



WEST BAY SANITARY DISTRICT FY 2018-19 SEWER RATE STUDY



FINAL REPORT – April 25, 2018



HF&H Consultants, LLC

WEST BAY SANITARY DISTRICT
500 Laurel Street
Menlo Park, CA 94025



SEWER RATE STUDY

FINAL REPORT

HF&H CONSULTANTS, LLC
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April 25, 2018

Mr. Phil Scott
District Manager
West Bay Sanitary District
500 Laurel Street
Menlo Park, CA 94025

Subject: Sewer Rate Study – Final Report

Dear Mr. Scott:

HF&H is pleased to submit this final report from our study of the West Bay Sanitary District's (District) FY 2018-19 sewer rates. The report summarizes the analysis that was conducted to develop the recommended rates. The analysis updates last year's projections to reflect the District's and Silicon Valley Clean Water's (SVCW) current operating and capital costs.

The results are consistent with last year, which indicates the need for a 5.0% increase in FY 2018-19 rates.

The overall increase in revenue will allow the District to:

- Fund inflationary increases in staff and system O&M costs; other than a part-time clerical position, staffing levels are projected to stay at their current level through the five-year planning period.
- Maintain the operating, capital, recycled water project, and emergency reserve balances at their current levels.
- Achieve an \$8.0M rate stabilization reserve fund by FY 2020-21 for use in buying down anticipated debt incurred by the SVCW for capital improvements to its wastewater treatment facility.
- Fund \$7.6 M in annual capital improvement projects for the District-maintained collection system.
- Fund an average of \$17.7M in projected operating and capital treatment costs at SVCW's treatment plant.

A copy of the rate model is included in the appendix.

Very truly yours,
HF&H CONSULTANTS, LLC

John W. Farnkopf, P.E.
Senior Vice President

Richard J. Simonson, CMC
Vice President

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ACRONYMS

FY	Fiscal Year
CCF or HCF	Hundred cubic feet of metered water sold; 748 gallons; a cube of water 4.6 feet on edge
BOD	Biochemical Oxygen Demand
COS	Cost of Service
EDU	Equivalent Dwelling Unit
GPD	Gallons per Day
I&I	Inflow & Infiltration
MGL	Milligrams per Liter
O&M	Operations and Maintenance
PAYGo	Pay-As-You-Go, in reference to funding capital improvements from cash rather than from borrowed sources of revenue
SHGCC	Sharon Heights Golf & Country Club
SLAC	Stanford Linear Accelerator Center
SVCW	Silicon Valley Clean Water, a Joint Powers Authority that is responsible for regional conveyance and wastewater treatment for West Bay Sanitary District and the cities of Redwood City, San Carlos and Belmont.
STEP	Septic Tank Effluent Pumping systems
TSS	Total Suspended Solids

ACKNOWLEDGEMENTS

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 David Walker, Treasurer
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SEWER RATE STUDY

1. EXECUTIVE SUMMARY

The proposed rates for FY 2018-19 have been calculated to fund the District's expense projections for FY 2018-19. Revenue increases for subsequent years have been projected in this financial plan and are based on a number of assumptions and information that will require review prior to adopting any future rate increases. For present purposes, the revenue increases in subsequent years provide a preview of the increases that may eventually be required. Prior to adopting rate increases in subsequent years, the District is advised to update the financial planning model in conjunction with an update to its capital improvement program and associated O&M. A critical area for consideration is SVCW's capital costs, which are dependent on the pace with which SVCW makes progress with its capital improvement program.

1.1 FINDINGS AND RECOMMENDATIONS

1.1.1 Current Rates

Residential customers are charged per dwelling unit. Approximately 68 homes in the Portola Valley area (located within the On-Site Wastewater Disposal Zone) pay higher charges for the maintenance of the Septic Tank Effluent Pump (STEP) system that they require.

Commercial customers pay charges based on their metered water use from the prior calendar year (measured in CCF or hundred cubic feet). Each non-residential charge is the product of the customer's flow multiplied by the rate corresponding to the customer's class.

Industrial customers are billed based on each customer's annual flow and the strength of the customer's wastewater based on sampling data.

Current rates were adopted by the Board in May 2017, as follows:

Figure 1-1. Current Rates

	FY 2017-18
Residential (charge per DU)	
Single Family, Multi Family	Adopted
On-site Wastewater Disposal Zone	\$1,072
	\$1,364
Commercial (charge per CCF)	
Retail/Commercial	\$9.56
Institution/Public	\$9.28
Restaurants/Bakeries	\$14.56
Supermarkets with Grinders	\$14.67
Hospitals	\$9.72
Hotels with Dining Facilities	\$12.73
Industrial (measured)	
Flow Rate Charge per CCF	\$8.38
BOD Rate Charge per pound	\$0.59
TSS Rate Charge per pound	\$0.67

1.1.2 Revenue Requirement Projections.

Figure 1-2 indicates the projected revenue requirements for the five-year period beginning with FY 2018-19. Of the 5% overall rate increase in FY 2018-19, approximately 2.2% is attributable to increases in SVCW's treatment costs and rate stabilization, and 2.8% is attributable to inflationary increases in the District's local operations, an increase in pipeline replacement costs, and the additional \$1.0 M reserve investment to offset future PERS retirement liability. The estimated cost of this pipeline replacement program is \$6.4 M annually, which has increased significantly in recent years as construction costs continue to rise at a rate greater than inflation as the economy continues to improve from the 2008 downturn.

Figure 1-2. Revenue Requirement Projections

Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	\$26,316,170	
FY 2018-19	\$27,631,979	5.0%
FY 2019-20	\$29,013,577	5.0%
FY 2020-21	\$30,464,256	5.0%
FY 2021-22	\$31,987,469	5.0%
FY 2022-23	\$33,586,843	5.0%

The District's existing rates could be increased by the annual percentages to generate the required revenue if no modifications are made to the rate structure.

1.1.3 Cost-of-Service Analysis

As part of the rate study, a Cost-of-Service (COS) analysis was performed to allocate the revenue requirement to each customer class in proportion to each class' loading on the system. Each customer class is charged the same unit cost for its share of the services that it requires. Figure 1-3 compares the revenue from current rates with the COS for FY 2018-19, by customer class.

In the Cost-of-Service study completed last year for FY 2017-18 and approved by the Board on March 8, 2017, the analysis resulted in a significant increase for non-residential customer classes with high strength characteristics to cover the cost of service. The Board recommended phasing in the proposed non-residential increases over three years. This is the second year of the three-year phase-in.

Figure 1-3. Cost-of-Service Analysis Summary

Customer Class	Revenue at	FY 2018-19	Difference	
	Current	Cost-of-Service	\$	%
Residential	\$20,873,472	\$21,917,205	\$1,043,733	5.0%
Non-Residential				
Commercial				
Retail/Commercial	\$1,872,352	\$1,719,523	(\$152,829)	-8.2%
Institution/Public	\$326,761	\$289,599	(\$37,162)	-11.4%
Restaurants/Bakeries	\$934,169	\$1,207,609	\$273,440	29.3%
Supermarkets with Grinders	\$63,514	\$81,906	\$18,392	29.0%
Hospitals	\$391,356	\$362,595	(\$28,761)	-7.3%
Hotels with Dining Facilities	\$278,863	\$327,011	\$48,148	17.3%
Industrial	<u>\$1,575,683</u>	<u>\$1,726,530</u>	<u>\$150,847</u>	<u>9.6%</u>
Subtotal Non-Residential	\$5,442,698	\$5,714,774	\$272,075	5.0%
Grand Total	\$26,316,170	\$27,631,979	\$1,315,808	5.0%

The COS analysis determined the rates for commercial and industrial customers with higher strength wastewater (i.e., customers with on-site food preparation, such as restaurants, bakeries, supermarkets, etc.) have not kept pace with the increasing costs of treating high strength wastewater. Given the magnitude of some of the differences for these high strength customers, we recommend phasing in the changes to the commercial and industrial rates over a three-year period.

Figure 1-4 summarizes the current FY 2017-18 rates and the proposed FY 2018-19 rates, which reflect an increase of 5.0% for residential rates. The proposed commercial and industrial rates reflect the second year of a three-year phase-in.

Figure 1-4. Proposed Rates – FY 2018-19

	FY 2016-17	FY 2017-18	FY 2018-19 Proposed	
			Rate	% Chg
Residential (charge per DU)	Adopted	Adopted		
Single Family, Multi Family	\$1,031	\$1,072	\$1,126	5.0%
On-site Wastewater Disposal Zone	\$1,312	\$1,364	\$1,432	5.0%
Commercial (charge per CCF)				
Retail/Commercial	\$9.51	\$9.56	\$9.66	1.1%
Institution/Public	\$9.37	\$9.28	\$9.24	-0.4%
Restaurants/Bakeries	\$11.87	\$14.56	\$17.20	18.1%
Supermarkets with Grinders	\$11.96	\$14.67	\$17.31	18.0%
Hospitals	\$9.57	\$9.72	\$9.91	2.0%
Hotels with Dining Facilities	\$11.05	\$12.73	\$14.40	13.1%
Industrial (measured)				
Flow Rate Charge per CCF	\$8.95	\$8.38	\$7.90	-5.8%
BOD Rate Charge per pound	\$0.26	\$0.59	\$0.90	52.0%
TSS Rate Charge per pound	\$0.34	\$0.67	\$0.99	47.2%

2. BACKGROUND

This report presents a financial plan for the District that incorporates the capital improvements identified in the District's Master Plan, as well as the latest available projections provided by SVCW in January 2018. The District's financial plan comprises projected operating and capital expenses, including its share of SVCW costs, projected revenues from the District's sewer service charges, and projected District reserves for the period from FY 2017-18 to FY 2022-23. The results of the financial plan indicate the annual increases in sewer service charges that are projected to fund the District's expenses and maintain adequate reserves. Detailed spreadsheets comprising the rate model are included in Appendix A.

2.1 REGIONAL CONTEXT

The District provides wastewater collection and conveyance services to approximately 32,000 residential, commercial, and industrial equivalent dwelling units (EDU) through a system of pipelines and pump stations that transport their wastewater to the SVCW for treatment and discharge into San Francisco Bay. SVCW is a Joint Powers Authority (JPA) that provides wastewater treatment services to the Cities of Redwood City, San Carlos, and Belmont as well as the District.

The District owns and operates wastewater collection system facilities serving portions of Menlo Park, Atherton, and Portola Valley. Wastewater from these communities is treated at the SVCW treatment plant, the cost for which is billed to the District and included in the District's sewer service charges. Most recently, the District took over the wastewater collection system operations for the Towns of Los Altos Hills and Woodside under a new services contract. Wastewater from these communities is treated at the Palo Alto Regional Water Quality Control plant. Under the services contract, the District is fully compensated by the towns. The towns are responsible for setting rates for their customers, which will cover the District's cost as well as the cost of treatment.

2.2 EXISTING SEWER RATES

The District charges sewer customers annually on the tax rolls, which is a common practice for billing for sewer service. Billing on the tax rolls is less expensive than it would be if the District issued its own bills while allowing the County to easily levy liens for nonpayment. Even though the District bills through the tax rolls, its sewer service charges are not a tax or assessment. Unlike taxes or assessments, which are based on land-related characteristics such as assessed value or parcel size, the District's sewer charges are a form of service fee or charge that is proportionate to the cost of providing sewer service.

The District's sewer service charges have recently increased primarily in response to increases in SVCW's treatment charges, as well as to maintain the level of service required to safely and reliably meet the sewer service needs of the District's ratepayers. The District has also been faced with additional recent capital improvements to renew and replace aging District infrastructure, in addition to significant increases in SVCW capital improvement needs.

2.3 RECENT RATE INCREASES

During the last five years, the District's residential sewer service charges have increased as shown in Figure 2-1.

Figure 2-1. Recent Rates and Rate Increases

	2013/14	2014/15	2015-16	2016-17	2017-18
Residential Sewer Service Charge	\$820	\$893	\$974	\$1,031	\$1,072
Annual Increase - \$ per Year		\$73	\$81	\$57	\$41
Percentage Increase		9%	9%	6%	4%

The increases during this period are primarily attributable to SVCW's increasing debt service allocation to the District and, secondarily, to increases in the District's reserves that was necessitated to bring them to the target levels.

3. REVENUE REQUIREMENT PROJECTIONS

A spreadsheet model was developed to derive revenue requirements for FY 2018-19 through FY 2022-23. The revenue requirements represent the costs that must be covered by revenue from rates and other sources. The District's O&M budget for FY 2017-18 served as the starting point for projecting the District's expenses and revenues. The escalation factors summarized in Figure 3-1 were incorporated in the model for projecting expense and revenues.

Figure 3-1. Key Modeling Assumptions

Assumptions	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
(1) General Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
(2) Utilities	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
(3) Salaries & Benefits	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
(4) PERS Unfunded Accrued Liability	Per Budget	71.9%	22.1%	14.1%	15.4%	11.8%
(5) SVCW O&M Increase %	Per Budget	3.7%	3.7%	3.9%	4.0%	4.0%
(6) Interest on Earnings	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
(7) Non-rate Revenues	Per Budget	1.0%	1.0%	1.0%	1.0%	1.0%
(8) % Increase in Revenue due to Growth	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%
(9) Los Altos Hills, Woodside Revenue Change	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
(10) Construction Cost Inflation	Per Budget	10.0%	10.0%	10.0%	10.0%	10.0%

The application of these assumptions to the O&M and capital expenses is described below and summarized in Figure 3-3.

3.1 DISTRICT O&M EXPENSES

The District's net O&M expenses (summarized by category in Figure 3-2) are projected to increase by a few percent per year from approximately \$6.2M to \$7.7 M over the planning period. Annual increases are generally no greater than the estimated rate of inflation or cost escalation for most recurring expenses.

Figure 3-2. District O&M Expense Summary

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Salaries	\$3,349,962	\$3,450,461	\$3,553,975	\$3,660,594	\$3,770,412	\$3,883,524
Benefits	\$1,294,085	\$1,332,908	\$1,372,895	\$1,414,082	\$1,456,505	\$1,500,200
PERS Unfunded Accrued Liability	\$165,251	\$284,080	\$347,000	\$396,000	\$457,000	\$511,000
Contractual/Professional Services	\$931,350	\$959,291	\$988,069	\$1,017,711	\$1,048,243	\$1,079,690
Other O&M	\$1,412,825	\$1,500,660	\$1,510,105	\$1,601,216	\$1,614,055	\$1,708,681
Non-Operating Revenue	(\$973,763)	(\$980,254)	(\$986,810)	(\$993,432)	(\$1,000,120)	(\$1,006,875)
Net District Operating Costs	\$6,179,710	\$6,547,145	\$6,785,233	\$7,096,172	\$7,346,094	\$7,676,219

3.2 DISTRICT CAPITAL EXPENSES

The District's capital expenses are summarized by category in Figure 3-3. The District's annual budgeted capital expenditures range from \$6.6 M to \$8.5 M during the modeling period. On average, the District expects to spend approximately \$7.5 M annually on these projects (during the five-year planning period FY 2018-19 to FY 2022-23), the majority of which funds Master

3. Revenue Requirement Projections

Plan subsurface line projects. The remaining capital expenses comprise various ongoing administrative and other capital expenditures.

Figure 3-3. CIP Summary

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Administration	\$215,000	\$221,450	\$228,094	\$234,936	\$241,984	\$249,244
Collection Facilities	\$934,500	\$1,287,535	\$1,303,661	\$1,070,271	\$587,379	\$605,000
Master Plan/Subsurface Lines	\$7,150,000	\$5,182,100	\$5,656,750	\$5,989,500	\$6,723,147	\$7,484,845
Construction Proj. Environ Review	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Manhole Raising	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Allow. For Unanticipated Cap Exp	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Vehicles and Equipment	\$205,000	\$205,000	\$205,000	\$205,000	\$205,000	\$205,000
Less: Connection Fee Revenue	(\$500,000)	(\$500,000)	(\$500,000)	(\$400,000)	(\$300,000)	(\$200,000)
Total Capital Expenses	\$8,214,500	\$6,606,085	\$7,103,505	\$7,309,707	\$7,667,511	\$8,554,090

The District plans to fund these capital improvements on a pay-as-you-go (PAYGo) basis without issuing debt, which continues the District's historical practice.

3.3 DISTRICT RESERVES

In addition to covering annual expenses, sewer service charges need to generate revenue to maintain adequate operations and capital reserves. To determine what constitutes adequate reserve amounts, the reserve balance was subdivided into Operations, Capital, Rate Stabilization, Recycled Water Project, Emergency Reserves, and a PERS Retirement Liability Reserve Fund. In this way, it is possible to set recommended target balances for each purpose.

3.3.1 Operations Reserve Minimum Balance

The Operations Reserve provides working capital for monthly O&M expenses. There is a nine-month lag between sewer service charge payments from the County tax assessor; therefore, the minimum Operations Reserve balance is set equal to five months of O&M expenses to provide adequate cash flow. If this minimum balance is maintained, the District should be able to fund its monthly operations cash flow over this extended period without relying on the Capital Reserve for a short-term loan.

Maintaining the minimum balance for the Operations Reserve is recommended as the highest priority for the District's three reserves.

3.3.2 Emergency Reserve Target Balance

The target balances for the Operations and Capital Reserves are sufficient to provide working capital on an ongoing basis, but do not provide for unforeseen contingencies such as emergencies. Should an emergency strike (e.g., earthquake), the District cannot suddenly raise rates to generate additional funds due to state law requirements for such rate increases (e.g., Proposition 218). Moreover, the District bills annually on the tax rolls. Therefore, the District has set a target for the Emergency Reserve of \$5.0 M. With such a reserve, the District would have funds on hand to take immediate remedial steps without waiting to procure a loan or issue bonds.

Maintaining the target balance for the Emergency Reserve is recommended as the second highest priority after meeting the minimum balance for the Operations Reserve. The Emergency

Reserve can be used for funding capital projects at times when the Capital Reserve is not fully funded.

3.3.3 Capital Reserve Target Balance

The Capital Reserve provides liquidity to fund construction for projects that are funded on a PAYGo basis (as opposed to those that are funded from debt). With adequate capital reserves, the District is able to pay contractors without encroaching on the Operations or Emergency Reserves. A target balance of \$3.5 M has been established by the Board. Maintaining the target balance for the Capital Reserve is recommended after meeting the minimum balances for the Operations and Emergency Reserves.

3.3.4 Rate Stabilization Reserve Fund

In late 2015, the Board established a rate stabilization fund with a target of \$3.0 M. The fund is currently fully funded. An adequate rate stabilization reserve will allow the District a margin of safety for the uncertainty of SVCW capital costs. In 2017, the Board increased the target to \$8 M to reflect an updated capital program by SVCW. The revenue requirement projections include an additional \$2.6 M in FY 2017-18 which has been transferred to the rate stabilization reserve fund. Additionally, transfers will be made in subsequent years until the Fund has a balance of \$8 M. These funds are being set aside for future use in buying down SVCW debt.

3.3.5 Recycled Water Project Reserve Fund

In late 2016, the Board established an \$8M reserve fund for future capital expenditures to help reduce potable water use by constructing a satellite recycled water treatment facility at the SHGCC to use recycled water to irrigate the golf course and also to serve water to the Stanford Linear Accelerator Center (SLAC) for irrigation and industrial uses such as for cooling towers. These funds have been set aside to fund design and construction costs that will be incurred prior to receiving funding from the State Water Resources Control Board.

3.3.6 PERS Retirement Liability Reserve Fund

In February 2018, the Board established a reserve fund to help meet the District's net pension liability and deferred outflows/inflows of resources related to pensions and pension expenses. The PERS Retirement Liability Fund will be used to smooth out the annual liability. \$1 million will be added to the fund in FY 2017-18.

3.4 SVCW EXPENSES

SVCW's treatment charge is 49% of the District's total revenue requirement, and is the District's single largest expense. The District's charge is allocated in proportion to the number of its EDUs compared with the other SVCW member agencies. SVCW's cost has recently increased significantly to fund the debt service on the series of bonds that have been issued to fund the rehabilitation of its interceptors, pump stations, and wastewater treatment plant.

3.5 TOTAL REVENUE REQUIREMENTS

The foregoing modeling assumptions lead to the projected revenue requirements shown in Figure 3-4 and Figure 3-5. Figure 3-3 shows that:

- There will be inflationary increases in the District's own O&M expenses.

3. Revenue Requirement Projections

- The District’s funding need for capital improvements will be higher initially, but will remain fairly constant in the out years.
- The projected SVCW O&M expenses increase gradually; although current estimates may not reflect future O&M after SVCW completes its capital improvement program.
- SVCW’s capital costs increase significantly as SVCW issues bonds to construct its capital improvement program.

Unlike the District’s local costs, SVCW costs are largely beyond the District’s control. Figure 3-5 contains the same data as Figure 3-4 in tabular form.

Figure 3-4. Projected Revenue Requirements (graph)

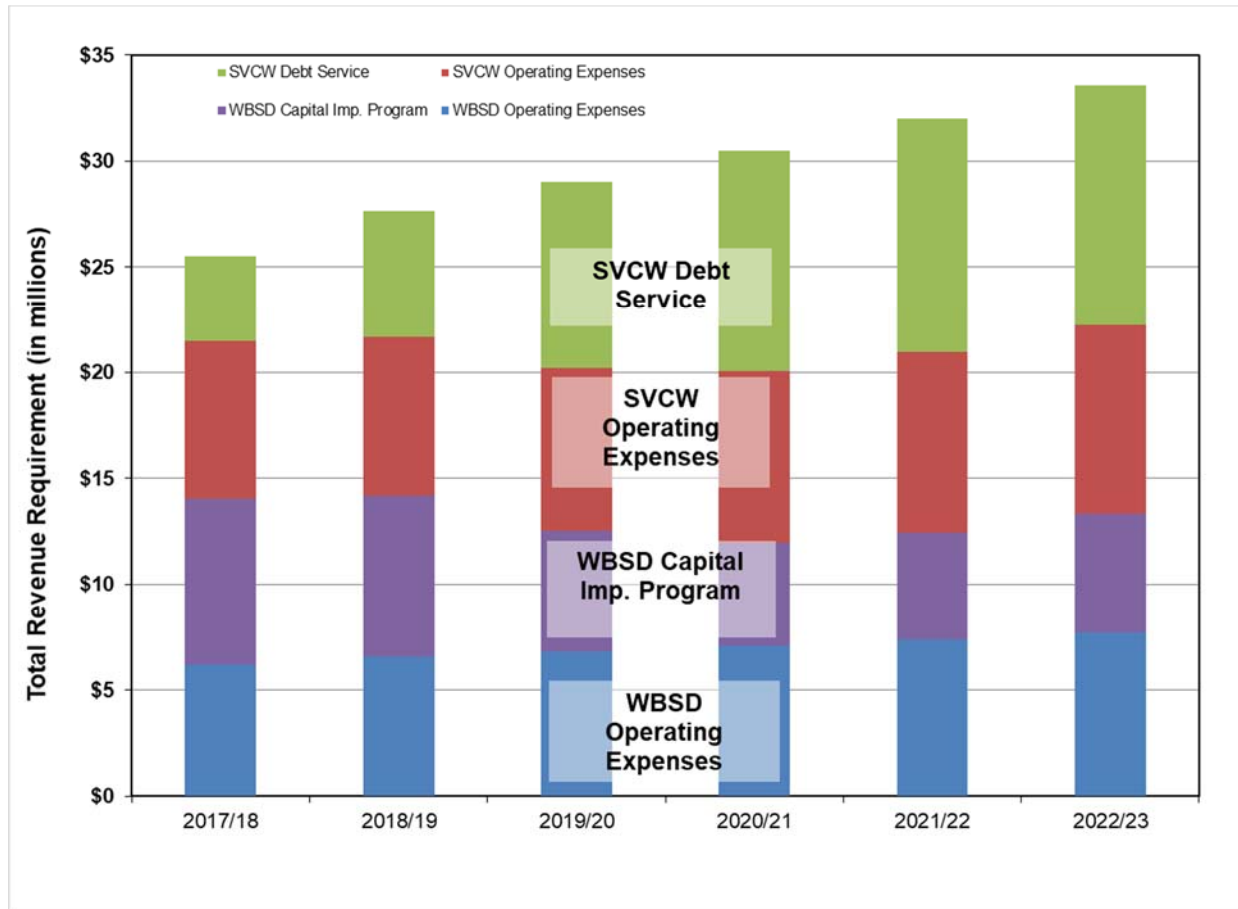


Figure 3-5. Projected Revenue Requirements

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
SVCW Debt Service	\$4,003,715	\$5,973,712	\$8,801,294	\$10,385,332	\$11,009,175	\$11,362,668
SVCW Operating Expenses	\$7,465,000	\$7,478,360	\$7,694,341	\$8,107,776	\$8,541,376	\$8,883,031
WBSD Capital Imp. Program	\$7,845,899	\$7,632,761	\$5,732,709	\$4,874,976	\$5,090,824	\$5,664,924
WBSD Operating Expenses	<u>\$6,179,710</u>	<u>\$6,547,145</u>	<u>\$6,785,233</u>	<u>\$7,096,172</u>	<u>\$7,346,094</u>	<u>\$7,676,219</u>
Total Projected Revenue Req't.	\$25,494,324	\$27,631,979	\$29,013,577	\$30,464,256	\$31,987,469	\$33,586,843

SVCW's share of the projected revenue requirement (expenses) is greatest in the years in which they plan on issuing bonds or receiving loans for its capital improvement program (FY 2018-19 and FY 2020-21). The District's share of the revenue requirement increases most in FY 2017-18 when there is an increase in capital improvement program funding compared to the previous year.

3.6 REVENUE INCREASES

The District's revenue requirements increase over the next five years. Current rates cannot support the projected revenue requirements shown in Figure 3-5. The increases in revenue from rates that will be needed to fund the increasing revenue requirements are shown in Figure 3-6.

Figure 3-6. Projected Rate Revenue Increases

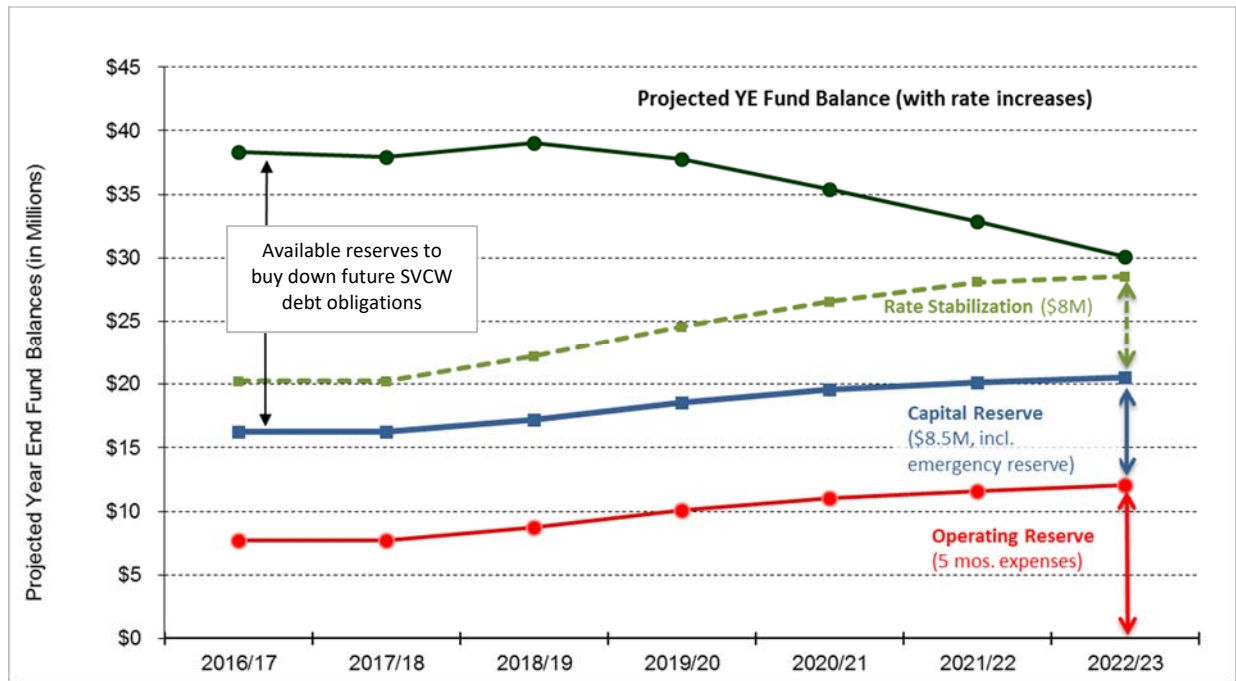
Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	\$26,316,170	
FY 2018-19	\$27,631,979	5.0%
FY 2019-20	\$29,013,577	5.0%
FY 2020-21	\$30,464,256	5.0%
FY 2021-22	\$31,987,469	5.0%
FY 2022-23	\$33,586,843	5.0%

3.7 FUND BALANCE

Figure 3-7 shows the projected annual fund balances with the rate revenue increases recommended in Figure 3-6 (solid green line) and without the rate increases (dashed green line). Although the projections show straight lines between years, the fund balance will be drawn down substantially during each year. In other words, the reserves are actively drawn on at all times during the year but only periodically added to when payments are received from the County. The reserves are not simply accumulated without being used.

The recommended revenue increases will maintain a fund balance above the target during the five-year planning period.

Figure 3-7. Fund Balance With and Without Increased Rate Revenue



3.7.1 Minimum Fund Balance

The minimum balance (red line) is the balance that is required to meet the District’s operating expenses during the year. The balance is large because the District bills annually on the tax rolls and receives reimbursement from the County twice each year. As a result, there are several months over which the District must rely heavily on its operating reserve to meet its monthly cash flow requirements. Because of the lag between payments from the County, the minimum Operations Reserve balance is set equal to five months of SVCW and District operating expenses.

3.7.2 Target Fund Balance

The target balance is the sum of the minimum balance for operations (red line) plus an allowance for capital projects (\$3.5 M), emergency capital reserves (\$5.0 M), and rate stabilization reserves (increasing to \$8.0 M by FY 2021-22). The capital allowance provides working capital to maintain sufficient funds in order to pay contractors so that work can proceed without delay. Emergency reserves help manage risks associated with sudden asset failures caused by emergencies such as natural disasters or human error. Emergency reserves are a form of capital reserve that can provide a measure of self-insurance so that immediate funding is available for disaster recovery until loans can be arranged.

In addition, the District has established a rate stabilization reserve to help manage the risk of unexpected costs at the SVCW treatment plant, which is outside the District’s control.

4. COST-OF-SERVICE ANALYSIS

A COS analysis is a rate-making technique that is used to derive reasonable rates. Reasonable rates are defined by the courts as not being capricious, arbitrary, or discriminatory. Rates are not capricious if there is a clear rationale supporting the analysis. Rates are not arbitrary if there is a sound basis for choosing among alternatives. Rates are not discriminatory if they allocate costs proportionately to customers.

The District's current rates determine how much of the total revenue requirement is paid by each customer class (i.e., single-family residents, multi-family residents, commercial office buildings, restaurants, bakeries, industrial accounts, etc.). A COS analysis determines how much each class should pay based on its respective share of flow and wastewater strength (i.e., biochemical oxygen demand and total suspended solids, the standard measures of wastewater strength).

A cost of service analysis should be conducted periodically to account for any material changes in the loadings from each class.

4.1 ALLOCATION OF COSTS TO FUNCTIONS

The COS analysis is a process by which expenses (i.e., the District's FY 2017-18 revenue requirement) are allocated to the four functions that represent the services the District provides to customers. Three of the functions are related to the "loading" on the collection system produced by the volume and strength of wastewater; the fourth function is related to customer accounts.

The \$27.4 M revenue requirement for FY 2018-19 (from Figure 3-5) is allocated to functional categories that represent the functions performed by the District's facilities: customer accounts (i.e., customer service activities, which includes billing), flow, biochemical oxygen demand (BOD), and total suspended solids (TSS).

Figure 3-6 shows the allocation factors that were applied to each line item of the District's direct expenses related to the maintenance, replacement, and repair of the District's sewer lines, as well as costs related to treatment at SVCW's treatment plant. The total allocations for each of the four functional categories are summed up at the bottom of Figure 3-6. These amounts indicate how much of the District's revenue requirements are associated with each of the four functions.

Figure 4-1. Revenue Requirement Functional Cost Allocation

	FY 2018-19		Allocation Factors					Allocated Costs				
	Rev. Req.	Alloc. Type	Accounts	Flow	BOD	TSS	Total	Accounts	Flow	BOD	TSS	Total
SVCW Treatment Costs												
Operating Expense	\$ 5,645,426	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 1,496,038	\$ 1,891,218	\$ 2,258,170	\$ 5,645,426
Safety	\$ 105,794	1	0%	100.0%	0.0%	0.0%	100%	\$ -	\$ 105,794	\$ -	\$ -	\$ 105,794
Administrative Services	\$ 995,519	1	0%	100.0%	0.0%	0.0%	100%	\$ -	\$ 995,519	\$ -	\$ -	\$ 995,519
Existing Bonds	\$ 3,245,104	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 859,953	\$ 1,087,110	\$ 1,298,042	\$ 3,245,104
Existing SRF Loans	\$ 726,843	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 192,613	\$ 243,492	\$ 290,737	\$ 726,843
New Bonds/SRF Loans	\$ 2,001,765	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 530,468	\$ 670,591	\$ 800,706	\$ 2,001,765
Revenue-Funded Capital	\$ 423,245	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 112,160	\$ 141,787	\$ 169,298	\$ 423,245
New Cash Reserves (SRF / CIP)	\$ 308,377	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 81,720	\$ 103,306	\$ 123,351	\$ 308,377
Subtotal SVCW Treatment Costs	\$ 13,452,072							\$ -	\$ 4,374,264	\$ 4,137,505	\$ 4,940,304	\$ 13,452,072
District Operating Expenses												
Salaries and Benefits	\$ 5,067,449	3	90%	5%	2.5%	2.5%	100%	\$ 4,560,704	\$ 253,372	\$ 126,686	\$ 126,686	\$ 5,067,449
Other Operating Expense	\$ 2,197,920	3	90%	5%	2.5%	2.5%	100%	\$ 1,978,128	\$ 109,896	\$ 54,948	\$ 54,948	\$ 2,197,920
Utilities	\$ 163,800	4	0%	90%	5%	5%	100%	\$ -	\$ 147,420	\$ 8,190	\$ 8,190	\$ 163,800
Gasoline, Oil and Fuel	\$ 72,100	4	0%	90%	5%	5%	100%	\$ -	\$ 64,890	\$ 3,605	\$ 3,605	\$ 72,100
Total General Operating Expenses	\$ 7,501,269							\$ 6,538,832	\$ 575,578	\$ 193,429	\$ 193,429	\$ 7,501,269
				87.2%	7.7%	2.6%	2.6%					100.0%
Capital Projects and Equipment												
Vehicle & Equipment Replacement	\$ 278,100	3	90%	5%	2.5%	2.5%	100%	\$ 250,290	\$ 13,905	\$ 6,953	\$ 6,953	\$ 278,100
Transfers to Capital Projects Fund	\$ 7,575,899	4	0%	90%	5%	5%	100%	\$ -	\$ 6,818,310	\$ 378,795	\$ 378,795	\$ 7,575,899
Total Capital Expenses	\$ 7,853,999							\$ 250,290	\$ 6,832,215	\$ 385,747	\$ 385,747	\$ 7,853,999
Subtotal - District Expenses	\$ 15,355,269							\$ 6,789,122	\$ 7,407,793	\$ 579,177	\$ 579,177	\$ 15,355,269
				44.2%	48.2%	3.8%	3.8%					100.0%
Total Direct Expenses	\$ 28,807,341							\$ 6,789,122	\$ 11,782,057	\$ 4,716,681	\$ 5,519,481	\$ 28,807,341
				23.6%	40.9%	16.4%	19.2%					100.0%
Non-Operating Expenses/(Revenue)												
Non-Operating Expense	\$ 26,130	4	24%	41%	16%	19%	100%	\$ 6,158	\$ 10,687	\$ 4,278	\$ 5,007	\$ 26,130
Transfers to Operating (General) Fund	\$ (221,238)	4	24%	41%	16%	19%	100%	\$ (52,140)	\$ (90,485)	\$ (36,224)	\$ (42,389)	\$ (221,238)
Flow Eq. Cost Sharing	\$ (324,642)	4	24%	41%	16%	19%	100%	\$ (76,509)	\$ (132,777)	\$ (53,154)	\$ (62,201)	\$ (324,642)
Permit & Inspection Fees	\$ (101,000)	4	24%	41%	16%	19%	100%	\$ (23,803)	\$ (41,308)	\$ (16,537)	\$ (19,352)	\$ (101,000)
Other Operating Revenue	\$ (431,018)	4	24%	41%	16%	19%	100%	\$ (101,579)	\$ (176,284)	\$ (70,571)	\$ (82,583)	\$ (431,018)
Other Non-Operating Income	\$ (123,595)	4	24%	41%	16%	19%	100%	\$ (29,128)	\$ (50,550)	\$ (20,236)	\$ (23,681)	\$ (123,595)
Total Composite Expenses	\$ (1,175,362)							\$ (277,002)	\$ (480,717)	\$ (192,444)	\$ (225,199)	\$ (1,175,362)
				23.6%	40.9%	16.4%	19.2%					100.0%
Total Direct and Composite Expenses (Fig. 3-5)	\$ 27,631,979							\$ 6,512,121	\$ 11,301,340	\$ 4,524,237	\$ 5,294,281	\$ 27,631,979

Allocation Types:

- 1 Treatment Plant Allocators (Page 14, SVCW Long Range Financial Plan, January 2017)
- 2 Collection System O&M - Direct attribution with HF&H estimate of flow, BOD, and TSS
- 3 Customer Account Allocations - Direct attribution
- 4 Composite Expense Allocation: Composite of 1, 2, 3
- 5 STEP revenue - Direct attribution to accounts

4.2 UNITS OF SERVICE

The units of service provided by the District to its customers are the sum of the services provided to each of the District’s customer classes.

Estimates of customer accounts, flow, BOD, and TSS associated with each customer class are summarized in Figure 4-2.

Figure 4-2. Summary of Customer Class Units of Service

Customer Class	Mass Balance					
	Accounts/ Dwelling Units	Flow CCF/yr	BOD mg/l	TSS mg/l	BOD lbs/yr	TSS lbs/yr
Residential						
SFR	14,062	958,527	300	400	1,797,232	2,396,309
SFR w/ STEP	68	4,635	300	400	8,691	11,588
MFR	5,323	362,839	300	400	680,320	907,094
Subtotal - Residential	19,453	1,326,002			2,486,243	3,314,991
Non-Residential						
Commercial						
Retail/Commercial	433	183,808	150	150	172,319	172,319
Institution/Public Schools	28	34,928	130	100	28,378	21,830
Restaurants/Bakeries	56	63,795	1000	600	398,714	239,228
Hospitals	9	40,263	250	100	62,911	25,164
Supermarkets with Grinders	2	4,330	800	800	21,647	21,647
Hotels with Dining Facilities	3	21,906	500	600	68,456	82,147
Measured Industrial Customers						
USGS	1	876	246	188	1,347	1,029
USGS	1	222	112	116	155	161
Valley Presbyterian	1	138	1600	280	1,380	241
SRI	1	33,742	278	78	58,626	16,449
Circuit Board Manufacturer	1	169	95	120	100	127
Sanford Metal Processing	1	82	11	45	6	23
SILTEC	1	1,510	122	483	1,151	4,558
SILTEC	1	65	62	23	25	9
Tyco	1	83,199	815	230	423,791	119,597
USGS	1	902	470	683	2,650	3,850
SLAC	1	15,069	283	430	26,652	40,496
Village Square	1	515	1600	280	5,150	901
Subtotal - Non-Residential	543	485,517			1,273,460	749,780
Total (excluding I&I)	19,996	1,811,518			3,759,703	4,064,771
Inflow & Infiltration (I & I)	-	91,424	115	305	65,497	173,974
Total at SVCW Treatment Plant	19,996	1,902,943			3,825,200	4,238,745

The number of customer accounts/dwelling units is based on the District's most-recent tax roll data.

The flow data for non-residential customers were based on actual bill data from 2016. Residential flow was determined by subtracting the actual non-residential measured flow and estimated inflow & infiltration (I&I) flow¹ rate of 4.8% from the total District flow at SVCW's treatment plant, as reported by SVCW for 2016. The resulting total residential flow estimate equates to an average flow per dwelling unit of 140 gallons per day, a 10 gpd increase from last year which is reasonable as customers increased water consumption after the recent drought.

Values for BOD and TSS concentrations were assumed for each customer class. The strength concentrations (in milligrams per liter (MGL)) for industrial customers were based on actual

¹ I&I is runoff that has entered the collection system through manholes and cracked pipelines.

measurements for each customer taken in 2016, and billed accordingly. Strength concentrations for commercial customers were based on the State's guidelines². Strength concentrations for residential customers were based on the high-end of recent sampling done by the District over the past three years.

The product of these concentrations multiplied times each class' estimated flow yielded the class' pounds of BOD and TSS. As a check, the total loading for all classes was compared with the concentration of BOD and TSS for the District based on SVCW data. Adjustments were made to the concentrations of I&I to achieve a mass balance in Figure 4-2.

4.3 UNIT COSTS OF SERVICE

The units of service for customer accounts, flow, BOD, and TSS for each customer class in Figure 4-2 are combined with the functionalized costs in Figure 4-1 to determine the unit costs in Figure 4-3. These unit costs are the costs of providing the units of service to all customer classes without exception, thereby ensuring that all customer classes pay their share in proportion to their respective units of service.

Figure 4-3. Unit Costs of Service

		Accounts	Flow	BOD	TSS	Total
Allocated Functional Costs (from Fig. 4-1)	a	\$6,512,121	\$11,301,340	\$4,524,237	\$5,294,281	\$27,631,979
Units of Service, excl. I&I (from Fig. 4-2)	b	19,996	1,811,518	3,759,703	4,064,771	
	Type	accts	CCF	Pounds	Pounds	
Unit Costs	a ÷ b	\$325.67	\$6.24	\$1.20	\$1.30	
		\$/acct	\$/CCF	\$/lb	\$/lb	

4.4 REVENUE REQUIREMENT BY CUSTOMER CLASS

In COS analyses, all customer classes are treated equally through the application of the same unit costs to all customers, which is the fundamental purpose of COS analysis. In this way, the COS analysis proportionally distributes the revenue requirement to each customer class without discrimination, after which rates can be designed to generate the revenue required to provide the necessary level of service to each class. Figure 4-4 shows the result of applying the unit costs from Figure 4-3 to each customer class' units of service in Figure 4-2 to distribute the respective shares of the revenue requirement.

² State Water Resources Control Board. *Revenue Program Guidelines*. Appendix G.

Figure 4-4. Revenue Requirement Allocations

Customer Class	FY 2017-18 Revenue Requirement Allocation				Total
	Accounts	Flow	BOD	TSS	
Residential	\$6,335,281	\$8,272,396	\$2,991,820	\$4,317,708	\$21,917,205
Non-Residential					
Retail/Commercial	\$141,016	\$1,146,705	\$207,360	\$224,442	\$1,719,523
Institution/Public	\$9,119	\$217,899	\$34,149	\$28,433	\$289,599
Restaurants/Bakeries	\$18,238	\$397,988	\$479,792	\$311,590	\$1,207,609
Supermarkets with Grinders	\$651	\$27,010	\$26,049	\$28,195	\$81,906
Hospitals	\$2,931	\$251,185	\$75,704	\$32,776	\$362,595
Hotels with Dining Facilities	\$977	\$136,663	\$82,376	\$106,995	\$327,011
Industrial	<u>\$3,908</u>	<u>\$851,494</u>	<u>\$626,986</u>	<u>\$244,142</u>	<u>\$1,726,530</u>
Subtotal Non-Residential	\$176,839	\$3,028,944	\$1,532,417	\$976,573	\$5,714,774
Grand Total	\$6,512,121	\$11,301,340	\$4,524,237	\$5,294,281	\$27,631,979

The revenue requirement allocations are compared with the current revenue at current rates in Figure 4-5. A difference greater than the average increase of 4.5% indicates whether a class is paying more or less than its share of the cost of service.

Figure 4-5. Current Revenue Compared with Cost-of-Service (by Customer Class)

Customer Class	Revenue at	FY 2018-19	Difference	
	Current	Cost-of-Service	\$	%
Residential	\$20,873,472	\$21,917,205	\$1,043,733	5.0%
Non-Residential				
Commercial				
Retail/Commercial	\$1,872,352	\$1,719,523	(\$152,829)	-8.2%
Institution/Public	\$326,761	\$289,599	(\$37,162)	-11.4%
Restaurants/Bakeries	\$934,169	\$1,207,609	\$273,440	29.3%
Supermarkets with Grinders	\$63,514	\$81,906	\$18,392	29.0%
Hospitals	\$391,356	\$362,595	(\$28,761)	-7.3%
Hotels with Dining Facilities	\$278,863	\$327,011	\$48,148	17.3%
Industrial	<u>\$1,575,683</u>	<u>\$1,726,530</u>	<u>\$150,847</u>	<u>9.6%</u>
Subtotal Non-Residential	\$5,442,698	\$5,714,774	\$272,075	5.0%
Grand Total	\$26,316,170	\$27,631,979	\$1,315,808	5.0%

These variances indicate the rates for commercial and industrial customers with higher strength wastewater (i.e., customers with on-site food preparation, such as restaurants, bakeries, supermarkets, etc.) have not kept pace with the increasing costs of treating high strength wastewater.

5. RATE DESIGN

5.1 RATE DESIGN

After each class' share of the revenue requirement is determined in the COS analysis, rates are designed to ensure that each class' rates generate its respective share of the cost of service.

Figure 5-1 presents the calculation of the sewer service charges based on the results of the cost of service analysis presented above.

5.1.1. Calculation of FY 2018-19 Residential Sewer Service Charges

Figure 5-1 shows how the FY 2018-19 rate for residential customers, which are billed a fixed annual service charge per dwelling unit, is calculated. The service charge is the result of applying the unit costs from Figure 4-3 to the residential units of service in Figure 4-2. The FY 2018-19 residential sewer service charge is increasing 5.1%, from \$1,072 to \$1,127 per year.

Figure 5-1. FY 2017-18 Calculation of Residential Sewer Service Charges

Residential - Charge per Account					
	Account	Flow	BOD	TSS	Total
Residential - Charge per Account					(per acct)
Units	19,453 accounts	1,326,002 CCF	2,486,243 lbs	3,314,991 lbs	
Accounts	19,453 accounts	19,453 accounts	19,453 accounts	19,453 accounts	
Units per account	1	68.16 CCF/account	127.81 lbs/account	170.41 lbs/account	
Unit Costs (\$ per Unit)	\$325.67 per account	\$6.24 per CCF	\$1.20 per lb	\$1.30 per lb	
Total Residential - Charge per Account	\$325.67 per account	\$425.25 per account	\$153.80 per account	\$221.96 per account	\$1,126

Note: Arithmetic errors may exist due to rounding

On-site Wastewater Disposal Zone - STEP/Grinder Charges

In addition to the services provided by the District, which are covered by the annual sewer service charge calculated in Figure 5-1, there are 68 single-family residential customers located in the On-Site Wastewater Disposal Zone who require additional services not provided to other residential customers. The customers within the On-Site Wastewater Disposal Zone either have STEP or Grinder Pumping systems, which require additional maintenance. Currently, the District charges an additional \$292 annually for the services it provides to these customers to service and replace their pumps and appurtenances; it has been the District's practice to charge the same amount for either a STEP or grinder pump.

Before FY 2013-14, the District had not updated the STEP/grinder charge for several years, at which time cost analyses were prepared and verified by HF&H which indicated that the District's then-current cost to maintain STEP and grinder pumping systems is greater than the District's charge. Going forward, the Board elected to increase the STEP/Grinder charges by the same percentage as the residential sewer service charges in order to continue to recover the majority of the costs associated with providing this service.

Accordingly, the FY 2018-19 STEP/Grinder charge is increasing 5.0%, from \$292 annually to \$307 annually, a \$15 increase.

5.1.2. Calculation of FY 2018-19 Non-Residential Sewer Service Charges

Commercial customers are billed per CCF based on estimated wastewater discharge using metered potable water use as a proxy; commercial wastewater discharge is not metered and their flows are not sampled for BOD and TSS concentrations. Commercial customers are classified into customer classes which reflect the class' BOD and TSS concentrations expected from such activities (i.e., retail, restaurants, hospitals, etc.). The BOD and TSS concentrations for the District's commercial customer classes are based on State guidelines³.

Industrial customers are billed based on BOD and TSS concentration sampling data for each customer. With this data, it is possible to bill each industrial customer using the COS per-unit costs for flow, COD and TSS from Figure 4-3, instead of developing aggregate rates per CCF, as is done for the commercial customers.

In the Cost-of-Service study for FY 2017-18, the analysis resulted in a significant increase for non-residential customer classes with high strength characteristics (e.g., 59.9% increase to the restaurant/bakery customer class) to cover the cost of service. The results were presented to the Board on February 8, 2017, and recognizing that the proposed fees represented a large increase to some customer classes, the Board recommended phasing in the proposed non-residential increases over three years. This is the second year of the three-year phase-in.

Figure 5-2 calculates the adjusted FY 2017-18 unit costs, which reflect the three-year phase-in approach.

Figure 5-2. Calculation of Transitional FY 2018-19 Non-Residential Unit Costs

	Accounts	Flow	BOD	TSS	Total
Non-Residential COS (1)	\$176,839	\$3,028,944	\$1,532,417	\$976,573	\$5,714,774
Re-allocate Accounts Component	(\$176,839)	\$176,839			\$0
Adjusted COS	\$0	\$3,205,783	\$1,532,417	\$976,573	\$5,714,774
Revenue at Current Rates (2)		\$4,069,672	\$751,341	\$502,353	\$5,323,366
Variance (COS vs. Current)		(\$863,889)	\$781,076	\$474,221	\$391,408
1/2 of Variance		(\$431,944)	\$390,538	\$237,110	\$195,704
FY 2018-19 Phase-in Calculation					
Revenue at Current Rates (from above)		\$4,069,672	\$751,341	\$502,353	\$5,323,366
Transitional Adjustment (3)		(\$236,240)	\$390,538	\$237,110	\$391,408
Adjusted Functional COS - 2nd Year of Phase-in		\$3,833,432	\$1,141,879	\$739,463	\$5,714,774
Non-Residential Units of Service		485,517	1,273,460	749,780	
		CCF	Pounds	Pounds	
Adjusted Unit Costs (2nd Year of Phase-in)		\$7.90	\$0.90	\$0.99	
		\$/CCF	\$/lb	\$/lb	

(1) Figure 4-4

(2) Non-residential Units of Service (Figure 4-2) times current Flow, BOD, and TSS per unit rates.

(3) BOD and TSS transitional adjustment reflects 1/2 of the current variance. The Flow adjustment reflects the amount necessary to generate the required 5.0% increase in revenue from the non-residential customer class determined by the COS analysis.

³ State Water Resources Control Board. *Revenue Program Guidelines*. Appendix G.

Figure 5-3 calculates the commercial charges (per CCF), which are the result of applying the adjusted unit costs from Figure 5-2 to the commercial units of service in Figure 4-2.

Figure 5-3. FY 2018-19 Calculation of Commercial Charges per CCF

Commercial - Charge per CCF						
	Account	Flow	BOD	TSS	Total	
					(per CCF)	
Retail/Commercial						
Units	433 accounts	183,808 CCF	172,319 lbs	172,319 lbs		
CCF	183,808 CCF	183,808 CCF	183,808 CCF	183,808 CCF		
Units/CCF	0.002356 accounts/CCF	1	0.9374962 lbs/CCF	0.9374962 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.90 per lb		
Total Retail/Commercial	\$0.00 per CCF	\$7.90 per CCF	\$0.84 per CCF	\$0.92 per CCF	\$9.66	
Institution/Public						
Units	28 accounts	34,928 CCF	28,378 lbs	21,830 lbs		
CCF	34,928 CCF	34,928 CCF	34,928 CCF	34,928 CCF		
Units/CCF	0.000802 accounts/CCF	1	0.8124967 lbs/CCF	0.6249974 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.99 per lb		
Total Institution/Public	\$0.00 per CCF	\$7.90 per CCF	\$0.73 per CCF	\$0.62 per CCF	\$9.24	
Restaurants/Bakeries						
Units	56 accounts	63,795 CCF	398,714 lbs	239,228 lbs		
CCF	63,795 CCF	63,795 CCF	63,795 CCF	63,795 CCF		
Units/CCF	0.000878 accounts/CCF	1	6.2499745 lbs/CCF	3.7499847 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.99 per lb		
Total Restaurants/Bakeries	\$0.00 per CCF	\$7.90 per CCF	\$5.60 per CCF	\$3.70 per CCF	\$17.20	
Supermarkets with Grinders						
Units	2 accounts	4,330 CCF	21,647 lbs	21,647 lbs		
CCF	4,330 CCF	4,330 CCF	4,330 CCF	4,330 CCF		
Units/CCF	0.000462 accounts/CCF	1	4.9999796 lbs/CCF	4.9999796 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.99 per lb		
Total Supermarkets with Grinders	\$0.00 per CCF	\$7.90 per CCF	\$4.48 per CCF	\$4.93 per CCF	\$17.31	
Hospitals						
Units	9 accounts	40,263 CCF	62,911 lbs	25,164 lbs		
CCF	40,263 CCF	40,263 CCF	40,263 CCF	40,263 CCF		
Units/CCF	0.000224 accounts/CCF	1	1.5624936 lbs/CCF	0.6249974 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.99 per lb		
Total Hospitals	\$0.00 per CCF	\$7.90 per CCF	\$1.40 per CCF	\$0.62 per CCF	\$9.91	
Hotels with Dining Facilities						
Units	3 accounts	21,906 CCF	68,456 lbs	82,147 lbs		
Kgal	21,906 CCF	21,906 CCF	21,906 CCF	21,906 CCF		
Units/Kgal	0.000137 accounts/CCF	1	3.1249872 lbs/CCF	3.7499847 lbs/CCF		
Unit Costs (\$ per Unit)	\$0.00 per account	\$7.90 per CCF	\$0.90 per lb	\$0.99 per lb		
Total Hotels with Dining Facilities	\$0.00 per CCF	\$7.90 per CCF	\$2.80 per CCF	\$3.70 per CCF	\$14.40	

Figure 5-4 summarizes the current and proposed commercial rates per CCF (calculated in Figure 5-3) and the industrial customer unit costs (calculated in Figure 5-2). As discussed in the Section 4. Cost-of-Service Analysis, recent rate increases for commercial and industrial customers with higher strength wastewater (i.e., customers with on-site food preparation, such as restaurants, bakeries, supermarkets, etc.) have not kept pace with the increasing costs of treating high strength wastewater. Accordingly, the high strength customer rate increases are increasing something greater than the average non-residential increase of 5%, while regular strength and low strength customers are seeing a rate increase of something less than the 5% average. The District's lowest strength customer class (Institution/Public, which includes schools) is seeing a rate reduction.

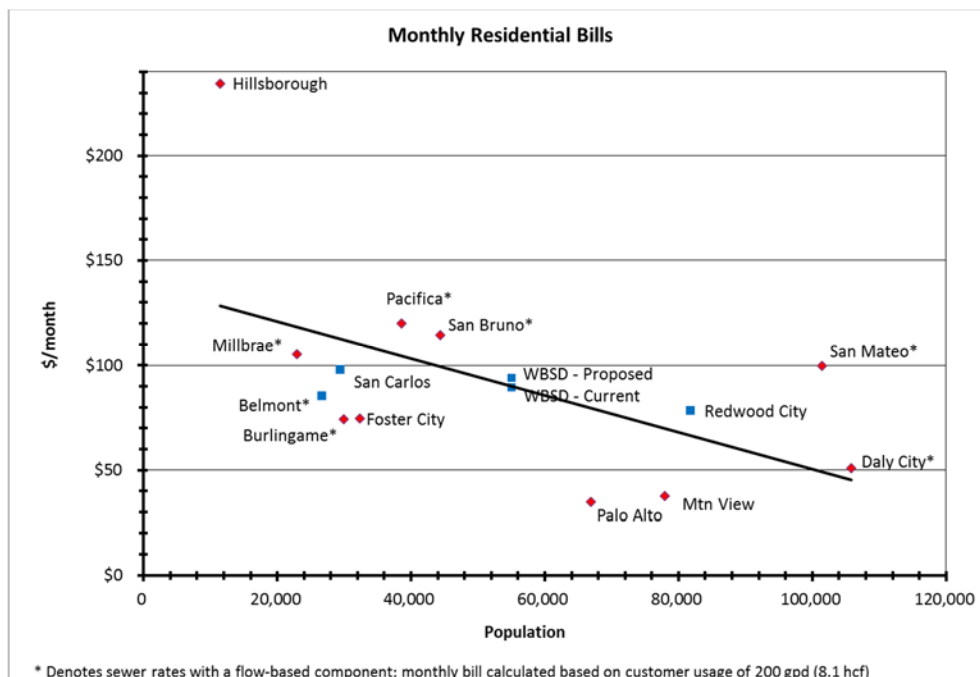
Figure 5-4. Current and FY 2018-19 Commercial and Industrial Rates

	Current FY 2017-18	Proposed FY 2018-19
Commercial (charge per CCF)		
Retail/Commercial	\$9.56	\$9.66
Institution/Public	\$9.28	\$9.24
Restaurants/Bakeries	\$14.56	\$17.20
Supermarkets with Grinders	\$14.67	\$17.31
Hospitals	\$9.72	\$9.91
Hotels with Dining Facilities	\$12.73	\$14.40
Industrial (measured)		
Flow Rate Charge per CCF	\$8.38	\$7.90
BOD Rate Charge per pound	\$0.59	\$0.90
TSS Rate Charge per pound	\$0.67	\$0.99

5.2 COMPARISON OF RESIDENTIAL SEWER CHARGES

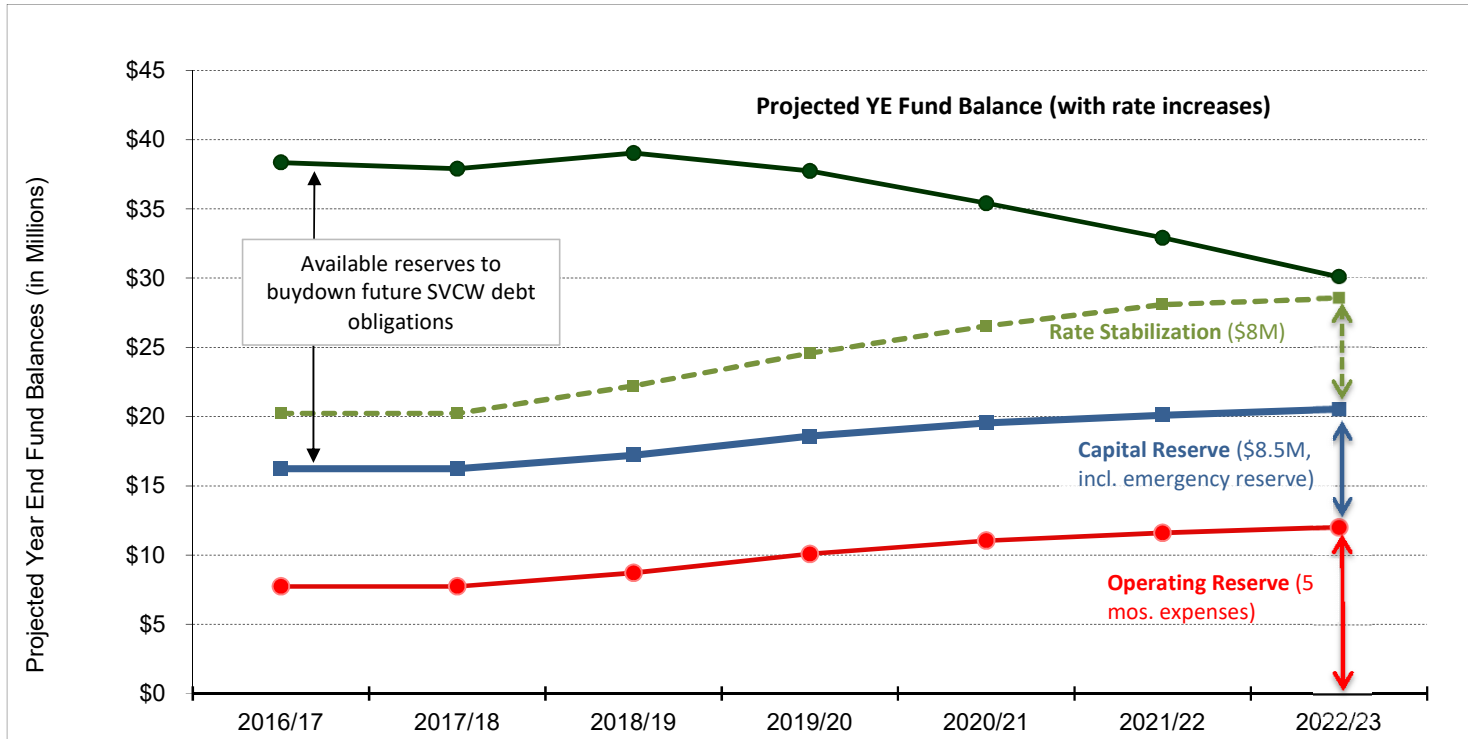
Based on available sources, Figure 5-5 shows the recent charges for sewer service among various San Mateo and Santa Clara County agencies. Larger agencies tend to have lower rates because they can take advantage of economies of scale and have a larger base of customers over which to distribute fixed costs. Figure 5-5 indicates that the District’s current sewer rates track the trendline along with the other SVCW member agencies (identified with blue squares in Figure 5-5). It should be noted that the other SVCW member agencies also face similar additional costs. It is expected that these agencies will be required to increase their rates substantially to cover their share of SVCW costs. Even with the projected rate increases, we would not expect the District’s relative position among its neighbors to change significantly.

Figure 5-5. Comparison of Monthly Residential Bills



APPENDIX A. SEWER RATE MODEL

	A	B	C	D	E	F	G	H	I	J
1	West Bay Sanitary District									
2	Sewer Rate Study									
3	Table 1A. Summary									
4										
5		Adopted	Adopted	Adopted						
6	<i>Fiscal Year:</i>	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
7	Overall Revenue Increases	9.0%	6.0%	4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	To Tables 3, 4
8	<i>Cumulative Increase</i>				<i>5.0%</i>	<i>10.3%</i>	<i>15.8%</i>	<i>21.6%</i>	<i>27.6%</i>	From Table 3
9										
10	Residential Bill (annual)	\$974	\$1,031	\$1,072	\$1,126	\$1,182	\$1,241	\$1,303	\$1,368	
11	\$ Increase		\$57	\$41	\$54	\$56	\$59	\$62	\$65	
12										
13										
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	A	B	C	D	E	F	G	H	I	J	K
1	West Bay Sanitary District										
2	Sewer Rate Study										
3	Table 1B. General										
4											
5	List of Model Worksheets										
6	Table 1A. Summary										
7	Table 1B. General										
8	Table 2. Revenue Requirement										
9	Table 3. Revenue Increases										
10	Table 4. Reserves										
11	Table 5. Master Plan Capital Projects										
12	Table 6. WBSD Debt Service Schedule										
13											
14											
15	Assumptions		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes		
17	(1)	General Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2		
18	(2)	Utilities	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%	To Table 2		
19	(3)	Salaries & Benefits	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2		
20	(4)	PERS Unfunded Accrued Liability	Per Budget	71.9%	22.1%	14.1%	15.4%	11.8%	To Table 2		
21	(5)	SVCW O&M Increase %	Per Budget	3.7%	3.7%	3.9%	4.0%	4.0%	To Table 2		
22	(6)	Interest on Earnings		0.25%	0.25%	0.25%	0.25%	0.25%	To Table 4		
23	(7)	Non-rate Revenues	Per Budget	1.0%	1.0%	1.0%	1.0%	1.0%	To Table 2		
24	(8)	% Increase in Revenue due to Growth	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%	To Tables 2,3		
25	(9)	Los Altos Hills, Woodside Revenue Change	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2		
26	(10)	Construction Cost Inflation	Per Budget	10.0%	10.0%	10.0%	10.0%	10.0%	To Table 5		
27											
28	Target Fund Balances										
29	<u>Operating Fund</u>										
30	Purpose		For O&M cash flow during the year								
31	Minimum balance		Cannot go negative								
32	Target balance		Five months of operating expenses								
33			(to accommodate biannual receipt of fees from County tax roll)								
34	<u>Capital Asset Fund</u>										
35	Purpose		To be used for replacement of Equipment/ Facilities								
36	Minimum balance		Cannot go negative								
37	Target balance		\$3,500,000								
38											
39	<u>Emergency Capital Fund</u>										
40	Purpose		To be used for sewer emergencies								
41	Minimum balance		Cannot go negative								
42	Target balance		\$5,000,000								
43											
44	<u>Rate Stabilization Fund</u>										
45	Purpose		Allow a margin of safety for the uncertainty of SVCW capital costs								
46	Minimum balance		Cannot go negative								
47	Target balance		\$4,000,000; increasing \$1,000,000 per year for next four years to \$8.0M								

	A	B	C	D	E	F	G	H	I
1	West Bay Sanitary District								
2	Sewer Rate Study								
3	Table 2. Revenue Requirement								
4									
5		Tbl.	Budgeted	Projected					
6		1B	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
7	SVCW Projected Expenses								
8	Operating Expense		\$6,505,000	\$6,746,738	\$6,994,231	\$7,264,832	\$7,555,425	\$7,857,642	Source: District's Cash Flow Analysis 1-19-18
9	Debt Service								
10	Existing Bonds		\$3,271,950	\$3,245,104	\$3,025,049	\$2,755,980	\$2,760,308	\$2,753,730	
11	Existing SRF Loans		\$731,765	\$726,843	\$726,843	\$726,843	\$726,843	\$726,843	
12	New Bond - 2018 \$35M		\$0	\$1,801,765	\$1,803,358	\$1,802,483	\$1,800,358	\$1,800,358	
13	New Bond - 2019 \$63M (incl. \$13M deferred from 2018)		\$0	\$200,000	\$3,246,044	\$3,246,044	\$3,246,044	\$3,246,044	includes \$200k for LOC-related exp. from deferral
14	New Bond - 2020 \$36M		\$0	\$0	\$0	\$1,853,983	\$1,853,983	\$1,853,983	
15	New Bond - 2021 \$9M		\$0	\$0	\$0	\$0	\$462,949	\$462,949	
16	New Bond - 2022 \$7M		\$0	\$0	\$0	\$0	\$0	\$360,072	
17	New SRF Loans - \$3.5M (conveyance planning)		\$0	\$0	\$0	\$0	\$158,690	\$158,690	
18	Total SVCW Debt Service		\$4,003,715	\$5,973,712	\$8,801,294	\$10,385,332	\$11,009,175	\$11,362,668	
19	Revenue-Funded Capital (PAYGo)		\$415,000	\$423,245	\$431,710	\$440,344	\$449,151	\$467,117	
20	New Cash Reserves (SRF / CIP)		\$545,000	\$308,377	\$268,400	\$402,600	\$536,800	\$558,272	
21		Subtotal, SVCW	\$11,468,715	\$13,452,072	\$16,495,635	\$18,493,108	\$19,550,551	\$20,245,699	
22		<i>Annual Change</i>		17.3%	22.6%	12.1%	5.7%	3.6%	
23									
24	Operating Expenses								
25	Salaries	(3)	\$3,349,962	\$3,450,461	\$3,553,975	\$3,660,594	\$3,770,412	\$3,883,524	
26	Employee Benefits	(3)	\$1,294,085	\$1,332,908	\$1,372,895	\$1,414,082	\$1,456,505	\$1,500,200	
27	OPEB		\$0	\$0	\$0	\$0	\$0	\$0	
28	PERS Unfunded Accrued Liability	(4)	\$165,251	\$284,080	\$347,000	\$396,000	\$457,000	\$511,000	Source: FY2019-23 PERS Valuation Report 6-30-17 pg. 5
29	Director's Fees	(1)	\$37,930	\$39,068	\$40,240	\$41,447	\$42,691	\$43,971	
30	Election Expense		\$0	\$40,000	\$0	\$40,000	\$0	\$40,000	
31	Gasoline, Oil and Fuel	(1)	\$70,000	\$72,100	\$74,263	\$76,491	\$78,786	\$81,149	
32	Insurance	(1)	\$104,850	\$107,996	\$111,235	\$114,572	\$118,010	\$121,550	
33	Memberships	(1)	\$32,850	\$33,836	\$34,851	\$35,896	\$36,973	\$38,082	
34	Office Expense	(1)	\$35,500	\$36,565	\$37,662	\$38,792	\$39,956	\$41,154	
35	Operating Supplies	(1)	\$353,195	\$363,791	\$374,705	\$385,946	\$397,524	\$409,450	
36	Contractual Services	(1)	\$402,000	\$414,060	\$426,482	\$439,276	\$452,455	\$466,028	
37	Professional Services	(1)	\$529,350	\$545,231	\$561,587	\$578,435	\$595,788	\$613,662	
38	Printing and Publications	(1)	\$62,500	\$64,375	\$66,306	\$68,295	\$70,344	\$72,455	
39	Rents and Leases	(1)	\$61,000	\$62,830	\$64,715	\$66,656	\$68,656	\$70,716	
40	Repairs and Maintenance	(1)	\$278,500	\$286,855	\$295,461	\$304,324	\$313,454	\$322,858	
41	Research and Monitoring	(1)	\$33,000	\$33,990	\$35,010	\$36,060	\$37,142	\$38,256	
42	Travel and Meetings	(1)	\$57,500	\$59,225	\$61,002	\$62,832	\$64,717	\$66,658	
43	Utilities	(2)	\$156,000	\$163,800	\$171,990	\$180,590	\$189,619	\$199,100	
44	Other Operating Expense	(1)	\$170,000	\$175,100	\$180,353	\$185,764	\$191,336	\$197,077	
45	Transf. from Solid Waste Fund to cover alloc. exp.		(\$65,000)	(\$65,000)	(\$65,000)	(\$65,000)	(\$65,000)	(\$65,000)	
46		Subtotal, Operating Expenses	\$7,128,473	\$7,501,269	\$7,744,731	\$8,061,052	\$8,316,366	\$8,651,889	
47		<i>Annual Change</i>		5.2%	3.2%	4.1%	3.2%	4.0%	

	A	B	C	D	E	F	G	H	I
1	West Bay Sanitary District								
2	Sewer Rate Study								
3	Table 2. Revenue Requirement								
4									
5		Tbl.	Budgeted	Projected					
6		1B	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
48	Non-Operating Expenditures								
49		(1)	\$6,000	\$6,180	\$6,365	\$6,556	\$6,753	\$6,956	
50			\$19,000	\$19,950	\$20,948	\$21,995	\$23,095	\$24,249	
51			\$25,000	\$26,130	\$27,313	\$28,551	\$29,848	\$31,205	
52				4.5%	4.5%	4.5%	4.5%	4.5%	
53									
54			\$18,622,188	\$20,979,471	\$24,267,679	\$26,582,712	\$27,896,765	\$28,928,794	
55				12.7%	15.7%	9.5%	4.9%	3.7%	
56									
57	Non-Operating Revenues								
58			(\$324,642)	(\$324,642)	(\$324,642)	(\$324,642)	(\$324,642)	(\$324,642)	
59		(7)	(\$100,000)	(\$101,000)	(\$102,010)	(\$103,030)	(\$104,060)	(\$105,101)	
60		(9)	(\$426,750)	(\$431,018)	(\$435,328)	(\$439,681)	(\$444,078)	(\$448,519)	
61		(7)	(\$122,371)	(\$123,595)	(\$124,831)	(\$126,079)	(\$127,340)	(\$128,613)	includes revenue from minimum charge
62			(\$973,763)	(\$980,254)	(\$986,810)	(\$993,432)	(\$1,000,120)	(\$1,006,875)	
63									
64	Other Transfers to/(from)								
65			\$0	(\$221,238)	(\$2,129,634)	(\$2,995,959)	(\$2,788,963)	(\$2,223,980)	From Table 4
66			\$270,000	\$278,100	\$286,443	\$295,036	\$303,887	\$313,004	From 17/18 budget p. 11; To Table 4; 3% annual increase
67			\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	From Table 4
68			\$0	\$0	\$0	\$0	\$0	\$0	From Table 4
69			\$7,845,899	\$7,632,761	\$5,732,709	\$4,874,976	\$5,090,824	\$5,664,924	
70									
71			\$25,494,324	\$27,631,979	\$29,013,577	\$30,464,256	\$31,987,469	\$33,586,843	To Table 3
72				8.4%	5.0%	5.0%	5.0%	5.0%	
73				8.4%	13.8%	19.5%	25.5%	31.7%	
74									
75	Source: West Bay Sanitary District FY 2017/18 Budget								

	A	B	C	D	E	F	G	H
1	West Bay Sanitary District							
2	Sewer Rate Study							
3	Table 3. Revenue Increases							
4								
5								
6		Estimated			Projected			
7		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
8	Rate Revenue @ Current Rates							
9	Current Customer Base	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	FY 2017/18 Revenue per Tax Roll Report
10	Additional Revenue from Growth		0	0	0	0	0	
11	Total Rate Revenue @ Current Rates		\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	To Below
12								
13	Revenue Requirement	(\$25,494,324)	(\$27,631,979)	(\$29,013,577)	(\$30,464,256)	(\$31,987,469)	(\$33,586,843)	From Table 2
14	To/(From) operations before Rate Incr.	\$821,846	(\$1,315,809)	(\$2,697,407)	(\$4,148,086)	(\$5,671,299)	(\$7,270,673)	To Table 4
15								
16								
17	Increase in Rate Revenue		5%	5%	5%	5%	5%	From Table 1B
18	Cumulative Increase in Rate Revenue		5.0%	10.3%	15.8%	21.6%	27.6%	To Table 1A
19	Revenue from Rate Increases							
20	FY 2018-19 (eff. July 1, 2018)		\$1,315,809	\$1,315,809	\$1,315,809	\$1,315,809	\$1,315,809	
21	FY 2019-20 (eff. July 1, 2019)			\$1,381,599	\$1,381,599	\$1,381,599	\$1,381,599	
22	FY 2020-21 (eff. July 1, 2020)				\$1,450,679	\$1,450,679	\$1,450,679	
23	FY 2021-22 (eff. July 1, 2021)					\$1,523,213	\$1,523,213	
24	FY 2022-23 (eff. July 1, 2022)						\$1,599,373	
25	Total Revenue from Rate Increases	\$0	\$1,315,809	\$2,697,407	\$4,148,086	\$5,671,299	\$7,270,673	
26	Total Current Revenue	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	\$26,316,170	From Above
27	Total Revenue	\$26,316,170	\$27,631,979	\$29,013,577	\$30,464,256	\$31,987,469	\$33,586,843	
28	Revenue Requirement	(\$25,494,324)	(\$27,631,979)	(\$29,013,577)	(\$30,464,256)	(\$31,987,469)	(\$33,586,843)	From Above
29	To/(From) operations after Rate Incr.	\$821,846	\$0	\$0	\$0	\$0	\$0	To Table 4

	A	B	C	D	E	F	G	H	I	J	K	
1	West Bay Sanitary District											
2	Sewer Rate Study											
3	Table 4. Reserves											
4												
5			Tbl.	Actual	Budgeted							
6			1B	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes	
7												
8	OPERATING (GENERAL) FUND											
9	Revenue Increases				4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	From Table 1A
10	Beginning Balance				\$7,591,126	\$7,431,504	\$9,734,542	\$12,135,171	\$13,673,309	\$14,219,807		
11	Surplus/Deficit				\$821,846	\$0	\$0	\$0	\$0	\$0	\$0	From Table 3
12												
13	Transfers (To)/From											
14	Revenue Requirement				\$0	(\$221,238)	(\$2,129,634)	(\$2,995,959)	(\$2,788,963)	(\$2,223,980)		To Table 2
15	Capital Asset Fund				\$0	\$2,500,000	\$4,500,000	\$4,500,000	\$3,300,000	\$2,600,000		
16	Recycled Water Project - Reimbursement				\$0	\$0	\$0	\$0	\$0	\$0	\$0	
17	PERS Liability Reserve				(\$1,000,000)	\$0	\$0	\$0	\$0	\$0	\$0	From Below
18	Fund Subtotal				\$7,412,972	\$9,710,266	\$12,104,908	\$13,639,211	\$14,184,346	\$14,595,827		
19	Estimated Interest Earnings (6)				\$18,532	\$24,276	\$30,262	\$34,098	\$35,461	\$36,490		
20	Ending Balance				\$7,591,126	\$7,431,504	\$9,734,542	\$12,135,171	\$13,673,309	\$14,219,807	\$14,632,317	
21	<i>Minimum Balance (5 mo. operations)</i>				<i>\$7,732,162</i>	<i>\$8,714,363</i>	<i>\$10,084,450</i>	<i>\$11,049,047</i>	<i>\$11,596,569</i>	<i>\$12,026,581</i>		
22												
23	CAPITAL ASSET FUND (includes Capital Project Reserve and Vehicle/Equipment Replacement)											
24	Beginning Balance				\$22,458,568	\$19,538,692	\$17,329,823	\$12,620,133	\$8,427,378	\$5,353,003		
25	Revenues											
26	Connection Charges (7)				\$500,000	\$500,000	\$500,000	\$400,000	\$300,000	\$200,000		
27	Capital Projects											
28	Administration (1)				(\$215,000)	(\$221,450)	(\$228,094)	(\$234,936)	(\$241,984)	(\$249,244)		WBSD Budget
29	Collection Facilities/FEF (1)				(\$934,500)	(\$1,287,535)	(\$1,303,661)	(\$1,070,271)	(\$587,379)	(\$605,000)		WBSD Budget
30	Subsurface Lines											
31	Proposed (Master Plan)				(\$7,150,000)	(\$5,182,100)	(\$5,656,750)	(\$5,989,500)	(\$6,723,147)	(\$7,484,845)		From Table 5
32	Other (10)				\$0	\$0	\$0	\$0	\$0	\$0	\$0	
33	Construction Proj. Environ Review				(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)	(\$10,000)		WBSD Budget
34	Manhole Raising				(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)		WBSD Budget
35	Allow. For Unanticipated Cap Ex				(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)		WBSD Budget
36	Subtotal Expenses				(\$8,509,500)	(\$6,901,085)	(\$7,398,505)	(\$7,504,707)	(\$7,762,511)	(\$8,549,090)		
37												
38	Vehicles and Equipment Purchases				(\$205,000)	(\$205,000)	(\$205,000)	(\$205,000)	(\$205,000)	(\$205,000)		
39												
40	Net Capital Expenditures to be paid by Rates				(\$8,214,500)	(\$6,606,085)	(\$7,103,505)	(\$7,309,707)	(\$7,667,511)	(\$8,554,090)		
41												
42	Transfers (To)/From											
43	Revenue Requirement- PayGo Capital				\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	\$7,575,899	To Table 2
44	Operating Fund				\$0	(\$2,500,000)	(\$4,500,000)	(\$4,500,000)	(\$3,300,000)	(\$2,600,000)		From Above
45	SVCW Capital Contribution				\$0	\$0	\$0	\$0	\$0	\$0	\$0	
46	Rate Stabilization Fund				(\$2,600,000)	(\$1,000,000)	(\$1,000,000)	(\$275,000)	\$0	\$0	\$0	
47	Revenue Requirement- Veh & Equip Replacement				\$270,000	\$278,100	\$286,443	\$295,036	\$303,887	\$313,004		
48	Subtotal Transfers				\$5,245,899	\$4,353,999	\$2,362,342	\$3,095,936	\$4,579,787	\$5,288,903		
49	Fund Subtotal				\$19,489,968	\$17,286,607	\$12,588,661	\$8,406,362	\$5,339,654	\$2,087,817		
50	Estimated Interest Earnings (6)				\$48,725	\$43,217	\$31,472	\$21,016	\$13,349	\$5,220		
51	Ending Balance				\$22,458,568	\$19,538,692	\$17,329,823	\$12,620,133	\$8,427,378	\$5,353,003	\$2,093,036	
52	<i>Target Balance</i>				<i>\$3,500,000</i>	<i>\$3,500,000</i>	<i>\$3,500,000</i>	<i>\$3,500,000</i>	<i>\$3,500,000</i>	<i>\$3,500,000</i>	<i>\$3,500,000</i>	From Table 1B

	A	B	C	D	E	F	G	H	I	J	K
1	West Bay Sanitary District										
2	Sewer Rate Study										
3	Table 4. Reserves										
4											
5			Tbl.	Actual	Budgeted						
6			1B	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
53											
54	EMERGENCY CAPITAL RESERVES										
55	Beginning Balance				\$5,288,863	\$5,302,085	\$5,315,341	\$5,328,629	\$5,341,950	\$5,355,305	
56	Transfers (To)/From										
57	Revenue Requirements				\$0	\$0	\$0	\$0	\$0	\$0	To Table 2
58	Operating Fund				\$0	\$0	\$0	\$0	\$0	\$0	To Above
59	Subtotal Transfers				\$0	\$0	\$0	\$0	\$0	\$0	
60	Fund Subtotal				\$5,288,863	\$5,302,085	\$5,315,341	\$5,328,629	\$5,341,950	\$5,355,305	
61	Estimated Interest Earnings (6)				\$13,222	\$13,255	\$13,288	\$13,322	\$13,355	\$13,388	
62	Ending Balance				\$5,288,863	\$5,302,085	\$5,315,341	\$5,328,629	\$5,341,950	\$5,355,305	\$5,368,694
63	Minimum Balance				\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	
64	Target Balance (\$5M by 2015-16)				\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	
65											
66	RATE STABILIZATION FUND										
67	Beginning Balance				\$3,016,904	\$5,630,946	\$6,647,524	\$7,666,642	\$7,961,496	\$7,981,400	
68	Transfers (To)/From										
69	Revenue Requirements				\$0	\$0	\$0	\$0	\$0	\$0	To Table 2
70	Capital Fund				\$2,600,000	\$1,000,000	\$1,000,000	\$275,000	\$0	\$0	To Above
71	Subtotal Transfers				\$2,600,000	\$1,000,000	\$1,000,000	\$275,000	\$0	\$0	
72	Fund Subtotal				\$5,616,904	\$6,630,946	\$7,647,524	\$7,941,642	\$7,961,496	\$7,981,400	
73	Estimated Interest Earnings (6)				\$14,042	\$16,577	\$19,119	\$19,854	\$19,904	\$19,954	
74	Ending Balance				\$3,016,904	\$5,630,946	\$6,647,524	\$7,666,642	\$7,961,496	\$7,981,400	\$8,001,354
75	Target Balance				\$4,000,000	\$5,000,000	\$6,000,000	\$7,000,000	\$8,000,000	\$8,000,000	
76											

	A	B	C	D	E	F	G	H	I	J	K
1	West Bay Sanitary District										
2	Sewer Rate Study										
3	Table 5. Master Plan Capital Projects										
4	Source: West Bay Sanitary District CIP Updated 04-27-17										
5					Projected						
6		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes			
7	R&R Priority										
8	1 Carlton-Madera Easements (Belle Haven III)	\$4,000,000									
9	2 2a Atherton Civic Center	\$600,000									
10	3 Lucky/Campo Bello/Alameda&Atherton		\$400,000								
11	4 Vine		\$350,000								
12	5 Bay Road North		\$2,450,000								
13	6 2b Isabella		\$161,000								
14	7 3a Gilbert		\$1,225,000								
15	8 3b Santa Margarita			\$700,000							
16	9 4 Camino al Lego			\$1,155,000							
17	10 5b Santa Cruz			\$700,000							
18	11 5c Avy			\$175,000							
19	12 5d Vine			\$770,000							
20	13 Marsh Road CIPP			\$1,125,000							
21	14 6 Westminster				\$4,250,000	\$650,000					
22	15 Stowe Lane Pump Station						\$1,300,000				
23	16 Stowe Lane PS xcrossing SFPUC sag						\$297,500				
24	17 8a University						\$2,800,000				
47	41 PS Misc		\$75,000		\$200,000		\$200,000				
48	42 Trunkline Cleaning 8 CCTV	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000				
49	Subtotal - R&R	\$4,650,000	\$4,711,000	\$4,675,000	\$4,500,000	\$700,000	\$4,647,500				
50	Capacity Priority										
51	1 Jamee-Fwenites-Diviersieft										
52	2 Lower Ringwood					\$1,300,000					
53	3 Valparaiso					\$450,000					
54	4 Willow Gravity Main										
55	5 Upper Ringwood					\$1,640,000					
56	8 A4Port&R-East-										
57	7 Santa Cruz Avy										
58	8 Cambridge Laurel										
59	9 Middlefield at Fair Oaks					\$502,000					
60	Carryover	\$2,500,000									
61	Subtotal - Capacity	\$2,500,000	\$0	\$0	\$0	\$3,892,000	\$0				
62											
63	Total CIP	\$7,150,000	\$4,711,000	\$4,675,000	\$4,500,000	\$4,592,000	\$4,647,500				
64	Inflationary Index		10.00%	21.00%	33.10%	46.41%	61.05%	From Table 1B			
65	Total Inflated CIP	\$7,150,000	\$5,182,100	\$5,656,750	\$5,989,500	\$6,723,147	\$7,484,845	To Table 4			
66		ties with Budget									
67											
68	Source: West Bay Sanitary District CIP Updated 04-27-17										

	A	B	C	D	E	F	G	H
1	West Bay Sanitary District							
2	Sewer Rate Study							
3	Table 6. WBSD Debt Service Schedule							
4								
5					Projected			
6		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Notes
7								
8								
9	No debt has been issued by WBSD, SVCW debt only (see Table 2)							
10								
11								
12								
13								

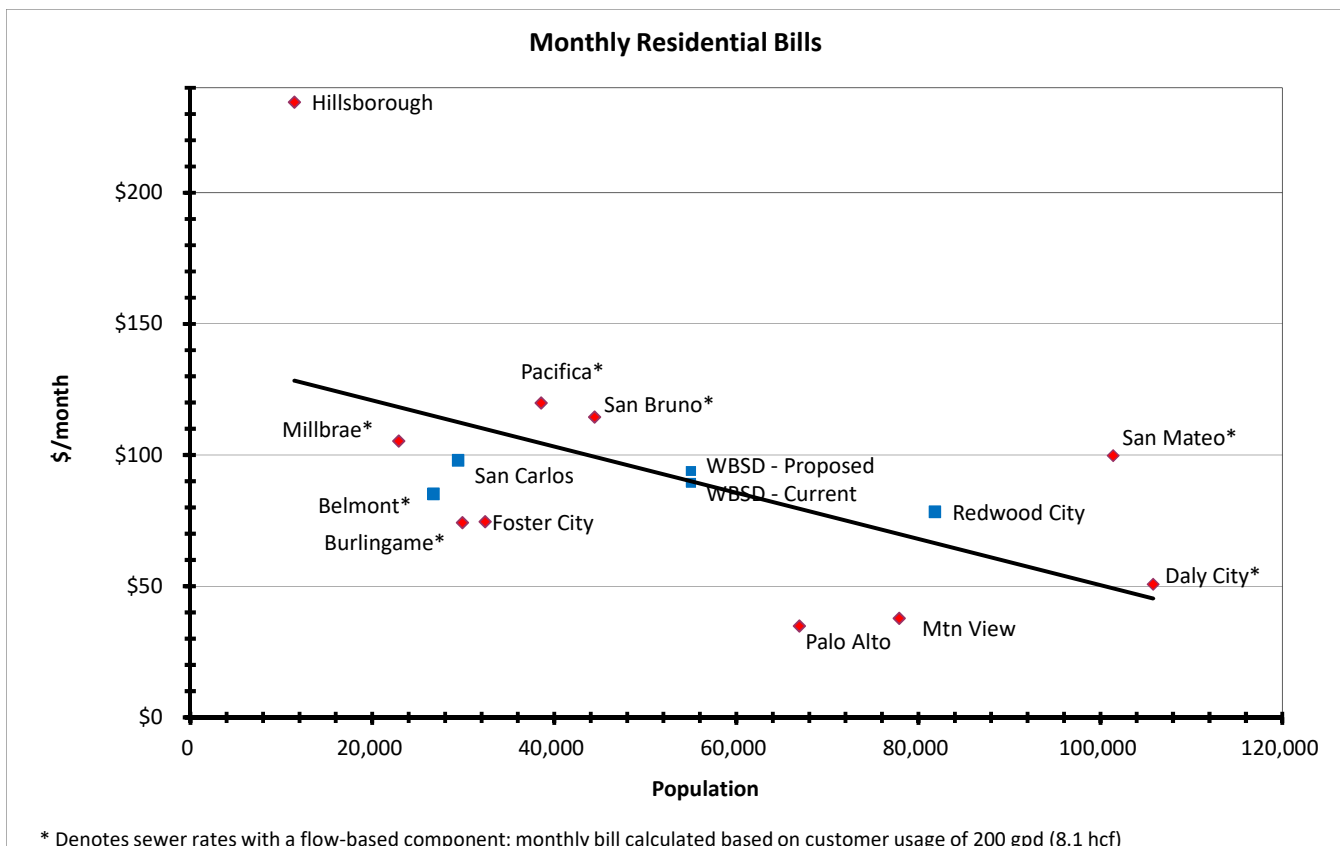
	A	B	C	D	E	F	G
1	West Bay Sanitary District						
2	Sewer Rate Study						
3	Table 7. Single-Family Rate Comparison						
4					Monthly Charge		
5					@ 4.05 hcf/mo	@ 8.1 hcf/mo	@ 16.2 hcf/mo
6	City	Population	Basis		50% of avg.	avg.	2x avg.
7	Hillsborough	11,420	Fixed (incl. collection and treatment)		\$234.50	\$234.50	\$234.50
8	San Bruno	44,409	Fixed + Flow (incl. collection and treatment)		\$71.17	\$114.47	\$201.06
9	Millbrae	22,898	Fixed + Flow (incl. collection and treatment)		\$80.13	\$105.36	\$155.83
10	Belmont	26,748	Fixed + Flow (collection) + SVCW Treatment		\$60.66	\$85.16	\$134.16
11	West Bay SD (Proposed)	55,000	Fixed (incl. collection and treatment)		\$93.83	\$93.83	\$93.83
12	West Bay SD (Current)	55,000	Fixed (incl. collection and treatment)		\$89.33	\$89.33	\$89.33
13	Burlingame	29,890	Flow (incl. collection and treatment)		\$37.11	\$74.23	\$148.45
14	Redwood City	81,838	Fixed (incl. collection and treatment)		\$78.24	\$78.24	\$78.24
15	San Carlos	29,449	Fixed (incl. collection and treatment)		\$97.93	\$97.93	\$97.93
16	San Mateo	101,429	Flow (incl. collection and treatment)		\$49.86	\$99.71	\$199.42
17	Daly City	105,810	Flow (incl. collection and treatment)		\$25.35	\$50.71	\$101.41
18	Palo Alto	66,932	Fixed (incl. collection and treatment)		\$34.83	\$34.83	\$34.83
19	Mountain View	77,914	Fixed (incl. collection and treatment)		\$37.75	\$37.75	\$37.75
20	Pacifica	38,551	Flow (incl. collection and treatment)		\$59.94	\$119.88	\$239.76
21	Foster City	32,390	Fixed (incl. collection and treatment)		\$74.57	\$74.57	\$74.57

Sources:

Population - California Department of Finance, Demographic Research Unit, E-5 City/County Population & Housing Estimates, 1/1/2014

except West Bay Sanitary District (population estimate from district).

Monthly Rates - online resources available on each respective agencies' website



* Denotes sewer rates with a flow-based component; monthly bill calculated based on customer usage of 200 gpd (8.1 hcf)

blue squares = SVCW member red diamonds = other neighboring city