

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



SEWER RATE STUDY

FINAL REPORT

HF&H CONSULTANTS, LLC
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Walnut Creek, CA 94596



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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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TABLE OF CONTENTS

- 1. EXECUTIVE SUMMARY 1**
 - 1.1 Findings and Recommendations 1
 - 1.1.1 Current Rates..... 1
 - 1.1.2 Revenue Requirement Projections..... 2
 - 1.1.3 Cost-of-Service Analysis 2
- 2. BACKGROUND..... 4**
 - 2.1 Regional Context..... 4
 - 2.2 Existing Sewer Rates 4
 - 2.3 Recent Rate Increases..... 5
- 3. REVENUE REQUIREMENT PROJECTIONS..... 6**
 - 3.1 District O&M Expenses..... 6
 - 3.2 District Capital Expenses 6
 - 3.3 District Reserves 7
 - 3.3.1 Operations Reserve Minimum Balance 7
 - 3.3.2 Emergency Reserve Target Balance 7
 - 3.3.3 Capital Reserve Target Balance..... 8
 - 3.3.4 Rate Stabilization Reserve Fund 8
 - 3.3.5 Recycled Water Project Reserve Fund 8
 - 3.3.6 PERS Retirement Liability Reserve Fund..... 8
 - 3.4 SVCW Expenses 8
 - 3.5 Total Revenue Requirements..... 8
 - 3.6 Revenue Increases 10
 - 3.7 Fund Balance 10
 - 3.7.1 Minimum Fund Balance 11
 - 3.7.2 Target Fund Balance..... 11
- 4. COST-OF-SERVICE ANALYSIS..... 12**
 - 4.1 Allocation of Costs to Functions 12
 - 4.2 Units of Service..... 13
 - 4.3 Unit Costs of Service 15
 - 4.4 Revenue Requirement by Customer Class..... 15
- 5. RATE DESIGN..... 17**
 - 5.1 Rate Design 17
 - 5.1.1. Calculation of FY 2018-19 Residential Sewer Service Charges..... 17
 - 5.1.2. Calculation of FY 2018-19 Non-Residential Sewer Service Charges..... 18
 - 5.2 Comparison of Residential Sewer Charges 20

APPENDIX A. SEWER RATE MODEL

TABLE OF FIGURES

Figure 1-1. Current Rates 1

Figure 1-2. Revenue Requirement Projections 2

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

Figure 1-4. Proposed Rates – FY 2018-19 3

Figure 2-1. Recent Rates and Rate Increases 5

Figure 3-1. Key Modeling Assumptions 6

Figure 3-2. District O&M Expense Summary 6

Figure 3-3. CIP Summary 7

Figure 3-4. Projected Revenue Requirements (graph) 9

Figure 3-5. Projected Revenue Requirements 9

Figure 3-6. Projected Rate Revenue Increases 10

Figure 3-7. Fund Balance With and Without Increased Rate Revenue 11

Figure 4-1. Revenue Requirement Functional Cost Allocation 13

Figure 4-2. Summary of Customer Class Units of Service 14

Figure 4-3. Unit Costs of Service 15

Figure 4-4. Revenue Requirement Allocations 16

Figure 4-5. Current Revenue Compared with Cost-of-Service (by Customer Class) 16

Figure 5-1. FY 2017-18 Calculation of Residential Sewer Service Charges 17

Figure 5-2. Calculation of Transitional FY 2018-19 Non-Residential Unit Costs 18

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

Figure 5-4. Current and FY 2018-19 Commercial and Industrial Rates 20

Figure 5-5. Comparison of Monthly Residential Bills 20

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

District Board

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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

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)

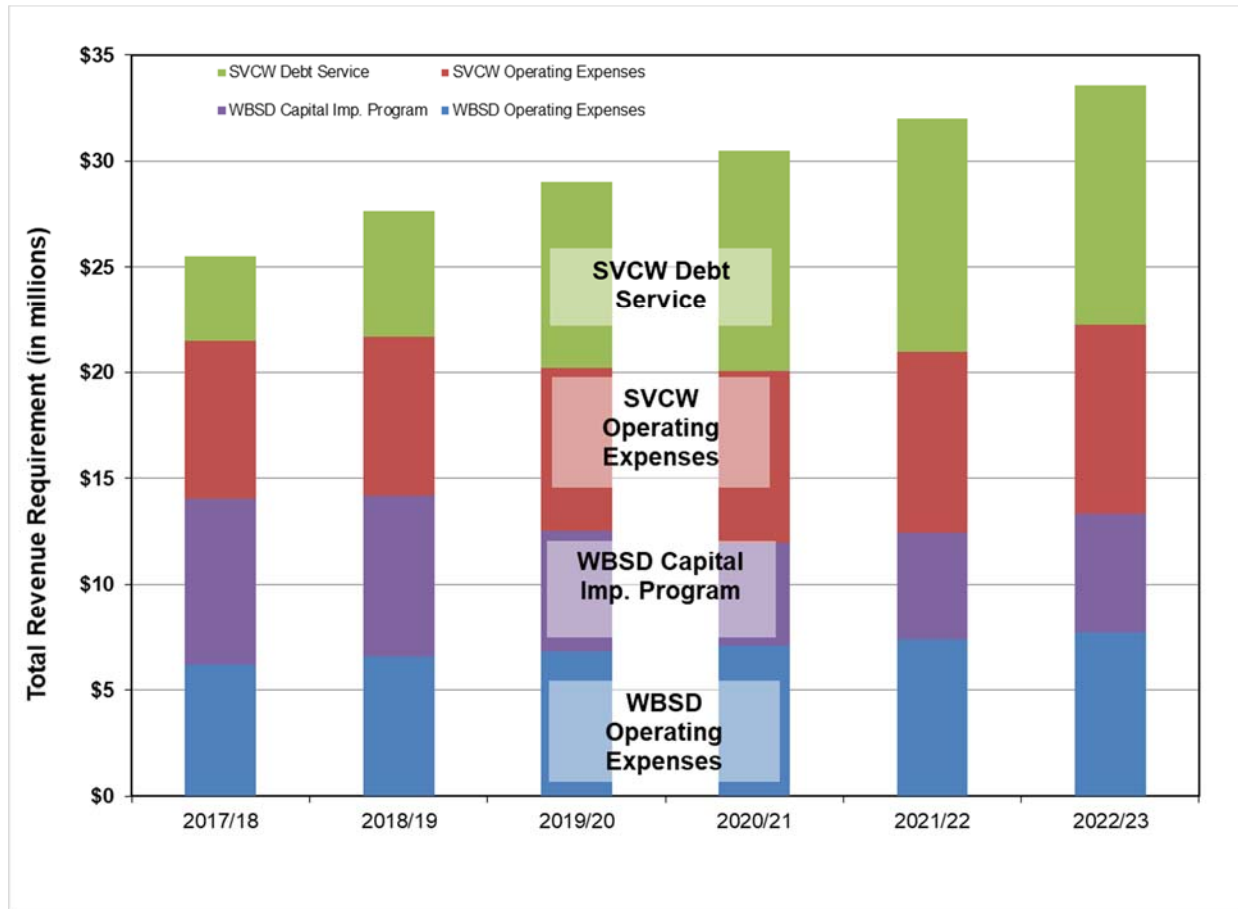


Figure 3-5. Projected Revenue Requirements

	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

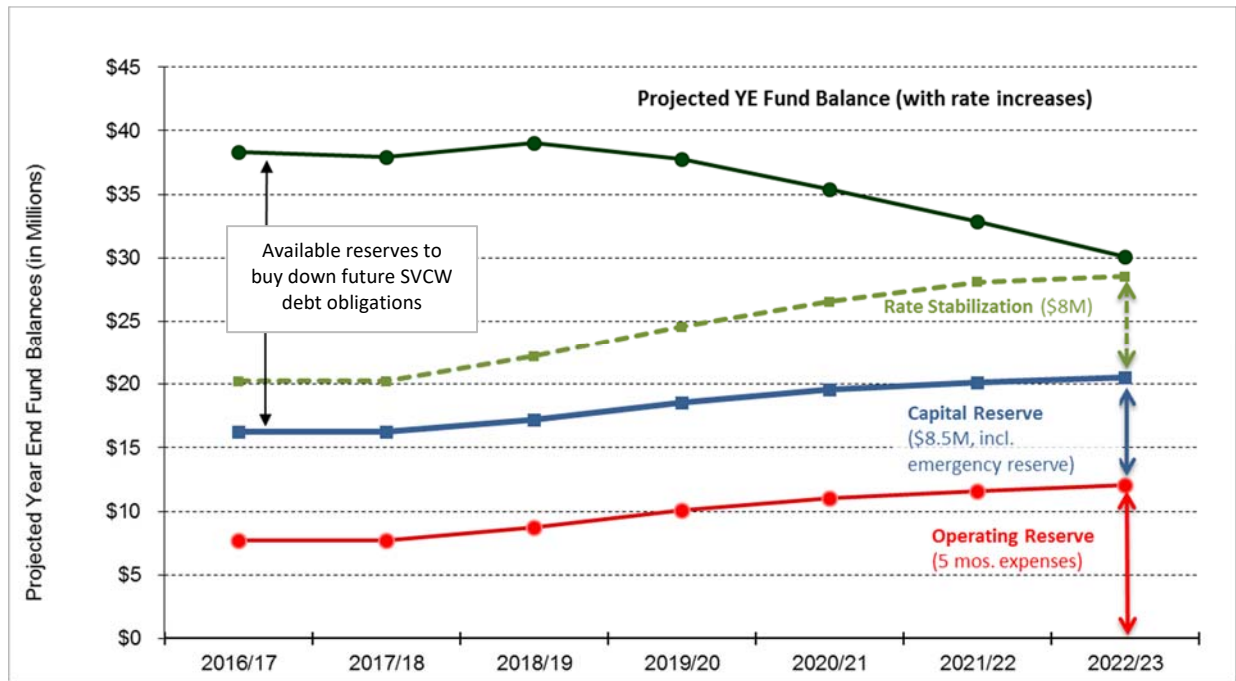
Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	\$26,316,170	
FY 2018-19	\$27,631,979	5.0%
FY 2019-20	\$29,013,577	5.0%
FY 2020-21	\$30,464,256	5.0%
FY 2021-22	\$31,987,469	5.0%
FY 2022-23	\$33,586,843	5.0%

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	
		<i>CCF</i>	<i>Pounds</i>	<i>Pounds</i>	
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.

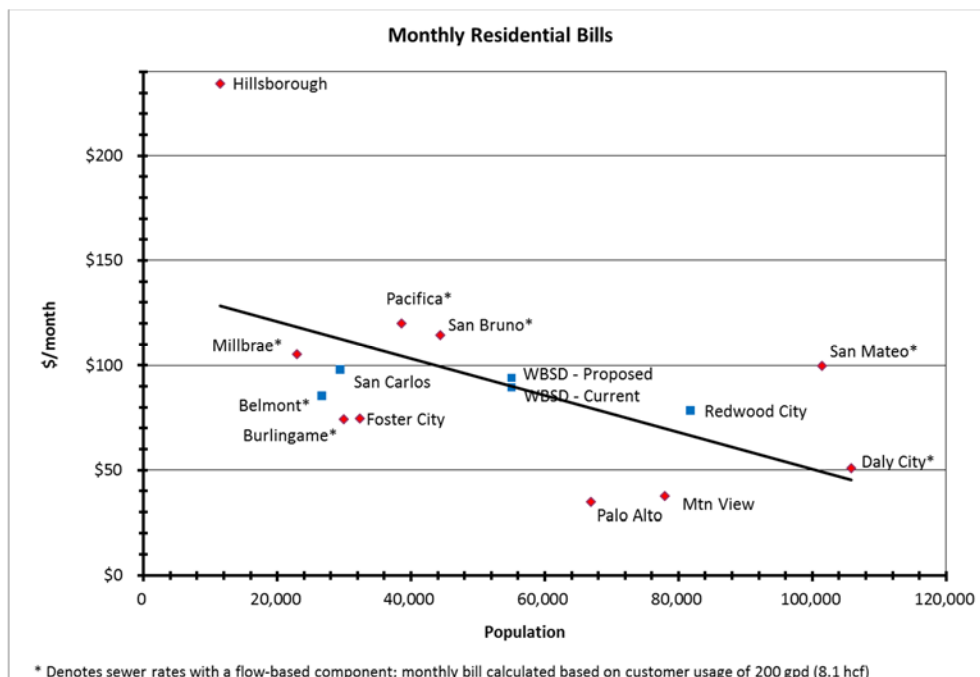
Figure 5-4. Current and FY 2018-19 Commercial and Industrial Rates

	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
