Coachella Valley Water District

Sewer Service Rate Study Report

Final Report

May 16, 2017

Stantec

Ms. Katherine Godbey
Director of Finance
Coachella Valley Water District
75515 Hovley Lane East
Palm Desert, CA 92260

May 16, 2017

Subject: Sewer Service Rate Study Report

Dear Ms. Godbey,

Stantec Consulting (formerly Hawksley Consulting) is pleased to present this Sewer Service Rate Study Report that we performed for the (District). We appreciate the fine assistance provided by you and all of the members of the District staff who participated in the development of the Report.

This Report encompasses financial planning, cost-of-service, and rate design recommendations, and involved a great deal of effort not only from Stantec, but also from you and your staff. Our efforts were completed using standard cost allocation and rate setting principles established by the Water Environment Federation.

If you or others at the District have any questions, please do not hesitate to call me at (510) 316-0621 or email me at mark.hildebrand@stantec.com. We appreciate the opportunity to be of service to the District, and look forward to the possibility of doing so again in the near future.

Sincerely,

Mark Hildebrand
Principal Consultant

Enclosure

Executive Summary

Coachella Valley Water District ("District" or "CVWD") has developed recommendations for updating the rates for its Sewer Service Fees. The rates recommended in the Sewer Service Rate Study Report ("Report") reflect the District's costs of providing wastewater services to specific classes of customers. The Report was made up of a long-range financial plan, a cost-of-service study, and a rate design study, culminating in a recommended five-year rate schedule for the District's Sewer utility.

The purpose of this Report is to assess CVWD's Sewer Utility rate revenue requirements, to evaluate the cost of providing service to each of its Customer Classes, and to present rate recommendations for equitably collecting revenue from each respective Customer Class based on the cost of providing them service.

The Report was completed using standard wastewater ratemaking practices and follows industry-accepted cost-of-service principals to calculate the proposed rates as described by the Water Environment Federation (WEF) in its "*Financing and Charges for Wastewater Systems, Manual of Practice No. 27"* (2005) (Manual No. 27). The Report-recommended rate structures are designed to fund the utility's long-term projected costs of providing service while proportionally allocating costs among customers, providing a reasonable and prudent balance of revenue stability, and complying with the substantive requirements of California Constitution article XIII D, section 6 ("Article XIII D"), commonly known as Proposition 218.

ES. 1 – STUDY OBJECTIVES

The principal objectives or components of the Report are as follows:

1. Develop a multi-year financial management plan that integrates the District's capital funding needs;

2. Identify future rate adjustments to sanitation rates that will ensure adequate revenues to meet the District's ongoing financial requirements;
3. Determine the cost of providing sanitation service to each identified Customer Class using industry accepted methodologies; and
4. Recommend specific rate structures that equitably recover the cost of service from each Customer Class and comport with industry practices and legal requirements.

ES. 2 - Financial Plan

The District operates the Sewer Utility as an enterprise fund (Sanitation Fund). In order to evaluate the long-term financial sustainability of the Sanitation Fund, the revenues and expenditures were evaluated within the context of a ten-year financial plan. A financial plan model considers the costs of operations and maintenance (O&M), capital, and debt, while also accounting for non-rate revenue, reserve targets and financial performance metrics.

The financial assessment found that, while the annual budget has a deficit, the Sanitation Fund has sufficient cash reserves to avoid a rate increase in the immediate future. Even though the District is anticipated to spend $200 million in capital projects over the next ten years, the cash reserves are expected to still meet reserve targets in fiscal year (FY) 2020. As such, the District has elected to forego any planned rate increases. It is important to note that, while cash reserves are immediately abundant, the budget deficit is also significant and the rate increases that will be necessary in FY 2020 in order to maintain the fund's reserve targets are expected to be in excess of 30%. If all spending projections hold true and rates are not increased, it is forecasted that the Sanitation Fund will have a negative fund balance by FY 2024.

ES.3 - Cost-of-Service Analysis

Cost-of-service ratemaking is a process of allocating the utility system user-charge revenue requirements to customers based on the demands they place on the system. Individual customer demands vary depending on the nature of the utility use at the location where service is provided. The industry standard, as

promulgated by WEF's Manual No. 27, is to group customers with similar system needs into Customer Classes. Rates are then developed for each Customer Class, with each individual customer paying the Customer Class' average allocated cost of service for each unit of specific usage. The District's Sewer Utility is currently made up of two Customer Classes: Residential and Commercial.

CVWD's current sanitation rates also include a geographical component, whereby there are different rates depending on six different geographical service areas that are referred to as "Rate Areas". This Report recommends the elimination of these service areas and creating a new "RV/Trailer Park" Customer Class (which has sewage production patterns similar to Residential, but receives monthly sewer bills rather than annual sewer bills). The costs of providing wastewater services are incurred as a result of customer demands. This notion of cost causation means that the District incurs a cost of providing service as a result of a particular kind of customer demand and its impact on the sewer system and treatment costs. The Report allocates costs to Customer Classes based on the number of accounts, number of bills received, and approximate wastewater discharged (flows).

The amount of wastewater discharged (i.e., "flow") of each customer is difficult to measure accurately because individual customer discharges into the sewer system are not metered. Rather than rely on current assignments of "equivalent dwelling units" (EDUs) to each account (which the District has found problematic), the Report recommends estimating the sewage discharges for Residential customers based on their indoor water budget of 200 gallons per dwelling unit per day, established by the Domestic Water Enterprise. The discharge of sewage for Commercial accounts will also be based on potable water usage, combined with an assumption of a "return to sewer" factor for each respective Customer Class. The return-to-sewer factor estimates how much of the account's potable water usage is subsequently discharged to the sewer drain as wastewater.

The following table summarizes the shift of cost responsibilities by Customer Class (and the "inspection points" for the fats, oils and grease program) has been isolated by this exercise, as recommended by the Report. The shifting of cost

responsibilities between Customer Classes is a normal phenomenon as use patterns change, rate structures are modified, and as billing data is corrected.

Customer Class	*Cost of Service Allocation*	*Revenue at Existing Rates*	*Difference*	
Residential	$30,094,451	$32,287,308	($2,192,856)	-6.8%
RV/Trailer Parks	987,580	984,778	2,802	0.3%
Combined Non-Residential*	6,576,791	4,287,758	2,289,033	53.4%
Inspection Point	344,177	443,156	(98,979)	-22.3%
Total	**$38,003,000**	**$38,003,000**		

* Included Institutional, Business, Hotel/Motel, Commercial and Industrial

ES.4 - Rate Recommendations

A rate design analysis was performed to identify a rate structure that would:

- Fairly and equitably recover the cost of providing service and revenue requirements for each Customer Class;
- Conform to accepted industry practice and legal requirements;
- Provide fiscal stability and recovery of fixed costs of the system; and
- Improve District staff's ability to maintain the Sewer Utility billing database.

Based on the findings of this Report, MWH recommends the following changes to the existing rate structure:

1. Eliminate the separate rates by Rate Area (i.e., service areas).
2. Separate RV/Trailer Parks as a separate Customer Class.
3. Eliminate the Supplemental Sewer Cleaning Charge.
4. Replace the current rate structure with a consumption-based fixed Service Charge - *All Residential and RV/Trailer Park customers will be charged one Service Charge unit per dwelling unit. Commercial customers will be charged the same Service Charge unit per equivalent sewage unit (ESU). Under the proposed rates, the estimated amount of sewer flow for each customer within a Customer Class is determined on the basis of the number of ESUs assigned to the Customer Class. ESU values will be assigned to Commercial customers based on 90% (the return-to-sewer factor) of their average daily water usage over the previous three years, divided by 200 (signifying the 200 GPD of indoor water usage assumed for Residential customers).*

5. Create a monthly fixed Account Charge.

Based on the above and the results of the cost-of-service analysis, the following rates for FY2018 (starting on July 1, 2017) are recommended. These rates include no overall rate revenue increase (i.e., they are revenue neutral). This Report does not provide a multi-year rate schedule since the District has elected to hold rate revenue flat until cash reserve levels are lowered.

Customer Class	***Acct. Charge*** (per month)	***Service Charge*** *(per ESU per mo.)*
Residential	$1.58	$23.04
RV/Trailer Parks	$3.98	$23.04
Business	$3.98	$23.04
Commercial/Industrial	$3.98	$23.04

The Report used methodologies that are aligned with industry standard practices for rate setting as promulgated by WEF and all applicable law, including Proposition 218. The proposed adjustments to the rates will provide revenue stability and continue to equitably and proportionately recover costs from the appropriate customers.

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Section 1. INTRODUCTION

Coachella Valley Water District ("District" or "CVWD") engaged Stantec Consulting to study the finances of the District's Sewer Utility and develop recommendations for updating the Sewer service rates. The rates recommended in this Sewer Service Rate Study Report (Report) reflect the District's cost of providing wastewater services to specific classes of customers. This Report is made up of a long-range financial plan, a cost-of-service study, and a rate design study, culminating in recommended rates for the Sewer Utility.

1.1 SYSTEM OVERVIEW

The CVWD is a special district governed by a five-member Board of Directors. It was formed in 1918 to protect and conserve local water sources. CVWD began wastewater collection and treatment services in 1968. Today, the District's Sewer Utility serves an estimated population of approximately 271,000 with five wastewater reclamation plants (WRPs) that a combined treatment capacity of 33.1 million gallons per day.

1.2 PURPOSE OF THE REPORT

The purpose of this Report is to assess the Sewer Utility's rate revenue requirements, to evaluate the cost of providing service to each of its Customer Classes, and to present rate recommendations for equitably collecting revenue from each respective Customer Class based on the cost of providing them service. The District's sewer rates have not been increased by the Board since August 1, 2010.

The District is a community-oriented utility dedicated to serving its customers and the environment with reliable, economical, and high-quality water and sewer service. The financial planning associated with this Report furthers these goals by developing rates that support the District's financial goals and policies.

1.3 PROJECT OBJECTIVES

The primary objectives of this Report are to:

i. Develop a multi-year financial management plan that integrates the Sewer Utility's capital funding needs;

ii. Identify future adjustments to the sewer rates that will ensure adequate revenues to meet the Sewer Utility's ongoing financial requirements;

iii. Determine the cost of providing sewer service to each identified Customer Class using industry accepted methodologies; and

iv. Recommend specific rate structures that equitably recover the cost of service from each Customer Class and comport with industry practices and legal requirements.

1.4 PROJECT METHODOLOGY

Stantec used standard wastewater ratemaking practices to calculate the proposed rates as described by the Water Environment Federation (WEF) in its Manual of Practice No. 27 "Financing and Charges for Wastewater Systems" (Manual No. 27). The basis for the proposed rate schedules follows industry-accepted cost-of-service principals and complies with all requirements as stipulated by State of California law. The proposed rates are designed to meet current and future revenue needs.

This project followed three major phases:

1. **Financial Planning Analysis.** Financial planning compares the overall revenues of the Sewer Utility to its overall revenue requirements in order to determine the rate adjustments needed over a multi-year period. The revenue requirements methodology used in this Report is consistent with industry standards established by WEF's Manual No. 27. The Report's revenue requirements analysis compares the revenues of the utility to its operating and capital costs to determine the adequacy of the existing rates to recover the utility's costs. The revenue requirements are analyzed through the development of a long-term financial plan. Based on the best information

currently available, the current financial plan incorporates projected operations and maintenance costs, capital expenditures, debt issuances and service, and growth assumptions to estimate annual revenue requirements.

2. **Cost-of-Service Analysis.** The cost-of-service analysis proportionally allocates the revenue requirements for the Sewer Utility among its various Customer Classes. Following the determination of overall revenue requirements, the utility's costs, expenses, and assets were categorized by major operating functions to determine the costs associated with each respective function. Subsequently, the functionalized costs were allocated to each respective Customer Class (e.g., Residential, Business, etc.) based on the service requirements of each respective Customer Class.[1] Metrics such as estimated sewage flows and bill frequency were all used to determine how to allocate costs among the various Customer Classes.
3. **Rate Design Analysis.** The final part of the analysis, rate design, determines how rate revenues will be collected from the respective Customer Classes in a manner that respects the results of the cost-of-service analysis while also addressing District goals and objectives for pricing. This Report's recommended rate structures are designed to fund the utility's long-term projected costs of providing service while proportionally allocating costs among customers, providing a reasonable and prudent balance of revenue stability, and complying with the substantive requirements of California Constitution article XIII D, section 6 ("Article XIII D"), commonly known as Proposition 218.

Each of these steps is described in more detail below.

1.5 ACRONYMS

AWWA	American Water Works Association
CIP	Capital Improvement Plan

[1] Customer classes consist of users with similar usage characteristics who are served at similar costs.

CVWD	Coachella Valley Water District (or District)
DCR	debt coverage ratio
EDU	equivalent dwelling unit
ESU	equivalent sewage unit
FOG	fats, oils & grease
FY	fiscal year (which begins on July 1)
HCF	hundred cubic feet
O&M	operation and maintenance
R&R	repair and rehabilitation
SCC	Sewer Capacity Charge
WEF	Water Environment Federation
WRP	wastewater reclamation plant

Section 2. FINANCIAL PLAN

CVWD operates the Sewer Utility as an enterprise fund. In order to evaluate the long-term financial sustainability of the Sewer Utility, the project team evaluated the revenues and expenses in a ten-year financial plan, which projects CVWD's future expenses in order to calculate the required rate revenue for a ten-year period. As detailed below, the financial plan model considers the costs of operations and maintenance (O&M), capital, and debt, while also accounting for non-rate revenue, reserve targets and financial performance metrics. The following subsections provide financial planning information over the next ten years.

2.1 CAPITAL FINANCING POLICIES

CVWD has not historically issued debt to finance its capital expenses, and as such does not have a set policy for debt service coverage (DSC) ratios (the ratio of revenues net of all expenses relative to the annual debt service). A debt service coverage ratio target of 1.50 was used in these projections, based on the recommendation of the CVWD's Financial Advisor, PFM, Inc.

2.2 RESERVE POLICIES

CVWD has adopted target reserve policies in order to maintain sufficient working capital in CVWD's enterprise funds so as to mitigate current and future risks and promote stable services and fees. The stated objectives of CVWD's reserve policies are:

- To establish sound formal fiscal reserve guidelines to ensure strong fiscal management that guide future CVWD decisions.
- To build adequate reserves over time. This action will provide CVWD with resources to help stabilize CVWD's finances, and position it more easily to absorb economic downturns or large-scale emergencies.
- To help smooth rates from year to year, and to promote equity over the years to ratepayers.
- To provide funding for current and future replacement of existing assets as they reach the end of their useful lives.
- To assist CVWD in meeting its short-term and long-term obligations and to ensure that CVWD maintains the highest possible credit rating.

CVWD's Reserve Policy was last updated in February 2016. The following are CVWD's reserve policies as adopted by the Board:

Operating Reserves – The Operating Reserves cover operating costs for an established period of time. This reserve ensures continuity of service regardless of cash flow, and is considered working capital to be used to fund current expenses as needed. Operating reserves are maintained at a level of 90 days (i.e., 25% of annual) current year budgeted expenses (less depreciation).

Rate Stabilization – This reserve is intended to smooth rate volatility during short to mid-term rate revenue loss, property tax revenue loss, and/or higher than anticipated budget costs that cannot be supported by normal revenues. The formal policy adopted by CVWD is to maintain this reserve at the higher of 10% of current year budgeted volumetric rate revenues (which is an amount that could be lost if customers conserve water at a higher level than projected) or 10% of total costs less depreciation. Given that the volumetric component of the Sewer rates is proposed to be eliminated (see Section 4), and the latter formula didn't produce realistic numbers, this Report assumed that the target for this reserve should be 10% of Commercial rate revenue (since that revenue may still experience volatility).

Capital Improvement Program – This reserve is designated for funding capital assets and is designed to stabilize funding for capital by accumulating "pay as you go" reserves. This reserve can also be used in conjunction with outside funding sources. This reserve fund is generally established for capital items/projects with a cost of $10,000 or more and a useful life of one year or greater. This reserve is maintained at two years depreciation expense since CVWD has historically utilized pay-go financing of capital projects.

Emergency Reserve – These reserves help to ensure continued service to CVWD's customers and service areas for events which are impossible to anticipate or budget. The ability of CVWD to quickly restore facilities and services is critical to the public health and safety. This fund assists in covering emergency cash needs for any reason. This reserve is maintained at one percent (1.0%) of the net capital assets.

Motor Pool Reserve – The motor pool reserve provides capital replacement funding as CVWD's rolling stock is depreciated over its useful life. The target is set at a five-year average of the Capital Improvement Plan (CIP).

Reserve for Debt Service (anticipated) – Most debt issuances require the creation of a separately held reserve fund equal to one year of debt service, to be held by the trustee and used in the last year of the debt repayment. In the future, if CVWD issues debt it may be required to establish a legally-restricted debt service reserve.

Table 1 summarizes the Sewer Utility's reserve targets in FY 2017.

Table 1 – Summary of Reserve Targets

Reserve	Approximate FY2017 Target
Operating Reserves	$8.4M
Rate Stabilization	$0.8M
Capital Improvement Progı	$24.8M
Emergency Reserve	$4.0M
Motor Pool Reserve	$1.8M

2.3 MODELING ASSUMPTIONS

The financial plan model employs assumptions to calculate future year revenues and expenses where budget projections are not available. The financial plan model uses the most recent audited financial information and Board adopted budgets for the study period. The cost-of-service analysis is based on the financial information for FY 2017 (i.e., the "Test Year"). CVWD's fiscal year (FY) starts July 1 of each year. For example, FY 2017 runs from July 1, 2016 to June 30, 2017.

2.3.1 INFLATION ASSUMPTIONS

When forecasting future costs when actual budget numbers were not available, a general inflation assumption of 3.0 percent per year (3.0%) was assumed, with the exception of labor costs which were escalated at a rate of 4.0 percent per year (4.0%). These inflation assumptions were based on recent historical trends and near-term budget projections. It should be noted that all budget values for the next 5 years (the rate schedule horizon) are based on actual budget forecasts, not these inflation values.

2.3.2 GROWTH ASSUMPTIONS

Customer growth was assumed to be one half of a percent per year (0.5%) based on recent growth trends, as evidenced by Sewer developer fees (growth-based revenue) in the past two years. Water usage (and therefore wastewater production) was assumed to remain static.

2.4 SEWER FINANCIAL PLAN

CVWD's revenue requirements can be organized into four components: O&M costs, capital costs (cash and debt service), reserve requirements, and debt service coverage requirements. The former two components are described below, while the latter two components were described in Section 2.1 and Section 2.2. Note that all budget values in this report were provided by District staff, as documented in detail in the financial model developed by Stantec ("Sanitation FAMS Model Current").

2.4.1 BEGINNING FUND BALANCES

The Sewer enterprise is made up of three funds: the operating Fund and two restricted funds associated with Sewer Capacity Charge (SCC) revenue. The ending cash balances for FY 2016 was used to establish the beginning FY 2017 balances for all three funds, as shown in Table 2.

Table 2 – FY 2017 Beginning Cash Balance

Cash Balance	Beginning FY 2017
Operating Fund	$107,957,000
SCC Collection	$5,982,185
SCC Treatment	$9,875,280

2.4.2 REVENUE REQUIREMENTS

O&M Costs - The financial plan model was populated with CVWD's adopted O&M budget for FY 2017 and budgets for FY 2018 - 2023. The term "projected" budget is used for the coming five years, while "forecasted" budgets refer to projections beyond 5 years. Operating costs beyond FY 2023 were calculated based on cost escalation assumptions (see Section 2.3.1), unless specified otherwise in this Report. The O&M budget projections for the study period are summarized in Table 3.

The Report assumed interest earnings on invested funds at a rate of 1.0% for the duration of the study period, based on the recent historical performance of the District's investment earnings.

Table 3 – Forecasted O&M Expenses[2]

	Budget FY 2017	*Projected* FY 2018	*Projected* FY 2019	*Projected* FY 2020	*Projected* FY 2021
Salaries & Wages	$17,563,000	$18,091,000	$18,634,000	$19,194,000	$19,770,000
Supplies & Services	11,305,000	11,351,000	11,747,000	12,157,000	12,581,000
Utilities	4,143,000	4,433,000	4,743,000	5,075,000	5,430,000
Effluent Disposal Fee	600,000	600,000	600,000	600,000	600,000
Capital Outlay	593,000	593,000	593,000	593,000	593,000
Less District Labor	-616,000	-595,000	-376,000	-425,000	-837,790
Total Expenses:	**$33,588,000**	**$34,473,000**	**$35,941,000**	**$37,194,000**	**$38,136,210**

	Forecast FY 2022	*Forecast* FY 2023	*Forecast* FY 2024	*Forecast* FY 2025	*Forecast* FY 2026
Salaries & Wages	$20,363,000	$20,973,000	$21,602,190	$22,250,256	$22,917,763
Supplies & Services	13,020,000	13,474,000	13,878,220	14,294,567	14,723,404
Utilities	5,810,000	6,217,000	6,403,510	6,595,615	6,793,484
Effluent Disposal Fee	600,000	600,000	618,000	636,540	655,636
Capital Outlay	593,000	593,000	610,790	629,114	647,987
Less District Labor	-601,574	-735,539	-757,605	-780,333	-803,743
Total Expenses:	**$39,784,426**	**$41,121,461**	**$42,355,105**	**$43,625,758**	**$44,934,531**

Capital Costs - CVWD maintains a long-range fiscal perspective through the use of a CIP to maintain the quality of CVWD infrastructure. The capital spending projections in the financial plan model are based on CVWD's CIP. Detailed capital spending has been projected as far as FY 2022 and the remaining years in the 10-year study period were estimated at a high level. As a result, the spending and scheduling projections beyond FY 2022 are significantly less reliable than those in the next five years.

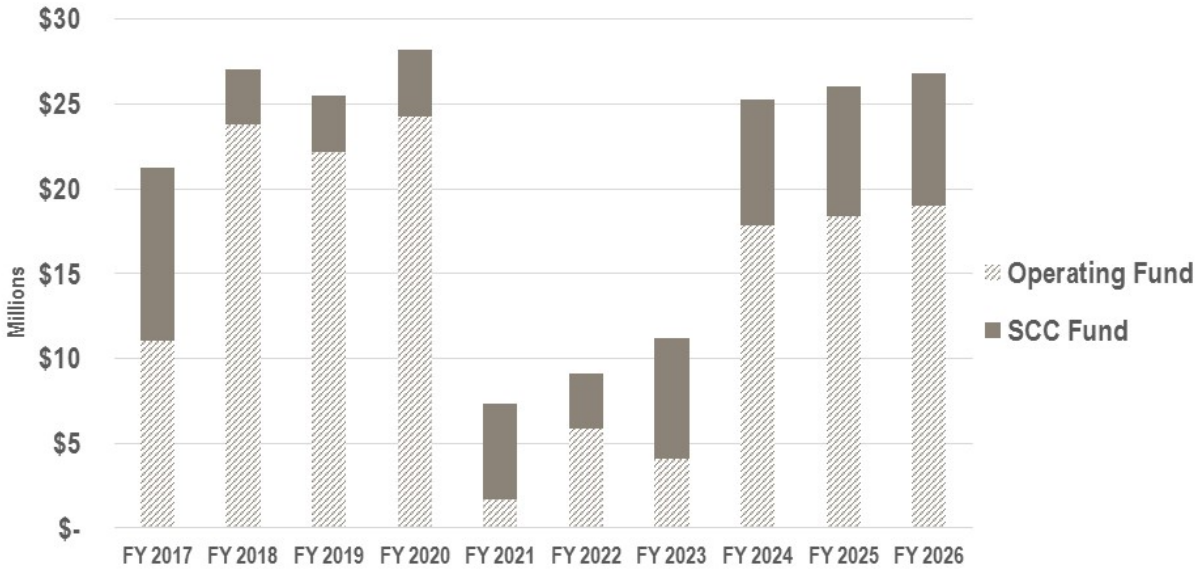
The Sewer Utility separates its capital spending into two categories: repair and rehabilitation (R&R) projects which are always funded through the operating fund, and growth projects which are generally paid for with revenue from CVWD's restricted Sanitation Capacity Charge (SCC).

[2] Salaries and benefits numbers are less capitalized labor.

A detailed summary of the projected capital spending has been provided in Schedule 1.

Figure 1 provides a summary of the current and projected breakdown between use of restricted (SCC) and operating revenue for CVWD's CIP. Amounts shown are in real dollars.

Figure 1 – Capital Spending Summary



For more detail regarding the Sewer Utility's projected O&M and capital expenses, refer to Schedule 2, which contains a 10-year cash flow pro forma.

2.4.3 EXISTING REVENUE

The Sewer Utility receives a mix of both rate and non-rate revenue to support its operations. Table 4 shows a summary of the Sewer Utility's projected revenues through FY 2024 assuming no rate adjustments. This scope of the Report is limited to making recommendations regarding Sewer Service Fees, not the other sources of Sewer Fund revenue. Note that these tables exclude restricted revenues.

As will be explained in Section 4, the recommended rates rely on estimated indoor water usage in order to estimate sewage discharged by individual Sewer customers. This Report assumes that total water usage by this group will only increase at the rate of regional growth over the course of the study period.

Table 4 – Budgeted and Projected Revenues

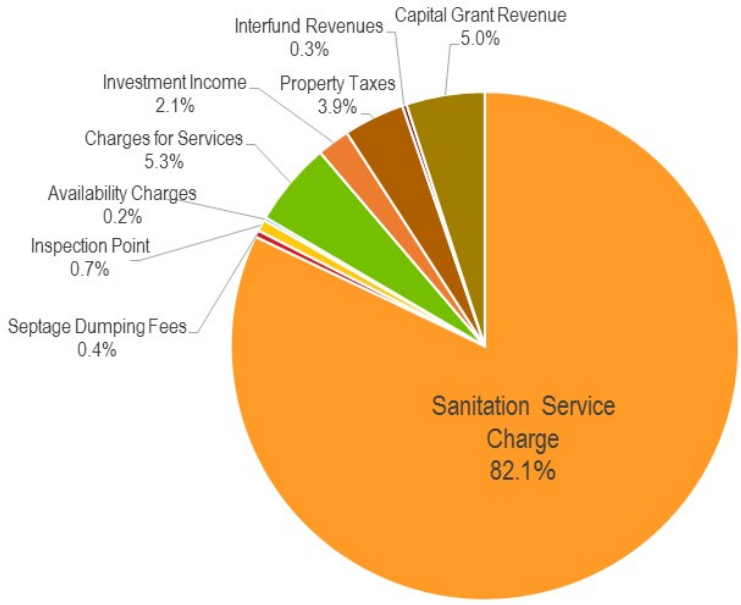
Revenue Sources	*Budget* FY 2017	*Projected* FY 2018	*Projected* FY 2019	*Projected* FY 2020	*Projected* FY 2021
Sanitation Service Charge	$37,657,857	$38,253,000	$38,003,000	$38,382,952	$38,766,751
Septage Dumping Fees	200,000	200,000	200,000	200,000	200,000
Inspection Point	344,177	344,177	344,177	344,177	344,177
Availability Charges	94,000	94,000	94,000	94,000	94,000
Charges for Services	159,000	2,484,000	159,000	159,000	159,000
Total Operating Revenues	**$38,455,034**	**$41,375,177**	**$38,800,177**	**$39,180,129**	**$39,563,928**
Investment Income	$1,059,425	$1,059,425	$1,059,425	$1,059,425	$1,059,425
Property Taxes	990,547	1,808,000	1,844,000	1,881,000	1,918,000
Interfund Revenues	129,000	129,000	129,000	129,000	129,000
Capital Grant Revenue	0	2,325,000	0	0	0
Total Non-Operating Revenues	**$2,178,972**	**$2,808,000**	**$129,000**	**$129,000**	**$129,000**
Total Revenues	**$40,634,006**	**$44,183,177**	**$38,929,177**	**$39,309,129**	**$39,692,928**

Revenue Sources	*Forecast* FY 2022	*Forecast* FY 2023	*Forecast* FY 2024	*Forecast* FY 2025	*Forecast* FY 2026
Sanitation Service Charge	$38,766,752	$38,766,753	$38,766,754	$38,766,755	$38,766,756
Septage Dumping Fees	200,000	200,000	200,000	200,000	200,000
Inspection Point	344,177	344,177	344,177	344,177	344,177
Availability Charges	94,000	94,000	96,820	99,725	102,716
Charges for Services	159,000	159,000	163,770	168,683	173,744
Total Operating Revenues	**$39,563,929**	**$39,563,930**	**$39,571,521**	**$39,579,340**	**$39,587,393**
Investment Income	$1,059,425	$1,059,425	$1,059,425	$1,059,425	$1,059,425
Property Taxes	1,937,000	1,957,000	1,979,260	2,002,188	2,025,803
Interfund Revenues	129,000	129,000	132,870	136,856	140,962
Capital Grant Revenue	0	0	0	0	0
Total Non-Operating Revenues	**$129,000**	**$129,000**	**$129,000**	**$129,000**	**$129,000**
Total Revenues	**$39,692,929**	**$39,692,930**	**$39,700,521**	**$39,708,340**	**$39,716,393**

Figure 2 provides a graphic representation of the relative amount of revenue that the Sewer Utility is budgeted to receive in FY 2018[3] by revenue type.

[3] FY2018 was selected because it has a more representative amount of property tax revenue than FY 2017 which had repaid some property tax obligations in that year.

Figure 2 – Revenue Sources in FY2018



2.4.4 RESTRICTED FUNDS

As previously mentioned, there are two restricted funds associated with Sewer Capacity Charge (SCC) revenue: Sanitation Capacity Charge - Collection, and Sanitation Capacity Charge - Treatment. These restricted funds receive revenues from fees assessed on new connections and upgrades to existing connections to the sewer system. These funds are restricted for the construction of collection and treatment facilities that provide additional capacity to the sanitary system.

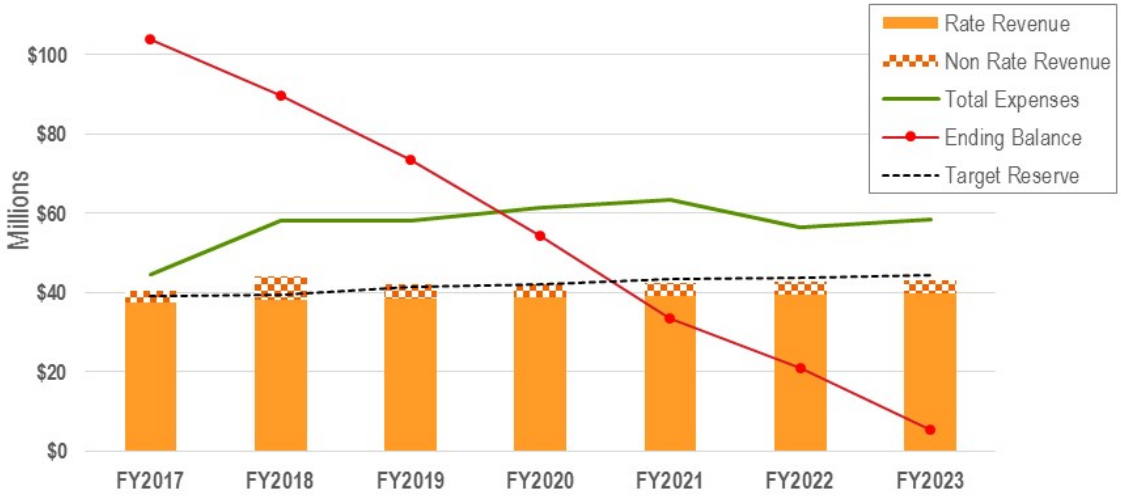
2.5 RECOMMENDED RATE ADJUSTMENTS

The pro forma in Schedule 2 provides a 10-year cash flow projection given the scenario where CVWD makes no adjustment to sewer rates and doesn't issue any new debt. Figure 3 below shows the same results through FY 2023.

Given the Sewer Fund's current fund balance, no overall rate revenue increases are being proposed by the District's Board of Directors. Even though the Sewer Utility's budget will be in significant deficit for the foreseeable future, there are sufficient reserves that the fund isn't expected to fall below the recommended reserve target levels until FY 2021. The Board has

elected to allow the reserves to drop to lower levels before making decision to adopt rate increases. It is important to note that the magnitude of the rate adjustments that will be needed in FY 2021 to address the budget deficit will be significant (on the order of a 30% increase in FY 2021).

Figure 3 – Revenue Sources in FY2018



While an overall rate revenue increase is not being proposed for the Sewer Utility, this Report is recommending adjustments to the rate structure in order to reflect the findings of the cost-of-service analysis, as explained in the next section. Any time that cost-of-service adjustments are made there will be some customers that will experience an increase in their sewer bill, while others will experience a decrease in their sewer bill.

Section 3. COST OF SERVICE ANALYSIS

Cost-of-service ratemaking is a process of allocating the utility system user-charge revenue requirements to customers based on the demands they place on the system. Individual customer demands vary depending on the nature of the utility use at the location where service is provided. For example, sewer service demand for a family residing in a typical single-family home is different than the sewer service demand for a large restaurant in terms of the volume of sewage discharged. As a practical matter, it is not feasible to allocate system revenue requirements at the individual account level. As such, the industry standard, as promulgated by WEF's Manual No. 27[4], is to group customers with similar system needs into Customer Classes. Rates are then developed for each Customer Class, with each individual customer paying the Customer Class' average allocated cost of service for each unit of specific usage.

Generally speaking, Sewer customers place the following demands on CVWD's sewer system:

- The system capacity (both collection and treatment) that must be maintained to provide reliable service to all customers at all times;
- The quantity of sewage (i.e., flow)[5] that must be moved through the sewer system;
- The strength or concentration of the sewage flow; and
- The number of customers requiring customer services, such as bill processing, customer service support, and other administrative services.

3.1 CUSTOMER CLASSES

A Customer Class consists of a group of customers, with common characteristics, who share responsibility for certain costs incurred by the utility. Joint costs are shared proportionately among all customers in the system based on their service requirements that drive costs; some customers create specific costs, and those specific costs are borne by specific classes based on the characteristics of that group alone. The Sewer Utility is currently made up of the following Customer Classes:

[4] Financing and Charges for Wastewater Systems, WEF, 2004

[5] Sewage flows are not under pressure and therefore must be estimated since they cannot be metered directly.

- **Residential:** Residential customers include single-family homes used as domiciles, condominiums, townhouses, and apartments.
- **RV/Trailer Park, Hotels, Motels**
- **Institutions & Public Agencies**
- **Business / Commercial / Industrial –** including retail, laundromats and restaurants
- **Schools**

CVWD's current Sewer rates also include a geographical component, whereby there are different rates depending on six different service areas. This Report recommends the elimination of these service areas for purposes of rates since the Sewer Utility is managed as a whole and there aren't significant differences in the service levels provided in each respective area.

Given the fact that RV/Trailer Parks require more frequent bills, this Report recommends the creation of three Customer Classes:

- **Residential:** Residential customers include single-family homes used as domiciles, condominiums, townhouses, apartments, and separately metered mobile homes.
- **RV/Trailer Parks:** RV/Trailer Park customers consist of parks for temporary RVs. This Customer Class does not include manufactured homes or other mobile home customers who are billed on their property tax bill.
- **Commercial:** All non-Residential and non-RV/Trailer Park accounts, including (but not limited to) hotels, motels, institutions, agencies, businesses, retail, laundromats, restaurants and schools.

3.2 COST ALLOCATION METHODOLOGY

The costs of providing wastewater services are incurred as a result of customer demands. This notion of cost causation means that CVWD incurs a cost of providing service as a result of a particular kind of customer demand. The Report allocated costs to each respective Customer Class based on the following demand characteristics:

- **Flow**: Costs that vary with the hydraulic flow of sewage. Flow costs typically include the operating, maintenance, and capital costs associated with treatment, collection lines, lift stations, and outfall infrastructure, which are typically designed to accommodate maximum hydraulic flow rates. These costs were assigned to the Customer Classes based on each class' demand characteristics.

- **Customer Costs:** Costs incurred as a result of serving customers are determined without regard for the amount of wastewater discharged because these costs are not impacted by the amount of wastewater discharged. Customer costs include the cost of customer accounting, customer service, and other related costs, but does not include the cost of billing.
- **Billing Costs:** Costs incurred as a result of sending bills. This costs is isolated because Residential customers are invoiced on their annual property tax statement (therefore only receive on bill per year), while RV/Trailer Park customers and Commercial customers received monthly bills.

It should be noted that the District has elected to follow a simple allocation methodology for this cost-of-service study. The methodology does not attempt to distinguish between the "strength"[6] of the sewage that is produced by each respective Customer Class. This decision was made largely because there is insufficient data to ascertain the difference in the sewage strength between the respective Customer Classes. Also, it was assumed that Customer Classes generally have similar sewage strengths because (1) CVWD has a Fats, Oil, & Grease (FOG) program with special fees for those accounts that are required to be part of the FOG program; and (2) CVWD has a high-strength discharge prohibition. Another reason for the District's decision to adopt a simple methodology is because this Report is proposing a new method for measuring sewage flows which is based on "equivalent sewage units" (see Section 3.3). This new methodology is being "rolled out" in a simple format in order to promote customers' understanding of how the rate structure works. The District may elect to refine the cost of service methodology in the future, once customers have become accustomed to the basic structure.

As previously mentioned, the current Supplemental Sewer Cleaning charge was eliminated and the cost associated with the cleaning program is proposed to be imbedded in all Sewer Service charges.

[6] "Strength" refers to parameters such as biological oxygen demand, total suspended solids, and other metrics that measure the level of effort needed to treat wastewater.

3.3 CUSTOMER CLASS DEMAND MEASUREMENTS

The Report allocates costs to Customer Classes based on the number of accounts, number of bills, and wastewater flows.

Currently the **wastewater flow** contributions of each respective Customers Class is largely estimated based on the District's assignment of "equivalent dwelling units" (EDUs) to each account, which estimates the likely use of the sanitary system (relative to one residential dwelling unit) based on the nature and size of the account. The District has found the upkeep of the EDU database to be problematic and has therefore elected to switch to a metric that is more easily verifiable and more dynamically reflects actual (rather than theoretical) sewage production. The proposed methodology estimates the discharge of sewage based on potable water usage, combined with an assumption of the "return-to-sewer" factor for each respective Customer Class. The return-to-sewer factor estimates how much of the account's potable water usage is subsequently discharged to the sewer system.

The Report begins by estimating indoor water usage for a typical residential dwelling unit because indoor water usage is assumed to be largely discharged to a drain. This indoor water usage was assumed to be equal to the indoor water budget established for Domestic potable water rates: 200 gallons per day per residential unit[7]. Multiplying the 200 gallons per day by 365 days per year yields an **equivalent sewage unit (ESU)** of 73,000 gallons per year (or approximately 97.6 hundred cubit fee (HCF)). This ESU value is used as a common denominator to measure the relative impact of all Customer Classes.

To understand how many ESUs to assign to RV/Trailer Park accounts and Commercial accounts, the study assessed their respective water usage and made assumptions regarding their relative return-to-sewer factors. Measuring the return-to-sewer factor is challenging because sewage discharges from individual accounts are not metered. It is common for utilities to not have discharge data, therefore a common method used to approximate the quantity of indoor usage versus outdoor usage (since indoor usage is largely discharged to the sewer) is compare winter-

[7] This assumes there are four persons per residence. The District treats all Residential customers equally; variances from the indoor water usage assumption are not allowed.

time water usage with year-round water usage. The logic being that in many climates the winter-timer usage is largely limited to indoor water usage. In the case of the Coachella Valley, however, this method is not applicable because (a) there is plenty of outdoor water use during the winter and (b) winter-time use can actually be higher than summer-time use due to the significant "snowbird" population during wintertime.

As such, return-to-sewer values for Residential and RV/Trailer Park were estimated based on the total indoor water usage by Residential accounts (102,663 living units multiplied by 97.6 HCF per ESU) to derive the total indoor usage for Residential customers of 10 million HCF per year. This number was compared to the total water usage by the same group of customers (of 18.3 million HCF), which yields a ratio of 55%. This was adopted as the return-to-sewer factor for RV / Trailer Park customers since those customers were deemed to use water in a similar manner to Residential customers.

The return-to-sewer factor for Commercial customers was assumed to be 90% based on Stantec's experience of standard industry practice, and confirmed by a review of the policies employed by a number of other California sewer utilities with similar sewer rate structures. The large difference in the return-to-sewer factor between residential-type customers and Commercial customers can be explained by the fact that residential customers have a single meter ("dual-use meter") for both indoor and outdoor water usage, while most Commercial accounts have a dedicated outdoor water meter.

Other customer demands are measured by the number of accounts that are served and the number of bills that are issued. A summary of all of the account data for all Customer Classes is provided in Table 5.

Table 5 - Wastewater Customer Demand by Customer Class

Customer Class	*No. of Customers (Accounts)*	*Estimated Wastewater Flow (ccf)*	*Equivalent Sewer Units (ESUs)*	*No. of bills per year*
Residential	90,197	10,083,159	102,663	104,244
RV/Trailer Parks	132	263,887	3,549	1,584
Commercial	3,940	2,036,285	23,105	47,280
	94,269	**12,383,331**	**129,316**	**153,108**

The following sections explain the steps that were followed to assign costs to each respective Customer Class. Details regarding the source of the following financial values can be found in Stantec's cost of service model ("Coachella Sanitation COS Model May 2017 Final").

3.4 PROCEDURE 1: FUNCTIONALIZE SEWER SYSTEM COSTS

Sewer service O&M costs are first grouped by system function. The functional categories and their associated values are used in determining the proper allocation of the O&M costs to respective Customer Classes based on their characteristics. The functions included in the cost-of-service analysis are listed in Table 6, which provides a summary of the Test Year (FY2017) O&M expenses by function. The values are assigned based on reviewing each line item of CVWD's O&M budget. "Tax billing" refers to the cost of sending bills via the County's parcel tax roll. "Regular billing" refers to the costs associated with sending bills on monthly invoices. Customer service refers to all customer administration costs aside from billing. "Inspection point" refers to the cost of inspecting the grease trap interceptor associated with the District's FOG program. Operation costs are all remaining Sewer Utility costs that do not fall under one of the above categories. Note that the cost of servicing business interceptor/separator FOG "inspection points" has been isolated since these costs are recovered through service fees, rather than through sewer service charges.

Table 6 – Test Year O&M Budget by Function

System Function	*Test Year O&M Budget*
Operations	$31,712,658
Customer Service	1,905,947
Tax Billing	60,938
Regular Billing	180,280
Inspection Point	344,177
Total	**34,204,000**

Similar to O&M, the capital costs of the Sewer Utility are analyzed and segregated by system function. In the methodology selected by the District, the allocation of capital costs are all related to "operations". As such, the Test Year cash-needs capital cost ($8.6 million) is allocated

entirely to the Operations function. The "cash needs" capital costs are equal to the Sewer Utility's total capital spending for the Test Year ($11.1 million) less the capitalized District labor ($606 thousand) less the change in fund balance ($1.8 million).

3.5 PROCEDURE 2: ASSIGN FUNCTIONALIZED COSTS AMONG PARAMETERS

The costs associated with specific system functions are allocated among the parameters shown in Table 7.

Table 7 – Allocation Parameters

	Allocation Parameters				
System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points
Operations	0%	0%	0%	100%	0%
Customer Service	100%	0%	0%	0%	0%
Regular Billing	0%	100%	0%	0%	0%
Tax Billing	0%	0%	100%	0%	0%
Indirect Capital	0%	0%	0%	100%	0%
Indirect O&M	0%	0%	0%	100%	0%
Inspection Point	0%	0%	0%	0%	100%

The functionalized O&M and capital costs are then assigned to the parameters accordingly, as shown in Table 8.

Table 8 – Allocation of O&M System Functions

	Allocation Parameters					
System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points	Totals
Operations	$0	$0	$0	$16,400,813	$0	$16,400,813
Customer Service	$1,905,947	$0	$0	$0	$0	$1,905,947
Regular Billing	$0	$180,280	$0	$0	$0	$180,280
Tax Billing	$0	$0	$60,938	$0	$0	$60,938
Indirect Capital	$0	$0	$0	$331,240	$0	$331,240
Indirect O&M	$0	$0	$0	$14,980,605	$0	$14,980,605
Inspection Point	$0	$0	$0	$0	$344,177	$344,177
Totals	**$1,905,947**	**$180,280**	**$60,938**	**$31,712,658**	**$344,177**	**$34,204,000**

Again, the cash-needs capital cost ($8.6 million) is allocated entirely to the Operations function. Table 9 shows the O&M costs and capital costs combined.

Table 9 – Allocation of Total Costs by System Function

	Allocation Parameters					
System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points	Totals
Operations	$0	$0	$0	$23,776,323	$0	$23,776,323
Customer Service	$1,905,947	$0	$0	$0	$0	$1,905,947
Regular Billing	$0	$180,280	$0	$0	$0	$180,280
Tax Billing	$0	$0	$60,938	$0	$0	$60,938
Indirect Capital	$0	$0	$0	$1,613,277	$0	$1,613,277
Indirect O&M	$0	$0	$0	$14,980,605	$0	$14,980,605
Inspection Point	$0	$0	$0	$0	$344,177	$344,177
Totals	**$1,905,947**	**$180,280**	**$60,938**	**$40,370,205**	**$344,177**	**$42,861,547**

3.6 PROCEDURE 3: ALLOCATE COSTS TO CUSTOMER CLASSES

The O&M and capital costs are then allocated to various classes of customers based on the respective Customer Class' system demand and usage characteristics (see Section 3.3).

A summary of the Test Year assignment of O&M and capital costs to each of the Customer Classes based on their respective service requirements are shown in Table 10. For example, the

District's total Customer costs are $1.9M (see Table 9). With 90,197 accounts, the Residential Customer Class has 95.7% of the District's sewer accounts. As such, the Residential Customer Class is allocated 95.7% of the Customer costs ($1,823,619, see Table 10).

Table 10 - Allocation of Functionalized Capital and O&M Costs

System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points	
Basis of Allocation:	No. of Accounts	No. of Bills	No. of Bills	No. of ESUs	(direct)	Total
Residential	$1,823,619	$43,039	$60,938	$32,049,486	$0	$33,977,082
RV/Trailer Parks	$2,669	$4,449	$0	$1,107,875	$0	$1,114,993
Institutional	$7,076	$11,796	$0	$1,341,077	$0	$1,359,950
Business	$44,460	$74,114	$0	$1,561,331	$0	$1,679,905
Hotel / Motel	$3,983	$6,640	$0	$1,147,863	$0	$1,158,485
Commercial/Industrial	$24,140	$40,242	$0	$3,162,572	$0	$3,226,955
Inspection Point	$0	$0	$0	$0	$344,177	$344,177
Total:	**$1,905,947**	**$180,280**	**$60,938**	**$40,370,205**	**$344,177**	**$42,861,547**

As shown above, the cost of servicing business interceptor/separator FOG "inspection points" has been isolated by this exercise. While not the focus of this Report, understanding the costs associated with the FOG program can help inform the proper fees to charge for the associated services. Dividing the total cost of the program ($344 thousand) by the number of inspection points (2,436) and 12 (months), yields $11.77 per inspection point per month (as compared to the $15 per month that is charged currently.

3.7 PROCEDURE 4: ALLOCATE NON-RATE REVENUES TO CUSTOMER CLASSES

Non-rate revenue is used to defray the need for rate revenue. Non-rate revenue includes property taxes, charges for services, availability charges, inter-fund revenue, interest earnings, as well as debt proceeds. Eligible non-rate revenue is allocated equitability among Customer Classes using the same distribution proportions used when allocating costs. Interceptor costs are not defrayed by non-rate revenue since interceptor cleaning is a fee-based service, based on the total cost of the FOG inspection program. The non-rate revenue credits by Customer Class are shown in Table 11.

Table 11 –Non-Rate Revenue Credits by Function

System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points	
Basis of Allocation:	No. of Accounts	No. of Bills	No. of Bills	No. of ESUs	(direct)	Totals
Residential	$208,389	$4,918	$6,964	$3,662,360	$0	$3,882,631
RV/Trailer Parks	$305	$508	$0	$126,599	$0	$127,412
Institutional	$809	$1,348	$0	$153,248	$0	$155,404
Business	$5,081	$8,469	$0	$178,417	$0	$191,966
Hotel / Motel	$455	$759	$0	$131,169	$0	$132,383
Commercial/Industrial	$2,759	$4,599	$0	$361,394	$0	$368,751
Inspection Point	$0	$0	$0	$0	$0	$0
Total:	**$217,796**	**$20,601**	**$6,964**	**$4,613,186**	**$0**	**$4,858,547**

3.8 PROCEDURE 5: CALCULATE RATE-REVENUE REQUIREMENT BY CUSTOMER CLASS

The rate revenue requirements by Customer Class shown in the final column of Table 12 are determined by subtracting the credits for non-rate revenues (see Table 11) from the total costs (see Table 10) for each respective Customer Class.

Table 12 - Total Rate Revenue Requirements by Customer Class

System Function	Customer	Monthly Billing	Annual Biling	System Capacity	Inspection Points	
Basis of Allocation:	No. of Accounts	No. of Bills	No. of Bills	No. of ESUs	(direct)	Total
Residential	$1,615,230	$38,121	$53,974	$28,387,126	$0	$30,094,451
RV/Trailer Parks	$2,364	$3,940	$0	$981,276	$0	$987,580
Institutional	$6,268	$10,448	$0	$1,187,830	$0	$1,204,546
Business	$39,379	$65,645	$0	$1,382,915	$0	$1,487,939
Hotel / Motel	$3,528	$5,881	$0	$1,016,694	$0	$1,026,103
Commercial/Industrial	$21,382	$35,643	$0	$2,801,179	$0	$2,858,204
Inspection Point	$0	$0	$0	$0	$344,177	$344,177
Total:	**$1,688,151**	**$159,679**	**$53,974**	**$35,757,019**	**$344,177**	**$38,003,000**

Table 13 summarizes the shift of cost responsibilities recommended by this Report. The shifting of cost responsibilities between Customer Classes is a normal phenomenon as system use patterns change and better data becomes available. The cost responsibilities across Customer Classes reflects the outcome of this cost-of-service analysis, including number of accounts, estimated wastewater flows, and capacity requirements. The shifting of cost responsibilities between Customer Classes is particularly common when new Customer Classes are created and the rate design is modified (as is being proposed in this case). Specifically, the shift in cost responsibilities may be attributable to the direct allocation of cleaning costs to specific Customer Classes.

Table 13 - Cost-of-Service Comparison

Customer Class	*Cost of Service Allocation*	*Revenue at Existing Rates*	*Difference*	
Residential	$30,094,451	$32,287,308	($2,192,856)	-6.8%
RV/Trailer Parks	987,580	984,778	2,802	0.3%
Combined Non-Residential*	6,576,791	4,287,758	2,289,033	53.4%
Inspection Point	344,177	443,156	(98,979)	-22.3%
Total	**$38,003,000**	**$38,003,000**		

* Included Institutional, Business, Hotel/Motel, Commercial and Industrial

A bill impact assessment was conducted to ascertain why certain Customer Classes (namely Commercial accounts) will bear a greater portion of the Sewer Utility costs. The vast majority of the increases to the Commercial Class was not because of the change in allocation methodology, but rather due to an update of the billing database. Most customers with the largest increases had special billing agreements with the District or weren't being correctly billed in accordance with the District's rate schedule. A number of those accounts are schools, which have rates that are based on outdated per-pupil rates. Some of the accounts have abnormally high water usage due to dual-use meters (those accounts should work with the District to replace their dual-use meter with single-purpose meters). In some isolated instances, the accounts actually use water in their product, therefore the District may want to consider a variance request for those Commercial accounts that can demonstrate that their return-to-sewer factor is materially lower than 90%.

Section 4. RATE STRUCTURE ANALYSIS

The following explains how the recommended rates were designed in a manner that complies with the cost-of-service results and is responsive to CVWD pricing objectives. The rate design analysis was performed to identify a rate structure that would:

- Fairly and equitably recover the cost of providing service and revenue requirements for each Customer Class;
- Conform to accepted industry practice and legal requirements;
- Provide fiscal stability and recovery of fixed costs of the system; and
- Improve District' staff's ability to maintain the Sewer Utility billing database.

4.1 CURRENT SEWER SERVICE FEES

CVWD's current Service Fees for wastewater service are made up of two parts:

1. Sewer Service Charge; and
2. Volumetric / EDU Charge.

The Sewer Service Charge is a fixed charge that is assessed per EDU (and sometimes sewer lateral). The Volumetric Charge is a variable charge that is determined by the amount of metered potable water served to the property. Residential customers only pay the Sewer Service Charge (i.e., a flat rate per EDU). Some commercial customers are charged based on their metered water use, with a minimum charge equal to the Service Charge for one EDU, while other commercial customers are charged based on their number of assigned EDUs. For each of these rate components, there are different rates for the District's six different "Rate Areas" (service areas).

Customers that are served by laterals that have historically needed Supplemental Sewer Cleaning are charged $1.50 per EDU per month.

4.2 PROPOSED CHANGES TO RATE STRUCTURE

Based on the findings of this Report, Stantec recommends the following changes to the existing rate structure:

1. **Eliminate the separate rates by Rate Area (service areas)**. All applicable repayment plans that were associated with the respective rate areas have been fulfilled and the differentiations between the Rate Areas are not supported by current available cost data, nor is there a significant difference in service levels between the respective Rate Areas.
2. **Separate RV/Trailer Parks as a separate Customer Class**. The creation of this new Customer Class (as described in Section 3.1) allows costs to be allocated to the classes of customers that generate the demand. In this case the RV/Trailer Parks incur higher billing costs than the Residential Customer Class.
3. **Eliminate the Supplemental Sewer Cleaning Charge**. Going forward the costs of cleaning the sewers will be imbedded within the Sewer Service Fees, as described in Section 3.3.
4. **Replace the current rate structure with a consumption-based fixed Service Charge**. All Residential and RV/Trailer Park customers will be charged one Service Charge unit per dwelling unit[8]. Commercial customers will be charged the same Service Charge unit per ESU. ESU values will change once per year and will be assigned to Commercial customers based on 90% (the return-to-sewer factor) of their average daily water usage over the previous three years, divided by 200 (signifying the 200 GPD of indoor water usage assumed for Residential customers). To be clear, the Service Charge will be flat for Residential and RV/Trailer Park customers. For Commercial customers, the Service Charge will remain flat over the course of a year, but will change at the beginning of each subsequent next year based on that account's average water usage over the previous three years.
5. **Create a monthly fixed Account Charge**. The Account Charge will be assessed on a per-account basis for all customers to capture the cost of billing (which varies significantly since Commercial and RV/Trailer Park customers receive monthly bills while most Residential customers only receive one).

4.3 RECOMMENDED RATES

Based on the above and the results of the cost-of-service analysis, the following rates for FY2018 (starting on July 1, 2017) are recommended. These rates include no overall rate revenue adjustment, as concluded in Section 2.5. This Report does not provide a multi-year rate schedule

[8] Based on the EDU value assigned by the District, for both Residential and RV/Trailer Park customers.

since the District has elected to hold rate revenue flat until cash reserve levels are lowered (see Section 2.5).

Table 14 – Proposed Wastewater Rate Schedule – Effective July 1, 2017

Customer Class	***Acct. Charge*** (per month)	***Service Charge*** *(per ESU per mo.)*
Residential	$1.58	$23.04
RV/Trailer Parks	$3.98	$23.04
Business	$3.98	$23.04
Commercial/Industrial	$3.98	$23.04

The Service Charge of $23.04 per month was derived by dividing the total System Capacity costs ($35.8 million, see Table 12) by the total number of ESUs in the system (129,316, see Table 5), divided by 12 (months). Similarly the Account Charge was derived by dividing total billing costs by total number of account by Customer Class.

4.4 CONCLUSION

This Report used methodologies that are aligned with industry standard practices for rate setting as promulgated by WEF and all applicable law, including Proposition 218. The proposed adjustments to the rates will provide revenue stability and continue to equitably and proportionately recover costs from the appropriate customers.

DISCLAIMER

This document was produced by Stantec Consulting Services, Inc. ("Stantec") for the Coachella Valley Water District ("District") and is based on a specific scope agreed upon by both parties. In preparing this report, Stantec utilized information and data obtained from the District or public and/or industry sources. Stantec has relied on the information and data without independent verification, except only to the extent such verification is expressly described in this document. Any projections of future conditions presented in the document are not intended as predictions, as there may be differences between forecasted and actual results, and those differences may be material.

Additionally, the purpose of this document is to summarize Stantec's analysis and findings related to this project, and it is not intended to address all aspects that may surround the subject area. Therefore, this document may have limitations, assumptions, or reliances on data that are not readily apparent on the face of it. Moreover, the reader should understand that Stantec was called on to provide judgments on a variety of critical factors which are incapable of precise measurement. As such, the use of this document and its findings by the District should only occur after consultation with Stantec, and any use of this document and findings by any other person is done so entirely at their own risk.

Schedule 1 – Capital Improvement Program

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026
Share of General District CIB Allocation										
General District	$ -	$ 3,209,583	$ 2,111,520	$ 884,016	$ 516,609	$ 1,286,122	$ -	$ -	$ -	$ -
WRP 10 Treatment										
WRP 10 - Security System Upgrade	-	-	-	27,318	786,731	-	-	-	-	-
WRP 10 - Perimeter Security Wall	-	-	-	48,080	565,005	-	-	-	-	-
WRP 10 - Chemical System Safety Upgrade Project	-	1,648,000	218,545	-	-	-	-	-	-	-
WRP 10 - Secondary Effluent Pump Station and Storage Ponds Project	-	669,500	4,774,050	7,649,089	-	-	-	-	-	-
WRP 10 - Aeration Improvements	-	2,515,260	4,243,600	-	-	-	-	-	-	-
WRP 10 - T1 Tertiary Filter Seal Coating	-	769,410	-	-	-	-	-	-	-	-
WRP 10 - Biosolids Upgrade Project	-	-	-	-	-	521,673	-	-	-	-
WRP 10 - Headworks Improvements	-	-	-	-	281,377	3,361,895	-	-	-	-
WRP 10 - M1 Twin Backup Generators and ATS	-	-	-	-	-	185,484	-	-	-	-
WRP 10 - Phase 1 Expansion Project	-	-	-	-	-	428,931	-	-	-	-
WRP 10 - Process and Lighting Optimization	-	272,950	2,121,800	2,185,454	-	-	-	-	-	-
WRP 10 - Process Automation	-	-	159,135	-	-	-	-	-	-	-
WRP 10 - Recycled Water Floating Cover Improvements	-	-	-	109,273	2,381,577	-	-	-	-	-
WRP 9 Treatment										
WRP 9 - Plant Closure and Flow Diversion Evaluation	-	41,200	-	-	-	-	-	-	-	-
WRP 7 Treatment										
WRP 7 - Security System Upgrade	-	-	-	27,318	783,354	-	-	-	-	-
WRP 7 - Biosolids Upgrade Project	-	6,180,000	2,718,026	-	-	-	-	-	-	-
WRP 7 - Secondary Clarifiers and Filter Modifications Project	-	1,660,360	-	-	-	-	-	-	-	-
WRP 7 -Chemical System Safety Upgrade	-	1,648,000	218,545	-	-	-	-	-	-	-
WRP 7 - Administration Building	-	-	-	-	-	521,673	-	-	-	-
WRP 7 - Phase 1	-	-	-	-	-	463,710	-	-	-	-
WRP 7 PLC Upgrade Project	-	123,600	-	-	-	-	-	-	-	-
WRP 4 Treatment										
WRP 4 - Security System Upgrade	-	-	-	27,318	790,107	-	-	-	-	-
WRP 4 - Chemical System Safety Upgrade Project	-	1,648,000	468,918	-	-	-	-	-	-	-
WRP 4 - Administration Building	-	-	-	-	-	521,673	-	-	-	-
WRP 4 - Phase 1 Improvements	-	-	-	-	281,377	1,449,093	-	-	-	-
WRP 4 Improvements - Plant Processes	-	-	-	-	-	463,710	-	-	-	-
Collection										
Lift Station 81-03 Capacity Upgrade and Force Main (Burr Street)	-	154,500	2,512,211	3,278,181	-	-	-	-	-	-
Lift Station 55-11 Capacity Upgrade (Mecca)	-	-	-	32,782	3,544,227	-	-	-	-	-
Lift Station 80-04 Upgrade (Indian Wells)	-	-	-	109,273	695,564	-	-	-	-	-
Lift Station 80-06 Upgrade (Country Club Drive)	-	-	-	109,273	900,407	-	-	-	-	-
Lift Station 80-07 - Perimeter Wall (Paxton)	-	-	-	562,754	-	-	-	-	-	-
Lift Station 80-16 Upgrade (Bob Hope Drive)	-	-	106,090	846,863	-	-	-	-	-	-
Lift Station 55-13 (Ave. 58) Abandonment	-	21,630	-	-	-	-	-	-	-	-
Lift Station 55-10 (Citrus) Abandonment	-	-	-	513,582	1,822,199	-	-	-	-	-
Lift Station 55-12 Electrical and Site Upgrade (Home Depot)	-	-	-	174,836	971,314	-	-	-	-	-
Lift Station 80-13 Upgrade (Grand Champion)	-	-	-	152,982	1,125,509	-	-	-	-	-
Lift Station 81-01 Upgrade (Washington Street)	-	154,500	1,166,990	-	-	-	-	-	-	-
Lift Station 80-03 - Upgrade Cook Street	-	-	212,180	2,076,181	-	-	-	-	-	-
Sewer Pipeline Rehabilitation Project - Fred Waring Drive	-	370,800	-	-	-	-	-	-	-	-
Sewer Pipeline Rehabilitation Project - Shifting Sands	-	92,700	-	-	-	-	-	-	-	-
Sewer Pipeline Relocation - Bob Hope Drive	-	154,500	320,392	-	-	-	-	-	-	-
Mecca Sewer and Manhole Replacement and Rehabilitation	-	-	-	262,254	4,186,893	-	-	-	-	-
Sewer Pipeline Rehabilitation Project -Palm Desert and Thousand Palms	-	-	-	354,044	1,778,304	-	-	-	-	-
Sewer Pipeline Rehabilitation Project - Fairway Drive	-	-	63,654	666,563	-	-	-	-	-	-
Relocate Date Palm Bridge Facilities	-	111,240	-	-	-	-	-	-	-	-
Sewer Manhole Rehabilitation Project - District Wide	-	-	100,786	327,818	337,653	347,782	-	-	-	-
Sewer Pipeline Rehabilitation Project - Avenue 50	-	-	-	163,909	587,516	-	-	-	-	-
Sewer Pipeline Rehabilitation Project - Avenida Juarez	-	-	-	-	50,648	394,153	-	-	-	-
Sewer Pipeline Rehabilitation Project - Cedar Crest	-	-	-	-	50,648	875,252	-	-	-	-
WRP 2 Plant Improvements										
WRP 2 Plant Improvements	-	663,320	-	-	-	-	-	-	-	-
Grant Projects										
San Antonio Del Desierto Mobile Home Park Sewer Project	-	2,394,750	-	-	-	-	-	-	-	-
West Replenishment Funded by Sanitation	-	1,642,160	3,617,192	6,796,434	4,888,985	8,612,943	-	-	-	-
Motor Pool Expenditures	694,000	919,790	377,680	791,134	600,346	618,357	636,907	656,015	675,695	695,966
FY2017 Projected Actuals	20,521,000	-	-	-	-	-	-	-	-	-
Long-term CIP Forecast	-	-	-	-	-	-	23,881,046	24,597,477	25,335,402	26,095,464
Totals	**$ 21,215,000**	**$ 27,065,753**	**$ 25,511,314**	**$ 28,176,731**	**$ 27,926,350**	**$ 20,052,451**	**$ 24,517,953**	**$ 25,253,492**	**$ 26,011,097**	**$ 26,791,430**
Funded by Operating Fund (R&R)	$ 11,076,000	$ 23,821,253	$ 22,153,565	$ 24,272,963	$ 1,652,466	$ 5,890,225	$ 4,062,432	$ 17,874,249	$ 18,410,476	$ 18,962,791
Funded by Sanitation Capacity Charge (growth)	$ 10,139,000	$ 3,244,500	$ 3,357,749	$ 3,903,767	$ 5,693,949	$ 3,199,596	$ 7,164,314	$ 7,379,243	$ 7,600,620	$ 7,828,639

Schedule 2 – Cash Flow Pro forma

	Budget	Projected	Projected	Projected	Projected	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
Rate Revenue Increase	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Revenues											
Rate Revenue Before Adjustments	$37,657,857	$37,846,146	$38,035,377	$38,225,554	$38,416,681	$38,608,765	$38,801,809	$38,995,818	$39,190,797	$39,386,751	$39,583,684
Additional Sales	-	-	-	-	-	-	-	-	-	-	-
Other Charges	453,000	453,000	453,000	453,000	453,000	453,000	453,000	460,590	468,408	476,460	484,754
Inspection Point	344,177	344,177	344,177	344,177	344,177	344,177	344,177	344,177	344,177	344,177	344,177
Property Taxes	990,547	1,808,000	1,844,000	1,881,000	1,918,000	1,937,000	1,957,000	1,979,260	2,002,188	2,025,803	2,050,128
Other Funding	129,000	2,454,000	129,000	129,000	129,000	129,000	129,000	132,870	136,856	140,962	145,191
Investment Income	1,059,420	967,161	812,671	622,374	399,310	209,382	44,217	(151,272)	(371,017)	(610,185)	(873,072)
Total Revenues	**$ 40,634,001**	**$ 43,872,484**	**$ 41,618,224**	**$ 41,655,104**	**$ 41,660,168**	**$ 41,681,323**	**$ 41,729,202**	**$ 41,761,443**	**$ 41,771,408**	**$ 41,763,968**	**$ 41,734,861**
Operating Expenses											
Salaries, Wages, and Benefits	$17,563,000	$18,091,000	$18,634,000	$19,194,000	$19,770,000	$20,363,000	$20,973,000	$21,602,190	$22,250,256	$22,917,763	$23,605,296
(less labor transfer to Capital budget)	(616,000)	(595,000)	(376,000)	(425,000)	(837,790)	(601,574)	(735,539)	(757,605)	(780,333)	(803,743)	(827,855)
Supplies & Services	11,305,000	11,351,000	11,747,000	12,157,000	12,581,000	13,020,000	13,474,000	13,878,220	14,294,567	14,723,404	15,165,106
Utilities	4,143,000	4,433,000	4,743,000	5,075,000	5,430,000	5,810,000	6,217,000	6,403,510	6,595,615	6,793,484	6,997,288
Effluent Disposal Fee	600,000	600,000	600,000	600,000	600,000	600,000	600,000	618,000	636,540	655,636	675,305
Minor Capital Outlay	593,000	593,000	593,000	593,000	593,000	593,000	593,000	610,790	629,114	647,987	667,427
OPEB Trust Payments	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	**$ 33,588,000**	**$ 34,473,000**	**$ 35,941,000**	**$ 37,194,000**	**$ 38,136,210**	**$ 39,784,426**	**$ 41,121,461**	**$ 42,355,105**	**$ 43,625,758**	**$ 44,934,531**	**$ 46,282,567**
Net Revenues	**$ 7,046,001**	**$ 9,399,484**	**$ 5,677,224**	**$ 4,461,104**	**$ 3,523,959**	**$ 1,896,897**	**$ 607,741**	**$ (593,663)**	**$ (1,854,351)**	**$ (3,170,563)**	**$ (4,547,706)**
Debt Service											
Debt Service Payments (existing)	-	-	-	-	-	-	-	-	-	-	-
Debt Service Payments - (future)	-	-	-	-	-	-	-	-	-	-	-
Total Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Operating Fund Capital Budget	$11,076,000	$23,821,253	$22,153,565	$26,044,172	$26,553,648	$16,852,854	$18,684,740	$20,427,100	$21,073,960	$21,734,628	$23,124,572
Growth Capital - Funded by the Operating Fund	-	-	-	1,771,208	4,321,247	-	1,331,101	2,552,851	2,663,484	2,771,837	2,883,554
Debt Proceeds (includes debt service reserve)	-	-	-	-	-	-	-	-	-	-	-
Total Revenue Requirements	**$44,664,000**	**$58,294,253**	**$58,094,565**	**$65,009,380**	**$69,011,104**	**$56,637,281**	**$61,137,302**	**$65,335,056**	**$67,363,202**	**$69,440,996**	**$72,290,693**
Revenues Over (Under) Expenses	$ (4,029,999)	$ (14,421,769)	$ (16,476,341)	$ (23,354,276)	$ (27,350,936)	$ (14,955,957)	$ (19,408,100)	$ (23,573,614)	$ (25,591,794)	$ (27,677,028)	$ (30,555,832)
Operating Fund - Beginning Balance	107,957,000	103,927,001	89,505,232	73,028,891	51,445,823	28,416,134	13,460,177	(4,616,823)	(25,637,585)	(48,565,896)	(73,471,087)
Operating Fund - Ending Balance	**103,927,001**	**89,505,232**	**73,028,891**	**49,674,615**	**24,094,887**	**13,460,177**	**(5,947,923)**	**(28,190,436)**	**(51,229,379)**	**(76,242,924)**	**(104,026,919)**
Operating Fund - Target Reserves	39,705,491	39,726,820	41,822,374	42,690,841	43,767,656	44,248,253	44,695,728	45,124,731	45,570,581	46,033,784	46,514,861
Collection Fund - Ending Balance	$947,159	$1,904,642	$1,023,759	$5,119	$26	$1,125,541	$5,628	$28	$0	$0	$0
Treatment Fund - Ending Balance	$4,879,185	$3,871,482	$4,603,589	$6,719,120	$8,611,649	$7,572,414	$6,148,764	$4,613,379	$2,961,954	$1,190,044	$5,950