WEST BAY SANITARY DISTRICT
FY 2017-18 SEWER RATE STUDY

FINAL REPORT – Approved March 8, 2017

HF&H Consultants, LLC

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

SEWER RATE STUDY

FINAL REPORT – APPROVED MARCH 8, 2017

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March 8, 2017

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

Subject: Sewer Rate Study – Final Report – Approved March 8, 2017

Dear Mr. Scott:

HF&H is pleased to submit this final report from our study of the West Bay Sanitary District's (District) FY 2017-18 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.

Last year's rate study projected a 5% rate increase would be necessary for FY 2017-18; however, more-than-projected connection fee revenue collected during the past year allows for a lower recommended rate increase of 4.5% for FY 2017-18.

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, rate stabilization, and emergency reserve balances at their current levels.
- An additional $1.0 M per year transferred to the rate stabilization reserve fund for the next five years for future use in buying down SVCW debt.
- An $8.0 M reserve for the Recycled Water Project with Sharon Heights Golf & Country Club (SHGCC).
- $7.2 M in annual capital improvement projects for the District-maintained collection system.
- Projected sewer treatment costs at SVCW's treatment plant based on SVCW's Long Term Financial Plan published in January 2017.

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

District Board
- Edward Moritz, President
- Roy Thiele-Sardina, Secretary
- David Walker, Treasurer
- Fran Dehn, Member
- George Otte, Member

District Staff
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- Liz Bahrami, Finance Manager
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- John Simonetti, Regulatory Compliance Coordinator
- Sergio Ramirez, Maintenance Superintendent

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- John Farnkopf, Sr. Vice President
- Rick Simonson, Vice President

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SEWER RATE STUDY

1. EXECUTIVE SUMMARY

The proposed rates for FY 2017-18 have been calculated to fund the District's expense projections for FY 2017-18. 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 2016, as follows:

Figure 1-1. Current Rates

	Current FY 2016-17
Residential (charge per DU)	
Single Family, Multi Family	$1,031
On-site Wastewater Disposal Zone	$1,312
Commercial (charge per CCF)	
Retail/Commercial	$9.51
Institution/Public	$9.37
Restaurants/Bakeries	$11.87
Supermarkets with Grinders	$11.96
Hospitals	$9.57
Hotels with Dining Facilities	$11.05
Industrial (measured)	
Flow Rate Charge per CCF	$8.95
BOD Rate Charge per pound	$0.26
TSS Rate Charge per pound	$0.34

1.1.2 Revenue Requirement Projections.

Figure 1-2 indicates the projected revenue requirements for the five-year period beginning with FY 2017-18. Of the 4.5% overall rate increase in FY 2017-18, approximately 4.4% is attributable to increases in SVCW's treatment costs and rate stabilization, and 0.1% is attributable to inflationary increases in the District's local operations and an increase in pipeline replacement costs. The estimated cost of this pipeline replacement program is $5.6 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	$24,405,004	
FY 2017-18	$25,503,229	4.5%
FY 2018-19	$26,778,391	5.0%
FY 2019-20	$28,117,310	5.0%
FY 2020-21	$29,523,176	5.0%
FY 2021-22	$30,999,334	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 2017-18, by customer class.

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

Customer Class	Revenue at Current	FY 2017-18 Cost-of-Service	Difference $	Difference %
Residential	$19,133,298	$19,901,289	$767,991	4.0%
Non-Residential				
Commercial				
Retail/Commercial	$2,179,604	$1,991,469	($188,135)	-8.6%
Institution/Public	$328,808	$271,229	($57,578)	-17.5%
Restaurants/Bakeries	$457,867	$732,050	$274,183	59.9%
Supermarkets with Grinders	$56,906	$88,691	$31,786	55.9%
Hospitals	$298,272	$264,651	($33,622)	-11.3%
Hotels with Dining Facilities	$246,757	$324,924	$78,167	31.7%
Industrial	$1,703,492	$1,928,926	$225,434	13.2%
Subtotal Non-Residential	$5,271,706	$5,601,940	$330,234	6.3%
Grand Total	$24,405,004	$25,503,229	$1,098,225	4.5%

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 2016-17 rates and the proposed FY 2017-18 rates, which reflect an increase of 4.0% for residential rates. The proposed commercial and industrial rates reflect the first year of a three-year phase-in.

Figure 1-4. Proposed Rates – FY 2017-18

	Current FY 2016-17	Proposed FY 2017-18
Residential (charge per DU)		
Single Family, Multi Family	$1,031	$1,072
On-site Wastewater Disposal Zone	$1,312	$1,364
Commercial (charge per CCF)		
Retail/Commercial	$9.51	$9.56
Institution/Public	$9.37	$9.28
Restaurants/Bakeries	$11.87	$14.56
Supermarkets with Grinders	$11.96	$14.67
Hospitals	$9.57	$9.72
Hotels with Dining Facilities	$11.05	$12.73
Industrial (measured)		
Flow Rate Charge per CCF	$8.95	$8.38
BOD Rate Charge per pound	$0.26	$0.59
TSS Rate Charge per pound	$0.34	$0.67

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 SVCW Expenditure Projections by Member Entity - January 2017 (the latest available projections provided by SVCW). 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 2016-17 to FY 2021-22. 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 rates have increased as shown in Figure 2-1.

Figure 2-1. Recent Rates and Rate Increases

	2012/13	2013/14	2014/15	2015-16	2016-17
Sewer Service Charge per EDU	$752	$820	$893	$974	$1,031
Annual Increase - $ per Year		$68	$74	$80	$57
Percentage Increase		9%	9%	9%	6%

The 33% cumulative increase during this period is primarily attributable to SVCW's increasing debt service allocation to the District and, secondarily, to increase 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 2017-18 through FY 2021-22. 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 2016-17 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		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
(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	13.4%	16.2%	15.2%	21.8%	26.1%
(5)	SVCW O&M Increase %	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%
(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 $6.3M to $7.3 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

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Salaries	$3,215,407	$3,311,869	$3,411,225	$3,513,562	$3,618,969	$3,727,538
Benefits	$1,226,655	$1,263,455	$1,301,358	$1,340,399	$1,380,611	$1,422,029
PERS Unfunded Accrued Liability	$145,669	$165,251	$192,079	$221,338	$269,518	$339,871
Contractual/Professional Services	$922,350	$950,021	$978,521	$1,007,877	$1,038,113	$1,069,256
Other O&M	$1,535,705	$1,395,149	$1,401,175	$1,488,752	$1,497,937	$1,588,786
Non-Operating Revenue	($793,375)	($798,640)	($804,060)	($809,562)	($815,149)	($820,822)
Net District Operating Costs	$6,252,411	$6,287,104	$6,480,299	$6,762,367	$6,990,000	$7,326,658

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 $6.4 M to $9.4 M during the modeling period. On average, the District expects to spend approximately $7.2 M annually on these projects (during the five-year planning period FY 2017-18 to FY 2021-22), 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

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Administration	$250,000	$257,500	$265,225	$273,182	$281,377	$289,819
Collection Facilities	$934,500	$1,037,535	$1,068,661	$1,100,721	$1,133,743	$1,167,755
Subsurface Lines	$8,020,000	$4,931,300	$5,449,840	$5,037,569	$5,307,363	$7,271,453
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
Total Capital Expenses	$9,414,500	$6,436,335	$6,993,726	$6,621,471	$6,932,482	$8,939,026

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, and Emergency Reserves. 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. The $3.0 M effectively increases the operating reserves another 6 weeks to 6.6 months, which is reasonable considering the lag in revenue due to billing on the tax roll. The revenue requirement projections include an additional $1.0 M per year to be transferred to the rate stabilization reserve fund. 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 a 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. The current fund balance is $8.0 M. 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.

3.4 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.
- 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)

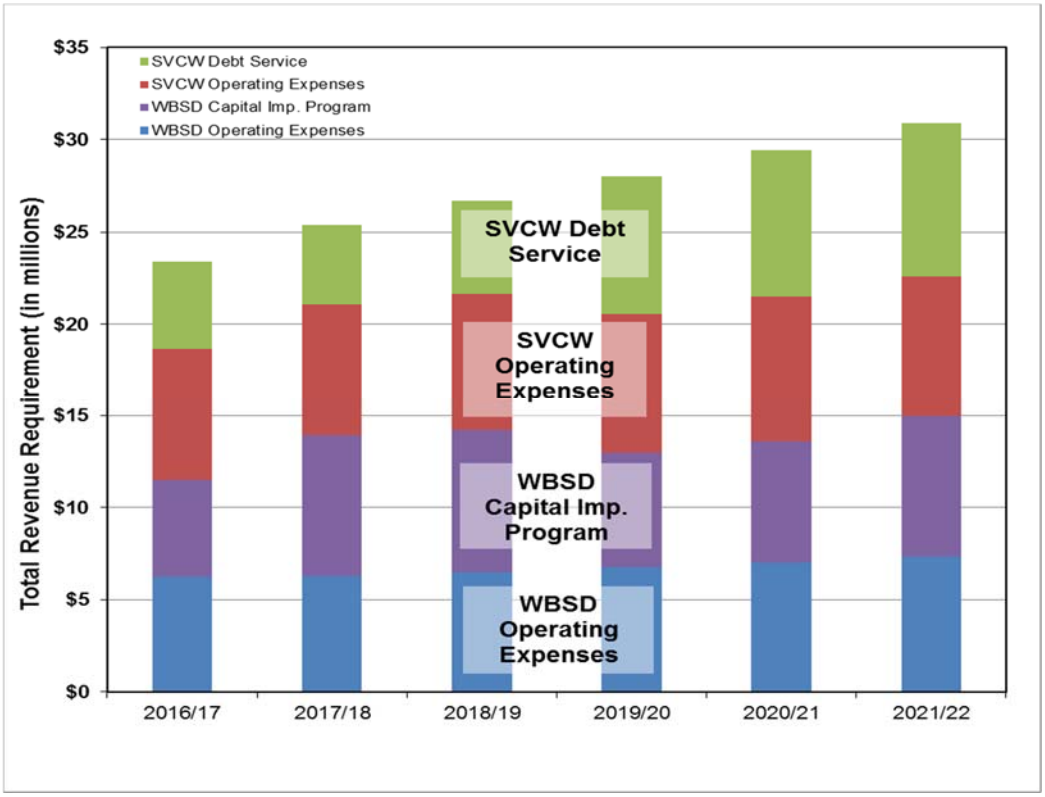


Figure 3-5. Projected Revenue Requirements (table)

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
SVCW Debt Service	$4,722,000	$4,314,350	$5,034,330	$7,437,832	$7,903,994	$8,273,469
SVCW Operating Expenses	$7,183,000	$7,164,025	$7,399,361	$7,603,404	$7,913,481	$7,638,055
WBSD Capital Imp. Program	$5,221,450	$7,615,731	$7,736,281	$6,179,181	$6,574,449	$7,612,837
WBSD Operating Expenses	$6,252,411	$6,287,098	$6,480,292	$6,762,360	$6,989,992	$7,326,651
Total Projected Revenue Req't.	$23,378,861	$25,381,204	$26,650,264	$27,982,778	$29,381,916	$30,851,012

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

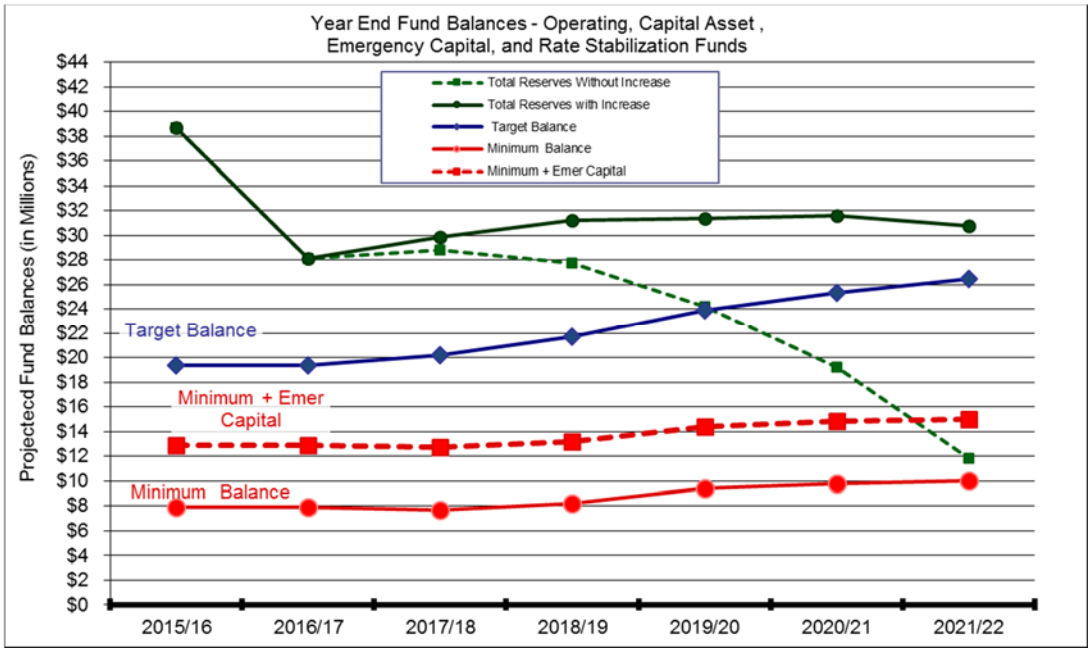
Fiscal Year	Annual Revenue Requirement	Annual Change
Current Revenue	$24,405,004	
FY 2017-18	$25,503,229	4.5%
FY 2018-19	$26,778,391	5.0%
FY 2019-20	$28,117,310	5.0%
FY 2020-21	$29,523,176	5.0%
FY 2021-22	$30,999,334	5.0%

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 2016-17 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 $25.4 M revenue requirement for FY 2017-18 (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 2017-18 Rev. Req.	Alloc. Type	Allocation Factors					Allocated Costs				
			Accounts	Flow	BOD	TSS	Total	Accounts	Flow	BOD	TSS	Total
SVCW Treatment Costs												
Operating Expense	$ 5,322,813	1	0%	26.5%	33.5%	40.0%	100%	$ -	$ 1,410,545	$ 1,783,142	$ 2,129,125	$ 5,322,813
Safety	$ 111,759	1	0%	100.0%	0.0%	0.0%	100%	$ -	$ 111,759	$ -	$ -	$ 111,759
Administrative Services	$ 1,018,476	1	0%	100.0%	0.0%	0.0%	100%	$ -	$ 1,018,476	$ -	$ -	$ 1,018,476
Existing Bonds	$ 2,961,292	1	0%	26.5%	33.5%	40.0%	100%	$ -	$ 784,742	$ 992,033	$ 1,184,517	$ 2,961,292
Existing SRF Loans	$ 703,058	1	0%	26.5%	33.5%	40.0%	100%	$ -	$ 186,310	$ 235,524	$ 281,223	$ 703,058
New Bonds	$ 650,000	1	0%	26.5%	33.5%	40.0%	100%	$ -	$ 172,250	$ 217,750	$ 260,000	$ 650,000
Revenue-Funded Capital	$ 402,600	1	0%	26.5%	33.5%	40.0%	100%	$ -	$ 106,689	$ 134,871	$ 161,040	$ 402,600
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	**$ 11,478,375**							**$ -**	**$ 3,872,492**	**$ 3,466,627**	**$ 4,139,256**	**$ 11,478,375**
District Operating Expenses												
Salaries and Benefits	$ 4,812,731	3	90%	5%	2.5%	2.5%	100%	$ 4,331,458	$ 240,637	$ 120,318	$ 120,318	$ 4,812,731
Other Operating Expense	$ 2,023,670	3	90%	5%	2.5%	2.5%	100%	$ 1,821,303	$ 101,184	$ 50,592	$ 50,592	$ 2,023,670
STEP Revenue	$ (14,095)	5	100%	0%	0%	0%	100%	$ (14,095)	$ -	$ -	$ -	$ (14,095)
Utilities	$ 155,400	4	0%	90%	5%	5%	100%	$ -	$ 139,860	$ 7,770	$ 7,770	$ 155,400
Gasoline, Oil and Fuel	$ 72,100	4	0%	90%	5%	5%	100%	$ -	$ 64,890	$ 3,605	$ 3,605	$ 72,100
Total General Operating Expenses	**$ 7,049,806**							**$ 6,138,666**	**$ 546,570**	**$ 182,285**	**$ 182,285**	**$ 7,049,806**
								87.1%	7.8%	2.6%	2.6%	100.0%
Capital Projects and Equipment												
Vehicle & Equipment Replacement	$ 228,094	3	90%	5%	2.5%	2.5%	100%	$ 205,284	$ 11,405	$ 5,702	$ 5,702	$ 228,094
Transfers to Capital Projects Fund	$ 5,000,000	4	0%	90%	5%	5%	100%	$ -	$ 4,500,000	$ 250,000	$ 250,000	$ 5,000,000
Total Capital Expenses	**$ 5,228,094**							**$ 205,284**	**$ 4,511,405**	**$ 255,702**	**$ 255,702**	**$ 5,228,094**
Subtotal - District Expenses	**$ 12,277,900**							**$ 6,343,950**	**$ 5,057,975**	**$ 437,987**	**$ 437,987**	**$ 12,277,900**
								51.7%	*41.2%*	*3.6%*	*3.6%*	*100.0%*
Total Direct Expenses	**$ 23,756,275**							$ 6,343,950	$ 8,930,467	$ 3,904,614	$ 4,577,243	$ 23,756,275
					% of Total Direct Expenses			*26.7%*	*37.6%*	*16.4%*	*19.3%*	*100.0%*
Non-Operating Expenses/(Revenue)												
Non-Operating Expense	$ 21,855	4	27%	38%	16%	19%	100%	$ 5,836	$ 8,216	$ 3,592	$ 4,211	$ 21,855
Transfers to Operating (General) Fund	$ 2,509,655	4	27%	38%	16%	19%	100%	$ 670,186	$ 943,430	$ 412,490	$ 483,548	$ 2,509,655
Flow Eq. Cost Sharing	$ (313,000)	4	27%	38%	16%	19%	100%	$ (83,585)	$ (117,663)	$ (51,445)	$ (60,307)	$ (313,000)
Permit & Inspection Fees	$ (50,500)	4	27%	38%	16%	19%	100%	$ (13,486)	$ (18,984)	$ (8,300)	$ (9,730)	$ (50,500)
Other Operating Revenue	$ (420,046)	4	27%	38%	16%	19%	100%	$ (112,170)	$ (157,904)	$ (69,039)	$ (80,932)	$ (420,046)
Other Non-Operating Income	$ (1,010)	4	27%	38%	16%	19%	100%	$ (270)	$ (380)	$ (166)	$ (195)	$ (1,010)
		4	27%	38%	16%	19%	100%	$ -	$ -	$ -	$ -	$ -
Total Composite Expenses	**$ 1,746,954**							**$ 466,512**	**$ 656,716**	**$ 287,132**	**$ 336,595**	**$ 1,746,954**
					% of Total Net Revenue Requirement			26.7%	37.6%	16.4%	19.3%	100.0%
Total Direct and Composite Expenses (Fig. 3-5)	**$ 25,503,229**							**$ 6,810,462**	**$ 9,587,183**	**$ 4,191,746**	**$ 4,913,838**	**$ 25,503,229**

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	13,963	885,693	300	400	1,660,667	2,214,223
SFR w/ STEP	48	3,045	300	400	5,709	7,612
MFR	4,547	288,423	300	400	540,790	721,054
Subtotal - Residential	18,558	1,177,160			2,207,167	2,942,889
Non-Residential						
Commercial						
Retail/Commercial	419	229,131	150	150	214,809	214,809
Institution/Public Schools	26	35,078	130	100	28,500	21,923
Restaurants/Bakeries	65	38,574	1000	600	241,083	144,650
Hospitals	8	31,172	250	100	48,705	19,482
Supermarkets with Grinders	2	4,758	800	800	23,790	23,790
Hotels with Dining Facilities	3	22,336	500	600	69,800	83,760
Measured Industrial Customers						
SRI	1	37,040	250	100	57,875	23,150
4 Homewood	1	504	112	116	353	365
Middlefield Park	1	1,218	246	188	1,873	1,431
3696 Haven Ave	1	1,485	122	483	1,132	4,483
Village Square	1	527	1600	280	5,270	922
Valley Presbyterian	1	216	1600	280	2,160	378
Printed Circuit Board Manufactur	2	352	95	120	209	264
Sanford Metal Processing	1	75	11	45	5	21
The Sequoia's	1	15,552	250	100	24,300	9,720
3715 Haven Ave	1	105	62	23	41	15
Tyco	1	77,263	815	230	393,554	111,064
USGS	1	1,917	470	683	5,630	8,182
S.L.A.C.	1	29,215	283	430	51,673	78,514
Subtotal - Non-Residential	537	526,515			1,170,763	746,924
Total (excluding I&I)	19,095	1,703,675			3,377,929	3,689,813
Inflow & Infiltration (I & I)	-	89,667	799	981	447,271	548,932
Total at SVCW Treatment Plant	19,095	1,793,342			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 2015. Residential flow was determined by subtracting the actual non-residential measured flow and estimated inflow & infiltration (I&I) flow[1] rate of 5% from the total District flow at SVCW's treatment plant, as reported by SVCW for 2015. The resulting total residential flow estimate equates to an average flow per dwelling unit of 130 gallons per day, which is reasonable considering the recent drought and conservation efforts.

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 2015, and billed accordingly. Strength concentrations

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

for commercial customers were based on the State's guidelines[2]. 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	$6,810,462	$9,587,183	$4,191,746	$4,913,838	$25,503,229
Units of Service, excl. I&I (from Fig. 4-2)	b *Type*	19,095 *accts*	1,703,675 *CCF*	3,377,929 *Pounds*	3,689,813 *Pounds*	
Unit Costs	a ÷ b	**$356.66** $/acct	**$5.63** $/CCF	**$1.24** $/lb	**$1.33** $/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	$6,618,935	$6,624,297	$2,738,921	$3,919,136	$19,901,289
Non-Residential					
Retail/Commercial	$149,441	$1,289,398	$266,561	$286,068	$1,991,469
Institution/Public	$9,273	$197,393	$35,367	$29,196	$271,229
Restaurants/Bakeries	$23,183	$217,067	$299,166	$192,635	$732,050
Supermarkets with Grinders	$713	$26,775	$29,521	$31,682	$88,691
Hospitals	$2,853	$175,413	$60,439	$25,945	$264,651
Hotels with Dining Facilities	$1,070	$125,693	$86,616	$111,545	$324,924
Industrial	$4,993	$931,147	$675,155	$317,631	$1,928,926
Subtotal Non-Residential	$191,528	$2,962,886	$1,452,825	$994,702	$5,601,940
Grand Total	$6,810,462	$9,587,183	$4,191,746	$4,913,838	$25,503,229

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 Current	FY 2017-18 Cost-of-Service	Difference $	Difference %
Residential	$19,133,298	$19,901,289	$767,991	4.0%
Non-Residential				
Commercial				
Retail/Commercial	$2,179,604	$1,991,469	($188,135)	-8.6%
Institution/Public	$328,808	$271,229	($57,578)	-17.5%
Restaurants/Bakeries	$457,867	$732,050	$274,183	59.9%
Supermarkets with Grinders	$56,906	$88,691	$31,786	55.9%
Hospitals	$298,272	$264,651	($33,622)	-11.3%
Hotels with Dining Facilities	$246,757	$324,924	$78,167	31.7%
Industrial	$1,703,492	$1,928,926	$225,434	13.2%
Subtotal Non-Residential	$5,271,706	$5,601,940	$330,234	6.3%
Grand Total	$24,405,004	$25,503,229	$1,098,225	4.5%

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 2017-18 Residential Sewer Service Charges

Figure 5-1 shows how the FY 2017-18 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 2017-18 residential sewer service charge is increasing 4.0%, from $1,031 to $1,072 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	18,558	accounts	1,177,160	CCF	2,207,167	lbs	2,942,889	lbs	
Accounts	18,558	accounts	18,558	accounts	18,558	accounts	18,558	accounts	
Units per account	1		63.43	CCF/account	118.93	lbs/account	158.58	lbs/account	
Unit Costs ($ per Unit)	$356.66	per account	$5.63	per CCF	$1.24	per lb	$1.33	per lb	
Total Residential - Charge per Account	$356.66	per account	$356.95	per account	$147.59	per account	$211.18	per account	**$1,072**

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 $281 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 2017-18 STEP/Grinder charge is increasing approximately 4.0%, from $281 annually to $291 annually, a $10 increase.

5.1.2. Calculation of FY 2017-18 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 guidelines[3].

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.

As shown in Figure 4-5, the rates for non-residential customer classes with high strength characteristics would need to increase significantly (e.g., 59.9% increase to the restaurant/bakery customer class) to cover the cost of service. Similar preliminary 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 has recommended phasing in the proposed non-residential increases over three years.

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 2017-18 Non-Residential Unit Costs

	Accounts	Flow	BOD	TSS	Total
Non-Residential COS (1)	$191,528	$2,962,886	$1,452,825	$994,702	$5,601,940
Re-allocate Accounts Component	($190,613)	$190,613			$0
Adjusted COS	$915	$3,153,499	$1,452,825	$994,702	$5,601,940
Revenue at Current Rates (2)		$4,713,354	$304,398	$253,954	$5,271,706
Variance (COS vs. Current)		($1,559,855)	$1,148,427	$740,748	$329,319
1/3 of Variance		($519,952)	$382,809	$246,916	$109,773
FY 2017-18 Phase-in Calculation					
Revenue at Current Rates (from above)		$4,713,354	$304,398	$253,954	$5,271,706
Transitional Adjustment (3)		($300,405)	$382,809	$246,916	$329,319
Adjusted Functional COS - 1st Year of Phase-		$4,412,948	$687,207	$500,870	$5,601,026
Non-Residential Units of Service		526,515	1,170,763	746,924	
		CCF	*Pounds*	*Pounds*	
Adjusted Unit Costs (1st Year of Phase-in)		**$8.38**	**$0.59**	**$0.67**	
		$/CCF	***$/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 1/3 of the current variance. The Flow adjustment reflects the amount necessary to generate the required 5.7% 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 2017-18 Calculation of Commercial Charges per CCF

Commercial - Charge per CCF					
	Account	Flow	BOD	TSS	Total
Retail/Commercial					(per CCF)
Units	419 accounts	229,131 CCF	214,809 lbs	214,809 lbs	
CCF	229,131 CCF	229,131 CCF	229,131 CCF	229,131 CCF	
Units/CCF	0.001829 accounts/CCF	1	0.9374962 lbs/CCF	0.9374962 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Retail/Commercial	$0.00 per CCF	$8.38 per CCF	$0.55 per CCF	$0.63 per CCF	**$9.56**
Instituion/Public					
Units	26 accounts	35,078 CCF	28,500 lbs	21,923 lbs	
CCF	35,078 CCF	35,078 CCF	35,078 CCF	35,078 CCF	
Units/CCF	0.000741 accounts/CCF	1	0.8124967 lbs/CCF	0.6249974 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Instituion/Public	$0.00 per CCF	$8.38 per CCF	$0.48 per CCF	$0.42 per CCF	**$9.28**
Restaurants/Bakeries					
Units	65 accounts	38,574 CCF	241,083 lbs	144,650 lbs	
CCF	38,574 CCF	38,574 CCF	38,574 CCF	38,574 CCF	
Units/CCF	0.001685 accounts/CCF	1	6.2499745 lbs/CCF	3.7499847 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Restaurants/Bakeries	$0.00 per CCF	$8.38 per CCF	$3.67 per CCF	$2.51 per CCF	**$14.56**
Supermarkets with Grinders					
Units	2 accounts	4,758 CCF	23,790 lbs	23,790 lbs	
CCF	4,758 CCF	4,758 CCF	4,758 CCF	4,758 CCF	
Units/CCF	0.000420 accounts/CCF	1	4.9999796 lbs/CCF	4.9999796 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Supermarkets with Grinders	$0.00 per CCF	$8.38 per CCF	$2.93 per CCF	$3.35 per CCF	**$14.67**
Hospitals					
Units	8 accounts	31,172 CCF	48,705 lbs	19,482 lbs	
CCF	31,172 CCF	31,172 CCF	31,172 CCF	31,172 CCF	
Units/CCF	0.000257 accounts/CCF	1	1.5624936 lbs/CCF	0.6249974 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Hospitals	$0.00 per CCF	$8.38 per CCF	$0.92 per CCF	$0.42 per CCF	**$9.72**
Hotels with Dining Facilities					
Units	3 accounts	22,336 CCF	69,800 lbs	83,760 lbs	
Kgal	22,336 CCF	22,336 CCF	22,336 CCF	22,336 CCF	
Units/Kgal	0.000134 accounts/CCF	1	3.1249872 lbs/CCF	3.7499847 lbs/CCF	
Unit Costs ($ per Unit)	$0.00 per account	$8.38 per CCF	$0.59 per lb	$0.67 per lb	
Total Hotels with Dining Facilities	$0.00 per CCF	$8.38 per CCF	$1.83 per CCF	$2.51 per CCF	**$12.73**

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 6.2%, while regular strength and low strength customers are seeing a rate increase of something less than the 6.2%

average. The District's lowest strength customer class (Institution/Public, which includes schools) is seeing a rate reduction.

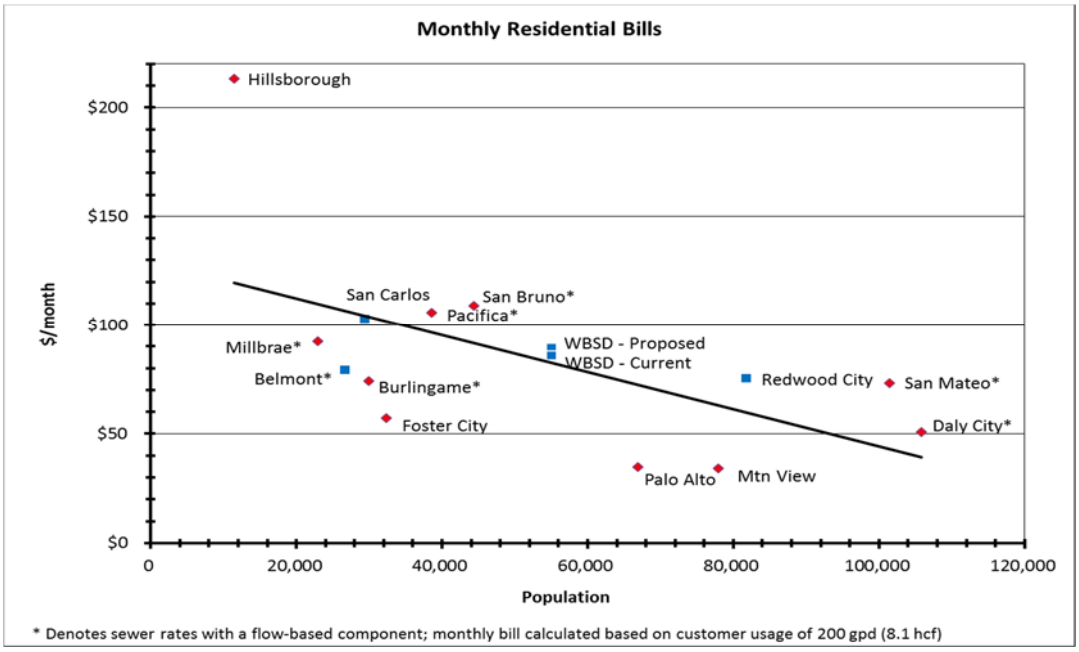
Figure 5-4. Current and FY 2017-18 Commercial and Industrial Rates

	Current FY 2016-17	Proposed FY 2017-18
Commercial (charge per CCF)		
Retail/Commercial	$9.51	$9.56
Institution/Public	$9.37	$9.28
Restaurants/Bakeries	$11.87	$14.56
Supermarkets with Grinders	$11.96	$14.67
Hospitals	$9.57	$9.72
Hotels with Dining Facilities	$11.05	$12.73
Industrial (measured)		
Flow Rate Charge per CCF	$8.95	$8.38
BOD Rate Charge per pound	$0.26	$0.59
TSS Rate Charge per pound	$0.34	$0.67

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.

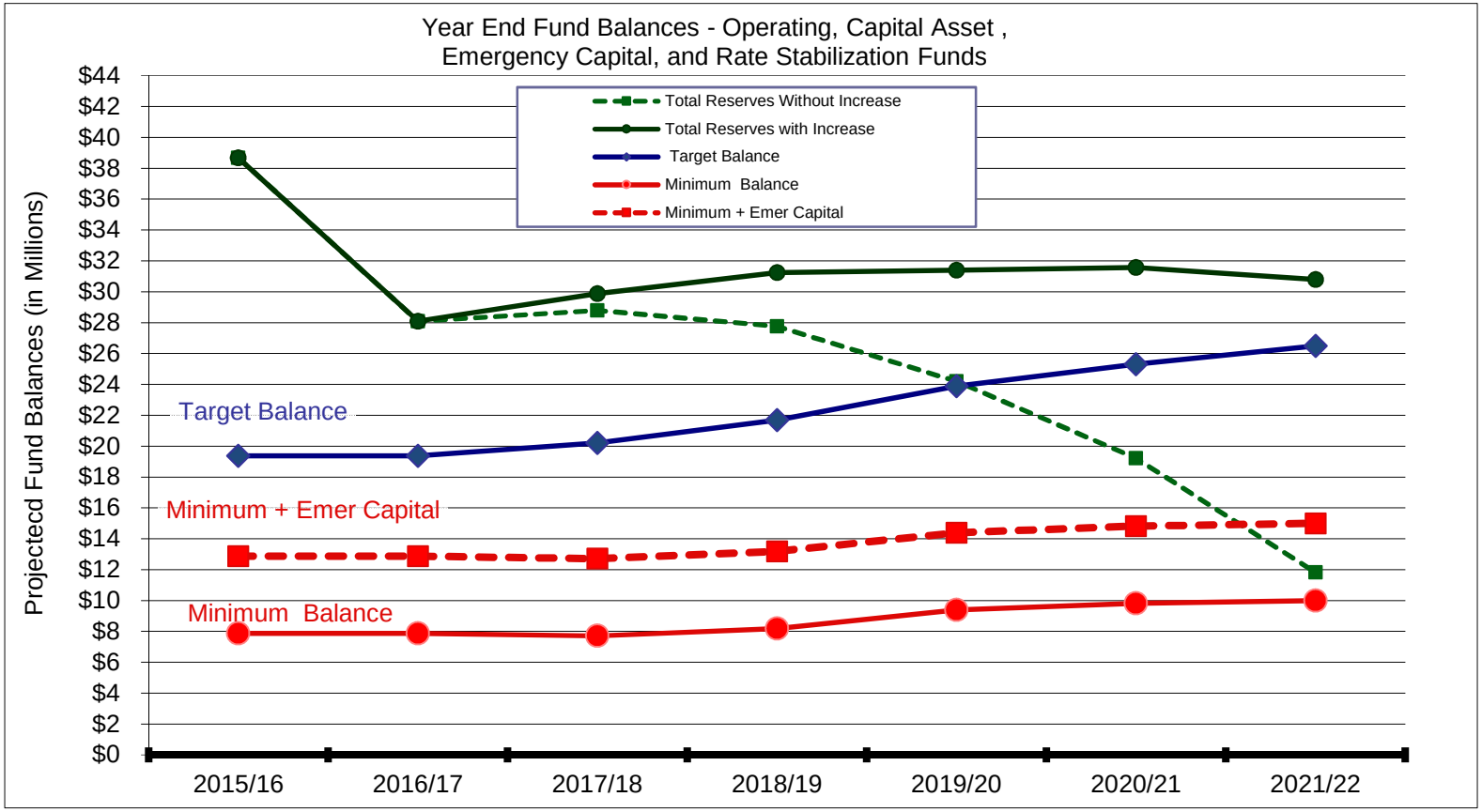
Figure 5-5. Comparison of Monthly Residential Bills



APPENDIX A. SEWER RATE MODEL

West Bay Sanitary District
Sewer Rate Study
Table 1A. Summary

Fiscal Year:	Adopted 2015/16	Adopted 2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Notes
Revenue Increases	**9%**	**6%**	4.5%	5.0%	5.0%	5.0%	5.0%	To Tables 3, 4
Cumulative Increase			*4.5%*	*9.7%*	*15.2%*	*21.0%*	*27.0%*	From Table 3



West Bay Sanitary District
Sewer Rate Study
Table 1B. General

List of Model Worksheets

Table 1A. Summary
Table 1B. General
Table 2. Revenue Requirement
Table 3. Revenue Increases
Table 4. Reserves
Table 5. Capital Projects
Table 6. WBSD Debt Service Schedule

Assumptions		2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Notes
(1)	General Inflation	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2
(2)	Utilities	Per Budget	5.0%	5.0%	5.0%	5.0%	5.0%	To Table 2
(3)	Salaries & Benefits	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2
(4)	PERS Unfunded Accrued Liability	Per Budget	13.4%	16.2%	15.2%	21.8%	26.1%	To Table 2
(5)	SVCW O&M Increase %	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2
(6)	Interest on Earnings	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	To Table 4
(7)	Non-rate Revenues	Per Budget	1.0%	1.0%	1.0%	1.0%	1.0%	To Table 2
(8)	% Increase in Revenue due to Growth	Per Budget	0.0%	0.0%	0.0%	0.0%	0.0%	To Tables 2,3
(9)	Los Altos Hills, Woodside Revenue Change	Per Budget	3.0%	3.0%	3.0%	3.0%	3.0%	To Table 2
(10)	Construction Cost Inflation	Per Budget	10.0%	10.0%	10.0%	10.0%	10.0%	To Table 5

Target Fund Balances

Operating Fund
- Purpose: For O&M cash flow during the year
- Minimum balance: Cannot go negative
- Target balance: Five months of operating expenses (to accommodate biannual receipt of fees from County tax roll)

Capital Asset Fund
- Purpose: To be used for replacement of Equipment/ Facilities
- Minimum balance: Cannot go negative
- Target balance: $3,500,000

Emergency Capital Fund
- Purpose: To be used for sewer emergencies
- Minimum balance: Cannot go negative
- Target balance: $5,000,000

Rate Stabilization Fund
- Purpose: Allow a margin of safety for the uncertainty of SVCW capital costs
- Minimum balance: Cannot go negative
- Target balance: $3,000,000; increasing $1,000,000 per year for next five years

	A	B	C	D	E	F	G	H	I
1	**West Bay Sanitary District**								
2	**Sewer Rate Study**								
3	**Table 2. Revenue Requirement**								
4									
5		**Tbl.**	**Budgeted**	**Projected**					
6		**1B**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**Notes**
7	**SVCW Projected Expenses**								
8	Operating Expense		$6,227,000	$6,453,048	$6,688,384	$6,932,404	$7,185,433	$6,910,007	SVCW Long Term Financial Plan - January 2017
9	Debt Service: Existing Bonds		$3,257,000	$2,961,292	$2,956,904	$2,958,633	$2,776,890	$2,775,380	SVCW Long Term Financial Plan - January 2017
10	Debt Service: Existing SRF Loans		$965,000	$703,058	$703,058	$703,058	$703,058	$861,749	SVCW Long Term Financial Plan - January 2017
11	Debt Service: New Bonds		$500,000	$650,000	$1,374,368	$3,591,323	$3,591,323	$3,803,617	SVCW Long Term Financial Plan - January 2017
12	Debt Service: New SRF Loans		$0	$0	$0	$184,818	$832,723	$832,723	SVCW Long Term Financial Plan - January 2017
13	Revenue-Funded Capital		$411,000	$402,600	$402,600	$402,600	$402,600	$402,600	SVCW Long Term Financial Plan - January 2017
14	New Cash Reserves (SRF / CIP)		$545,000	$308,377	$308,377	$268,400	$325,448	$325,448	SVCW Long Term Financial Plan - January 2017
15	**Subtotal, SVCW**		$11,905,000	$11,478,375	$12,433,691	$15,041,236	$15,817,475	$15,911,524	
16	*Annual Change*		*per WBSD Budget*	*-3.6%*	*8.3%*	*21.0%*	*5.2%*	*0.6%*	
17									
18	**Operating Expenses**								
19	Salaries	(3)	$3,215,407	$3,311,869	$3,411,225	$3,513,562	$3,618,969	$3,727,538	
20	Employee Benefits	(3)	$1,226,655	$1,263,455	$1,301,358	$1,340,399	$1,380,611	$1,422,029	
21	OPEB		$225,000	$0	$0	$0	$0	$0	
22	PERS Unfunded Accrued Liability	(4)	$145,669	165,251	192,079	221,338	269,518	339,871	
23	Director's Fees	(1)	$37,930	$39,068	$40,240	$41,447	$42,691	$43,971	
24	Election Expense		$0	$40,000	$0	$40,000	$0	$40,000	
25	Gasoline, Oil and Fuel	(1)	$70,000	$72,100	$74,263	$76,491	$78,786	$81,149	
26	Insurance	(1)	$95,050	$97,902	$100,839	$103,864	$106,980	$110,189	
27	Memberships	(1)	$30,850	$31,776	$32,729	$33,711	$34,722	$35,764	
28	Office Expense	(1)	$33,000	$33,990	$35,010	$36,060	$37,142	$38,256	
29	Operating Supplies	(1)	$345,195	$355,551	$366,217	$377,204	$388,520	$400,176	
30	Contractual Services	(1)	$393,000	$404,790	$416,934	$429,442	$442,325	$455,595	
31	Professional Services	(1)	$529,350	$545,231	$561,587	$578,435	$595,788	$613,662	
32	Printing and Publications	(1)	$62,500	$64,375	$66,306	$68,295	$70,344	$72,455	
33	Rents and Leases	(1)	$38,680	$39,840	$41,036	$42,267	$43,535	$44,841	
34	Repairs and Maintenance	(1)	$259,000	$266,770	$274,773	$283,016	$291,507	$300,252	
35	Research and Monitoring	(1)	$33,000	$33,990	$35,010	$36,060	$37,142	$38,256	
36	Travel and Meetings	(1)	$56,500	$58,195	$59,941	$61,739	$63,591	$65,499	
37	Utilities	(2)	$148,000	$155,400	$163,170	$171,329	$179,895	$188,890	
38	Other Operating Expense	(1)	$145,000	$149,350	$153,831	$158,445	$163,199	$168,095	
39	Transf. from Solid Waste Fund to cover alloc. exp.		($65,000)	($65,000)	($65,000)	($65,000)	($65,000)	($65,000)	
40	**Subtotal, Operating Expenses**		$7,024,786	$7,063,901	$7,261,547	$7,548,104	$7,780,263	$8,121,487	
41	*Annual Change*			*0.6%*	*2.8%*	*3.9%*	*3.1%*	*4.4%*	

West Bay Sanitary District
Sewer Rate Study
Table 2. Revenue Requirement

	Tbl. 1B	Budgeted 2016/17	Projected 2017/18	2018/19	2019/20	2020/21	2021/22	Notes
Non-Operating Expenditures								
Non-Operating Expense	(1)	$6,000	$6,180	$6,365	$6,556	$6,753	$6,956	
Contrib. to LAFCo		$15,000	$15,675	$16,459	$17,282	$18,146	$19,053	
Subtotal, Non-Operating Expenditures		$21,000	$21,855	$22,824	$23,838	$24,899	$26,009	
Annual Change			*4.1%*	*4.4%*	*4.4%*	*4.4%*	*4.5%*	
Total Expenses		**$18,950,786**	**$18,564,131**	**$19,718,062**	**$22,613,178**	**$23,622,637**	**$24,059,019**	
Annual Change			*-2.0%*	*6.2%*	*14.7%*	*4.5%*	*1.8%*	
Non-Operating Revenues								
Flow Equalization Cost Sharing		($313,000)	($313,000)	($313,000)	($313,000)	($313,000)	($313,000)	
STEP Revenue		($13,488)	($14,095)	($14,800)	($15,540)	($16,317)	($17,133)	
Permit & Inspection Fees	(7)	($50,000)	($50,500)	($51,005)	($51,515)	($52,030)	($52,551)	
Other Operating Revenue (Los Altos Hills, Woodside)	(9)	($415,887)	($420,046)	($424,246)	($428,489)	($432,774)	($437,101)	
Other Non-Operating Income	(7)	($1,000)	($1,010)	($1,020)	($1,030)	($1,041)	($1,051)	
Subtotal, Non-Operating Income		($793,375)	($798,651)	($804,071)	($809,574)	($815,161)	($820,835)	
Other Transfers to/(from)								
Operating (General) Fund		$0	$2,509,655	$2,629,463	$1,071,721	$1,466,456	$2,504,429	From Table 4
Vehicle & Equipment Replacement Fund		$221,450	$228,094	$234,936	$241,984	$249,244	$256,721	To Table 4; 3% annual increase
Capital Projects Fund		$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	From Table 4
Emergency Capital Reserves		$0	$0	$0	$0	$0	$0	From Table 4
Total Transfers		$5,221,450	$7,737,749	$7,864,400	$6,313,706	$6,715,700	$7,761,150	
Total Revenue Requirement		**$23,378,861**	**$25,503,229**	**$26,778,391**	**$28,117,310**	**$29,523,176**	**$30,999,334**	To Table 3
Annual Change			*9.1%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	
Cumulative Change			*9.1%*	*14.5%*	*20.3%*	*26.3%*	*32.6%*	

Source: West Bay Sanitary District FY 2016/17 Budget and Discussions with District staff

	A	B	C	D	E	F	G	H
1	**West Bay Sanitary District**							
2	**Sewer Rate Study**							
3	**Table 3. Revenue Increases**							
4								
5								
6		**Estimated**	**Projected**					
7		**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**Notes**
8	**Rate Revenue @ Current Rates**							
9	Current Customer Base	$24,405,004	$24,405,004	$24,405,004	$24,405,004	$24,405,004	$24,405,004	
11	Additional Revenue from Growth		$0	$0	$0	$0	$0	
12	Total Rate Revenue @ Current Rates w/ Growth		$24,405,004	$24,405,004	$24,405,004	$24,405,004	$24,405,004	To Below
13								
14	Revenue Requirement	($23,378,861)	($25,503,229)	($26,778,391)	($28,117,310)	($29,523,176)	($30,999,334)	From Table 2
15	**To/(From) operations before Rate Incr.**	$1,026,143	($1,098,225)	($2,373,387)	($3,712,306)	($5,118,172)	($6,594,330)	To Table 4
16								
17								
18	**Increase in Rate Revenue**		**5%**	**5%**	**5%**	**5%**	**5%**	From Table 1B
19	Cumulative Increase in Rate Revenue		4.5%	9.7%	15.2%	21.0%	27.0%	To Table 1A
20	**Revenue from Rate Increases**							
21	FY 2017-18 (eff. July 1, 2017)		$1,098,225	$1,098,225	$1,098,225	$1,098,225	$1,098,225	
22	FY 2018-19 (eff. July 1, 2018)			$1,275,161	$1,275,161	$1,275,161	$1,275,161	
23	FY 2019-20 (eff. July 1, 2019)				$1,338,920	$1,338,920	$1,338,920	
24	FY 2020-21 (eff. July 1, 2020)					$1,405,866	$1,405,866	
25	FY 2021-22 (eff. July 1, 2021)						$1,476,158.78	
26	**Total Revenue from Rate Increases**	$0	$1,098,225	$2,373,387	$3,712,306	$5,118,172	$6,594,330	
27	**Total Current Revenue**	$24,405,004	$24,405,004	$24,405,004	$24,405,004	$24,405,004	$24,405,004	From Above
28	**Total Revenue**	$24,405,004	$25,503,229	$26,778,391	$28,117,310	$29,523,176	$30,999,334	
29	**Revenue Requirement**	($23,378,861)	($25,503,229)	($26,778,391)	($28,117,310)	($29,523,176)	($30,999,334)	From Above
30	**To/(From) operations after Rate Incr.**	**$1,026,143**	**$0**	**$0**	**$0**	**$0**	**$0**	To Table 4

West Bay Sanitary District
Sewer Rate Study
Table 4. Reserves

	Tbl. 1B	Actual 2015/16	Budgeted 2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Notes
OPERATING (GENERAL) FUND									
Revenue Increases			**6%**	**4.5%**	**5.0%**	**5.0%**	**5.0%**	**5.0%**	From Table 1A
Beginning Balance			$6,648,271	$7,693,600	$8,524,513	$10,179,361	$10,276,710	$10,770,024	
Surplus/Deficit			$1,026,143	$0	$0	$0	$0	$0	From Table 3
Transfers (To)/From									
Revenue Requirement			$0	$2,509,655	$2,629,463	$1,071,721	$1,466,456	$2,504,429	To Table 2
Capital Asset Fund			$0	($700,000)	$0	$0	$0	($1,500,000)	
OPEB Fund			$0	$0	$0	$0	$0	$0	
Rate Stabilzation Fund			$0	($1,000,000)	($1,000,000)	($1,000,000)	($1,000,000)	($1,000,000)	From Below
Fund Subtotal			$7,674,414	$8,503,255	$10,153,976	$10,251,082	$10,743,166	$10,774,453	
Estimated Interest Earnings	(6)		$19,186	$21,258	$25,385	$25,628	$26,858	$26,936	
Ending Balance		**$6,648,271**	**$7,693,600**	**$8,524,513**	**$10,179,361**	**$10,276,710**	**$10,770,024**	**$10,801,389**	
Minimum Balance (5 mo. operations)			*$7,869,078*	*$7,707,971*	*$8,188,776*	*$9,395,074*	*$9,815,682*	*$9,997,508*	
CAPITAL ASSET FUND (includes Capital Project Reserve and Vehicle/Equipment Replacement)									
Beginning Balance			$23,806,054	$12,159,828	$12,091,740	$10,764,795	$9,804,759	$8,454,053	
Revenues									
Connection Charges	(7)		$631,500	$500,000	$500,000	$515,000	$530,450	$546,364	WBSD Budget
Capital Projects									
Administration	(1)		($250,000)	($257,500)	($265,225)	($273,182)	($281,377)	($289,819)	WBSD Budget
Collection Facilities	(1)		($934,500)	($1,037,535)	($1,068,661)	($1,100,721)	($1,133,743)	($1,167,755)	WBSD Budget
Subsurface Lines									
Proposed (Master Plan)			($8,020,000)	($4,931,300)	($5,449,840)	($5,037,569)	($5,307,363)	($7,271,453)	From Table 5
Other	(10)		$0	$0	$0	$0	$0	$0	
Construction Proj. Environ Review			($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	($10,000)	WBSD Budget
Manhole Raising			($100,000)	($100,000)	($100,000)	($100,000)	($100,000)	($100,000)	WBSD Budget
Allow. For Unanticipated Cap Ex			($100,000)	($100,000)	($100,000)	($100,000)	($100,000)	($100,000)	WBSD Budget
Subtotal Expenses			($9,414,500)	($6,436,335)	($6,993,726)	($6,621,471)	($6,932,482)	($8,939,026)	
Vehicles and Equipment Purchases			($115,000)	($90,000)	($95,000)	($120,000)	($219,000)	($219,000)	
Transfers (To)/From									
Revenue Requirement- PayGo Capital			$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	To Table 2
Operating Fund			$0	$700,000	$0	$0	$0	$1,500,000	From Above
Recycled Water Project Reserve			($8,000,000)	$0	$0	$0	$0	$0	
Revenue Requirement- Veh & Equip Replacement			$221,450	$228,094	$234,936	$241,984	$249,244	$256,721	
Subtotal Transfers			($2,778,550)	$5,928,094	$5,234,936	$5,241,984	$5,249,244	$6,756,721	
Fund Subtotal			$12,129,504	$12,061,586	$10,737,950	$9,780,308	$8,432,971	$6,599,112	
Estimated Interest Earnings	(6)		$30,324	$30,154	$26,845	$24,451	$21,082	$16,498	
Ending Balance		**$23,806,054**	**$12,159,828**	**$12,091,740**	**$10,764,795**	**$9,804,759**	**$8,454,053**	**$6,615,610**	
Target Balance			*$3,500,000*	*$3,500,000*	*$3,500,000*	*$3,500,000*	*$3,500,000*	*$3,500,000*	From Table 1B

West Bay Sanitary District
Sewer Rate Study
Table 4. Reserves

	Tbl. 1B	Actual 2015/16	Budgeted 2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Notes
EMERGENCY CAPITAL RESERVES									
Beginning Balance			$5,238,989	$5,252,086	$5,265,217	$5,278,380	$5,291,576	$5,304,805	
Transfers (To)/From									
Revenue Requirements			$0	$0	$0	$0	$0	$0	To Table 2
Operating Fund			$0	$0	$0	$0	$0	$0	To Above
Subtotal Transfers			$0	$0	$0	$0	$0	$0	
Fund Subtotal			$5,238,989	$5,252,086	$5,265,217	$5,278,380	$5,291,576	$5,304,805	
Estimated Interest Earnings	(6)		$13,097	$13,130	$13,163	$13,196	$13,229	$13,262	
Ending Balance		**$5,238,989**	**$5,252,086**	**$5,265,217**	**$5,278,380**	**$5,291,576**	**$5,304,805**	**$5,318,067**	
Minimum Balance			$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	
Target Balance ($5M by 2015-16)			*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	
RATE STABILIZATION FUND									
Beginning Balance			$2,983,434	$2,990,893	$4,000,870	$5,013,372	$6,028,405	$7,045,976	
Transfers (To)/From									
Revenue Requirements			$0	$0	$0	$0	$0	$0	To Table 2
Operating Fund			$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	To Above
Subtotal Transfers			$0	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	
Fund Subtotal			$2,983,434	$3,990,893	$5,000,870	$6,013,372	$7,028,405	$8,045,976	
Estimated Interest Earnings	(6)		$7,459	$9,977	$12,502	$15,033	$17,571	$20,115	
Ending Balance		**$2,983,434**	**$2,990,893**	**$4,000,870**	**$5,013,372**	**$6,028,405**	**$7,045,976**	**$8,066,091**	
Target Balance			*$3,000,000*	*$4,000,000*	*$5,000,000*	*$6,000,000*	*$7,000,000*	*$8,000,000*	

West Bay Sanitary District
Sewer Rate Study
Table 5. Capital Projects
Source: West Bay Sanitary District CIP Updated 09-28-16

					Projected			
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Notes	
R&R Priority								
Sausal Vista PS & Electrical	$ 1,000,000							
Stowe Lane PS xcrossing SFPUC sag		$ 150,000						
Stowe Lane Pump Station		$ 1,003,000						
Marsh Road CIPP	$ 875,000	$ 1,125,000						
Carlton-Madera Easements	$ 2,504,000							
Stevenson		$ 1,155,000						
Lucky/Campo Bello/Alameda&Atherton		$ 400,000						
Camino Al Lago		$ 100,000						
MacBain			$ 400,000					
Roble		$ 500,000	$ 2,130,000					
Oak Knoll			$ 845,000					
Santa Cruz			$ 1,004,000					
Elena				$ 1,621,800				
Menalto Easements				$ 788,000				
Fair Oaks					$ 2,000,000			
College Park North						$ 2,213,000		
Oak Grove								
Encinal A								
Encinal B								
Berkeley								
Haven ($400,000 Delete Due Anton Menlo								
PS Misc	$ 150,000		$ 75,000		$ 200,000			
Misc Point Repairs	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000		
Subtotal - R&R	**$4,579,000**	**$4,483,000**	**$4,504,000**	**$2,459,800**	**$2,250,000**	**$2,263,000**		
Capacity Priority								
James Avenue Diversion								
Lower Ringwood				$ 1,200,000				
Valparaiso						$ 450,000		
Willow Gravity Main						$ 200,000		
Upper Ringwood				$ 125,000	$ 1,375,000			
Santa Cruz Avy						$ 1,100,000		
Cambridge Laurel								
Middlefield at Fair Oaks						$ 502,000		
Carryover	$4,835,950							
Subtotal - Capacity	**$4,835,950**	**$0**	**$0**	**$1,325,000**	**$1,375,000**	**$2,252,000**		
Total CIP	$9,414,950	$4,483,000	$4,504,000	$3,784,800	$3,625,000	$4,515,000		
Inflationary Index		10.00%	21.00%	33.10%	46.41%	61.05%	From Table 1B	
Total Inflated CIP	$9,414,950	$4,931,300	$5,449,840	$5,037,569	$5,307,363	$7,271,453	To Table 4	

Source: West Bay Sanitary District CIP Updated 09-28-16

	A	B	C	D	E	F	G	H
1	**West Bay Sanitary District**							
2	**Sewer Rate Study**							
3	**Table 6. WBSD Debt Service Schedule**							
4								
5					**Projected**			
6		**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**Notes**
7								
8								
9	No debt has been issued by WBSD, SVCW debt only (see Table 2)							
10								

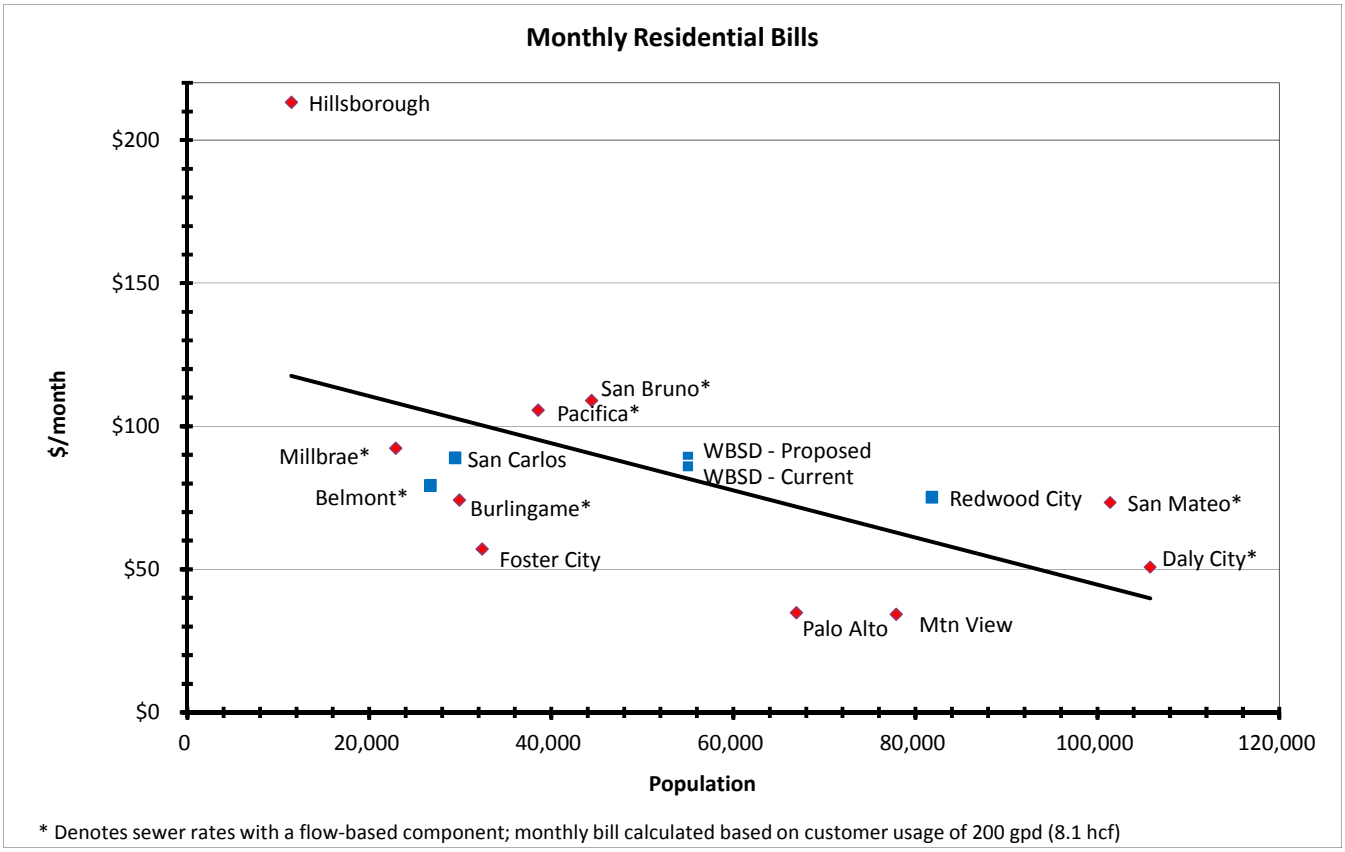
West Bay Sanitary District
Sewer Rate Study
Table 7. Single-Family Rate Comparison

City	Population	Basis	Monthly Charge @ 4.05 hcf/mo 50% of avg.	Monthly Charge @ 8.1 hcf/mo avg.	Monthly Charge @ 16.2 hcf/mo 2x avg.	Rates as of
Hillsborough	11,420	Fixed (incl. collection and treatment)	$213.17	$213.17	$213.17	7/1/2016
San Bruno	44,409	Fixed + Flow (incl. collection and treatement)	$67.78	$109.01	$191.47	7/1/2016
Millbrae	22,898	Fixed + Flow (incl. collection and treatement)	$70.02	$92.33	$136.96	8/1/2016
Belmont	26,748	Fixed + Flow (collection) + SVCW Treatment	$56.51	$79.23	$124.67	7/1/2016
West Bay SD (Proposed)	55,000	Fixed (incl. collection and treatment)	$89.33	$89.33	$89.33	7/1/2017
West Bay SD (Current)	55,000	Fixed (incl. collection and treatment)	$85.92	$85.92	$85.92	7/1/2016
Burlingame	29,890	Flow (incl. collection and treatment)	$37.11	$74.23	$148.45	1/1/2017
Redwood City	81,838	Fixed (incl. collection and treatment)	$75.11	$75.11	$75.11	7/1/2016
San Carlos	29,449	Fixed (incl. collection and treatment)	$88.82	$88.82	$88.82	7/1/2016
San Mateo	101,429	Flow (incl. collection and treatment)	$36.65	$73.31	$146.61	7/1/2016
Daly City	105,810	Flow (incl. collection and treatment)	$25.35	$50.71	$101.41	7/1/2015
Palo Alto	66,932	Fixed (incl. collection and treatment)	$34.83	$34.83	$34.83	7/1/2016
Mountain View	77,914	Fixed (incl. collection and treatment)	$34.30	$34.30	$34.30	7/1/2016
Pacifica	38,551	Flow (incl. collection and treatment)	$52.83	$105.66	$211.33	7/1/2016
Foster City	32,390	Fixed (incl. collection and treatment)	$57.13	$57.13	$57.13	7/1/2016

Sources:

Population - California Department of Finance, Demographic Research Unit, E-5 City/County Population & Housing Estimates, 1/1/2014 except West Bay Sanitary District (population estimate from district).

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



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

blue squares = SVCW member red diamonds = other neighboring city