



Stege Sanitary District Sewer Rate Study

**Final Report
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LIST OF ACRONYMS

CIP – capital improvement plan
EBMUD – East Bay Municipal Utility District
EDU – equivalent dwelling unit (i.e. a single family home)
EPA – Environmental Protection Agency
FY – fiscal year (July 1 to June 30)
HVAC – heating, ventilation, and air conditioning
LF – linear feet
O&M – operations and maintenance
Prop 218 – Proposition 218
SPASPA – San Pablo Ave Specific Plan Area
Stege SD – Stege Sanitary District

SECTION 1: EXECUTIVE SUMMARY

1.1 Background

The Stege Sanitary District (Stege SD or District) owns and operates a sewer collection system serving the City of El Cerrito, the Richmond Annex, and the Kensington community. Stege SD is commonly referred to as one of the East Bay Municipal Utility District's (EBMUD) satellite sanitation agencies. Sewer flows collected within the District's service area are conveyed to EBMUD for treatment and disposal.

The Stege Sanitary District last conducted a sewer rate study in June 2014 and is in need of an adjustment to fund upcoming capital costs. Stege SD has established the following financial goals to guide the rate adjustment:

- 1) Fund operating costs and existing debt service expenses
- 2) Fund capital improvements on a pay-as-you-go basis
- 3) Maintain reasonable and adequate operating and capital fund working capital targets and reserves
- 4) Minimize rate impacts on customers

1.2 Need for a Rate Adjustment

Stege SD has not increased the sewer rates over the past three years. Despite this, the District has experienced inflationary cost increases. Moreover, sewer utilities are infrastructure-intensive enterprises. Stege SD's most significant funding challenge over the next five years is the construction cost of the Sewer Rehabilitation Program. The program was initiated to conduct pipeline replacements required by the Environmental Protection Agency's (EPA) Consent Decree to reduce inflow and infiltration. The District is required to replace over two miles of sewer pipelines per year. The rehabilitation program will be conducted in conjunction with the District's other planned capital projects such as vehicle replacement, interceptor cleaning, pump station rehabilitation, and others. Over the next five years, this work is projected to cost about \$17.8 million.

The District's primary source of revenue is the sewer service charges which are collected annually with the Contra Costa County property taxes. Other revenue sources include property taxes, connection fees, interest earnings, permit fees, and contracted services. Current rate revenue for fiscal year (FY) 2019 is \$4.63 million. This amount of revenue is adequate to cover operations and maintenance (O&M) and debt service expenses but is not adequate to fully fund the District's capital improvement plan (CIP). District revenues and expenditures are summarized in Table 1.

To fund the CIP, the District will utilize a combination of existing capital reserves and sewer service charge increases. As of June 30, 2018, the capital fund balance was estimated at about \$2.3 million. Working capital fund targets have been established for the Operating Fund and the Capital Fund and are accounted for separately due to the magnitude of the cost of the CIP. For the Operating Fund, the District maintains a target consisting of 60% of annual O&M costs. This target is intended to equal the O&M expenses incurred each year between July and December, the gap in time each year when the District has limited revenues before the sewer service charges are collected with the property taxes. For FY2019, the operating target fund balance is approximately \$1.6 million.

The capital fund target is equal to a 3-year average of the annual capital cost (i.e. average of the previous, current, and future year capital cost) plus the annual debt service cost. The goal of the capital fund target is to ensure that the District will have adequate funds available on an annual basis to conduct the sewer pipeline replacements required by the EPA. In addition, it is recommended that Stege SD establish a new reserve funded via an annual set-aside of \$45,000. Annual funding of \$45,000 will accumulate \$225,000 (plus interest earnings) over five years, which could fund retrofits of the Administration Building such as HVAC improvements, roof repairs, repaving the parking lot, etc. This new reserve could also provide funding for emergency repairs following a natural disaster such as a fire or earthquake.

Table 1: Revenues and Expenses
Sewer Rate Study
Stege Sanitary District

	Actual FY 2018	Budget FY 2019	
Revenue			
Property Tax	\$489,000	\$400,000	
Sewer Service Charges	4,592,000	4,631,000	[1]
Connection Fees	180,000	150,000	
All Other Revenues	<u>886,000</u>	<u>733,000</u>	
Total Revenue	5,478,000	5,364,000	
Expense			
Operations, Maintenance, Administration	2,362,000	2,724,000	
Capital Expense	<u>2,039,000</u>	<u>3,196,000</u>	
Total Expenses	4,401,000	5,920,000	
Net Annual Revenues	\$1,077,000	(\$556,000)	

1 - The FY2019 tax roll revenue is shown above. The adopted FY2019 budget estimated \$4,677,000 in service charge revenues.

1.3 Requirements of Proposition 218

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIII C and XIII D of the California Constitution. Proposition 218 establishes requirements for imposing any new or increasing any existing property-related fees and charges. For many years, there was no legal consensus on whether water and sewer service fees met the definition of “property-related fees.” In July 2007, the California Supreme Court essentially confirmed that Proposition 218 applies to water and wastewater (sewer) service fees.

Stege SD must follow the procedural requirements of Proposition 218 for all utility rate increases. These requirements include:

1. **Noticing Requirement** – Stege SD must mail a notice of the proposed rate increases to all affected property owners or ratepayers. The notice must specify the amount of the fee, the basis upon which it was calculated, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
2. **Public Hearing** – Stege SD must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
3. **Rate Increases are Subject to Majority Protest** – At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners or ratepayers submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established substantive requirements that apply to sewer rates and charges, including:

1. **Cost of Service** - Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the “cost of service”.
2. **Intended Purpose** - Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
3. **Proportional Cost Recovery** - The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.
4. **Availability of Service** - No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property.
5. **General Government Services** - No fee or charge may be imposed for general governmental services where the service is available to the public at large.

Charges for water, sewer, and refuse collection are exempt from additional voting requirements of Proposition 218, provided the charges do not exceed the cost of providing service and are adopted pursuant to procedural requirements of Proposition 218.

1.4 Proposed Rates

The District’s current sewer service charge for residential customers is \$20.17 monthly (\$242 annually) and \$4.97 per 1,000 gallons for non-residential customers. To fund operating expenses, the 10-Year CIP, debt service costs, and meet fund balance targets, it is proposed that the District implement service charge increases. The recommended service charges are shown in Table 2. As part of the rate study process, the relative sewer flow of single family and multi-family residential customers was evaluated. The average multi-family residential customer was found to discharge about 30% less flow than the typical single family customer. Therefore, a new multi-family rate is proposed.

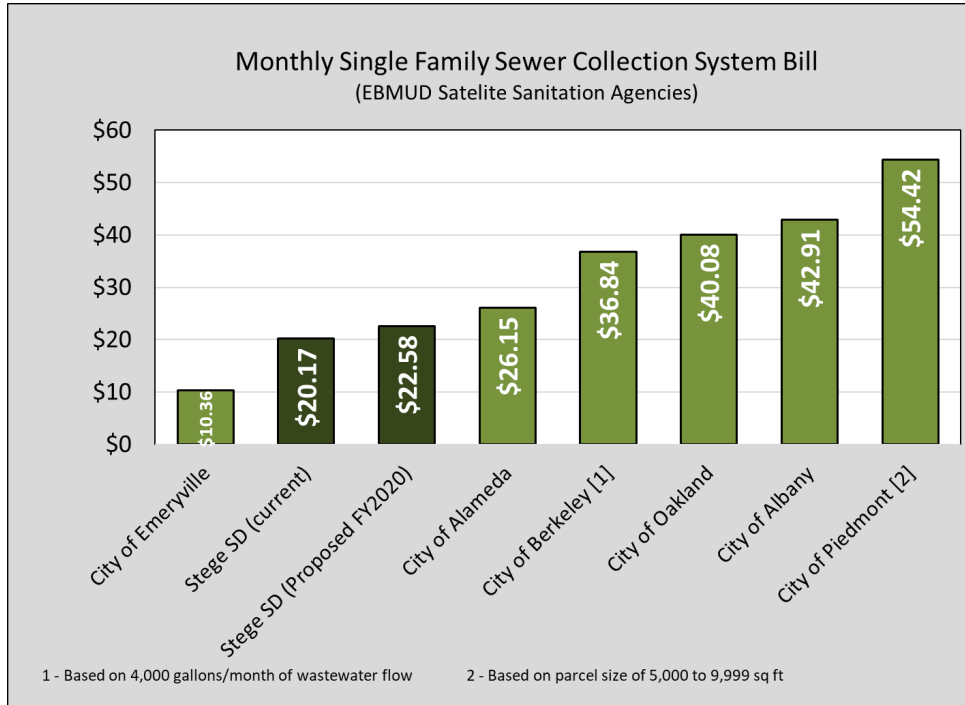
**Table 2: Recommended Monthly Sewer Service Charges
Sewer Rate Study
Stege Sanitary District**

Service Charges	Current FY 19	5-Year Planning Horizon (Prop 218)				
		FY 20	FY 21	FY 22	FY 23	FY 24
Single Family Residential [1] % Increase	\$20.17	\$22.58 12.0%	\$25.33 12.2%	\$28.42 12.2%	\$31.92 12.3%	\$35.75 12.0%
Multi-family Residential [1] % Increase	\$20.17	\$21.00 4.1%	\$21.92 4.4%	\$22.83 4.2%	\$23.75 4.0%	\$24.75 4.2%
Non-Residential (per 1,000 gal) % Increase	\$4.97	\$5.59 12.6%	\$6.30 12.7%	\$7.10 12.7%	\$8.01 12.8%	\$9.02 12.5%

Note: Stege SD bills customers annually on the property tax roll. The equivalent monthly residential rates are shown here.

1 – Per dwelling unit

Even with these potential increases, the District's rates will remain competitively priced. The survey below compares Stege SD's equivalent monthly single family charge to the rates of other sanitation agencies.



SECTION 2: CURRENT RATES AND CUSTOMER BASE

This section provides an overview of Stege SD’s sewer rates, customer base, and current rate revenues.

2.1 Current Sewer Rates

Stege SD currently charges residential customers on an equivalent dwelling unit (EDU) basis and commercial customers based on metered water use as billed by EBMUD. The District does not distinguish between single family and multi-family residential customers and both groups pay the same residential rate of \$20.17 per month (\$242 per year). Currently, residential sewer flow is assumed to be 48,660 gallons per year which equates to a flow charge of \$4.97 per 1,000 gallons. The flow charge is the commercial rate and demonstrates proportionality as required by Proposition 218 (i.e. both residential and commercial customers pay the equivalent of \$4.97 per 1,000 gallons). As shown below, the District has not raised its rates for the past three years.

**Table 3: Historical Service Charges
Sewer Rate Study
Stege Sanitary District**

Fiscal Year	Residential (\$/EDU/month)		Commercial (\$/1,000 gallons)	
	Rate	% Change	Rate	% Change
FY 2006	\$9.25	-	\$2.03	-
FY 2007	\$9.58	3.6%	\$2.18	7.4%
FY 2008	\$9.92	3.5%	\$2.25	3.2%
FY 2009	\$10.25	3.4%	\$2.33	3.6%
FY 2010	\$10.25	0.0%	\$2.33	0.0%
FY 2011	\$12.25	19.5%	\$3.02	29.6%
FY 2012	\$14.25	16.3%	\$3.51	16.2%
FY 2013	\$16.25	14.0%	\$4.01	14.2%
FY 2014	\$16.25	0.0%	\$4.01	0.0%
FY 2015	\$18.33	12.8%	\$4.52	12.7%
FY 2016	\$20.17	10.0%	\$4.97	10.0%
FY 2017	\$20.17	0.0%	\$4.97	0.0%
FY 2018	\$20.17	0.0%	\$4.97	0.0%
FY 2019	\$20.17	0.0%	\$4.97	0.0%

2.2 Current Rate Revenues

Stege SD serves about 13,200 parcels which equate to about 19,100 equivalent dwelling units. As described on the previous page, every 48,660 gallons of commercial sewer flow is one EDU. Current rates generate about \$4.63 million annually, see Table 4. The residential class contributes about 81% of rate revenues.

Table 4: Summary of Sewer Service Units (EDUs) FY2019
Sewer Rate Study
Stege Sanitary District

Customer Class [1]	Number of Parcels	Number of EDUs	Revenue	% of Revenue
Residential	11,331	11,321	\$2,740,000	59%
Multi-Family Residential	1,000	4,301	1,041,000	22%
Commercial	354	2,311	559,000	12%
Industrial	22	414	100,000	2%
Institutional	254	671	162,000	3%
Other	100	19	5,000	0%
Direct Billed Customers	<u>101</u>	<u>101</u>	<u>24,000</u>	<u>1%</u>
Total	13,162	19,138	\$4,631,000	100%

1 - The District's single agricultural parcel is not billed and is not included in this table.

Source: Stege Sanitary District FY 2018/19 Sewer Service Charges Summary for Contra Costa County Tax Rolls

2.3 Updated Residential Flows

As part of the rate study process, the flows of residential customers were evaluated. Stege SD does not directly meter the wastewater flow of individual utility accounts. However, water use is often used as a proxy for sewer flow. This method for estimating sewer discharge is commonly used by sewer service providers throughout California. Residential customers typically have high water use in the summer due to irrigation for landscaping. This water use occurs outdoors and does not flow into the sewer system. Therefore, it is necessary to identify low water use periods during the winter to better estimate water use that flows into the sewer. The average single family residential sewer flow is estimated as 47,574 gallons based on a 5-year average of winter water usage data provided in Table 5.

The same analysis was conducted for multi-family residential customers, see Table 6. The average multi-family sewer flow is estimated to be about 33,000 gallons annually. The average multi-family dwelling unit flow is about 69% of the average single family flow.

**Table 5: Single Family Residential Sewer Flow (gallons)
Sewer Rate Study
Stege Sanitary District**

Month	2013	2014	2015	2016	2017
Jan	49,917,780	55,509,828	46,234,628	40,044,180	42,267,236
Feb	47,448,632	44,583,792	43,444,588	37,427,676	37,165,128
Mar	55,665,412	49,206,432	49,736,764	42,193,932	43,028,700
Apr	61,197,620	51,675,580	47,132,976	43,769,968	45,326,556
May	69,949,968	59,557,256	48,474,888	49,386,700	53,079,576
Jun	70,335,936	60,309,744	46,916,056	52,644,988	57,115,784
Jul	72,319,632	61,494,576	50,081,592	56,739,540	61,946,368
Aug	71,570,136	59,003,736	50,656,804	56,652,024	61,846,136
Sep	67,471,844	54,233,740	49,011,204	53,420,664	58,187,668
Oct	66,273,548	52,112,412	48,454,692	49,552,008	56,675,212
Nov	58,800,280	46,355,804	42,255,268	43,179,048	49,944,708
Dec	57,891,460	45,583,868	40,686,712	41,883,512	47,959,516
Average Monthly Winter Water Use (gallons) (shaded)					44,882,344
Stege Single Family Accounts (average)					11,321
Estimated Annual Sewer Flow per Single Family Home (gallons) [1]					47,574

Note: The shaded area is the three lowest water use months of each water year (October 1 to September 30). The three months are not necessarily consecutive.

1 - Average winter water use divided by number of accounts multiplied by 12 months

**Table 6: Multi-Family Residential Sewer Flow (gallons)
Sewer Rate Study
Stege Sanitary District**

Month	2013	2014	2015	2016	2017
Jan	12,539,472	12,925,440	12,309,088	11,870,012	12,305,348
Feb	11,466,840	11,374,836	11,204,292	11,267,124	11,122,760
Mar	12,900,756	12,614,272	12,444,476	12,182,676	12,591,084
Apr	13,111,692	12,452,704	12,205,864	12,190,904	12,523,016
May	14,349,632	13,641,276	12,863,356	13,238,104	13,757,216
Jun	14,286,052	13,428,844	12,452,704	13,201,452	14,057,912
Jul	14,679,500	13,572,460	12,745,172	13,877,644	14,634,620
Aug	14,517,932	13,264,284	12,904,496	13,887,368	14,459,588
Sep	13,692,888	12,190,904	12,594,824	13,223,892	13,887,368
Oct	13,701,116	12,057,012	12,579,116	12,755,644	13,718,320
Nov	12,834,184	11,294,800	11,744,348	11,690,492	12,636,712
Dec	13,050,356	11,555,852	11,770,528	12,006,896	12,785,564
Average Monthly Winter Water Use (gallons) (shaded)					11,800,398
Stege SD Multi-Family Dwelling Units (average)					4,301
Estimated Annual Sewer Flow per Dwelling Unit (gallons) [1]					32,927
Ratio to single family flow per dwelling unit					69%

Note: The shaded area is the three lowest water use months of each water year (October 1 to September 30). The three months are not necessarily consecutive.

1 - Average winter water use divided by number of accounts multiplied by 12 months

2.4 EDU Adjustment

It is recommended that Stege SD adjust its EDU definition to reflect the lower sewer flows of single family customers. Going forward, it is proposed that one EDU reflect 47,574 gallons of annual flow rather than 48,660 gallons (current). Individual single family customers may discharge more or less than 47,574 gallons per month but this amount is used for rate design purposes.

The water use of commercial customers is metered monthly by EBMUD. Commercial customers typically have a water meter for indoor use and a dedicated meter for outdoor irrigation. It is assumed that 100% of indoor commercial water use flows into the sewer. Outdoor water use is not included in this study. It is also assumed that indoor commercial water use will remain constant at the FY2018 level over the next five years. Due to the change in the EDU flow amount, the commercial customer class is proposed to represent 2.3% more EDUs than current.

It is also proposed that the number of multi-family EDUs be adjusted to reflect an average flow of 32,927 gallons per year per multi-family dwelling unit. This results in a loss of about 1,324 multi-family EDUs. Due to the change in EDU flow from 48,660 gallons to 47,574 gallons, the commercial customer class will gain 81 EDUs. In total, the sewer flow adjustments result in a net loss of about 1,244 EDUs (rounded), see Table 7. To collect the same amount of revenue (\$4.63 million), the rate would need to increase from \$242 per year to about \$259 or about 7% for a single family home.

**Table 7: Current and Proposed EDU Count
Sewer Rate Study
Stege Sanitary District**

	Current	Proposed	Units	% Change
Sewer Flow per Single Family Dwelling	48,660	47,574	gallons per year	-2.2%
Sewer Flow per Multi-Family Dwelling	48,660	32,927	gallons per year	-32.3%
Single Family Residential	11,321	11,321	EDUs	0.0%
Multi-Family Residential	4,301	2,977	EDUs	-30.8%
Commercial	<u>3,516</u>	<u>3,597</u>	EDUs	2.3%
Total	19,138	17,894		-6.5%

Table 8: Proposed EDUs at FY2019 Revenue
Sewer Rate Study
Stege Sanitary District

Customer Class [1]	Number of Parcels	Number of EDUs	Revenue	% of Revenue
Single Family Residential	11,331	11,321	\$2,929,000	63%
Multi-Family Residential	1,000	2,977	\$770,000	17%
Commercial	354	2,364	\$612,000	13%
Industrial	22	423	\$110,000	2%
Institutional	254	687	\$178,000	4%
Other	100	19	\$5,000	0%
Direct Billed Customers	<u>101</u>	<u>103</u>	<u>\$27,000</u>	<u>1%</u>
Total	13,162	17,894	\$4,631,000	100%
Rate per EDU			\$258.81	
Current Rate per EDU			\$242.00	

1 - The District's single agricultural parcel is not billed and is not included in this table.

SECTION 3: REVENUE REQUIREMENT

Proposition 218 requires that utility rates be based on the reasonable cost of providing service to customers. The cost of service includes annual operating expenses, debt service payments, capital projects, and the accumulation of appropriate reserves. The sewer utility cost of service was developed based on the FY2019 adopted budget, capital project list developed by staff, and reserve recommendations from the Board. Sewer rates have not been increased since FY2016 despite inflationary cost increases.

3.1 Revenues

For FY2019, Stege SD budgeted about \$5.36 million in total revenues. The majority, about \$4.63 million (about 86%), is made up of service charges paid by ratepayers. Other revenue categories include property taxes, connection fees, interest earnings, permit fees, and other.

**Table 9: Revenues
Sewer Rate Study
Stege Sanitary District**

Revenue	Actual FY 2018	Budget FY 2019	
Property Tax	\$489,000	\$400,000	
Sewer Service Charges	4,592,000	4,631,000	[1]
Stege SD Districtwide Connection Fees	180,000	150,000	
San Pablo Ave Specific Plan Area Impact Fees	38,000	100,000	
Permit Fees and Contracted Services	42,000	45,000	
Interest	86,000	17,000	
Other	<u>51,000</u>	<u>21,000</u>	
Total Revenue	\$5,478,000	\$5,364,000	

1 - The FY2019 tax roll revenue is shown above. The adopted FY2019 budget estimated \$4,677,000 in service charge revenues.

3.2 Operating Expenses

Stege SD manages its finances via an Operating Fund and a Capital Fund. Operating expenses are shown in Table 10. About \$2.72 million in expenses are budgeted for FY2019 and most line-items are expected to increase by 3% annually over the next ten years. In FY2020, the maintenance/engineering line item is estimated to increase by an additional \$100,000 and the general and administrative line item is estimated to increase by an additional \$50,000 beyond the 3% inflation rate. These increases are intended to encompass the District's pension liability expenses.

**Table 10: Operating Expenses
Sewer Rate Study
Stege Sanitary District**

Operating Expenses	Actual FY 2018	Budget FY 2019
Maintenance/Engineering	\$1,613,000	\$1,903,000
Pump Stations	17,000	16,000
Contracted Repairs	56,000	62,000
General and Administrative	<u>676,000</u>	<u>743,000</u>
Total Operating Expenses	\$2,362,000	\$2,724,000

3.3 Capital Expenses

A summary of the District’s FY2018 actual capital expenses and budgeted FY2019 expenses is shown in Table 11. More detailed information regarding sewer rehabilitation, capital equipment costs, and other capital costs is provided in Table 12. The District’s Capital Improvement Plan includes over \$38.7 million in expenditures over the next 10 years (FY2020-FY2029). The sewer rehabilitation funding group was developed to comply with the Environmental Protection Agency’s Consent Decree and is comprised of the annual pipebursting project. Annually, Stege SD expects to replace 2 to 3 miles of pipeline at a cost of \$200 per linear foot plus inflation of 3% per year. Over the next 10 years, approximately 28 miles of pipeline are projected be replaced at a total cost of \$34.6 million. The pipebursting project represents 89% of projected capital improvement projects over the next decade. The capital equipment funding group includes smaller value capital items including flow meters, vehicle replacement, manhole “smart” covers, and other miscellaneous items. The other capital funding group includes manhole adjustments, minor repairs to the Administration Building, pump station rehabilitation, and interceptor cleaning.

**Table 11: Capital Expenses
Sewer Rate Study
Stege Sanitary District**

Capital Expenses	Actual FY 2018	Budget FY 2019
Debt Service	\$148,000	\$148,000
Sewer Rehabilitation	1,884,000	2,523,000
Capital Equipment	7,000	425,000
Other Capital Costs	<u>0</u>	<u>100,000</u>
Subtotal Capital	\$2,039,000	\$3,196,000

**Table 12: 10-Year Capital Improvement Plan
Sewer Rate Study
Stege Sanitary District**

	Budget FY 2019	5-Year Planning Horizon (Proposition 218)					10-Year Planning Horizon					10-Year Projection Total
		FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	
Costs in \$1,000s												
Sewer Rehabilitation Project												
Footage (LF)	12,615	13,053	13,512	13,988	14,478	14,979	15,045	15,119	15,196	15,110	15,336	145,817
Cost per LF	\$200	\$206	\$212	\$219	\$225	\$232	\$239	\$246	\$253	\$261	\$269	
Total Project Cost	\$2,523	\$2,689	\$2,867	\$3,057	\$3,259	\$3,473	\$3,593	\$3,719	\$3,850	\$3,943	\$4,122	\$34,572
Capital Equipment												
Flow Meters	0	40	0	150	150	0	40	0	0	0	150	530
Vehicle Replacement	0	0	35	0	30	0	30	0	35	0	35	165
Manhole Covers ("Smart")	0	0	15	0	0	0	0	0	15	0	0	30
Rodders	0	0	0	350	0	0	0	0	0	0	300	650
Vactor	425	0	0	0	0	425	0	0	0	0	425	850
Misc. Other	<u>0</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>20</u>	<u>20</u>	<u>10</u>	<u>10</u>	<u>20</u>	<u>20</u>	<u>10</u>	<u>140</u>
Total Capital Equipment	425	50	60	510	200	445	80	10	70	20	920	2,365
Other capital costs												
Manhole Adjustments	40	50	50	50	50	50	50	50	50	50	50	500
Administration Building [1]	10	10	10	10	10	10	10	10	10	10	40	130
Pump Station Rehab	0	150	0	0	0	500	0	0	0	0	0	650
Interceptor Cleaning	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>500</u>
Total other capital costs	100	260	110	110	110	610	110	110	110	110	140	1,780
Total Capital Projects	\$3,048	\$2,999	\$3,037	\$3,677	\$3,569	\$4,528	\$3,783	\$3,839	\$4,030	\$4,073	\$5,182	\$38,717

1 – Minor annual repairs

3.4 Working Capital and Additional Reserve

3.4.1 Operating Working Capital

Currently the District maintains an Operating Working Capital target balance and a Capital Improvement Working Capital target balance. It is recommended that the Operating target remain at its current level equal to 60% of operating and maintenance costs. This level of funding adjusts annually to equal the District's costs from July to December, reflecting the lag in the collection of service charges on the property tax roll.

3.4.2 Capital Improvement Working Capital

The current Capital Improvement target balance is equal to a 3-year rolling average of the annual capital cost (i.e. average of the previous, current, and future year capital cost) plus the annual debt service cost. The ultimate goal of the capital fund target is to ensure that the District will have adequate funds available on an annual basis to conduct sewer pipeline replacements or to fund other emergency needs. Due to the high construction cost of the annual pipeline replacements, Stege SD makes large payments to contractors throughout the year. The District needs appropriate working capital to fund these disbursements.

3.4.3 New Capital Reserve

As described above, working capital is used annually to "float" the District's cash flow and is replenished as revenues are collected. The District is interested in funding a new reserve or set-aside that will be accumulated over time and used every five to ten years for major improvements. Annual funding of \$45,000 will accumulate \$225,000 (plus interest earnings) over five years, which could fund retrofits of the Administration Building such as HVAC improvements, roof repairs, repaving the parking lot, etc. This new reserve could also provide funding for emergency repairs following a natural disaster such as a fire or earthquake. The reserve and working capital recommendations for the District's funds are summarized in Table 13.

**Table 13: Working Capital Targets and New Reserve
Sewer Rate Study
Stege Sanitary District**

Reserves	Current Estimated Fund Balance [1]	Target	Policy
Operating Reserve	\$4,002,000	\$1,634,000	60% of annual O&M to account for the break in tax revenue collection from July to December; target increases as operating costs increase
Capital Reserve	2,300,000	2,794,000	3-year rolling average of capital improvements (average of past, current, and future years) [2] plus the annual debt service cost
New Reserve	<u>NA</u>	<u>NA</u>	Annual set-aside of \$45,000
Total	\$6,302,000	\$4,428,000	

1 - Source: FY2019 Budget; estimated as of June 30, 2018

2 - For FY2019 (shown in table), the target is the average of the past year (FY2018), current year (FY2019), and future year (FY2020) capital costs.

Although Stege SD will exceed its fund targets in FY2019, the District is budgeted to operate at a deficit as shown in Table 1. The deficit combined with new capital projects, new retirement funding needs, and 3% annual inflation would deplete the District’s fund reserves over time absent a rate adjustment.

3.5 Cash Flow

This subsection provides the operating and capital cash flows. Stege SD has established the following financial goals to guide the cash flow analysis and rate study process:

- 1) Fund operating costs and existing debt service expenses
- 2) Fund capital improvements on a pay-as-you-go basis
- 3) Maintain reasonable and adequate operating and capital fund working capital targets and reserves
- 4) Minimize rate impacts on customers

3.5.1 Operating Fund Cash Flow

The Operating Fund cash flow is provided in Table 14.

EDU Adjustment

As shown in Table 7, there is a proposed downward adjustment in EDUs for existing customers from 19,138 to 17,894. To mitigate rate impacts, this adjustment is proposed to be phased-in over the next five years. In addition, there is moderate growth in EDUs from new development.

Rate Change

Stege SD's current service charge is \$242 per EDU which is made up of \$126 for the O&M service charge and \$116 for the capital service charge. The O&M service charge is proposed to increase to \$191 over the next five years to fund operating expenses and maintain the target fund balance.

Other Revenue Sources and Expenses

The Operating Fund's other revenue sources such as interest earnings, permit fees, and contracted services are projected to remain the same through FY2024. Expenses are expected to increase by 3% annually due to inflation. Moreover, an additional \$150,000 in expenses are projected in FY2020 to account for pension liability costs.

Fund Balance

The FY2019 fund balance is about \$4 million which is well in excess of the fund target of \$1.64 million based on 60% of expenses. It is recommended that \$1.3 million be transferred to the Capital Fund. From FY2020 to FY2024, the target balance is projected to be met each year with the proposed rate increases.

**Table 14: Operating Fund Cash Flow
Sewer Rate Study
Stege Sanitary District**

	Budget FY 2019	5-Year Planning Horizon (Proposition 218)					10-Year Planning Horizon				
		FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
New EDUs		65	61	2	2	2	2	2	2	2	2
Number of EDUs	19,138	18,918	18,715	18,467	18,235	18,026	18,028	18,030	18,032	18,034	18,036
Increase		\$11.00	\$12.00	\$13.00	\$14.00	\$15.00	\$16.00	\$0.00	\$0.00	\$0.00	\$0.00
O&M Service Charge	\$126.00	\$137.00	\$149.00	\$162.00	\$176.00	\$191.00	\$207.00	\$207.00	\$207.00	\$207.00	\$207.00
Beginning Fund Balance	\$4,002	\$2,467	\$2,177	\$1,994	\$1,924	\$1,976	\$2,000	\$2,060	\$2,185	\$2,355	\$2,416
Sources											
Operating Service Charge	2,411	2,592	2,789	2,992	3,209	3,443	3,732	3,732	3,733	3,733	3,733
Interest Earnings	12	12	12	12	12	12	12	12	12	12	12
Permit Fees & Contracted Services	45	45	45	45	45	45	45	45	45	45	45
Other	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>	<u>21</u>
Total Sources	2,489	2,670	2,867	3,070	3,287	3,521	3,810	3,810	3,811	3,811	3,811
Uses [1]											
Maintenance/Engineering	1,903	2,063	2,125	2,189	2,254	2,322	2,392	2,463	2,537	2,613	2,692
Pump Stations	16	16	17	17	18	19	19	20	20	21	22
Contracted Repairs	62	64	66	68	70	72	74	76	79	81	83
General and Administrative	<u>743</u>	<u>817</u>	<u>841</u>	<u>867</u>	<u>893</u>	<u>919</u>	<u>947</u>	<u>975</u>	<u>1,005</u>	<u>1,035</u>	<u>1,066</u>
Total Uses	2,724	2,960	3,049	3,140	3,235	3,332	3,432	3,535	3,641	3,750	3,862
Net Sources and Uses	(235)	(290)	(182)	(71)	53	189	378	276	170	61	(51)
"Transfer" to Capital Fund	<u>(1,300)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>(165)</u>	<u>(319)</u>	<u>(150)</u>	<u>0</u>	<u>0</u>	<u>0</u>
Ending Fund Balance	2,467	2,177	1,994	1,924	1,976	2,000	2,060	2,185	2,355	2,416	2,365
Target Minimum Balance [2]	1,634	1,776	1,829	1,884	1,941	1,999	2,059	2,121	2,184	2,250	2,317
Does it meet target?	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Costs shown as \$1,000s

1 - Operating cost inflation estimated at 3%

2 - Minimum balance 60% of O&M

3.5.2 Capital Fund Cash Flow

The Capital Fund cash flow is provided in Table 15.

Rate Change

To conduct the pipeline replacements required by the EPA's Consent Decree and to fund other capital expenditures, the capital service charge is proposed to increase from \$116 to \$238 per EDU over the next five years. The total combined charge (O&M plus capital) is proposed to increase from \$242 to \$429 over the same period. This equates to an annual increase of about 12%. Section 4 discusses proposed rate design changes. Not all customers will receive an increase of exactly 12%. Instead, 12% represents an average rate change across all customer groups.

Other Revenue Sources and Expenses

Due to new development, the Capital Fund is projected to collect connection fees and impact fees from the San Pablo Avenue Specific Plan Area (SPASPA) development. These new customers will pay SPASPA impact fees as well as Districtwide connection fees. Stege SD's other main capital revenue source is property taxes which are assumed to remain the same through FY2024.

In addition to the capital improvements described above, the Capital Fund is responsible for debt service payments on the District's two current outstanding State Revolving Fund Loans. The current payment is \$148,000 annually. In FY2023, one of the issuances will be paid off and will lower the annual debt service cost to \$44,000.

Fund Balance

The FY2019 beginning fund balance is \$2.3 million which is less than the fund target of about \$2.8. However, with the proposed transfer from the Operating Fund of \$1.3 million, the FY2019 ending balance is projected to be about \$3.3 million. In FY2022, the ending balance is projected to miss the target slightly. The benefit of this approach is that rates are increased more gradually than if the District was strict about meeting the fund target every year of the five-year plan. It should also be noted that the SPASPA impact fee revenues will be used as needed to fund upsizing of pipelines in the SPASPA and downstream of the SPASPA. Impact fee revenues will not be retained by the District in its capital fund balance in perpetuity. The impact fee funds will be used as needed to benefit the SPASPA.

**Table 15: Capital Fund Cash Flow
Sewer Rate Study
Stege Sanitary District**

	Budget FY 2019	5-Year Planning Horizon (Proposition 218)					10-Year Planning Horizon				
		FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
Number of EDUs	19,138	18,918	18,715	18,467	18,235	18,026	18,028	18,030	18,032	18,034	18,036
Capital Service Charge											
Available from Existing Charge	116.00	116.00	134.00	155.00	179.00	207.00	238.00	238.00	238.00	238.00	238.00
Annual Increased Capital Charge	NA	<u>18.00</u>	<u>21.00</u>	<u>24.00</u>	<u>28.00</u>	<u>31.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>
Total Capital Service Charge	116.00	134.00	155.00	179.00	207.00	238.00	238.00	238.00	238.00	238.00	238.00
O&M Charge	<u>126.00</u>	<u>137.00</u>	<u>149.00</u>	<u>162.00</u>	<u>176.00</u>	<u>191.00</u>	<u>207.00</u>	<u>207.00</u>	<u>207.00</u>	<u>207.00</u>	<u>207.00</u>
Total Charge (O&M + Capital)	242.00	271.00	304.00	341.00	383.00	429.00	445.00	445.00	445.00	445.00	445.00
% Increase over previous year	0%	12.0%	12.2%	12.2%	12.3%	12.0%	4%	0%	0%	0%	0%
Beginning Fund Balance	\$2,300	\$3,279	\$3,277	\$3,603	\$3,449	\$3,977	\$4,226	\$5,375	\$6,299	\$6,927	\$7,512
Sources											
Capital Service Charges	2,220	2,535	2,901	3,306	3,775	4,290	4,291	4,291	4,292	4,292	4,293
Property Taxes	400	400	400	400	400	400	400	400	400	400	400
Interest Earnings	5	5	5	5	5	5	5	5	5	5	5
Stege SD Connection Fees	150	150	150	3	3	3	3	3	3	3	3
San Pablo Ave SPA Impact Fees	<u>100</u>	<u>100</u>	<u>100</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>
Total Sources	2,875	3,190	3,556	3,717	4,186	4,701	4,702	4,702	4,703	4,703	4,704
Uses											
Sewer Rehabilitation	2,523	2,689	2,867	3,057	3,259	3,473	3,593	3,719	3,850	3,943	4,122
Capital Equipment	425	50	60	510	200	445	80	10	70	20	920
Other capital costs	100	260	110	110	110	610	110	110	110	110	140
Debt Service	<u>148</u>	<u>148</u>	<u>148</u>	<u>148</u>	<u>44</u>	<u>44</u>	<u>44</u>	<u>44</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal Uses	3,196	3,147	3,185	3,825	3,613	4,572	3,827	3,883	4,030	4,073	5,182
New Reserve Set-aside	0	45	45	45	45	45	45	45	45	45	45
Total Uses (w/New Reserve)	3,196	3,192	3,230	3,870	3,658	4,617	3,872	3,928	4,075	4,118	5,227
Net Sources and Uses	(321)	(2)	326	(153)	528	84	830	774	628	585	(523)
"Transfer" from Operating Fund	<u>1,300</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>165</u>	<u>319</u>	<u>150</u>	<u>0</u>	<u>0</u>	<u>0</u>
Ending Fund Balance	3,279	3,277	3,603	3,449	3,977	4,226	5,375	6,299	6,927	7,512	6,988
Fund Target Minimum Balance [1]	2,794	3,176	3,386	3,576	3,969	4,004	4,094	3,928	3,981	4,428	5,182
Does it meet target?	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES

1 - The capital fund target each year is equal to an average of the past year, current year, and future year capital improvement cost plus the annual debt service payment. Does not include the New Reserve Set-aside.

SECTION 4: RATE DESIGN

4.1 Rate Structure Recommendations

As described in previous sections, it is recommended that the residential customer class be split into single family and multi-family classes and rates be adjusted based on each group's respective flows. For commercial customers, it is recommended that the current billing method of charging a flow rate per 1,000 gallons be continued and the service charge should be adjusted to reflect the new EDU definition of 47,574 gallons per year.

4.2 Rate Smoothing Plan

The proposed change in EDUs alone would result in a 7% increase in the sewer service charge (i.e. absent other increases needed to fund capital improvements). To avoid a dramatic rate adjustment in FY2020, a rate smoothing plan was developed, see Table 16. The adjustment in single family and multi-family residential flows (and corresponding EDU count) is phased-in over five years.

Table 16: Rate Smoothing Plan
Sewer Rate Study
Steger Sanitary District

Rate Smoothing Plan	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Single Family Gallons/Year	48,660	48,441	48,223	48,006	47,789	47,574
EDUs	11,321	11,321	11,321	11,321	11,321	11,321
Multi-Family Gallons/Year	48,660	45,050	41,713	38,549	35,603	32,927
EDUs	4,301	3,999	3,720	3,453	3,204	2,977
Commercial Gallons/Year	171,111,603	171,111,603	171,111,603	171,111,603	171,111,603	171,111,603
EDUs	3,516	3,532	3,548	3,564	3,581	3,597
Total EDUs [1]	19,138	18,853	18,589	18,339	18,106	17,894

1 - Does not include growth

4.3 Recommended Rates

The proposed rate adjustments are provided in Table 17. Commercial customers are proposed to receive higher percent rate increases than single family customers due to the EDU adjustment. Based on the evaluation of flow described in this report, residential customers contribute lower flows than previously assumed and the commercial customer class makes up a higher relative amount of total District flows.

**Table 17: Proposed Service Charges
Sewer Rate Study
Stege Sanitary District**

Fiscal Year	Single Family		
	\$/dwelling/yr	\$/dwelling/month	% Change
2019	\$242	\$20.17	
2020	\$271	\$22.58	12.0%
2021	\$304	\$25.33	12.2%
2022	\$341	\$28.42	12.2%
2023	\$383	\$31.92	12.3%
2024	\$429	\$35.75	12.0%
	Multi-family		
	\$/dwelling/yr	\$/dwelling/month	% Change
2019	\$242	\$20.17	
2020	\$252	\$21.00	4.1%
2021	\$263	\$21.92	4.4%
2022	\$274	\$22.83	4.2%
2023	\$285	\$23.75	4.0%
2024	\$297	\$24.75	4.2%
	Commercial		
	\$/1,000 gallons		% Change
2019	\$4.97		
2020	\$5.59		12.6%
2021	\$6.30		12.7%
2022	\$7.10		12.7%
2023	\$8.01		12.8%
2024	\$9.02		12.5%

4.4 Bill Impacts

A rate survey was conducted to compare Stege SD’s current and FY2020 proposed rates with the rates of other local agencies. Even with the proposed rate change, the typical single family bill will remain competitive with the other EBMUD satellite sanitation agencies. The only public agency with a lower single family residential bill than Stege SD is the City of Emeryville. Stege SD’s current and proposed multi-family bill is in the lower to mid-range of the surveyed agencies. All other agencies besides the City of Albany and Stege SD (current) offer a multi-family rate that is less than the single family rate.

Stege SD’s current and proposed commercial rates are in the upper range of surveyed agencies but less than the City of Berkeley. However, the bill survey provided here shows the equivalent flow rate per 1,000 gallons and does not necessarily reflect the minimum charges of the agencies. For example, the City of Emeryville’s minimum commercial charge is \$10.36 per month which reflects about 4,800 gallons

per month. Use over 4,800 gallons per month is charged a rate of \$2.17 (rounded) per 1,000 gallons. Lower flow customers would pay a higher average rate per 1,000 gallons than indicated.

