the approved sewer charges that were adopted by Council in 2013. The City must conduct a new sewer rate study in order to be able to charge sewer rates. A sewer rate study can establish new rates for up to the next five fiscal years (FY 2018/19 through FY 2022/23).

Discussion/Analysis

The City of Los Altos retained NBS in 2017 to perform a comprehensive Sewer Rate Structure Analysis and for the administration of Proposition 218 Process. The City recommends adopting rate increases for the next five years to ensure that all O & M and Capital Improvement costs are funded. It is recommended that the existing methodology (annual fixed or based charge per equivalent dwelling unit plus a single volumetric rate based on average winter water consumption) be used to calculate the sewer rate charges for FY 2018/19 through FY 2022/23.

Due to existing reserve levels exceeding reserve targets, rate increases per year will be 2.5% the first year and 3% the four following years with capital improvement costs being funded primarily by reserves until the 5th year of the rate study.

Sub Metering

Some residential customers have expressed interest in using water sub meter data used for sewer billing purposes. Currently, only water usage information obtained from the water supplier (California Water Service Company or Purisima Water District) is used when calculating sewer charges. Overall charges are then divided equally among condominium dwelling units. Water sub meters would allow the City's multi-family residential and commercial condominium customers to have more control over their sewer bills, and encourages water conservation. Sub metering will also improve sewer billing equity for multifamily residents and commercial condominium customers.



Subject: Sanitary Sewer Rate Study

Customers that want to have unit-specific property tax bills would need to satisfy all the sewer sub metering requirements:

- Customers must have an existing assessor's parcel number (APN) associated with it. If a sub meter does not have an APN, only the property owner will receive a charge from the City.
- Monthly water consumption data for each submetered unit for the entire prior calendar year is required to apply sub metered sewer charges to each dwelling unit's bill.
- Sub metering service providers must submit data to the City no later than March 15th each year.
- All condominiums, apartments or otherwise individual units served by one master meter should be sub metered (i.e. there should not be a mixture of units that are metered and not metered).
- Water consumption data reported for all sub meters must equal master meter water consumption for the same time period. The City is not responsible for reconciliation of water consumption data for sub metered units.
- Sub meters shall be inspected, tested, and verified for commercial purposes pursuant to all California state laws.

The Financial Commission approve the sewer rate study report prepared by NBS at their February 15, 2018 meeting.

Options

- 1) Approve the Sewer Rate Study Report prepared by NBS.

Advantages: Rate increases per year will be 2.5% the first year and 3% the four following years. The sewer fund will use some existing reserves to fund annual capital improvement projects through year 5 of the rate study when goal reserves are met.

Disadvantages: None

- 2) Don't approve the Sewer Rate Study Report prepared by NBS.

Advantages: Sewer rates for FY 2018/19 would remain unchanged.



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Disadvantages: While reserves would allow the City to continue to operate the sanitary system program in the short term, eventually, greater rate increases would be needed to ensure financial stability within the sewer fund.

Recommendation

The staff recommends Option 1.



Los
Altos

CITY OF LOS ALTOS

Report for:

Sewer Rate Study

February 27, 2018

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ATTACHMENT 1

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Section 1. EXECUTIVE SUMMARY

Background

The City of Los Altos has a sewer collection system that serves the residents and business 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 2017 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. Ongoing rehabilitation and replacement projects are expected to draw down existing reserves. Capital and operational reserve funding targets incorporated input from City staff and are intended to meet the utility's specific financial objectives. The amount of rate revenue required, that will allow reserves to be maintained at the recommended levels, is known as the *net revenue requirement*.

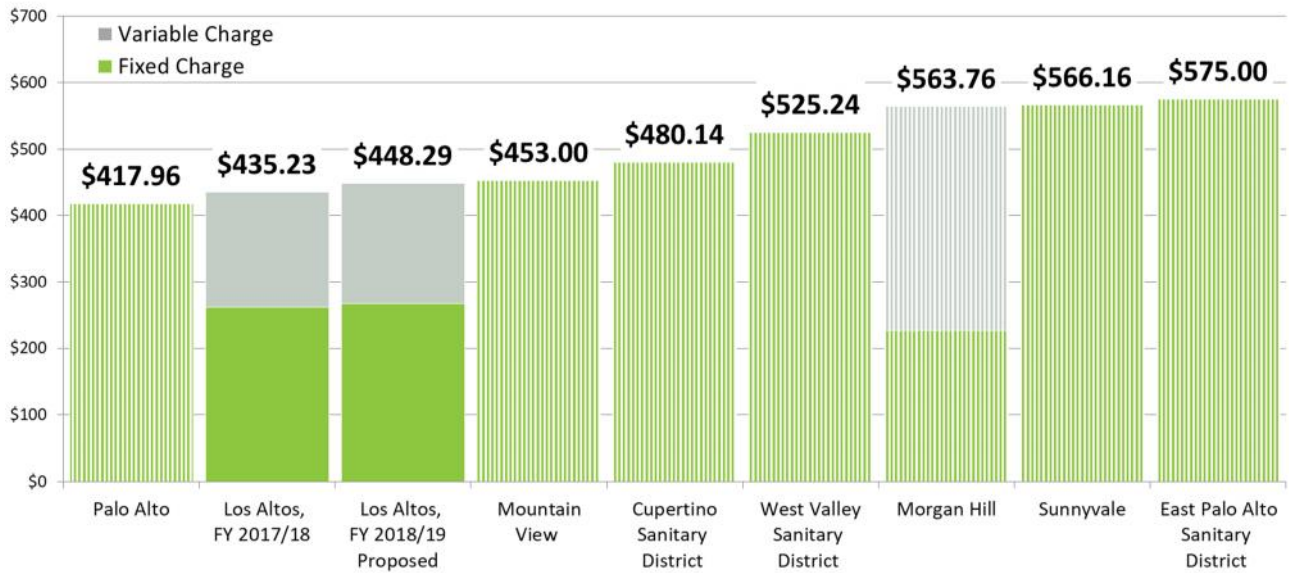
To keep meeting net revenue requirements, moderate rate adjustments – or more accurately, adjustments in the total revenue collected from rates – are recommended over the next five years.

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 thorough 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 SEWER BILL COMPARISON FOR SFR CUSTOMERS



Sewer rate calculation assumes a winter-based average consumption of 84 HCF Annually

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

NBS recommends the City take the following actions:

- ▮ Adopt the long-range financial plan presented in this report.
- ▮ Adopt the recommended reserve fund target balances.
- ▮ Adopt the proposed sewer rates.
- ▮ Conduct a legal review of the rate study.
- ▮ Proceed with Prop 218 noticing requirements and 45-day protest period.
- ▮ Assuming a successful Prop 218 process (that is, there is no majority protest of the rates), adopt the rates summarized in this report.

Section 2. SEWER RATE STUDY

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 developed several rate alternatives as requested by City staff over the course of this study, although staff chose to maintain the existing rate structure. All rate alternatives developed in this study relied on industry standard cost of service principles. 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 20-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 over the next five years.
- ▮ **Reserve Targets** – NBS has developed 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:
 - ▮ General inflation is 3.0 percent annually.
 - ▮ Labor cost inflation is 4.0 percent annually.
 - ▮ PERS Obligation inflation is 22.35 percent in FY 2018/19 and decreases to 11.5 percent by FY 2022/23. Long-term inflation is held at 5.57 percent per year.
 - ▮ Energy cost inflation is 5.0 percent annually.
 - ▮ Palo Alto RWQCP cost inflation is approximately 4.0 percent annually (ranges from 3.64-4.06 percent).
 - ▮ 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 \$3.6 million in FY 2018/19.
2. **Meeting Capital Improvement Costs:** The sewer utility plans to adequately fund necessary capital improvements, which includes roughly \$16.9 million in planned capital improvements for the current fiscal year through the end of FY 2022/23.
3. **Maintaining Reserve Funds:** Currently, the sewer utility's reserves are higher than target levels. Recommended rate adjustments will help maintain healthy unrestricted and restricted reserve fund balances over the next ten years. After discussions with City staff, the following reserve targets were established for this analysis:
 - N **Operating Reserve** equal to 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 2018/19 the operating reserve target is \$1.8 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.
 - N **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 2018/19, this reserve target is \$2.3 million. The primary purpose of a capital reserves is to set aside a cash resource to address long-term capital rehabilitation and replacement needs.
 - N **City of Palo Alto RWQCP Reserve** is a new, recommended reserve target 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 \$300,000.
 - N **Debt Reserves** for the sewer utility's existing debt obligations has a target level of \$462,000 in FY 2018/19 and increases to approximately \$570,000 by FY 2019/20. The City does not have any direct debt issuances; debt service obligations are through the City's partnership with Palo Alto's RWQCP. 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 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Sources of Wastewater Funds						
Rate Revenue Under Prevailing Rates	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000
Additional Revenue from Rate Increases (1)	-	150,000	334,500	524,535	720,271	921,879
Sewer Service Charge not on Tax Roll	400,000	400,000	400,000	400,000	400,000	400,000
Non-Rate Revenues	52,100	31,835	43,216	60,539	79,377	96,888
Total Sources of Funds	\$ 6,452,100	\$ 6,581,835	\$ 6,777,716	\$ 6,985,074	\$ 7,199,648	\$ 7,418,767
Uses of Wastewater Funds						
Operating Expenses	\$ 3,606,883	\$ 3,619,614	\$ 3,771,246	\$ 3,918,434	\$ 4,084,011	\$ 4,254,008
Debt Service	126,204	245,630	452,269	465,652	470,458	470,650
Rate-Funded Capital Expenses	-	-	-	-	-	-
Total Use of Funds	\$ 3,733,087	\$ 3,865,244	\$ 4,223,515	\$ 4,384,086	\$ 4,554,469	\$ 4,724,658
Projected Annual Rate Increase	0.00%	2.50%	3.00%	3.00%	3.00%	3.00%
Cumulative Rate Increases	0.00%	2.50%	5.58%	8.74%	12.00%	15.36%
Rate Revenue with Annual Rate Increase(s)	\$ 6,000,000	\$ 6,150,000	\$ 6,334,500	\$ 6,524,535	\$ 6,720,271	\$ 6,921,879
Surplus (Deficiency) before Rate Increase	2,719,013	2,716,590	2,554,202	2,600,988	2,645,179	2,694,109
Surplus (Deficiency) after Rate Increase	2,719,013	2,866,590	2,888,702	3,125,523	3,365,450	3,615,988
Net Revenue Requirement (2)	\$ 3,280,987	\$ 3,433,410	\$ 3,780,298	\$ 3,923,547	\$ 4,075,092	\$ 4,227,771

1. Assumes new rates are implemented July 1, 2018.

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 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Un-Restricted Reserves						
Operating Reserve						
Ending Balance	\$ 1,803,400	\$ 1,809,800	\$ 1,885,600	\$ 1,959,200	\$ 2,042,000	\$ 2,127,000
Recommended Minimum Target	\$ 1,803,400	\$ 1,809,800	\$ 1,885,600	\$ 1,959,200	\$ 2,042,000	\$ 2,127,000
Capital Rehabilitation & Replacement Reserve						
Ending Balance	\$ 7,370,829	\$ 6,833,467	\$ 6,186,286	\$ 5,978,465	\$ 5,709,024	\$ 5,335,105
Recommended Minimum Target	\$ 2,300,000	\$ 2,370,000	\$ 2,440,000	\$ 2,510,000	\$ 2,590,000	\$ 2,670,000
City of Palo Alto RWQCP R&R Reserve						
Ending Balance	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 310,000	\$ 320,000
Recommended Minimum Target	\$ 300,000	\$ 290,000	\$ 290,000	\$ 300,000	\$ 310,000	\$ 320,000
Restricted Reserves						
Debt Reserve						
Ending Balance	\$ 126,850	\$ 462,690	\$ 568,436	\$ 568,436	\$ 568,272	\$ 568,272
Recommended Minimum Target	\$ 126,411	\$ 462,690	\$ 568,436	\$ 568,436	\$ 568,272	\$ 568,272
Total Ending Balance	\$ 9,601,078	\$ 9,405,958	\$ 8,940,321	\$ 8,806,100	\$ 8,629,296	\$ 8,350,377
Recommended Minimum Target	\$ 4,529,811	\$ 4,932,490	\$ 5,184,036	\$ 5,337,636	\$ 5,510,272	\$ 5,685,272

A summary of the entire 20-year financial plan, showing revenue requirements, revenues, and recommended rate increases is presented in Appendix B, along with a summary of the City's capital improvement program.

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 \$6,150,000 to be collected from sewer rates.

FIGURE 4. RATE REVENUE REQUIREMENTS BY COST CLASSIFICATION

Cost Classification Components	Volume	Treatment		Customer Related	Cost-of-Service Net Revenue Requirement
		COD	TSS		
Net Revenue Requirements	\$ 4,272,233	\$ 864,045	\$ 864,045	\$ 149,676	\$ 6,150,000
<i>% of Net Revenue Requirements</i>	<i>69.5%</i>	<i>14.0%</i>	<i>14.0%</i>	<i>2.4%</i>	<i>100.0%</i>

Actual sewer flow data from 2016 and 2017 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 usage¹.

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 ESTIMATED FLOW TO TREATMENT PLANT

Customer Class	Number of Accounts	Annual Winter-Average Based Volume (HCF)	Percentage of Adjusted Volume
Residential			
Single Family Home	10,330	893,765	78.3%
Multifamily Residence (2 units)	65	7,884	0.7%
Multifamily Residence (3-4 units) & Multifamily Residence (5+ units)	35	21,748	1.9%
Condominium Unit	1,029	52,954	4.6%
Commercial	490	135,753	11.9%
Public/Institutional	45	30,028	2.6%
Grand Total:	11,994	1,142,132	100.0%

1. Data Source: Los Altos Combined Levy data 1516 to 1718.xlsx;
Restaurant information: March 2017.xlsx and April and May 2-17.xlsx FOG reports.

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 consumption².

¹ 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).

² See City of Los Altos Ordinance No. 2013-394; Section 10.12.140, Estimation of Sewer Use.

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

Customer Class	Number of Accounts (1)	Percent of Total	Number of Equivalent Dwelling Units (1)	Percent of Total
Residential				
Single Family Home	10,330	86.1%	10,330	74.9%
Multifamily Residence (2 units)	65	0.5%	130	0.9%
Multifamily Residence (3-4 units) & Multifamily Residence (5+ units)	35	0.3%	554	4.0%
Condominium Unit	1,029	8.6%	1,029	7.5%
Commercial	490	4.1%	1,464	10.6%
Public/Institutional	45	0.4%	277	2.0%
Total:	11,994	100%	13,785	100%
Vacant	15	0.00%	-	0.00%
N/A	3	0.00%	-	0.00%
Grand Total:	12,012	0.00%	13,785	0.00%

1. Data Source: Los Altos Combined Levy data 1516 to 1718.xlsx.

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 all water consumed. Water consumption charges are based on average winter water use from the prior year (using the three wettest months)³.

The existing rate structure collects 40 percent of revenue from volumetric charges and 60 percent of revenue from fixed charges; City Staff has decided to maintain this revenue allocation in the proposed rates. Figure 7 calculates the fixed charge per EDU; and Figure 8 calculates the volumetric charge per HCF. Figure 9 shows the current and proposed sewer rates through FY 2022/23.

FIGURE 7. SEWER RATE CALCULATION FOR FY 2018/19 – FIXED CHARGES

Fixed Charges (per EDU)	Total Revenue Requirements	Percent of Total Rev. Req't. to be Collected from Fixed Charges	Amount to be Collected from Fixed Charges	Number of Equivalent Dwelling Units	Rate per EDU
	A	B	C = A * B	D	E = C / D
All Customers	\$6,150,000	60%	\$3,690,000	13,785	\$267.69

FIGURE 8. SEWER RATE CALCULATION FOR FY 2018/19 – VOLUMETRIC CHARGES

Volumetric Charges (per HCF)	Total Revenue Requirements	Percent of Total Rev. Req't. to be Collected from Volumetric Charges	Amount to be Collected from Volumetric Charges	Annual Billable Volume (hcf)	Rate per HCF
	F	G = 1 - B	H = F * G	I	J = H / I
All Customers	\$6,150,000	40%	\$2,460,000	1,142,132	\$2.15

³ Average winter consumption is recalculated each year using the most recent winter water consumption.

FIGURE 9. CURRENT (FY 2017/18) AND PROPOSED SEWER RATES (FY 2018/19 – FY 2022/23)

Sewer Rate Schedule	Current Rates	Proposed Yearly Sewer Rates				
		Year 1	Year 2	Year 3	Year 4	Year 5
		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Annual Fixed Service Charge per EDU	\$261.35	\$267.69	\$275.72	\$283.99	\$292.51	\$301.29
Volumetric Rate (\$/hcf) (1, 2)	\$2.07	\$2.15	\$2.21	\$2.28	\$2.35	\$2.42

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 months from previous year).

Customer Bill Comparisons

RESIDENTIAL SEWER CUSTOMERS

Figure 10 compares typical single-family annual sewer bills over the next five years, under the current and proposed rates. Similarly, Figure 11 compares typical multi-family annual sewer bills over the next five years, under the current and proposed rates.

FIGURE 10. ANNUAL SINGLE-FAMILY SEWER BILL COMPARISON

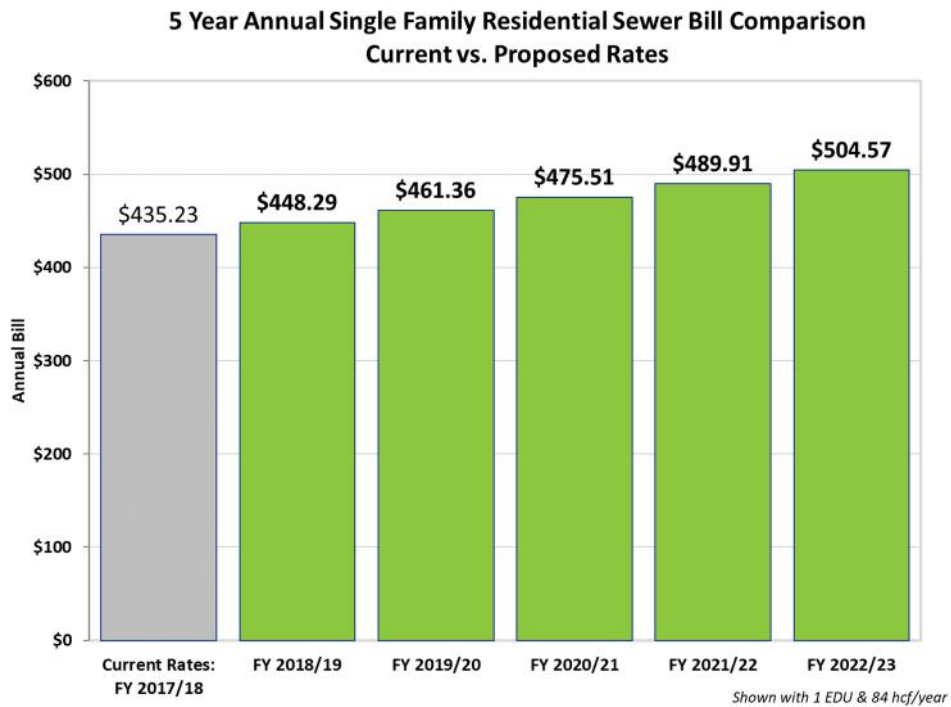
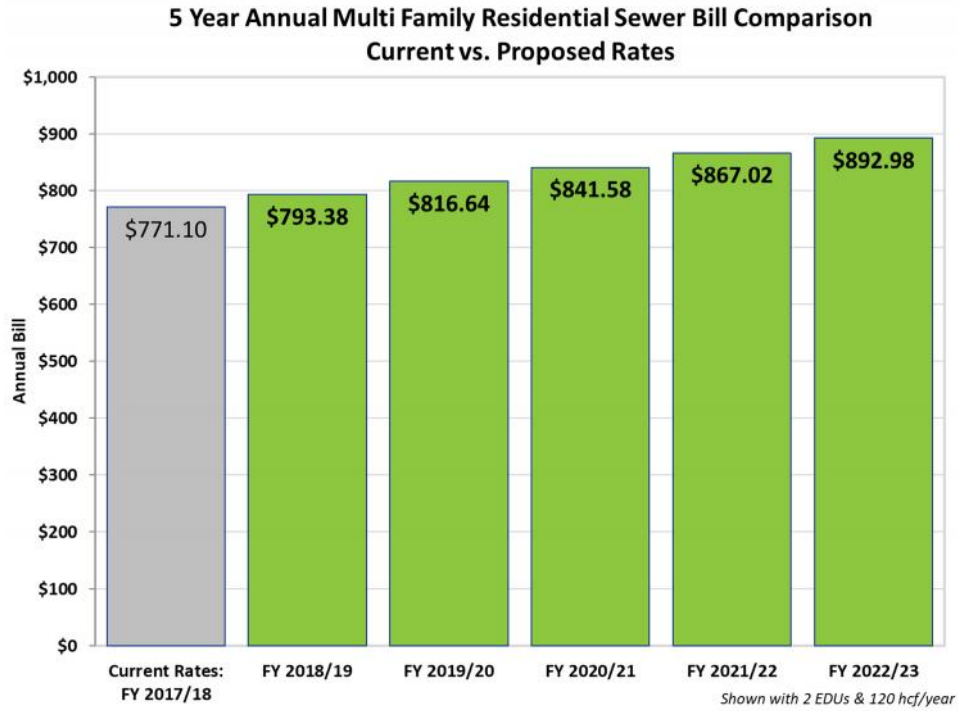


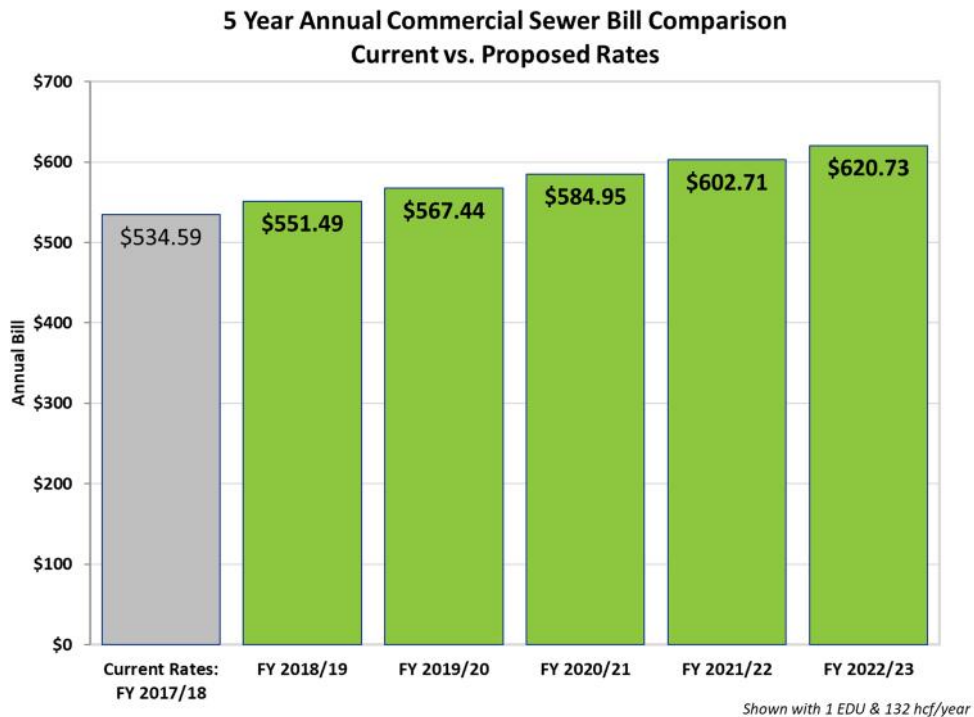
FIGURE 11. ANNUAL MULTI-FAMILY SEWER BILL COMPARISON (2 UNITS)



COMMERCIAL SEWER CUSTOMERS

Figure 12 compares typical commercial annual sewer bills over the next five years, under the current and proposed rates.

FIGURE 12. ANNUAL COMMERCIAL SEWER BILL COMPARISON



Section 3. NEXT STEPS

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 the Proposition 218 balloting requirements, the City Council should proceed with implementing the rates proposed in this report for the next five years (see Figure 9). These rates are intended to ensure the continued financial health of the City's sewer utility.
- ▮ **Further Evaluate the Cost of Service for Each Customer Class:** NBS recommends that the City take the steps necessary to implement full cost of service based sewer rates at a later date, that reflect the cost of providing sewer collection and treatment services to various customer classes. This process would include developing a rate structure that varies by customer class.

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 & ACRONYMS⁴

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 2017/18	July 1, 2017 through June 30, 2018
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 ₃	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 218	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

4 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

TABLE 1
FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget	Projected					Projected				
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Sources of Funds (Sewer Revenues) (1)											
<i>Rate Revenue:</i>											
Sewer Service Charge on Tax Roll	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Revenue from Rate Increases (2)	-	150,000	334,500	524,535	720,271	921,879	1,198,754	1,486,705	1,786,173	2,097,620	2,421,524
Subtotal: Rate Revenue After Rate Increases	6,000,000	6,150,000	6,334,500	6,524,535	6,720,271	6,921,879	7,198,754	7,486,705	7,786,173	8,097,620	8,421,524
<i>Non-Rate Revenue:</i>											
Sewer Service Charge not on Tax Roll	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Other Revenues	16,000	-	-	-	-	-	-	-	-	-	-
Interest Income (3)	36,100	31,835	44,012	61,733	80,968	98,877	114,319	128,880	143,822	139,573	135,879
Subtotal: Rate Revenue After Rate Increases	452,100	431,835	444,012	461,733	480,968	498,877	514,319	528,880	543,822	539,573	535,879
Total Sources of Funds	\$ 6,452,100	\$ 6,581,835	\$ 6,778,512	\$ 6,986,268	\$ 7,201,239	\$ 7,420,756	\$ 7,713,073	\$ 8,015,584	\$ 8,329,995	\$ 8,637,193	\$ 8,957,403
Uses of Funds											
<i>Operating Expenses (4):</i>											
Salaries and Benefits	\$ 783,446	\$ 824,767	\$ 869,114	\$ 911,457	\$ 958,061	\$ 1,004,269	\$ 1,048,014	\$ 1,091,881	\$ 1,137,613	\$ 1,185,288	\$ 1,234,992
Utilities	56,100	57,983	59,932	61,951	64,041	66,205	68,447	70,768	73,173	75,663	78,243
Repair and Services	241,693	250,381	259,387	268,722	278,400	288,433	298,835	309,618	320,797	332,388	344,404
Equipment	76,000	78,280	80,628	83,047	85,539	88,105	90,748	93,470	96,275	99,163	102,138
City of Palo Alto RWQCP O&M	2,449,644	2,408,203	2,502,184	2,593,257	2,697,970	2,806,996	2,920,636	3,039,090	3,162,459	3,291,044	3,422,072
Subtotal: Operating Expenses	\$ 3,606,883	\$ 3,619,614	\$ 3,771,246	\$ 3,918,434	\$ 4,084,011	\$ 4,254,008	\$ 4,426,679	\$ 4,604,828	\$ 4,790,316	\$ 4,983,546	\$ 5,181,850
<i>Other Expenditures:</i>											
Existing Debt Service - Palo Alto RWQCP	\$ 126,204	\$ 245,630	\$ 452,269	\$ 465,652	\$ 470,458	\$ 470,650	\$ 470,567	\$ 494,662	\$ 494,866	\$ 494,342	\$ 494,037
Existing Debt Service - City of Los Altos	-	-	-	-	-	-	-	-	-	-	-
Future Debt Service	-	-	-	-	-	-	-	-	-	-	-
Rate-Funded Capital Expenses	-	-	-	-	-	-	324,492	838,747	1,275,255	1,767,275	2,238,250
Subtotal: Other Expenditures	\$ 126,204	\$ 245,630	\$ 452,269	\$ 465,652	\$ 470,458	\$ 470,650	\$ 795,059	\$ 1,333,409	\$ 1,770,121	\$ 2,261,617	\$ 2,732,287
Total Uses of Sewer Funds	\$ 3,733,087	\$ 3,865,244	\$ 4,223,515	\$ 4,384,086	\$ 4,554,469	\$ 4,724,658	\$ 5,221,738	\$ 5,938,237	\$ 6,560,437	\$ 7,245,163	\$ 7,914,137
Annual Surplus/(Deficit)	\$ 2,719,013	\$ 2,716,590	\$ 2,554,997	\$ 2,602,182	\$ 2,646,770	\$ 2,696,098	\$ 2,491,335	\$ 2,077,347	\$ 1,769,558	\$ 1,392,030	\$ 1,043,267
Net Revenue Req't. <i>(Total Uses less Non-Rate Revenue)</i>	\$ 3,280,987	\$ 3,433,410	\$ 3,779,503	\$ 3,922,353	\$ 4,073,501	\$ 4,225,781	\$ 4,707,419	\$ 5,409,357	\$ 6,016,615	\$ 6,705,590	\$ 7,378,258
Total Rate Revenue After Rate Increases	\$ 6,000,000	\$ 6,150,000	\$ 6,334,500	\$ 6,524,535	\$ 6,720,271	\$ 6,921,879	\$ 7,198,754	\$ 7,486,705	\$ 7,786,173	\$ 8,097,620	\$ 8,421,524
Projected Annual Rate Revenue Increase	0.00%	2.50%	3.00%	3.00%	3.00%	3.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Cumulative Increase from Annual Revenue Increases	0.00%	2.50%	5.58%	8.74%	12.00%	15.36%	19.98%	24.78%	29.77%	34.96%	40.36%
Debt Coverage After Rate Increase	22.54	12.06	6.65	6.59	6.63	6.73	6.98	6.90	7.15	7.39	7.64

- Revenue are Budgeted for FY 2017/18.
- Revenue from rate increases assumes an implementation date of July 1, 2018 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.
- Interest earnings beginning in FY 2018/19 are calculated based on historical LAIF returns.
- Operating Expenses for FY 2017/18 are Budget Expenses.

TABLE 2
RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY	Budget	Projected									
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Total Beginning Cash (1)	\$ 9,293,454										
Un-Restricted Reserves:											
Operating Reserve											
Beginning Reserve Balance (2)	\$ 1,803,400	\$ 1,803,400	\$ 1,809,800	\$ 1,885,600	\$ 1,959,200	\$ 2,042,000	\$ 2,127,000	\$ 2,213,300	\$ 2,302,400	\$ 2,395,200	\$ 2,491,800
Plus: Net Cash Flow (After Rate Increases)	2,719,013	2,716,590	2,554,997	2,602,182	2,646,770	2,696,098	2,491,335	2,077,347	1,769,558	1,392,030	1,043,267
Plus: Transfer of Debt Reserve Surplus	-	440	1,518	3,070	4,256	5,114	6,224	80,477	6,714	6,714	6,714
Plus: Transfer of Capital R&R Reserve Surplus	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out to Debt Service Reserve	-	(176,687)	(105,745)	-	-	-	-	-	-	-	-
Less: Transfer Out to City of Palo Alto RWQCP R&R Reserve	-	-	-	-	(10,000)	(10,000)	(10,000)	(10,000)	(10,000)	-	(10,000)
Less: Transfer Out to Capital Replacement Reserve	(2,719,013)	(2,533,943)	(2,374,970)	(2,531,652)	(2,558,227)	(2,606,212)	(2,401,260)	(2,058,724)	(1,673,472)	(1,302,144)	(940,881)
Ending Operating Reserve Balance	\$ 1,803,400	\$ 1,809,800	\$ 1,885,600	\$ 1,959,200	\$ 2,042,000	\$ 2,127,000	\$ 2,213,300	\$ 2,302,400	\$ 2,395,200	\$ 2,491,800	\$ 2,590,900
Target Ending Balance (6 months of O&M)	\$ 1,803,400	\$ 1,809,800	\$ 1,885,600	\$ 1,959,200	\$ 2,042,000	\$ 2,127,000	\$ 2,213,300	\$ 2,302,400	\$ 2,395,200	\$ 2,491,800	\$ 2,590,900
Capital Rehabilitation & Replacement Reserve											
Beginning Reserve Balance (2)	\$ 7,063,643	\$ 7,370,829	\$ 6,992,621	\$ 6,345,439	\$ 6,137,618	\$ 5,868,177	\$ 5,494,258	\$ 5,151,260	\$ 4,888,724	\$ 4,583,472	\$ 4,302,144
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-	-	-
Plus: Transfer of Operating Reserve Surplus	2,719,013	2,533,943	2,374,970	2,531,652	2,558,227	2,606,212	2,401,260	2,058,724	1,673,472	1,302,144	940,881
Plus: Transfer of City of Palo Alto RWQCP R&R Reserve Surplus	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out to Operating Replacement Reserve	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out for Capital Projects	(2,411,827)	(2,912,151)	(3,022,151)	(2,739,473)	(2,827,667)	(2,980,131)	(2,744,258)	(2,321,260)	(1,978,724)	(1,583,472)	(1,212,144)
Ending Capital Rehab & Replacement Reserve Balance	\$ 7,370,829	\$ 6,992,621	\$ 6,345,439	\$ 6,137,618	\$ 5,868,177	\$ 5,494,258	\$ 5,151,260	\$ 4,888,724	\$ 4,583,472	\$ 4,302,144	\$ 4,030,881
Capital R&R Reserve (based on estimated annual CIP expenditure)	\$ 2,300,000	\$ 2,370,000	\$ 2,440,000	\$ 2,510,000	\$ 2,590,000	\$ 2,670,000	\$ 2,750,000	\$ 2,830,000	\$ 2,910,000	\$ 3,000,000	\$ 3,090,000
City of Palo Alto RWQCP R&R Reserve											
Beginning Reserve Balance (2)	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 310,000	\$ 320,000	\$ 330,000	\$ 340,000	\$ 350,000	\$ 350,000
Plus: Transfer of Operating Reserve Surplus	-	-	-	-	10,000	10,000	10,000	10,000	10,000	-	10,000
Less: Transfer Out for Capital Projects	-	-	-	-	-	-	-	-	-	-	-
Ending Capital Rehab & Replacement Reserve Balance	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 310,000	\$ 320,000	\$ 330,000	\$ 340,000	\$ 350,000	\$ 350,000	\$ 360,000
RWQCP R&R Reserve (1 year CIP costs)	\$ 300,000	\$ 290,000	\$ 290,000	\$ 300,000	\$ 310,000	\$ 320,000	\$ 330,000	\$ 340,000	\$ 350,000	\$ 350,000	\$ 360,000
Ending Balance - Excl. Restricted Reserves	\$ 9,474,229	\$ 9,102,421	\$ 8,531,039	\$ 8,396,818	\$ 8,220,177	\$ 7,941,258	\$ 7,694,560	\$ 7,531,124	\$ 7,328,672	\$ 7,143,944	\$ 6,981,781
Min. Target Ending Balance -Excl. Restricted Reserves	\$ 4,403,400	\$ 4,469,800	\$ 4,615,600	\$ 4,769,200	\$ 4,942,000	\$ 5,117,000	\$ 5,293,300	\$ 5,472,400	\$ 5,655,200	\$ 5,841,800	\$ 6,040,900
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 5,070,829	\$ 4,632,621	\$ 3,915,439	\$ 3,627,618	\$ 3,278,177	\$ 2,824,258	\$ 2,401,260	\$ 2,058,724	\$ 1,673,472	\$ 1,302,144	\$ 940,881

TABLE 3
RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY	Budget	Projected									
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Restricted Reserves:											
Connection Fee Reserve											
Beginning Reserve Balance	\$ -	\$ 30,000	\$ 40,104	\$ 50,305	\$ 60,682	\$ 71,289	\$ 82,180	\$ 93,413	\$ 105,047	\$ 117,148	\$ 129,491
Plus: Interest Earnings	-	104	201	377	607	891	1,233	1,635	2,101	2,343	2,590
Plus: Connection Fee Revenue	30,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-	-	-
Ending Connection Fee Fund Balance	\$ 30,000	\$ 40,104	\$ 50,305	\$ 60,682	\$ 71,289	\$ 82,180	\$ 93,413	\$ 105,047	\$ 117,148	\$ 129,491	\$ 142,081
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Bond Project Fund											
Beginning Reserve Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Plus: SRF Loan Funding Proceeds	-	-	-	-	-	-	-	-	-	-	-
Plus: Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-
Less: Use of Bond & Loan Funds for Capital Projects	-	-	-	-	-	-	-	-	-	-	-
Ending Bond Project Fund Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Reserve											
Beginning Reserve Balance	\$ 126,411	\$ 126,850	\$ 303,537	\$ 409,282	\$ 409,282	\$ 409,119	\$ 409,119	\$ 409,031	\$ 335,713	\$ 335,713	\$ 335,713
Plus: Reserve Funding from Operating Reserve	-	176,687	105,745	-	-	-	-	-	-	-	-
Plus: Reserve Funding from Future Debt Obligations	-	-	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings	439	440	1,518	3,070	4,093	5,114	6,137	7,158	6,714	6,714	6,714
Less: Transfer of Surplus to Operating Reserve	-	(440)	(1,518)	(3,070)	(4,256)	(5,114)	(6,224)	(8,477)	(6,714)	(6,714)	(6,714)
Ending Debt Reserve Balance	\$ 126,850	\$ 303,537	\$ 409,282	\$ 409,282	\$ 409,119	\$ 409,119	\$ 409,031	\$ 335,713	\$ 335,713	\$ 335,713	\$ 335,713
Target Ending Balance	\$ 126,411	\$ 303,537	\$ 409,282	\$ 409,282	\$ 409,119	\$ 409,119	\$ 409,031	\$ 335,713	\$ 335,713	\$ 335,713	\$ 335,713
Ending Balance - Restricted Reserves	\$ 156,850	\$ 343,641	\$ 459,587	\$ 469,964	\$ 480,408	\$ 491,299	\$ 502,444	\$ 440,760	\$ 452,861	\$ 465,204	\$ 477,794
Min. Target Ending Balance - Restricted Reserves	\$ 126,411	\$ 303,537	\$ 409,282	\$ 409,282	\$ 409,119	\$ 409,119	\$ 409,031	\$ 335,713	\$ 335,713	\$ 335,713	\$ 335,713
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 30,439	\$ 40,104	\$ 50,305	\$ 60,682	\$ 71,289	\$ 82,180	\$ 93,413	\$ 105,047	\$ 117,148	\$ 129,491	\$ 142,081
Annual Interest Earnings Rate (3)	0.35%	0.35%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.00%	2.00%

RESERVE FUND SUMMARY FOOTNOTES

1. The beginning Cash balance is equal to the amount in the Sewer Fund, per the 2016 Audited Financial Statement (source: email sent August 31, 2017).
2. NBS assumes total unrestricted cash of \$9,293,454 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 were conservatively estimated through 2022 and phase into the historical 10 year average interest earnings rate.

CHART 1

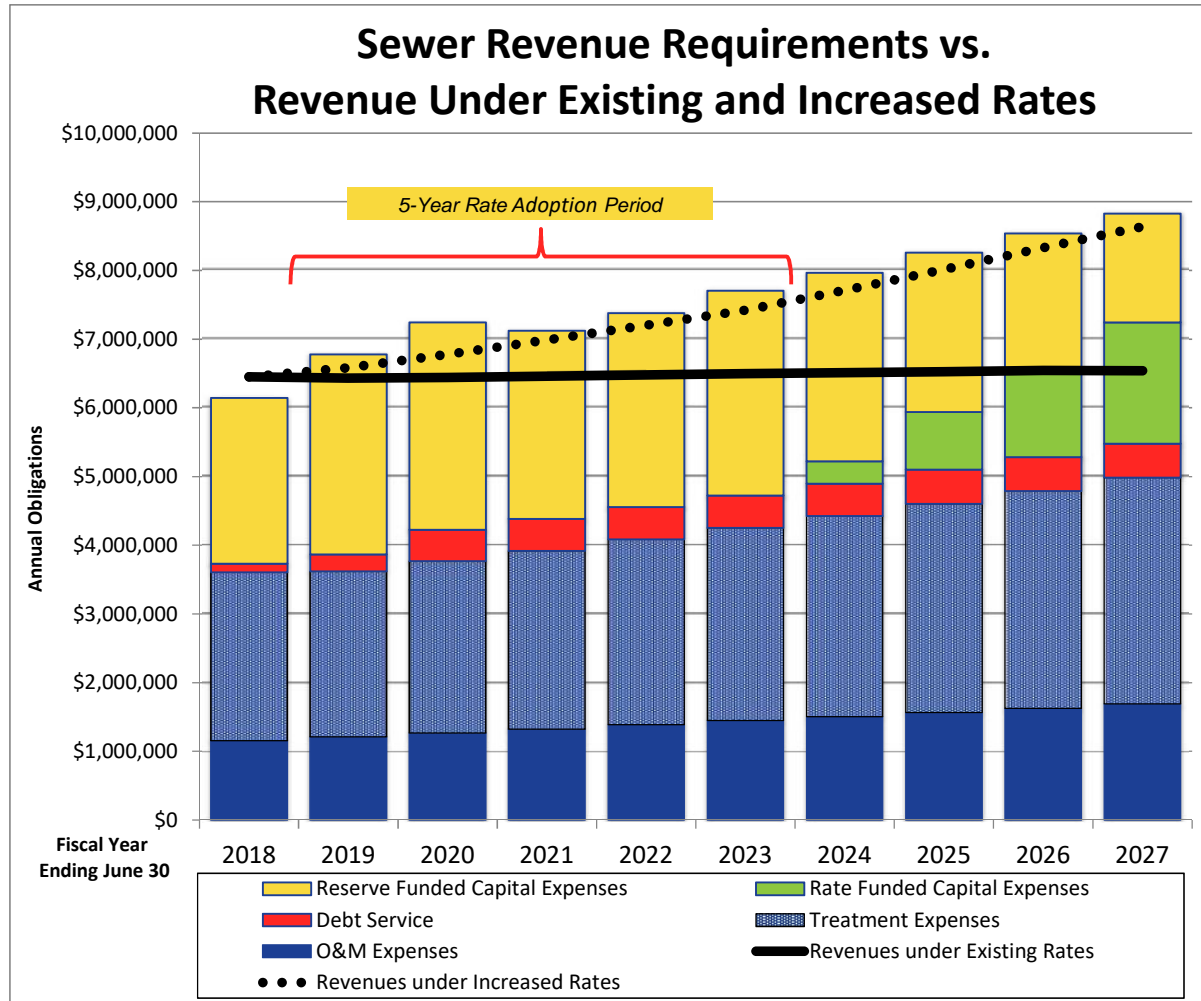


CHART 2

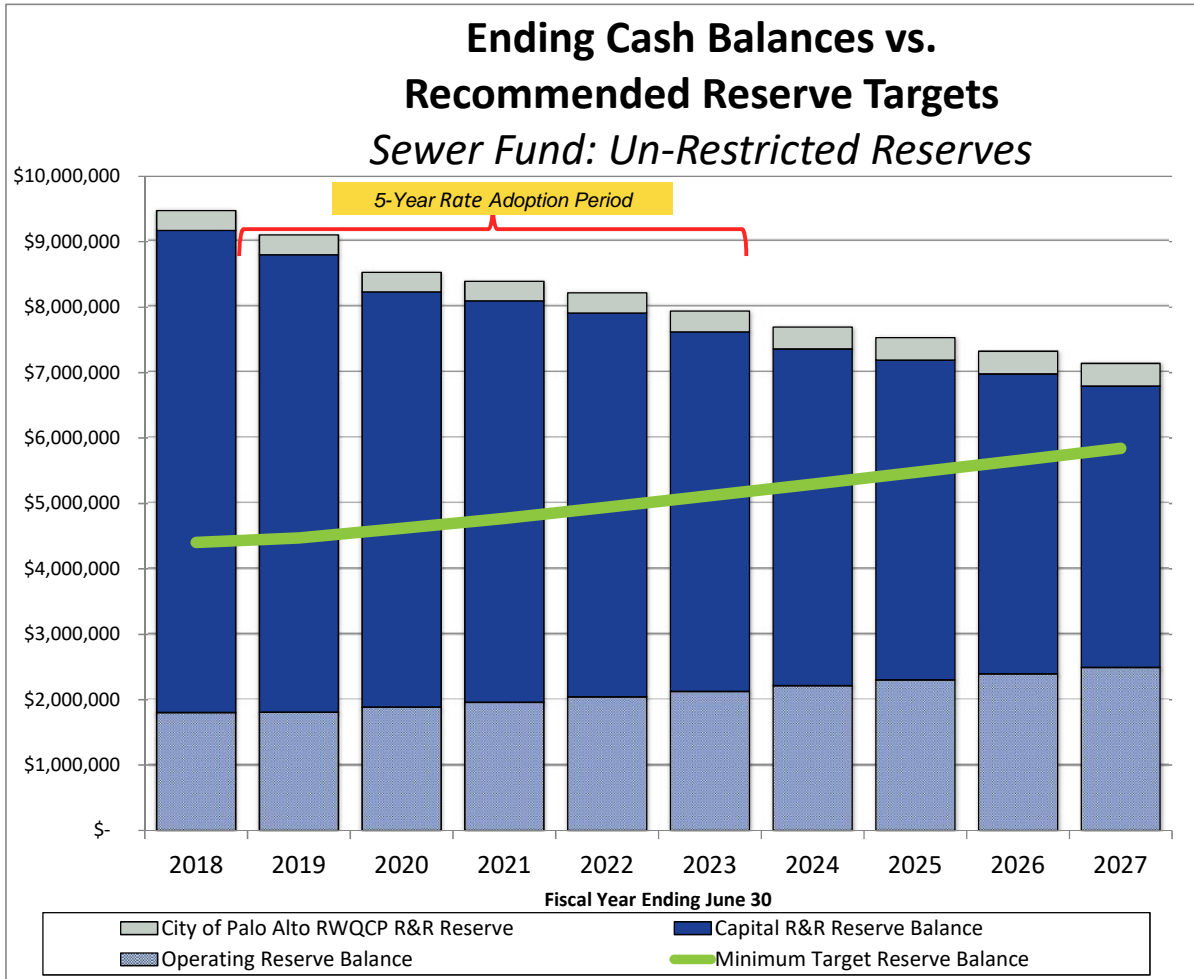
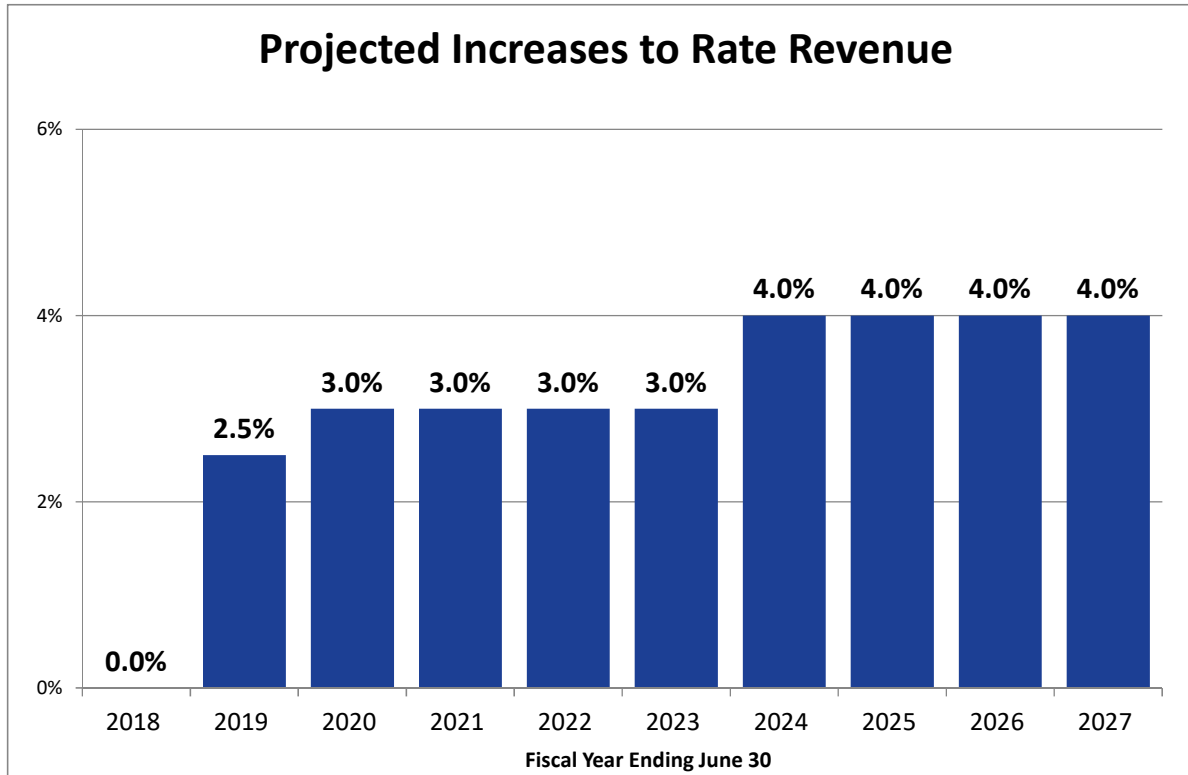


CHART 3



CITY OF LOS ALTOS
 SEWER RATE STRUCTURE ANALYSIS
 Operating Revenue and Expenses

EXHIBIT 1

TABLE 4
 REVENUE FORECAST:

DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
SEWER REVENUE (1)											
Interest Income	8	\$ 36,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Portfolio Income	8	-	-	-	-	-	-	-	-	-	-
Unrealized Gain/Loss	8	-	-	-	-	-	-	-	-	-	-
Sewer Fees- Tax Roll	1	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Sewer Fees- Not on Tax Roll	1	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Sewer Connection Fees	1	30,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Misc. Sewer Fees	1	16,000	-	-	-	-	-	-	-	-	-
TOTAL: REVENUE		\$6,482,100	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000

TABLE 5
 REVENUE SUMMARY:

SEWER REVENUE (1)											
Sewer Service Charges		\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000
Sewer Service Charges - Not on Tax Roll		400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Sewer Connection Fee		30,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Interest Earnings		36,100	-	-	-	-	-	-	-	-	-
Other Revenues		16,000	-	-	-	-	-	-	-	-	-
TOTAL: REVENUE		\$6,482,100	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000	\$6,410,000
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Operating Revenue and Expenses

EXHIBIT 1

TABLE 6
SEWER FUND OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Sewer System Maintenance											
Salaries and Benefits											
Salaries	3	\$ 461,440	\$ 479,898	\$ 499,094	\$ 519,057	\$ 539,820	\$ 561,412	\$ 583,869	\$ 607,224	\$ 631,513	\$ 656,773
Vacation/Sick Leave Payout	3	-	-	-	-	-	-	-	-	-	-
Overtime	3	53,000	55,120	57,325	59,618	62,003	64,483	67,062	69,744	72,534	75,436
Specialty Pay	3	-	-	-	-	-	-	-	-	-	-
Retirement	3	44,296	46,068	47,911	49,827	51,820	53,893	56,049	58,291	60,622	63,047
Pers Unfunded Liability	4	54,517	66,701	80,745	91,573	105,403	117,527	125,825	132,828	140,221	148,026
Dental Plan	3	5,400	5,616	5,841	6,074	6,317	6,570	6,833	7,106	7,390	7,686
Health Insurance	3	125,224	130,233	135,442	140,860	146,494	152,354	158,448	164,786	171,378	178,233
Uniforms	2	1,950	2,009	2,069	2,131	2,195	2,261	2,328	2,398	2,470	2,544
Life Insurance	3	1,967	2,046	2,128	2,213	2,301	2,393	2,489	2,588	2,692	2,800
Workers Comp Insurance	3	32,301	33,593	34,937	36,334	37,788	39,299	40,871	42,506	44,206	45,974
Medicare Tax	3	3,351	3,485	3,624	3,769	3,920	4,077	4,240	4,410	4,586	4,770
Utilities											
Utilities	5	10,000	10,500	11,025	11,576	12,155	12,763	13,401	14,071	14,775	15,513
Telephone	2	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	3,262
Radio & Radar	2	3,350	3,451	3,554	3,661	3,770	3,884	4,000	4,120	4,244	4,371
Teletype	2	-	-	-	-	-	-	-	-	-	-
Office Supplies	2	750	773	796	820	844	869	896	922	950	979
Postal Services	2	300	309	318	328	338	348	358	369	380	391
Mileage	7	2,200	2,266	2,334	2,404	2,476	2,550	2,627	2,706	2,787	2,871
Training and Meetings	2	7,000	7,210	7,426	7,649	7,879	8,115	8,358	8,609	8,867	9,133
Memberships	2	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048
Gasoline & Oil	7	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095
Repair and Services											
Vehicle Maintenance/Repair	2	26,000	26,780	27,583	28,411	29,263	30,141	31,045	31,977	32,936	33,924
Equipment Repairs	2	7,000	7,210	7,426	7,649	7,879	8,115	8,358	8,609	8,867	9,133
Building & Grounds	2	3,600	3,708	3,819	3,934	4,052	4,173	4,299	4,428	4,560	4,697
Rentals	2	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524
Special Departmental Supplies	2	56,223	57,910	59,647	61,437	63,280	65,178	67,133	69,147	71,222	73,359
Employee Recognition	2	180	185	191	197	203	209	215	221	228	235
Professional Services	3	1,300	1,352	1,406	1,462	1,521	1,582	1,645	1,711	1,779	1,850
Other Services	3	142,390	148,086	154,009	160,169	166,576	173,239	180,169	187,376	194,871	202,665
Equipment											
Equipment Purchase	2	26,000	26,780	27,583	28,411	29,263	30,141	31,045	31,977	32,936	33,924
Equipment Replacement	2	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239
City of Palo Alto RWQCP O&M											
Invoiced from City of Palo Alto RWQCP	6	2,449,644	2,408,203	2,502,184	2,593,257	2,697,970	2,806,996	2,920,636	3,039,090	3,162,459	3,291,044
TOTAL: Sewer System Maintenance Expenses		\$3,606,883	\$3,619,614	\$3,771,246	\$3,918,434	\$4,084,011	\$4,254,008	\$4,426,679	\$4,604,828	\$4,790,316	\$4,983,546
GRAND TOTAL: SEWER EXPENSES		\$3,606,883	\$3,619,614	\$3,771,246	\$3,918,434	\$4,084,011	\$4,254,008	\$4,426,679	\$4,604,828	\$4,790,316	\$4,983,546

**TABLE 7
 FORECASTING ASSUMPTIONS**

INFLATION FACTORS (2)	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Customer Growth (3)	1	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
General Cost Inflation	2	--	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Labor & Benefits Cost Inflation	3	--	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
PERS Obligation Inflation (4)	4	--	22.35%	21.06%	13.41%	15.10%	11.50%	7.06%	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%
RWQCP Treatment (5)	6	--	--	3.90%	3.64%	4.04%	4.04%	4.05%	4.06%	4.06%	4.07%
Fuel	7	--	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
No Escalation	8	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Revenue are budget for 2017/2018. Source: *Sewer Revenues 61100 - Line Items.pdf*.

Expenses Sources: *Sewer Maintenance Acct 61200 Budget to-date 9_8_17.pdf*.

Invoiced from O&M RWQCP Source: *2017.12 WWT FY2018-2028 Forecast LA.pdf*.

2. Expenses are inflated each year by the following annual inflation factor categories.

3. Customer growth is initially assumed to be zero.

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

5. Treatment Factor based on Palo Alto costs allocated to Los Altos; data project 10 years of O&M costs, which include inflation. Source: *2017.12 WWT FY2018-2028 Forecast LA.pdf*.

TABLE 8
CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Budget		Projected								
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Funding Sources:											
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Connection Fee Reserves	-	-	-	-	-	-	-	-	-	-	-
New Loan Funding	-	-	-	-	-	-	-	-	-	-	-
Use of Future Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	2,411,827	2,912,151	3,022,151	2,739,473	2,827,667	2,980,131	2,744,258	2,321,260	1,978,724	1,583,472	1,212,144
Rate Revenue	-	-	-	-	-	-	324,492	838,747	1,275,255	1,767,275	2,238,250
Total Sources of Capital Funds	\$ 2,411,827	\$ 2,912,151	\$ 3,022,151	\$ 2,739,473	\$ 2,827,667	\$ 2,980,131	\$ 3,068,750	\$ 3,160,007	\$ 3,253,979	\$ 3,350,747	\$ 3,450,395
Uses of Capital Funds:											
Total Project Costs	\$ 2,411,827	\$ 2,912,151	\$ 3,022,151	\$ 2,739,473	\$ 2,827,667	\$ 2,980,131	\$ 3,068,750	\$ 3,160,007	\$ 3,253,979	\$ 3,350,747	\$ 3,450,395
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Loan Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Future Revenue Bond Proceeds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CAPITAL IMPROVEMENT PROGRAM

TABLE 9
Capital Improvement Program Costs (1, 2):

Project Description	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sewer System Repair Program	\$ 600,000	\$ 610,000	\$ 620,000	\$ 630,000	\$ 640,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structural Reach Replacement	800,000	800,000	800,000	800,000	800,000	-	-	-	-	-	-
Root Foaming	274,000	281,000	288,000	295,000	305,000	-	-	-	-	-	-
CIPP Corrosion Replacement	320,000	333,000	340,000	350,000	360,000	-	-	-	-	-	-
Fats, Oils, Grease Program (FOG)	60,000	62,000	64,000	66,000	68,000	-	-	-	-	-	-
GIS Updates	60,000	62,000	64,000	66,000	68,000	-	-	-	-	-	-
Sewer System Management Plan Update	-	26,000	-	28,000	-	-	-	-	-	-	-
Sanitary Sewer Video Inspection	-	380,000	400,000	-	-	-	-	-	-	-	-
City of Palo Alto RWQCP Minor CIP Fund (3)	297,827	281,531	281,531	281,531	281,531	281,531	281,531	281,531	281,531	281,531	281,531
Placeholder for Future Year Capital Projects (4)	-	-	-	-	-	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000	2,300,000
Total: CIP Program Costs	\$ 2,411,827	\$ 2,835,531	\$ 2,857,531	\$ 2,516,531	\$ 2,522,531	\$ 2,581,531	\$ 2,581,531	\$ 2,581,531	\$ 2,581,531	\$ 2,581,531	\$ 2,581,531

TABLE 10
Capital Improvement Program Costs (in Future-Year Dollars):

Project Description	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sewer System Repair Program	\$ 600,000	\$ 628,300	\$ 657,758	\$ 688,418	\$ 720,326	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Structural Reach Replacement	800,000	824,000	848,720	874,182	900,407	-	-	-	-	-	-
Root Foaming	274,000	289,430	305,539	322,354	343,280	-	-	-	-	-	-
CIPP Corrosion Replacement	320,000	342,990	360,706	382,454	405,183	-	-	-	-	-	-
Fats, Oils, Grease Program (FOG)	60,000	63,860	67,898	72,120	76,535	-	-	-	-	-	-
GIS Updates	60,000	63,860	67,898	72,120	76,535	-	-	-	-	-	-
Sewer System Management Plan Update	-	26,780	-	30,596	-	-	-	-	-	-	-
Sanitary Sewer Video Inspection	-	391,400	424,360	-	-	-	-	-	-	-	-
City of Palo Alto RWQCP Minor CIP Fund (3)	297,827	281,531	289,273	297,228	305,402	313,801	322,430	331,297	340,408	349,769	359,387
Placeholder for Future Year Capital Projects (4)	-	-	-	-	-	2,666,330	2,746,320	2,828,710	2,913,571	3,000,978	3,091,008
Total: Capital Improvement Program Costs (Future-Year Dollars)	\$ 2,411,827	\$ 2,912,151	\$ 3,022,151	\$ 2,739,473	\$ 2,827,667	\$ 2,980,131	\$ 3,068,750	\$ 3,160,007	\$ 3,253,979	\$ 3,350,747	\$ 3,450,395

TABLE 11
FORECASTING ASSUMPTIONS:

Economic Variables	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Annual Construction Cost Inflation, Per Engineering News Record (5)	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	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 (3)	0.00%	0.00%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%	2.75%
Cumulative Construction Cost Multiplier from 2018	1.00	1.00	1.03	1.06	1.08	1.11	1.15	1.18	1.21	1.24	1.28

- Capital project costs were provided by City Staff in source file: *Pages from adopted_budget_fy18_and_fy19 - CIP Summary table.pdf*.
City of Palo Alto Wastewater Treatment Plant Minor CIP Fund Source: *2017.12 WWT FY2018-2028 Forecast LA.pdf*.
- Future project costs are inflated by 3.0% per year.
- Inflation Factor determined based on file: *2017.12 WWT FY2018-2028 Forecast LA.pdf*.
- NBS has initially estimated Future Projects based on average annual project expenditures for the previous five years; City needs to confirm this amount.
- For reference purposes, the annual Construction Cost Inflation percentage is the 10 year average change in the Construction Cost Index for 2006-2016 (3.0%). Source: *Engineering News Record website (http://enr.construction.com)*.

TABLE 12

WASTEWATER UTILITY EXISTING DEBT OBLIGATIONS	Budget		Projected							
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
1999 Bond- New Money for Incinerator Rehabilitation Utility Revenue Bond- Los Altos Share is 9.47% (1)										
Principal Payment	\$ 35,513	\$ 37,407	\$ 38,827	\$ 41,195	\$ 43,089	\$ 45,456	\$ 47,824	\$ -	\$ -	\$ -
Interest Payment	\$ 15,144	\$ 13,324	\$ 11,360	\$ 9,322	\$ 7,159	\$ 4,897	\$ 2,511	\$ -	\$ -	\$ -
Amortization of Bond Discount and Issuance Cost of New Money Bonds (4)	\$ 823	\$ 823	\$ 823	\$ 823	\$ 823	\$ 823	\$ 755	\$ -	\$ -	\$ -
Subtotal: Annual Debt Service	\$ 51,480	\$ 51,554	\$ 51,011	\$ 51,340	\$ 51,071	\$ 51,176	\$ 51,089	\$ -	\$ -	\$ -
Coverage Requirement (%-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ 51,554	\$ 51,554	\$ 51,340	\$ 51,340	\$ 51,176	\$ 51,176	\$ 51,089	\$ -	\$ -	\$ -
City of Palo Alto 1999 Refunding of 1990 Utility Revenue Bonds- Los Altos share 7.80% (2)										
Principal Payment	\$ 15,230	\$ 16,031	\$ 16,833	\$ 17,634	\$ 18,703	\$ 19,772	\$ 20,841	\$ -	\$ -	\$ -
Interest Payment	\$ 6,546	\$ 5,765	\$ 4,924	\$ 4,040	\$ 3,114	\$ 2,132	\$ 1,094	\$ -	\$ -	\$ -
Amortization of Issuance Costs and Bond Discount of 1999 Refunding of 1990 Bonds (4)	\$ 321	\$ 321	\$ 321	\$ 321	\$ 321	\$ 321	\$ 295	\$ -	\$ -	\$ -
Subtotal: Annual Debt Service	\$ 22,097	\$ 22,118	\$ 22,078	\$ 21,996	\$ 22,139	\$ 22,226	\$ 22,230	\$ -	\$ -	\$ -
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ 22,230	\$ 22,230	\$ 22,230	\$ 22,230	\$ 22,230	\$ 22,230	\$ 22,230	\$ -	\$ -	\$ -
SWRCB SRF Loan- C-06-5044-110 UV Disinfection Facility- Los Altos share is 9.47% (3)										
Principal Payment	\$ 36,741	\$ 37,696	\$ 38,676	\$ 39,682	\$ 40,713	\$ 41,772	\$ 42,858	\$ 43,972	\$ 45,116	\$ 46,289
Interest Payment	\$ 15,887	\$ 14,931	\$ 13,951	\$ 12,946	\$ 11,914	\$ 10,855	\$ 9,769	\$ 8,655	\$ 7,512	\$ 6,339
Subtotal: Annual Debt Service	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627	\$ 52,627
California Clean Water SRF Payment Schedule Project No. 8190-110- Sludge Dewatering and Loadout Facility (5)										
Principal Payment	\$ -	\$ -	\$ 54,662	\$ 62,743	\$ 64,670	\$ 65,456	\$ 66,634	\$ 67,834	\$ 69,055	\$ 70,298
Interest Payment	\$ -	\$ -	\$ 33,230	\$ 38,285	\$ 41,289	\$ 40,503	\$ 39,325	\$ 38,126	\$ 36,905	\$ 35,662
Subtotal: Annual Debt Service	\$ -	\$ -	\$ 87,892	\$ 101,028	\$ 105,960	\$ 105,959	\$ 105,959	\$ 105,960	\$ 105,960	\$ 105,960
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ 105,960	\$ 105,960	\$ 105,960	\$ 105,960	\$ 105,960	\$ 105,960	\$ 105,960	\$ 105,960
2018A Wastewater Utility Revenue Bonds with Capitalized Interest First Bond Issuance (5)										
Principal Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 65,346	\$ 68,785	\$ 72,224
Interest Payment	\$ -	\$ 78,125	\$ 156,249	\$ 156,249	\$ 156,249	\$ 156,249	\$ 156,249	\$ 154,615	\$ 151,262	\$ 147,737
Subtotal: Annual Debt Service	\$ -	\$ 78,125	\$ 156,249	\$ 156,249	\$ 156,249	\$ 156,249	\$ 156,249	\$ 219,961	\$ 220,047	\$ 219,961
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902	\$ 115,902
2018A Wastewater Utility Revenue Bonds with Capitalized Interest Second Bond Issuance (5)										
Principal Payment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,566	\$ 36,460	\$ 37,880
Interest Payment	\$ -	\$ 41,206	\$ 82,413	\$ 82,413	\$ 82,413	\$ 82,413	\$ 82,413	\$ 81,549	\$ 79,773	\$ 77,914
Subtotal: Annual Debt Service	\$ -	\$ 41,206	\$ 82,413	\$ 82,413	\$ 82,413	\$ 82,413	\$ 82,413	\$ 116,114	\$ 116,232	\$ 115,794
Coverage Requirement (\$-Amount above annual payment)	120%	120%	120%	120%	120%	120%	120%	120%	120%	120%
Reserve Requirement (total fund balance)	\$ -	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224	\$ 61,224
Grand Total: Existing Annual Debt Service (Palo Alto RWQCP)	\$ 126,204	\$ 245,630	\$ 452,269	\$ 465,652	\$ 470,458	\$ 470,650	\$ 470,567	\$ 494,662	\$ 494,866	\$ 494,342
Grand Total: Existing Annual Debt Service (City of Los Altos)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total: Existing Annual Coverage Requirement	\$ 151,445	\$ 294,756	\$ 542,723	\$ 558,782	\$ 564,550	\$ 564,780	\$ 564,680	\$ 593,594	\$ 593,839	\$ 593,211
Grand Total: Existing Debt Reserve Target	\$ 126,411	\$ 303,537	\$ 409,282	\$ 409,282	\$ 409,119	\$ 409,119	\$ 409,031	\$ 335,713	\$ 335,713	\$ 335,713

Footnotes:

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*

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Projected Sewer Rates Under Existing Rate Schedule

EXHIBIT 4

TABLE 13
Current Wastewater Rate Schedule:

Base Charges	Rate per Dwelling Unit	Quantity Charge (per HCF) (1)
FY 1718 Pre- Parcel Sewer Service Charge	\$261.35	\$2.07

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

Source: *ordinance_2013-394.pdf*

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Cost of Service Analysis

TABLE 14

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Flow	Strength		Customer	Basis of Classification			
	FY 2018/19	(VOL)	(COD)	(TSS)	(CA)	(VOL)	(COD)	(TSS)	(CA)
Sewer System Maintenance									
Salaries and Benefits									
Salaries	\$ 479,898	\$ 455,903	\$ -	\$ -	\$ 23,995	95.0%	0.0%	0.0%	5.0%
Vacation/Sick Leave Payout	-	-	-	-	-	95.0%	0.0%	0.0%	5.0%
Overtime	55,120	52,364	-	-	2,756	95.0%	0.0%	0.0%	5.0%
Specialty Pay	-	-	-	-	-	95.0%	0.0%	0.0%	5.0%
Retirement	46,068	43,764	-	-	2,303	95.0%	0.0%	0.0%	5.0%
Pers Unfunded Liability	66,701	63,366	-	-	3,335	95.0%	0.0%	0.0%	5.0%
Dental Plan	5,616	5,335	-	-	281	95.0%	0.0%	0.0%	5.0%
Health Insurance	130,233	123,721	-	-	6,512	95.0%	0.0%	0.0%	5.0%
Uniforms	2,009	1,908	-	-	100	95.0%	0.0%	0.0%	5.0%
Life Insurance	2,046	1,943	-	-	102	95.0%	0.0%	0.0%	5.0%
Workers Comp Insurance	33,593	31,913	-	-	1,680	95.0%	0.0%	0.0%	5.0%
Medicare Tax	3,485	3,311	-	-	174	95.0%	0.0%	0.0%	5.0%
Utilities									
Utilities	10,500	9,975	-	-	525	95.0%	0.0%	0.0%	5.0%
Telephone	2,575	2,446	-	-	129	95.0%	0.0%	0.0%	5.0%
Radio & Radar	3,451	-	-	-	3,451	0.0%	0.0%	0.0%	100.0%
Teletype	-	-	-	-	-	0.0%	0.0%	0.0%	100.0%
Office Supplies	773	-	-	-	773	0.0%	0.0%	0.0%	100.0%
Postal Services	309	309	-	-	-	100.0%	0.0%	0.0%	0.0%
Mileage	2,266	2,266	-	-	-	100.0%	0.0%	0.0%	0.0%
Training and Meetings	7,210	6,850	-	-	361	95.0%	0.0%	0.0%	5.0%
Memberships	10,300	9,785	-	-	515	95.0%	0.0%	0.0%	5.0%
Gasoline & Oil	20,600	19,570	-	-	1,030	95.0%	0.0%	0.0%	5.0%
Repair and Services									
Vehicle Maintenance/Repair	26,780	25,441	-	-	1,339	95.0%	0.0%	0.0%	5.0%
Equipment Repairs	7,210	6,850	-	-	361	95.0%	0.0%	0.0%	5.0%
Building & Grounds	3,708	3,523	-	-	185	95.0%	0.0%	0.0%	5.0%
Rentals	5,150	4,893	-	-	258	95.0%	0.0%	0.0%	5.0%
Special Departmental Supplies	57,910	55,014	-	-	2,895	95.0%	0.0%	0.0%	5.0%
Employee Recognition	185	176	-	-	9	95.0%	0.0%	0.0%	5.0%
Professional Services	1,352	1,284	-	-	68	95.0%	0.0%	0.0%	5.0%
Other Services	148,086	111,064	-	-	37,021	75.0%	0.0%	0.0%	25.0%
Equipment									
Equipment Purchase	26,780	25,441	-	-	1,339	95.0%	0.0%	0.0%	5.0%
Equipment Replacement	51,500	48,925	-	-	2,575	95.0%	0.0%	0.0%	5.0%
City of Palo Alto RWQCP O&M									
Invoiced from City of Palo Alto RWQCP	2,408,203	1,444,922	481,641	481,641	-	60.0%	20.0%	20.0%	0.0%
SUB-TOTAL	\$ 3,619,614	\$ 2,562,262	\$ 481,641	\$ 481,641	\$ 94,071	70.8%	13.3%	13.3%	2.6%
GRAND TOTAL - Sewer System Maintenance	\$ 3,619,614	\$ 2,562,262	\$ 481,641	\$ 481,641	\$ 94,071	70.8%	13.3%	13.3%	2.6%

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Cost of Service Analysis

TABLE 15

Classification of Expenses, continued									
Budget Categories	Total Revenue Requirements	Flow	Strength		Customer	Basis of Classification			
	FY 2018/19	(VOL)	(COD)	(TSS)	(CA)	(VOL)	(COD)	(TSS)	(CA)
Debt Service Payments									
Existing Annual Debt Service	\$ 245,630	\$ 122,815	\$ 61,408	\$ 61,408	\$ -	50.0%	25.0%	25.0%	0.0%
Future Annual Debt Service	-	-	-	-	-	50.0%	25.0%	25.0%	0.0%
Total Debt Service Payments	\$ 245,630	\$ 122,815	\$ 61,408	\$ 61,408	\$ -	50.0%	25.0%	25.0%	0.0%
Capital Expenditures									
Rate Funded Capital Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	50.0%	25.0%	25.0%	0.0%
TOTAL REVENUE REQUIREMENTS	\$ 3,865,244	\$ 2,685,077	\$ 543,048	\$ 543,048	\$ 94,071	69.5%	14.0%	14.0%	2.4%
<i>Less: Non-Rate Revenues</i>									
Sewer Service Charge not on Tax Roll	\$ (400,000)	(277,869)	(56,198)	(56,198)	(9,735)	69.5%	14.0%	14.0%	2.4%
Other Revenues	\$ -	-	-	-	-	69.5%	14.0%	14.0%	2.4%
Interest Income	\$ (31,835)	(22,115)	(4,473)	(4,473)	(775)	69.5%	14.0%	14.0%	2.4%
NET REVENUE REQUIREMENTS	\$ 3,433,410	\$ 2,385,094	\$ 482,377	\$ 482,377	\$ 83,561				
<i>Allocation of Revenue Requirements</i>	<i>100.0%</i>	<i>69.5%</i>	<i>14.0%</i>	<i>14.0%</i>	<i>2.4%</i>				
<i>Net Revenue Req't. Check from Financial Plan \$ -</i>									

TABLE 16

Classification of Expenses, continued					
Adjustments to Classification of Expenses					
Adjustment to Current Rate Level:	Total	(VOL)	(COD)	(TSS)	(CA)
Test Year (FY 2018/19) Target Rate Rev. After Rate Increases	\$6,150,000				
Projected Rate Revenue at Current Rates	\$6,000,000				
Test Year (FY 2018/19) Projected Rate Adjustment	2.5%				
Adjusted Net Revenue Req'ts	\$ 6,150,000	\$ 4,272,233	\$ 864,045	\$ 864,045	\$ 149,676
<i>Percent of Revenue</i>		<i>69.5%</i>	<i>14.0%</i>	<i>14.0%</i>	<i>2.4%</i>

Current Revenue		
Fixed Charges	\$ 3,602,482	60%
Variable Charges	\$ 2,364,214	40%
	\$ 5,966,696	100%

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Sewer Cost of Service Analysis

TABLE 17
Volume by Customer Class (1)

Customer Class	Number of Accounts	Annual Winter-Average Based Volume (HCF)	Percentage of Adjusted Volume
Residential			
Single Family Home	10,330	893,765	78.3%
Multifamily Residence (2 units)	65	7,884	0.7%
Multifamily Residence (3-4 units)	14	2,148	0.2%
Multifamily Residence (5+ units)	21	19,600	1.7%
Condominium Unit	1,029	52,954	4.6%
Commercial			
Commercial/Industrial	425	56,178	4.9%
Restaurant	65	79,575	7.0%
Public/Institutional			
Public/Institutional	31	15,252	1.3%
Parks	4	2,324	0.2%
School	10	12,452	1.1%
Total:	11,994	1,142,132	100%
Vacant	15	-	0.0%
N/A	3	-	0.0%
Grand Total:	12,012	1,142,132	

1. Data Source: *Los Altos Combined Levy data 1516 to 1718.xlsx*;
Restaurant information: *March 2017.xlsx* and *April and May 2-17.xlsx* FOG reports.

TABLE 18
Accounts & EDUs by Customer Class

Customer Class	Number of Accounts (1)	Percent of Total	Number of Equivalent Dwelling Units (1)	Percent of Total
Residential				
Single Family Home	10,330	86.1%	10,330	74.9%
Multifamily Residence (2 units)	65	0.5%	130	0.9%
Multifamily Residence (3-4 units)	14	0.1%	48	0.3%
Multifamily Residence (5+ units)	21	0.2%	506	3.7%
Condominium Unit	1,029	8.6%	1,029	7.5%
Commercial				
Commercial/Industrial	425	3.5%	591	4.3%
Restaurant	65	0.5%	873	6.3%
Public/Institutional				
Public/Institutional	31	0.3%	143	1.0%
Parks	4	0.0%	21	0.2%
School	10	0.1%	113	0.8%
Total:	11,994	100%	13,785	100%
Vacant	15		-	
N/A	3		-	
Grand Total:	12,012		13,785	

1. Data Source: *Los Altos Combined Levy data 1516 to 1718.xlsx*.

CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Sewer Cost of Service Analysis/Rate Design

TABLE 19
Sewer Rate Calculation for FY 2018/19 - Fixed Charges:

Fixed Charges (per EDU)	Total Revenue Requirements	Percent of Total Rev. Req't. to be Collected from Fixed Charges	Amount to be Collected from Fixed Charges	Number of Equivalent Dwelling Units	Rate per EDU
	<i>A</i>	<i>B</i>	$C = A * B$	<i>D</i>	$E = C / D$
All Customers	\$6,150,000	60%	\$3,690,000	13,785	\$267.69

TABLE 20
Sewer Rate Calculation for FY 2018/19 - Volumetric Charges:

Volumetric Charges (per HCF)	Total Revenue Requirements	Percent of Total Rev. Req't. to be Collected from Volumetric	Amount to be Collected from Volumetric Charges	Annual Billable Volume (hcf)	Rate per HCF
	<i>F</i>	$G = 1 - B$	$H = F * G$	<i>I</i>	$J = H / I$
All Customers	\$6,150,000	40%	\$2,460,000	1,142,132	\$2.15

TABLE 21
Current vs. Proposed Sewer Rates (Annual)

Sewer Rate Schedule	Current Rates	Proposed Yearly Sewer Rates				
		Year 1	Year 2	Year 3	Year 4	Year 5
		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Annual Fixed Service Charge per EDU	\$261.35	\$267.69	\$275.72	\$283.99	\$292.51	\$301.29
Volumetric Rate (\$/hcf) (1, 2)	\$2.07	\$2.15	\$2.21	\$2.28	\$2.35	\$2.42

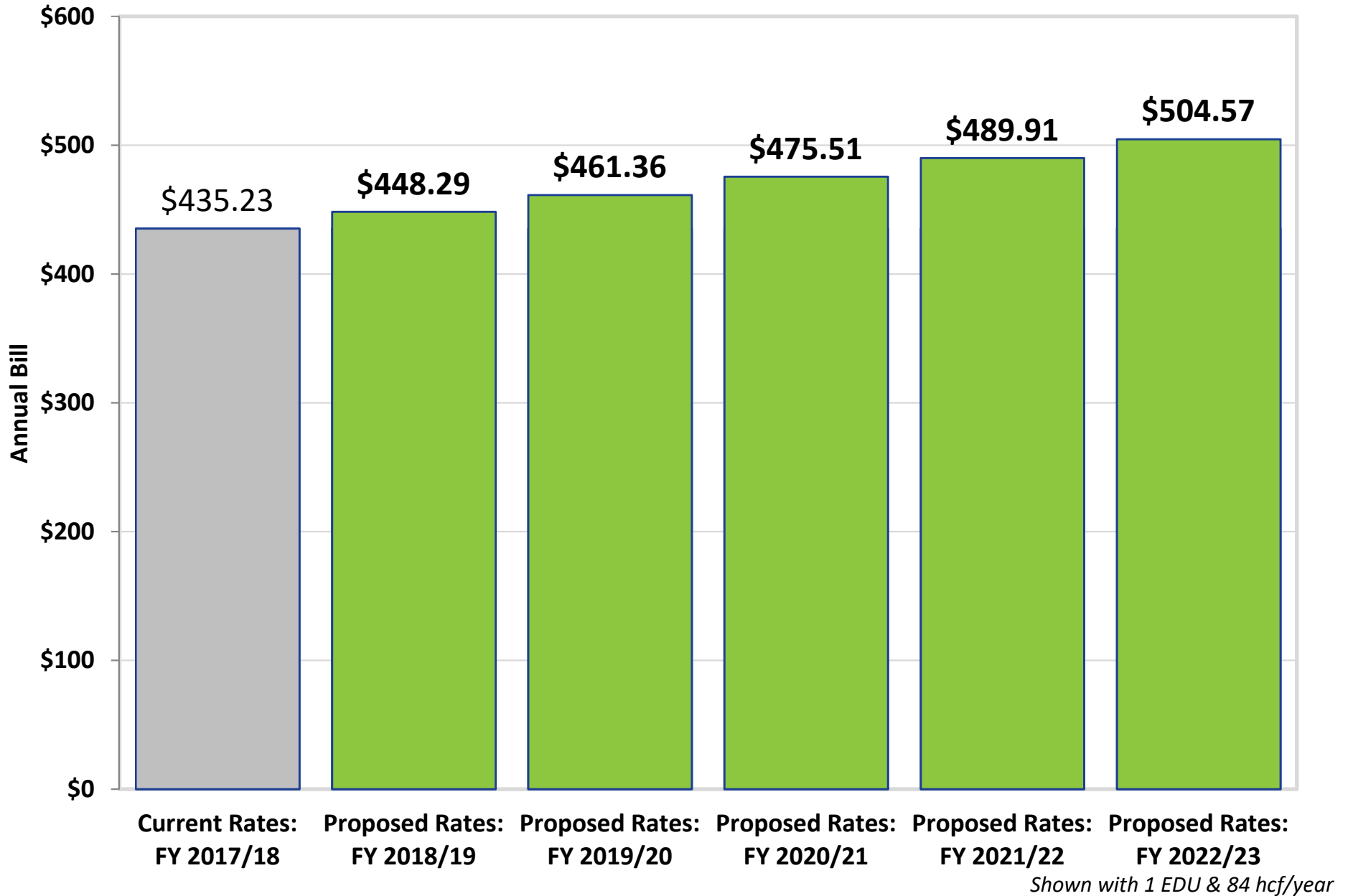
1. One Unit is equal to one HCF (Hundred Cubic Feet) or 748 gallons.
2. Rates are charged based on average winter water consumption (three lowest months from previous year).

CITY OF LOS ALTOS
 SEWER RATE STRUCTURE ANALYSIS
 Sewer Cost of Service Analysis/Rate Design

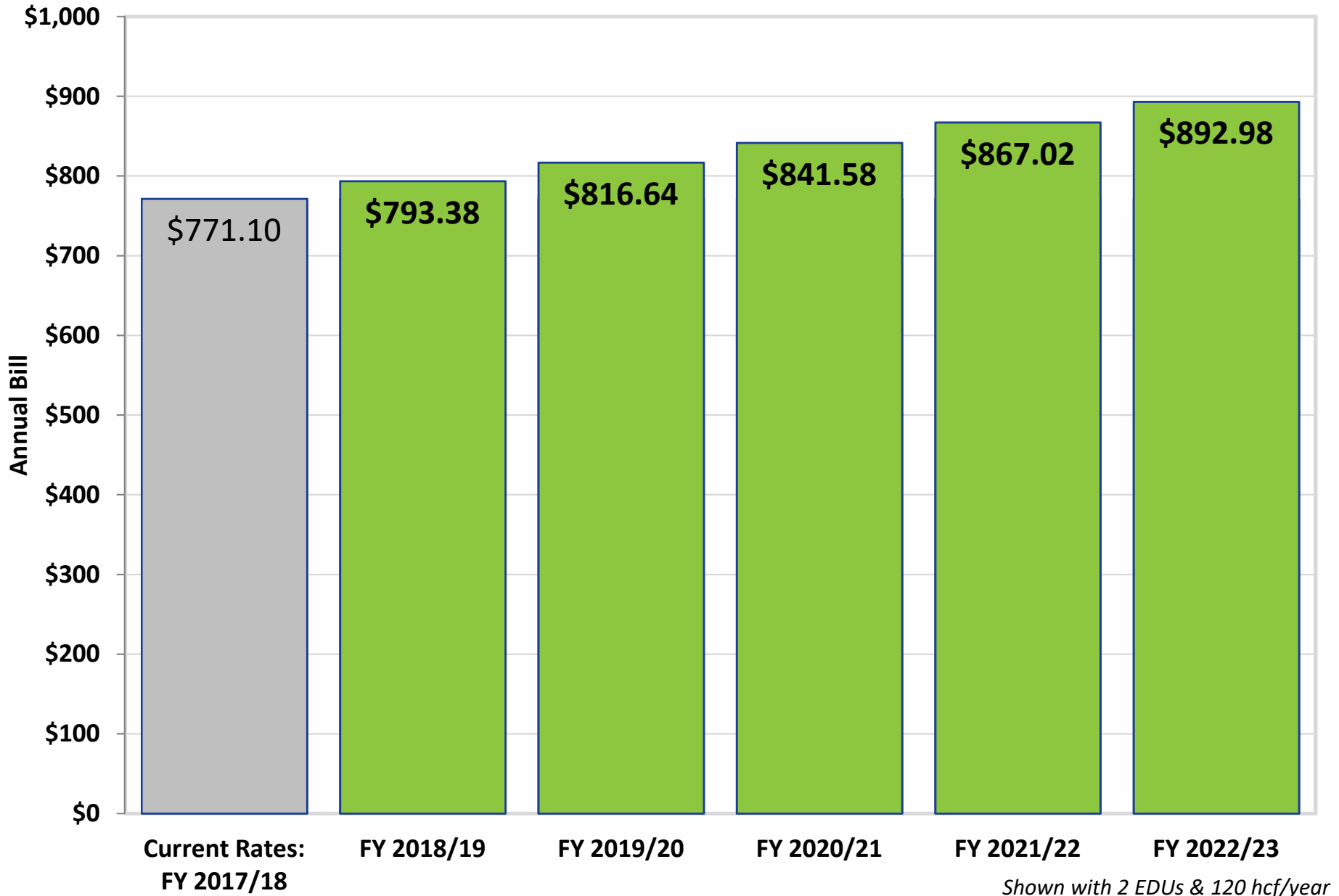
TABLE 22
 Revenue Check

Customer Class	No. of Equivalent Dwelling Units	Annual Fixed Charge Per Equivalent Dwelling Unit	Annual Fixed Charge Revenue	Annual Billable Volume (hcf)	Volumetric Charge Per hcf	Annual Volumetric Charge Revenue	Total
Residential							
Single Family Home	10,330	\$267.69	\$ 2,765,245	893,765	\$2.15	\$ 1,925,050	\$ 4,690,296
Multifamily Residence (2 units)	130	\$267.69	34,800	7,884	\$2.15	16,981	51,781
Multifamily Residence (3-4 units)	48	\$267.69	12,849	2,148	\$2.15	4,627	17,476
Multifamily Residence (5+ units)	506	\$267.69	135,452	19,600	\$2.15	42,216	177,668
Condominium Unit	1,029	\$267.69	275,454	52,954	\$2.15	114,056	389,510
Commercial							
Commercial/Industrial	591	\$267.69	158,205	56,178	\$2.15	121,000	279,205
Restaurant	873	\$267.69	233,786	79,575	\$2.15	171,394	405,180
Public/Institutional							
Public/Institutional	143	\$267.69	38,253	15,252	\$2.15	32,851	71,104
Parks	21	\$267.69	5,655	2,324	\$2.15	5,006	10,661
School	113	\$267.69	30,301	12,452	\$2.15	26,820	57,121
TOTAL	13,785		\$ 3,690,000	1,142,132		\$ 2,460,000	\$ 6,150,000
<i>Percent of Revenue from Fixed vs. Volumetric Charges</i>			<i>60%</i>			<i>40%</i>	<i>100%</i>

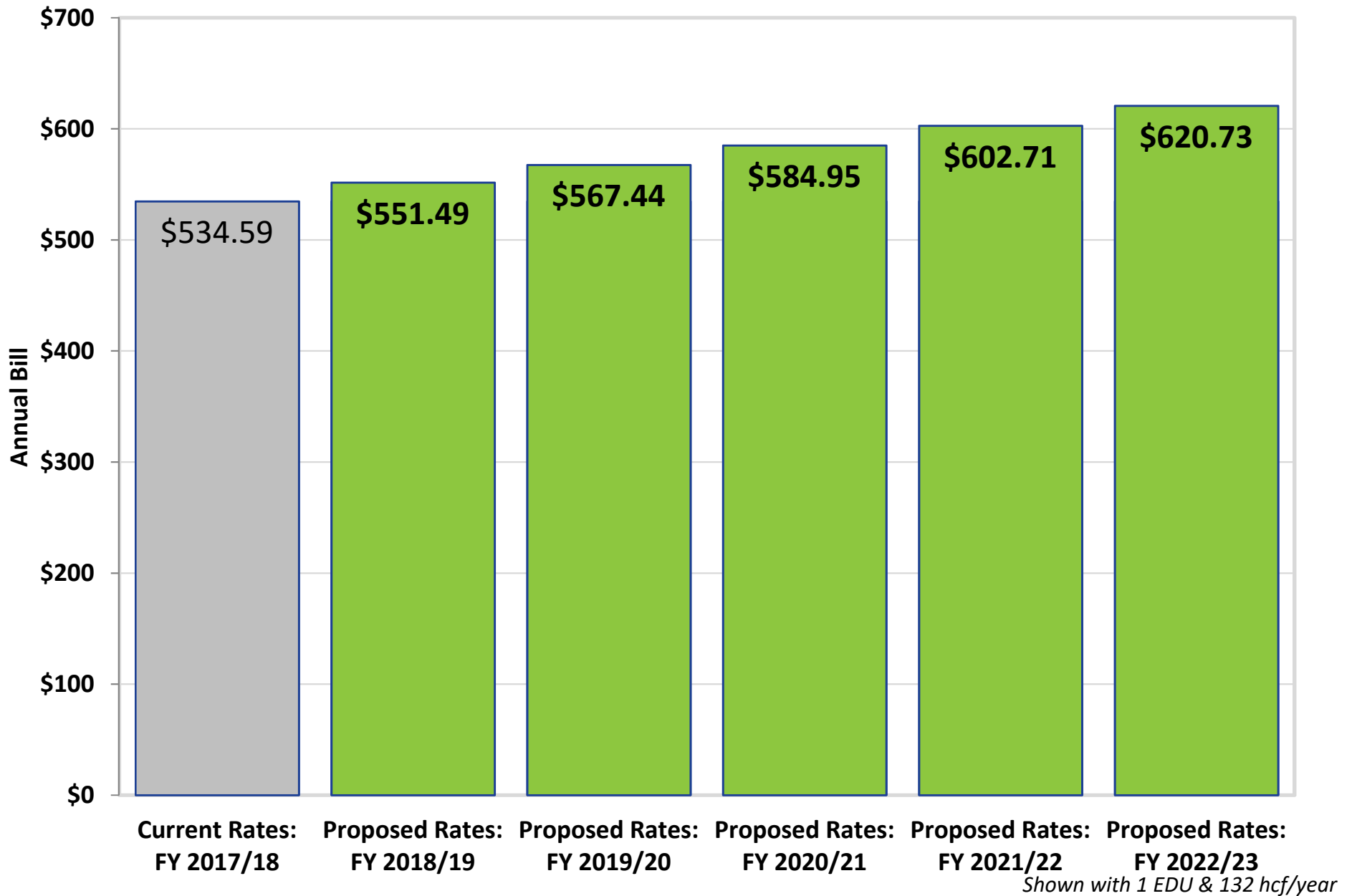
5 Year Annual Single Family Residential Sewer Bill Comparison Current vs. Proposed Rates



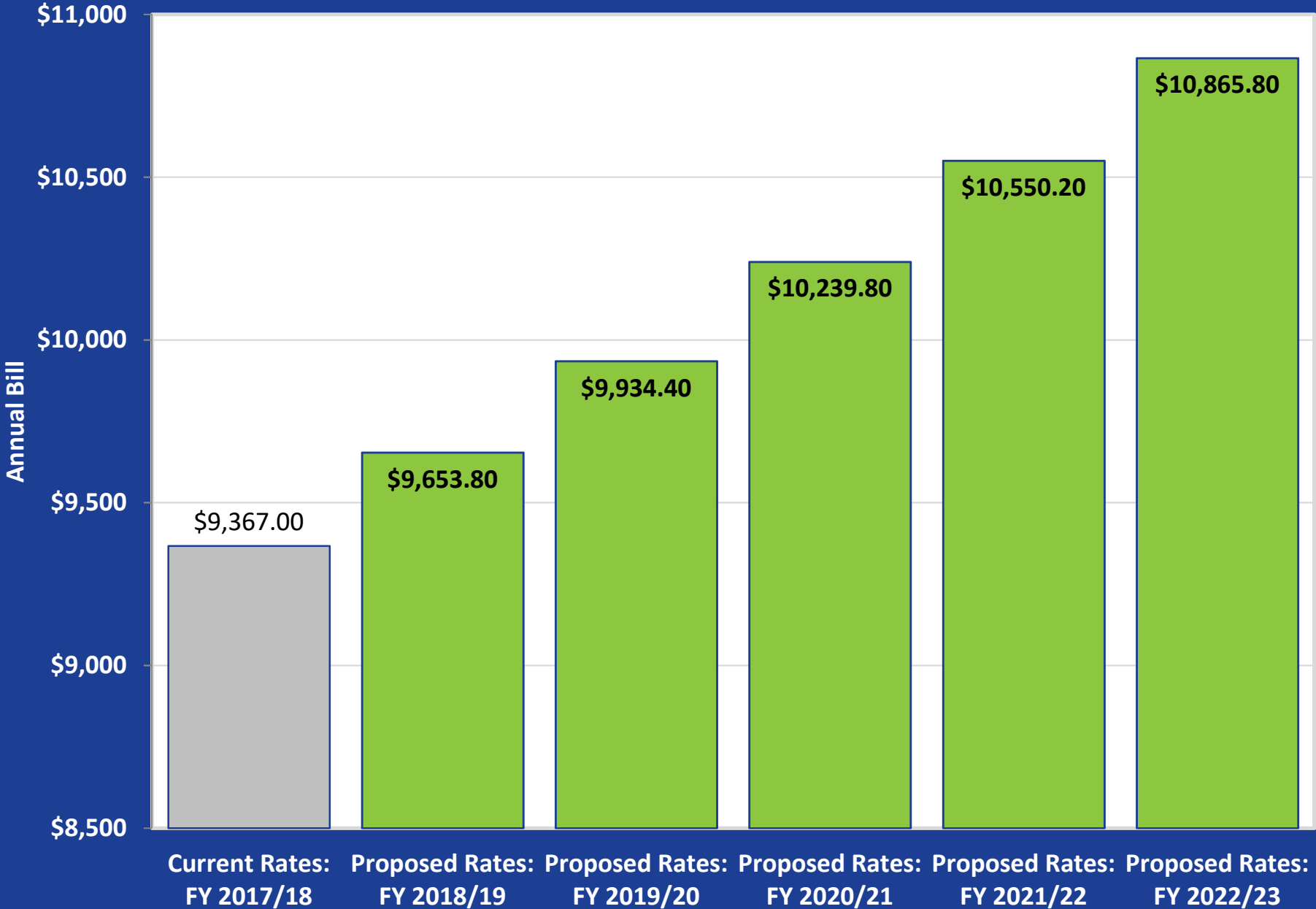
5 Year Annual Multi Family Residential Sewer Bill Comparison Current vs. Proposed Rates



5 Year Annual Commercial Sewer Bill Comparison Current vs. Proposed Rates



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



CITY OF LOS ALTOS
SEWER RATE STRUCTURE ANALYSIS
Customer Data

TABLE 23

Year	Annual Influent Flow, MG	Average Influent Flow, MGD	Average COD Load, lbs./Day	Total Influent COD, lbs./Year	Average Influent TSS, lbs./Day	Total Influent TSS, lbs./Year
FY 2014/15	1,070	89.16	16,749.40	6,113,386	7,699.82	2,809,639
FY 2015/16	989	82.38	15,526.05	5,642,884	7,712.67	2,803,093
FY 2016/17	1,086	90.48	17,816.86	6,456,012	8,446.05	3,048,473

Year	Month	Monthly Influent Flow, MG	Average Influent Flow, MGD	Average COD Load, lbs./Day	Average Influent COD, lbs./Month	Average Influent TSS, lbs./Day	Average Influent TSS, lbs./Month
FY 2016/17	July	78.68	90.48	8,149	252,607	6,248	193,688
FY 2016/17	August	81.02	90.48	21,469	665,541	9,876	306,149
FY 2016/17	September	77.48	90.48	17,360	520,806	6,313	189,384
FY 2016/17	October	83.55	90.48	20,165	625,124	7,413	229,805
FY 2016/17	November	80.81	90.48	12,847	385,397	4,519	135,579
FY 2016/17	December	83.93	90.48	11,769	364,840	3,138	97,291
FY 2016/17	January	107.24	90.48	15,189	470,871	11,182	346,653
FY 2016/17	February	108.29	90.48	32,834	919,357	20,451	572,641
FY 2016/17	March	103.23	90.48	14,147	438,547	4,387	136,011
FY 2016/17	April	94.14	90.48	25,050	751,501	13,798	413,942
FY 2016/17	May	97.52	90.48	16,723	518,421	6,552	203,124
FY 2016/17	June	89.84	90.48	18,100	543,000	7,474	224,206

Data Sources: *Los Altos Monthly Flow BOD TSS NH3 pounds.xlsx*