



## WEST BAY SANITARY DISTRICT AGENDA ITEM 3

**To:** *Board of Directors*

**From:** *Phil Scott, District Manager*

**Subject:** *Consideration of the Establishment of a Public Hearing Date for Proposed Increase in Sewer Service Charges as Required by Proposition 218, Adopt the Updated Sewer Rate Study and Provide Staff Direction Regarding the Sewer Service Charge Rate Adjustment and the Mailing of the Proposition 218 Notice for a Public Hearing*

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### Background

In August of 2018 the District contracted with HF&H Consultants to prepare an updated FY 2019-20 sewer rate study and sewer rate model that would serve to amend the existing financial plan completed by HF&H which was included in the 2011 Master Plan.

The updated sewer rate study and model contains a 5-year revenue requirement projection from which future rate increases are anticipated to be adopted in compliance with Proposition 218, though each year's rate increase may be adopted separately. In addition to updating and presenting the sewer rate study and model to staff and the District Board, the Consultant has prepared a final project report, has assisted with a rate study workshop, and has assisted with the preparation of the notice in accordance with Proposition 218 legislation, and will assist with the public hearing(s).

A Sewer Rate Study Workshop was held on January 9, 2019 in which preliminary information regarding anticipated rate adjustments, options for alternate rate structures, biochemical and suspended solids loading charges, and cost of service analysis were discussed. The Board directed HF&H to complete the Sewer Rate Study for the FY 2019-20 and present the findings in a draft report .

### Analysis

The Sewer Rate Study took into consideration updated data on cash flow, revenues, anticipated Capital Improvement Plan projects, District O&M expenses, changes in expenses related to labor negotiations, SVCW (Silicon Valley Clean Water) debt service, SVCW O&M expenses, and SVCW cost allocations. HF&H inputted the data and returned with a revised rate model which predicted rate increases for residential in the order of 4.5% in 2019-20 and for the next four years thereafter, after which the rates

gradually return to a rate more indicative of anticipated CPI increases. Two years ago, the rate study included a Cost of Service Analysis and the report recommended that the Non-Residential rates increase by \$1 for each of the loading factors, Bio-Chemical Oxygen Demand and Total Suspended Solids. To soften the impact, the Board requested that these increases be phased in over approximately three years. This is year three (3) of an anticipated three year phase-in. Some categories of industry will actually see a decrease in their rates, and others may see an increase above 4.5% but overall the Non-Residential rates will increase by approximately 4.5% for FY19-20.

After considerable Board discussion over the proposed rate increase, and the effects on the cash flow in the months of July through November, when the District receives no tax roll revenue, the Board gave direction to consider the above recommended approach to future sewer service charges, allowing that continued annual rate studies will need to be conducted to adjust to changes in the economic environment.

The Sewer Rate Study includes a model designed to meet revenue requirements, ensure a high coverage ratio for debt expense in order to continue to obtain favorable bond rates, and preserve target reserve balances as desired by the Board. The rate model does show that utilization of the Operating Reserve will be required during periods of low revenue for the District but those reserves should be replenished with the tax roll revenues in the winter and spring. HF&H and Staff worked hard to craft a model that would meet the above criteria and result in the lowest cumulative increase of any rate scenario over the five year horizon.

The forecast increases are slightly lower than last year's projections for FY2019-20. Of the overall 4.5% rate increase in FY 2019-20, approximately 3.9% is attributable to increases in SVCW's costs and 0.6% is attributable to increases in the District's local operations and capital expenses. The increases attributable to SVCW are due to increased debt service expense for the SVCW treatment plant Capital Improvement Plan. The treatment plant is the midst of implementing a Capital Improvement Plan that includes projects to replace agency pump stations, force mains, and plant infrastructure that has been deferred for many years.

Included in the FY 2019-20 rate adjustments is the expense of meeting the District's share of debt service on approximately \$232 million in bonds and SRF loans to fund the SVCW's Capital Improvement Program. The estimated total for the Capital Improvement Program is expected to exceed \$606 million over the next 7 years. The District's debt service expense will eventually exceed \$11 million per year to fund the expense of debt service in order to finance the SVCW Capital Improvement Program.

Due to frugal management practices, and only small increases in labor costs, there is very little increase projected in the District's own O&M expenses. However, significant factors in the proposed increase in rates are a result of increases in the following areas:

- SVCW debt service for scheduled capital improvement projects
- SVCW O&M costs
- Necessary increases in operating reserves to match 5 months of operating expenses.

- Annual Contributions of \$1M to the Rate Stabilization Reserve to pay down debt service once a significant reserve is accumulated.
- Increasing the Capital Improvement Reserves target from \$3.5M to \$6M, which is roughly equal to the industry standard of one year's average annual capital improvement expenditures.

Redwood City is expected to increase their sewer service charges by 3% to 5% for FY19-20, to meet their SVCW related debt service and operating revenue requirement. The City of San Carlos has a residential sewer service charge of \$1,175.10 for FY18-19 and they have not determined what increase is expected in FY19-20. A 4.5% increase in West Bay Sanitary District's sewer service charge would bring the monthly rate to the current San Carlos level and in line with the rates of our JPA partners.

Several budgetary items have shown change since last year's rate study update:

- SVCW did not issue the expected \$50M bond for capital improvement projects for 2017-18, but issued a total of \$140M with \$48M allocable to West Bay Sanitary District of which \$35M is allocable in year 2017-18 and the remaining \$13M will be allocable to West Bay in the summer of 2019. West Bay may further decrease the impact of these bonds by using the Rate Stabilization reserve to buy down the \$13M owed this year.
- West Bay received Buy America rebates on the \$10M debt service payments.
- The District also received connection fees from a large development project in Menlo Park.

These changes in West Bay's overall economic picture translated to a needed residential rate increase in the order of 4.5% for FY2019/20 based on SVCW plant improvement projections and the District's CIP plans.

The attached Final Draft Sewer Rate Study report incorporates the Board comments from the Sewer Rate Study workshop and is brought forward for the Board's consideration to adopt and at the same time establish a date for a public hearing on sewer service charges in accordance with Proposition 218 requirements. An electronic version of the model will be available at the Board meeting which will allow us to model the impacts of any further refinements to the budget/inflation assumptions in the model.

#### Fiscal Impact

A 4.5% increase in residential sewer service charges will result in annual sewer service rates for a single family home increasing from \$1,126 to \$1,177 per year. For homes (approximately 68 homes) within the OWDZ (Onsite Wastewater Disposal Zone), primarily in Portola Valley, the anticipated sewer service charge will increase from \$1,432 to \$1,497 per household. Overall, this equates to an increase in revenues of approximately \$1.3M per year.

#### Recommendation

The District Manager is seeking Board policy direction to increase sewer service charge rates to cover costs outlined above and in the revised rate study and the 2011 financial

plan. A rate increase of approximately 4.5% per SFR is needed to meet the anticipated required revenue and increases in non-residential (commercial/industrial) rates averaging 4.5%.

Therefore, the District Manager recommends:

1. The Board adopt the updated Sewer Rate Study and set a Public Hearing date for April 24, 2019 to review the proposed sewer service charge increase for the year FY 2019-20 (effective July 1, 2019); and
2. Provide staff direction regarding the sewer service charge rate adjustment for FY 2019-20, the revised rate study, and the mailing of the Proposition 218 notice for a public hearing to be held on April 24, 2019 prior to adoption of the sewer service charges for FY 2019-20.

Attachments:

Final Draft Sewer Rate Study by HF&H Consultants dated February 5, 2019  
Draft 218 Notice of Public Hearing Mailer



# WEST BAY SANITARY DISTRICT FY 2019-20 SEWER RATE STUDY



**February 20, 2019 – FINAL REPORT**



**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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February 20, 2019

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

**Subject: FY 2019-20 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 2019-20 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 overall increase in revenue will allow the District to:

- Fund inflationary increases in staff and sewer collection system operating and maintenance costs; staffing levels are projected to stay at their current level through the five-year planning period;
- Fund \$6.23M in annual capital projects for the District-maintained collection system;
- Increase the capital improvement project reserves target (from \$3.5M to \$6.0M), and fully-fund the new target, which is roughly equal to the industry standard of one year's average annual capital improvement expenditures;
- Transfer \$1.0M per year to the District's PERS unfunded liability reserve;
- Reach the targeted levels of the District's operating, capital, recycled water project, rate stabilization, and emergency reserve balances; and,
- Fully-fund the District's share of SVCW's projected operating and capital costs to operate the wastewater treatment plant. This includes contributing \$6.5M from the District's rate stabilization reserves to reduce the District's proportionate share of an SVCW bond obligation from \$13.0M to \$6.5M, which will result in lower interest expenses for the District over the 30-year term of the bond.

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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# Sewer Rate Study





## 1. EXECUTIVE SUMMARY

The proposed rates for FY 2019-20 have been calculated to fund the District's expense projections for FY 2019-20. 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 2018, as follows:

**Figure 1-1. Current Rates**

	FY 2018-19
<b>Residential (charge per DU)</b>	Adopted
Single Family, Multi Family	\$1,126
On-site Wastewater Disposal Zone	\$1,432
<b>Commercial (charge per CCF)</b>	
Retail/Commercial	\$9.66
Institution/Public	\$9.24
Restaurants/Bakeries	\$17.20
Supermarkets with Grinders	\$17.31
Hospitals	\$9.91
Hotels with Dining Facilities	\$14.40
<b>Industrial (measured)</b>	
Flow Rate Charge per CCF	\$7.90
BOD Rate Charge per pound	\$0.90
TSS Rate Charge per pound	\$0.99

### 1.1.2 Revenue Requirement Projections.

Figure 1-2 indicates the projected revenue requirements for the five-year period beginning with FY 2019-20. Of the 4.5% overall rate increase in FY 2019-20, approximately 1.8% is attributable to increases in SVCW's treatment costs, and 2.7% is attributable to inflationary increases in the District's local operations offset by a reduction in the District's projected capital improvement project spending.

**Figure 1-2. Revenue Requirement Projections**

Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	\$27,452,686	
FY 2019-20	\$28,688,057	4.5%
FY 2020-21	\$29,979,019	4.5%
FY 2021-22	\$31,328,075	4.5%
FY 2022-23	\$32,737,839	4.5%
FY 2023-24	\$34,211,041	4.5%

The District's existing rates would be increased by the annual percentages, shown in **Figure 1-2**, to generate the required revenue if no modifications are made to the rate structure.

### 1.1.3 Cost-of-Service Analysis – Rate Structure Modification

In the Cost-of-Service study completed for setting FY 2017-18 rates, 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 final year of the three-year phase-in. As such, the 4.5% recommended revenue increase will affect each customer class differently.

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 the differences for high strength customers, we recommend phasing in the changes to the non-residential rates over a three-year period.

To see the progression of the phasing in of the non-residential rates, **Figure 1-3** summarizes the FY 2017-18 rates, the current FY 2018-19 rates, and the proposed FY 2018-19 rates. The proposed commercial and industrial rates reflect the final year of a three-year phase-in. From this point forward, recommended rate increases will be uniform.

Figure 1-3. Proposed Rates – FY 2019-20

	FY 2017-18	Current FY 2018-19	FY 2019-20 Proposed	
			Rate	% Chg
<b><u>Commercial (charge per CCF)</u></b>				
Retail/Commercial	\$9.56	\$9.66	\$9.48	-1.9%
Institution/Public	\$9.28	\$9.24	\$8.89	-3.8%
Restaurants/Bakeries	\$14.56	\$17.20	\$19.98	16.2%
Supermarkets with Grinders	\$14.67	\$17.31	\$20.20	16.7%
Hospitals	\$9.72	\$9.91	\$9.81	-1.1%
Hotels with Dining Facilities	\$12.73	\$14.40	\$16.13	12.1%
<b><u>Industrial (measured)</u></b>				
Flow Rate Charge per CCF	\$8.38	\$7.90	\$7.00	-11.3%
BOD Rate Charge per pound	\$0.59	\$0.90	\$1.23	37.3%
TSS Rate Charge per pound	\$0.67	\$0.99	\$1.41	42.8%

## 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 2019. 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 2018-19 to FY 2023-24. 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**

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
Residential Sewer Service Charge	\$893	\$974	\$1,031	\$1,072	\$1,126
Annual Increase - \$ per Year		\$81	\$57	\$41	\$54
Percentage Increase		9%	6%	4%	5%

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 2019-20 through FY 2023-24. 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 2018-19 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**

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
General Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
Utilities	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%
Salaries & Benefits	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
SVCW O&M Increase %	Per Budget	4.0%	4.0%	4.0%	4.0%	4.0%
Interest on Earnings	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Non-rate Revenues	Per Budget	1.0%	1.0%	1.0%	1.0%	1.0%
% Increase in Revenue due to Growth	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%
Los Altos Hills, Woodside Revenue Cha	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
Construction Cost Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%

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 \$7.4M to \$8.9M over the planning period. Annual increases are generally increasing by the rate of inflation, with the exception of the District's unfunded retirement liability, which is more than doubling over the five-year planning period.

**Figure 3-2. District O&M Expense Summary**

	Current Year	Five-Year Planning Period				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Salaries	\$3,379,871	\$3,481,267	\$3,585,705	\$3,693,276	\$3,804,075	\$3,918,197
Benefits	\$2,239,296	\$2,306,475	\$2,375,669	\$2,446,939	\$2,520,347	\$2,595,958
PERS Unfunded Accrued Liability	\$276,130	\$346,648	\$389,500	\$441,800	\$508,070	\$558,562
Contractual/Professional Services	\$979,450	\$1,008,834	\$1,039,099	\$1,070,271	\$1,102,380	\$1,135,451
Other O&M	\$1,497,955	\$1,476,329	\$1,596,331	\$1,578,021	\$1,701,457	\$1,686,702
Non-Operating Revenue	(\$946,406)	(\$952,476)	(\$958,607)	(\$964,800)	(\$971,054)	(\$977,371)
Net District Operating Costs	\$7,426,296	\$7,667,076	\$8,027,697	\$8,265,508	\$8,665,274	\$8,917,498
		3.2%	4.7%	3.0%	4.8%	2.9%

#### 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 \$5.1M (in FY 2021-22) to \$6.9M (in FY 2019-20), during the five-year planning period. On average, the District expects to spend approximately \$6.26M of sewer service charge revenue annually on these projects (during the five-year planning period FY 2019-20 to FY 2022-23), the majority of which funds Master Plan subsurface line projects. The

remaining capital expenses comprise various ongoing administrative and other capital expenditures.

**Figure 3-3. CIP Summary**

	Current Year	Five-Year Planning Period				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Administration	\$140,000	\$144,200	\$148,526	\$152,982	\$157,571	\$162,298
Collection Facilities	\$934,500	\$524,785	\$540,529	\$556,744	\$573,447	\$590,650
Master Plan/Subsurface Lines	\$9,926,500	\$6,484,895	\$5,942,043	\$4,559,156	\$4,734,432	\$5,582,226
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	\$240,000	\$247,200	\$254,616	\$262,254	\$270,122	\$278,226
Less: Connection Fee Revenue	<u>(\$500,000)</u>	<u>(\$500,000)</u>	<u>(\$500,000)</u>	<u>(\$400,000)</u>	<u>(\$300,000)</u>	<u>(\$200,000)</u>
Total Capital Expenses	\$10,951,000	\$7,111,080	\$6,595,714	\$5,341,136	\$5,645,573	\$6,623,401

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 \$5.0M. 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 \$6.0M has been established by the Board, roughly the District's average annual capital expenditures. 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**

The Board established a rate stabilization fund to allow a margin of safety for the uncertainty of the timing and amount of SVCW capital expenditures to upgrade the wastewater treatment facility (as discussed in **Section 3.4** below). The funds could be used to minimize future rates increases and/or to reduce interest expenses by buying down the amount of debt to be issued by SVCW to fund the upgrades. This year's rate study includes using \$6.5M of the rate stabilization reserve to reduce the District's debt obligation from \$13.0M to \$6.5M. In subsequent years, any unspent non-operating expense will be transferred to the rate stabilization reserve fund.

### **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 transferred to the fund each year, beginning FY2018-19. .

## **3.4 SVCW Expenses**

In FY 2019/20, SVCW's treatment charge is 48.3% of the District's total revenue requirement, and is the District's single largest expense, which will increase to 52.1% of the District's total revenue requirement by FY 2023/24. The District's treatment charge is allocated in proportion to the number of its EDUs compared with the other SVCW member agencies, currently 26.84%. As shown in **Figure 3-4**, SVCW's cost has recently increased significantly to fund the debt service on a series of bonds and SRF loans, that have been issued to fund the rehabilitation of its interceptors, pump stations, and wastewater treatment plant.



**Figure 3-4. SVCW O&M and Debt Service Revenue Requirement**

	Current Year	Five-Year Planning Period				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
<b>Operating Expense</b>						
Operations & Maintenance	\$6,930,000	\$7,207,200	\$7,495,488	\$7,795,308	\$8,107,120	\$8,431,405
PAYGo Capital	<u>\$423,245</u>	<u>\$440,175</u>	<u>\$457,782</u>	<u>\$476,093</u>	<u>\$495,137</u>	<u>\$514,942</u>
<b>Total Operating Expense</b>	<b>\$7,353,245</b>	<b>\$7,647,375</b>	<b>\$7,953,270</b>	<b>\$8,271,401</b>	<b>\$8,602,257</b>	<b>\$8,946,347</b>
<b>Debt Service</b>						
Existing Bonds	\$4,772,609	\$4,705,902	\$4,593,692	\$4,599,521	\$4,588,067	\$4,587,775
Existing SRF Loans	\$726,843	\$726,843	\$726,843	\$726,843	\$726,843	\$912,039
New Bond - 2021 (LOC Term-Out)	\$0	\$0	\$313,846	\$313,846	\$313,846	\$313,846
New Bond - 2022 (Fixed Rate Issue #1)	\$0	\$0	\$0	\$386,526	\$386,526	\$386,526
WIFIA Loan (after FY 2023/24)	\$0	\$0	\$0	\$0	\$0	\$0
New Bond - 2024 (Variable-Rate)	\$0	\$0	\$0	\$0	\$0	\$442,044
Subordinate LOC Interest Expense	\$74,842	\$199,579	\$0	\$0	\$0	\$0
New SRF Loans	\$0	\$0	\$0	\$1,543,998	\$1,543,998	\$1,543,998
Debt Reserves	<u>\$545,000</u>	<u>\$566,800</u>	<u>\$589,472</u>	<u>\$613,051</u>	<u>\$637,573</u>	<u>\$663,076</u>
<b>Total SVCW Debt Service</b>	<b>\$6,119,294</b>	<b>\$6,199,124</b>	<b>\$6,223,853</b>	<b>\$8,183,784</b>	<b>\$8,196,853</b>	<b>\$8,849,304</b>
<b>Total Projected Revenue Req't.</b>	<b>\$13,472,539</b>	<b>\$13,846,499</b>	<b>\$14,177,123</b>	<b>\$16,455,185</b>	<b>\$16,799,110</b>	<b>\$17,795,651</b>

### 3.5 Total Revenue Requirements

The foregoing modeling assumptions lead to the projected revenue requirements shown in Figure 3-5, which shows that:

- The projected SVCW O&M expenses increasing approximately 4% per year; 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. Debt service is projected to increase from \$6.1M in FY 2018-19 to \$8.8M in FY 2023-24.
- There will be inflationary increases in the District's own O&M expenses.
- The District's funding need (from the sewer service charges) for capital improvements will be consent during the five-year planning period, which reflects the average of the projected capital needs summarized in **Figure 3-3**.

Unlike the District's local costs, SVCW costs are largely beyond the District's control.

**Figure 3-5. Projected Revenue Requirements**

	Current Year	Five-Year Planning Period				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
SVCW Operating Expenses	\$7,353,245	\$7,647,375	\$7,953,270	\$8,271,401	\$8,602,257	\$8,946,347
SVCW Debt Service	\$6,119,294	\$6,199,124	\$6,223,853	\$8,183,784	\$8,196,853	\$8,849,304
WBSD Capital Imp. Program	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381
WBSD Operating Expenses	\$7,426,296	\$7,667,076	\$8,027,697	\$8,265,508	\$8,665,274	\$8,917,498
Contribution To/(From) Reserves	<u>\$290,470</u>	<u>\$911,102</u>	<u>\$1,510,819</u>	<u>\$344,002</u>	<u>\$1,010,074</u>	<u>\$1,234,512</u>
<b>Total Projected Revenue Req't.</b>	<b>\$27,452,686</b>	<b>\$28,688,057</b>	<b>\$29,979,019</b>	<b>\$31,328,075</b>	<b>\$32,737,839</b>	<b>\$34,211,041</b>

### 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**.

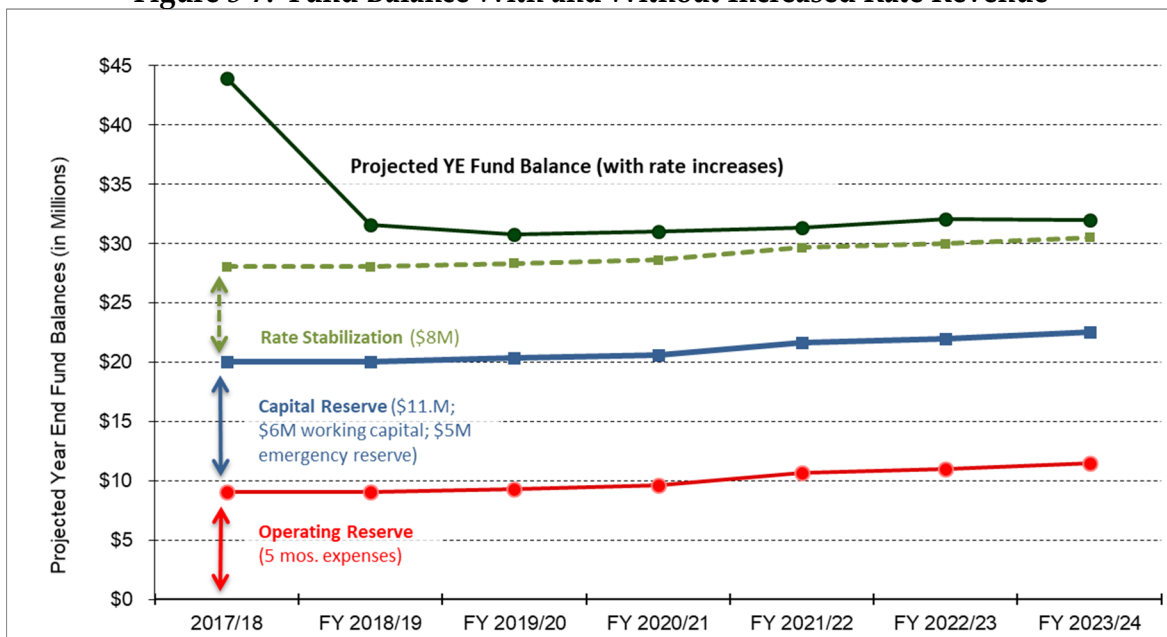
**Figure 3-6. Projected Rate Revenue Increases**

Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	\$27,452,686	
FY 2019-20	\$28,688,057	4.5%
FY 2020-21	\$29,979,019	4.5%
FY 2021-22	\$31,328,075	4.5%
FY 2022-23	\$32,737,839	4.5%
FY 2023-24	\$34,211,041	4.5%

### 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**



The drop in the year-end fund balance in FY 2018-19 reflects the use of reserves to pay for capital improvement projects (as previously budgeted), as well as the planned transfer of \$6.5M from the District to SVCW to reduce the necessary debt issuance (from \$13.0M to \$6.5M).

### **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 (\$6.0M), emergency capital reserves (\$5.0M), and rate stabilization reserves (\$8.0M). 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 2019-2020 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 \$28.68M revenue requirement for FY 2019-2020 (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 include 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**

Costs	FY 2019-20 Alloc.		Allocation Factors					Allocated Costs				
	Rev. Req.	Type	Accts	Flow	BOD	TSS	Total	Accounts	Flow	BOD	TSS	Total
<b>SVCW Treatment Costs</b>												
Operating Expense	\$ 6,059,002	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 1,605,635	\$ 2,029,766	\$ 2,423,601	\$ 6,059,002
Safety	\$ 110,026	1	0%	100.0%	0.0%	0.0%	100%	\$ -	\$ 110,026	\$ -	\$ -	\$ 110,026
Administrative Services	\$ 1,038,173	1	0%	100.0%	0.0%	0.0%	100%	\$ -	\$ 1,038,173	\$ -	\$ -	\$ 1,038,173
Existing Bonds	\$ 4,705,902	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 1,247,064	\$ 1,576,477	\$ 1,882,361	\$ 4,705,902
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	\$ 199,579	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 52,888	\$ 66,859	\$ 79,832	\$ 199,579
Revenue-Funded Capital	\$ 440,175	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 116,646	\$ 147,459	\$ 176,070	\$ 440,175
New Cash Reserves (SRF / CIP)	\$ 566,800	1	0%	26.5%	33.5%	40.0%	100%	\$ -	\$ 150,202	\$ 189,878	\$ 226,720	\$ 566,800
<b>Subtotal SVCW Treatment Costs</b>	<b>\$ 13,846,499</b>							<b>\$ -</b>	<b>\$ 4,513,248</b>	<b>\$ 4,253,931</b>	<b>\$ 5,079,320</b>	<b>\$ 13,846,499</b>
<b>District Operating Expenses</b>												
Salaries and Benefits	\$ 6,134,390	3	90%	5%	2.5%	2.5%	100%	\$ 5,520,951	\$ 306,720	\$ 153,360	\$ 153,360	\$ 6,134,390
Other Operating Expense	\$ 2,213,777	3	90%	5%	2.5%	2.5%	100%	\$ 1,992,399	\$ 110,689	\$ 55,344	\$ 55,344	\$ 2,213,777
Utilities	\$ 173,250	4	0%	90%	5%	5%	100%	\$ -	\$ 155,925	\$ 8,663	\$ 8,663	\$ 173,250
Gasoline, Oil and Fuel	\$ 72,100	4	0%	90%	5%	5%	100%	\$ -	\$ 64,890	\$ 3,605	\$ 3,605	\$ 72,100
Total General Operating Expenses	<b>\$ 8,593,517</b>							<b>\$ 7,513,350</b>	<b>\$ 638,223</b>	<b>\$ 220,972</b>	<b>\$ 220,972</b>	<b>\$ 8,593,517</b>
								87.4%	7.4%	2.6%	2.6%	100.0%
<b>Capital Projects and Equipment</b>												
Transfers to Capital Projects Fund	\$ 6,263,381	4	0%	95%	2.5%	2.5%	100%	\$ -	\$ 5,950,212	\$ 156,585	\$ 156,585	\$ 6,263,381
Total Capital Expenses	<b>\$ 6,263,381</b>							<b>\$ -</b>	<b>\$ 5,950,212</b>	<b>\$ 156,585</b>	<b>\$ 156,585</b>	<b>\$ 6,263,381</b>
<b>Subtotal - District Expenses</b>	<b>\$ 14,856,898</b>							<b>\$ 7,513,350</b>	<b>\$ 6,588,435</b>	<b>\$ 377,556</b>	<b>\$ 377,556</b>	<b>\$ 14,856,898</b>
								50.6%	44.3%	2.5%	2.5%	100.0%
<b>Total Direct Expenses</b>	<b>\$ 28,703,397</b>							<b>\$ 7,513,350</b>	<b>\$ 11,101,683</b>	<b>\$ 4,631,487</b>	<b>\$ 5,456,876</b>	<b>\$ 28,703,397</b>
								26.2%	38.7%	16.1%	19.0%	100.0%
<b>Non-Operating Expenses/(Revenue)</b>												
Non-Operating Expense	\$ 26,035	4	26%	39%	16%	19%	100%	\$ 6,815	\$ 10,070	\$ 4,201	\$ 4,950	\$ 26,035
Transfers to/(from) Reserves	\$ 911,102	4	26%	39%	16%	19%	100%	\$ 238,488	\$ 352,389	\$ 147,012	\$ 173,212	\$ 911,102
Flow Eq. Cost Sharing	\$ (339,367)	4	26%	39%	16%	19%	100%	\$ (88,832)	\$ (131,258)	\$ (54,759)	\$ (64,518)	\$ (339,367)
Permit & Inspection Fees	\$ (101,000)	4	26%	39%	16%	19%	100%	\$ (26,438)	\$ (39,064)	\$ (16,297)	\$ (19,201)	\$ (101,000)
Other Operating Revenue	\$ (353,500)	4	26%	39%	16%	19%	100%	\$ (92,532)	\$ (136,724)	\$ (57,040)	\$ (67,205)	\$ (353,500)
Other Non-Operating Income	\$ (158,609)	4	26%	39%	16%	19%	100%	\$ (41,517)	\$ (61,346)	\$ (25,593)	\$ (30,154)	\$ (158,609)
<b>Total Composite Expenses</b>	<b>\$ (15,340)</b>							<b>\$ (4,015)</b>	<b>\$ (5,933)</b>	<b>\$ (2,475)</b>	<b>\$ (2,916)</b>	<b>\$ (15,340)</b>
								26.2%	38.7%	16.1%	19.0%	100.0%
<b>Total Direct and Composite Expenses (Fig. 4-2)</b>	<b>\$ 28,688,057</b>							<b>\$ 7,509,335</b>	<b>\$ 11,095,750</b>	<b>\$ 4,629,012</b>	<b>\$ 5,453,960</b>	<b>\$ 28,688,057</b>

**Allocation Types:**

- 1 Treatment Plant Allocators (SVCW Long Range Financial Plan, January 2019)
- 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
<b>Residential</b>						
SFR	14,089	921,183	300	400	1,727,212	2,302,949
SFR w/ STEP	68	4,446	300	400	8,336	11,115
MFR	5,317	347,642	300	400	651,827	869,102
Subtotal - Residential	19,474	1,273,272			2,387,374	3,183,166
<b>Non-Residential</b>						
<b>Commercial</b>						
Retail/Commercial	432	120,806	150	150	113,255	113,255
Institution/Public Schools	44	22,063	130	100	17,926	13,789
Institution/Public Offices	15	5,320	150	150	4,987	4,987
Restaurants/Bakeries	77	51,822	1000	600	323,883	194,330
Hotels without Dining Facilities	5	4,210	150	150	3,947	3,947
Hospitals	11	30,508	250	100	47,668	19,067
Supermarkets with Grinders	3	3,773	800	800	18,866	18,866
Repair Shops and Service Stations	21	2,071	150	150	1,942	1,942
Commercial Laundry	7	3,405	150	150	3,192	3,192
Hotels with Dining Facilities	3	15,945	500	600	49,826	59,792
<b>Measured Industrial Customers</b>						
USGS	1	164	246	188	252	192
USGS	1	221	112	116	155	160
Valley Presbyterian	1	84	1600	280	840	147
SRI	1	25,655	278	78	44,575	12,507
Circuit Board Manufacturer	1	128	95	120	76	96
Sanford Metal Processing	1	52	11	45	4	15
SILTEC	1	471	122	483	359	1,422
SILTEC	1	42	62	23	16	6
Tyco	1	138,899	815	230	707,513	199,666
USGS	1	850	470	683	2,496	3,627
SLAC	1	14,423	283	430	25,511	38,763
Village Square	1	405	1600	280	4,046	708
Subtotal - Non-Residential	630	441,314			1,371,335	690,475
<b>Total (excluding I&amp;I)</b>	<b>20,104</b>	<b>1,714,585</b>			<b>3,758,709</b>	<b>3,873,641</b>
Inflow & Infiltration (I & I)	-	80,036	133	731	66,491	365,104
<b>Total at SVCW Treatment Plant</b>	<b>20,104</b>	<b>1,794,621</b>			<b>3,825,200</b>	<b>4,238,745</b>

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 2017. Residential flow was determined by subtracting the actual non-residential measured flow and estimated inflow & infiltration (I&I) flow<sup>1</sup> rate of 4.5% from the total District flow at SVCW's treatment

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

plant. The resulting total residential flow estimate equates to an average flow per dwelling unit of 134 gallons per day, a 6 gpd decrease from last year, which reflects continued conservation.

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 measurements for each customer taken in 2017, and billed accordingly. Strength concentrations for commercial customers were based on the State's guidelines<sup>2</sup>. 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)	<b>a</b>	\$7,509,335	\$11,095,750	\$4,629,012	\$5,453,960	\$28,688,057
Units of Service, excl. I&I (from Fig. 4-2)	<b>b</b>	20,104 <i>accts</i>	1,714,585 <i>CCF</i>	3,758,709 <i>Pounds</i>	3,873,641 <i>Pounds</i>	
Unit Costs	<b>a ÷ b</b>	<b>\$373.52</b> \$/acct	<b>\$6.47</b> \$/CCF	<b>\$1.23</b> \$/lb	<b>\$1.41</b> \$/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.

<sup>2</sup> State Water Resources Control Board. *Revenue Program Guidelines*. Appendix G.

Figure 4-4. Revenue Requirement Allocations

Customer Class	FY 2019-20 Revenue Requirement Allocation				Total
	Accounts	Flow	BOD	TSS	
<b>Residential</b>	\$7,274,015	\$8,239,836	\$2,940,154	\$4,481,793	\$22,935,798
<b>Non-Residential</b>					
Retail/Commercial	\$173,689	\$844,463	\$150,662	\$172,244	\$1,341,058
Institution/Public	\$22,038	\$177,204	\$28,219	\$26,437	\$253,897
Restaurants/Bakeries	\$28,761	\$335,357	\$398,876	\$273,610	\$1,036,605
Supermarkets with Grinders	\$1,121	\$24,418	\$23,234	\$26,562	\$75,334
Hospitals	\$4,109	\$197,427	\$58,705	\$26,846	\$287,087
Hotels with Dining Facilities	\$1,121	\$103,183	\$61,363	\$84,185	\$249,852
<b>Industrial</b>	<u>\$4,482</u>	<u>\$1,173,862</u>	<u>\$967,799</u>	<u>\$362,282</u>	<u>\$2,508,425</u>
<b>Subtotal Non-Residential</b>	\$235,320	\$2,855,914	\$1,688,858	\$972,167	\$5,752,259
<b>Grand Total</b>	\$7,509,335	\$11,095,750	\$4,629,012	\$5,453,960	\$28,688,057



## 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.

#### 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 2019-20 residential sewer service charge is increasing 4.5%, from \$1,126 to \$1,177 per year.

Figure 5-1. Calculation of FY 2019-20 Residential Sewer Service Charges

Residential - Charge per Account					
	Account	Flow	BOD	TSS	Total
Residential - Charge per Account					(per acct)
Units	19,474 accounts	1,273,272 CCF	2,387,374 lbs	3,183,166 lbs	
Accounts	19,474 accounts	19,474 accounts	19,474 accounts	19,474 accounts	
Units per account	1	65.38 CCF/account	122.59 lbs/account	163.46 lbs/account	
Unit Costs (\$ per Unit)	\$373.52 per account	\$6.47 per CCF	\$1.23 per lb	\$1.41 per lb	
<b>Total Residential - Charge per Account</b>	<b>\$373.52 per account</b>	<b>\$423.12 per account</b>	<b>\$150.98 per account</b>	<b>\$230.14 per account</b>	<b>\$1,177</b>

#### 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 \$306 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 2019-20 STEP/Grinder charge is increasing 4.5%, from \$306 annually to \$320 annually, a \$14 increase.

#### 5.1.2. Calculation of FY 2019-20 Non-Residential Sewer Service Charges

Commercial customers are billed purely based on each customer's respective flow, unlike residential customers, which are all billed on a fixed per dwelling unit/account basis. Each commercial customer's is billed per CCF of flow 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 guidelines<sup>3</sup>.

The Flow, BOD, and TSS unit costs for deriving the commercial and industrial sewer service charges are the same unit costs computed in **Figure 4-3**, which were used to derive the fixed sewer service charge for residential customers, with one adjustment. The commercial and industrial rates are solely flow-based. To accommodate this rate structure, we have re-allocated the fixed per-account-related expenses (e.g., billing, customer service) to the flow component, see **Figure 5-2**. The effect of the adjustment is that the flow-component will recoup those account-related costs identified in **Figure 4-1**.

**Figure 5-2. Calculation of Non-Residential Flow, BOD, and TSS Unit Costs**

	Accounts	Flow	BOD	TSS	Total
Non-Residential COS (1)	\$235,320	\$2,855,914	\$1,688,858	\$972,167	\$5,752,259
Re-allocate Accounts Component	(\$235,320)	\$235,320			\$0
Adjusted COS	\$0	\$3,091,234	\$1,688,858	\$972,167	\$5,752,259
Non-Residential Units of Service (2)		441,314	1,371,335	690,475	
		CCF	Pounds	Pounds	
<b>Unit Costs</b>		<b>\$7.00</b>	<b>\$1.23</b>	<b>\$1.41</b>	
		\$/CCF	\$/lb	\$/lb	

(1) Figure 4-4

(2) Figure 4-2

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 (computed in **Figure 5-2**), instead of developing aggregate rates per CCF, as is done for the commercial customers in **Figure 5-3** below.

**Figure 5-3** calculates the commercial charges (per CCF) for the third, and final year, of the three-year phase-in, which are the result of applying the adjusted unit costs from **Figure 5-2** to the non-residential units of service in **Figure 4-2**. 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.

<sup>3</sup> State Water Resources Control Board. *Revenue Program Guidelines*. Appendix G.

Figure 5-3. Calculation of FY 2019-20 Commercial Charges per CCF

<b>Commercial - Charge per CCF</b>				
	<u>Flow</u>	<u>BOD</u>	<u>TSS</u>	<u>Total</u>
<b>Retail/Commercial</b>				(per CCF)
Units	120,806 CCF	113,255 lbs	113,255 lbs	
CCF	120,806 CCF	120,806 CCF	120,806 CCF	
Units/CCF	1	0.9374962 lbs/CCF	0.9374962 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Retail/Commercial</b>	<u>\$7.00 per CCF</u>	<u>\$1.15 per CCF</u>	<u>\$1.32 per CCF</u>	<b>\$9.48</b>
<b>Instituion/Public</b>				
Units	22,063 CCF	17,926 lbs	13,789 lbs	
CCF	22,063 CCF	22,063 CCF	22,063 CCF	
Units/CCF	1	0.8124967 lbs/CCF	0.6249974 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Instituion/Public</b>	<u>\$7.00 per CCF</u>	<u>\$1.00 per CCF</u>	<u>\$0.88 per CCF</u>	<b>\$8.89</b>
<b>Restaurants/Bakeries</b>				
Units	51,822 CCF	323,883 lbs	194,330 lbs	
CCF	51,822 CCF	51,822 CCF	51,822 CCF	
Units/CCF	1	6.2499745 lbs/CCF	3.7499847 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Restaurants/Bakeries</b>	<u>\$7.00 per CCF</u>	<u>\$7.70 per CCF</u>	<u>\$5.28 per CCF</u>	<b>\$19.98</b>
<b>Supermarkets with Grinders</b>				
Units	3,773 CCF	18,866 lbs	18,866 lbs	
CCF	3,773 CCF	3,773 CCF	3,773 CCF	
Units/CCF	1	4.9999796 lbs/CCF	4.9999796 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Supermarkets with Grinders</b>	<u>\$7.00 per CCF</u>	<u>\$6.16 per CCF</u>	<u>\$7.04 per CCF</u>	<b>\$20.20</b>
<b>Hospitals</b>				
Units	30,508 CCF	47,668 lbs	19,067 lbs	
CCF	30,508 CCF	30,508 CCF	30,508 CCF	
Units/CCF	1	1.5624936 lbs/CCF	0.6249974 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Hospitals</b>	<u>\$7.00 per CCF</u>	<u>\$1.92 per CCF</u>	<u>\$0.88 per CCF</u>	<b>\$9.81</b>
<b>Hotels with Dining Facilities</b>				
Units	15,945 CCF	49,826 lbs	59,792 lbs	
CCF	15,945 CCF	15,945 CCF	15,945 CCF	
Units/Kgal	1	3.1249872 lbs/CCF	3.7499847 lbs/CCF	
Unit Costs (\$ per Unit)	<u>\$7.00 per CCF</u>	<u>\$1.23 per lb</u>	<u>\$1.41 per lb</u>	
<b>Total Hotels with Dining Facilities</b>	<u>\$7.00 per CCF</u>	<u>\$3.85 per CCF</u>	<u>\$5.28 per CCF</u>	<b>\$16.13</b>

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). A variance greater than the overall revenue requirement increase of 4.5% indicates where the customer's 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. This was first noted in our cost-of-service for FY 2017-18. Those 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. FY 2019-20 is the third, and final year, of the three-year phase-in. As such, future increases in commercial and industrial rates will be uniform percentage increases applied equally to all customer classes.

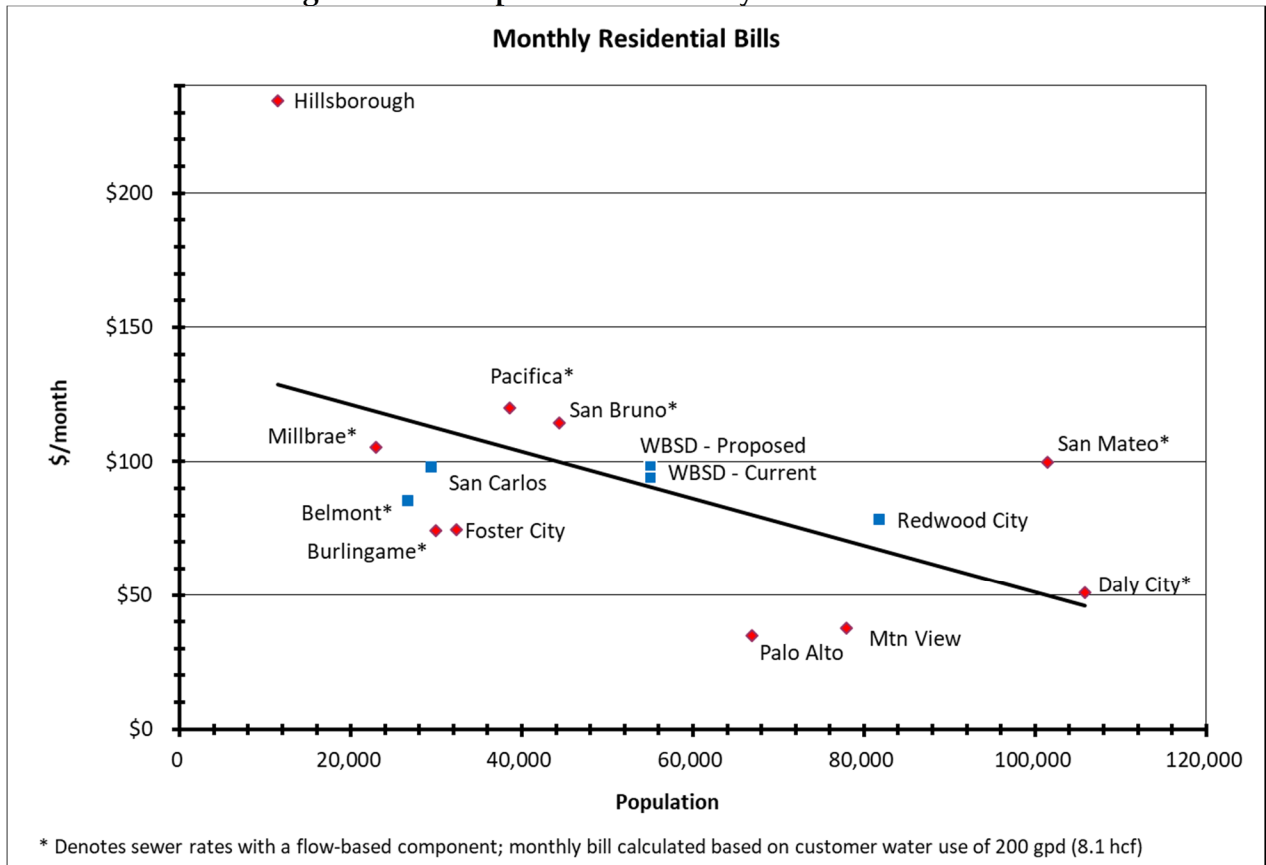
**Figure 5-4. Current and Proposed Commercial and Industrial Rates**

	Current	FY 2019-20 Proposed	
	FY 2018-19	Rate	% Chg
<b>Commercial (charge per CCF)</b>			
Retail/Commercial	\$9.66	\$9.48	-1.9%
Institution/Public	\$9.24	\$8.89	-3.8%
Restaurants/Bakeries	\$17.20	\$19.98	16.2%
Supermarkets with Grinders	\$17.31	\$20.20	16.7%
Hospitals	\$9.91	\$9.81	-1.1%
Hotels with Dining Facilities	\$14.40	\$16.13	12.1%
<b>Industrial (measured)</b>			
Flow Rate Charge per CCF	\$7.90	\$7.00	-11.3%
BOD Rate Charge per pound	\$0.90	\$1.23	37.3%
TSS Rate Charge per pound	\$0.99	\$1.41	42.8%

## 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 trend line 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





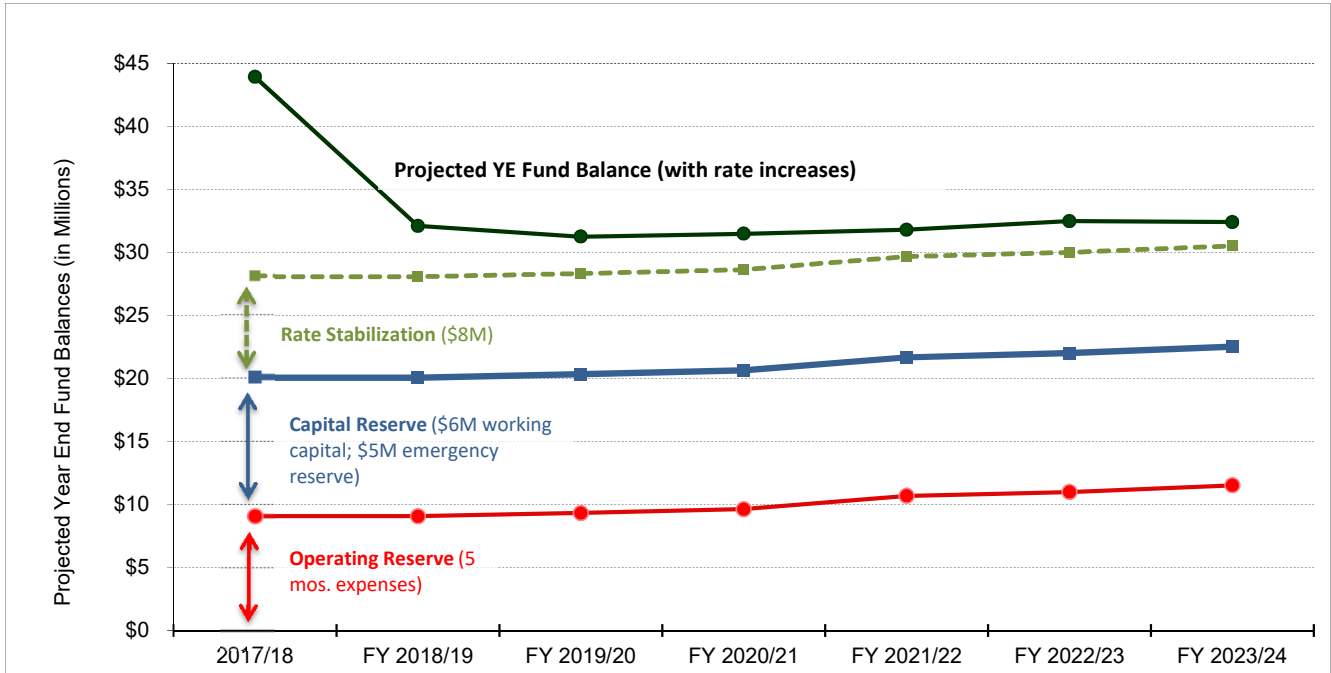
## **APPENDIX A. SEWER RATE MODEL**

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	A	B	C	D	E	F	G	H
1	<b>West Bay Sanitary District</b>							
2	<b>Sewer Rate Study</b>							
3	<b>Table 1A. Summary</b>							
4								
5								
6		<i>Fiscal Year:</i>	<b>Adopted</b>					
7			<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b> <b>Notes</b>
8		<b>Overall Revenue Increases</b>	<b>5.0%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	To Tables 3, 4
9		<i>Cumulative Increase</i>		4.5%	9.2%	14.1%	19.3%	24.6% From Table 3
10		<b>Residential Bill (annual)</b>	\$1,126	\$1,177	\$1,230	\$1,285	\$1,343	\$1,403
11		<b>\$ Increase</b>		\$51	\$53	\$55	\$58	\$60
12								
13								
14								
15								
16								
17								
18								
19								
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26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40			2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
41		<b>Forthcoming SVCW Projected Debt Issuance</b>						
42		New Bond - 2021 (LOC Term-Out) - \$13M / 3.00%		\$0	\$680,000	\$680,000	\$680,000	\$680,000
43		Debt service reduction due to Cash Contribution		\$0	(\$340,000)	(\$340,000)	(\$340,000)	(\$340,000)
44		Adjusted debt service		\$0	\$340,000	\$340,000	\$340,000	\$340,000
45								
46		<b>District's cash contribution to reduce Bond principal</b>		(\$6,500,000)				
47								
48		<b>Total cash contribution</b>		(\$6,500,000)				
49								



	A	B	C	D	E	F	G	H	I	J	K
1	<b>West Bay Sanitary District</b>										
2	<b>Sewer Rate Study</b>										
3	<b>Table 1B. General</b>										
4											
5	<b>List of Model Worksheets</b>										
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	<b>Assumptions</b>		<b>FY 2018/19</b>	<b>FY</b>	<b>FY</b>	<b>FY</b>	<b>FY</b>	<b>FY</b>	<b>FY</b>	<b>Notes</b>	
17	(1)	General Inflation	Per Budget	3.0%	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%	5.0%	To Table 2	
19	(3)	Salaries & Benefits	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2	
20	(4)	PERS Unfunded Accrued Liability	Per Budget	25.5%	12.4%	13.4%	15.0%	9.9%		To Table 2	
21	(5)	SVCW O&M Increase %	Per Budget	4.0%	4.0%	4.0%	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	3.0%	3.0%	3.0%	3.0%	3.0%		To Table 5	
27											
28	<b>Target Fund Balances</b>										
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	C	D	E	F	G	H	I
1	<b>West Bay Sanitary District</b>							
2	<b>Sewer Rate Study</b>							
3	<b>Table 2. Revenue Requirement</b>							
4								
5		<b>Budgeted</b>	<b>Projected</b>					
6		<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>
7	<b>SVCW Projected Expenses</b>							
8	Operating Expense	\$6,930,000	\$7,207,200	\$7,495,488	\$7,795,308	\$8,107,120	\$8,431,405	Source: District's Cash Flow Analysis December 2018
9	Revenue-Funded Capital (PAYGo)	\$423,245	\$440,175	\$457,782	\$476,093	\$495,137	\$514,942	Source: District's Cash Flow Analysis December 2018
10	Debt Service							
11	Existing Bonds	\$4,772,609	\$4,705,902	\$4,593,692	\$4,599,521	\$4,588,067	\$4,587,775	Source: Fieldman Rolapp Debt Service Schedule
12	Existing SRF Loans	\$726,843	\$726,843	\$726,843	\$726,843	\$726,843	\$912,039	Source: Fieldman Rolapp Debt Service Schedule
13	<b>New Bond - 2021 (LOC Term-Out)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$340,000</b>	<b>\$340,000</b>	<b>\$340,000</b>	<b>\$340,000</b>	Source: Fieldman Rolapp Debt Service Schedule
14	New Bond - 2022 (Fixed Rate Issue #1)	\$0	\$0	\$0	\$386,526	\$386,526	\$386,526	Source: Fieldman Rolapp Debt Service Schedule
15	WIFIA Loan	\$0	\$0	\$0	\$0	\$0	\$0	Source: Fieldman Rolapp Debt Service Schedule
16	New Bond - 2024 (Variable-Rate)	\$0	\$0	\$0	\$0	\$0	\$442,044	Source: Fieldman Rolapp Debt Service Schedule
17	Subordinate LOC Interest Expense	\$74,842	\$199,579	\$0	\$0	\$0	\$0	Source: Fieldman Rolapp Debt Service Schedule
18	New SRF Loans	\$0	\$0	\$0	\$1,543,998	\$1,543,998	\$1,543,998	Source: Fieldman Rolapp Debt Service Schedule
19	Cash Reserves (SRF / CIP)	\$545,000	\$566,800	\$589,472	\$613,051	\$637,573	\$663,076	Source: District's Cash Flow Analysis December 2018
20	Subtotal SVCW Debt Service	<u>\$6,119,294</u>	<u>\$6,199,124</u>	<u>\$6,250,007</u>	<u>\$8,209,938</u>	<u>\$8,223,007</u>	<u>\$8,875,458</u>	
21		<b>Subtotal, SVCW</b>	\$13,472,539	\$13,846,499	\$14,203,277	\$16,481,339	\$16,825,263	\$17,821,805
22		<i>Annual Change</i>		2.8%	2.6%	16.0%	2.1%	5.9%
23			4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
24	<b>Operating Expenses</b>							
25	Salaries	\$3,379,871	\$3,481,267	\$3,585,705	\$3,693,276	\$3,804,075	\$3,918,197	
26	Employee Benefits	\$2,239,296	\$2,306,475	\$2,375,669	\$2,446,939	\$2,520,347	\$2,595,958	
27	OPEB	\$0	\$0	\$0	\$0	\$0	\$0	
28	PERS Unfunded Accrued Liability	\$276,130	\$346,648	\$389,500	\$441,800	\$508,070	\$558,562	
29	Director's Fees	\$40,260	\$41,468	\$42,712	\$43,993	\$45,313	\$46,672	
30	Election Expense	\$70,000	\$0	\$70,000	\$0	\$70,000	\$0	Assumed elections every other year, \$70k each
31	Gasoline, Oil and Fuel	\$70,000	\$72,100	\$74,263	\$76,491	\$78,786	\$81,149	
32	Insurance	\$112,000	\$115,360	\$118,821	\$122,385	\$126,057	\$129,839	
33	Memberships	\$46,000	\$47,380	\$48,801	\$50,265	\$51,773	\$53,327	
34	Office Expense	\$35,500	\$36,565	\$37,662	\$38,792	\$39,956	\$41,154	
35	Operating Supplies	\$353,195	\$363,791	\$374,705	\$385,946	\$397,524	\$409,450	
36	Contractual Services	\$449,500	\$462,985	\$476,875	\$491,181	\$505,916	\$521,094	
37	Professional Services	\$529,950	\$545,849	\$562,224	\$579,091	\$596,463	\$614,357	
38	Printing and Publications	\$62,500	\$64,375	\$66,306	\$68,295	\$70,344	\$72,455	
39	Rents and Leases	\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$46,371	
40	Repairs and Maintenance	\$283,000	\$291,490	\$300,235	\$309,242	\$318,519	\$328,075	
41	Research and Monitoring	\$33,000	\$33,990	\$35,010	\$36,060	\$37,142	\$38,256	
42	Travel and Meetings	\$57,500	\$59,225	\$61,002	\$62,832	\$64,717	\$66,658	
43	Utilities	\$165,000	\$173,250	\$181,913	\$191,008	\$200,559	\$210,586	
44	Other Operating Expense	\$170,000	\$175,100	\$180,353	\$185,764	\$191,336	\$197,077	
45	Transf. from Solid Waste Fund to cover alloc. exp.	<b>(\$65,000)</b>	<b>(\$65,000)</b>	<b>(\$65,000)</b>	<b>(\$65,000)</b>	<b>(\$65,000)</b>	<b>(\$65,000)</b>	
46		<b>Subtotal, Operating Expenses</b>	\$8,347,702	\$8,593,517	\$8,959,190	\$9,202,069	\$9,606,917	\$9,864,236
47		<i>Annual Change</i>		2.9%	4.3%	2.7%	4.4%	2.7%

	A	C	D	E	F	G	H	I
1	<b>West Bay Sanitary District</b>							
2	<b>Sewer Rate Study</b>							
3	<b>Table 2. Revenue Requirement</b>							
4								
5								
6		<b>Budgeted</b>	<b>Projected</b>					
48		<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>
49	<b>Non-Operating Expenditures</b>							
49	Non-Operating Expense	\$6,000	\$6,180	\$6,365	\$6,556	\$6,753	\$6,956	
50	Contrib. to LAFCo	\$19,000	\$19,855	\$20,748	\$21,682	\$22,658	\$23,677	
51	<b>Subtotal, Non-Operating Expenditures</b>	<b>\$25,000</b>	<b>\$26,035</b>	<b>\$27,114</b>	<b>\$28,239</b>	<b>\$29,411</b>	<b>\$30,633</b>	
52	<i>Annual Change</i>		4.1%	4.1%	4.1%	4.2%	4.2%	
53								
54	<b>Total Expenses</b>	<b>\$21,845,241</b>	<b>\$22,466,051</b>	<b>\$23,189,581</b>	<b>\$25,711,647</b>	<b>\$26,461,592</b>	<b>\$27,716,674</b>	
55	<i>Annual Change</i>		2.8%	3.2%	10.9%	2.9%	4.7%	
56								
57	<b>Non-Operating Revenues</b>							
58	Flow Equalization Cost Sharing	(\$339,367)	(\$339,367)	(\$339,367)	(\$339,367)	(\$339,367)	(\$339,367)	
59	Permit & Inspection Fees	(\$100,000)	(\$101,000)	(\$102,010)	(\$103,030)	(\$104,060)	(\$105,101)	
60	Other Operating Revenue (Los Altos Hills, Woodside)	(\$350,000)	(\$353,500)	(\$357,035)	(\$360,605)	(\$364,211)	(\$367,854)	
61	Other Non-Operating Income	(\$157,039)	(\$158,609)	(\$160,195)	(\$161,797)	(\$163,415)	(\$165,050)	
62	<b>Subtotal, Non-Operating Income</b>	<b>(\$946,406)</b>	<b>(\$952,476)</b>	<b>(\$958,607)</b>	<b>(\$964,800)</b>	<b>(\$971,054)</b>	<b>(\$977,371)</b>	
63	<i>Annual Change</i>		0.6%	0.6%	0.6%	0.6%	0.7%	
64	<b>Other Transfers to/(from)</b>							
65	Operating (General) Fund	\$290,470	\$911,102	\$1,484,665	\$317,848	\$983,920	\$1,208,358	From Table 4
66	Capital Projects Fund (for PAYGo projects)	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	From Table 4
67	Emergency Capital Reserves	\$0	\$0	\$0	\$0	\$0	\$0	From Table 4
68	<b>Total Transfers</b>	<b>\$6,553,851</b>	<b>\$7,174,482</b>	<b>\$7,748,046</b>	<b>\$6,581,229</b>	<b>\$7,247,301</b>	<b>\$7,471,739</b>	
69	<i>Annual Change</i>		9.5%	8.0%	-15.1%	10.1%	3.1%	
70	<b>Total Revenue Requirement</b>	<b>\$27,452,686</b>	<b>\$28,688,057</b>	<b>\$29,979,019</b>	<b>\$31,328,075</b>	<b>\$32,737,839</b>	<b>\$34,211,041</b>	To Table 3
71	<i>Annual Change</i>		4.5%	4.5%	4.5%	4.5%	4.5%	
72	<i>Cumulative Change</i>		4.5%	9.2%	14.1%	19.3%	24.6%	
73								
74	<i>Source: West Bay Sanitary District FY 2018/19 Budget</i>							

	A	B	C	D	E	F	G	H
1	<b>West Bay Sanitary District</b>							
2	<b>Sewer Rate Study</b>							
3	<b>Table 3. Revenue Increases</b>							
4								
5								
6		<b>Estimated</b>	<b>Projected</b>					
7		<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>
8	<b>Rate Revenue @ Current Rates</b>							
9	Current Customer Base	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	FY 2018/19 Revenue per Budget
10	Additional Revenue from Growth		0	0	0	0	0	
11	<b>Total Rate Revenue @ Current Rates</b>		\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	To Below
12								
13	Revenue Requirement	(\$27,452,686)	(\$28,688,057)	(\$29,979,019)	(\$31,328,075)	(\$32,737,839)	(\$34,211,041)	From Table 2
14	<b>To/(From) operations before Rate Incr.</b>	\$0	(\$1,235,371)	(\$2,526,333)	(\$3,875,389)	(\$5,285,153)	(\$6,758,355)	To Table 4
15								
16								
17	<b>Increase in Rate Revenue</b>		<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	From Table 1B
18	Cumulative Increase in Rate Revenue		4.5%	9.2%	14.1%	19.3%	24.6%	To Table 1A
19	<b>Revenue from Rate Increases</b>							
20	FY 2019-20 (eff. July 1, 2019)		\$1,235,371	\$1,235,371	\$1,235,371	\$1,235,371	\$1,235,371	
21	FY 2020-21 (eff. July 1, 2020)			\$1,290,963	\$1,290,963	\$1,290,963	\$1,290,963	
22	FY 2021-22 (eff. July 1, 2021)				\$1,349,056	\$1,349,056	\$1,349,056	
23	FY 2022-23 (eff. July 1, 2022)					\$1,409,763	\$1,409,763	
24	FY 2023-24 (eff. July 1, 2023)						\$1,473,203	
25	<b>Total Revenue from Rate Increases</b>	\$0	\$1,235,371	\$2,526,333	\$3,875,389	\$5,285,153	\$6,758,355	
26	<b>Total Current Revenue</b>	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	\$27,452,686	From Above
27	<b>Total Revenue</b>	\$27,452,686	\$28,688,057	\$29,979,019	\$31,328,075	\$32,737,839	\$34,211,041	
28	<b>Revenue Requirement</b>	(\$27,452,686)	(\$28,688,057)	(\$29,979,019)	(\$31,328,075)	(\$32,737,839)	(\$34,211,041)	From Above
29	<b>To/(From) operations after Rate Incr.</b>	\$0	\$0	\$0	\$0	\$0	\$0	To Table 4

	A	B	C	D	E	F	G	H	I	J	K	
1	<b>West Bay Sanitary District</b>											
2	<b>Sewer Rate Study</b>											
3	<b>Table 4. Reserves</b>											
4												
5			<b>Tbl.</b>	<b>Actual</b>	<b>Budgeted</b>							
6			<b>1B</b>	<b>2017/18</b>	<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>	
7												
8	<b>OPERATING (GENERAL) FUND</b>											
9	<b>Revenue Increases</b>				<b>5.0%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	<b>4.5%</b>	From Table 1A
10	Beginning Balance				\$7,931,098	\$9,044,123	\$9,378,612	\$9,647,336	\$10,691,847	\$11,003,207		
11	Surplus/Deficit				\$0	\$0	\$0	\$0	\$0	\$0	\$0	From Table 3
12												
13	<b>Transfers (To)/From</b>											
14	Revenue Requirement				\$290,470	\$911,102	\$1,484,665	\$317,848	\$983,920	\$1,208,358		To Table 2
15	Capital Asset Fund				\$1,800,000	\$400,000	(\$240,000)	\$1,700,000	\$300,000	\$300,000		
16	Recycled Water Project - Reimbursement				\$0	\$0	\$0	\$0	\$0	\$0		
17	PERS Liability Reserve				(\$1,000,000)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)		From Below
18	Fund Subtotal				\$9,021,569	\$9,355,224	\$9,623,278	\$10,665,184	\$10,975,767	\$11,511,565		
19	Estimated Interest Earnings (6)				\$22,554	\$23,388	\$24,058	\$26,663	\$27,439	\$28,779		
20	<b>Ending Balance</b>				<b>\$7,931,098</b>	<b>\$9,044,123</b>	<b>\$9,378,612</b>	<b>\$9,647,336</b>	<b>\$10,691,847</b>	<b>\$11,003,207</b>	<b>\$11,540,344</b>	
21	<i>Minimum Balance (5 mo. operations)</i>				<i>\$9,075,100</i>	<i>\$9,333,771</i>	<i>\$9,635,242</i>	<i>\$10,686,103</i>	<i>\$10,998,580</i>	<i>\$11,521,531</i>		
22												
23	<b>CAPITAL ASSET FUND (includes Capital Project Reserve and Vehicle/Equipment Replacement)</b>											
24	Beginning Balance				\$25,103,564	\$11,745,234	\$8,017,528	\$7,945,009	\$7,185,171	\$7,521,737		
25	<b>Revenues</b>											
26	Connection Charges				\$500,000	\$500,000	\$500,000	\$400,000	\$300,000	\$200,000		
27	<b>Capital Projects</b>											
28	Administration (1)				(\$140,000)	(\$144,200)	(\$148,526)	(\$152,982)	(\$157,571)	(\$162,298)		WBSD Budget
29	Collection Facilities (1)				(\$934,500)	(\$524,785)	(\$540,529)	(\$556,744)	(\$573,447)	(\$590,650)		WBSD Budget
30	Subsurface Lines											
31	Proposed (Master Plan)				(\$9,926,500)	(\$6,484,895)	(\$5,942,043)	(\$4,559,156)	(\$4,734,432)	(\$5,582,226)		From Table 5
32	Other (10)				\$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	Vehicles and Equipment				(\$240,000)	(\$247,200)	(\$254,616)	(\$262,254)	(\$270,122)	(\$278,226)		
36	Allow. For Unanticipated Cap Ex				(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)	(\$100,000)		WBSD Budget
37	Subtotal Expenses				(\$11,451,000)	(\$7,611,080)	(\$7,095,714)	(\$5,741,136)	(\$5,945,573)	(\$6,823,401)		
38												
39	<b>Net Capital Expenditures to be paid by Rates</b>				<b>(\$10,951,000)</b>	<b>(\$7,111,080)</b>	<b>(\$6,595,714)</b>	<b>(\$5,341,136)</b>	<b>(\$5,645,573)</b>	<b>(\$6,623,401)</b>		
40												
41	<b>Transfers (To)/From</b>											
42	Revenue Requirement- PayGo Capital				\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381	\$6,263,381		To Table 2
43	Operating Fund				(\$1,800,000)	(\$400,000)	\$240,000	(\$1,700,000)	(\$300,000)	(\$300,000)		From Above
44	Rate Stabilization Fund				(\$6,900,000)	(\$2,500,000)	\$0	\$0	\$0	\$0		
45	Subtotal Transfers				(\$2,436,619)	\$3,363,381	\$6,503,381	\$4,563,381	\$5,963,381	\$5,963,381		
46	Fund Subtotal				\$11,715,944	\$7,997,535	\$7,925,196	\$7,167,253	\$7,502,979	\$6,861,717		
47	Estimated Interest Earnings (6)				\$29,290	\$19,994	\$19,813	\$17,918	\$18,757	\$17,154		
48	<b>Ending Balance</b>				<b>\$25,103,564</b>	<b>\$11,745,234</b>	<b>\$8,017,528</b>	<b>\$7,945,009</b>	<b>\$7,185,171</b>	<b>\$6,878,871</b>		
49	<i>Target Balance</i>				<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>	<i>\$6,000,000</i>		From Table 1B

	A	B	C	D	E	F	G	H	I	J	K
1	<b>West Bay Sanitary District</b>										
2	<b>Sewer Rate Study</b>										
3	<b>Table 4. Reserves</b>										
4											
5			<b>Tbl.</b>	<b>Actual</b>	<b>Budgeted</b>						
6			<b>1B</b>	<b>2017/18</b>	<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>
50											
51	<b>EMERGENCY CAPITAL RESERVES</b>										
52					\$5,314,622	\$5,327,908	\$5,341,228	\$5,354,581	\$5,367,967	\$5,381,387	
53	<b>Transfers (To)/From</b>										
54					\$0	\$0	\$0	\$0	\$0	\$0	To Table 2
55					\$0	\$0	\$0	\$0	\$0	\$0	To Above
56					\$0	\$0	\$0	\$0	\$0	\$0	
57					\$5,314,622	\$5,327,908	\$5,341,228	\$5,354,581	\$5,367,967	\$5,381,387	
58					\$13,287	\$13,320	\$13,353	\$13,386	\$13,420	\$13,453	
59					<b>\$5,314,622</b>	<b>\$5,327,908</b>	<b>\$5,341,228</b>	<b>\$5,354,581</b>	<b>\$5,367,967</b>	<b>\$5,381,387</b>	<b>\$5,394,841</b>
60					\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	
61					\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	
62											
63	<b>RATE STABILIZATION FUND</b>										
64					\$5,577,745	\$5,992,690	\$8,513,921	\$8,535,206	\$8,556,544	\$8,577,936	
65	<b>Transfers (To)/From</b>										
66					\$0	\$0	\$0	\$0	\$0	\$0	To Table 2
67					(\$6,500,000)	\$0	\$0	\$0	\$0	\$0	
68					\$6,900,000	\$2,500,000	\$0	\$0	\$0	\$0	To/From Above
69					\$400,000	\$2,500,000	\$0	\$0	\$0	\$0	
70					\$5,977,745	\$8,492,690	\$8,513,921	\$8,535,206	\$8,556,544	\$8,577,936	
71					\$14,944	\$21,232	\$21,285	\$21,338	\$21,391	\$21,445	
72					<b>\$5,577,745</b>	<b>\$5,992,690</b>	<b>\$8,513,921</b>	<b>\$8,535,206</b>	<b>\$8,556,544</b>	<b>\$8,577,936</b>	<b>\$8,599,380</b>
73					\$8,000,000	\$8,000,000	\$8,000,000	\$8,000,000	\$8,000,000	\$8,000,000	
74											

	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											
5											
6					Projected						
7		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	Notes			
8	Per 10-year CIP Plan	\$8,011,000	\$5,175,000	\$5,000,000	\$5,092,000	\$5,147,500	\$5,778,226				
9	Alpine Road	\$1,700,000									
10	FERRF Levee	\$1,500,000	\$2,000,000	\$1,500,000							
11	Vehicles and Equipment	\$240,000	\$247,200	\$254,616	\$262,254	\$270,122	\$278,226				
12											
13											
14											
15											
16	<b>Total</b>	<b>\$11,451,000</b>	<b>\$7,422,200</b>	<b>\$6,754,616</b>	<b>\$5,354,254</b>	<b>\$5,417,622</b>	<b>\$6,056,452</b>				
17											
18	Less: Non-Master Plan (e.g., admin, manhole raising) per Budget Doc	(\$1,524,500)	(\$1,126,185)	(\$1,153,671)	(\$1,181,981)	(\$1,211,140)	(\$1,241,174)				
19	Net Subsurface CIP	\$9,926,500	\$6,296,015	\$5,600,945	\$4,172,273	\$4,206,482	\$4,815,277				
20	Inflationary Index		3.00%	6.09%	9.27%	12.55%	15.93%	From Table 1B			
21	Total Inflated Master Plan/Subsurface CIP	\$9,926,500	\$6,484,895	\$5,942,043	\$4,559,156	\$4,734,432	\$5,582,226	To Table 4			
22											
23											
24											



	A	B	C	D	E	F	G	H
1	<b>West Bay Sanitary District</b>							
2	<b>Sewer Rate Study</b>							
3	<b>Table 6. WBSD Debt Service Schedule</b>							
4								
5					<b>Projected</b>			
6		<b>FY 2018/19</b>	<b>FY 2019/20</b>	<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>Notes</b>
7								
8								
9	No debt has been issued by WBSD, SVCW debt only (see Table 2)							
10								
11								
12								
13								



# WEST BAY SANITARY DISTRICT

## PUBLIC HEARING ON PROPOSED INCREASE IN SEWER SERVICE CHARGES April 2019

(Please Share This Information with Tenants)



The West Bay Sanitary District provides sewer service to approximately 55,000 customers in areas of Menlo Park, Atherton, Portola Valley, East Palo Alto, Woodside, and Unincorporated San Mateo and Santa Clara Counties. The District, established in 1902, owns and operates more than 200 miles of main line sewers and 13 pumping stations throughout the service area. The District's sewer system is aging. In order to meet our goal of providing safe, reliable service to our customers, the District proposes a sewer service rate change effective July 1, 2019, through the annual property tax bill beginning in November 2019.

In order to ensure proper maintenance of the collection system and proper connections to the system, the District employs twenty-eight people. The District's fiscal year begins on July 1 and ends on June 30 of the following year. Customers are billed annually on the San Mateo County tax rolls.

### Collection System Infrastructure Replacements

Beginning in fiscal year 2009/10, the District has accelerated a system-wide rehabilitation and replacement program. The District's goal is to proactively replace the entire 200-mile sewer system before it reaches the end of its useful life. More than half of the District's sewer lines are in excess of 50 years old. These older lines often experience heavy root intrusion, corrosion, and local failures. Gaps in the pipeline system admit groundwater during wet weather; this additional water floods the system and, if severe, could result in overflows from the existing system manholes. This additional water also increases the flows that need treatment at the regional treatment plant (see below). The estimated cost of this pipeline replacement program is approximately \$7 million 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.



Cracked Clay Sewer Pipe

In addition, the District has implemented an aggressive preventive maintenance program in accordance with guidelines established by the State Water Resources Control Board. In order to continue to fund these sewer system operations and improvements on a pay-as-you-go basis, which ultimately keeps costs down for the ratepayers, the collection system component of the sewer service charge must be increased slightly in fiscal year 2019/20.

### SVCW Treatment Plant Improvements

The District sends wastewater north to the Silicon Valley Clean Water (SVCW) Wastewater Treatment Plant, located in Redwood Shores. The SVCW facility also treats wastewater from Redwood City, San Carlos, and Belmont. The District's share of operating costs for SVCW are approximately \$6.9M per year. In addition, in 2008, SVCW began a significant program to plan, design, and construct over \$840 million in capital improvement projects. These projects replace aging facilities and enable the treatment plant to meet more stringent wastewater permit requirements. The cost of funding the District's portion of these critical projects must be incorporated in the sewer rates, and are defined as a separate wastewater component of the rates. This cost represents a large majority of the required sewer service charge increase.

### Proposed Rates

A sewer service charge rate study, completed by the District's rate consultant, HF&H Consultants (HF&H), found District rates need to increase to cover operating and capital expenses for fiscal year 2019/20. A cost-of-service analysis was performed to determine each customer class' proportionate share of the District's costs. Some commercial classes, such as restaurants, were found to be paying less than their cost of service and their rates are being adjusted over a three-year period to correct the imbalance (fiscal year 2019/20 is the final year of the three-year transition period). Therefore, the increase varies by customer class: residential rates are proposed to increase 4.5%. Commercial/industrial rates are proposed to increase an average of 4.5%, with some increasing greater than 4.5% (e.g., restaurants, supermarkets), some increasing less than 4.5%, and some decreasing.

Approximately 68 homes in the Portola Valley area (located within the On-Site Wastewater Disposal Zone) pay higher charges for the maintenance of the STEP or Grinder Sewer Collection Systems that they require.

Non-residential customers pay charges based on their metered water use from the prior twelve months (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 prior annual flow and the strength of the customer's wastewater based on sampling data.

#### Summary of Current and Proposed Rates

	Current FY 2018/19	Proposed FY 2019/20
<b>Residential (per Dwelling Unit)</b>		
Single Family, Multi-Family	\$1,126	\$1,177
On-site Wastewater Disposal Zone	\$1,432	\$1,497
<b>Commercial (per CCF)</b>		
Retail/Commercial	\$9.66	\$9.48
Institution/Public	\$9.24	\$8.89
Restaurants	\$17.20	\$19.98
Supermarkets with Grinders	\$17.31	\$20.20
Hospitals	\$9.91	\$9.81
Hotels with Dining Facilities	\$14.40	\$16.13
<b>Industrial</b>		
Flow rate (per CCF)	\$7.90	\$7.00
BOD (per pound)	\$0.90	\$1.23
TSS (per pound)	\$0.99	\$1.41

#### Single-Family Rate Breakdown

Component		Proposed (per dwelling unit)
	Current	FY2019/20
Collection	\$578 (51%)	\$609 (52%)
Treatment	\$548 (49%)	\$568 (48%)
<b>Total</b>	<b>\$1,126</b>	<b>\$1,177</b>

## Fairness Principle

Customers pay only for the proportional cost of their service. The proposed rate increase will provide funds to pay for the District's planned operational costs, capital improvements through June of 2020 (including engineering, administrative, and implementation costs), and to repay the District's share of principal and interest on SVCW loans and bonds, for their capital construction during this period.

## Emergency Service

**To request service, please call (650) 321-0384, 24 hours a day, 365 days per year.**



SVCW Regional Treatment Plant

The District provides 24-hour emergency service. We recommend that you always contact the District in the event that you are having a problem with your sewer. District Emergency Response crews will check the main line sewer to ensure that it is flowing correctly, and will advise you if the problem is located in the portion of the sewer from the main line to your home (this is your private sewer lateral).

If your property does not have a conforming cleanout (which looks like a 4-inch capped pipe near the street or near your home), it is recommended that you install one. A permit must be obtained from the District office. All new installations require conforming cleanouts.

[www.westbaysanitary.org](http://www.westbaysanitary.org)



West Bay Sanitary District  
500 Laurel Street  
Menlo Park, CA 94025-3427

**Important Information – Notice of Public Hearing**  
**Wednesday, April 24, 2019 at 7:00 p.m.**

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## WEST BAY SANITARY DISTRICT

### NOTICE OF PUBLIC HEARING

Notice is given that the Board of Directors of West Bay Sanitary District will conduct a Regular Meeting and Public Hearing on **Wednesday evening, April 24, 2019 at 7:00 p.m.**

The location of the meeting is: West Bay Sanitary District  
Ronald W. Shepherd Administration Building  
500 Laurel Street  
Menlo Park, California 94025

The purpose of the Public Hearing will be to consider a proposed increase in Sewer Service Charge fees for all District customers, for fiscal year 2019/20. At the Public Hearing, any interested persons may address the District Board. The proposed rates are \$1,177 per Single Family Residence for fiscal year 2019/20, which is a \$51 increase from fiscal year 2018/19.

If you wish to file a written protest, please send a letter in a sealed envelope to the address above. Your letter must identify the real property you own or rent by street address and assessor's parcel number (APN). Your letter must be legibly signed by any one of the current property owners or ratepayers of record. The District must receive your letter in a sealed envelope by 4:00 p.m. on April 24, 2019, or it must be presented at the District Board meeting on April 24, 2019 prior to the close of the public hearing on this matter. Any person interested, including all sanitary sewer customers of the West Bay Sanitary District, may appear at the public hearing and be heard on any matter related to the proposed increase in rates.