DRAFT SANITATION RATE STUDY

B&V PROJECT NO. 401802

PREPARED FOR

City of Simi Valley, CA

AUGUST 16, 2019

BLACK & VEATCH

Table of Contents

1 Executive Summary

The City of Simi Valley (City) commissioned Black & Veatch Management Consulting, LLC (Black & Veatch) to conduct a Sanitation Rate Study (Study). The Study included the development of a five-year financial plan, a cost of service analysis and the design of rates. The specific objectives of the Study were to:

- Evaluate the adequacy of projected revenues under existing rates to meet projected revenue requirements;
- Develop sound financial plans for the utility covering a five-year Study period for both ongoing operations and planned capital improvements;
- Recommend reserves that provide financial stability for the utility based on industry standard for both operating and capital;
- Allocate the utility's projected revenue requirements to the various customer classes in accordance with the respective service requirements; and
- Develop a suitable rate schedule that produces revenues adequate to meet financial needs while recognizing customer costs of service and regulatory considerations such as Proposition 218 and applicable judicial decisions.

1.1 SANITATION SYSTEM

The City's Sanitation Utility provides sewer services to a population of over 127,000. The nearly 40,000 customer connection consists primarily of residential and commercial customers. Sanitation services provide both collection and treatment. Sanitary sewer flows in the City are collected and transported through more than 380 miles of sewer main by way of three lift stations to the Water Quality Control Plant (WQCP). The WQCP provides tertiary treatment for up to 12.5 million gallons a day (MGD) of liquid waste. Despite the design capacity, the City averaged 7.7 MGD in fiscal year 2018. A portion of the effluent water from the WQCP is reclaimed and used for dust control at the Simi Valley Landfill.

1.2 FINANCIAL PLAN

The City operates the utility as self-supporting enterprise. As such, the utility must develop financial plans, also known as revenue requirements, which provide sufficient levels of revenue to meet all operation and maintenance expenses, sewer treatment, debt service requirements, capital improvements funded from current revenues, and other revenue requirements.

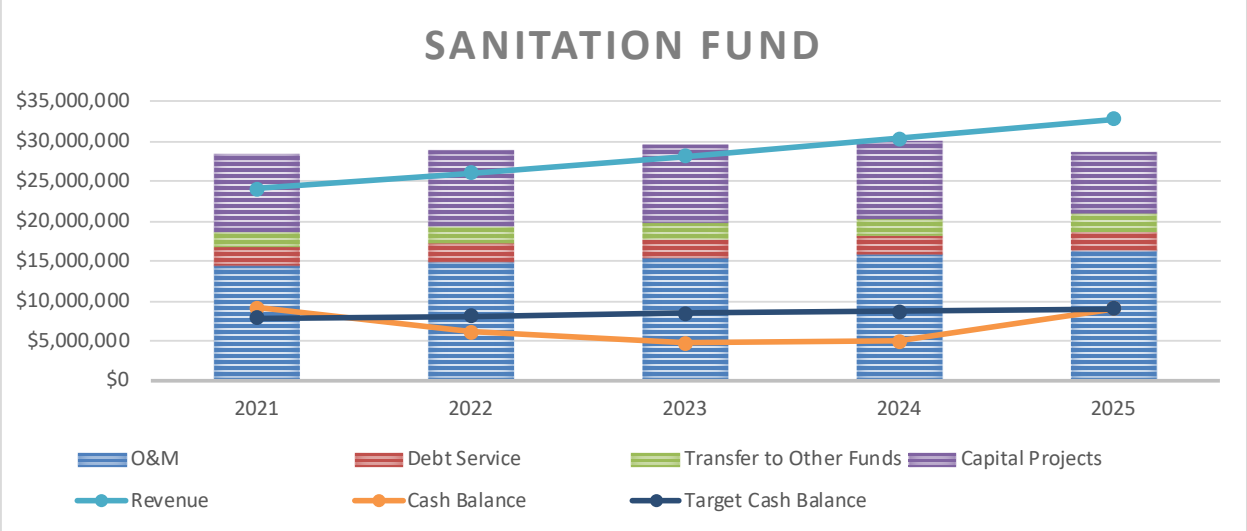
The Study develops a financial plan that project operating revenue, expenses, and capital financing costs for the utilities over a five-year planning period beginning July 1, 2020 and ending June 30, 2025. The financial plans project future rate revenues under existing rates, operations and maintenance (O&M) expenses, principal and interest expense on debt, transfers, and capital improvement program (CIP) requirements. In the projection of rate revenues, annual projections of customers and billed sewage flow rely upon the City's historical data.

Summarized below are the utility's revenue requirements:

- **Operation and Maintenance Expenses:** The City anticipates O&M expenses to increase from $16.25M in FY 2021 to $18.62M in FY2025.
- **Debt Service:** The City anticipates a debt service payment of $2.39M per year from FY 2021 to FY 2025 associated with proposed bank loan for the ESCO projects. In FY 2020, the City anticipates a loan of $33.24M.
- **Capital Improvements**: The City plans to execute $44.90M in capital projects from FY 2021 to FY 2025.
- **Reserves**: The City plans to implement an operating reserve, replacement reserve, and a rate stabilization fund reserve.
  - The operating reserve is to help cover fluctuations in day-to-day expenses. The scheduled target is 180 days of O&M expenses.
  - The capital reserve is to help maintain enough funds on hand to help mitigate unexpected capital costs. The scheduled target is one-year's average of City's 5-Year CIP.

To meet the projected revenue requirements, the Sanitation Utility is proposing revenue adjustments which would allow the utility to operate the enterprise on a revenue-neutral basis as shown in Figure ES-1.

Figure ES-1 Sanitation Operating Cash Flow



1.3 ADEQUACY OF EXISTING RATES TO MEET COSTS OF SERVICE

Based on the financial plan, Black & Veatch recommends the revenue adjustments shown in Table ES-1 to meet the projected revenue requirements for the FY 2021 to FY 2025. These do not represent proposed rate increases to customers; rather these represent the overall revenue increases needed by the utilities to meet their overall obligations and maintain current service levels.

Table ES-1 Proposed Revenue Adjustment

Fiscal Year	Effective Month	Revenue Adjustment
FY 2021	July	7.85%
FY 2022	July	7.85%
FY 2023	July	7.85%
FY 2024	July	7.90%
FY 2025	July	7.90%

1.4 COST-OF-SERVICE ANALYSIS

The cost-of-service analysis allocates the costs to the various customer classes of service in a fair and equitable manner. The methodology used in the Study is specific to sanitation operations.

The cost-of-service allocation performed in this Study follows the cost allocation method endorsed by the Water Environment Federation (WEF) *Financing and Charges for Wastewater Systems, Manual of Practice* (MoP) 27 manual. The sanitation cost of service analysis allocates costs to the different customer classes in proportion to their use of the sanitation system. As recommended by WEF, Black & Veatch distributed functional costs to volume, strength and customer-related parameters. This allocation methodology produces unit costs for allocation to individual customer classes based on the projected customer service requirements.

1.5 RATE DESIGN

Through the cost-of-service analysis, the allocation of costs to customer classes must meet Proposition 218 requirements. The Right to Vote on Taxes Act, also known as Proposition 218, was passed by California voters in 1996 and added Article XIIIC and Article XIIID to the California Constitution. These articles provide the regulatory framework that guides and informs the rate-setting process. The regulatory framework helps ensure cost recovery proportionate to the cost of providing the service.

To minimize impacts, retain simplicity, and ensure the reasonable stability of revenue, Black & Veatch recommends the following rate structure.

- Monthly Service Charge: The utility should retain the monthly service charge based on equivalent dwelling units (EDU) for all residential customer classes. In addition, the monthly service charge serves as the base amount, or minimum, for all non-residential customer classes.
- Consumption Charge: The utility should retain its consumption charges for all non-residential customers. The recommended rate structure should retain the uniform rate based on customer class.
- Special Charges: The utility should retain the per student charge for schools and truck load charge for hauled septage.

Table ES-3 summarizes the recommended five-year rate schedules for all Sanitation Utility components.

Table ES-3 Proposed Five-Year Sanitation Rate Schedule

Customer Class	Fiscal Year Ending June 30,				
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Monthly Residential ($/month)					
Single Family	41.24	44.48	47.97	51.76	55.85
Multi Family	29.25	31.55	34.03	36.72	39.62
Senior Housing	22.86	24.65	26.59	28.69	30.96
Mobile Homes	29.25	31.55	34.03	36.72	39.62
Monthly Non-Residential ($/month) - LM stands for Landscape Meter					
Office with LM (SCD)	39.89	43.02	46.40	50.07	54.03
Office without LM (SDL)	31.91	34.41	37.11	40.04	43.20
Commercial with LM (SCR)	48.49	52.30	56.41	60.87	65.68
Commercial without LM (SRL)	38.79	41.84	45.12	48.68	52.53
Restaurant/Cafe with LM (SRR/SRD)	57.11	61.59	66.42	71.67	77.33
Restaurant/Cafe without LM (RRL/RDL)	45.69	49.28	53.15	57.35	61.88
Non-Residential Usage Rates ($/HCF of water usage)					
Office with LM (SCD)	4.91	5.30	5.72	6.17	6.66
Office without LM (SDL)	3.93	4.24	4.57	4.93	5.32
Commercial with LM (SCR)	6.38	6.88	7.42	8.01	8.64
Commercial without LM (SRL)	5.11	5.51	5.94	6.41	6.92
Restaurant/Cafe with LM (SRR/SRD)	7.85	8.47	9.13	9.85	10.63
Restaurant/Cafe without LM (RRL/RDL)	6.28	6.77	7.30	7.88	8.50
Non-Residential Rates ($/Unit)					
High Schools ($/student)	1.72	1.86	2.01	2.17	2.34
Other Schools ($/student)	1.15	1.24	1.34	1.45	1.56
Septage Hauler ($/truck)	35.34	38.11	41.10	44.35	47.85

2 Revenue and Revenue Requirements

To meet the costs associated with providing sanitation services to its customers, the Sanitation Utility derives revenue from a variety of sources including sanitation user charges (rates), environmental compliance program, engineering fees, recycled water charges, interest earned from the investment of available funds, and other miscellaneous revenues. Black & Veatch has projected the level of future revenue generated in the Study through a combination of an analysis of historical and future system growth in terms of the number of EDUs, bills and billed sewage flow. This section also projects the expenses, or revenue requirements, necessary to operate and maintain the system, invest in capital improvements, make debt service payments and cover other expenses of the sanitation system.

2.1 CUSTOMER AND CONSUMPTION PROJECTIONS

2.1.1 Customer Classes

The Sanitation Utility's customers include both residential and non-residential customers. The City has the following customer classes:

- Residential: Single-family residential, multi-family residential, senior housing and mobile homes.
- Non-Residential: Office, Commercial and Restaurants/Café.
- Non-Residential (Other): Schools and Septage Haulers.

2.1.2 Number of Customer Units

2.1.2.1 Residential

The City provides sanitation services to over 42,500 residential customers. Since the City bills residential customers based on EDUs, a review of historical EDUs patterns for customers and anticipated growth within the City, the projected total number of EDUs are expected to grow at 0.29% per year over the Study Period. An EDU represents a single-family residential customer equivalent with a flow of 155 gallons per day and strengths of 266 mg/L of Biological Oxygen Demand (BOD), and 331 mg/L of Total Suspended Solids (TSS).

2.1.2.2 Non-Residential

The City bills non-residential customers primarily on sewage flow but imposes a monthly minimum service charge which includes a billed sewage allowance of 7 HCF. The monthly service charge is based on connections to the sanitation system. In reviewing historical connection patterns for non-residential customers and anticipated growth within the City, the projected total number of connections are expected to grow at 0.29% per year over the Study Period.

2.1.2.3 Non-Residential (Other)

The City has other non-residential customers such as schools and septage haulers. Schools are billed on the number of students based on average daily attendance while septage haulers are billed on truck loads which is based on a base 750 gallons per load. Based on anticipated growth within the City, the projected total of students is expected to grow at 0.29% per year over the Study Period. For septage haulers, it is expected that there will no growth in the number of truck loads.

Table 2-1 summarizes the projected number of EDUs for residential, projected number of connections for non-residential, and projected number of units for schools and septage haulers.

Table 2-1 Number of Customer Units

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
	Residential (Units)					
1	Single Family	32,956	33,052	33,148	33,244	33,340
2	Multi Family	7,996	8,019	8,042	8,065	8,088
3	Senior Housing	1,279	1,283	1,287	1,291	1,295
4	Mobile Homes	607	607	607	607	607
5	Subtotal	42,838	42,961	43,084	43,207	43,330
	Non-Residential (Connections)					
6	Office with LM (SCD)	442	443	444	445	446
7	Office without LM (SDL)	140	140	140	140	140
8	Commercial with LM (SCR)	200	201	202	203	204
9	Commercial without LM (SRL)	16	16	16	16	16
10	Restaurant/Cafe with LM (SRR/SRD)	117	117	117	117	117
11	Restaurant/Cafe without LM (RRL/RDL)	42	42	42	42	42
12	Total	957	959	961	963	965
	Non-Residential Other [1,2]					
13	High Schools	4,774	4,788	4,802	4,816	4,830
14	Other Schools	11,759	11,793	11,827	11,861	11,895
15	Septage Hauler	1,568	1,568	1,568	1,568	1,568

Notes:
[1] Schools represent the number of students based on average daily attendance.
[2] Septage Haulers represents the equivalent truck loads of 750 gal.

2.1.3 Billable Sewage Flow

The City charges non-residential customers based on billable sewage flow, which is determined by using water consumption. Water consumption is measured in hundred cubic feet (HCF). In determining the projected sewage flow, Black & Veatch analyzed historical patterns of sewage flow in conjunction with a projected estimate of future billed sewage flow. The City has two type of non-residential customers: 1) with a landscape meter and 2) without a landscape meter. With landscape meter represents customers that have separate irrigation meter and therefore billable sewage flow is assumed 100% of water consumption. Without landscape meter represents customers that don't have a separate irrigation meter and therefore billable sewage flow is assumed 80% of water consumption. Based on historical consumption patterns, it is projected that billable sewage flow will grow by 0.29% per year over the Study period. Table 2-2 shows the projected billable sewage flow generated for the Study Period.

Table 2-2 Billable Sewage Flow

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		(HCF)	(HCF)	(HCF)	(HCF)	(HCF)
1	Office with LM (SCD)	181,031	181,556	182,083	182,611	183,141
2	Office without LM (SDL)	68,694	68,893	69,093	69,293	69,494
3	Commercial with LM (SCR)	96,992	97,273	97,555	97,838	98,122
4	Commercial without LM (SRL)	39,118	39,231	39,345	39,459	39,573
5	Restaurant/Cafe with LM (SRR/SRD)	94,449	94,723	94,998	95,273	95,549
6	Restaurant/Cafe without LM (RRL/RDL)	39,450	39,564	39,679	39,794	39,909
7	Total (HCF)	519,734	521,240	522,753	524,268	525,788

2.2 REVENUE UNDER EXISTING RATES

Sanitation user rates serve as the primary source of revenue for the Sanitation Utility. Therefore, the level of future rate revenue is important in the development of a long-range financial plan. To determine rate revenue, we multiply the projected system growth in terms of number of EDUs, connections, billed sewage flow, students, and truck loads by the applicable rates to determine sanitation rate revenue.

Table 2-3 shows the Sanitation Utility's current schedule of charges. It is important to note that the monthly service charge for non-residential customers includes a usage allowance of 7 HCF per month. Therefore, the non-residential monthly service charge serves a baseline cost that the City needs to recover.

Table 2-3 Existing Sanitation Rates

Description	Service Charge FY 2020	Consumption Charge FY 2020
Residential	$/Month	
Single Family	38.58	
Multi-Family	26.88	
Senior Housing	20.79	
Mobile Home	26.88	
Non-Residential	$/Month	$/HCF
Office with LM (SCD)	33.55	4.84
Office without LM (SCL)	26.85	3.85
Commercial with LM (SCD)	40.92	5.86
Commercial without LM (SCL)	32.74	4.71
Restaurant with LM (SCD)	48.29	6.92
Restaurant without LM (SCL)	38.64	5.53
Cafe with LM (SCD)	48.29	6.92
Cafe without LM (SCL)	38.64	5.53
* LM Stands for Landscape Meter		
Non-Residential (Other)		
High Schools ($/Student/Month)		1.28
Other Schools ($/Student/Month)		0.85
Septage Hauler ($/750 gal)		30.08

Table 2-4 represents a summary of projected sanitation rate revenue under existing rates. As shown, the revenue generated increases over the Study period in conjunction with the number of EDUs, number of connections, billed sewage flow, students and truck loads. The projected Sanitation Utility revenues increase from $21.86M in FY 2021 to $22.11M in FY 2025.

Table 2-4 Projected Revenue under Existing Rates

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
	Residential					
1	Single Family	15,338,200	15,382,900	15,427,500	15,472,200	15,516,900
2	Multi-Family	2,592,900	2,600,300	2,607,800	2,615,200	2,622,700
3	Senior Housing	320,800	321,800	322,800	323,800	324,800
4	Mobile Home	196,800	196,800	196,800	196,800	196,800
5	Total Residential	$ 18,448,700	$ 18,501,800	$ 18,554,900	$ 18,608,000	$ 18,661,200
	Non-Residential					
6	Office with LM (SCD)	1,059,700	1,062,700	1,065,700	1,068,600	1,071,600
7	Office without LM (SCL)	311,200	311,900	312,700	313,500	314,300
8	Commercial with LM (SCD)	670,100	672,200	674,400	676,600	678,700
9	Commercial without LM (SCL)	191,500	192,100	192,600	193,100	193,700
10	Restaurant with LM (SCD)	0	0	0	0	0
11	Restaurant without LM (SCL)	238,900	239,500	240,200	240,800	241,500
12	Cafe with LM (SCD)	725,300	727,200	729,100	731,000	732,900
13	Cafe without LM (SCL)	0	0	0	0	0
14	Total Non-Residential	$ 3,196,700	$ 3,205,600	$ 3,214,700	$ 3,223,600	$ 3,232,700
	Non-Residential (Other)					
15	High Schools (per student per month)	73,700	73,900	74,100	74,400	74,600
16	Other Schools (per student per month)	120,600	120,900	121,300	121,600	122,000
17	Septage Hauler (per 750 gallons)	22,700	22,700	22,700	22,700	22,700
18	Total Non-Residential (Other)	$ 217,000	$ 217,500	$ 218,100	$ 218,700	$ 219,300
19	Total Sanitation System	$ 21,862,400	$ 21,924,900	$ 21,987,700	$ 22,050,300	$ 22,113,200

2.3 OTHER REVENUE

There are other operating sources from miscellaneous services that the City provides to its customers. These include engineering fees, inspection services, recycled water, environmental compliance, interest on investments, and other smaller miscellaneous revenues. In total, other operating revenues represent about 2.0% of the Sanitation Utility's total revenue. The City anticipates that these revenues will grow at about 0.9% per year over the Study period.

2.4 OPERATING AND MAINTENANCE (O&M) EXPENSES

Table 2-5 summarizes the Sanitation Utility's projected O&M expenses for the Study Period. These expenses represent the major operating departments within the Sanitation Utility. Each department is further broken down into salaries and benefits, materials and supplies, contract and professional services, utilities, and routine capital outlay. The City anticipates that all O&M expenditures will increase on average 3.5% per year over the Study period.

Table 2-5 O&M Expenses

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
1	Administration	5,581,700	5,758,200	5,940,300	6,128,300	6,322,100
2	Collection System Maintenance	1,287,100	1,327,400	1,369,100	1,411,900	1,456,000
3	Plant Operations & Maintenance	6,674,900	6,895,800	7,124,200	7,360,600	7,605,400
4	Environmental Compliance	824,800	850,200	876,500	903,600	931,500
5	Transfers & Reimbursements	1,881,000	2,033,800	2,152,200	2,222,200	2,301,100
6	Total	$ 16,249,500	$ 16,865,400	$ 17,462,300	$ 18,026,600	$ 18,616,100

As shown in Table 2-5, the Sanitation Utility's O&M expenses increase from $16.25M in FY 2021 to $18.62M in FY 2025.

2.5 DEBT SERVICE REQUIREMENTS

Table 2-6 represents the Sanitation Utility's existing and proposed debt service obligations. This table shows only the combined principal and interest requirements on existing debt over the Study period. The City does not anticipate using future debt issuances for other capital projects. It is common practice for utilities to debt finance large capital improvement projects. By financing the cost of the projects, the City can fund large projects immediately and spread the payment over a specified time frame, thereby helping to offset the impact on rate-payers.

Table 2-6 Long-Term Debt Service

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
1	ESCO Treatment Plant Projects	2,392,200	2,392,200	2,392,200	2,392,200	2,392,200
2	Total	$ 2,392,200	$ 2,392,200	$ 2,392,200	$ 2,392,200	$ 2,392,200

2.6 CAPITAL IMPROVEMENT PROGRAM

As part of this Study, the City examined its five-year Capital Improvement Plan (CIP) and amended the CIP to better reflect planned projects. In addition, the City hired a third-party engineering consultant to prepare a report titled *Sewer System Reliability Assessment*. The preliminary results of the report identified sanitation system needs including ongoing assessments, maintenance, and renewal and replacement requirements on an annual basis.

Based on the updated CIP and assessment report, Table 2-7 summarizes the Sanitation Utility's planned CIP by major categories. The Sanitation Utility is projecting $44.90M in CIP over the Study Period, which includes both collection and treatment projects. For complete details of each CIP project, see Appendix A.

Table 2-7 Capital Improvement Projects

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
1	Sewerline	5,733,701	3,821,044	4,154,220	6,274,712	4,704,334
2	WQCP	103,000	1,154,259	5,058,343	6,083,825	3,811,461
3	Organization	257,500	530,450	327,818	196,964	202,873
4	SCADA	0	1,166,990	1,202,000	56,275	57,964
5	Total	$ 6,094,201	$ 6,672,743	$ 10,742,381	$ 12,611,776	$ 8,776,632

2.6.1 Capital Improvement Financing Plan

The City funds annual expenditures for the CIP and transfer for other services such as vehicles from a combination of available funds on hand, debt financing, connection charges, and revenues derived from user rates. As shown in Tables 2-8, the average annual transfer and CIP expenditure is $9.56M for the Sanitation Utility. The planned average annual CIP contribution from the Sanitation Operating Fund or PAY-GO is $9.34M per year over the Study Period.

Table 2-8 Sanitation Replacement Reserve Financing Plan

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
	Source of Funds					
1	Transfer from Capital Proj Fn	0	0	0	0	0
2	Transfer from Sanitation	9,743,400	9,743,400	9,743,400	9,743,400	7,743,400
3	Debt Proceeds	0	0	0	0	0
4	Total Sources	$ 9,743,400	$ 9,743,400	$ 9,743,400	$ 9,743,400	$ 7,743,400
	Use of Funds					
5	Transfers	547,400	563,800	580,700	598,200	616,200
6	Capital Projects	6,094,201	6,672,743	10,742,381	12,611,776	8,776,632
7	Total Uses	$ 6,641,601	$ 7,236,543	$ 11,323,081	$ 13,209,976	$ 9,392,832
8	Net Annual Cash Balance	3,101,799	2,506,857	(1,579,681)	(3,466,576)	(1,649,432)
9	Beginning Unrestricted Fund Balance	9,239,200	12,340,999	14,847,856	13,268,176	9,801,599
10	Net Cumulative Fund Balance	$ 12,340,999	$ 14,847,856	$ 13,268,176	$ 9,801,599	$ 8,152,167
11	Reserve Target [1]	$ 9,633,361	$ 9,735,226	$ 7,827,076	$ 5,526,823	$ 6,398,550

[1] Reserve Target set at one year's average of 5-year CIP.

2.7 TRANSFERS

The Sanitation Utility will perform transfers over the Study period from the Operating Fund and other funds. The other funds consist of the Other Funds and Replacement Reserve Fund. Since these transfers do not represent direct operating expenses for the Sanitation Utility, Black & Veatch includes these costs as “below-the-line” cash flow items and not included as O&M expenses.

Table 2-9, Lines 21 and 22 for the Sanitation Utility reflect these associated amounts. The following are a brief description of the transfers.

- Other Fund transfers represent funds to cover other indirect costs such as retiree benefits, PERS liability and other public work reimbursements.
- Replacement Reserve transfers represent funds to a capital fund. See Section 2.8 for further explanation.

2.8 RESERVES

The City currently has no defined reserve policy but is establishing a reserve policy for the Sanitation Utility. Utilities typically establishe reserves for several reasons such as covering shortfalls in operating revenues, maintaining strong bond ratings, covering day-to-day operating costs, and easing the burden on ratepayers associated with large rate increases. The Sanitation Utility is establishing the following two reserve funds:

- Operating Reserve represents working capital maintained by the Operating Fund to cover day-to-day expenses and maintain sufficient funds to cover accounts receivables if there are supplier issues, periods of lower than expected sanitation revenues, or unforeseen cost increases. The reserve will maintain a minimum balance of 180 days of operating expenses.
- Replacement Reserve represents funds used for unforeseen and unbudgeted capital costs. Once fully funded, this reserve will maintain a minimum balance of one-years' average of the following 5-years of planned CIP.

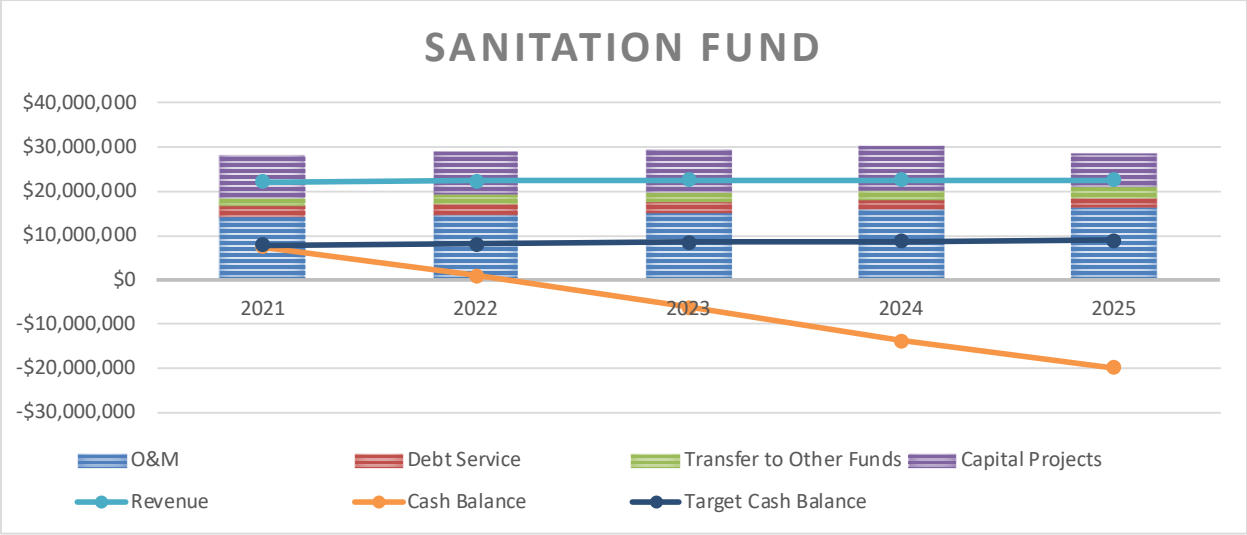
Regardless of the type of reserve, appropriate reserve levels help the Sanitation Utility attain and keep better bond ratings, which in turn, leads to lower borrowing costs.

2.9 PROJECTED OPERATING RESULTS

The revenue requirements of the Sanitation Utility consist of O&M expenses, debt service, capital expenditures, and reserve requirements.

It is important to examine the cash flow projections under the status quo scenario in order to fully understand the current condition of the Sanitation Utility and the need for revenue adjustments. In this scenario, the Sanitation Utility would not impose any revenue increases over the Study Period and continue to incur O&M expenses, pay for the execution of the planned CIP, and transfer to reserves. As shown in Figures 2-1, the status quo conditions would project that the Sanitation Utility would operate from an annual deficit position, thus tapping into its reserves. By FY 2023, the Operating Fund would have a zero balance under such a scenario.

Figure 2-1 Status Quo Operating Cash Flow



The Sanitation Utility will fall into a deficit position if the City does not implement the revenue increases as shown in Table 2-9. The revenue increases represent the overall total revenue adjustment needed to meet revenue requirements. The revenue adjustment does not represent adjustments to the individual rates but reflects the overall level of revenue needed to meet the Sanitation Utility's obligations.

The suggested revenue increases help the Sanitation Utility meet the following goals:

- Meet budgeted operating obligations.
- Meet planned capital investments.
- Maintain an operating reserve of 180 days of operating expenses.
- Maintain replacement reserve of one-years' average of next 5-year's CIP.

Shown in Tables 2-9 is a summary of the proposed Operating Fund for the Study Period. The Operating Fund consists of two parts: 1) Revenue and 2) Revenue Requirements.

Revenue

- Line 1 is the revenue under existing rates.
- Lines 2 through 6 is the additional revenue generated from the required annual revenue increases. The additional revenue generated is a direct reflection of the number of months the increase is effective for, and therefore amount might calculate at less than that stated amount.
- Line 8 is the total revenue generated from user charges.
- Line 14 represents other operating revenues.
- Line 15 represents total revenues for the enterprises.

Revenue Requirements

- Line 17 represents O&M expenses.

- Line 20 represent debt service payments.
- Line 23 represents transfers. The transfers include money to the Other Funds and Replacement Reserve Fund.
- Line 24 represents total revenue requirements.

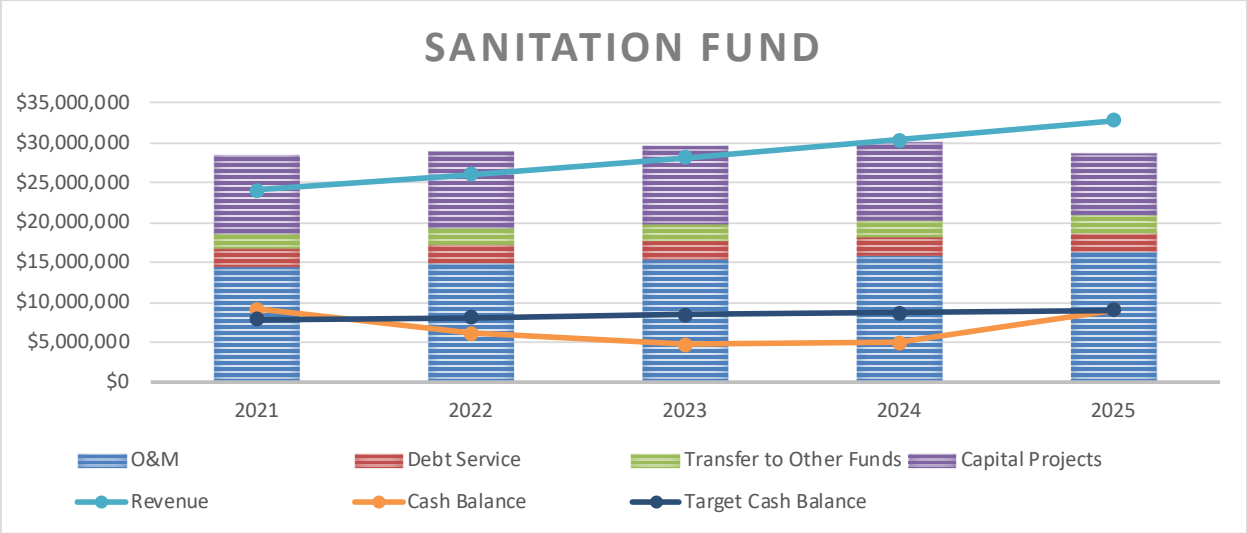
Lines 27 represents the net cumulative cash balance within the Operating Funds. The net cumulative cash balance intends to match, to the extent possible, Line 28. After discussions with City staff, Black & Veatch recommends a reserve target minimum of 180 days of O&M expenses. The cash balance reserve is required to ensure the Operation Fund can continue in the event of a supplier interruption, market price fluctuations of critical equipment or supplies or an abrupt drop in account receivables.

Table 2-9 Operating Fund

Line No.	Description			Fiscal Year Ending June 30,				
				FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
				($)	($)	($)	($)	($)
	Revenue							
	Rate Revenue							
1	Revenue from Existing Rates			21,862,400	21,924,900	21,987,700	22,050,300	22,113,200
	Year	Months Effective	Rate Adj					
2	2021	12	7.85%	1,716,200	1,721,100	1,726,000	1,730,900	1,735,900
3	2022	12	7.85%		1,856,200	1,861,500	1,866,800	1,872,200
4	2023	12	7.85%			2,007,700	2,013,400	2,019,100
5	2024	12	7.90%				2,185,300	2,191,500
6	2025	12	7.90%					2,364,600
7	Increased Revenue Due to Adjustments			1,716,200	3,577,300	5,595,200	7,796,400	10,183,300
8	Subtotal Rate Revenue			$ 23,578,600	$ 25,502,200	$ 27,582,900	$ 29,846,700	$ 32,296,500
	Other Operating Revenue							
9	Interest Earnings			138,800	140,200	141,600	143,000	144,400
10	Lift Station Charges			48,200	48,200	48,200	48,200	48,200
11	Recycled Water Charges			54,500	55,000	55,600	56,200	56,800
12	Environmental Compliance Program			252,500	255,000	257,600	260,200	262,800
13	Other Revenue			50,800	51,300	51,800	52,300	52,800
14	Subtotal Other Operating Revenue			$ 544,800	$ 549,700	$ 554,800	$ 559,900	$ 565,000
15	**Total Revenue**			**$ 24,123,400**	**$ 26,051,900**	**$ 28,137,700**	**$ 30,406,600**	**$ 32,861,500**
	Revenue Requirements							
	Operating & Maintenance							
16	O&M Expenses			14,368,500	14,831,600	15,310,100	15,804,400	16,315,000
17	Subtotal O&M			$ 14,368,500	$ 14,831,600	$ 15,310,100	$ 15,804,400	$ 16,315,000
	Debt Service							
18	Existing Revenue Bonds			0	0	0	0	0
19	Proposed Revenue Bonds			2,392,200	2,392,200	2,392,200	2,392,200	2,392,200
20	Total Debt Service			$ 2,392,200	$ 2,392,200	$ 2,392,200	$ 2,392,200	$ 2,392,200
	Transfers							
21	Transfer to Other Funds [1]			1,881,000	2,033,800	2,152,200	2,222,200	2,301,100
22	Transfer to Sanitation Replacement Fund			9,743,400	9,743,400	9,743,400	9,743,400	7,743,400
23	Total Transfers			$ 11,624,400	$ 11,777,200	$ 11,895,600	$ 11,965,600	$ 10,044,500
24	**Total Revenue Requirements**			**$ 28,385,100**	**$ 29,001,000**	**$ 29,597,900**	**$ 30,162,200**	**$ 28,751,700**
25	Net Annual Cash Balance			(4,261,700)	(2,949,100)	(1,460,200)	244,400	4,109,800
26	Beginning Fund Balance			13,391,450	9,129,750	6,180,650	4,720,450	4,964,850
27	Net Cumulative Fund Balance			$ 9,129,750	$ 6,180,650	$ 4,720,450	$ 4,964,850	$ 9,074,650
28	Minimum Operating Reserves (180 Days)			$ 7,865,200	$ 8,168,900	$ 8,463,300	$ 8,741,600	$ 9,032,300

Figure 2-2 presents the proposed Operating Fund.

Figure 2-2 Operating Cash Flow



3 Cost of Service Analysis

Cost of Service analysis requires that the utility recover needed revenues from rates for sanitation service, which are allocated to customer classes according to the service rendered. An equitable rate structure allocates the capture of revenue requirements to customer classes based on billed sewage volume, strengths, and number of customer bills.

In analyzing the Sanitation Utility's cost of service for allocation to its customer classes, Black & Veatch selected the annual revenue requirements for FY 2021 as the Test Year (TY) requirements to demonstrate the development of cost-of-service sewer rates. Table 3-1 summarizes the total costs of service that needs to be recovered from sanitation user rates for TY 2021.

Table 3-1 Cost of Service Revenue from Rates

Line No.	Description	Operating Expense	Capital Cost	Total Cost
		($)	($)	($)
	Revenue Requirements			
1	O&M Expense	14,368,500	0	14,368,500
2	Debt Service Requirements	0	2,392,200	2,392,200
3	Transfers to Rate Stabilization Fund	0	0	0
4	Transfers to Other Funds	1,881,000	0	1,881,000
5	Transfers to Sanitation Replacement Reser	0	9,743,400	9,743,400
6	Subtotal	$ 16,249,500	$ 12,135,600	$ 28,385,100
	Less Revenue Requirements Met from Other Sources			
7	Interest Earnings	138,800	0	138,800
8	Lift Station Charges	0	48,200	48,200
9	Recycled Water Charges	54,500	0	54,500
10	Environmental Compliance Program	252,500	0	252,500
11	Other Revenue	50,800	0	50,800
12	Subtotal	$ 496,600	$ 48,200	$ 544,800
	Adjustments			
13	Adjustment for Annual Cash Balance	4,261,700	0	4,261,700
14	Adjustment to Annualize Rate Increase	0	0	0
15	Subtotal	$ 4,261,700	$ 0	$ 4,261,700
16	Cost of Service to be Recovered from Rates	$ 11,491,200	$ 12,087,400	$ 23,578,600

Shown in Line 5 is the total revenue requirement that corresponds with Table 2-9, Line 24. To derive the net revenue requirement recovered via rates, it is necessary to deduct revenues from other sources as shown in Line 12. Line 13 represents the net annual cash balance during the TY. If the enterprise is drawing down funds already in the Operating Fund, then this number is positive. The number will be negative if the enterprise is replacing funds. In the case of the Sanitation Utility, the $4.26M figure indicates that the forecast is projecting a negative cash balance for the year. Since the City expects to implement the revenue adjustment starting in July 2020, the final cost of service recovered from rates does not require an adjustment. Therefore, Line 14 represents no additional revenues generated.

3.1 FUNCTIONAL COST COMPONENTS

The first step in conducting a cost-of-service analysis involves analyzing the cost of providing sanitation service by system function to properly allocate the costs to the various customer classes and subsequently design rates. As a basis for allocating costs of service among customer classes, we separate costs into the following four basic functional cost components: (1) "Base"; (2) "Strength"; (3) "Customer"; and (4) "Direct Assignment," described as follows:

- Base costs represent operating and capital costs of the system associated with collection. The collection costs vary directly with the quantity of sewage flow.
- Strength costs represent those operating and capital costs associated with treatment. The treatment costs are specifically related to strength parameters such as Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS).
- Customer costs are those expenditures that tend to vary in proportion to the number of customers connected to the system. These include billing, collecting and accounting, and maintenance and capital costs associated with meters and services.
- Directly assigned costs are costs specifically identified as those incurred to serve specific customers. The Sanitation Utility has no directly assigned categories.

3.2 ALLOCATION TO COST COMPONENTS

The next step of the cost-of-service process involves allocating each element of cost to functional cost components based on the parameter or parameters having the most significant influence on the magnitude of that element of cost. We allocate O&M expense items directly to appropriate cost components. We use a detailed allocation of related capital investment as a proxy for allocating capital and replacement costs. The separation of costs into functional components provides a means for distributing such costs to the various classes of customers based on their respective responsibilities for each type of service.

3.2.1 Functional Cost Allocations

The sanitation system consists of various facilities; each designed and operated to fulfill a given function. For the system to provide adequate service to its customers, it must be capable of meeting not only the annual volume requirements but also the strength loading demands placed on the system. Because not all customers and types of customers exert volume and strength loading demands similarly, the capacities of the various facilities must be designed to accommodate the demands of all classes of customers. Each facility within the system has an underlying volume demand, exerted by all customers for whom the base cost component applies. For those facilities designed solely to meet volume demand, 100% of the costs go to the volume cost component. For those facilities designed to meet a strength loading demands, the percentage of the costs all allocated to the different strength cost component based on their specific function. Similarly, the customer costs such as billing, collecting and accounting are assigned to customer. Table 3-2 provides the cost allocations used in the allocation of O&M and capital costs.

Table 3-2 Functional Cost Allocations

Line No.	Description	Common to All Customers			
		Volume	BOD	TSS	Customer
	O&M Allocations				
1	Volume	100.0%	0.0%	0.0%	0.0%
2	Customer	0.0%	0.0%	0.0%	100.0%
3	Avg O&M [1]	74.7%	10.3%	10.3%	4.8%
	Capital Allocations				
4	Collection & Interceptor Sewers	100.0%	0.0%	0.0%	0.0%
5	Lift and Pumping Stations	100.0%	0.0%	0.0%	0.0%
6	Grit Removal	100.0%	0.0%	0.0%	0.0%
7	Primary Settling Basin	80.0%	0.0%	20.0%	0.0%
8	Aeration Basins	70.0%	15.0%	15.0%	0.0%
9	Secondary Settling Basin	80.0%	20.0%	0.0%	0.0%
10	Disinfection	100.0%	0.0%	0.0%	0.0%
11	Sludge Handling	0.0%	50.0%	50.0%	0.0%
12	Laboratory	100.0%	0.0%	0.0%	0.0%
13	Outfall	100.0%	0.0%	0.0%	0.0%
14	FA - Avg Collection [2]	100.0%	0.0%	0.0%	0.0%
15	FA - Avg Treatment [3]	69.7%	15.1%	15.2%	0.0%
16	FA - Avg Net Plant [4]	86.8%	6.6%	6.6%	0.0%

Notes:

[1] Avg O&M represents the average of costs for all O&M elements.

[2] FA - Avg Collection represents the average of costs for all collection system elements.

[3] FA - Avg Treatment represents the average of costs for all treatment system elements.

[4] FA - Net Plant represents the average of costs for all plant system elements.

3.2.2 Allocation of Operating and Maintenance (O&M) Expenses

In the allocation of O&M expense for Test Year 2021, the costs are directly allocated to the cost components to the extent possible. The Sanitation Utility books operating costs by functional categories. Therefore, Black & Veatch used the factors noted in Section 3.2.1 to allocate the operating expenses to the cost components. The allocation of Administration and Transfers & Reimbursements cost elements are based on the average of all other O&M costs. Table 3-3 represents the allocation of O&M to the cost components. We subtract revenues from other sources as shown in Table 3-1, Lines 12 and we deduct any drawdown of the cash balance and normalize for partial rate adjustments as shown in Table 3-1, Line 15 to determine the net O&M costs. The final step is the reallocation of customer costs to the other functional cost components. The reallocation is based on volume costs in Line 13. The final net O&M costs are shown in Line 15.

3.2.3 Allocation of Capital Investments

In the allocation of capital investment for Test Year 2021, the existing fixed assets (which serve as a proxy for the current capital investments) are allocated directly to cost components to the extent possible. The allocation of costs into the cost components provides a basis for annual investment in sanitation system facilities. Table 3-4 shows the total allocation of existing system investment serving sanitation customers. The total net system investment of $68.75M shown on Line 15 represents the original

cost less accumulated depreciation as of June 30, 2018 of the sanitation system in service. Using the distribution of total net system investment across the functional cost components, we then apply the allocation to the planned capital costs as shown in Line 17. Similarly, to O&M allocation, we subtract revenues from other sources as shown in Table 3-1, Lines 12 and we deduct any drawdown of the cash balance and normalize for partial rate adjustments as shown in Table 3-1, Line 15 to determine the net capital costs. Similarly, to O&M allocation, we reallocation of customer costs to the other functional cost components based on Line 20 to get the final net capital costs are shown in Line 22.

Table 3-3 Allocation of O&M Expenditures

Line No.	Description	Total Cost	Common to All Customers			
			Volume	BOD	TSS	Customer
		($)	($)	($)	($)	($)
	Operation & Maintenance					
1	Administration	5,139,000	3,838,000	526,800	527,700	246,500
2	Customer Svcs & Billing	442,700	0	0	0	442,700
3	Collection System Maintenance	1,287,100	1,287,100	0	0	0
4	Plant Operations & Maintenance	0	0	0	0	0
5	Utilities	840,000	840,000	0	0	0
6	Chemicals	404,800	404,800	0	0	0
7	All Other	5,430,100	3,785,900	821,400	822,800	0
8	Environmental Compliance	824,800	575,000	124,800	125,000	0
9	Transfers & Reimbursements	1,881,000	1,404,800	192,800	193,200	90,200
10	Total O&M Expenses	$ 16,249,500	$ 12,135,600	$ 1,665,800	$ 1,668,700	$ 779,400
	Less Other Revenue					
11	Miscellaneous Revenues	496,600	370,900	50,900	51,000	23,800
12	Other Adjustments	4,261,700	3,182,800	436,900	437,600	204,400
13	Net Operating Expenses	$ 11,491,200	$ 8,581,900	$ 1,178,000	$ 1,180,100	$ 551,200
14	Reallocation of Customer		$ 551,200	$ 0	$ 0	$ (551,200)
15	Net Operating Expenses	$ 11,491,200	$ 9,133,100	$ 1,178,000	$ 1,180,100	$ 0

Table 3-4 Allocation of Capital Costs

Line No.	Description	Total Cost	Common to All Customers			
			Volume	BOD	TSS	Customer
		($)	($)	($)	($)	($)
	Plant Assets					
1	Collection & Interceptor Sanitations	37,740,200	37,740,200	0	0	0
2	Lift and Pumping Stations	282,600	282,600	0	0	0
3	Structures and Improvements	9,080,200	6,330,800	1,373,500	1,375,900	0
4	Grit Removal	983,400	983,400	0	0	0
5	Primary Settling Basin	26,400	21,100	0	5,300	0
6	Aeration Basins	16,580,400	11,606,200	2,487,100	2,487,100	0
7	Secondary Settling Basin	0	0	0	0	0
8	Disinfection	12,300	12,300	0	0	0
9	Sludge Handling	1,110,700	(100)	555,400	555,400	0
10	Laboratory	9,200	9,200	0	0	0
11	Other Treatment Equipment	79,300	55,300	12,000	12,000	0
12	Outfall	1,391,700	1,391,700	0	0	0
13	Vehicles	244,400	212,200	16,100	16,100	0
14	General Plant	1,212,200	1,052,500	79,800	79,900	0
15	Total Plant Assets	$ 68,753,000	$ 59,697,400	$ 4,523,900	$ 4,531,700	$ 0
	Note: Using the distribution for Plant Assets					
	Capital Projects					
16	Capital Projects	12,135,600	10,537,195	798,514	799,891	0
17	Total Capital Projects	$ 12,135,600	$ 10,537,195	$ 798,514	$ 799,891	$ 0
	Less Other Revenue					
18	Miscellaneous Revenues	48,200	41,800	3,200	3,200	0
19	Other Adjustments	0	0	0	0	0
20	Net Operating Expenses	$ 12,087,400	$ 10,495,395	$ 795,314	$ 796,691	$ 0
21	Reallocation of Customer		$ 0	$ 0	$ 0	$ 0
22	Net Plant Assets	$ 12,087,400	$ 10,495,395	$ 795,314	$ 796,691	$ 0

3.3 MASS BALANCE

Before the units of service can be determined, a mass balance analysis is performed to help develop units for customer classes that traditionally aren't known or measured. The mass balance accounts for the influent flows and strengths going into the treatment plant, the customer classes producing those flow and strengths characteristics (BOD and TSS), and the inflow and infiltration (I&I) going into the collections system such as rain runoff. Through an accounting of these three components, the mass balance estimates the flows and strengths that each customer class is responsible for contributing into the sanitation system.

Table 3-5 Mass Balance

Line No.	Description	Customer Data		
		Volume	BOD	TSS
		(mgd)	(mg/L)	(mg/L)
	Plant Assets			
1	Total Flow	7.70	284	312
2	I&I (5% of Total Flow)	0.39	50	50
3	Sutotal Total Flow	7.32	302	331
	Non-Residential Flow			
4	SCD (Low Strength)	0.37	130	80
5	SDL (Low Strength)	0.14	130	80
6	SCR (Medium Strength)	0.20	565	340
7	SRL (Medium Strength)	0.08	565	340
8	SRR/SRD (High Strength)	0	1,000	600
9	RRL/RDL (High Strength)	0.08	1,000	600
10	High Schools (15 gpd/student)	0.04	130	100
11	Other Schools (10 gpd/student)	0.06	130	100
12	Pump Truck	0.00	5,400	12,000
13	Sutotal Non-Residential Flow	1.16	455	300
14	Net Residential Flow	6.15	266	331
15	Revised EDU Definition	155 gpd	266 mg/L	331 mg/L

In 2015, the EDU was defined as of flow of 175 gpd and strengths of 285 mg/L for BOD and 353 mg/L for TSS for the single-family residential customer class. Based on estimates by the City, the current single-family household size is approximately 3.16 persons within the City. The per capita usage depends on different factors such climate and economy, but it is estimated that average is between 50-60 gallons per capita per day (gpcd) in Simi Valley. This figure aligns with current usage in comparable areas. The strength factors for non-residential used for the Study are taken from characteristic sewage generation factors published by the State of California and City of Los Angeles. Residential strengths are determined to be 266 mg/L for BOD and 331 mg/L for TSS.

Based on the information calculated in the mass balance and the plant allocation shown in Table 3-7, Line 6, the EDU definition can be revised. The new formula parallels the City's prior format.

$$1\ EDU = \frac{Daily\ Flow}{155} x (0.83 + 0.08x\frac{BOD}{266} + 0.08x\frac{TSS}{331})$$

Where:
EDU = Equivalent Dwelling Unit
Daily Flow = Sewer Flow in gallons per day
BOD = Biological Oxygen Demand in mg/L
TSS = Total Suspended Solids in mg/L

3.4 UNITS OF SERVICE

Following the allocation of costs, the total cost responsibility for each customer class is developed using unit costs of service for each cost function and subsequently assigning those costs to the customer classes based on the respective service requirements of each. To properly recognize the cost of service, each customer class receives its share of base, strength and customer costs. The number of units of service required by each customer class provides a means for the proportionate distribution of costs previously allocated to respective cost categories.

- Base costs vary with the volume of billable sewage flow produced and distributed to customer classes on that basis. Black & Veatch derived billable sewage flow information from water consumption records in the City's CIS for non-residential customers. Billable sewage flow for residential customers was derived from performing a mass balance on the entire system.
- Strength costs are those associated with pollutant characteristics, and the Study allocated these costs to customer classes based on loadings. The pollutant loadings for each customer class come from recommendations of the State Water Resources Control Board, Revenue Program Guidelines, Appendix G and the City of Los Angeles. The City's non-residential class consists of 3 distinct types of businesses: Office, Commercial and Restaurant/Café. Since sampling is not performed, the City has relied on industry standards used by the State of California.
- Customer costs are those mainly associated with customer billing, collecting and accounting. The number of bills for each customer class serves as the basis for distributing customer billing requirements.

Table 3-6 summarizes the estimated Test Year units of service for the various customer classes.

3.5 COST OF SERVICE ALLOCATIONS

To determine the cost of service for each customer class, we apply the unit costs of service to each customer classes' respective service requirements. The total unit costs of service applied to the respective requirements for each customer class results in the total cost of service for each customer class.

3.5.1 Units Costs of Service

For Test Year 2021, the unit cost of service for each functional cost component is simply the total cost divided by the applicable units of service as shown in Table 3-7. Line 1 represents the total O&M costs that rates need to recover as demonstrated in Table 3-3, Line 15. Line 2 represents the total capital costs that rates need to recover as demonstrated in Table 3-4, Line 22. Line 4 represents the unit costs for the entire sanitation system regardless of customer classes as derived in Table 3-6. Thereafter the unit costs for each functional cost component of the entire sanitation system is derived as shown on Line 5.

3.5.2 Distribution of Costs of Service to Customer Classes

Applying the unit costs to the units for each customer class produces the customer class costs. This process is illustrated in Table 3-8, in which we apply the unit costs to the customer class units of service. The costs attributable to each customer class are based on the functional cost components described in Section 3.1. Each customer class places a burden on the system in different ways, and thus the allocation of the units is representative of this burden.

An example of the application of unit costs is shown below for illustrative purposes.

	Vol Component	
Unit Cost (Table 3-7, Line 5)	$ 5.22	per HCF
Multi Family Consumption (Table 3-8, Line 4)	453,904	HCF
Total Allocated Cost	$ 2,371,400	

Please note that the numbers within the tables are rounded, yet the calculations are done based on non-rounded values; therefore, results might vary.

Table 3-6 Units of Service

Line No.	Description	Units	Contributed Units	Total Volume	BOD Loadings		TSS Loadings		Bills
					Factor	Loading	Factor	Loading	
	Units of Measure		(varies)	(HCF)	(mg/L)	(lbs)	(mg/L)	(lbs)	(bills)
	Residential								
1	Single Family	units	32,956	2,632,228	266	4,175,700	331	5,175,200	395,472
2	Multi Family	units	7,996	453,904	266	711,300	331	881,100	95,952
3	Senior Housing	units	1,279	56,844	266	88,000	331	108,900	15,348
4	Mobile Homes	units	607	34,457	266	54,000	331	66,800	7,284
5	Non-Residential								
6	Office with LM (SCD)	accounts	442	185,469	130	147,200	80	90,800	5,304
7	Office without LM (SDL)	accounts	140	70,299	130	55,800	80	34,400	1,680
8	Commercial with LM (SCR)	accounts	200	99,265	565	342,100	340	205,900	2,400
9	Commercial without LM (SRL)	accounts	16	39,850	565	137,900	340	83,000	192
10	Restaurant/Cafe with LM (SRR/SRD)	accounts	0	96,440	1,000	0	600	0	0
11	Restaurant/Cafe without LM (RRL/RDL)	accounts	42	0	1,000	246,100	600	147,700	504
12	Non-Residential (Other)								
13	High Schools	students	4,774	40,262	130	14,000	100	10,800	48
14	Other Schools	students	11,759	0	130	22,900	100	17,700	408
15	Septage Hauler	trucks	1,568	17,545	5,400	52,800	12,000	117,400	228
16	Total			3,726,563		6,047,800		6,939,700	524,820

Table 3-7 Units Cost of Service

Line No.	Description	Total Cost	Common to All Customers		
			Volume	BOD	TSS
1	Net Operating Expense	11,491,200	9,133,100	1,178,000	1,180,100
2	Capital Costs	12,087,400	10,495,395	795,314	796,691
3	Total Cost of Service	$ 23,578,600	$ 19,628,495	$ 1,973,314	$ 1,976,791
4	Units of Service		3,757,102 HCF	6,637,100 lbs	7,293,400 lbs
5	Cost per Unit		$ 5.22 per HCF	$ 0.30 per lbs	$ 0.27 per lbs
6	Plant Allocations		83%	8%	8%

Table 3-8 Distribution of Costs to Customer Classes

Line No.	Description	Total Cost	Common to All Customers		
			Volume	BOD	TSS
1	Cost per Unit		$ 5.22 per HCF	$ 0.30 per lbs	$ 0.27 per lbs
	Single Family				
2	Units		2,632,228	4,175,700	5,175,200
3	Allocation of costs of service	16,396,300	13,752,095	1,241,314	1,402,891
	Multi-Family				
4	Units		453,904	711,300	881,100
5	Allocation of costs of service	2,821,700	2,371,400	211,500	238,800
	Senior Housing				
6	Units		56,844	88,000	108,900
7	Allocation of costs of service	352,700	297,000	26,200	29,500
	Mobile Homes				
8	Units		34,457	54,000	66,800
9	Allocation of costs of service	214,200	180,000	16,100	18,100
	Office with LM (SCD)				
10	Units		185,469	147,200	90,800
11	Allocation of costs of service	1,037,400	969,000	43,800	24,600
	Office without LM (SDL)				
12	Units		70,299	55,800	34,400
13	Allocation of costs of service	393,200	367,300	16,600	9,300
	Commercial with LM (SCR)				
14	Units		99,265	342,100	205,900
15	Allocation of costs of service	676,100	518,600	101,700	55,800

Line No.	Description	Total Cost	Common to All Customers		
			Volume	BOD	TSS
1	Cost per Unit		$ 5.22 per HCF	$ 0.30 per lbs	$ 0.27 per lbs
	Commercial without LM (SRL)				
16	Units		39,850	137,900	83,000
17	Allocation of costs of service	271,700	208,200	41,000	22,500
	Restaurant/Cafe with LM (SRR/SRD)				
18	Units		0	0	0
19	Allocation of costs of service	0	0	0	0
	Restaurant/Cafe without LM (RRL/RDL)				
20	Units		40,262	246,100	147,700
21	Allocation of costs of service	323,500	210,300	73,200	40,000
	High Schools				
22	Units		17,545	14,000	10,800
23	Allocation of costs of service	98,800	91,700	4,200	2,900
	Other Schools				
24	Units		28,889	22,900	17,700
25	Allocation of costs of service	162,500	150,900	6,800	4,800
	Septage Hauler				
26	Units		1,568	52,800	117,400
27	Allocation of costs of service	55,700	8,200	15,700	31,800
28	TOTAL COSTS OF SERVICE	$ 23,578,600	$ 19,628,495	$ 1,973,314	$ 1,976,791

4 Rate Design

The initial consideration in the derivation of rate schedules for sanitation service is the establishment of equitable charges to the customers commensurate with the cost of providing that service. While the cost of service allocations to customer classes should not be construed as literal or exact determinations, they offer a guide to the necessity for, and the extent of, rate adjustments. Practical considerations sometimes modify rate adjustments by considering additional factors such as the extent of bill impacts, and local policies and practices.

4.1 EXISTING RATES

The Sanitation Utility's existing rates consist of a fixed component in the form of monthly service charge and a variable component in the form of consumption charge. The monthly service charge is a flat fee based on EDUs for residential customers. The monthly service charge also serves as minimum charge for non-residential customers. Non-residential customers also have a consumption charge based on units of water consumption (1 HCF = 748 gallons) multiplied by a return factor. The City has separate charges for other non-residential customers consisting of by students or truck loads. Table 2-3 presented earlier in this report summarizes the existing sanitation rates.

4.2 PROPOSED RATES

The costs of service analysis described in preceding sections of this report provide a basis for the design of sanitation rates. Table 4-1 shows the forecasted proposed five-year monthly service charge rate schedule.

4.2.1 Monthly Service Charge

The monthly service charge is designed to recover residential costs associated with billable sewage flow, strength loadings, and billing, collecting and accounting, and capital costs. The charge is a flat monthly fee based on EDUs. An EDU is defined in Section 5.1

The monthly service charge also serves as the minimum monthly service charge for non-residential customers. The minimum service charge will recover a portion of non-residential costs associated with volume, strength, and meter reading, billing, collecting and accounting, and capital costs. The minimum monthly service charge incorporates an allowance of sewage flow of 7 HCF.

4.2.2 Consumption Charge

The consumption charges are designed to recover the remainder of the cost component costs not recovered through the monthly service charge for non-residential customers.

4.2.3 Other Charges

Other Non-Residential such as schools will continue to be charges based on number of students (average daily attendance) while septic haulers will be charged on truck loads (750 gals per load).

Table 4-1 Proposed Five-Year Sanitation Rates

Customer Class	Fiscal Year Ending June 30,				
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Monthly Residential ($/month)					
Single Family	41.24	44.48	47.97	51.76	55.85
Multi Family	29.25	31.55	34.03	36.72	39.62
Senior Housing	22.86	24.65	26.59	28.69	30.96
Mobile Homes	29.25	31.55	34.03	36.72	39.62
Monthly Non-Residential ($/month) - LM stands for Landscape Meter					
Office with LM (SCD)	39.89	43.02	46.40	50.07	54.03
Office without LM (SDL)	31.91	34.41	37.11	40.04	43.20
Commercial with LM (SCR)	48.49	52.30	56.41	60.87	65.68
Commercial without LM (SRL)	38.79	41.84	45.12	48.68	52.53
Restaurant/Cafe with LM (SRR/SRD)	57.11	61.59	66.42	71.67	77.33
Restaurant/Cafe without LM (RRL/RDL)	45.69	49.28	53.15	57.35	61.88
Non-Residential Usage Rates ($/HCF of water usage)					
Office with LM (SCD)	4.91	5.30	5.72	6.17	6.66
Office without LM (SDL)	3.93	4.24	4.57	4.93	5.32
Commercial with LM (SCR)	6.38	6.88	7.42	8.01	8.64
Commercial without LM (SRL)	5.11	5.51	5.94	6.41	6.92
Restaurant/Cafe with LM (SRR/SRD)	7.85	8.47	9.13	9.85	10.63
Restaurant/Cafe without LM (RRL/RDL)	6.28	6.77	7.30	7.88	8.50
Non-Residential Rates ($/Unit)					
High Schools ($/student)	1.72	1.86	2.01	2.17	2.34
Other Schools ($/student)	1.15	1.24	1.34	1.45	1.56
Septage Hauler ($/truck)	35.34	38.11	41.10	44.35	47.85

4.2.4 Lift Charges

The City owns and maintains two sanitation lift stations which aid in the collection of sewage in the Wood Ranch and Big Sky developments. The existing fee was developed to help the City with ongoing maintenance and replacement of the lift stations. Therefore, a fee was developed for those dwelling units benefiting from the lift stations.

The five assets that comprise the infrastructure included in the fee are: two lift stations completed in 1986 and 2006 respectively, pumps, control equipment, and a generator. Replacement cost of the assets was calculated using the original cost of the asset and Engineering News-Record's (ENR) Construction Cost Index (CCI). An inflation rate is derived from the index value in the acquisition year and the current year. To determine the fee per equivalent dwelling unit, the replacement cost is divided by the useful life of the asset and the number of dwelling units benefiting from the lift stations. There are 473 EDU with these service areas.

Table 4-1 lists the lift station assets and corresponding replacement costs. Table 4-3 shows in detail the annual fee calculation for FY 2018. Since the City already has charges in place for FY 2019 and FY 2020, the fee is escalated at ENR's 10-year Construction Cost Index average of 2.9% per year to arrive at the FY 2021 rate of $100.43 per EDU.

Table 4-2 Replacement Cost Calculation of Lift Station Assets

Asset Type	Useful Life	Completed Year	Original Cost	ENR CCI Inflation	Replacement Costs
	(Years)	(Year)	($)	(%)	($)
Big Sky Lift Station	40	2006	425,356	143%	607,056
Pumps	15	2015	40,000	110%	44,094
Wood Ranch Lift Station	40	1986	70,000	258%	180,289
Generator & Electrical	40	2011	368,000	122%	448,822
Pumps & Controls	15	2011	120,000	122%	146,355
Total			$ 1,023,356		$ 1,426,615

Table 4-3 Lift Station Fee

Asset Type	Replacement Costs	Useful Life	EDUs	2018 Fee/Year	2021 Fee/Year
	($)	(Years)		($)	($)
Big Sky Lift Station	607,056	40	473	32.09	34.96
Pumps	44,094	15	473	6.21	6.77
Wood Ranch Lift Station	180,289	40	473	9.53	10.38
Generator & Electrical	448,822	40	473	23.72	25.85
Pumps & Controls	146,355	15	473	20.63	22.48
Total	$ 1,426,615			$ 92.18	$ 100.43

Based on this methodology, Table 4-4 shows the current and proposed fee for the two communities. Note that fees are assessed on a per EDU basis. Therefore, the duplex residences within Wood Ranch pay a fee relative to the MFR class density of 2.20 persons per household, versus SFR density of 2.99 persons per household.

Table 4-4 Proposed Lift Charges

Community & Dwelling Type	Fiscal Year Ending June 30,				
	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
	($)				
Big Sky					
Single-Family Residential	$100.43	$108.31	$116.81	$126.04	$136.00
Wood Ranch					
Single-Family Residential	$100.43	$108.31	$116.81	$126.04	$136.00
Duplex	$73.90	$79.70	$85.96	$92.75	$100.08

4.3 TYPICAL MONTHLY COSTS UNDER PROPOSED CHARGES

Table 4-4 presents a comparison of typical monthly costs under existing rates and the proposed schedule of sewer user rates derived in this study for both residential and non-residential customers.

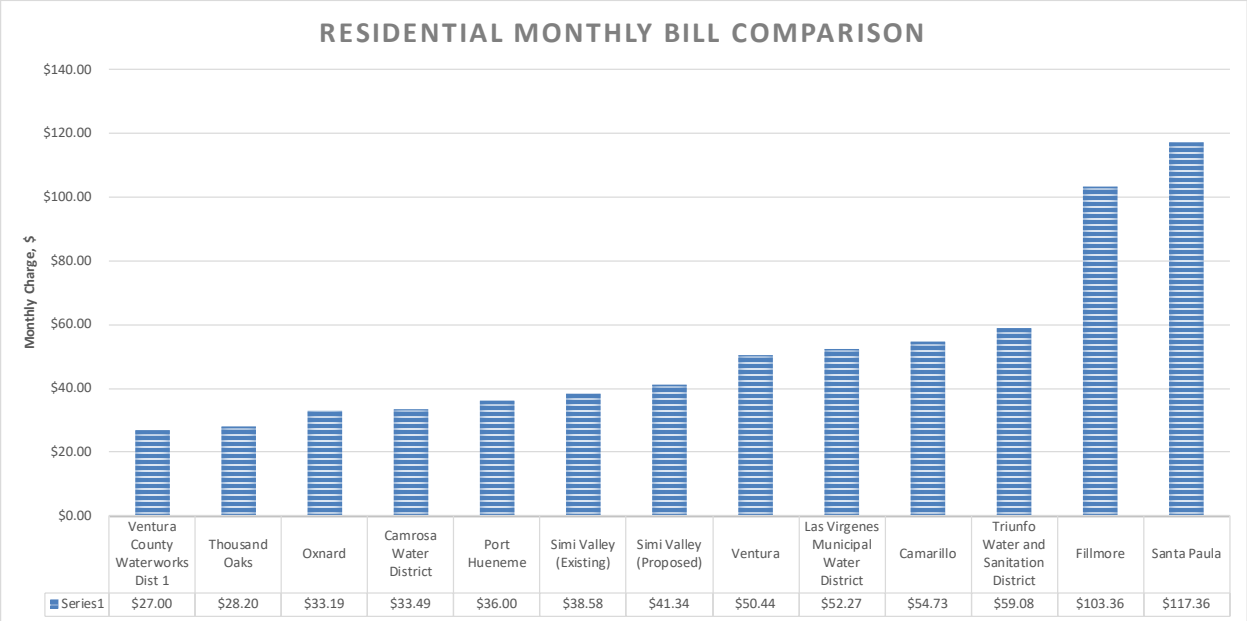
Table 4-5 Typical Monthly Bill

Customer Class	Typical Monthly Usage (HCF)	FY 2020 Existing Rates ($)	FY 2021 Proposed Rates ($)
Residential		$38.58	$41.24
Non-Residential	0	$26.85	$31.91
	10	$65.35	$71.16
	20	$103.85	$110.42
	30	$142.35	$149.67
	40	$180.85	$188.92
	50	$219.35	$228.17
	100	$411.85	$424.43
	250	$989.35	$1,013.21

4.4 NEIGHBORING UTILITIES

Presented in Figure 4-1 is the proposed rates compared to rates of neighboring jurisdictions, for a single-family residential customer. Based on the comparison, the City is currently a middle cost sanitation provider in the area. With the proposed rate increases, the City remains as a middle provider of the surveyed communities. All surveyed community rates are best estimates as of July 2019. For customers that use volumetric charges, it is assumed that 10 HCF are part of the bill.

Figure 4-1 Comparison to Neighboring Utilities



Appendix A – Capital Improvement Program

Line No.	Description	Fiscal Year Ending June 30,				
		FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
	Sewerline					
1	Royal (Pride to Erringer)	0	0	0	0	0
2	First, Fifth, Royal	0	0	0	0	0
3	Royal Ave (Crosby-Fair)	0	0	0	0	0
4	Stratheam Place	0	0	0	0	0
5	LA Ave (Erringer-Crater)	0	0	0	0	0
6	Arroyo Lift Station	0	0	0	0	0
7	Royal (Pride-Erringer)	0	0	0	0	0
8	10-12" Sewerline	499,550	0	0	0	0
9	Trunkline Inspection Program	154,500	159,135	163,909	168,826	173,891
10	Supplemental Inspection Program	489,250	503,928	519,045	534,617	550,655
11	Sebring-Santa Susana	1,524,400	0	0	0	0
12	Sinaloa-Royal-Long Canyon	999,100	1,029,073	0	0	0
13	Easy-Arroyo Simi	2,066,901	2,128,908	2,192,775	0	0
14	Sinaloa Lake-West	0	0	1,278,491	0	0
15	Royal-Arroyo Simi	0	0	0	1,069,233	0
16	Arelia-Arroyo Simi	0	0	0	1,541,947	0
17	Civic Center-Alamo St	0	0	0	619,030	0
18	E Los Angeles Ave Trunk	0	0	0	2,341,058	2,411,290
19	Mountain Valley/Justin El	0	0	0	0	1,391,129
20	Manhole Asset Lifecycle Model Forecast	0	0	0	0	177,369
21	Tapo Canyon-Rebecca	0	0	0	0	0
22	Sinaloa Lake-East	0	0	0	0	0
23	Madera-Woodranch	0	0	0	0	0
24	Stearns	0	0	0	0	0
25	East Simi-Indian Hills Ridge	0	0	0	0	0
26	Wright Ranch-Cochran	0	0	0	0	0
27	Pipeline Asset Lifecycle Model Forecast	0	0	0	0	0
28	Manhole Asset Lifecycle Model Forecast	0	0	0	0	0
29	Total	$ 5,733,701	$ 3,821,044	$ 4,154,220	$ 6,274,712	$ 4,704,334

Line No.	Description	Fiscal Year Ending June 30, FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		($)	($)	($)	($)	($)
	WQCP					
30	FEB & Primary Sludge Pumps	0	0	0	0	0
31	Plant Water System Pump Replacement	0	0	0	0	0
32	Public Works Warehouse	0	0	0	0	0
33	Concrete Structural Study/Repairs	0	0	0	0	0
34	WQCP Road Paving	0	0	0	0	0
35	Laboratory Fume Hoods	103,000	0	0	0	0
36	Building Roof Rehabs	0	0	614,659	633,099	0
37	Electrical Conveyance Replacement	0	0	1,092,727	1,125,509	0
38	Tertiary Filter Rehabilitation	0	1,154,259	1,188,887	1,224,554	0
39	Plant-wide Safety Improvements	0	0	232,095	0	0
40	Digester Internal Condition Inspection	0	0	218,545	0	0
41	East BNR Repairs	0	0	413,925	426,343	0
42	Grit Pumping Improvements	0	0	215,486	221,950	0
43	Primary Clarifier and PS Rehabilitation	0	0	1,082,018	1,114,479	1,147,913
44	WAS Pump Station Overhaul	0	0	0	278,001	0
45	DAFT foundation cracking investigation	0	0	0	56,275	0
46	MCC Replacements	0	0	0	510,756	526,079
47	Secondary Effluent Diversion Structure	0	0	0	107,261	110,479
48	FEB Pump Station and Basin Upgrades	0	0	0	385,599	397,167
49	Thickening Study	0	0	0	0	231,855
50	Sludge storage pumping modifications	0	0	0	0	115,927
51	Gravel Sump (Stormwater Pump Station)	0	0	0	0	87,409
52	Chlorine Contact Tanks Rehabilitation	0	0	0	0	1,194,632
53	Electrical Coordination Study	0	0	0	0	0
54	Sodium Bisulfite Station Improvements	0	0	0	0	0
55	Sodium Hypochlorite Station Improvements	0	0	0	0	0
56	Asset Lifecycle Model Forecast	0	0	0	0	0
57	Nitrogen and Phosphorous Regulatory Improvements	0	0	0	0	0
58	DAFT Process Overhaul	0	0	0	0	0
59	Total	$ 103,000	$ 1,154,259	$ 5,058,343	$ 6,083,825	$ 3,811,461
	Organization					
60	CMMS Improvements Program	257,500	265,225	0	0	0
61	Performance Management Program	0	265,225	0	0	0
62	Inventory Management Program	0	0	327,818	0	0
63	Project Management System	0	0	0	196,964	202,873
64	Financial Plan Update	0	0	0	0	0
65	Master Plan Udate	0	0	0	0	0
66	Total	$ 257,500	$ 530,450	$ 327,818	$ 196,964	$ 202,873
	Organization					
67	Rockwell PlantPAX Migration	0	1,113,945	1,147,363	0	0
68	Alarm Management Program	0	53,045	54,636	56,275	57,964
69	Lift Station SCADA Integration	0	0	0	0	0
70	BNR PLC and SCADA Upgrades	0	0	0	0	0
71	SCADA System Upgrade	0	0	0	0	0
72	Total	$ 0	$ 1,166,990	$ 1,202,000	$ 56,275	$ 57,964

Disclaimer

Black & Veatch has prepared this report for the City, and it is based on information not within the control of Black & Veatch. The City has not requested Black & Veatch to make an independent analysis, to verify the information provided to us, or to render an independent judgment of the validity of the information provided by others. Because of this, Black & Veatch cannot, and does not, guarantee the accuracy thereof to the extent that such information, data, or opinions were based on information provided by others.

In conducting these analyses and in forming an opinion of the projection of future financial operations summarized in this report, Black & Veatch made certain assumptions on the conditions, events, and circumstances that may occur in the future. The methodology utilized in performing the analyses follows generally accepted practices for such projections. Such assumptions and methodologies are reasonable and appropriate for the purpose for which they are used. While we believe the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that occur. Such factors may include the utility's ability to execute the capital improvement program as scheduled and within budget, regional climate and weather conditions affecting the demand for water and thus discharge of sewage flow and adverse legislative, regulatory, or legal decisions (including environmental laws and regulations) affecting the utilities' ability to manage the system and meet water quality requirements.