SEWER USER RATE STUDY SALIDA SANITARY DISTRICT



March 10, 2016

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SECTION 1: OVERVIEW

The Salida Sanitary District (District) is located in north-central Stanislaus County and encompasses and area of approximately 1,200 acres in the unincorporated community of Salida. The District owns and operates a wastewater system that collects, treats and disposes wastewater for approximately 4,200 individual customer accounts.

The wastewater system is comprised of three major components: a sanitary wastewater collection system consisting of 42.7 miles of pipeline ranging in size from 6 inches to 36 inches, four lift stations, and a wastewater treatment plant. The collection system conveys untreated wastewater from residences, business and some industry to the wastewater treatment plant. The four lift stations are needed to pump about 50 percent of the wastewater generated in the District at points where gravity force isn't enough to move wastewater through the collection system.

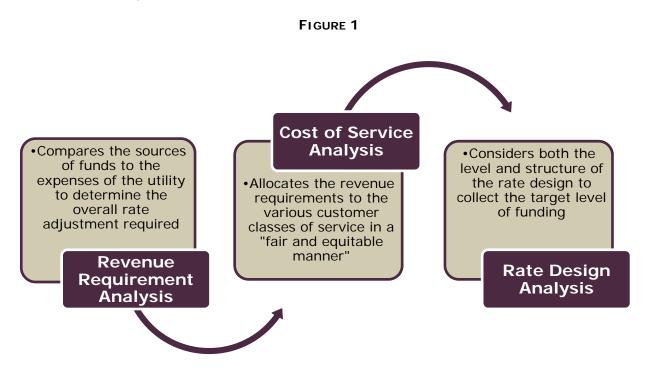
The District's revenues are derived primarily from sewer rates and they must be adequate to fund the operations and capital needs. This Study was conducted to review the District's finances, project revenues and expenditures over the next 5 years and design wastewater rates and charges to equitably and proportionately distribute the cost of providing sewer services to the District's customers. This Report presents key findings and recommendations of the Study.

The District's goal is to have a sewer user rate that would meet future funding requirements and improve rate design so that it is fair and equitable to the District's residents, businesses and other ratepayers. The rates recommended by this Study were developed following industry standards.



Rate Study Process

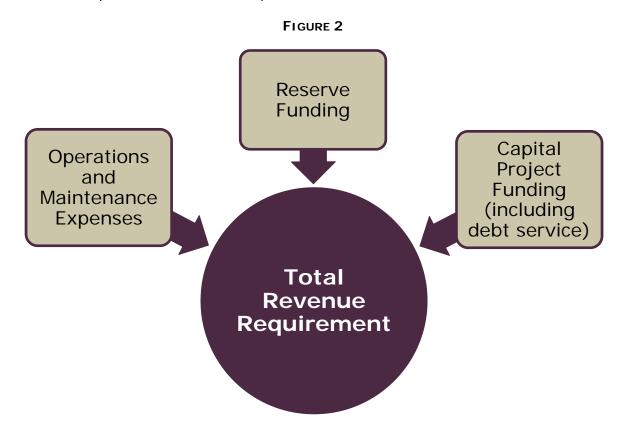
Rate analyses are typically performed every 5 years to ensure that revenues from rates are adequately funding sewer operations, maintenance and future capital needs. In California, rate analyses also require compliance with the cost-of-service principles imposed by Proposition 218 to ensure that rates correlate to how costs are incurred. A comprehensive sewer rate study typically includes the following three components: a revenue requirement analysis, a cost of service analysis, and a rate design analysis. This process is shown and summarized in **Figure 1**.



Section 2: Revenue Requirement Analysis

The first step in the rate analysis process it to determine the revenue requirements that must be provided from sewer rates to cover the cost of service. For purposes of this study, a five-year rate projection period was developed using a spreadsheet model. With this model, revenue requirements were projected for fiscal year 2016-17 through fiscal year 2020-21.

To develop the revenue requirement the District's 2015-16 Budget was analyzed. Major operating and maintenance expenses were identified and projected out over the next 5 years using a "cash basis" approach. For public utilities, a cash basis approach is the most frequently used methodology. *Figure 2* provides a summary of the cash basis methodology used to develop the sewer revenue requirement.



The revenue requirement model assumed no growth in the District's customer base. Certain expenses were increased over time due to expected inflation.

Operations and Maintenance Expenses

Operations and maintenance expenses are incurred by the District to provide sewer service to its customers. These expenses are accounted for during the current year and are not capitalized or amortized over an extended period of years. Operations and maintenance costs include salaries and benefits, professional services, utilities, materials and supplies and other items necessary to maintain the District's sewer collection and treatment system.



For the revenue requirement model, the District's 2015-16 Budget was used as a base with several of the line items increased in future fiscal years for inflation. It has been estimated that Insurance costs will increase by 10% each year. Proposed costs for Salaries and Benefits, and Safety, Security, Clothing are estimated to increase annually by 5%. Utilities costs are estimated to increase by 4%, Lab Testing, Equipment and Supplies and Miscellaneous Office and Operation Expenses are estimated to increase by 2%, and Communications are estimated to increase by 1% annually.

Reserves

The creation of a Reserve Fund would allow for the District to have financial viability should an unexpected fluctuation in revenues and/or expenditures arise. It is important for the District to maintain a cash balance that is sufficient to meet the daily cash-flow requirements and operating expenses. The District is currently operating without any designated reserves. As such, we recommend that the District build up a general Reserve Fund over the next 5 years with a target reserve balance of 15% of the District's operating budget.

This recommended target reserve balance of 15% is not the ultimate recommended reserve target. However, since the District has not had a reserve fund in the past, it is a target that is reasonable to achieve in a five year period without a significant impact to ratepayers. Ultimately, it is recommended that the District set a reserve policy for both operational and capital needs. The operational component of the reserves can be set based on cash flow needs and the capital component of the reserves can be set based on estimated replacement value of capital equipment.

Another benefit to the creation of Reserve Fund is related to the District's timeframe for collection of user fees. The District bills its customers annually on the property tax rolls and receives reimbursement from the County only twice each year. As a result, there are several month over which the District could rely on its operating reserve to meet its monthly cash flow requirements.

Debt Repayment

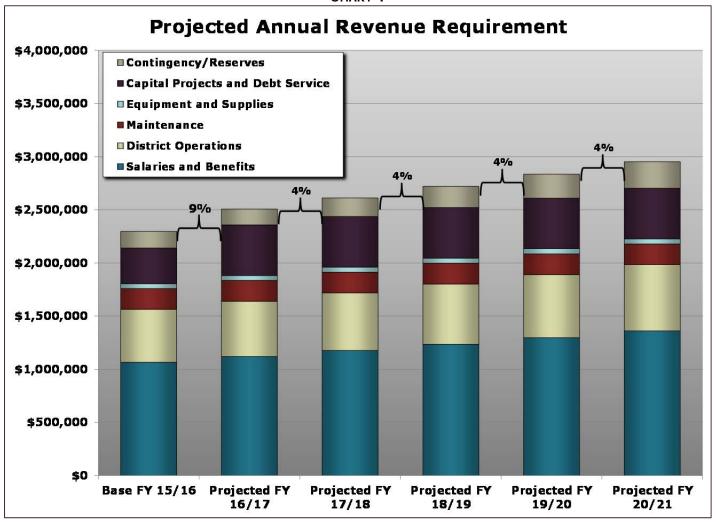
In addition to the figures included in the District's 2015-16 Budget, the District also needs to collect funds to repay a loan with Oak Valley Community Bank in the principal amount of \$2 million, maturing in 2021. As part of the Loan and Security Agreement, the District made a covenant to maintain a debt coverage ratio of 1.1 to 1, meaning after accounting for all other operating expenses, revenue collected must equate to 110% of annual debt service on the loan. Any funds not needed to pay debt service in any given year can then be applied toward District reserve funds. The debt service and required coverage have been added to the funding requirement for current and future fiscal years.

Total Funding Need

The components of the District's budget – Operations and Maintenance Expenses, Reserve Funding and Capital Project Funding – come together to determine the overall sewer funding requirement. This portion of the analysis balances the District's need to fund sewer operations and maintain financial stability with an attempt to minimize rates and the impacts on the District's customers. The projected total funding needed over the next five years ranges from approximately \$2.4 million to \$2.7 million, shown in *Chart 1*, and detailed in *Appendix A*.



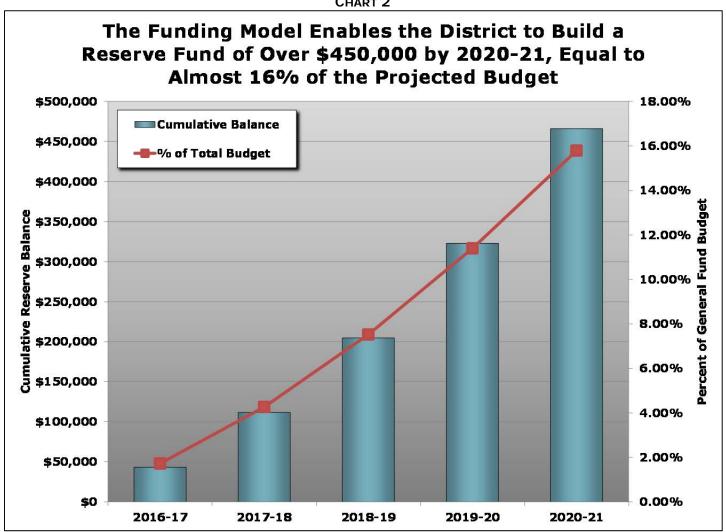
CHART 1



As shown in *Chart 1*, after an initial 9% increase mostly due to debt repayment, the District's overall expenditures are projected to increase at about 4% per year.

Reserve levels will be built up over time as the anticipated reserve contribution is increased annually until the District reaches the target 15% of annual operating expenses at the end of the 5 year period. *Chart 2* shows the reserve fund building at funding levels established in the revenue requirement model.

CHART 2





SECTION 3: COST OF SERVICE ANALYSIS

After completing the revenue requirement analysis, the next step is to distribute costs to each customer class. A cost of service analysis is conducted in order to allocate the costs of the determined revenue requirements in an equitable and proportional manner among the District's users. Allocation of the costs is based on the relationship between the user and the costs they impose on the utility. Key factors in allocating costs include the estimated flow from each user, as well as sewage strengths based on the user's biochemical oxygen demand (BOD) and total suspended solids (TSS). Industry standards were used for such things as BOD and TSS per customer category.

Table 1, on the following page, summarizes the estimated sewage flows and strengths for all customer classes in the District.

Cost Classification

Cost classification assigns the functionalized costs to cost components. Typically there are two types of classifications for sewer utility: fixed costs and variable costs. Fixed costs are the costs that are required in order to maintain capacity and service levels. Variable costs are dependent upon the volume of flow and strength of wastewater. The volume of flow refers to the volume of fluid which passes over the course of a year. The strength refers to the BOD and TSS of the wastewater.

To determine the per unit costs, the District's budgetary needs were allocated based on the fixed, volume and strength costs. Fixed costs were allocated 20% of the District's budgetary needs, volume costs were allocated an estimated 40% of the District's budgetary needs and strength costs, combining BOD and TSS, were allocated a combined estimated 40% of the District's budgetary needs.

Cost Allocation

The District's current rates and rate structure is based on a fixed charge per Equivalent Dwelling Unit (EDU). Under this system, one EDU equates to one single family residential customer. In order to make the rates more equitable among all customers, it is recommended that the District shift so rates are set based on three separate components: (1) fixed charge, (2) volume charge, (3) strength charge.

Customer classes have been broken down into residential and non-residential categories as shown in *Table 1*. Residential users include single-family, multi-family, duplexes and residential care homes. Non-residential users have been broken down into subcategories including: shops and stores, hotels and motels, full service restaurants, short order restaurants, fast food restaurants, gas stations, churches, offices, laundry facilities, light industrial, heavy industrial and schools.



TABLE 1

Customer Summary and Estimated Flows											
			Flow Loading								
User Group	Number of Customers/ Dwelling Units	Single Family Equivalent Dwelling Units (EDUs)	Total Flow (MGD)	Annual Flow (MG/Year)	% of Total	BOD per User (MG/L)	Annual BOD Load (LBS/Yr)	% of Total	TSS per User (MG/L)	Annual TSS Load (LBS/Year)	% of Total
Single-Family	3,981	4,022	0.8848	322.97	72.22%	250	673,385	71.01%	250	673,385	77.11%
Duplex	23	49	0.0108	3.93	0.88%	250	8,204	0.87%	250	8,204	0.94%
Apartments	27	144	0.0317	11.56	2.59%	250	24,109	2.54%	250	24,109	2.76%
Rest Homes	4	81	0.0177	6.46	1.45%	250	13,478	1.42%	100	5,391	0.62%
Sub-Total Residential	4,035	4,296	0.9450	344.93	77.13%		719,176	75.84%		711,090	81.43%
Shops and Stores	40	100.5	0.0221	8.07	1.80%	150	10,096	1.06%	150	10,096	1.16%
Hotels and Motels	5	257.6	0.0567	20.69	4.63%	310	53,480	5.64%	120	20,702	2.37%
Full Service Restaurants	2	46	0.0101	3.69	0.83%	1,000	30,806	3.25%	600	18,484	2.12%
Short Order Restaurants	7	45	0.0099	3.61	0.81%	500	15,068	1.59%	300	9,041	1.04%
Fast Food	3	22	0.0048	1.77	0.40%	1,000	14,733	1.55%	600	8,840	1.01%
Gas Stations	3	9	0.0020	0.72	0.16%	180	1,085	0.11%	280	1,688	0.19%
Churches and Other Non-Profit Buildings	6	16.5	0.0036	1.32	0.30%	250	2,763	0.29%	250	2,763	0.32%
Office Buildings	44	218.3	0.0480	17.53	3.92%	130	19,005	2.00%	80	11,696	1.34%
Laundry Facilities	2	28	0.0062	2.25	0.50%	150	2,813	0.30%	110	2,063	0.24%
Light Industrial	117	357.4	0.0786	28.70	6.42%	250	59,838	6.31%	250	59,838	6.85%
Heavy Industrial	2	53.4	0.0117	4.29	0.96%	250	8,941	0.94%	250	8,941	1.02%
High Schools	1	63	0.0139	5.06	1.13%	130	5,485	0.58%	100	4,219	0.48%
Middle Schools	1	26	0.0057	2.09	0.47%	130	2,264	0.24%	100	1,741	0.20%
Elementary Schools	3	29	0.0064	2.33	0.52%	130	2,525	0.27%	100	1,942	0.22%
Pre-Schools	2	2	0.0004	0.16	0.04%	130	174	0.02%	100	134	0.02%
Sub-Total Non-Residential	238	1274	0.2802	102.28	22.87%		229,075	24.16%		162,186	18.57%
Total	4,273	5,569	1.23	447.21			948,251			873,275	



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Section 4: Rate Design Analysis

Once the revenue requirements have been determined and the cost of service analysis performed a rate structure can be designed that will collect the necessary revenues.

Rate Design Criteria

The main goals of the rate design should be on establishing rates which are equitable and proportional to the users and are able to generate sufficient revenues. Other criteria that should be considered when determining a rate structure are listed below:

- Easy to understand by the customer and easy to administer
- Customer's ability to pay
- Provide monthly and yearly revenue stability
- Efficient allocation of the resource
- Policy considerations including water conservation and economic development

Final Rate Design

The rate applied to each customer is equal to the sum of a base component, a volumetric component and a strength component. The base component is based on the District's fixed operations and maintenance costs, equal to about 20% of the annual budget, and are equally divided among the number of customers in the system. The volumetric component is based on each user's actual or estimated flow, with costs equal to about 40% of the annual budget. The strength component is based on each users estimated strength of flow, with costs equal to 40% of the annual budget.

Residential Customers

Residential customers make up about 94.5% of the total customer accounts in the District. For residential customers, the volumetric and strength components are based on discharge characteristics of an average single family user (one EDU) and is composed of wastewater flow of 220 gallons per day for 365 days per year and constituent levels of sewage strength of 250 milligrams per liter (mg/l) BOD and 250 mg/l TSS. Single family, multi-family and duplex customers are all billed at one EDU per dwelling unit. Rest home customers, on average, have lower volume and strength levels and their rates are, therefore, adjusted accordingly.

Non-Residential Customers

The remaining 5.5% of the District's customer accounts are non-residential. To calculate the charges for non-residential customers, the District has established a set of strength factors and an estimated flow rate per EDU. The flow factor is established for each non-residential customer based on the ratio of its flow based on actual or estimated water usage to the standard flow rate of 220 gallons per day per EDU.

The strength factor for a commercial customer reflects the pollutant content of their wastewater and the resulting ease or difficulty of treatment. This is an important component in the rate structure because higher strength sewage that contains more oils and greases such as that generated by a restaurant costs more to treat and these costs need to be recovered from the users who are generating higher strength sewage. *Table 2* summarizes the sewage strengths for each user classification in this Study.



TABLE 2

Sewage Strength							
User Group	BOD per User (MG/L)	Equivalent EDUs	TSS per User (MG/L)	Equivalent EDUs			
Single-Family	250	1.00	250	1.00			
Duplex	250	1.00	250	1.00			
Apartments	250	1.00	250	1.00			
Rest Homes	250	1.00	100	0.40			
Shops and Stores	150	0.60	150	0.60			
Hotels and Motels	310	1.24	120	0.48			
Full Service Restaurants	1,000	4.00	600	2.40			
Short Order Restaurants	500	2.00	300	1.20			
Fast Food	1,000	4.00	600	2.40			
Gas Stations	180	0.72	280	1.12			
Churches and Other Non-Profit Buildings	250	1.00	250	1.00			
Office Buildings	130	0.52	80	0.32			
Laundry Facilities	150	0.60	110	0.44			
Light Industrial	250	1.00	250	1.00			
Heavy Industrial	250	1.00	250	1.00			
High Schools	130	0.52	100	0.40			
Middle Schools	130	0.52	100	0.40			
Elementary Schools	130	0.52	100	0.40			
Pre-Schools	130	0.52	100	0.40			

Non-residential customers pay a base component plus a volumetric and strength component per EDU based on a formula that determines each commercial customer's number of EDUs. Each non-residential customer's flow and strength is considered in the determination of their individual sewer bill as shown below:

Non-Residential Customer Charge =

Base charge +

(Volume Charge per EDU + Strength Charge per EDU * Strength Factor) *

Customer Assigned EDUs

The volumetric component for non-residential customers, in the absence of actual flow data, is based on the customer classification and the average flow rates set forth in guidelines provided by the California State Water Resources Control Board (State) Revenue Program Guidelines, Appendix G. Additionally, for non-residential customers, the strength component is based on the customer classification and the average strength characteristics set forth in State guidelines.



The District's General Manager shall assign flow rates based upon the actual flow rates or the average flow rates for the type of customer as provided by the State guidelines.

Recommended Sewer Rates

Table 3 summarizes the recommended monthly sewer rates based on the three-component rate model described above. The fixed charge is billed per customer, the volume charge is billed per assigned EDU and the strength charge is billed based on the strength factor per customer class.

TABLE 3

Recommended Monthly Sewer Rates									
	2016/17	2017/18	2018/19	2019/20	2020/21				
Flat Rates									
Per Customer	\$9.56	\$9.97	\$10.40	\$10.84	\$11.30				
Flow Based Rates									
Per EDU	\$14.68	\$15.30	\$15.95	\$16.63	\$17.34				
Strength Based Rates (Per EDU)									
User Group									
Single-Family	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
Duplex	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
Apartments	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
Rest Homes	\$10.35	\$10.79	\$11.25	\$11.73	\$12.23				
Shops and Stores	\$9.03	\$9.41	\$9.82	\$10.23	\$10.67				
Hotels and Motels	\$12.71	\$13.25	\$13.81	\$14.40	\$15.02				
Full Service Restaurants	\$47.67	\$49.69	\$51.81	\$54.02	\$56.32				
Short Order Restaurants	\$23.83	\$24.85	\$25.90	\$27.01	\$28.16				
Fast Food	\$47.67	\$49.69	\$51.81	\$54.02	\$56.32				
Gas Stations	\$13.97	\$14.56	\$15.18	\$15.83	\$16.51				
Churches and Other Non-Profit Buildings	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
Office Buildings	\$6.26	\$6.53	\$6.80	\$7.09	\$7.40				
Laundry	\$7.78	\$8.11	\$8.45	\$8.81	\$9.19				
Light Industrial	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
Heavy Industrial	\$15.05	\$15.69	\$16.36	\$17.06	\$17.78				
High Schools	\$6.89	\$7.18	\$7.48	\$7.80	\$8.14				
Middle Schools	\$6.89	\$7.18	\$7.48	\$7.80	\$8.14				
Elementary Schools	\$6.89	\$7.18	\$7.48	\$7.80	\$8.14				
Pre-Schools	\$6.89	\$7.18	\$7.48	\$7.80	\$8.14				



Customer Impacts

Table 4 provides a summary of the impact of the rate model on the District's customers. The table shows the average impact per customer category of the recommended rate model from fiscal year 2016-17 through 2020-21 and compares it to the rates the average customer in each category pays under the District's current rate model. As shown in the table, the percent change in rates for single family residential property owners is 4% per year.



TABLE 4

Average Combined Rates Per Customer Type									
User Group	Average Charge Per Customer 2016/17	Average Charge Per Customer 2017/18	Average Charge Per Customer 2018/19	Average Charge Per Customer 2019/20	Average Charge Per Customer 2020/21	Current 2015/16 Average Charge Per Customer			
Single-Family	\$39.60	\$41.28	\$43.04	\$44.87	\$46.79	\$38.06			
Duplex	\$72.90	\$76.00	\$79.23	\$82.60	\$86.13	\$81.08			
Apartments	\$168.11	\$175.26	\$182.71	\$190.50	\$198.63	\$166.97			
Rest Homes	\$513.22	\$535.04	\$557.80	\$581.56	\$606.39	\$192.24			
Shops and Stores	\$69.13	\$72.07	\$75.13	\$78.33	\$81.68	\$87.21			
Hotels and Motels	\$1,420.45	\$1,480.83	\$1,543.82	\$1,609.59	\$1,678.32	\$1,233.32			
Full Service Restaurants	\$1,443.49	\$1,504.85	\$1,568.87	\$1,635.70	\$1,705.54	\$837.27			
Short Order Restaurants	\$257.13	\$268.06	\$279.47	\$291.37	\$303.81	N/A			
Fast Food	\$466.76	\$486.60	\$507.30	\$528.91	\$551.49	\$114.17			
Gas Stations	\$95.51	\$99.57	\$103.80	\$108.22	\$112.85	\$76.12			
Churches and Other Non-Profit Buildings	\$91.32	\$95.20	\$99.25	\$103.48	\$107.89	\$13.21			
Office Buildings	\$113.44	\$118.26	\$123.29	\$128.54	\$134.03	\$111.52			
Laundry	\$323.91	\$337.68	\$352.05	\$367.05	\$382.72	\$95.13			
Light Industrial	\$100.37	\$104.64	\$109.09	\$113.74	\$118.60	\$54.06			
Heavy Industrial	\$803.29	\$837.44	\$873.07	\$910.26	\$949.13	\$494.75			
High Schools	\$1,368.03	\$1,426.18	\$1,486.85	\$1,550.19	\$1,616.38	\$380.56			
Middle Schools	\$570.20	\$594.44	\$619.73	\$646.13	\$673.72	\$380.56			
Elementary Schools	\$218.01	\$227.27	\$236.94	\$247.04	\$257.58	\$380.56			
Pre-Schools	\$31.13	\$32.45	\$33.83	\$35.27	\$36.78	\$57.09			
Percent Change in Rates for Single Family	4%	4%	4%	4%	4%				



SECTION 5: RECOMMENDATIONS

The District intends to update their sewer user rates based on current cost of service and to allocate costs equitably and proportionately to all user classes. The recommended rate structure achieves these goals and includes the funding of a reserve to enhance the financial management practices of the District.

In order to implement the rates identified the following is recommended:

- Approve and Accept this Rate Study. The approval of this report will provide documentation of the rate study analysis and the basis for analyzing potential changes to future rates.
- Initiate the Procedural Proposition 218 Activities. The District must mail a notice of proposed rate increases to all affected property owners. The District must hold a public hearing no less than 45 days after the notices are mailed, prior to adopting the proposed rates. At the public hearing, the proposed rates are subject to majority protest.
- **Update Sewer Charge Ordinance.** The District's current sewer charge ordinance should be updated to reflect the current rate model and include guidance related to calculating EDUs for each customer.
- **Establish Reserve Fund Policy.** It is recommended that the District establish a policy for setting operating and capital reserve funds to maintain financial stability.
- Utilize Water Meter Data to Refine the Volumetric Component of the Rate. Water meter data can be applied toward the volumetric component of the rate so that each customer is billed based on their actual utilization of the system.
- Annually Review Rates and Revenue. Any time an agency adopts new utility rates or rate structures, those new rates should be closely monitored to ensure the revenue generated is sufficient to meet the annual revenue requirements.



APPENDIX A: PROJECTED ANNUAL REVENUE REQUIREMENT

	Projected Budgetary Needs								
Expense Description	Base FY 15/16	Projected FY 16/17	Projected FY 17/18	Projected FY 18/19	Projected FY 19/20	Projected FY 20/21			
Salaries and Benefits	\$1,066,350	\$1,119,668	\$1,175,651	\$1,234,433	\$1,296,155	\$1,360,963			
District Operations	\$496,800	\$520,091	\$542,947	\$567,502	\$593,905	\$622,315			
Maintenance	\$195,000	\$195,000	\$195,000	\$195,000	\$195,000	\$195,000			
Equipment and Supplies	\$46,500	\$46,890	\$47,288	\$47,694	\$48,107	\$48,530			
Capital Projects and Debt Service ¹	\$335,891	\$475,453	\$475,453	\$475,453	\$475,453	\$475,453			
Contingency/Reserves ²	\$155,501	\$150,000	\$175,000	\$200,000	\$225,000	\$250,000			
Total	\$2,296,041	\$2,507,102	\$2,611,339	\$2,720,082	\$2,833,620	\$2,952,261			
Less Non-Service Charge Revenues	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000			
Total Service Charge Funding Need	\$2,241,041	\$2,452,102	\$2,556,339	\$2,665,082	\$2,778,620	\$2,897,261			
		9%	4%	4%	4%	4%			
¹ Includes debt service coverage of 110%, as required by the Note. ² Reserve target of 10% of Total Budget.									



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