RAINBOW
MUNICIPAL WATER DISTRICT

Wastewater Cost of Service and Rate Study

Final Report / January 2018

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FINANCIAL CONSULTANTS, INC.

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January 18, 2018

Mr. Tom Kennedy
General Manager
Rainbow Municipal Water District
3707 Old Highway 395
Fallbrook, CA 92028

Subject: Wastewater Cost of Service Study Report

Dear Mr. Kennedy:

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to present this wastewater cost of service study to the Rainbow Municipal Water District (District). This study involved a comprehensive review of the District's long-range financial plan, assessment of the current and alternative wastewater rate structures, and calculation of cost of service-based wastewater rates.

We are confident that the calculated rates are fair and equitable for the District's customers. This report includes an Executive Summary, a detailed presentation of the five-year financial plan, cost of service analysis, and rate derivation for the wastewater utility.

It was a pleasure working with you and we wish to express our thanks for the support you, Ms. Vanessa Martinez, and other District staff members have provided during the study. If you have any questions, please do not hesitate to call me at (626) 583-1894.

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Sudhir Pardiwala, P.E.
Executive Vice President

Nancy Phan
Consultant

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1 EXECUTIVE SUMMARY

The Rainbow Municipal Water District (District) engaged Raftelis Financial Consultants, Inc. (Raftelis) to develop a comprehensive wastewater financial plan and cost of service study for implementation in fiscal years (FY) 2018 through FY 2022. This report documents the assumptions, methodologies, analyses, and proposed rates developed during the study.

The major objectives of the study include the following:

1. Ensure revenue sufficiency to meet the operation and maintenance (O&M) and capital needs of the District's wastewater utility.
2. Determine rates that are fair and equitable, in accordance with cost of service guidelines used in the industry, and in compliance with Proposition 218 requirements.
3. Assess alternative rate structures to increase equity among customer classes and enhance revenue stability.

The executive summary provides an overview of the study and its results, including recommendations for wastewater rates for implementation in March 1, 2018. In this report, FY 2018 refers to the year starting in July 1, 2017 and ending June 30, 2018.

1.1 BACKGROUND

The District is a special district and member of the San Diego County Water Authority. The District's wastewater enterprise provides sanitation services to the communities of Rainbow, Bonsall, Oceanside, Fallbrook, and parts of Vista. It maintains six lift stations and 60 miles of sewer mains. The District operates and maintains the collection system and transports its wastewater to the City of Oceanside for treatment.

1.2 FINANCIAL PLAN

To determine the revenue requirements needed to fund the District's ongoing expenses, Raftelis projected the O&M Costs, capital improvement plan (CIP), debt service payments, reserve requirements, etc. for the study period from FY 2018 to FY 2022.

O&M expenses include salaries and benefits, equipment, building maintenance, sewage treatment costs from the City of Oceanside, and cost allocations for the General Fund. The District plans to spend approximately $11.6 million in capital projects over the study period, with the majority of this budget dedicated to building the Thoroughbred Equalization Basin and Schoolhouse Lift Station. Approximately $3.8 million of this project is funded through capacity fee revenues. The District does not plan to incur debt and will fund the project costs through rates, reserves, and capacity fee revenues.

Figure 1-1 shows the District's financial plan over the planning period. The blue line presents the current revenue, and the green line shows the proposed revenue, including the revenue adjustments shown in

Figure 1-2. The grey bars represent O&M expenses (excluding treatment costs from the City of Oceanside), the blue bars represent Oceanside plant treatment costs, and the green bars represent rate funded capital projects. These bars do not include capacity fee revenues or capacity fee funded capital projects. The orange bars represent the District's net cash flow for each year. If the orange bars are above the x-axis, the District is replenishing reserves; if the orange bars are below the x-axis, the District is drawing from reserves to fund operating and capital costs.

Figure 1-1: Projected Financial Plan

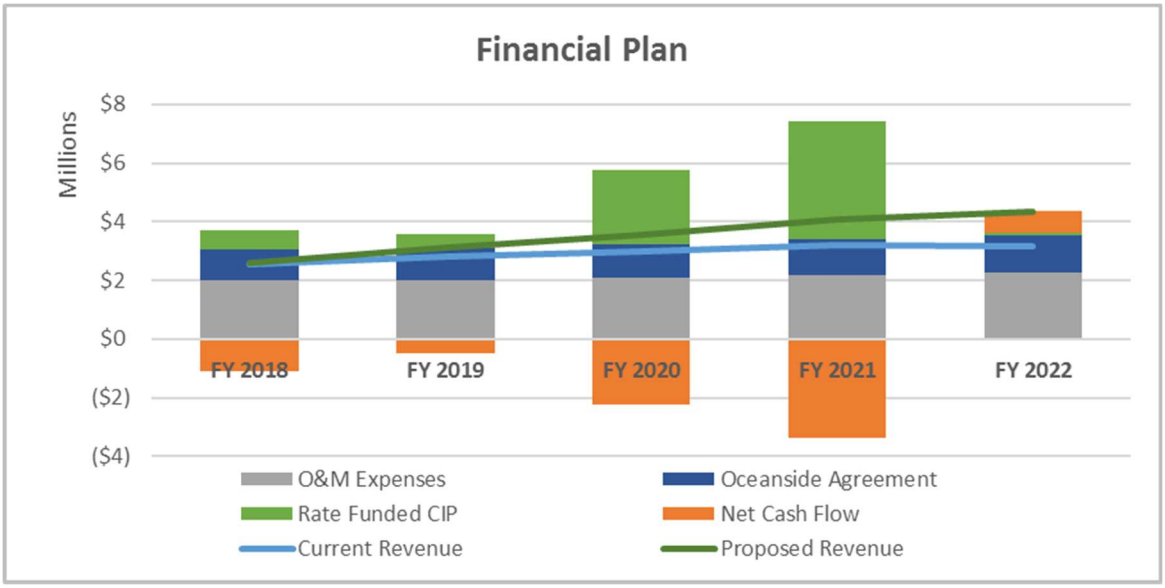


Figure 1-2 shows the proposed revenue adjustments from FY 2018 to FY 2022. The first revenue adjustment will be effective in March 2018; all subsequent revenue adjustments will be effective in January of the corresponding fiscal year. Although the graphs show anticipated revenue adjustments for the entire study period, the District will review and confirm the necessary revenue adjustments each year.

The main factors that determine the District's wastewater revenue adjustments are O&M expenses and capital projects. Overall, O&M expenses are expected to increase by approximately 1.5 to 4.4 percent for each year of the study period. The District has $7.8 million in **rate** funded capital projects over the course of five years.

Figure 1-2: Proposed Revenue Adjustments

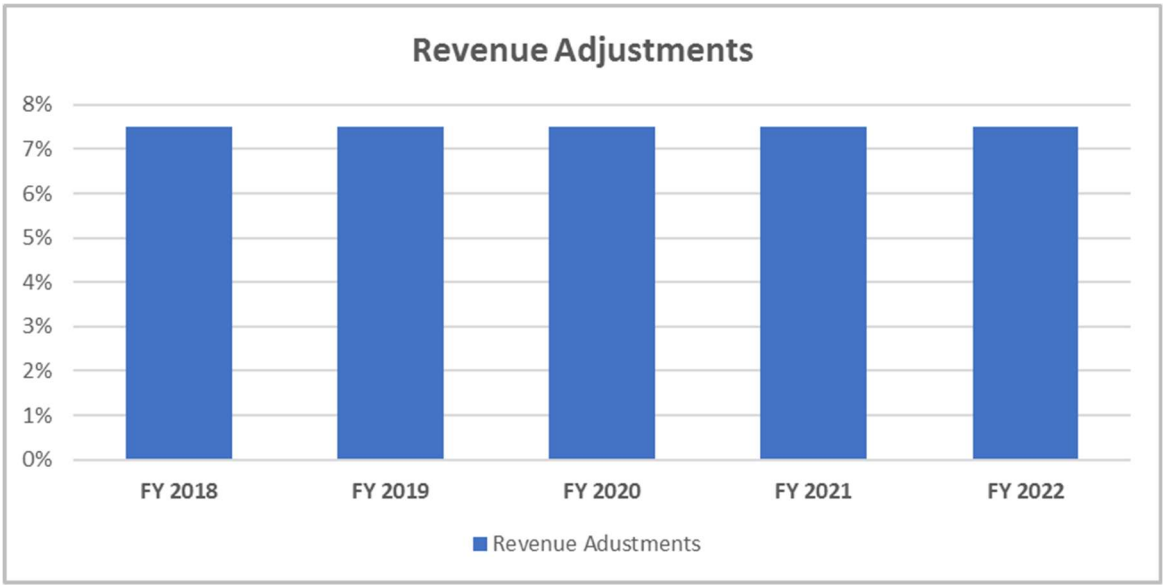


Figure 1-3 shows the total amount of wastewater capital projects and their funding sources. The District is expected to spend $11.6 million on capital projects over the planning period. Approximately $3.8 million of the Thoroughbred Equalization Basin and Schoolhouse Lift Station project, which totals $9.9 million from FY 2019 to FY 2021, is financed through capacity fee revenues, as shown by the green bars. The remaining costs on that specific project and all other capital projects are funded through rates, as shown by the blue bars.

Figure 1-3: Proposed Capital Financing Plan

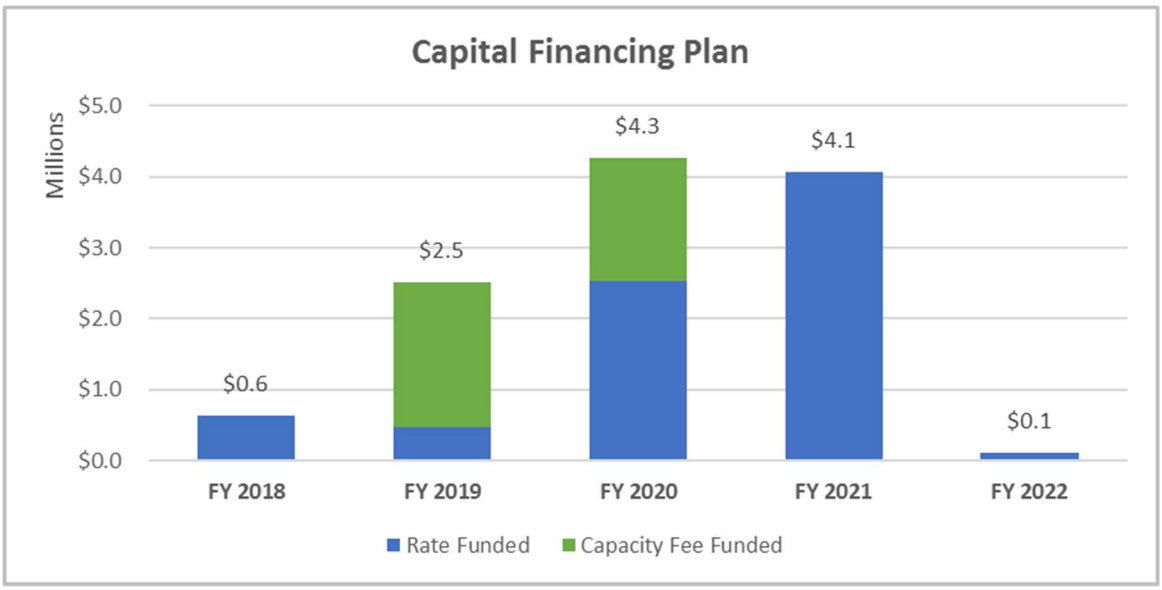
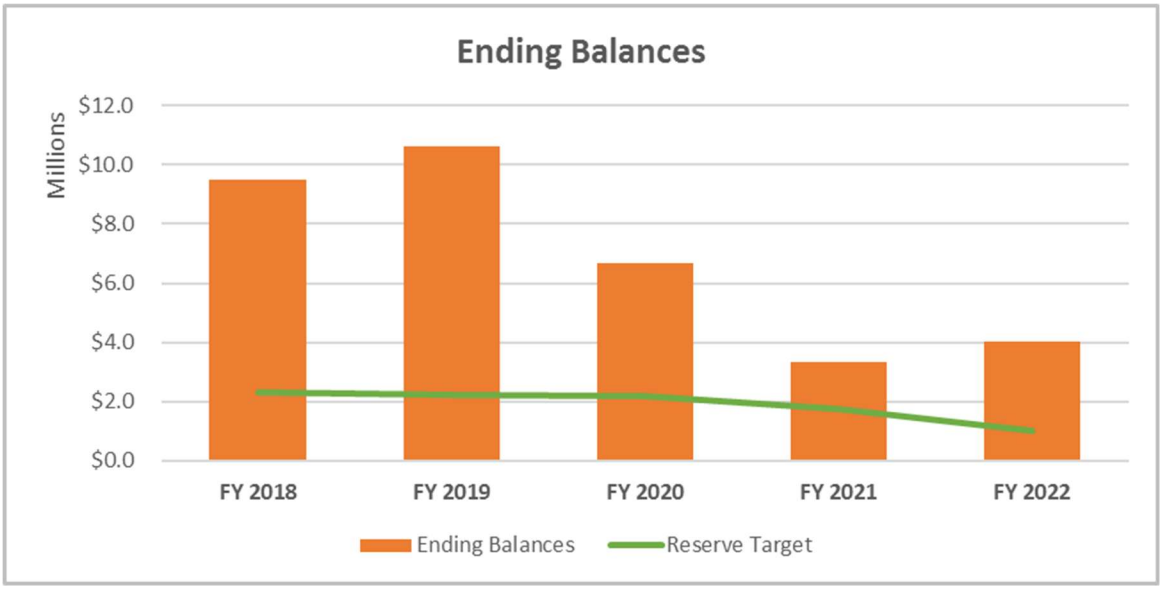


Figure 1-4 shows the District's wastewater reserve ending balances, including both the Operating and Capital funds. During the planning period, the District's wastewater reserves decrease significantly due to high capital project costs. In FY 2022, the proposed revenue adjustment offsets the depletion of reserves due to increasing O&M expenses and capital project costs.

The District's reserve targets are equal to 25 percent, or 90 days, of annual O&M expenses and the five-year average replacement and refurbishment (R&R) CIP expenses. The operating reserve target of 25 percent of annual O&M costs helps to mitigate cash flow risks and unexpected O&M expenses. The capital reserve target is recommended to reduce financial risk in case of asset failure. The District's wastewater reserve balances are expected to remain higher than targeted for the study period; however, the reserves may fund upcoming capital costs for new development in the future.

Figure 1-4: Projected Ending Balances



1.3 PROPOSED RATES

The proposed wastewater rates consist of a monthly fixed charge per dwelling unit (DU) for Residential customers and a variable charge per hundred cubic feet (hcf) of water usage for Commercial customers. Commercial customers are also subject to a minimum charge equal to the Multi-Family Residential charge.

This rate structure differs from the District's current wastewater rate structure of a monthly fixed charge per equivalent dwelling unit (EDU) based on lowest wet month usage (December to April) for Residential customers and a flat monthly charge per EDU for Commercial customers. The proposed rate structure is based on actual DUs for Residential customers, EDUs for Commercial customers, and annual wastewater flow for each customer class, which helps to recover costs more equitably from each class dependent upon their burden on the system.

The proposed rate structure also separates the former Commercial class into two classes: Commercial and Commercial with Irrigation. The Commercial with Irrigation class, which includes customers such as golf courses and country clubs, have a lower wastewater return factor and therefore a lower variable charge per hcf of water used. These customers have a lower return factor because irrigation usage is not discharged into the wastewater system.

Table 1-1 shows the proposed wastewater rate schedule over the planning period from FY 2018 to FY 2022. The first year of proposed rates are for implementation on March 1, 2018 and for all other years on January 1.

Table 1-1: Proposed Wastewater Rates

	March 2018	January 2019	January 2020	January 2021	January 2022
Monthly Service Charge per dwelling unit					
Single Family	$55.07	$59.21	$63.66	$68.44	$73.58
Multi-Family	$40.51	$43.55	$46.82	$50.34	$54.12
Sewer Only	$54.40	$58.48	$62.87	$67.59	$72.66
Variable Charge per hcf of water					
Commercial	$6.67	$7.18	$7.72	$8.30	$8.93
Commercial w/ Irrigation	$2.99	$3.22	$3.47	$3.74	$4.03
Monthly Minimum Charge					
Commercial	$40.51	$43.55	$46.82	$50.34	$54.12

1.4 CUSTOMER IMPACTS

Table 1-2 shows the customer impacts for various customers. The average current and proposed charges are based on average usage and EDU information. The EDUs per customer type are from the Sewer Administrative Code, Section 9.07.010. The estimated monthly usage is approximately 17 hcf per EDU, which is based on the average water usage per EDU for all customers. The proposed charges for Single Family and Multi-Family are based on one DU.

The Single Family Residence current average charge is based on 5 hcf of lowest wet month usage (December to April), which is the average for all customers within the Single Family Residential customer class. Apartment/Condominiums and Mobile Home Parks are considered Multi-Family Residential and are currently charged based on 3 hcf of lowest wet month usage.

Table 1-2: Proposed Customer Impacts

Customer Impacts	EDUs per Customer Type	Est. Monthly Water Usage (hcf)***	Avg. Current Charge	Avg. Proposed Charge	Difference ($)	Difference (%)
Single Family Residence*			$56.20	$55.07	($1.13)	-2%
Apartment/Condominium**			$42.50	$40.51	($1.99)	-5%
Mobile Home Park**	0.80		$42.50	$32.41	($10.09)	-24%
Bakery	1.00	17.00	$75.50	$113.39	$37.89	50%
Car Wash	1.20	20.40	$90.60	$136.07	$45.47	50%
Grocery Store	1.20	20.40	$90.60	$136.07	$45.47	50%
Restaurant	2.70	45.90	$203.85	$306.15	$102.30	50%
Country Club****	1.20	20.40	$90.60	$61.00	($29.60)	-33%

**Single Family Residences are currently charged based on lowest winter month usage, average is 5 hcf of water*

***Multi-Family Residences are currently charged a flat rate, equal to 3 hcf of lowest winter water usage*

****Estimated monthly usage is based on 17 hcf per EDU per month multiplied by number of EDUs per customer type*

*****Country Clubs are considered Commercial w/ Irrigation*

2 FINANCIAL PLAN

This section describes the District's long-range financial plan, including wastewater account projections, operating and capital expenses, non-rate revenues, and capital financing options. The financial plan determines the overall revenue adjustments needed to maintain the District's financial stability.

2.1 CUSTOMER DATA AND GROWTH

The District provided customer accounts and water usage data for FY 2017. The District is expecting some major developments coming on line over the next three years; **Table 2-1** shows the growth factors used to project customer accounts for FY 2018 and onward.

Table 2-1: Customer Growth Rates

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Account Growth					
Residential	10%	10%	10%	10%	0%
Non-Residential	0%	0%	0%	0%	0%

Table 2-2 shows the actual and projected customer accounts. The Residential customer accounts are projected with the Residential account growth factor; the Commercial customer accounts are projected with the Non-Residential account growth factor. The District provided Commercial EDUs based on the different types of commercial establishments.

Table 2-2: Projected Customer Accounts

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Residential Dwelling Units						
1 Unit of Water or Less	216	347	382	420	462	462
2 Units of Water	172	260	286	315	346	346
3 Units of Water (or Multi-Family)	1,515	1,593	1,752	1,928	2,120	2,120
4 Units of Water	237	306	337	371	408	408
5 Units of Water	278	260	286	314	346	346
6 to 10 Units of Water	682	583	641	705	775	775
11 Units of Water or Greater	380	200	220	242	266	266
Subtotal - Residential Dwelling Units	**3,481**	**3,549**	**3,903**	**4,294**	**4,723**	**4,723**
Commercial EDUs	381	391	391	391	391	391

2.2 REVENUES

Table 2-3 shows the District's current wastewater rates that are used for each year of the study. Residential customers are charged based on the lowest wet month usage (from December to April) of the prior year per DU. Commercial customers are charged based on EDUs.

Table 2-3: Current Wastewater Rates

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Residential Rate (per dwelling unit per month)					
1 Unit of Water or Less	$28.70	$28.70	$28.70	$28.70	$28.70
2 Units of Water	$35.70	$35.70	$35.70	$35.70	$35.70
3 Units of Water (or Multi-Family)	$42.50	$42.50	$42.50	$42.50	$42.50
4 Units of Water	$49.50	$49.50	$49.50	$49.50	$49.50
5 Units of Water	$56.20	$56.20	$56.20	$56.20	$56.20
6 to 10 Units of Water	$63.20	$63.20	$63.20	$63.20	$63.20
11 Units of Water or Greater	$75.50	$75.50	$75.50	$75.50	$75.50
Commercial Rate (per EDU per month)	$75.50	$75.50	$75.50	$75.50	$75.50

The current wastewater rates for each year are multiplied by the projected customer accounts to determine the calculated revenues for each customer class and usage level. **Table 2-4** shows the calculated wastewater rate revenues, using the customer data in **Table 2-2** and current wastewater rates in **Table 2-3**.

Residential rate revenues are calculated by multiplying the number of DUs in each usage level by the corresponding rate at that usage level for 12 months out of the year. Similarly, Commercial rate revenues are calculated by multiplying the number of EDUs by the Commercial wastewater rate per EDU for 12 months of the year. (For FY 2018: 391.27 EDUs x $75.50 per EDU x 12 months = $354,491.)

Table 2-4: Calculated Wastewater Revenues

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Calculated Rate Revenues					
Residential	$2,023,402	$2,225,742	$2,448,316	$2,693,148	$2,693,148
Commercial	$354,491	$354,491	$354,491	$354,491	$354,491
Total - Calculated Rate Revenues	**$2,377,892**	**$2,580,233**	**$2,802,807**	**$3,047,638**	**$3,047,638**

Table 2-5 shows the projected wastewater revenue for the study period. The sewer charges for established accounts (Line 2) is equal to the total calculated rate revenues in **Table 2-4**. Sewer charges for developing accounts (Line 3) is the capacity fee revenue that the District expects to receive from the Pala Mesa Highlands and DR Horton developments.

Table 2-5: Projected Revenues

		Budgeted FY 2018	Projected FY 2019	Projected FY 2020	Projected FY 2021	Projected FY 2022
1	**Wastewater Revenue**					
2	Sewer Charges-Established Acct	$2,377,892	$2,580,233	$2,802,807	$3,047,638	$3,047,638
3	Sewer Charges-Developing Accts	$100,000	$3,665,936	$0	$0	$0
4	Sewer-Oakcrest Service Charges	$20,000	$20,200	$20,402	$20,606	$20,812
5	Operating Inc-Sewer Letter Fee	$500	$505	$510	$515	$520
6	Operating Inc-Plan Chk/Ins Fee	$10,000	$10,100	$10,201	$10,303	$10,406
7	Non Operating Revenue	$5,000	$5,050	$5,101	$5,152	$5,203
8	Interest Income	$99,301	$149,767	$128,928	$74,466	$54,679
9	**Subtotal - Wastewater Revenue**	**$2,612,694**	**$6,431,790**	**$2,967,949**	**$3,158,680**	**$3,139,259**
10	**Other Revenue**					
11	Property Tax Rev - Ad Valorem	$35,000	$35,350	$35,704	$36,061	$36,421
12	Gains/Loss	$0	$0	$0	$0	$0
13	**Subtotal - Other Revenue**	**$35,000**	**$35,350**	**$35,704**	**$36,061**	**$36,421**
14	**Total - Revenues**	**$2,647,694**	**$6,467,140**	**$3,003,652**	**$3,194,741**	**$3,175,680**

2.3 O&M EXPENSES

We use inflationary assumptions to project future expenses. District staff provided the FY 2018 O&M budget, along with input, to reasonably estimate the yearly inflationary assumptions. **Table 2-6** shows the inflationary assumptions used in the study.

Table 2-6: Inflationary Assumptions

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
Escalation Factors					
Benefits	3%	3%	3%	3%	3%
Capital	2%	2%	2%	2%	2%
Energy	5%	5%	5%	5%	5%
General	3%	3%	3%	3%	3%
Non-Inflated	0%	0%	0%	0%	0%
Salaries	5%	5%	5%	5%	5%
Oceanside	5%	5%	5%	5%	5%

The District's wastewater O&M budget is shown in **Table 2-7**, which incorporates the inflationary assumptions in **Table 2-6** to project expenses for FY 2019 and beyond. The sewage treatment costs from the City of Oceanside (Line 31) are inflated by the escalation factor labeled Oceanside. The Cost Allocations (Lines 38-47) are expenses to the District's General Fund.

Table 2-7: Projected O&M Expenses

		Budgeted FY 2018	Projected FY 2019	Projected FY 2020	Projected FY 2021	Projected FY 2022
1	**Payroll & Employee Expense**					
2	Regular Salaries	$414,843	$435,585	$457,364	$480,233	$504,244
3	Overtime Paid, Comp Time Earn.	$35,000	$36,050	$37,132	$38,245	$39,393
4	Employer'S Share Fica Ssi	$25,720	$26,492	$27,286	$28,105	$28,948
5	Employer'S Share Fica Medicare	$6,015	$6,195	$6,381	$6,573	$6,770
6	Medical Ins Acwa Health Ben	$100,059	$103,061	$106,153	$109,337	$112,617
7	Dental Insurance	$9,149	$9,423	$9,706	$9,997	$10,297
8	Vision Ins Acwa	$1,180	$1,215	$1,252	$1,289	$1,328
9	Life, S/T,L/T Disability Ins	$6,182	$6,367	$6,558	$6,755	$6,958
10	Retirement-Calpers	$69,279	$71,357	$73,498	$75,703	$77,974
11	Employee Training/Tuition Reim	$3,000	$3,090	$3,183	$3,278	$3,377
12	Worker'S Compensation Ins	$19,333	$19,913	$20,510	$21,126	$21,759
13	State Unemployment Ins, E.T.T.	$1,260	$1,298	$1,337	$1,377	$1,418
14	Duty Pay	$13,000	$13,390	$13,792	$14,205	$14,632
15	Deferred Comp-Employer Contrib	$11,050	$11,382	$11,723	$12,075	$12,437
16	Other Post Employment Benefits	$0	$0	$0	$0	$0
17	**Subtotal - Payroll & Employee Expense**	**$715,070**	**$744,819**	**$775,875**	**$808,299**	**$842,152**
18	**Wastewater Expenses**					
19	Equipment	$7,300	$7,519	$7,745	$7,977	$8,216
20	Equipment Maintenance-Sewer	$39,400	$40,582	$41,799	$43,053	$44,345
21	Building Maintenance	$10,000	$10,300	$10,609	$10,927	$11,255
22	Professional Services	$60,000	$61,800	$63,654	$65,564	$67,531
23	Legal Services	$0	$0	$0	$0	$0
24	Supplies And Services-Sewer	$127,000	$130,810	$134,734	$138,776	$142,940
25	Regulatory Permits	$18,000	$18,540	$19,096	$19,669	$20,259
26	Books And Resources	$500	$515	$530	$546	$563
27	Dues And Subscriptions	$800	$824	$849	$874	$900
28	Sewer Line Cleaning	$25,000	$25,750	$26,523	$27,318	$28,138
29	Small Tools And Equipment	$5,000	$5,150	$5,305	$5,464	$5,628
30	Travel/Conferences/Training	$2,000	$2,060	$2,122	$2,185	$2,251
31	Sewage Treat.-Oceanside Plant	$840,000	$882,000	$926,100	$972,405	$1,021,025
32	Replacement Reserve-Oceanside	$200,000	$206,000	$212,180	$218,545	$225,102
33	Utilities	$65,000	$0	$0	$0	$0
34	Hazardous Waster Material Disp	$12,000	$0	$0	$0	$0
35	Utilities-Propane	$6,000	$0	$0	$0	$0
36	Shop And Field Equipment	$25,000	$25,750	$26,523	$27,318	$28,138
37	**Subtotal - Wastewater Expenses**	**$1,443,000**	**$1,417,600**	**$1,477,768**	**$1,540,623**	**$1,606,290**
38	**Cost Allocation**					
39	Board	$6,224	$6,536	$6,862	$7,205	$7,566
40	Garage	$111,162	$113,386	$115,653	$117,966	$120,326
41	Admin	$324,034	$340,235	$357,247	$375,110	$393,865
42	HR	$62,734	$65,871	$69,164	$72,623	$76,254
43	Safety	$32,701	$34,336	$36,052	$37,855	$39,748
44	Finance	$112,798	$118,437	$124,359	$130,577	$137,106
45	Customer Service	$84,069	$88,272	$92,686	$97,320	$102,186
46	Engineering	$167,793	$176,182	$184,991	$194,241	$203,953
47	**Subtotal - Cost Allocation**	**$901,514**	**$943,255**	**$987,016**	**$1,032,897**	**$1,081,003**
48	**Total - Expenses**	**$3,059,584**	**$3,105,674**	**$3,240,659**	**$3,381,819**	**$3,529,445**

2.4 DEBT SERVICE

The District currently does not have any existing debt and is not planning to incur any new debt during the study period.

2.5 CAPITAL IMPROVEMENT PLAN

Table 2-8 shows the District's five-year wastewater CIP. District staff provided capital project costs in current dollars from FY 2018 to FY 2022. Starting in FY 2019, capital project expenditures are inflated for future dollars using the Capital escalation factor shown in **Table 2-6**.

The Thoroughbred Equalization Basin and Schoolhouse Lift Station (EQ Basin and LS) (Line 13) is expected to be partially funded through capacity fees. The remaining portion of that project, along with all other projects, are funded through wastewater rates and reserves.

Table 2-8: Inflated Capital Projects

		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	**Existing Wastewater Projects**					
2	Hwy 76 Realignment - CalTrans UPSIZE	$404,227	$0	$0	$0	$0
3	**Subtotal - Existing Wastewater Projects**	**$404,227**	**$0**	**$0**	**$0**	**$0**
4	**On Going Wastewater Projects**					
5	Sewer System Rehabilitation Program	$100,000	$102,000	$104,040	$106,121	$108,243
6	**Subtotal - On Going Wastewater Projects**	**$100,000**	**$102,000**	**$104,040**	**$106,121**	**$108,243**
7	**Proposed Wastewater Projects**					
8	Rancho Viejo LS Wet Well Expansion	$0	$0	$0	$159,181	$0
9	Almendra Court, I-15 Crossing Sewer Rehabilitation	$0	$0	$0	$84,897	$0
10	Fallbrook Oaks LS Rehabilitation and Forcemain Replacement	$0	$243,780	$0	$0	$0
11	Replace Rancho Monserate LS Emergency Generator	$0	$127,500	$0	$0	$0
12	Sewer System Permanent Flow Monitoring	$130,000	$0	$0	$0	$0
13	Thoroughbred EQ Basin and Schoolhouse LS	$0	$2,040,000	$4,161,600	$3,714,228	$0
14	**Subtotal - Proposed Wastewater Projects**	**$130,000**	**$2,411,280**	**$4,161,600**	**$3,958,306**	**$0**
15	**Total - Capital Improvement Program**	**$634,227**	**$2,513,280**	**$4,265,640**	**$4,064,427**	**$108,243**

Table 2-9 shows the capital financing plan for the CIP shown in **Table 2-8**. Lines 1-3 show the total capital projects classified as General and Capacity Fee projects. Lines 5-6 show the funding for General projects and Lines 8-9 for Capacity Fee projects. The capacity fee funded capital projects (Line 3) is equal to the amount for the Thoroughbred EQ Basin and Schoolhouse LS shown in **Table 2-8** (Line 13). The remaining capital project costs are listed under General. The District expects to receive approximately $3.8 million in capacity fees, which will be used to fund the EQ Basin and LS (Line 8). The remaining $6.1 million in costs for the EQ Basin and LS will be funded through rates (Line 9). All other project costs, including the $6.1 million for the EQ Basin and LS, are funded through rates (Line 6).

Table 2-9: Proposed Capital Financing Plan

		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	**Total Capital Projects**	$634,227	$2,513,280	$4,265,640	$4,064,427	$108,243
2	General	$634,227	$473,280	$104,040	$350,199	$108,243
3	Capacity Fees	$0	$2,040,000	$4,161,600	$3,714,228	$0
4	**General Funded Projects**					
5	Debt Funded	$0	$0	$0	$0	$0
6	Rate Funded (incl. remaining Capacity Fee Funded Projects)	$634,227	$473,280	$2,539,704	$4,064,427	$108,243
7	**Capacity Fee Funded Projects**					
8	Capacity Fee Funded	$0	$2,040,000	$1,725,936	$0	$0
9	Rate Funded	$0	$0	$2,435,664	$3,714,228	$0

2.6 PROPOSED FINANCIAL PLAN

The following revenue adjustments ensure adequate revenue to fund operating expenses, capital projects, and reserve requirements. The financial planning model assumes the revenue adjustments occur in March 2018 and in January for each subsequent year. **Table 2-10** shows the proposed revenue adjustments for FY 2018 to FY 2022.

Table 2-10: Proposed Revenue Adjustments

Year	Revenue Adjustment
FY 2018	7.5%
FY 2019	7.5%
FY 2020	7.5%
FY 2021	7.5%
FY 2022	7.5%

Table 2-11 shows the operating cash flow detail for the study period, including the proposed revenue adjustments. The table shows the Net Cash Flow and Net Operating Revenue (Lines 25-26), the latter of which excludes costs associated with rate funded capital project costs. With the proposed revenue adjustments, the District will cover all operating costs in FY 2020 and all costs, including capital costs, in FY 2022.

Table 2-11: Proposed Financial Plan

		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	**Revenues**					
2	Sewer Charges-Established Acct	$2,377,892	$2,580,233	$2,802,807	$3,047,638	$3,047,638
3	**Revenue Adjustments**					
4	FY 2018	$59,447	$193,517	$210,211	$228,573	$228,573
5	FY 2019		$104,016	$225,976	$245,716	$245,716
6	FY 2020			$121,462	$264,145	$264,145
7	FY 2021				$141,978	$283,955
8	FY 2022					$152,626
9	**Total - Revenue Adjustments**	**$59,447**	**$297,533**	**$557,649**	**$880,411**	**$1,175,015**
10	Total Revenues from Rates	$2,437,340	$2,877,766	$3,360,456	$3,928,049	$4,222,653
11	Wastewater Revenue	$35,500	$35,855	$36,214	$36,576	$36,941
12	Other Revenue	$35,000	$35,350	$35,704	$36,061	$36,421
13	Interest Income	$99,301	$149,767	$128,928	$74,466	$54,679
14	**Total - Revenues**	**$2,607,141**	**$3,098,737**	**$3,561,301**	**$4,075,151**	**$4,350,694**
15	**O&M Expenses**					
16	Payroll & Employee Expense	$715,070	$744,819	$775,875	$808,299	$842,152
17	Wastewater Expenses	$1,443,000	$1,417,600	$1,477,768	$1,540,623	$1,606,290
18	Cost Allocation	$901,514	$943,255	$987,016	$1,032,897	$1,081,003
19	**Total - O&M Expenses**	**$3,059,584**	**$3,105,674**	**$3,240,659**	**$3,381,819**	**$3,529,445**
20	**Debt and Capital Projects**					
21	Existing Debt Service	$0	$0	$0	$0	$0
22	Proposed Debt Service	$0	$0	$0	$0	$0
23	Rate Funded Capital Projects	$634,227	$473,280	$2,539,704	$4,064,427	$108,243
24	**Total - Debt and Capital Projects**	**$634,227**	**$473,280**	**$2,539,704**	**$4,064,427**	**$108,243**
25	**Net Cash Flow**	**($1,086,670)**	**($480,217)**	**($2,219,062)**	**($3,371,094)**	**$713,006**
26	Net Operating Revenue	($452,443)	($6,937)	$320,642	$693,332	$821,249

Table 2-12 shows the District's projected Sewer Operating Reserve and Sewer Capital Reserve fund balances over the study period. The reserve target for the Operating Reserve (Line 15) includes 25 percent, or 90 days, of annual O&M expenses to provide working capital, mitigate against potential cash flow fluctuations or unexpected maintenance costs. The reserve target for the Capital Reserve (Line 31) includes a five-year average of the R&R CIP costs (general funded capital projects in **Table 2-9**).

Table 2-12: Projected Fund Balances

		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
1	**Sewer Operating Reserve**					
2	**Beginning Fund Balance**	**$227,544**	**$881,316**	**$938,157**	**$1,145,381**	**$1,786,069**
3	**Sources of Funds**					
4	Total Revenues from Rates	$2,437,340	$2,877,766	$3,360,456	$3,928,049	$4,222,653
5	Wastewater Revenue	$35,500	$35,855	$36,214	$36,576	$36,941
6	Other Revenue	$35,000	$35,350	$35,704	$36,061	$36,421
7	Transfer from Replacement Reserve	$1,200,000	$200,000	$0	$0	$0
8	Interest Income	$5,517	$13,544	$15,510	$21,822	$32,540
9	**Total - Sources of Funds**	**$3,713,356**	**$3,162,515**	**$3,447,883**	**$4,022,508**	**$4,328,556**
10	**Uses of Funds**					
11	O&M Expenses	$3,059,584	$3,105,674	$3,240,659	$3,381,819	$3,529,445
12	Transfer to Replacement Reserve	$0	$0	$0	$0	$0
13	**Total - Uses of Funds**	**$3,059,584**	**$3,105,674**	**$3,240,659**	**$3,381,819**	**$3,529,445**
14	**Ending Fund Balance**	**$881,316**	**$938,157**	**$1,145,381**	**$1,786,069**	**$2,585,180**
15	Target Balance	$764,896	$776,418	$810,165	$845,455	$882,361
16	**Sewer Capital Reserve**					
17	**Beginning Fund Balance**	**$10,245,586**	**$8,605,144**	**$9,694,022**	**$5,541,800**	**$1,530,017**
18	**Sources of Funds**					
19	Debt Proceeds	$0	$0	$0	$0	$0
20	Capacity Fee Revenues	$100,000	$3,665,936	$0	$0	$0
21	Transfer from Operating Reserve	$0	$0	$0	$0	$0
22	Interest Income	$93,785	$136,222	$113,418	$52,644	$22,138
23	**Total - Sources of Funds**	**$193,785**	**$3,802,158**	**$113,418**	**$52,644**	**$22,138**
24	**Uses of Funds**					
25	Debt Service	$0	$0	$0	$0	$0
26	General Funded Capital Projects	$634,227	$473,280	$2,539,704	$4,064,427	$108,243
27	Capacity Fee Funded Capital Projects	$0	$2,040,000	$1,725,936	$0	$0
28	Transfer to Operating Reserve	$1,200,000	$200,000	$0	$0	$0
29	**Total - Uses of Funds**	**$1,834,227**	**$2,713,280**	**$4,265,640**	**$4,064,427**	**$108,243**
30	**Ending Fund Balance**	**$8,605,144**	**$9,694,022**	**$5,541,800**	**$1,530,017**	**$1,443,912**
31	Target Balance	$1,563,976	$1,459,212	$1,387,080	$902,113	$112,660

3 COST OF SERVICE ANALYSIS

This section describes the cost of service analysis portion of the study. This analysis is conducted to proportionally allocate the District's revenue requirements, or costs, to the corresponding customer classes to later determine the proposed wastewater rates.

3.1 MASS BALANCE

A cost of service analysis assigns costs to customers in proportion to their loadings (flow and strength). Customers are divided into different classes based on their usage characteristics: Single Family, Multi-Family, Sewer Only Residential, Commercial, and Commercial with Irrigation. Since measurement of wastewater flow is expensive and prone to errors, it is not measured for most customers.

To determine the wastewater loadings from each customer class, a mass balance analysis is done by taking the total flow and strength of the wastewater influent into the plant and reducing that by the wastewater loadings of the District's non-residential customers and inflow and infiltration (I&I), which is water that enters the collection system from run-off and during rain-related events. For this study, I&I is estimated to be 2 percent of the wastewater influent, which is a reasonable estimate based on industry standards.

The District provided wastewater influent and customer data for FY 2017. To maintain consistency, the entire cost of service analysis is performed using FY 2017 data. **Table 3-1** shows the customer accounts, DUs (Residential) or EDUs (Commercial), annual water usage, and annualized average wet month usage (wet month usage is defined as December through April). The District provided data by customer class. The proposed customer classes expand on the District's current wastewater customer classes (Residential, Commercial) to increase equity amongst customer classes, as the various Residential and Commercial customers burden the system in different ways.

Table 3-1: Customer Data

	Accounts	DUs/EDUs	Water Usage (hcf)	Annualized Avg. Winter Usage (hcf)
Single Family	2,202	2,270	559,049	343,113
Multi-Family	86	1,148	98,791	84,761
Sewer Only	5	6	1,428	0
Commercial	24	188	28,481	19,428
Commercial w/ Irrigation	23	325	102,058	42,732
Total	**2,340**	**3,937**	**789,807**	**490,034**

Table 3-2 shows the mass balance analysis performed to determine the approximate amount of wastewater flow for Residential customers. The District provided the total annual wastewater flow in

gallons (Line 1). I&I, equal to 2 percent of wastewater influent, is subtracted from the total wastewater flow (Line 5). Then, Commercial wastewater flow is subtracted from the total flow less I&I (Line 10). Commercial with Irrigation customers have a 40 percent return factor because irrigation usage does not enter the wastewater system. Commercial customers have a 90 percent return factor, as these customers have smaller irrigation needs and therefore most of the water usage is returned to the wastewater system. The remaining wastewater flow is therefore assumed to be Residential flow (Line 11).

Table 3-2: Mass Balance Analysis

1	Total annual flow in gallons	226,707,938
2	Total annual flow in hcf	303,085
3	Inflow & infiltration percentage	2%
4	Inflow & infiltration in hcf	6,062
5	Total annual flow less I&I	297,024
6	Commercial w/ Irrigation water usage	102,058
7	Commercial w/ Irrigation return factor	40%
8	Commercial water usage	28,481
9	Commercial return factor	90%
10	Commercial WW flow in hcf	66,456
11	Estimated Residential WW flow	230,568

Table 3-3 shows the methodology in which the Residential wastewater flow is divided into the three Residential customer classes: Single Family, Multi-Family, and Sewer Only. The Single Family and Multi-Family Residential density (Lines 1-2) is derived from the Census Bureau's American Community Survey Five-Year Estimates (2011-2015) for the census designated places of Rainbow and Bonsall. Sewer Only Residential customers are assumed to have the same residential density as Single Family Residential customers.

A multi-Family DU is approximately 77 percent of a Single Family DU, which is equal to the Multi-Family density divided by the Single Family density (Line 3). The total number of Residential DUs is calculated by taking 77 percent of the Multi-Family DUs and adding that to the number of Single Family and Sewer Only Residential units (Line 8). The Residential wastewater flow (**Table 3-2**, Line 11) is divided by equivalent units for all Residential customers and then multiplied by the DUs to determine the wastewater flow for each Residential class (Lines 9-12).

Table 3-3: Residential Flow Analysis

1	Single Family household density	2.68
2	Multi-Family household density	2.07
3	Multi-Family factor for Single Family DU	77%
4	Multi-Family DUs	1,148
5	Multi-Family as Single Family DU	886
6	Single Family DUs (exclude Sewer Only)	2,270
7	Sewer Only DUs	6
8	Total Residential DUs	3,162
9	Annual residential wastewater flow in hcf	230,568
10	Single Family	165,534
11	Multi-Family	64,611
12	Sewer Only	423

Table 3-4 summarizes the customer data in FY 2017, with wastewater flow amounts for each customer class.

Table 3-4: Customer Data with Wastewater Flow

	Accounts	DUs/EDUs	Water Usage (hcf)	Wastewater Flow (hcf)	Annualized Avg. Winter Usage (hcf)
Single Family	2,202	2,270	559,049	165,534	343,113
Multi-Family	86	1,148	98,791	64,611	84,761
Sewer Only	5	6	1,428	423	0
Commercial	24	188	28,481	25,633	19,428
Commercial w/ Irrigation	23	325	102,058	40,823	42,732
Total	**2,340**	**3,937**	**789,807**	**297,024**	**490,034**

3.2 FUNCTIONALIZATION OF REVENUE REQUIREMENTS

A cost of service analysis distributes a utility's revenue requirements, or costs, to each customer class in proportion to the service received. The next step in the cost of service analysis is to functionalize the District's operating and capital costs. The District operates a collection-only wastewater system and outsources treatment to the City of Oceanside. Given this information, most of the District's operating

and capital costs will be allocated to Flow; apart from the Oceanside treatment costs which are allocated based on the information provided by Oceanside. The cost of service analysis uses the same cost components as the Oceanside's allocation for the District's costs, as shown below:

- Customer – costs associated with billing and customer service
- Capacity – costs associated with wastewater flow capacity
- Flow – costs associated with wastewater flow
- BOD – costs associated with biochemical oxygen demand (treatment)
- TSS – costs associated with total suspended solids (treatment)
- North Valley (NV) Pump Station – costs associated with pumping

Table 3-5 shows the O&M expenses allocation. The Oceanside treatment costs are allocated to the cost components based on the City of Oceanside's FY 2016 financial model, provided by the District. The Customer component of the Cost Allocation is allocated fully to Customer. The Admin component of the Cost Allocation is allocated mostly to Flow and partially to treatment (BOD, TSS). The last line of **Table 3-5** shows the percentage of total O&M costs to be allocated to each cost component.

Table 3-6 shows the capital expenses allocation. The District operates a collection only system, which necessitates capital assets related to Flow. Therefore, all capital assets are allocated to Flow. The capital asset methodology used for the cost of service analysis is Replacement Cost Less Depreciation, which is the most defensible because it takes into consideration inflation and depreciation. The last line of **Table 3-6** shows the percentage of total capital costs to be allocated to each cost component.

Table 3-5: O&M Expenses Allocation

	Customer	Capacity	Flow	BOD	TSS	NV Pump Station	General	Total
Payroll & Employee Expense			100%					100%
Wastewater Expenses								
Equipment			100%				0%	100%
Equipment Maintenance-Sewer			100%				0%	100%
Building Maintenance			100%				0%	100%
Professional Services			100%				0%	100%
Legal Services			100%				0%	100%
Supplies And Services-Sewer			100%				0%	100%
Regulatory Permits			100%				0%	100%
Books And Resources			100%				0%	100%
Dues And Subscriptions			100%				0%	100%
Sewer Line Cleaning			100%				0%	100%
Small Tools And Equipment			100%				0%	100%
Travel/Conferences/Training			100%				0%	100%
Sewage Treat.-Oceanside Plant	15.7%	8.7%	25.3%	27.4%	21.7%	1.1%	0%	100%
Replacement Reserve-Oceanside			100%				0%	100%
Utilities			100%				0%	100%
Hazardous Waster Material Disp			100%				0%	100%
Utilities-Propane			100%				0%	100%
Shop And Field Equipment			100%				0%	100%
Cost Allocation								
Board			100%				0%	100%
Garage			100%				0%	100%
Admin			80%	10%	10%		0%	100%
HR			100%				0%	100%
Safety			100%				0%	100%
Finance			100%				0%	100%
Customer Service	100%						0%	100%
Engineering			100%				0%	100%

	Customer	Capacity	Flow	BOD	TSS	NV Pump Station	General	Total
Payroll & Employee Expense	$0	$0	$715,070	$0	$0	$0		$715,070
Wastewater Expenses								
Equipment	$0	$0	$7,300	$0	$0	$0	$0	$7,300
Equipment Maintenance-Sewer	$0	$0	$39,400	$0	$0	$0	$0	$39,400
Building Maintenance	$0	$0	$10,000	$0	$0	$0	$0	$10,000
Professional Services	$0	$0	$60,000	$0	$0	$0	$0	$60,000
Legal Services	$0	$0	$0	$0	$0	$0	$0	$0
Supplies And Services-Sewer	$0	$0	$127,000	$0	$0	$0	$0	$127,000
Regulatory Permits	$0	$0	$18,000	$0	$0	$0	$0	$18,000
Books And Resources	$0	$0	$500	$0	$0	$0	$0	$500
Dues And Subscriptions	$0	$0	$800	$0	$0	$0	$0	$800
Sewer Line Cleaning	$0	$0	$25,000	$0	$0	$0	$0	$25,000
Small Tools And Equipment	$0	$0	$5,000	$0	$0	$0	$0	$5,000
Travel/Conferences/Training	$0	$0	$2,000	$0	$0	$0	$0	$2,000
Sewage Treat.-Oceanside Plant	$132,216	$72,744	$212,520	$230,496	$182,448	$9,576	$0	$840,000
Replacement Reserve-Oceanside	$0	$0	$200,000	$0	$0	$0	$0	$200,000
Utilities	$0	$0	$65,000	$0	$0	$0	$0	$65,000
Hazardous Waster Material Disp	$0	$0	$12,000	$0	$0	$0	$0	$12,000
Utilities-Propane	$0	$0	$6,000	$0	$0	$0	$0	$6,000
Shop And Field Equipment	$0	$0	$25,000	$0	$0	$0	$0	$25,000
Cost Allocation								
Board	$0	$0	$6,224	$0	$0	$0	$0	$6,224
Garage	$0	$0	$111,162	$0	$0	$0	$0	$111,162
Admin	$0	$0	$259,227	$32,403	$32,403	$0	$0	$324,034
HR	$0	$0	$62,734	$0	$0	$0	$0	$62,734
Safety	$0	$0	$32,701	$0	$0	$0	$0	$32,701
Finance	$0	$0	$112,798	$0	$0	$0	$0	$112,798
Customer Service	$84,069	$0	$0	$0	$0	$0	$0	$84,069
Engineering	$0	$0	$167,793	$0	$0	$0	$0	$167,793
Total - O&M Expenses	**$216,285**	**$72,744**	**$2,283,229**	**$262,899**	**$214,851**	**$9,576**	**$0**	**$3,059,584**
O&M Expense Allocation	7.1%	2.4%	74.6%	8.6%	7.0%	0.3%	0.0%	100.0%

Table 3-6: Capital Assets Allocation

	Customer	Capacity	Flow	BOD	TSS	NV Pump Station	Total
Wastewater Conveyance Mains			100%				100%
Wastewater Laterals			100%				100%
Wastewater Pump Stations			100%				100%
Wastewater Force Mains			100%				100%

	Customer	Capacity	Flow	BOD	TSS	NV Pump Station	Total
Wastewater Conveyance Mains	$0	$0	$92,684,920	$0	$0	$0	$92,684,920
Wastewater Laterals	$0	$0	$21,570,455	$0	$0	$0	$21,570,455
Wastewater Pump Stations	$0	$0	$1,213,963	$0	$0	$0	$1,213,963
Wastewater Force Mains	$0	$0	$2,202,391	$0	$0	$0	$2,202,391
Total - Capital Assets	**$0**	**$0**	**$117,671,729**	**$0**	**$0**	**$0**	**$117,671,729**
Capital Asset Allocation	0%	0%	100%	0%	0%	0%	100%

3.3 REVENUE REQUIREMENT

Table 3-7 shows the District's total revenue to be recovered from rates. This figure is calculated by subtracting revenue offsets (or miscellaneous, non-rate revenues) and adjustments from the revenue requirements, which includes O&M expenses and rate funded capital costs. The Adjustment to Annualize Rate Increase (Line 15) accounts for the mid-year rate increase in March. The Adjustment for Cash Balance (Line 16) is equal to the Net Cash Flow in FY 2018 in **Table 2-11**. The District's total revenue requirement is allocated into Operating and Capital costs, which will later be allocated into each cost component.

Table 3-7: Revenue Requirement

		Operating	Capital	Total
1	**Revenue Requirements**			
2	Payroll & Employee Expense	$715,070		$715,070
3	Wastewater Expenses	$1,443,000		$1,443,000
4	Cost Allocation	$901,514		$901,514
5	Existing Debt Service		$0	$0
6	Proposed Debt Service		$0	$0
7	Rate Funded Capital Projects		$634,227	$634,227
8	**Total - Revenue Requirements**	**$3,059,584**	**$634,227**	**$3,693,811**
9	**Revenue Offsets**			
10	Wastewater Revenue	$35,500		$35,500
11	Other Revenue	$35,000		$35,000
12	Interest Income	$99,301		$99,301
13	**Total - Revenue Offsets**	**$169,801**	**$0**	**$169,801**
14	**Adjustments**			
15	Adjustment to Annualize Rate Increase	($118,895)		($118,895)
16	Adjustment for Cash Balance	$543,335	$543,335	$1,086,670
17	**Total - Adjustments**	**$424,440**	**$543,335**	**$967,775**
18	**Revenue to be Recovered from Rates**	**$2,465,342**	**$90,892**	**$2,556,234**

3.4 UNIT COST DERIVATION

Table 3-8 shows the unit cost derivation for all cost components. Operating expenses (Line 1), which total approximately $2.5 million, are allocated based on the O&M expenses allocation shown in **Table 3-5**. For example, Customer costs equal 7.1 percent of all operating costs; therefore, the amount allocated to the Customer cost component for operating costs is equal to 7.1 percent of $2.5 million (7.1% x $2,465,342 = $174,277). Similarly, capital expenses (Line 2), which total $90,892, is allocated based on the capital assets allocation shown in **Table 3-6**.

The total cost of service allocated to each cost component is then divided by its corresponding unit of measure to determine the unit cost for each cost component. Customer costs, which are costs associated with billing and customer service, are divided by the number of accounts per year because billing is per account. Flow costs are calculated based on hcf of wastewater flow. The remaining cost components, which include Capacity, BOD, TSS, and NV Pump Station, are divided by the number of DUs (Residential) or EDUs (Commercial) per year, which are based on flow and strength for the various types of customers.

Table 3-8: Unit Cost Derivation

		Customer	Capacity	Flow	BOD	TSS	NV Pump Station	General	Total
1	Operating Costs	$174,277	$58,615	$1,839,773	$211,838	$173,122	$7,716	$0	$2,465,342
2	Capital Costs	$0	$0	$90,892	$0	$0	$0	$0	$90,892
3	**Total Cost of Service**	**$174,277**	**$58,615**	**$1,930,665**	**$211,838**	**$173,122**	**$7,716**	**$0**	**$2,556,234**
4	Unit of Measure	28,080 accounts/year	47,242 EDUs or DUs/year	297,024 hcf of ww	47,242 EDUs or DUs/year	47,242 EDUs or DUs/year	47,242 EDUs or DUs/year		
5									
6	Unit Cost	$6.21 per account	$1.24 per EDU or DU	$6.50 per hcf of ww	$4.48 per EDU or DU	$3.66 per EDU or DU	$0.16 per EDU or DU		
7									

3.5 ALLOCATION OF COSTS TO CUSTOMER CLASSES

The final step in the cost of service analysis is to proportionately allocate costs to the different customer classes. The unit costs derived in **Table 3-8** are multiplied by each customer class' number of accounts per year, number of annual DUs or EDUs, and annual wastewater flow shown in **Table 3-4**. For example, to determine Single Family Customer costs, the number of annual Single Family accounts are multiplied by the Customer unit cost (2,202 accounts per month x 12 months per year x $6.21 per account per month = $163,999). **Table 3-9** shows the allocation of costs to each customer class.

Table 3-9: Allocation of Costs to Customer Classes

	Customer	Capacity	Flow	BOD	TSS	NV Pump Station	Total COS
Single Family	$163,999	$33,805	$1,075,974	$122,173	$99,845	$4,450	$1,500,247
Multi-Family	$6,405	$17,094	$419,975	$61,777	$50,487	$2,250	$557,988
Sewer Only	$372	$86	$2,749	$312	$255	$11	$3,786
Commercial	$1,787	$2,797	$166,615	$10,109	$8,262	$368	$189,938
Commercial w/ Irrigation	$1,713	$4,833	$265,352	$17,467	$14,274	$636	$304,275
Total	**$174,277**	**$58,615**	**$1,930,665**	**$211,838**	**$173,122**	**$7,716**	**$2,556,234**

4 RATE DERIVATION

This section describes the derivation of the proposed wastewater rates based on the cost of service analysis. All calculated rates are rounded up to the nearest penny.

4.1 WASTEWATER RATE STRUCTURE

The proposed wastewater rate structure includes a monthly fixed charge by DU for Residential customers and a variable charge per hcf of water for Commercial customers. Commercial customers are subject to a minimum charge equal to the Multi-Family Residential charge, to cover the high fixed costs and to ensure financial sufficiency for the District.

The current wastewater rate structure consists of a monthly fixed charge per EDU based on the lowest wet month usage (December to April) of the prior fiscal year for Residential customers and a flat monthly charge per EDU for Commercial customers. The proposed wastewater rates are developed based on DUs, EDUs, and annual wastewater flow to more equitably recover costs from each customer class dependent on how they load the system year-round.

The proposed structure also separates the Commercial class into two classes: Commercial and Commercial with Irrigation. The differentiation between the two types of Commercial customers will also recover costs more equitably because irrigation usage does not enter the wastewater system and does not load the system.

4.2 RATE CALCULATION

Table 4-1 shows the wastewater rate calculation for each customer class. The total cost of service (COS) for each customer class is equal to the amount shown in **Table 3-9**.

Residential customers (Single Family, Multi-Family, and Sewer Only) are charged based on DUs. The COS of each Residential class is divided by the number of annual DUs in that class to determine the monthly fixed charge per DU.

Commercial customers (Commercial, Commercial with Irrigation) are charged based on hcf of water usage. The COS of each Commercial class is divided by the annual water usage of each class to determine the variable charge per hcf of water usage.

Table 4-1: Wastewater Rate Calculation

	Single Family	Multi-Family	Sewer Only	Commercial	Commercial w/ Irrigation
Total COS	$1,500,247	$557,988	$3,786	$189,938	$304,275
Annual Dwelling Units	27,246	13,777	70		
Annual Water Usage				28,481	102,058
Fixed Charge per dwelling unit	$55.07	$40.51	$54.40		
Variable Charge per hcf of water				$6.67	$2.99

4.3 PROPOSED WASTEWATER RATES

Table 4-2 shows the proposed wastewater rate schedule for the study period. The first year of rates, to be implemented in March 2018, are based on the cost of service analysis detailed in this report. All subsequent years' rates are increased across the board based on the proposed revenue adjustments shown in **Table 2-10**.

Table 4-2: Proposed Wastewater Rates

	March 2018	January 2019	January 2020	January 2021	January 2022
Monthly Service Charge per dwelling unit					
Single Family	$55.07	$59.21	$63.66	$68.44	$73.58
Multi-Family	$40.51	$43.55	$46.82	$50.34	$54.12
Sewer Only	$54.40	$58.48	$62.87	$67.59	$72.66
Variable Charge per hcf of water					
Commercial	$6.67	$7.18	$7.72	$8.30	$8.93
Commercial w/ Irrigation	$2.99	$3.22	$3.47	$3.74	$4.03
Monthly Minimum Charge					
Commercial	$40.51	$43.55	$46.82	$50.34	$54.12

4.4 CUSTOMER IMPACTS

Table 4-3 shows the proposed customer impacts for various customers. The average current and proposed charges are based on average usage and EDU information. The EDUs per customer type is derived from the Sewer Administrative Code, Section 9.07.010. The estimated monthly usage is approximately 17 hcf per EDU, which is based on the average water usage per EDU for all customers.

The Single Family Residence current average charge is based on 5 hcf of lowest wet month usage (December to April), which is the average for all Single Family customers. Multi-Family customers' current average charge is based on 3 hcf of lowest wet month usage. Apartment/Condominiums and Mobile

Home Parks are considered Multi-Family Residential and are charged as such. The proposed average charges for Single Family and Multi-Family customers are based on one DU. All other customers are charged based on EDUs for the current charge and estimated water usage per EDU for the proposed charge.

Table 4-3: Customer Impacts

Customer Impacts	EDUs per Customer Type	Est. Monthly Water Usage (hcf)***	Avg. Current Charge	Avg. Proposed Charge	Difference ($)	Difference (%)
Single Family Residence*			$56.20	$55.07	($1.13)	-2%
Apartment/Condominium**			$42.50	$40.51	($1.99)	-5%
Mobile Home Park**	0.80		$42.50	$32.41	($10.09)	-24%
Bakery	1.00	17.00	$75.50	$113.39	$37.89	50%
Car Wash	1.20	20.40	$90.60	$136.07	$45.47	50%
Grocery Store	1.20	20.40	$90.60	$136.07	$45.47	50%
Restaurant	2.70	45.90	$203.85	$306.15	$102.30	50%
Country Club****	1.20	20.40	$90.60	$61.00	($29.60)	-33%

**Single Family Residences are currently charged based on lowest winter month usage, average is 5 hcf of water*

***Multi-Family Residences are currently charged a flat rate, equal to 3 hcf of lowest winter water usage*

****Estimated monthly usage is based on 17 hcf per EDU per month multiplied by number of EDUs per customer type*

*****Country Clubs are considered Commercial w/ Irrigation*