

# CITY OF VICTORVILLE

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Final Report

## Sewer Rate Study

March 2018

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# Section 1. PURPOSE AND OVERVIEW OF THE STUDY

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## A. Purpose

The City of Victorville (City) owns and operates a sewer collection system that collects wastewater from approximately 27,000 connections and transports it either to the City’s Industrial Wastewater Treatment Plant (IWWTP) or the Victor Valley Wastewater Reclamation Authority (VWVRA) for treatment. The City retained NBS to help update the current sewer rates. The sewer rate analysis was undertaken with a few specific objectives, including:

- Ensuring sewer rates will be able to cover all operating and maintenance costs, including treatment costs.
- Funding mandated Capital Improvement Projects.
- Developing a plan to maintain appropriate reserve funds.
- Complying with certain legal requirements (such as California Constitution article XIII D, section 6, which is commonly referred to as Proposition 218 [Prop 218]).

The rates resulting from this study were developed in a manner that is consistent with industry standard cost of service principles. In addition to documenting the rate study methodology, this report is provided with the intent of assisting the City to maintain transparent communications with its residents and businesses.

In developing new sewer rates, NBS worked cooperatively with City staff and the City Council (Council), in selecting appropriate rate alternatives. Based on input from City staff and the Council, the proposed rates are summarized in this report.

This report presents an overview of the methodologies, assumptions, and data used, along with the financial plans and proposed rates developed in this study<sup>1</sup>.

## B. Overview of the Study

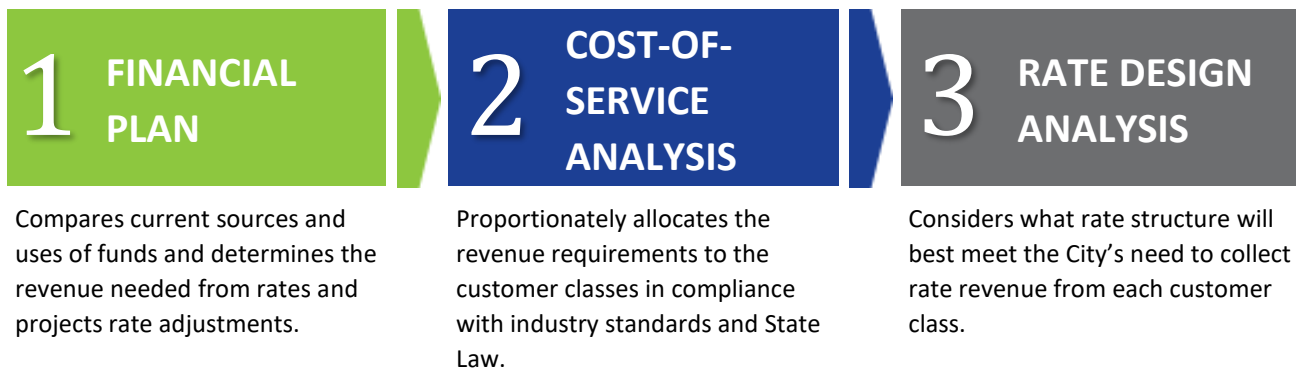
Comprehensive rate studies such as this one typically include the following three components, as outlined in **Figure 1**:

1. Preparation of a **Financial Plan**, which identifies the net revenue requirements for the utility.
2. **Cost of Service Analysis**, which determines the cost of providing service to each customer class.
3. **Rate Design Analysis**, which evaluates different rate design alternatives for each customer class.

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<sup>1</sup> The complete financial plan is set forth in the Appendix.

**Figure 1. Primary Components of a Rate Study**



These steps are intended to follow industry standards and reflect the fundamental principles of cost-of-service rate making embodied in the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges<sup>2</sup>, also referred to as the M1 Manual. They also address requirements under Proposition 218 that rates not exceed the cost of providing the service, and that they be proportionate to the cost of providing service for all customers. In terms of the chronology of the study, these three steps represent the order they were performed in this Study. Detailed tables and figures documenting the development of the proposed rates are provided in the Appendices.

### **FINANCIAL PLAN**

As a part of this rate study, NBS projected revenues and expenditures on a cash flow basis for the next twenty years. The amount of rate revenue required, that will allow reserves to be maintained at the recommended levels, is known as the *net revenue requirement*. As current rate revenue falls short of the net revenue requirement, rate adjustments -- or more accurately, adjustments in the total revenue collected from rates -- are recommended.

### **COST OF SERVICE ANALYSIS**

The cost of service analysis process includes the following steps:

1. Allocating budget items to approximate cost components (including for those related to flow, strength of effluent and customer connections and bills)
2. Gathering customers into classes based upon similar characteristics.
3. Distributing costs to customer classes based upon the amount of anticipated flow and strength of wastewater contributed by each customer class.

### **RATE DESIGN ANALYSIS**

Rate Design is typically the stage in the study where NBS, staff and the Council must work closely together, to develop rate alternatives that will meet the City's objectives. Several criteria are typically considered in setting rates and developing sound rate structures. The fundamentals of this process have been documented in a number of rate-setting manuals, such as the AWWA Manual M1. The foundation for

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<sup>2</sup> Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.

evaluating rate structures is generally credited to James C. Bonbright in the *Principles of Public Utility Rates*<sup>3</sup>, which outlines pricing policies, theories, and economic concepts along with various rate designs. The following is a simplified list of the attributes of a sound structure:

- Rates should be easy to understand from the customer’s perspective.
- Rates should be easy to administer from the utility’s perspective.
- Rates should promote the efficient allocation of the resource.
- Rates should be equitable and non-discriminating (that is, cost based).
- There should be continuity in the ratemaking philosophy over time.
- Rates should address other utility policies (for example, encouraging conservation & economic development).
- Rates should provide month-to-month and year-to-year revenue stability.

A number of criteria were considered when developing sewer rates for each customer class. The details of the study are discussed in the following sections.

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<sup>3</sup> James C. Bonbright; Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utility Rates*, (Arlington, VA: Public Utilities Report, Inc., Second Edition, 1988), p. 383-384.

## Section 2. SEWER RATES

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### A. Key Sewer Rate Study Issues

The City's sewer rate analysis was undertaken with a few specific objectives, including:

- Avoiding operational deficits and depletion of reserves beyond the target minimum reserve level.
- Generating additional revenue needed to meet projected funding requirements.

NBS developed various funding alternatives as requested by City staff and the Council over the course of this Study. The rate alternative that will be implemented, is ultimately the decision of the Council. The rates developed in this study are based on the net revenue requirements, number of customer accounts, and other City-provided information.

### B. Financial Plan

It is important for municipal utilities to maintain reasonable reserves in order to handle emergencies, fund working capital, maintain a good credit rating, and generally follow sound financial management practices. Rate increases are governed by the need to meet operating and capital costs, maintain adequate debt coverage, and build reasonable reserve funds. The current state of the City, with regard to these objectives, is as follows:

- **Meeting Net Revenue Requirements:** For FY 2018/19 through FY 2022/23, the projected operating and maintenance costs escalate from \$18.5 million to \$19.3 million. General cost inflation and potential regulatory compliance costs are the primary reasons for this increase. Expected inflation of treatment expenses at VVWRA are not included as part of this analysis<sup>4</sup>.
- **Building and Maintaining Reserve Funds:** Reserve funds provide a basis for a utility to cope with fiscal emergencies such as revenue shortfalls, asset failure, and natural disasters, among other events. Reserve policies provide guidelines for sound financial management, with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. The City plans to have approximately \$6.7 million in reserves by the end of FY 2022/23. The reserve funds for the Utility are considered unrestricted reserves and consist of the following:
  - **The Operating Reserve** should equal approximately 90 days of operating expenses (approximately \$4.8 million for FY 2022/23). An Operating Reserve is intended to promote financial viability in the event of any short-term fluctuation in revenues and/or expenditures. Fluctuations in revenue can be caused by the inflow and outflow of cash during billing cycles, and - particularly in periods of economic distress - changes or trends in age of receivables.

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<sup>4</sup> As will be discussed later, any future increases in VVWRA expenses will be directly passed through to ratepayers in future sewer rate adjustments.

- **The Capital Rehabilitation and Replacement Reserve** should at a minimum, equal 3 percent of net capital assets (approximately \$1.7 million by the end of FY 2022/23), which is set aside to address long-term capital system replacement and rehabilitation needs.
- **Funding Capital Improvement Projects:** The City must also be able to fund necessary capital improvements in order to maintain current service levels. City staff has identified roughly \$23 million in needed capital expenditures for FY 2018/19 through 2022/23. With the recommended rate increases, these expenditures can be accomplished while maintaining reserves to the minimum recommended target.
- **Inflation and Growth Projections** – Assumptions regarding cost inflation were made in order to project future revenues and expenses for the study period. The following inflation factors were used in the analysis:
  - No Customer growth is expected.
  - General cost inflation is 2.7 percent annually.
  - Transportation cost is 4 percent annually.
  - Utilities cost inflation is 5 percent annually.
  - Contract cost inflation is 3% annually.
- **Impact of Annual Rate Adjustment Date:** The financial plan modelling assumes that rate adjustments occur on July 1st of each year starting on July 1, 2018. Rate revenue increases as follows will be needed in order to fully fund all operating expenses, planned capital projects and maintain reserves at the recommended targets by FY 2022/23.

**Figure 2. Rate Revenue Targets**

Fiscal Year	Rate Revenue Target
FY 2017/18	\$15,969,914
FY 2018/19	\$18,365,401
FY 2019/20	\$21,120,211
FY 2020/21	\$22,704,227
FY 2021/22	\$24,407,044
FY 2022/23	\$26,237,572

**Figure 3** summarizes the sources and uses of funds, net revenue requirements, and the recommended annual percent increases in total rate revenue recommended for the next 5 years for the City.

**Figure 3. Summary of Sewer Revenue Requirements**

Summary of Sources and Uses of Funds and Net Revenue Requirements	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
<b>Sources of Sewer Funds</b>					
Rate Revenue Under Prevailing Rates	\$15,969,914	\$15,969,914	\$15,969,914	\$15,969,914	\$15,969,914
Additional Revenue from Rate Increases (1)	2,395,487	5,150,297	6,734,313	8,437,130	10,267,658
Sewer Use Fee - Capital and Connection Fees	1,042,632	1,054,632	1,066,632	1,078,632	1,090,632
Interest Earnings	62,281	51,857	47,060	33,522	49,284
<b>Total Sources of Funds</b>	<b>\$19,470,315</b>	<b>\$22,226,700</b>	<b>\$23,817,919</b>	<b>\$25,519,198</b>	<b>\$27,377,489</b>
<b>Uses of Sewer Funds</b>					
IWWTP Expenses	\$ 4,082,776	\$ 4,218,277	\$ 4,358,607	\$ 4,503,949	\$ 4,654,495
Sewer Expenses	2,981,735	3,064,101	3,148,794	3,235,890	3,748,014
GIS Expenses	91,538	94,009	96,547	99,153	101,830
DIV Expenses	109,762	112,725	115,769	118,894	122,104
Engineering Expenses	1,056,969	1,085,866	1,115,562	1,146,079	1,177,437
VVWRA Treatment	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400
Non-Regular Operating Expenses	1,500,000	95,000	768,000	783,360	799,027
Debt Service	1,607,761	1,740,191	1,897,215	1,882,549	1,867,583
Rate-Funded Capital Expenses	-	4,505,268	5,628,267	4,318,735	2,851,947
<b>Total Use of Funds</b>	<b>\$20,143,941</b>	<b>\$23,628,837</b>	<b>\$25,842,161</b>	<b>\$24,802,009</b>	<b>\$24,035,837</b>
<b>Surplus (Deficiency) before Rate Increase</b>	<b>\$ (3,069,114)</b>	<b>\$ (6,552,434)</b>	<b>\$ (8,758,555)</b>	<b>\$ (7,719,942)</b>	<b>\$ (6,926,007)</b>
<b>Surplus (Deficiency) after Rate Increase</b>	<b>(673,627)</b>	<b>(1,402,137)</b>	<b>(2,024,242)</b>	<b>717,189</b>	<b>3,341,651</b>
<b>Net Revenue Requirement (2)</b>	<b>\$19,039,028</b>	<b>\$22,522,348</b>	<b>\$24,728,469</b>	<b>\$23,689,856</b>	<b>\$22,895,921</b>

1. Assumes new rates are implemented July 1, 2018 and each July 1st thereafter.

2. Total Use of Funds less non-rate revenues and interest earnings. This is the annual amount needed from sewer rates.

Figure 4 summarizes the projected reserve fund balances and reserve targets. A more detailed version of the utility’s proposed 5-year financial plan is included in Tables 1 and 2 of Appendix A. The appendix tables include revenue requirements, reserve funds, revenue sources, proposed rate increases, and the City’s capital improvement program. As can be seen in Figure 4, given proposed rate increases, reserves will dip below the recommended levels; however, it is expected that the City reserves are expected return to target levels by the end of FY 2022/23.

**Figure 4. Summary of Reserve Funds**

Reserve Fund Balances and Recommended Reserve Targets	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
<b>Operating Reserve</b>					
Ending Balance	\$ 4,634,000	\$ 4,346,000	\$ 2,681,721	\$ 3,398,909	\$ 4,829,000
<i>Recommended Minimum Target</i>	<i>4,634,000</i>	<i>4,346,000</i>	<i>4,579,000</i>	<i>4,650,000</i>	<i>4,829,000</i>
<b>Capital Rehabilitation &amp; Replacement Reserve</b>					
Ending Balance	\$ 2,280,237	\$ 359,963	\$ -	\$ -	\$ 1,911,560
<i>Recommended Minimum Target</i>	<i>1,360,400</i>	<i>1,474,100</i>	<i>1,593,700</i>	<i>1,671,500</i>	<i>1,704,400</i>
<b>Total Ending Balance</b>	<b>\$ 6,914,237</b>	<b>\$ 4,705,963</b>	<b>\$ 2,681,721</b>	<b>\$ 3,398,909</b>	<b>\$ 6,740,560</b>
<i>Total Recommended Minimum Target</i>	<i>\$ 5,994,400</i>	<i>\$ 5,820,100</i>	<i>\$ 6,172,700</i>	<i>\$ 6,321,500</i>	<i>\$ 6,533,400</i>

**Figure 5** summarizes the City’s Capital Improvement Plan, providing the expected cost and timing of capital projects during the 5-year rate period.

**Figure 5 Capital Improvement Program**

Capital Improvement Program Costs	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
IWWTP Capital Asset Replacement	\$ 1,065,000	\$ 1,093,755	\$ 1,123,286	\$ 1,153,615	\$ 1,184,763
Sanitary Related Equipment	26,000	27,600	29,300	31,100	33,000
Vehicles/Large Equipment	975,000	8,000	75,000	278,000	20,000
Lift Station/SCADA	20,000	-	-	-	100,000
Sewer Master Plan	-	-	-	342,000	-
Mainline Replacements	-	3,892,000	4,102,800	2,208,096	1,100,000
Manhole Rehabilitation	282,425	290,050	297,881	305,924	314,184
Sewer Rate Study Update	-	-	-	-	100,000
Coad Road Sewer Line	2,500,000	-	-	-	-
<b>Total</b>	<b>\$ 4,868,425</b>	<b>\$ 5,311,405</b>	<b>\$ 5,628,267</b>	<b>\$ 4,318,735</b>	<b>\$ 2,851,947</b>

### C. Cost of Service Analysis

Once the net revenue requirements are determined, the cost of service analysis proportionately distributes the revenue requirements to each of the customer classes. The cost of service analysis consists of two major components: (1) the classification of expenses, and (2) the allocation of costs to customer classes. Costs were classified corresponding to the function they serve. All costs in the City’s budget are allocated to each component of the rate structure in proportion to the level of service required by customers. The levels of service are related to volumes of flow and pounds treated at the wastewater treatment facilities, process treatment, and customer service. Ultimately, a cost-of-service analysis is intended to result in rates that are proportional to the cost of providing service to each customer.

#### FUNCTIONALIZATION AND CLASSIFICATION

Budgeted costs were classified into the following categories to develop the basis for allocating costs to various customer classes in this analysis:

- **Flow** – Flow based costs are primarily related to the collection and distribution system which gather effluent from customers and transports it to the two treatment facilities.
- **Strength Based Factors** – Strength based costs are related to the treatment of effluent at the IWWTP. Two factors, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) measure different aspects of the treatment process.
- **Process Treatment** – Process Treatment costs are those related to the Upflow Anaerobic Sludge Blanket (UASB) Reactor and the Ion Exchange treatment system which are needed to process effluent from the Dr. Pepper/Snapple facility (DPSG).
- **VVWRA Treatment** – Treatment costs for the VVWRA facility.
- **Customers** – Customer based costs are related to the billing of customers (such as mailing and staff time committed to customer service).

All projected expenses from FY 2018/19 are allocated by percentage, to each of the cost factors. Additionally, all costs associated with Process Treatment which is primarily the UASB Reactor, were

allocated as such. The summary for each Sewer division is shown in **Figure 6**. The details of how each budget item was allocated can be found in Appendix A on pages 13 through 16.

**Figure 6. Classification of Expenses**

Budget Categories	Total Revenue Req't.	Flow	Strength		Process Treatment	VWRA Treatment	Customer
	FY 2018/19	(VOL)	(BOD)	(TSS)	(PT)	(VWRA)	(CA)
IWWTP	\$4,082,776	\$0	\$1,536,237	\$1,536,237	\$1,010,302	\$0	\$0
Sewer	4,481,735	4,074,622	-	-	-	-	407,113
GIS	91,538	91,538	-	-	-	-	-
Sewer DEV	109,762	109,762	-	-	-	-	-
Engineering	1,056,969	1,056,969	-	-	-	-	-
VWRA Treatment	8,713,400	-	-	-	-	8,713,400	-
Debt Service Payments	1,607,761	456,000	282,565	282,565	586,632	-	-
<b>Total Revenue Requirement</b>	<b>\$20,143,941</b>	<b>\$5,788,891</b>	<b>\$1,818,802</b>	<b>\$1,818,802</b>	<b>\$1,596,934</b>	<b>\$8,713,400</b>	<b>\$407,113</b>
Less: Non-Rate Revenues	(1,104,913)	(473,898)	(5,623)	(5,623)	(591,569)	(26,940)	(1,259)
<b>Net Revenue Requirements</b>	<b>\$19,039,028</b>	<b>\$5,314,992</b>	<b>\$1,813,178</b>	<b>\$1,813,178</b>	<b>\$1,005,365</b>	<b>\$8,686,460</b>	<b>\$405,855</b>
	100.0%	27.9%	9.5%	9.5%	5.3%	45.6%	2.1%

The percentage of costs allocated to each category are then applied to the revenue target for FY 2018/19, which is \$18,365,401. This is the Adjusted Net Revenue Requirement, and show in **Figure 7**.

**Figure 7. Adjusted Net Revenue Requirement**

Fiscal Year 2018/19 Adjusted Net Revenue Requirements	
Projected Rate Revenue at Current Rates	\$ 15,969,914
Projected Rate Increase	15.0%
<b>Adjusted Net Revenue Requirement</b>	<b>\$ 18,365,401</b>
<u>By Cost Category:</u>	
Volume	5,126,941
BOD	1,749,025
TSS	1,749,025
Process Treatment	969,793
VWRA Treatment	8,379,121
Customer	391,495
<b>Total</b>	<b>\$ 18,365,401</b>

**CUSTOMER CLASSES**

Customers were grouped into four primary categories: residential single family residential, multi-family residential, commercial and industrial/user-specific. The City uses two different treatment locations to provide service to customers. However, for the purposes of this analysis, residential customers were not differentiated based upon which site was providing treatment.

The cost components used in this analysis and allocated to each customer class are as follows:

- **Flow** – Costs related to flow are allocated based upon anticipated volume into the collection system. For Single Family Residential customers, volume is based upon average winter water

consumption (metered consumption from Nov through February). For all other customer classes, flow is based upon the total amount of water consumed, annually<sup>5</sup>.

- **Strength Based Costs** – Costs related to strength are allocated to each customer class based on either the estimated strength of influent treated<sup>6</sup> or actual measured flow to the IWWTP. Strength characteristics from the three industrial customers were measured as part of the City’s pre-treatment program and used for this analysis.
- **Process Treatment Costs** – Costs related to Process treatment are allocated to Dr. Pepper Snapple because this is entirely for the Dr. Pepper/Snapple facility.
- **VVWRA Treatment Costs** – Costs related to VVWRA treatment are allocated based upon anticipated flow to the VVWRA treatment plant.
- **Customer Related Costs** – Costs related to billing and customer service are allocated based upon number of customers within a given customer class.

The percentage allocations for each customer class are summarized in **Figure 8**.

**Figure 8. Customer Allocation**

Development of Allocation Factors	Percentage Allocated by Each Factor (1)					
	Customer Class	Volume	BOD	TSS	PT	VVWRA
<b>Sanitary Flow</b>						
Single Family Residential	58.7%	57.0%	55.1%	0.0%	58.3%	94.8%
Multi-Family Residential	10.6%	10.3%	9.9%	0.0%	10.5%	2.0%
Commercial	16.2%	0.0%	0.0%	0.0%	21.7%	3.2%
<b>Industrial Flow</b>						
FCC	9.8%	10.9%	10.1%	0.0%	9.5%	0.0%
Dr. Pepper/Snapple	4.6%	21.5%	23.6%	100.0%	0.0%	0.0%
PlastiPack	0.1%	0.4%	1.2%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

1. Volume - Percentage of Total Adjusted Volume, BOD & TSS - Percentage of Total LBS, Process Treatment - All Allocated to Dr. Pepper/Snapple, VVWRA - Percentage of Adjusted Volume at VVWRA, Customer Related - Percentage of Total Accounts

**Figure 9** applies the allocation from Figure 8 to the net revenue requirement from Figure 7 and shows the total amount of rate revenue which should be collected from each customer class in FY 2018/19.

<sup>5</sup> Water consumption records for Fiscal Year 2014/15 were used as the basis for this analysis.

<sup>6</sup> Strength factors developed based on State Water Resources Control Board Revenue Program Guidelines Appendix G Strength Factors by customer class.

**Figure 9. Cost of Service Allocation to Each Customer Class**

Allocation of FY 2018/19 Revenue Requirements by Customer Class							
Customer Class	Cost Classification Components (1)						Cost-of-Service Net Revenue Reqts.
	Volume	BOD	TSS	Process Treatment	VVWRA Treatment	Customer Related	
<b>Net Revenue Requirements</b>	<b>\$5,126,941</b>	<b>\$1,749,025</b>	<b>\$1,749,025</b>	<b>\$969,793</b>	<b>\$8,379,121</b>	<b>\$391,495</b>	<b>\$18,365,401</b>
	27.9%	9.5%	9.5%	5.3%	45.6%	2.1%	100.0%
<b>SINGLE FAMILY RESIDENTIAL</b>	\$3,010,224	\$ 996,741	\$ 963,901	\$ -	\$4,883,589	\$ 371,016	<b>\$ 10,225,471</b>
<b>MULTI-FAMILY RESIDENTIAL</b>	542,785	179,726	173,805	-	880,579	7,802	<b>1,784,698</b>
<b>COMMERCIAL</b>	830,196	-	-	-	1,819,342	12,619	<b>2,662,157</b>
<b>INDUSTRIAL</b>							
FCC	\$ 504,236	\$ 190,708	\$ 176,317	\$ -	\$ 795,610	\$ 29	<b>\$ 1,666,899</b>
Dr. Pepper/Snapple	234,592	375,593	413,212	969,793	-	14	<b>1,993,205</b>
Plastipak	4,908	6,257	21,791	-	-	14	<b>32,971</b>
<b>GRAND TOTAL</b>	<b>\$5,126,941</b>	<b>\$1,749,025</b>	<b>\$1,749,025</b>	<b>\$ 969,793</b>	<b>\$8,379,121</b>	<b>\$ 391,495</b>	<b>\$ 18,365,401</b>

1. Revenue requirement for each customer class is determined by multiplying the revenue requirement from each cost classification by the allocation factors for each customer class. Volume - Percentage of Total Adjusted Volume, BOD & TSS - Percentage of Total LBS, Process Treatment - All Allocated to Dr. Pepper/Snapple, VVWRA - Percentage of Adjusted Volume at VVWRA, Customer Related - Percentage of Total Accounts

## D. Current and Proposed Sewer Rates

The proposed rates are designed to capture the cost of service from each customer class. The details on how the costs allocated each customer class were used to develop the rates can be found on page 23 of Appendix A.

For Single Family and Multi-Family Residential customers, rates are fixed based on the number of dwelling units<sup>7</sup> per account. As the average volume estimated for Multi-Family customers (per dwelling unit) is only 76 percent of Single Family volume, Multi-Family rates have been adjusted to properly show the difference in the impact to the sewer system, which is why Multi-Family rates are not increasing in the same proportion as Single-family residential customers.

For Commercial customers a variable component (based upon water consumption) has been added to the rate structure, to improve equity between customers within this class. Previously, rates were fixed based upon expected consumption (assigned EDUs). Going forward, EDU charges have been eliminated and all accounts will pay a fixed charge that is the same as the single-family residential charge, and a variable component that is based upon estimated volume contributed to the sewer system.

For the Federal Corrections Complex (FCC), the sewer rate is based on the number of calculated EDU's on a monthly basis. One EDU is estimated to be equal to 200 gallons per day of volume contributed to the sewer system.

For Plastipak, there is a fixed monthly charge and a variable component based upon monthly water consumption; 100% of which is assumed to return to the City's sewer system.

<sup>7</sup> A dwelling unit is an individual living unit; for single-family residential customers, this is a single family home and for multi-family customers, this would be an individual unit (for example, an apartment unit, or one of the living units in a duplex or triplex building).

Finally, in accordance with the existing contract, Dr. Pepper/Snapple has been assigned a minimum monthly fee and an additional volume and COD surcharges which apply when monthly effluent exceeds the existing hurdle. An FDS charge was developed by Woodard and Curran (shown in Appendix B), to reflect the cost of additional Ion treatment needed for this customer.

As noted earlier, VVWRA costs are expected to increase, but that inflation is not included in this rate design. Should VVWRA costs increase, those increases will be directly passed-through to City customers through a rate adjustment, except for industrial customers. Since none of the City’s Industrial customers participate in VVWRA treatment, their rates will not be adjusted if and when VVWRA’s rates are updated in the future.

Figure 10 provides a comparison of the current and proposed rates through FY 2022/23.

**Figure 10. Current and Proposed Sewer Rates**

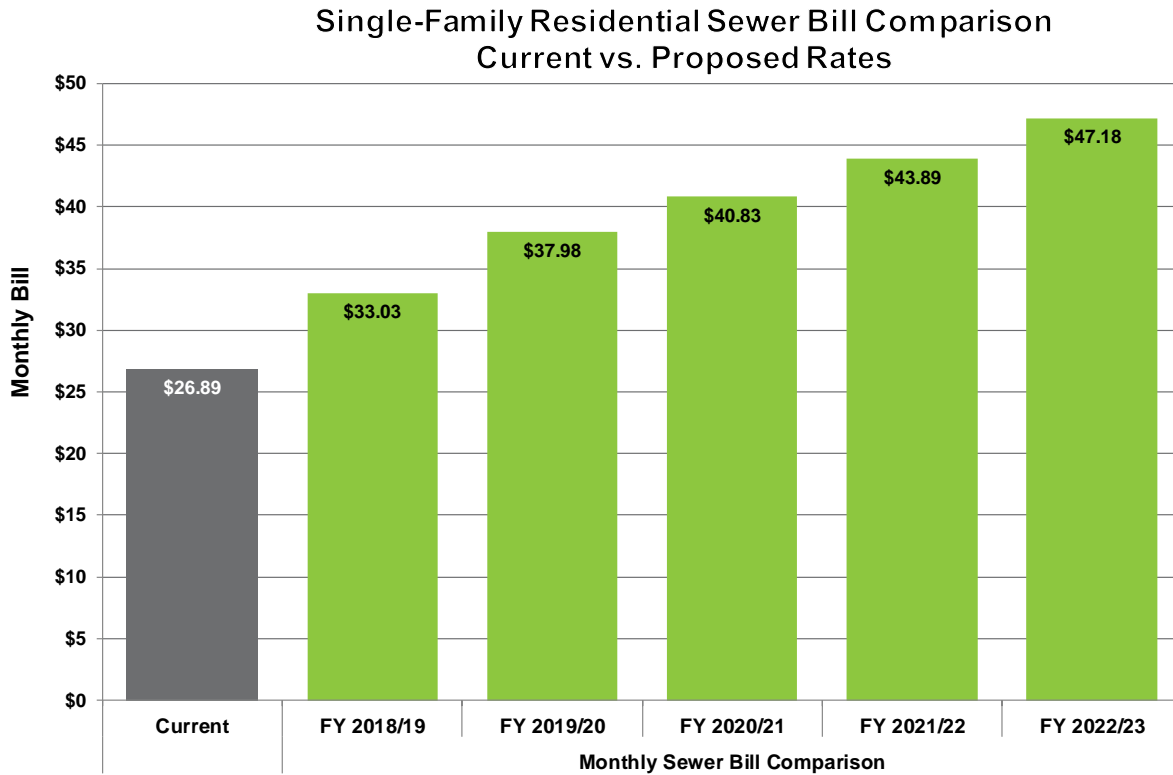
Sewer Rate Schedule	Current Rates	Recommended Sewer Rates				
		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
<b>Residential Customers</b>						
<u>Monthly Fixed Service Charge, per Dwelling Unit:</u>						
Single-Family Residential	\$26.89	\$33.03	\$37.98	\$40.83	\$43.89	\$47.18
Multi-Family Residential	\$24.63	\$24.25	\$27.88	\$29.97	\$32.22	\$34.64
<b>Commercial Customers</b>						
<u>Monthly Fixed Service Charge, per Account:</u>						
Volumetric Charge, per hcf	--	\$2.81	\$3.23	\$3.48	\$3.74	\$4.02
<b>Industrial Customers (user specific)</b>						
<u>Federal Corrections Complex (FCC)</u>						
Monthly Fixed Charge Per EDU (1)	\$26.89	\$33.24	\$38.22	\$41.09	\$44.17	\$47.48
BOD Charge, per lb	\$0.3323	\$1.39	\$1.60	\$1.72	\$1.85	\$1.99
SS Charge, per lb	\$0.2262	\$1.40	\$1.61	\$1.73	\$1.86	\$1.99
<u>Dr. Pepper/Snapple (DPSG)</u>						
Monthly Min Charge (excluding capital recovery)	\$113,614	\$166,100	\$191,016	\$205,342	\$220,742	\$237,298
Volumetric Charge, per 1,000 gal (2)	\$0.37	\$0.92	\$1.06	\$1.14	\$1.23	\$1.32
COD Charge, per lb	\$0.13	\$0.16	\$0.19	\$0.20	\$0.22	\$0.23
SS Charge, per lb (3)	\$0.22	--	--	--	--	--
FDS Charge, per lb (4)	--	\$2.62	\$2.69	\$2.76	\$2.84	\$2.91
<u>Plastipak</u>						
Monthly Fixed Charge Per Account	\$26.89/EDU	\$118.93	\$136.77	\$147.02	\$158.05	\$169.91
Volumetric Charge, per hcf (5)	--	\$7.95	\$9.14	\$9.82	\$10.56	\$11.35

1. FCC will be billed based on a flow estimate of 200 gallons per day, per EDU.  
BOD and TSS surcharges apply to concentrations above 200 mg/l for BOD and 250 mg/l for TSS.
2. Volumetric charges (per 1,000 gal or lbs) for DPSG shall apply accordingly if discharge exceeds 585,000 gpd, 28,100 lbs/day of COD or 1,400 lbs/day of SS in accordance with Wastewater Capacity and Treatment Agreement.
3. The SS charge is replaced with an FDS surcharge in FY 2018/19.
4. The FDS surcharge was calculated by Woodard & Curran and is subject to a 2.7% general cost inflation factor in FY 2019/20 and beyond.  
This will apply to all pound of FDS treated. Source:2018.03.21 FDS Surcharge Limit Table.xlsx
5. Volumetric charge for Plastipak will apply to monthly water consumption.

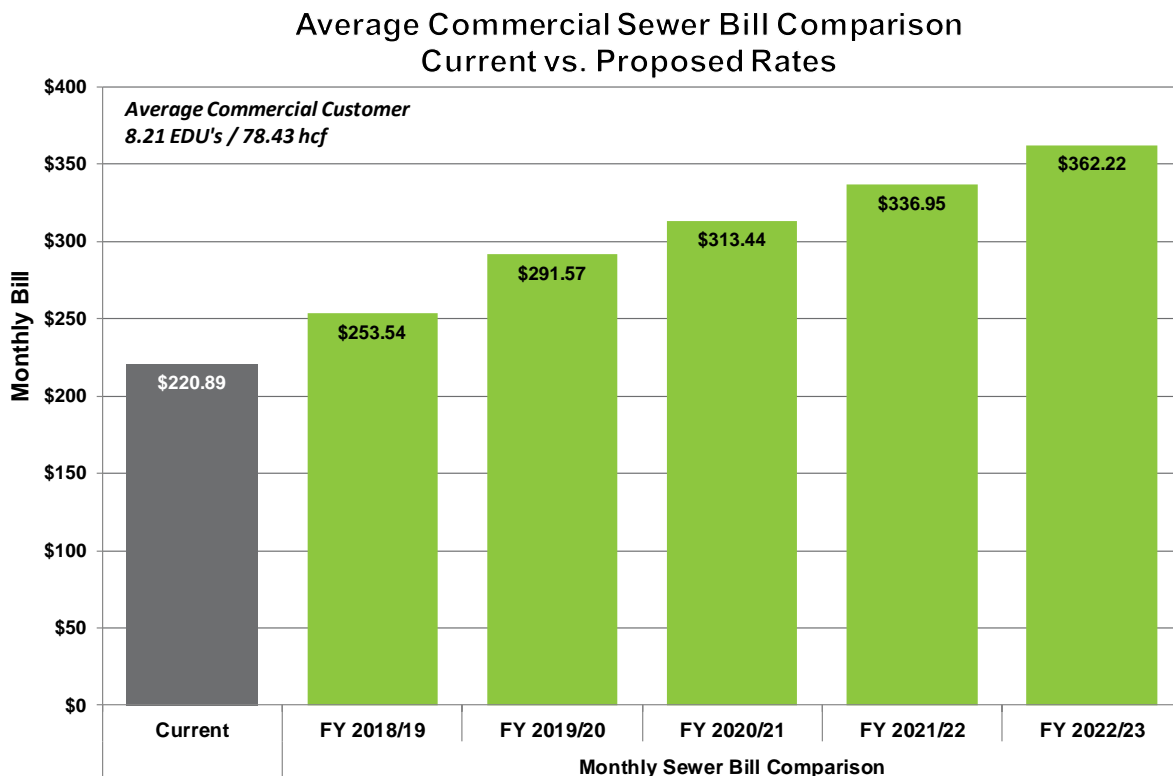
## E. Comparison of Current and Proposed Sewer Bills

Figure 11 and Figure 12 compare monthly sewer bills for the current and proposed sewer rates as a result of the planned rate adjustment for single-family residential customers and non-single family residential customers.

**Figure 11. Bi-Monthly Sewer Bill Comparison for Single Family Customers**



**Figure 12. Bi-Monthly Sewer Bill Comparison for Commercial Customers**



## Section 3. RECOMMENDATIONS AND NEXT STEPS

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### A. Findings and Recommendations

The following are the primary findings and recommendations resulting from this rate analysis.

**Summary of Findings** – The City’s sewer rates have not been adjusted since 2012 and need to incorporate historical increases in costs, and future estimated cost increases. This study has evaluated the various factors that are a part of the rate adjustment process, and the recommended rates are those that are necessary to adequately fund the City’s sewer utility

**Recommendations** – The following are the actions that NBS, in consultation with City staff, recommend the City take regarding the sewer rates:

- Review the results of this study and consider proceeding with the adoption process to implement the proposed rate adjustments.
- Approve the proposed sewer rates and formally adopt the recommended reserve fund targets as part of the rate resolution.
- Have the City’s legal counsel review the proposed rates and Prop 218 notices to ensure that they comply with existing statutes and legal requirements.
- Direct City staff to proceed with sending out Proposition 218 (Prop 218) notices to begin the protest ballot process required under State law prior to formal adoption and implementation of the proposed rates.
- After a minimum of 45 days after the initial mailing of the Prop 218 notices, determine if less than 50 percent of protest ballots were submitted. Assuming less than 50 percent of the eligible protest ballots were received, adopt the proposed rates in a public hearing.
- Assuming rates are adopted, direct staff to implement the new rates, with an effective date of July 1, 2018.

### B. NBS’ Principal Assumptions and Considerations

In preparing this report and the opinions and recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, conditions, and events that may occur in the future. This information and these assumptions, including City’s budgets, capital improvement costs, and information from City staff were provided by sources we believe to be reliable, although NBS has not independently verified this data.

While we believe NBS’ use of such information and assumptions is reasonable for the purpose of this report and its recommendations, some assumptions will invariably not materialize as stated herein and may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others.

# Appendix A: Detailed Sewer Study Tables and Figures

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TABLE 1  
FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget		Projection						
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
<b>Sources of Funds</b>									
Rate Revenue (1)									
Rate Revenue from Existing Rates	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914
Revenue from Rate Increases (2)	-	2,395,487	5,150,297	6,734,313	8,437,130	10,267,658	10,267,658	10,267,658	10,267,658
<b>Total Rate Revenue After Rate Increases</b>	<b>\$ 15,969,914</b>	<b>\$ 18,365,401</b>	<b>\$ 21,120,211</b>	<b>\$ 22,704,227</b>	<b>\$ 24,407,044</b>	<b>\$ 26,237,572</b>	<b>\$ 26,237,572</b>	<b>\$ 26,237,572</b>	<b>\$ 26,237,572</b>
<b>Non-Rate Revenue (1)</b>									
Sewer Use Fee - Capital & Connection Fees	\$ 892,632	\$ 1,042,632	\$ 1,054,632	\$ 1,066,632	\$ 1,078,632	\$ 1,090,632	\$ 1,102,632	\$ 1,114,632	\$ 1,126,632
Late Fee	-	-	-	-	-	-	-	-	-
Interest Income	55,222	62,281	51,857	47,060	33,522	49,284	97,738	114,411	136,844
<b>Total Source of Funds</b>	<b>\$ 16,917,768</b>	<b>\$ 19,470,315</b>	<b>\$ 22,226,700</b>	<b>\$ 23,817,919</b>	<b>\$ 25,519,198</b>	<b>\$ 27,377,489</b>	<b>\$ 27,437,943</b>	<b>\$ 27,466,615</b>	<b>\$ 27,501,049</b>
<b>Uses of Funds</b>									
<i>Regular Operating Expenses (1):</i>									
IWWTP Expenses	\$ 4,054,668	\$ 4,082,776	\$ 4,218,277	\$ 4,358,607	\$ 4,503,949	\$ 4,654,495	\$ 4,810,444	\$ 4,972,002	\$ 5,139,384
Sewer Expenses	2,901,639	2,981,735	3,064,101	3,148,794	3,235,890	3,748,014	3,851,542	3,958,003	4,067,482
GIS Expenses	89,131	91,538	94,009	96,547	99,153	101,830	104,579	107,403	110,303
DIV Expenses	106,877	109,762	112,725	115,769	118,894	122,104	125,401	128,787	132,264
Engineering Expenses	1,028,846	1,056,969	1,085,866	1,115,562	1,146,079	1,177,437	1,209,664	1,242,786	1,276,825
VVWRA Treatment	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400
Subtotal: Regular Operating Expenses	\$ 16,894,561	\$ 17,036,180	\$ 17,288,378	\$ 17,548,679	\$ 17,817,365	\$ 18,517,280	\$ 18,815,030	\$ 19,122,381	\$ 19,439,658
<i>Non-Regular Operating Expenses (1):</i>									
Potential Regulatory Compliance	\$ 1,510	\$ 1,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer-Contract Services Cctv	1,989,000	-	95,000	768,000	783,360	799,027	799,027	799,027	799,027
Subtotal: Non-Regular Operating Expenses	\$ 1,990,510	\$ 1,500,000	\$ 95,000	\$ 768,000	\$ 783,360	\$ 799,027	\$ 799,027	\$ 799,027	\$ 799,027
<i>Other Expenditures (1):</i>									
Existing Debt Service	\$ 1,321,032	\$ 1,607,761	\$ 1,740,191	\$ 1,897,215	\$ 1,882,549	\$ 1,867,583	\$ 1,852,318	\$ 1,836,752	\$ 1,820,886
New Debt Service	-	-	-	-	-	-	-	-	-
Rate-Funded Capital Expenses	-	-	4,505,268	5,628,267	4,318,735	2,851,947	4,703,762	3,035,825	1,518,553
Subtotal: Other Expenditures	\$ 1,321,032	\$ 1,607,761	\$ 6,245,459	\$ 7,525,482	\$ 6,201,284	\$ 4,719,530	\$ 6,556,079	\$ 4,872,577	\$ 3,339,439
<b>Total Uses of Funds</b>	<b>\$ 20,206,103</b>	<b>\$ 20,143,941</b>	<b>\$ 23,628,837</b>	<b>\$ 25,842,161</b>	<b>\$ 24,802,009</b>	<b>\$ 24,035,837</b>	<b>\$ 26,170,136</b>	<b>\$ 24,793,985</b>	<b>\$ 23,578,124</b>
<b>Annual Surplus/(Deficit)</b>	<b>\$ (3,288,335)</b>	<b>\$ (673,627)</b>	<b>\$ (1,402,137)</b>	<b>\$ (2,024,242)</b>	<b>\$ 717,189</b>	<b>\$ 3,341,651</b>	<b>\$ 1,267,807</b>	<b>\$ 2,672,630</b>	<b>\$ 3,922,925</b>
<b>Net Revenue Req't.</b> <i>(Total Uses less Non-Rate Revenue)</i>	<b>\$ 19,258,249</b>	<b>\$ 19,039,028</b>	<b>\$ 22,522,348</b>	<b>\$ 24,728,469</b>	<b>\$ 23,689,856</b>	<b>\$ 22,895,921</b>	<b>\$ 24,969,766</b>	<b>\$ 23,564,942</b>	<b>\$ 22,314,648</b>
<b>Projected Annual Rate Revenue Increase</b>	<b>0.00%</b>	<b>15.00%</b>	<b>15.00%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>7.50%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Cumulative Increase from Annual Revenue Increases</i>	0.00%	15.00%	32.25%	42.17%	52.83%	64.29%	64.29%	64.29%	64.29%
<i>Debt Coverage After Rate Increase</i>	0.02	3.00	5.80	6.85	8.57	10.24	10.20	10.13	10.07

1. Revenue, expenses & transfers for FY 2017/18 - FY 2025/26 were provided by District Staff. Source File: COV Sewer Data 01-17-2018.xlsx  
2. Assumes new rates are implemented July 1, 2018 and each July 1st each year thereafter.

TABLE 2  
RESERVE FUND SUMMARY, UN-RESTRICTED RESERVES

SUMMARY OF CASH ACTIVITY GENERAL WATER FUND RESERVES	Budget	Projection							
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
<b>Total Beginning Cash (1)</b>	<b>\$ 22,088,624</b>								
<b>Un-Restricted Reserves:</b>									
<b>Operating Reserve</b>									
Beginning Reserve Balance	\$ 4,181,000	\$ 4,721,000	\$ 4,634,000	\$ 4,346,000	\$ 2,681,721	\$ 3,398,909	\$ 4,829,000	\$ 4,904,000	\$ 4,980,000
Plus: Net Cash Flow (After Rate Increases)	(3,288,335)	(673,627)	(1,402,137)	(2,024,242)	717,189	3,341,651	1,267,807	2,672,630	3,922,925
Plus: Transfer of Debt Reserve Surplus	-	-	-	-	-	-	-	-	-
Plus: Adjustment to Cash Reserves	-	-	-	-	-	-	-	-	-
Net: Transfer To/From Capital Replacement Reser	3,828,335	586,627	1,114,137	359,963	-	(1,911,560)	(1,192,807)	(2,596,630)	(3,842,925)
<b>Ending Operating Reserve Balance</b>	<b>\$ 4,721,000</b>	<b>\$ 4,634,000</b>	<b>\$ 4,346,000</b>	<b>\$ 2,681,721</b>	<b>\$ 3,398,909</b>	<b>\$ 4,829,000</b>	<b>\$ 4,904,000</b>	<b>\$ 4,980,000</b>	<b>\$ 5,060,000</b>
<b>Target Ending Balance (90-days of O&amp;M)</b>	<b>\$ 4,721,000</b>	<b>\$ 4,634,000</b>	<b>\$ 4,346,000</b>	<b>\$ 4,579,000</b>	<b>\$ 4,650,000</b>	<b>\$ 4,829,000</b>	<b>\$ 4,904,000</b>	<b>\$ 4,980,000</b>	<b>\$ 5,060,000</b>
<b>Capital Rehabilitation &amp; Replacement Reserve</b>									
Beginning Reserve Balance	\$ 17,907,624	\$ 7,735,289	\$ 2,280,237	\$ 359,963	\$ -	\$ -	\$ 1,911,560	\$ 2,986,407	\$ 4,457,530
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-
Plus: Transfer of Operating Reserve Surplus	(3,828,335)	(586,627)	(1,114,137)	(359,963)	-	1,911,560	1,192,807	2,596,630	3,842,925
Less: Use of Reserves for Capital Projects	(6,344,000)	(4,868,425)	(806,137)	-	-	-	(117,960)	(1,125,507)	(2,534,530)
<b>Ending Capital R&amp;R Reserve Balance</b>	<b>\$ 7,735,289</b>	<b>\$ 2,280,237</b>	<b>\$ 359,963</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,911,560</b>	<b>\$ 2,986,407</b>	<b>\$ 4,457,530</b>	<b>\$ 5,765,925</b>
<b>Target Ending Balance (3% of Assets) (2)</b>	<b>\$ 1,256,400</b>	<b>\$ 1,360,400</b>	<b>\$ 1,474,100</b>	<b>\$ 1,593,700</b>	<b>\$ 1,671,500</b>	<b>\$ 1,704,400</b>	<b>\$ 1,793,600</b>	<b>\$ 1,860,900</b>	<b>\$ 1,923,000</b>
<b>Ending Cash Balance</b>	<b>\$ 12,456,289</b>	<b>\$ 6,914,237</b>	<b>\$ 4,705,963</b>	<b>\$ 2,681,721</b>	<b>\$ 3,398,909</b>	<b>\$ 6,740,560</b>	<b>\$ 7,890,407</b>	<b>\$ 9,437,530</b>	<b>\$ 10,825,925</b>
<b>Minimum Reserve Target</b>	<b>\$ 5,977,400</b>	<b>\$ 5,994,400</b>	<b>\$ 5,820,100</b>	<b>\$ 6,172,700</b>	<b>\$ 6,321,500</b>	<b>\$ 6,533,400</b>	<b>\$ 6,697,600</b>	<b>\$ 6,840,900</b>	<b>\$ 6,983,000</b>
<b>Ending Surplus/(Deficit) Compared to Target</b>	<b>\$ 6,478,889</b>	<b>\$ 919,837</b>	<b>\$ (1,114,137)</b>	<b>\$ (3,490,979)</b>	<b>\$ (2,922,591)</b>	<b>\$ 207,160</b>	<b>\$ 1,192,807</b>	<b>\$ 2,596,630</b>	<b>\$ 3,842,925</b>
<b>Annual Interest Earnings Rate (3)</b>	<b>0.25%</b>	<b>0.50%</b>	<b>0.75%</b>	<b>1.00%</b>	<b>1.25%</b>	<b>1.45%</b>	<b>1.45%</b>	<b>1.45%</b>	<b>1.45%</b>

- Total beginning cash balance for FY 2017/18 from Source File: Source File: COV Sewer Data 01-17-2018.xlsx
- The Capital Rehabilitation & Replacement Reserve target is set to 3% of net assets. This is based on a net capital asset value of \$35.1 million.  
Source files: #5 WWTP Assets Pj 76001 1 27 15 from client 12.16.15.xlsx, & #5 Sewer System Fixed Assets 10 29 15.xlsx
- Interest earnings conservatively estimated through the planning period and increase to 10-year LAIF average by FY 2022/23.

Chart 1

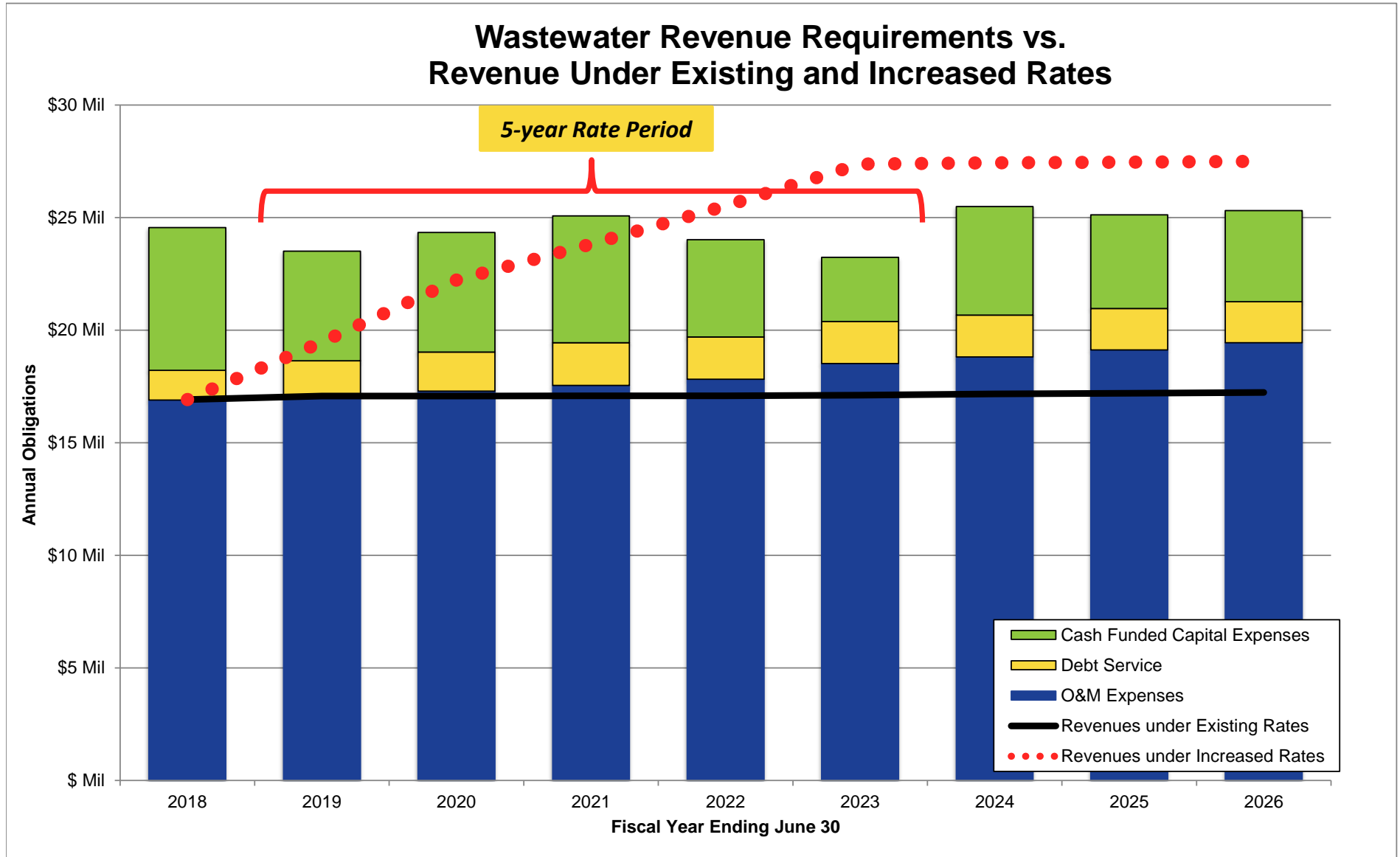


Chart 2

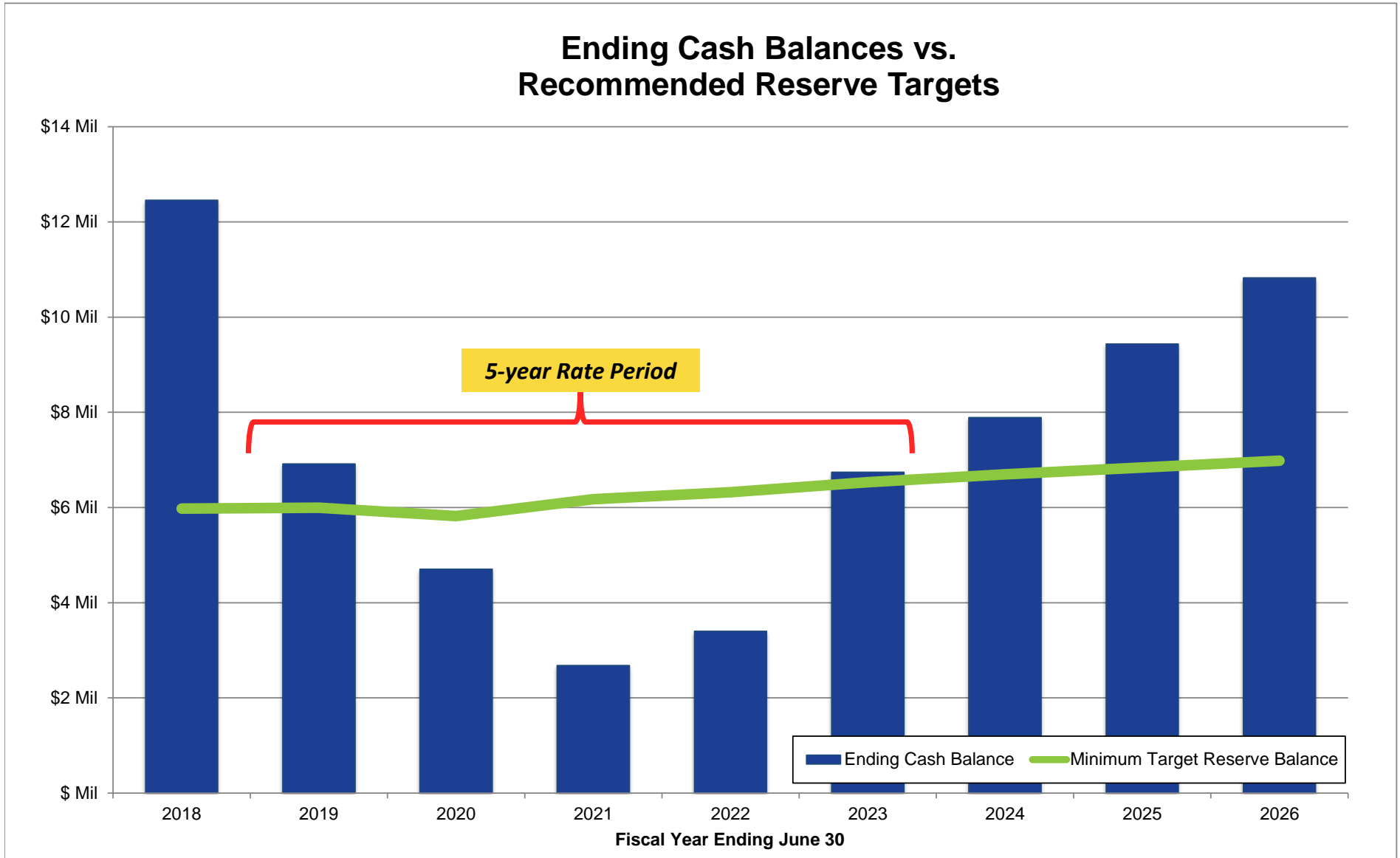
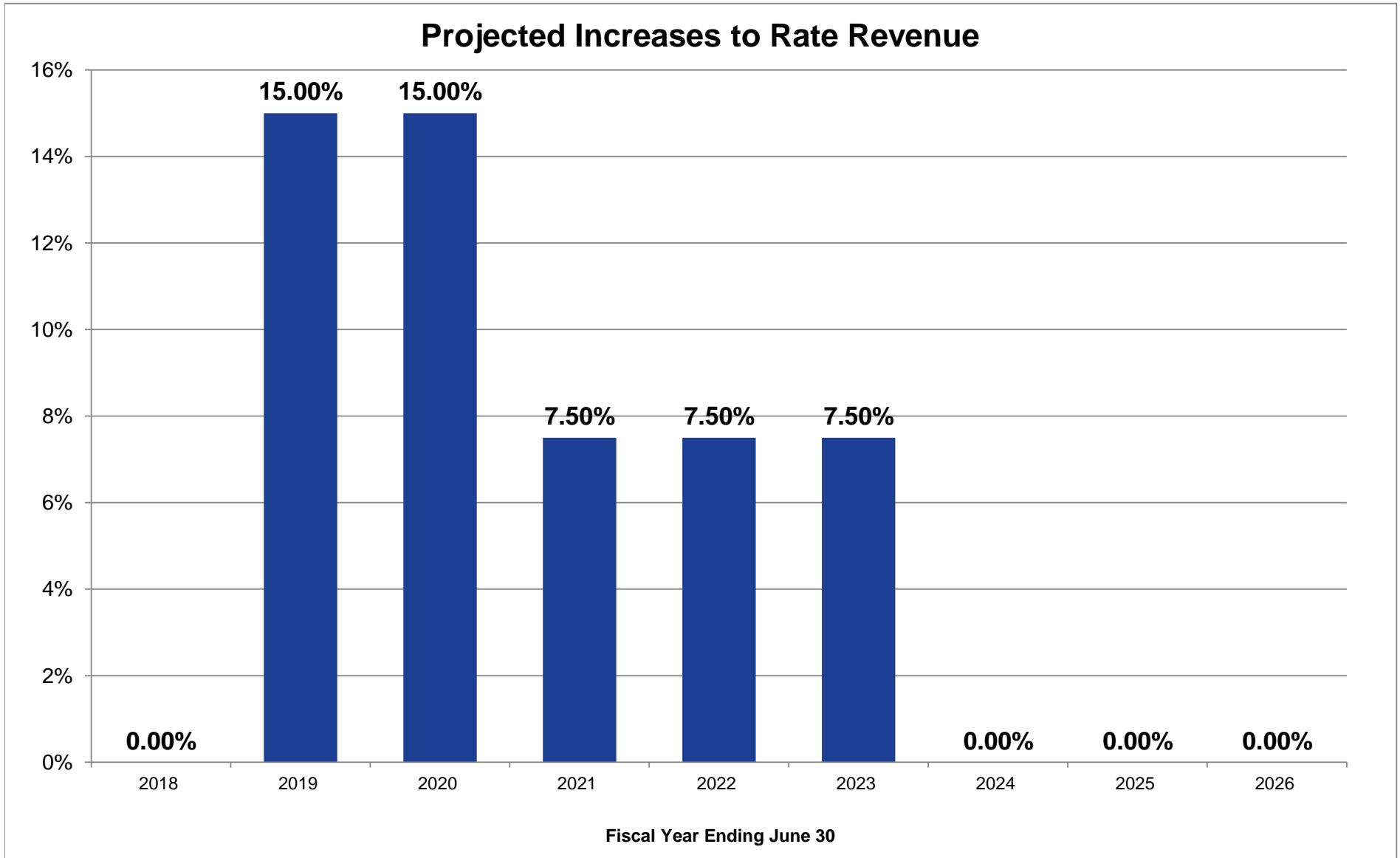


Chart 3



CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Operating Revenue and Expenses

EXHIBIT 1

REVENUE FORECAST (1,2)

OBJECT	DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>INDUSTRIAL WASTEWATER TREATMENT REVENUE</b>											
44451	IWWTP-SEWER USE FEE - O & M	0.0%	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000	\$ 4,552,000
44452	IWWTP-SEWER USE FEE - CAPITAL	0.0%	586,632	586,632	586,632	586,632	586,632	586,632	586,632	586,632	586,632
44540	WWTF-CONNECTION FEES	Cal'd	306,000	456,000	468,000	480,000	492,000	504,000	516,000	528,000	540,000
45110	IWWTP-INTEREST INCOME	Cal'd	-	-	-	-	-	-	-	-	-
<b>SEWER REVENUE</b>											
42150	SAN/SWRT-LATE FEE	0.0%	-	-	-	-	-	-	-	-	-
44450	SEWER USE FEE	0.0%	11,417,914	11,417,914	11,417,914	11,417,914	11,417,914	11,417,914	11,417,914	11,417,914	11,417,914
45110	SEWER -INTEREST INCOME	0.0%	-	-	-	-	-	-	-	-	-
<b>TOTAL: REVENUE</b>			<b>\$ 16,862,546</b>	<b>\$ 17,012,546</b>	<b>\$ 17,024,546</b>	<b>\$ 17,036,546</b>	<b>\$ 17,048,546</b>	<b>\$ 17,060,546</b>	<b>\$ 17,072,546</b>	<b>\$ 17,084,546</b>	<b>\$ 17,096,546</b>

REVENUE SUMMARY:

<b>Rate Revenue</b>	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914	\$ 15,969,914
<b>Sewer Use Fee - Capital &amp; Connection Fees</b>	\$ 892,632	\$ 1,042,632	\$ 1,054,632	\$ 1,066,632	\$ 1,078,632	\$ 1,090,632	\$ 1,102,632	\$ 1,114,632	\$ 1,126,632	
<b>Late Fee</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Interest Income</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>TOTAL: REVENUE</b>	<b>\$ 16,862,546</b>	<b>\$ 17,012,546</b>	<b>\$ 17,024,546</b>	<b>\$ 17,036,546</b>	<b>\$ 17,048,546</b>	<b>\$ 17,060,546</b>	<b>\$ 17,072,546</b>	<b>\$ 17,084,546</b>	<b>\$ 17,096,546</b>	

OPERATING EXPENSE FORECAST (1,2):

OBJECT	DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>WASTEWATER TREATMENT EXPENSES (IWWTP) - 4120710</b>											
51100	IWWTP-FULL TIME WAGES	2	\$ 138,197	\$ 141,928	\$ 145,760	\$ 149,696	\$ 153,738	\$ 157,889	\$ 162,152	\$ 166,530	\$ 171,026
51200	IWWTP-FRINGE BENEFITS	2	45,953	47,194	48,468	49,777	51,121	52,501	53,919	55,375	56,870
51220	IWWTP-RETIREE EXP	2	-	-	-	-	-	-	-	-	-
51300	IWWTP-PAYROLL TAXES	2	3,518	3,613	3,711	3,811	3,914	4,020	4,129	4,240	4,354
52010	IWWTP-ELECTRICITY	5	600,000	630,000	661,500	694,575	729,304	765,769	804,057	844,260	886,473
52020	IWWTP-WATER USE	5	1,000	1,050	1,103	1,158	1,216	1,277	1,341	1,408	1,478
52030	IWWTP-NATURAL GAS	5	140,000	147,000	154,350	162,068	170,171	178,680	187,614	196,995	206,845
52040	IWWTP-SANITATION	5	8,300	8,715	9,151	9,609	10,089	10,593	11,123	11,679	12,263
52130	IWWTP-SUBS/PUBS/DUES	2	500	514	528	542	557	572	587	603	619
52140	IWWTP-TRAINING & EDUCATION	2	5,200	5,340	5,484	5,632	5,784	5,940	6,100	6,265	6,434
52150	IWWTP-TRAVEL & MEETINGS	2	5,000	5,135	5,274	5,416	5,562	5,712	5,866	6,024	6,187
52160	IWWTP-MARKETING & PROMOTIONS	8	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500	62,500
52202	IWWTP-EQUIPMENT FUEL	3	2,000	2,054	2,109	2,166	2,224	2,284	2,346	2,409	2,474
52220	IWWTP-EQUIPMENT EXP	2	11,000	11,297	11,602	11,915	12,237	12,567	12,906	13,254	13,612
52300	IWWTP-CONTRACT SERVICES	6	2,869,000	2,955,070	3,043,722	3,135,034	3,229,085	3,325,958	3,425,737	3,528,509	3,634,364
52340	IWWTP-INSURANCE	2	2,000	2,054	2,109	2,166	2,224	2,284	2,346	2,409	2,474
52350	IWWTP-LEGAL	2	123,000	20,808	21,370	21,947	22,540	23,149	23,774	24,416	25,075
52360	IWWTP-FED/STAT/LOCAL FEES	2	26,000	26,702	27,423	28,163	28,923	29,704	30,506	31,330	32,176
52440	IWWTP-INFRASTRUCTURE REPAIRS	2	11,200	11,502	11,813	12,132	12,460	12,796	13,141	13,496	13,860
54050	IWWTP-UNCOLLECTIBLE WRITE OFFS	8	300	300	300	300	300	300	300	300	300
54120	INTEREST EXPENSE-INTER-FUND LOAN-IWWTP TO WATER	Exh 3 (3)	-	-	-	-	-	-	-	-	-
<b>SUBTOTAL: WASTEWATER TREATMENT EXPENSES</b>			<b>\$ 4,054,668</b>	<b>\$ 4,082,776</b>	<b>\$ 4,218,277</b>	<b>\$ 4,358,607</b>	<b>\$ 4,503,949</b>	<b>\$ 4,654,495</b>	<b>\$ 4,810,444</b>	<b>\$ 4,972,002</b>	<b>\$ 5,139,384</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Operating Revenue and Expenses

EXHIBIT 1

OPERATING EXPENSE FORECAST, continued (1,2):

OBJECT	DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>SEWER EXPENSES - 4250700</b>											
51100	SEWER-FULL TIME WAGES	2	\$ 857,474	\$ 880,626	\$ 904,403	\$ 928,822	\$ 953,900	\$ 979,655	\$ 1,006,106	\$ 1,033,271	\$ 1,061,169
51100	SEWER-ADDED STAFF	2	-	-	-	-	-	296,530	304,536	312,758	321,202
51110	SEWER-OVERTIME WAGES	2	35,000	35,945	36,916	37,913	38,937	39,988	41,068	42,177	43,316
51200	SEWER-FRINGE BENEGITS	2	352,946	362,475	372,262	382,313	392,635	403,236	414,123	425,304	436,787
51200	SEWER-ADDED STAFF	2	-	-	-	-	-	118,612	121,815	125,104	128,482
51220	SEWER-RETIREE EXPENSE	2	1,980	2,033	2,088	2,144	2,202	2,261	2,322	2,385	2,449
51300	SEWER-PAYROLL TAXES	2	21,312	21,888	22,479	23,086	23,709	24,349	25,006	25,681	26,374
51300	SEWER-ADDED STAFF	2	-	-	-	-	-	7,413	7,613	7,819	8,030
52010	SEWER-ELECTRICITY	5	20,500	21,730	23,034	24,416	25,881	27,434	29,080	30,825	32,675
52020	SEWER-WATER USE	5	14,900	15,794	16,742	17,747	18,812	19,941	21,137	22,405	23,749
52030	SEWER-NATURAL GAS	5	2,450	2,597	2,753	2,918	3,093	3,279	3,476	3,685	3,906
52060	SEWER-TELEPHONE	5	11,847	12,558	13,311	14,110	14,957	15,854	16,805	17,813	18,882
52110	SEWER-SUPPLIES	2	41,925	43,057	44,220	45,414	46,640	47,899	49,192	50,520	51,884
52130	SEWER-SUBS/PUBS/DUES	2	44,500	45,702	46,936	48,203	49,504	50,841	52,214	53,624	55,072
52140	SEWER-TRAINING & EDUCATION	2	17,450	17,921	18,405	18,902	19,412	19,936	20,474	21,027	21,595
52150	SEWER-TRAVEL & MEETINGS	4	8,600	8,944	9,302	9,674	10,061	10,463	10,882	11,317	11,770
52170	SEWER-ADVERTG/NOTICES	2	300	308	316	325	334	343	352	362	372
52180	SEWER-RECRUITMENT	2	750	770	791	812	834	857	880	904	928
52201	SEWER-VEHICLE FUEL	3	25,600	26,291	27,001	27,730	28,479	29,248	30,038	30,849	31,682
52202	SEWER-EQUIPMENT FUEL	3	16,000	16,432	16,876	17,332	17,800	18,281	18,775	19,282	19,803
52220	SEWER-EQUIPMENT EXP	2	48,183	49,484	50,820	52,192	53,601	55,048	56,534	58,060	59,628
52230	SEWER-VEHICLE EXP	2	19,000	19,513	20,040	20,581	21,137	21,708	22,294	22,896	23,514
52240	SEWER-FRNT/SMALL TOOLS	2	8,300	8,524	8,754	8,990	9,233	9,482	9,738	10,001	10,271
52250	SEWER-RENTALS	2	5,000	5,135	5,274	5,416	5,562	5,712	5,866	6,024	6,187
52260	SEWER-COMPUTER EQUIP	2	11,600	11,913	12,235	12,565	12,904	13,252	13,610	13,977	14,354
52300	SEWER-CONTRACT SERVICES	2	245,000	251,615	258,409	265,386	272,551	279,910	287,468	295,230	303,201
52300	SEWER-CONTRACT SERVICES CCTV	7	1,989,000	-	95,000	768,000	783,360	799,027	799,027	799,027	799,027
52350	SEWER-LEGAL	2	60,000	61,620	63,284	64,993	66,748	68,550	70,401	72,302	74,254
52350	POTENTIAL REGULATORY COMPLIANCE	2	1,510	1,500,000	-	-	-	-	-	-	-
52360	SEWER-FED/STATE/LOCAL FEES	2	19,100	19,616	20,146	20,690	21,249	21,823	22,412	23,017	23,638
52410	SEWER-BUILDING MAINTENANCE	2	18,500	19,000	19,513	20,040	20,581	21,137	21,708	22,294	22,896
52420	SEWER-GROUNDS MAINTENANCE	2	1,000	1,027	1,055	1,083	1,112	1,142	1,173	1,205	1,238
52440	SEWER-INFRASTRUCTURE REPAIRS	2	114,000	117,078	120,239	123,485	126,819	130,243	133,760	137,372	141,081
52450	SEWER-VANDALISM	2	1,000	1,027	1,055	1,083	1,112	1,142	1,173	1,205	1,238
54020	SEWER-COST ALLOCATIONS	2	877,422	901,112	925,442	950,429	976,091	1,002,445	1,029,511	1,057,308	1,085,855
54050	SEWER-UNCOLLECTIBLE WRITE-OFFS	2	-	-	-	-	-	-	-	-	-
<b>SUBTOTAL: SEWER SYSTEM EXPENSES</b>			<b>\$ 4,892,149</b>	<b>\$ 4,481,735</b>	<b>\$ 3,159,101</b>	<b>\$ 3,916,794</b>	<b>\$ 4,019,250</b>	<b>\$ 4,547,041</b>	<b>\$ 4,650,569</b>	<b>\$ 4,757,030</b>	<b>\$ 4,866,509</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Operating Revenue and Expenses

EXHIBIT 1

OPERATING EXPENSE FORECAST, continued (1,2):

OBJECT	DESCRIPTION	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>SEWER GIS EXPENSES - 4251510</b>											
52300	SEWER GIS-CONTRACT SERVICES	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
51100	SEWER GIS-FULL TIME WAGES	2	64,195	65,929	67,709	69,537	71,414	73,342	75,322	77,356	79,445
51200	SEWER GIS-FRINGE BENEFITS	2	23,299	23,928	24,574	25,237	25,918	26,618	27,337	28,075	28,833
51300	SEWER GIS-PAYROLL TAXES	2	1,637	1,681	1,726	1,773	1,821	1,870	1,920	1,972	2,025
<b>SEWER DEV EXPENSES - 4254000</b>											
51100	SEWER DEV-FULL TIME WAGES	2	75,854	77,902	80,005	82,165	84,383	86,661	89,001	91,404	93,872
51200	SEWER DEV-FRINGE BENEFITS	2	29,103	29,889	30,696	31,525	32,376	33,250	34,148	35,070	36,017
51300	SEWER DEV-PAYROLL TAXES	2	1,919	1,971	2,024	2,079	2,135	2,193	2,252	2,313	2,375
<b>SEWER ENGINEER EXPENSES - 4254500</b>											
51100	SEWER ENGINEERING-FULL TIME WAGES	2	680,643	699,020	717,894	737,277	757,183	777,627	798,623	820,186	842,331
51110	SEWER ENGINEERING-OVERTIME WAGES	2	1,500	1,541	1,583	1,626	1,670	1,715	1,761	1,809	1,858
51200	SEWER ENGINEERING-FRINGE BENEFITS	2	229,191	235,379	241,734	248,261	254,964	261,848	268,918	276,179	283,636
51220	SEWER ENGINEERING-RETIREE EXPENSE	2	556	571	586	602	618	635	652	670	688
51300	SEWER ENGINEERING-PAYROLL TAXES	2	17,356	17,825	18,306	18,800	19,308	19,829	20,364	20,914	21,479
52010	SEWER ENGINEERING-ELECTRICITY	5	12,296	12,911	13,557	14,235	14,947	15,694	16,479	17,303	18,168
52020	SEWER ENGINEERING-WATER USE	5	710	746	783	822	863	906	951	999	1,049
52030	SEWER ENGINEERING-NATURAL GAS	5	1,031	1,083	1,137	1,194	1,254	1,317	1,383	1,452	1,525
52060	SEWER ENGINEERING-TELEPHONE	5	725	761	799	839	881	925	971	1,020	1,071
52110	SEWER ENGINEERING-SUPPLIES	2	3,000	3,081	3,164	3,249	3,337	3,427	3,520	3,615	3,713
52140	SEWER ENGINEERING - TRAINING & EDUCATION	2	200	205	211	217	223	229	235	241	248
52150	SEWER ENGINEERING-TRAVEL &	4	200	208	216	225	234	243	253	263	274
52201	SEWER ENGINEERING-VEHICLE FUEL	3	3,500	3,595	3,692	3,792	3,894	3,999	4,107	4,218	4,332
52220	SEWER ENGINEERING-EQUIPMENT EXP	2	145	149	153	157	161	165	169	174	179
52230	SEWER ENGINEERING-VEHICLE EXP	2	2,500	2,568	2,637	2,708	2,781	2,856	2,933	3,012	3,093
52240	SEWER ENGINEERING-FRNT/SMALL TOOLS	2	7,793	8,003	8,219	8,441	8,669	8,903	9,143	9,390	9,644
52240	SEWER ENGINEERING-MANHOLE COVERS	2	-	-	-	-	-	-	-	-	-
52260	SEWER ENGINEERING-COMPUTER EQUIP	2	3,000	3,081	3,164	3,249	3,337	3,427	3,520	3,615	3,713
52300	SEWER ENGINEERING-CONTRACT SERVICE	2	4,500	4,622	4,747	4,875	5,007	5,142	5,281	5,424	5,570
52350	SEWER ENGINEERING-LEGAL	2	60,000	61,620	63,284	64,993	66,748	68,550	70,401	72,302	74,254
52300	SEWER VVWRA-CONTRACT SERVICES	8	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400	8,713,400
<b>SUBTOTAL: SEWER SYSTEM EXPENSES</b>			<b>\$ 9,938,254</b>	<b>\$ 9,971,669</b>	<b>\$ 10,006,000</b>	<b>\$ 10,041,278</b>	<b>\$ 10,077,526</b>	<b>\$ 10,114,771</b>	<b>\$ 10,153,044</b>	<b>\$ 10,192,376</b>	<b>\$ 10,232,792</b>

<b>GRAND TOTAL: IWWTP &amp; SEWER OPERATING EXPENSES</b>	<b>\$ 18,885,071</b>	<b>\$ 18,536,180</b>	<b>\$ 17,383,378</b>	<b>\$ 18,316,679</b>	<b>\$ 18,600,725</b>	<b>\$ 19,316,307</b>	<b>\$ 19,614,057</b>	<b>\$ 19,921,408</b>	<b>\$ 20,238,685</b>
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FORECASTING ASSUMPTIONS:

COST INFLATION FACTORS (2)	Basis	2018	2019	2020	2021	2022	2023	2024	2025	2026
No growth	1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
General Cost Inflation	2	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
Fuel cost	3	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%
Transportation	4	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Utilities	5	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Woodard and Curran Costs	6	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
CCTV Rate	7	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
No Inflation	8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

- Revenue and expenses for FY 2017/18 - FY 2025/16 were provided by District Staff. Source File: COV Sewer Data 01-17-2018.xlsx
- Budget revenue and expenses for FY 2017/18 were provided by District Staff. CPI inflation factors for each expense are provided by staff.  
The District's inflationary factors are applied to revenues & expenses in 2026/27 and beyond. Source File: COV Sewer - IWWTP Data 09-28-2017.xlsx
- Interest payment on inter agency loan shown in Exhibit 3 (Debt).

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Capital Improvement Plan Expenditures

EXHIBIT 2

CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Budget		Projection						
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
<b>Funding Sources:</b>									
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Capacity Fee Reserves	-	-	-	-	-	-	-	-	-
SRF Loan Funding	-	-	-	-	-	-	-	-	-
Use of New Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	6,344,000	4,868,425	806,137	-	-	-	117,960	1,125,507	2,534,530
Rate Revenue	-	-	4,505,268	5,628,267	4,318,735	2,851,947	4,703,762	3,035,825	1,518,553
<b>Total Sources of Capital Funds</b>	<b>\$ 6,344,000</b>	<b>\$ 4,868,425</b>	<b>\$ 5,311,405</b>	<b>\$ 5,628,267</b>	<b>\$ 4,318,735</b>	<b>\$ 2,851,947</b>	<b>\$ 4,821,722</b>	<b>\$ 4,161,332</b>	<b>\$ 4,053,083</b>
<b>Uses of Capital Funds:</b>									
Total Project Costs	\$ 6,344,000	\$ 4,868,425	\$ 5,311,405	\$ 5,628,267	\$ 4,318,735	\$ 2,851,947	\$ 4,821,722	\$ 4,161,332	\$ 4,053,083
<b>Capital Funding Surplus (Deficiency)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Inter Agency Loan Funding</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>New Revenue Bond Proceeds</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

Capital Improvement Program Funding Choice	2018	2019	2020	2021	2022	2023	2024	2025	2026
Effective Annual Funding Amount	\$ 6,344,000	\$ 4,868,425	\$ 5,311,405	\$ 5,628,267	\$ 4,318,735	\$ 2,851,947	\$ 4,821,722	\$ 4,161,332	\$ 4,053,083

CAPITAL IMPROVEMENT PROGRAM

Capital Improvement Program Costs (1):

Project Description	2018	2019	2020	2021	2022	2023	2024	2025	2026
76024 IWWTP-BOILER UPGRADE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
76025 IWWTP-PERC POND MOD	-	-	-	-	-	-	-	-	-
76030 IWWTP-ADDITIONAL GENERATOR SET	645,000	-	-	-	-	-	-	-	-
76034 IWWTP-MEMBRANE REPLACEMENT	1,300,000	-	-	-	-	-	-	-	-
76035 IWWTP-WATER RECYCLING STUDY	121,000	-	-	-	-	-	-	-	-
IWWTP-CAPITAL ASSET REPLACEMENTS	412,000	1,065,000	1,093,755	1,123,286	1,153,615	1,184,763	1,216,752	1,249,604	1,283,343
70013 SANITARY RELATED EQUIPMENT	24,500	26,000	27,600	29,300	31,100	33,000	35,000	37,100	39,300
70649 TRUCK, 4X4 1 TON CRW CAB	40,000	-	-	-	-	-	-	-	-
70655 PUMPING STATION-REDUNDANCY	150,000	-	-	-	-	-	-	-	-
70662 TRAILER-BACKHOE T40	21,500	-	-	-	-	-	-	-	-
70663 LOADER-BACKHOE JD 410	100,000	-	-	-	-	-	-	-	-
<b>Sub-Total: CIP Program Costs</b>	<b>\$ 2,814,000</b>	<b>\$ 1,091,000</b>	<b>\$ 1,121,355</b>	<b>\$ 1,152,586</b>	<b>\$ 1,184,715</b>	<b>\$ 1,217,763</b>	<b>\$ 1,251,752</b>	<b>\$ 1,286,704</b>	<b>\$ 1,322,643</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Capital Improvement Plan Expenditures

EXHIBIT 2

Capital Improvement Program Costs, ctd(1):

Project Description	2018	2019	2020	2021	2022	2023	2024	2025	2026
TRAILER	360,000	30,000	-	-	-	-	-	-	-
HOSE REAL	-	25,000	-	-	-	-	-	-	-
VEHICLE-REPLACE FORD EXPEDITION	-	50,000	-	-	-	-	-	-	-
TRUCK-REPLACE FORD F350	-	80,000	-	-	-	-	-	-	-
TRASH PUMP-REPLACE NON-COMPLIANT GOODW	-	90,000	-	-	-	-	-	-	-
TRUCK, CLEANING-REPLACE INTERNATIONAL 210	-	700,000	-	-	-	-	-	-	-
SPRAYER, AIRLESS-REPLACE 8900XLT TITAN	-	-	8,000	-	-	-	-	-	-
TRUCK-REPLACE DODGE RAM 2500	-	-	-	75,000	-	-	-	-	-
ARROWBOARD-REPLACE	-	-	-	-	8,000	-	-	-	-
VEHICLE-REPLACE FORD EXPEDITION	-	-	-	-	60,000	-	-	-	-
TRUCK, DUMP-REPLACE STERLING LT8500	-	-	-	-	210,000	-	-	-	-
FLOODLIGHT-REPLACE MAGNUM	-	-	-	-	-	20,000	-	-	-
TRUCK, CLEANING-REPLACE AUTOCAR WX64 VA	-	-	-	-	-	-	950,000	-	-
BACKHOE-REPLACE JOHN DEERE 410L	-	-	-	-	-	-	-	200,000	-
LIFT STATION-SCADA	-	20,000	-	-	-	-	-	-	-
LIFT STATION-SCLA	-	-	-	-	-	100,000	-	-	-
36020 CW DATA STORAGE	-	-	-	-	-	-	-	-	-
77419 WORK ORDER SYSTEM	178,000	-	-	-	-	-	-	-	-
77419 WORK ORDER SYSTEM-SOFTWARE	38,000	-	-	-	-	-	-	-	-
77001 SEWER MASTER PLAN	-	-	-	-	342,000	-	-	-	-
77426 MAINLINE REPL-VARIOUSE LOCATIONS	511,000	-	-	-	-	-	-	-	-
77427 MAINLINE REPL-STRUCTURAL DEFIECNCIES	1,499,000	-	1,000,000	2,164,800	2,208,096	1,100,000	2,297,303	2,343,249	2,390,114
77428 MAINLINE CAPACITY REPL-HESPERIA TO ARROW	315,000	-	2,892,000	-	-	-	-	-	-
77429 MAINLINE CAPACITY REPL-ARRWHEAD TO BURN	75,000	-	-	702,000	-	-	-	-	-
77430 MAINLINE REPL- NISQUALLY TO HESPERIA	132,000	-	-	1,236,000	-	-	-	-	-
77433 MANHOLE REHABILITATION	275,000	282,425	290,050	297,881	305,924	314,184	322,667	331,379	340,326
80007 PALMDALE YARD-BLDG IMPRVNT	130,000	-	-	-	-	-	-	-	-
80007 PALMDALE YARD-SEWER	17,000	-	-	-	-	-	-	-	-
RATE STUDY UPDATE	-	-	-	-	-	100,000	-	-	-
COAD ROAD SEWER LINE	-	2,500,000	-	-	-	-	-	-	-
<i>Placeholder for Future Year Capital Projects (2)</i>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Sub-Total: CIP Program Costs</b>	<b>\$ 3,530,000</b>	<b>\$ 3,777,425</b>	<b>\$ 4,190,050</b>	<b>\$ 4,475,681</b>	<b>\$ 3,134,020</b>	<b>\$ 1,634,184</b>	<b>\$ 3,569,970</b>	<b>\$ 2,874,628</b>	<b>\$ 2,730,440</b>
<b>Total: CIP Program Costs</b>	<b>\$ 6,344,000</b>	<b>\$ 4,868,425</b>	<b>\$ 5,311,405</b>	<b>\$ 5,628,267</b>	<b>\$ 4,318,735</b>	<b>\$ 2,851,947</b>	<b>\$ 4,821,722</b>	<b>\$ 4,161,332</b>	<b>\$ 4,053,083</b>

1. Capital project costs for 2016/17 - 2025/26 from Source File: COV Sewer Data 01-17-2018.xlsx. It is assumed that these project costs include inflation.

2. Future year projects based upon the annual average CIP cost for 2016/17 through 2025/26.

OUTSTANDING DEBT OBLIGATIONS	Budget	Projection							
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
<b>Annual Repayment Schedules: (1)</b>									
Inter Agency Loan - \$35,320,581 (2)									
Principal Payment	\$ 892,632	\$ 1,042,632	\$ 1,054,632	\$ 1,066,632	\$ 1,078,632	\$ 1,090,632	\$ 1,102,632	\$ 1,114,632	\$ 1,126,632
Interest Payment	428,400	565,129	685,559	830,583	803,917	776,951	749,686	722,120	694,254
<b>Subtotal: Annual Debt Service</b>	<b>\$ 1,321,032</b>	<b>\$ 1,607,761</b>	<b>\$ 1,740,191</b>	<b>\$ 1,897,215</b>	<b>\$ 1,882,549</b>	<b>\$ 1,867,583</b>	<b>\$ 1,852,318</b>	<b>\$ 1,836,752</b>	<b>\$ 1,820,886</b>
Coverage Requirement (\$-Amnt above annual payment)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

**Existing Debt Obligations to be Satisfied by Sewer Rates:**

<b>Existing Annual Debt Service</b>	<b>\$ 1,321,032</b>	<b>\$ 1,607,761</b>	<b>\$ 1,740,191</b>	<b>\$ 1,897,215</b>	<b>\$ 1,882,549</b>	<b>\$ 1,867,583</b>	<b>\$ 1,852,318</b>	<b>\$ 1,836,752</b>	<b>\$ 1,820,886</b>
<b>Existing Annual Coverage Requirement</b>	-	-	-	-	-	-	-	-	-
<b>Existing Debt Reserve Target</b>	-	-	-	-	-	-	-	-	-

1. Inter Agency annual payment from VWD to IWWTP Debt Service Schdule.pdf
2. Final cost of Treatment plant is estimated to be \$32,311,983.79

**CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Projected Wastewater Rates Under Existing Rate Schedule**

**EXHIBIT 4**

**Current Wastewater Rate Schedule, FY 2015/16 :**

Current Wastewater Rate and Connection Fees	Fees
<b>City of Victorville Rates and Fees</b>	
<b>Sewer Rates:</b>	
Monthly Sewer Charges (per EDU): (1,2)	\$26.89
Multi-Family with Trash Bins (3)	\$24.63
<u>Contract Customer Rate (Dr. Pepper/Snapple)</u>	
Flow (Per 1,000 gallons)	\$0.37
COD (per pound)	\$0.13
SS (per pound)	\$0.22
Monthly Minimum	\$162,500
Septage Receiving Fee (per gallon):	\$0.0936
<b>Sewer Connection Fees (4):</b>	
<u>Residential and Non-Residential Users</u>	
Connection Fee per EDU	\$350
<u>Heavy Industrial Users (for IWWTP)</u>	
Connection Fee per 100,000 gallons	\$1,175,000
<b>VVWRA Rates and Fees</b>	
<u>High Strength Charges for Industrial Customers (5)</u>	
Concentrations above 200 mg/l (BOD - \$/LB)	\$0.2989
Concentrations above 250 mg/l (TSS - \$/LB)	\$0.2336
Concentrations above 20 mg/l (NH3 - \$/LB)	\$2.9252
VVWRA Connection Fees (per EDU): (6)	\$4,000

1. EDU = 245 gpd or 20 fixture units. Source file: VVWRA Rates ORD001\_-\_adopted\_032014.pdf  
For FCC, 83% of general consumption is assumed to be sewer flow when assigning EDUs.
2. Monthly sewer charge per EDU was found in the client provided source file:  
Source file: #9 COV Sewer Rate Adjustment 7.1.12.pdf
3. Rates show only this residential group is 91.6% of the normal per EDU rate of \$26.89.  
Source file: #9 COV Ordinance No. 2269 Sewer 1999.pdf, pg. 5.
4. Source: City of Victorville Municipal Code 10.0.040 - Connection fees.
5. Pass through of VVWRA fee schedule surcharge. Source: <http://vvwra.com/index.aspx?page=69>
6. Victorville collects all connection fees but the \$4,000 is a pass-through to VVWRA.

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Cost of Service Analysis

Classification of Expenses													
Budget Categories	Total Revenue Requirements	Flow	Strength		Process Treatment	VWRA Treatment	Customer	Basis of Classification					
	FY 2018/19	(VOL)	(BOD)	(TSS)	(PT)	(VWRA)	(CA)	(VOL)	(BOD)	(TSS)	(PT)	(VWRA)	(CA)
<b>WASTEWATER TREATMENT EXPENSES (IWWTP) - 4120710</b>													
IWWTP-FULL TIME WAGES	\$ 141,928	\$ -	\$ 70,964	\$ 70,964	\$ -	\$ -	\$ -	0%	50%	50%	0%	0%	0%
IWWTP-FRINGE BENEFITS	47,194	-	23,597	23,597	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-RETIREE EXP	-	-	-	-	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-PAYROLL TAXES	3,613	-	1,807	1,807	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-ELECTRICITY	630,000	-	157,500	157,500	315,000	-	-	0%	25%	25%	50%	0%	0%
IWWTP-WATER USE	1,050	-	525	525	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-NATURAL GAS	147,000	-	3,675	3,675	139,650	-	-	0%	2.5%	2.5%	95%	0%	0%
IWWTP-SANITATION	8,715	-	4,358	4,358	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-SUBS/PUBS/DUES	514	-	257	257	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-TRAINING & EDUCATION	5,340	-	2,670	2,670	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-TRAVEL & MEETINGS	5,135	-	2,568	2,568	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-MARKETING & PROMOTIONS	62,500	-	31,250	31,250	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-EQUIPMENT FUEL	2,054	-	1,027	1,027	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-EQUIPMENT EXP	11,297	-	5,649	5,649	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-CONTRACT SERVICES	2,955,070	-	1,199,709	1,199,709	555,652	-	-	0%	41%	41%	19%	0%	0%
IWWTP-INSURANCE	2,054	-	1,027	1,027	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-LEGAL	20,808	-	10,404	10,404	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-FED/STAT/LOCAL FEES	26,702	-	13,351	13,351	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-INFRASTRUCTURE REPAIRS	11,502	-	5,751	5,751	-	-	-	0%	50%	50%	0%	0%	0%
IWWTP-UNCOLLECTIBLE WRITE OFFS	300	-	150	150	-	-	-	0%	50%	50%	0%	0%	0%
INTEREST EXPENSE-INTER-FUND	-	-	-	-	-	-	-	0%	50%	50%	0%	0%	0%
LOAN-IWWTP TO WATER	-	-	-	-	-	-	-	0%	50%	50%	0%	0%	0%
<b>Sub-Total IWWTP</b>	<b>\$ 4,082,776</b>	<b>\$ -</b>	<b>\$ 1,536,237</b>	<b>\$ 1,536,237</b>	<b>\$ 1,010,302</b>	<b>\$ -</b>	<b>\$ -</b>	<b>0%</b>	<b>38%</b>	<b>38%</b>	<b>25%</b>	<b>0%</b>	<b>0%</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Cost of Service Analysis

Classification of Expenses, continued													
Budget Categories	Total Revenue Requirements	Flow	Strength		Process Treatment	VVWRA Treatment	Customer	Basis of Classification					
	FY 2018/19	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)
<b>SEWER EXPENSES - 4250700</b>													
SEWER-FULL TIME WAGES	\$ 880,626	\$ 836,595	\$ -	\$ -	\$ -	\$ -	\$ 44,031	95%	0%	0%	0%	0%	5%
SEWER-ADDED STAFF	-	-	-	-	-	-	-	95%	0%	0%	0%	0%	5%
SEWER-OVERTIME WAGES	35,945	34,148	-	-	-	-	1,797	95%	0%	0%	0%	0%	5%
SEWER-FRINGE BENEFITS	362,475	344,351	-	-	-	-	18,124	95%	0%	0%	0%	0%	5%
SEWER-ADDED STAFF	-	-	-	-	-	-	-	95%	0%	0%	0%	0%	5%
SEWER-RETIREE EXPENSE	2,033	1,931	-	-	-	-	102	95%	0%	0%	0%	0%	5%
SEWER-PAYROLL TAXES	21,888	20,794	-	-	-	-	1,094	95%	0%	0%	0%	0%	5%
SEWER-ADDED STAFF	-	-	-	-	-	-	-	95%	0%	0%	0%	0%	5%
SEWER-ELECTRICITY	21,730	20,644	-	-	-	-	1,087	95%	0%	0%	0%	0%	5%
SEWER-WATER USE	15,794	15,004	-	-	-	-	790	95%	0%	0%	0%	0%	5%
SEWER-NATURAL GAS	2,597	2,467	-	-	-	-	130	95%	0%	0%	0%	0%	5%
SEWER-TELEPHONE	12,558	9,419	-	-	-	-	3,140	75%	0%	0%	0%	0%	25%
SEWER-SUPPLIES	43,057	40,904	-	-	-	-	2,153	95%	0%	0%	0%	0%	5%
SEWER-SUBS/PUBS/DUES	45,702	43,417	-	-	-	-	2,285	95%	0%	0%	0%	0%	5%
SEWER-TRAINING & EDUCATION	17,921	17,025	-	-	-	-	896	95%	0%	0%	0%	0%	5%
SEWER-TRAVEL & MEETINGS	8,944	8,497	-	-	-	-	447	95%	0%	0%	0%	0%	5%
SEWER-ADVERTG/NOTICES	308	-	-	-	-	-	308	0%	0%	0%	0%	0%	100%
SEWER-RECRUITMENT	770	732	-	-	-	-	39	95%	0%	0%	0%	0%	5%
SEWER-VEHICLE FUEL	26,291	24,976	-	-	-	-	1,315	95%	0%	0%	0%	0%	5%
SEWER-EQUIPMENT FUEL	16,432	15,610	-	-	-	-	822	95%	0%	0%	0%	0%	5%
SEWER-EQUIPMENT EXP	49,484	47,010	-	-	-	-	2,474	95%	0%	0%	0%	0%	5%
SEWER-VEHICLE EXP	19,513	18,537	-	-	-	-	976	95%	0%	0%	0%	0%	5%
SEWER-FRNT/SMALL TOOLS	8,524	8,098	-	-	-	-	426	95%	0%	0%	0%	0%	5%
SEWER-RENTALS	5,135	4,878	-	-	-	-	257	95%	0%	0%	0%	0%	5%
SEWER-COMPUTER EQUIP	11,913	11,317	-	-	-	-	596	95%	0%	0%	0%	0%	5%
SEWER-CONTRACT SERVICES	251,615	239,034	-	-	-	-	12,581	95%	0%	0%	0%	0%	5%
SEWER-CONTRACT SERVICES CCTV	-	-	-	-	-	-	-	95%	0%	0%	0%	0%	5%
SEWER-LEGAL	61,620	58,539	-	-	-	-	3,081	95%	0%	0%	0%	0%	5%
POTENTIAL REGULATORY COMPLIANCE	1,500,000	1,425,000	-	-	-	-	75,000	95%	0%	0%	0%	0%	5%
SEWER-FED/STATE/LOCAL FEES	19,616	18,635	-	-	-	-	981	95%	0%	0%	0%	0%	5%
SEWER-BUILDING MAINTENANCE	19,000	18,050	-	-	-	-	950	95%	0%	0%	0%	0%	5%
SEWER-GROUNDS MAINTENANCE	1,027	976	-	-	-	-	51	95%	0%	0%	0%	0%	5%
SEWER-INFRASTRUCTURE REPAIRS	117,078	111,224	-	-	-	-	5,854	95%	0%	0%	0%	0%	5%
SEWER-VANDALISM	1,027	976	-	-	-	-	51	95%	0%	0%	0%	0%	5%
SEWER-COST ALLOCATIONS	901,112	675,834	-	-	-	-	225,278	75%	0%	0%	0%	0%	25%
<b>Sub-Total Sewer</b>	<b>\$ 4,481,735</b>	<b>\$ 4,074,622</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,113</b>	<b>91%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>9%</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Cost of Service Analysis

Classification of Expenses, continued													
Budget Categories	Total Revenue Requirements	Flow	Strength		Process Treatment	VVWRA Treatment	Customer	Basis of Classification					
	FY 2018/19	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)
<b>SEWER GIS EXPENSES - 4251510</b>													
SEWER GIS-CONTRACT SERVICES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%	0%	0%	0%	0%	0%
SEWER GIS-FULL TIME WAGES	65,929	65,929	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER GIS-FRINGE BENEFITS	23,928	23,928	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER GIS-PAYROLL TAXES	1,681	1,681	-	-	-	-	-	100%	0%	0%	0%	0%	0%
<b>Sub-Total GIS</b>	<b>\$ 91,538</b>	<b>\$ 91,538</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
<b>SEWER DEV EXPENSES - 4254000</b>													
SEWER DEV-FULL TIME WAGES	\$ 77,902	\$ 77,902	\$ -	\$ -	\$ -	\$ -	\$ -	100%	0%	0%	0%	0%	0%
SEWER DEV-FRINGE BENEFITS	29,889	29,889	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER DEV-PAYROLL TAXES	1,971	1,971	-	-	-	-	-	100%	0%	0%	0%	0%	0%
<b>Sub-Total DEV</b>	<b>\$ 109,762</b>	<b>\$ 109,762</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
<b>SEWER ENGINEER EXPENSES - 4254500</b>													
SEWER ENGINEERING-FULL TIME WAGES	\$ 699,020	\$ 699,020	\$ -	\$ -	\$ -	\$ -	\$ -	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-OVERTIME WAGES	1,541	1,541	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-FRINGE BENEFITS	235,379	235,379	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-RETIREE EXPENSE	571	571	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-PAYROLL TAXES	17,825	17,825	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-ELECTRICITY	12,911	12,911	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-WATER USE	746	746	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-NATURAL GAS	1,083	1,083	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-TELEPHONE	761	761	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-SUPPLIES	3,081	3,081	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING - TRAINING & EDUCATIO	205	205	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-TRAVEL & MEETINGS	208	208	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-VEHICLE FUEL	3,595	3,595	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-EQUIPMENT EXP	149	149	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-VEHICLE EXP	2,568	2,568	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-FRNT/SMALL TOOLS	8,003	8,003	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-MANHOLE COVERS	-	-	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-COMPUTER EQUIP	3,081	3,081	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-CONTRACT SERVICES	4,622	4,622	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER ENGINEERING-LEGAL	61,620	61,620	-	-	-	-	-	100%	0%	0%	0%	0%	0%
SEWER VVWRA-CONTRACT SERVICES	8,713,400	-	-	-	-	8,713,400	-	0%	0%	0%	0%	100%	0%
<b>Sub-Total Engineering</b>	<b>\$ 9,770,369</b>	<b>\$ 1,056,969</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 8,713,400</b>	<b>\$ -</b>	<b>11%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>89%</b>	<b>0%</b>
<b>Total</b>	<b>\$ 18,536,180</b>	<b>\$ 5,332,891</b>	<b>\$ 1,536,237</b>	<b>\$ 1,536,237</b>	<b>\$ 1,010,302</b>	<b>\$ 8,713,400</b>	<b>\$ 407,113</b>	<b>29%</b>	<b>8%</b>	<b>8%</b>	<b>5%</b>	<b>47%</b>	<b>2%</b>

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Cost of Service Analysis

Classification of Expenses, continued													
Budget Categories	Total Revenue Requirements	Flow	Strength		Process Treatment	VVWRA Treatment	Customer	Basis of Classification					
	FY 2018/19	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)	(VOL)	(BOD)	(TSS)	(PT)	(VVWRA)	(CA)
<b>Debt Service Payments</b>													
Inter Agency Loan - Principal Payment	\$ 1,042,632	\$ 456,000	\$ -	\$ -	\$ 586,632	\$ -	\$ -	44%	0%	0%	56%	0%	0%
Inter Agency Loan - Interest Payment	\$ 565,129	-	282,565	282,565	-	-	-	0%	50%	50%	0%	0%	0%
<b>Total Debt Service Payments</b>	<b>\$ 1,607,761</b>	<b>\$ 456,000</b>	<b>\$ 282,565</b>	<b>\$ 282,565</b>	<b>\$ 586,632</b>	<b>\$ -</b>	<b>\$ -</b>	<b>28%</b>	<b>18%</b>	<b>18%</b>	<b>36%</b>	<b>0%</b>	<b>0%</b>
<b>Capital Expenditures</b>													
Rate Funded Capital Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	80%	10%	10%	0%	0%	0%
<b>TOTAL REVENUE REQUIREMENTS</b>	<b>\$ 20,143,941</b>	<b>\$ 5,788,891</b>	<b>\$ 1,818,802</b>	<b>\$ 1,818,802</b>	<b>\$ 1,596,934</b>	<b>\$ 8,713,400</b>	<b>\$ 407,113</b>	<b>29%</b>	<b>9%</b>	<b>9%</b>	<b>8%</b>	<b>43%</b>	<b>2%</b>
<b>Less: Non-Rate Revenues</b>													
Sewer Use Fee - Capital & Connection Fees	\$ (1,042,632)	\$ (456,000)	\$ -	\$ -	\$ (586,632)	\$ -	\$ -	44%	0%	0%	56%	0%	0%
Interest Income	\$ (62,281)	\$ (17,898)	\$ (5,623)	\$ (5,623)	\$ (4,937)	\$ (26,940)	\$ (1,259)	29%	9%	9%	8%	43%	2%
<b>NET REVENUE REQUIREMENTS</b>	<b>\$ 19,039,028</b>	<b>\$ 5,314,992</b>	<b>\$ 1,813,178</b>	<b>\$ 1,813,178</b>	<b>\$ 1,005,365</b>	<b>\$ 8,686,460</b>	<b>\$ 405,855</b>						
<b>Allocation of Revenue Requirements</b>	<b>100.0%</b>	<b>27.9%</b>	<b>9.5%</b>	<b>9.5%</b>	<b>5.3%</b>	<b>45.6%</b>	<b>2.1%</b>						
<i>Net Revenue Req't. Check from Financial Plan</i>	\$ -												
<b>Adjustment to Current Rate Level:</b>													
Target Rate Rev. After Rate Increases	\$ 18,365,401												
Projected Rate Revenue at Current Rates	15,969,914												
Projected Rate Increase	15.0%												
<b>Adjusted Net Revenue Req'ts</b>	<b>\$ 18,365,401</b>	<b>\$ 5,126,941</b>	<b>\$ 1,749,025</b>	<b>\$ 1,749,025</b>	<b>\$ 969,793</b>	<b>\$ 8,379,121</b>	<b>\$ 391,495</b>						
<i>Percent of Revenue</i>	<i>100.0%</i>	<i>27.9%</i>	<i>9.5%</i>	<i>9.5%</i>	<i>5.3%</i>	<i>45.6%</i>	<i>2.1%</i>						

**CITY OF VICTORVILLE**  
**WASTEWATER RATE STUDY**  
**Wastewater Cost of Service Analysis**

<b>Development of the Volume Allocation Factor (1)</b>						
<b>Customer Class</b>	<b>Annual Water Consumption/ Actual Sewer Flow (hcf) (3)</b>	<b>Annualized Winter Average Consumption (hcf) (4)</b>	<b>Estimated Annual Volume Total (hcf) (5)</b>	<b>Adjusted Annual Volume Total (hcf)</b>	<b>Percentage of Adjusted Volume by Treatment Location</b>	<b>Percentage of Total Adjusted Volume</b>
<b>Industrial Wastewater Treatment Plant (IWWTP)</b>						
<b>SINGLE FAMILY RESIDENTIAL</b>	1,134,504	775,503	775,503	632,342	<b>60.0%</b>	<b>15.2%</b>
<b>MULTI-FAMILY RESIDENTIAL</b>						
Apartment Complex	111,541	77,359	111,541	90,950	<b>8.6%</b>	<b>2.2%</b>
Mobile Home / Condo Housing	27,042	20,050	27,042	22,050	<b>2.1%</b>	<b>0.5%</b>
Campground	945	577	945	770	<b>0.1%</b>	<b>0.0%</b>
Rest/Nursing/Convalescent Home	66	22	66	54	<b>0.0%</b>	<b>0.0%</b>
Other	240	62	240	196	<b>0.0%</b>	<b>0.0%</b>
<b>INDUSTRIAL (6)</b>						
FCC (7,8) - Nevada	114,201	<i>n/a</i>	114,201	114,201	<b>10.8%</b>	<b>2.8%</b>
Dr. Pepper/Snapple (9)	189,754	<i>n/a</i>	189,754	189,754	<b>18.0%</b>	<b>4.6%</b>
PlastiPak (10)	3,970	<i>n/a</i>	3,970	3,970	<b>0.4%</b>	<b>0.1%</b>
<b>Sub-Total IWWTP</b>	<b>1,582,263</b>	<b>--</b>	<b>1,223,261</b>	<b>1,054,287</b>	<b>100%</b>	<b>25%</b>
<b>Victor Valley Wastewater Reclamation Authority (VWVRA)</b>						
<b>SINGLE FAMILY RESIDENTIAL</b>	3,233,973	2,210,617	2,210,617	1,802,530	<b>58.3%</b>	<b>43.5%</b>
<b>MULTI-FAMILY RESIDENTIAL</b>						
Apartment Complex	317,954	220,517	317,954	259,259	<b>8.4%</b>	<b>6.3%</b>
Mobile Home / Condo Housing	77,085	57,154	77,085	62,855	<b>2.0%</b>	<b>1.5%</b>
Campground	2,693	1,643	2,693	2,196	<b>0.1%</b>	<b>0.1%</b>
Rest/Nursing/Convalescent Home	188	62	188	153	<b>0.0%</b>	<b>0.0%</b>
Other	685	178	685	558	<b>0.0%</b>	<b>0.0%</b>
<b>COMMERCIAL (ALL USERS)</b>	823,548	565,880	823,548	671,518	<b>21.7%</b>	<b>16.2%</b>
<b>INDUSTRIAL (6)</b>						
FCC (7,8) - George	293,659	<i>n/a</i>	293,659	293,659	<b>9.5%</b>	<b>7.1%</b>
<b>Sub-Total VWVRA</b>	<b>4,749,785</b>	<b>--</b>	<b>3,726,430</b>	<b>3,092,729</b>	<b>100%</b>	<b>75%</b>
<b>Total:</b>	<b>6,332,048</b>	<b>--</b>	<b>4,949,691</b>	<b>4,147,016</b>		<b>100.0%</b>
				<i>Estimated Combined WWTP Flow (hcf/yr.) (11)</i>	4,147,016	
				<i>Estimated Combined WWTP Flow (mgd/yr.) (11)</i>	8.50	
				<i>Flow Adj. Factor (Non-Industrial)</i>	0.82	

**CITY OF VICTORVILLE**  
**WASTEWATER RATE STUDY**  
**Wastewater Cost of Service Analysis**

Notes for Volume Allocation Factor Table:

1. Consumption data is based on the City of Victorville's FY 2014/15 customer billing data for the water utility. Source file: Manipul. Water Data Summaries All Data 12.28.2015.xlsx
2. Residential classes are by number of dwelling units while commercial is by number of accounts.
3. Annual water consumption is for July 2014 - June 2015, for Residential and Commercial Customers. Actual Sewer Flow shown for Industrial Customers.
4. Annualized average winter water consumption is based on consumption in the lowest three months, January - March 2015.
5. Estimated annual volume is based upon winter water consumption for SFR, and annual water consumption for MFR and Commercial. Industrial customers based on actual flow to wastewater treatment plants.
6. Actual wastewater treatment plant flow data is used here for Industrial customers.
7. City staff (Linda St. Louis) provided data in email on 12/21/15 at 10:47 am - Source file: Industrial Customers Data.
8. In the billing methodology for FCC, it is assumed 83% of water consumed returns to the sewer system. Based on discussion with City staff, it is assumed that 100% of FCC's water consumption returns to the sewer. Per V & A Flow Study Dated June 2010, 28% of sewer flow is through Nevada outfall (72% George).
9. Dr. Pepper is a contract customer; City provided actual sewer flow. Source file: DPSG COD and Flow.xlsx. Most recent flow used here (March 2016 - Feb. 2017).
10. Source: Woodard Curran Consolidated 2017 data (PlastiPak).xlsx. Most recent data used: 7/11/2016 - 7/10/2017.
11. Total Wastewater Treatment Plant flow includes VVWRA flow and the City's IWWTP flow, for FY 2014/15.

**CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Wastewater Cost of Service Analysis**

**Wastewater Treatment Plant Flow/Strength Data for VVWRA:**

Year	Flow (MGD) <sup>1</sup>	BOD (lbs)	TSS (lbs)
FY 2012/13	7.71	6,722,492	6,010,780
FY 2013/14	7.27	7,175,031	6,754,543
FY 2014/15	6.86	6,753,100	8,011,864

1. City staff provided data in source file: #15 City of Victorville Flow Data 2012\_2015.xlsx

**Wastewater Treatment Plant Flow/Strength Data for City of Victorville:**

Year	Flow (MGD) <sup>1</sup>	Industrial COD (lbs)	Sanitary COD (lbs)	Total COD (lbs)	TSS/TDS/FDS (lbs)
FY 2012/13	n/a	n/a	n/a	n/a	n/a
FY 2013/14	n/a	n/a	n/a	n/a	n/a
FY 2014/15	0.98	66,240	39,654	105,894	n/a
FY 2015/16	1.60	69,941	83,784	153,725	n/a
March '16 - Feb '17	1.64	76,258	86,863	163,121	n/a

1. Data source, from City staff: COD and Flow.pdf.

**Summary of Wastewater Treatment Plant Flow Data for City and VVWRA:**

Total Flow for City and VVWRA Combined	
FY 2014/15	7.84
Most Recent for City + VVWRA <sup>1</sup>	8.50

1. FY 2014/15 for VVWRA and March 2016 - Feb. 2017 for City of Victorville.

**CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Wastewater Cost of Service Analysis**

<b>Development of the Customer Allocation Factor</b>			
<b>Customer Class</b>	<b>Number of Accounts (1)</b>	<b>Number of Dwelling Units (2)</b>	<b>Percent of Total Accounts</b>
SINGLE FAMILY RESIDENTIAL	25,726	25,802	<b>95%</b>
MULTI-FAMILY RESIDENTIAL	541	6,134	<b>2%</b>
COMMERCIAL	875	--	<b>3%</b>
INDUSTRIAL:			
FCC	2	--	<b>0%</b>
Dr. Pepper/Snapple	1	--	<b>0%</b>
PlastiPak	1	--	<b>0%</b>
<b>Total</b>	<b>27,146</b>	<b>31,936</b>	<b>100%</b>

Notes for Customer Allocation Factor Table:

1. Number of accounts is based on the number of sewer customers billed a charge in September 2015.  
Source file: #3 SewerBilling Information from Client 12 21 15.xlsx
2. Number of dwelling units is as of September 2015.

<b>Estimated Flow Per Dwelling Unit</b>			
<b>Customer Class</b>	<b>Est. Annual Wastewater Flow (hcf)</b>	<b>Est. Flow/DU/Day (gallons)</b>	<b>% of SFR Flow</b>
SINGLE FAMILY RESIDENTIAL	2,434,873	193	--
MULTI-FAMILY RESIDENTIAL	325,021	109	56%

<b>Calculated Number of EDU's Connected</b>	
Total Flow (All Customers) (hcf)	4,147,016
Total Flow (All Customers) (mgd)	8.50
Estimated Flow/Day/EDU (1)	200
Estimated # of EDU's	42,496

(1) Rounded to nearest tenth.

**CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Wastewater Cost of Service Analysis**

<b>Development of Allocation Factors - Biochemical Oxygen Demand (BOD) / Chemical Oxygen Demand (COD)<sup>1</sup> at IWWTP (Sanitary Flow)</b>							
<b>Customer</b>	<b>Annual Flow (hcf)</b>	<b>Average Strength Factor (BOD mg/l)</b>	<b>Calculated Strength BOD (lbs./yr.)</b>	<b>Average Strength Factor (COD mg/l)</b>	<b>Calculated Strength COD (lbs./yr.)</b>	<b>Adjusted Strength COD (lbs./yr.)</b>	<b>Percent of Total BOD / COD</b>
<b>Sanitary Flow</b>							
Single Family Residential	632,342	175	690,332	495	1,952,933	1,504,681	57.0%
Multi-Family Residential	114,020	175	124,476	495	352,141	271,315	10.3%
Commercial	0	175	0	495	0	0	0.0%
<b>Industrial Flow</b>							
FCC <sup>3</sup>	114,201	192	137,090	524	373,658	287,893	10.9%
Dr. Pepper/Snapple <sup>4</sup>	189,754	250	295,937	622	735,906	566,995	21.5%
PlastiPack <sup>5</sup>	3,970	175	4,334	495	12,260	9,446	0.4%
<b>Total</b>	<b>1,054,287</b>	<b>190</b>	<b>1,252,169</b>	<b>528</b>	<b>3,426,897</b>	<b>2,640,330</b>	<b>100%</b>
<i>Total Annual COD Treated at IWWTP (lbs)</i>					2,640,330		
<i>Adjustment Factor</i>					0.77		

1. Some Customer data provided in terms of BOD others in terms of COD.  
Conversion between metrics calculated from analysis provided in *Operation of Municipal Wastewater Treatment Plants Chapter 17, pg. 9.*
2. Treatment of BOD through 175 and COD through 495 (mg/l) is paid through the standard Sewer Rate and so excluded from analysis.
3. Sources: *July 2014.pdf through January.pdf gathered in GB Ind. Customers 07.07.17.xlsx*
4. Source: *DPSG COD and Flow.xlsx.*
5. Source: *Woodard Curran Consolidated 2017 data (PlastiPak).xlsx. Assumed BOD is sanitary strength (175 mg/l).*

<b>Development of Allocation Factors - Total Suspended Solids at IWWTP</b>				
<b>Customer</b>	<b>Annual Flow (hcf)</b>	<b>Average Strength Factor (mg/l)</b>	<b>Calculated TSS (lbs./yr.)</b>	<b>Percent of Total TSS</b>
<b>Sanitary Flow</b>				
Single Family Residential	632,342	175	690,332	55.1%
Multi-Family Residential	114,020	175	124,476	9.9%
Commercial	0	175	0	0.0%
<b>Industrial Flow</b>				
FCC <sup>2</sup>	114,201	177	126,276	10.1%
Dr. Pepper/Snapple <sup>3</sup>	189,754	250	295,937	23.6%
PlastiPack <sup>4</sup>	3,970	630	15,607	1.2%
<b>Total</b>	<b>1,054,287</b>	<b>190</b>	<b>1,252,627</b>	<b>100.0%</b>

1. Treatment of TSS through 175 (mg/l) is paid through the standard Sewer Rate and so excluded from analysis.
2. Sources: *July 2014.pdf through January.pdf gathered in GB Ind. Customers 07.07.17.xlsx*
3. Source: *DPSG COD and Flow.xlsx.*
4. Source: *Woodard Curran Consolidated 2017 data (PlastiPak).xlsx. Strength factor is for TDS, not TSS.*

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Sewer Cost of Service Analysis

Development of Allocation Factors Customer Class	Percentage Allocated by Each Factor (1)					
	Volume	BOD	TSS	PT	VVWRA	Customer
<b>Sanitary Flow</b>						
Single Family Residential	58.7%	57.0%	55.1%	0.0%	58.3%	94.8%
Multi-Family Residential	10.6%	10.3%	9.9%	0.0%	10.5%	2.0%
Commercial	16.2%	0.0%	0.0%	0.0%	21.7%	3.2%
<b>Industrial Flow</b>						
FCC	9.8%	10.9%	10.1%	0.0%	9.5%	0.0%
Dr. Pepper/Snapple	4.6%	21.5%	23.6%	100.0%	0.0%	0.0%
PlastiPack	0.1%	0.4%	1.2%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

1. Volume - Percentage of Total Adjusted Volume, BOD & TSS - Percentage of Total LBS, Process Treatment - All Allocated to Dr. Pepper/Snapple  
VVWRA - Percentage of Adjusted Volume at VVWRA, Customer Related - Percentage of Total Accounts

Allocation of FY 2018/19 Revenue Requirements by Customer Class								
Customer Class	Cost Classification Components (1)						Cost-of-Service Net Revenue Reqts.	% of COS Net Revenue Reqts.
	Volume	BOD	TSS	Process Treatment	VVWRA Treatment	Customer Related		
<b>Net Revenue Requirements</b>	<b>\$ 5,126,941</b>	<b>\$ 1,749,025</b>	<b>\$ 1,749,025</b>	<b>\$ 969,793</b>	<b>\$ 8,379,121</b>	<b>\$ 391,495</b>	<b>\$ 18,365,401</b>	<b>--</b>
	27.9%	9.5%	9.5%	5.3%	45.6%	2.1%	100.0%	
<b>SINGLE FAMILY RESIDENTIAL</b>	\$ 3,010,224	\$ 996,741	\$ 963,901	\$ -	\$ 4,883,589	\$ 371,016	\$ 10,225,471	55.7%
<b>MULTI-FAMILY RESIDENTIAL</b>	542,785	179,726	173,805	-	880,579	7,802	1,784,698	9.7%
<b>COMMERCIAL</b>	830,196	-	-	-	1,819,342	12,619	2,662,157	14.5%
<b>INDUSTRIAL</b>								
FCC	\$ 504,236	\$ 190,708	\$ 176,317	\$ -	\$ 795,610	\$ 29	\$ 1,666,899	9.1%
Dr. Pepper/Snapple	234,592	375,593	413,212	969,793	-	14	1,993,205	10.9%
Plastipak	4,908	6,257	21,791	-	-	14	32,971	0.2%
<b>GRAND TOTAL</b>	<b>\$ 5,126,941</b>	<b>\$ 1,749,025</b>	<b>\$ 1,749,025</b>	<b>\$ 969,793</b>	<b>\$ 8,379,121</b>	<b>\$ 391,495</b>	<b>\$ 18,365,401</b>	<b>100%</b>

1. Revenue requirement for each customer class is determined by multiplying the revenue requirement from each cost classification by the allocation factors for each customer class.

Volume - Percentage of Total Adjusted Volume, BOD & TSS - Percentage of Total LBS, Process Treatment - All Allocated to Dr. Pepper/Snapple  
VVWRA - Percentage of Adjusted Volume at VVWRA, Customer Related - Percentage of Total Accounts

CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Sewer Cost of Service Analysis

PROPOSED SEWER RATES FOR FY 2018/19:

Residential Sewer Rates:

Customer Class	No. of Dwelling Units (1)	Total Annual Revenue Requirement	Mo. Fixed Charge Per Dwelling Unit
<b>Residential</b>			
SINGLE FAMILY RESIDENT	25,802	\$ 10,225,471	\$33.03
MULTI-FAMILY RESIDENTIAL	6,134	1,784,698	\$24.25
<b>Subtotal: Residential</b>	<b>31,936</b>	<b>\$ 12,010,168</b>	<b>--</b>

1. Number of dwelling units/accounts used from most recent month of billing data for September 2015. Source file: #3 SewerBilling Information from Client 12 21 15.xlsx

Commercial Sewer Rates:

Customer Class	No. of Accounts (1)	Annual Volume (hcf)	Total Annual Revenue Requirement	Monthly Fixed Charge Per Account	Volumetric Charge Per hcf
<b>Commercial</b>					
COMMERCIAL	875	823,548	\$ 2,662,157	\$33.03	\$2.81

1. Number of accounts used from most recent month of billing data for September 2015. Source file: #3 SewerBilling Information from Client 12 21 15.xlsx

Industrial Sewer Rates:

Customer	Annual Revenue Requirement	Annual Volume (hcf)	Approx. # EDU Equivalents (200 gal/day)	Monthly Fixed Charge Per EDU	Volumetric Charge (1,000 gal)	BOD (per lbs)	TSS (per lbs)
<b>Industrial</b>							
FCC <sup>1</sup>	\$ 1,666,899	407,860	4,179	\$33.24	\$0.92	\$1.39	\$1.40

1. Rates assume that FCC will be billed for all consumption and not adjusted as is currently the case.

Customer	Annual Revenue Requirement	Annual Volume (hcf)	Monthly Minimum Charge	Volumetric Charge (1,000 gal)	COD (per lbs)
<b>Industrial</b>					
Dr. Pepper/Snapple	\$ 1,993,205	189,754	\$166,100	\$0.92	\$0.16

Customer	Annual Revenue Requirement	Annual Volume (hcf)	Monthly Fixed Charge Per Account	Volumetric Charge Per hcf
<b>Industrial</b>				
Plastipak	\$ 32,971	3,970	\$118.93	\$7.95

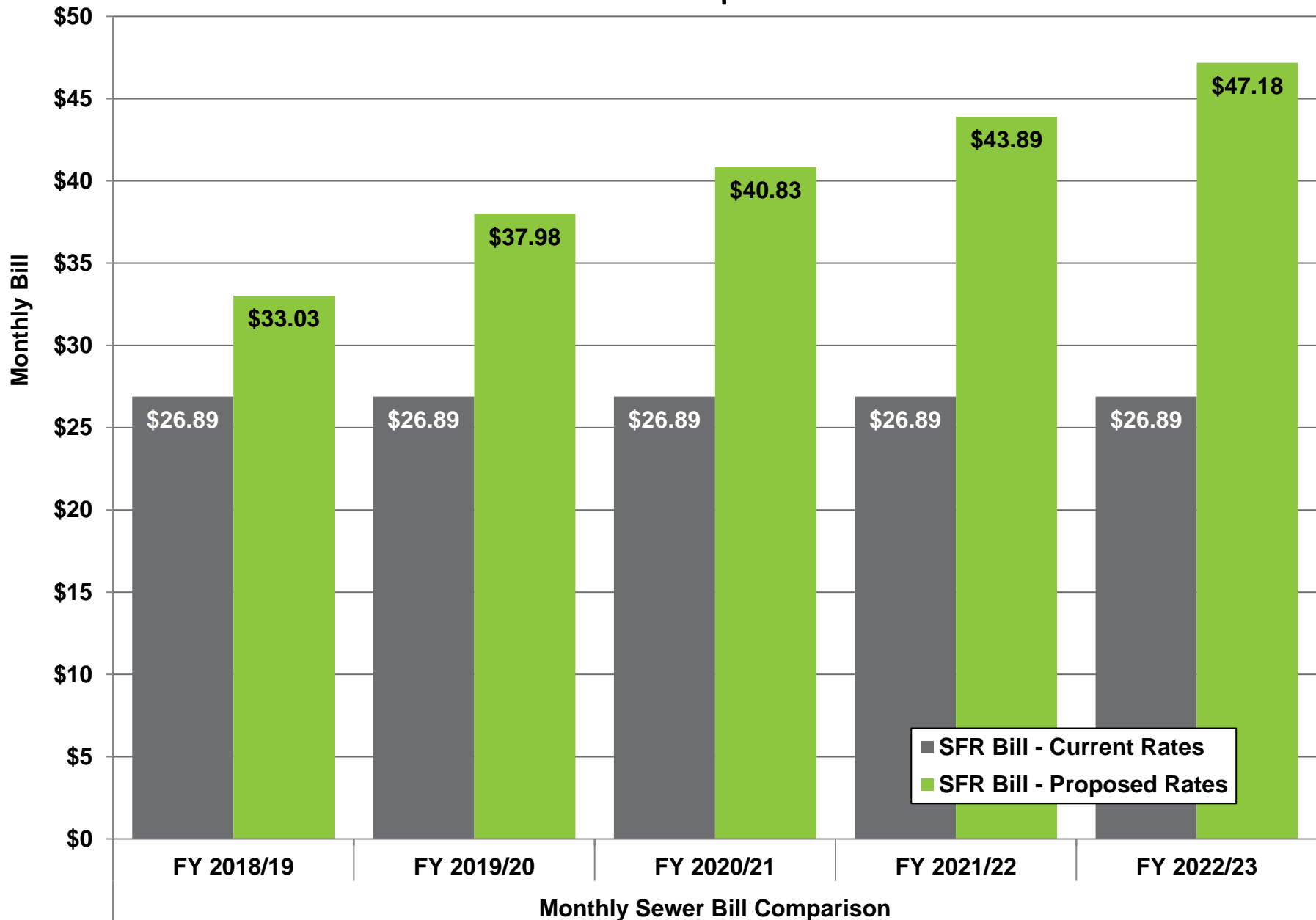
**CITY OF VICTORVILLE  
WASTEWATER RATE STUDY  
Sewer Cost of Service Analysis/Rate Design**

**CURRENT vs. PROPOSED SEWER RATES:**

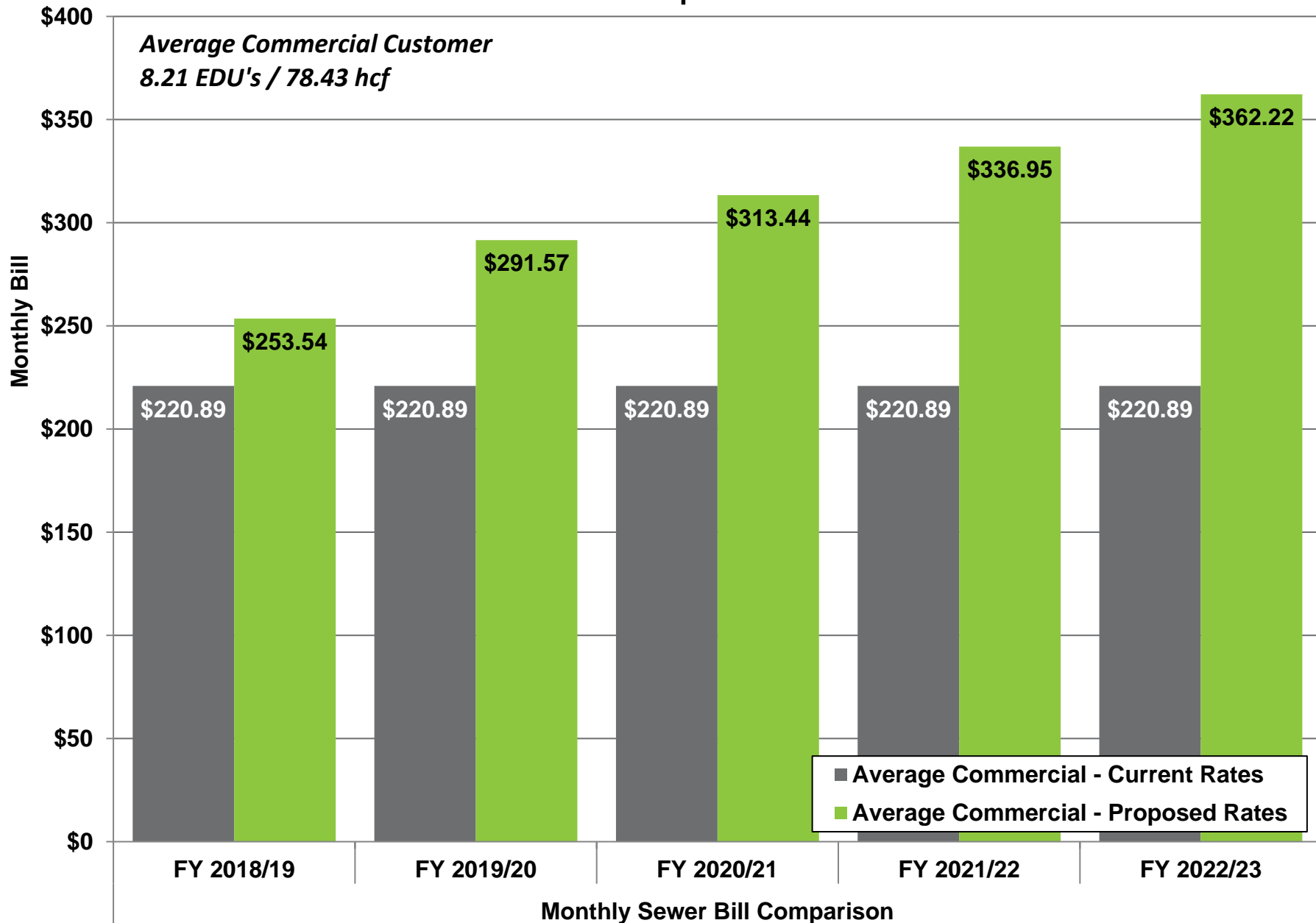
Sewer Rate Schedule	Current Rates	Recommended Sewer Rates				
		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
<b>Residential Customers</b>						
<u>Monthly Fixed Service Charge, per Dwelling Unit:</u>						
Single-Family Residential	\$26.89	\$33.03	\$37.98	\$40.83	\$43.89	\$47.18
Multi-Family Residential	\$24.63	\$24.25	\$27.88	\$29.97	\$32.22	\$34.64
<b>Commercial Customers</b>						
<u>Monthly Fixed Service Charge, per Account:</u>						
Volumetric Charge, per hcf	--	\$2.81	\$3.23	\$3.48	\$3.74	\$4.02
<b>Industrial Customers (user specific)</b>						
<u>Federal Corrections Complex (FCC)</u>						
Monthly Fixed Charge Per EDU (1)	\$26.89	\$33.24	\$38.22	\$41.09	\$44.17	\$47.48
BOD Charge, per lb	\$0.3323	\$1.39	\$1.60	\$1.72	\$1.85	\$1.99
SS Charge, per lb	\$0.2262	\$1.40	\$1.61	\$1.73	\$1.86	\$1.99
<u>Dr. Pepper/Snapple (DPSG)</u>						
Monthly Min Charge (excluding capital recovery)	\$113,614	\$166,100	\$191,016	\$205,342	\$220,742	\$237,298
Volumetric Charge, per 1,000 gal (2)	\$0.37	\$0.92	\$1.06	\$1.14	\$1.23	\$1.32
COD Charge, per lb	\$0.13	\$0.16	\$0.19	\$0.20	\$0.22	\$0.23
SS Charge, per lb (3)	\$0.22	--	--	--	--	--
FDS Charge, per lb (4)	--	\$2.62	\$2.69	\$2.76	\$2.84	\$2.91
<u>Plastipak</u>						
Monthly Fixed Charge Per Account	\$26.89/EDU	\$118.93	\$136.77	\$147.02	\$158.05	\$169.91
Volumetric Charge, per hcf (5)	--	\$7.95	\$9.14	\$9.82	\$10.56	\$11.35

1. FCC will be billed based on a flow estimate of 200 gallons per day, per EDU. BOD and TSS surcharges apply to concentrations above 200 mg/l for BOD and 250 mg/l for TSS.
2. Volumetric charges (per 1,000 gal or lbs) for DPSG shall apply accordingly if discharge exceeds 585,000 gpd, 28,100 lbs/day of COD or 1,400 lbs/day of SS in accordance with Wastewater Capacity and Treatment Agreement.
3. The SS charge is replaced with an FDS surcharge in FY 2018/19.
4. The FDS surcharge was calculated by Woodard & Curran and is subject to a 2.7% general cost inflation factor in FY 2019/20 and beyond.  
This will apply to all pound of FDS treated. Source:2018.03.21 FDS Surcharge Limit Table.xlsx
5. Volumetric charge for Plastipak will apply to monthly water consumption.

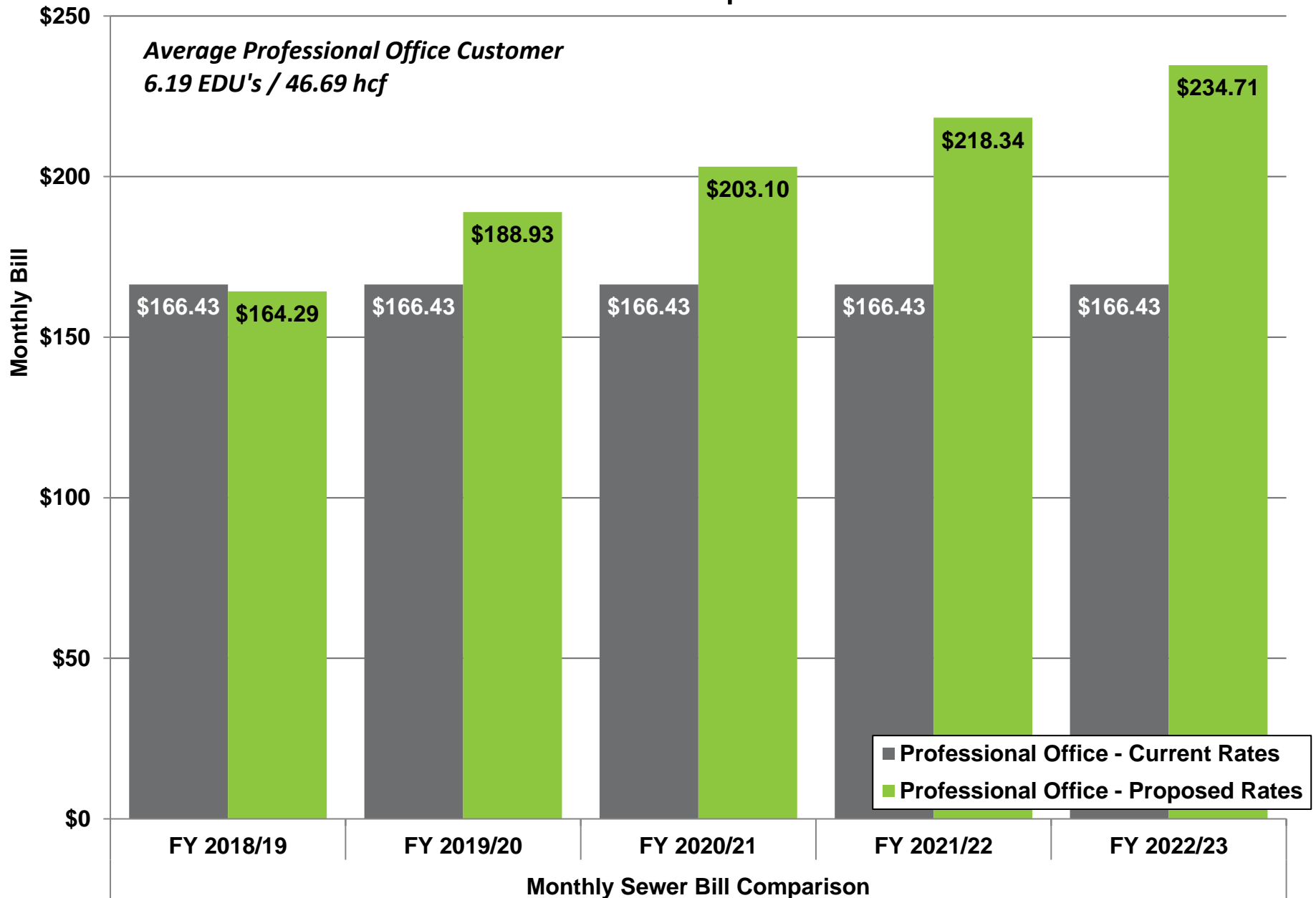
# Single-Family Residential Sewer Bill Comparison Current vs. Proposed Rates



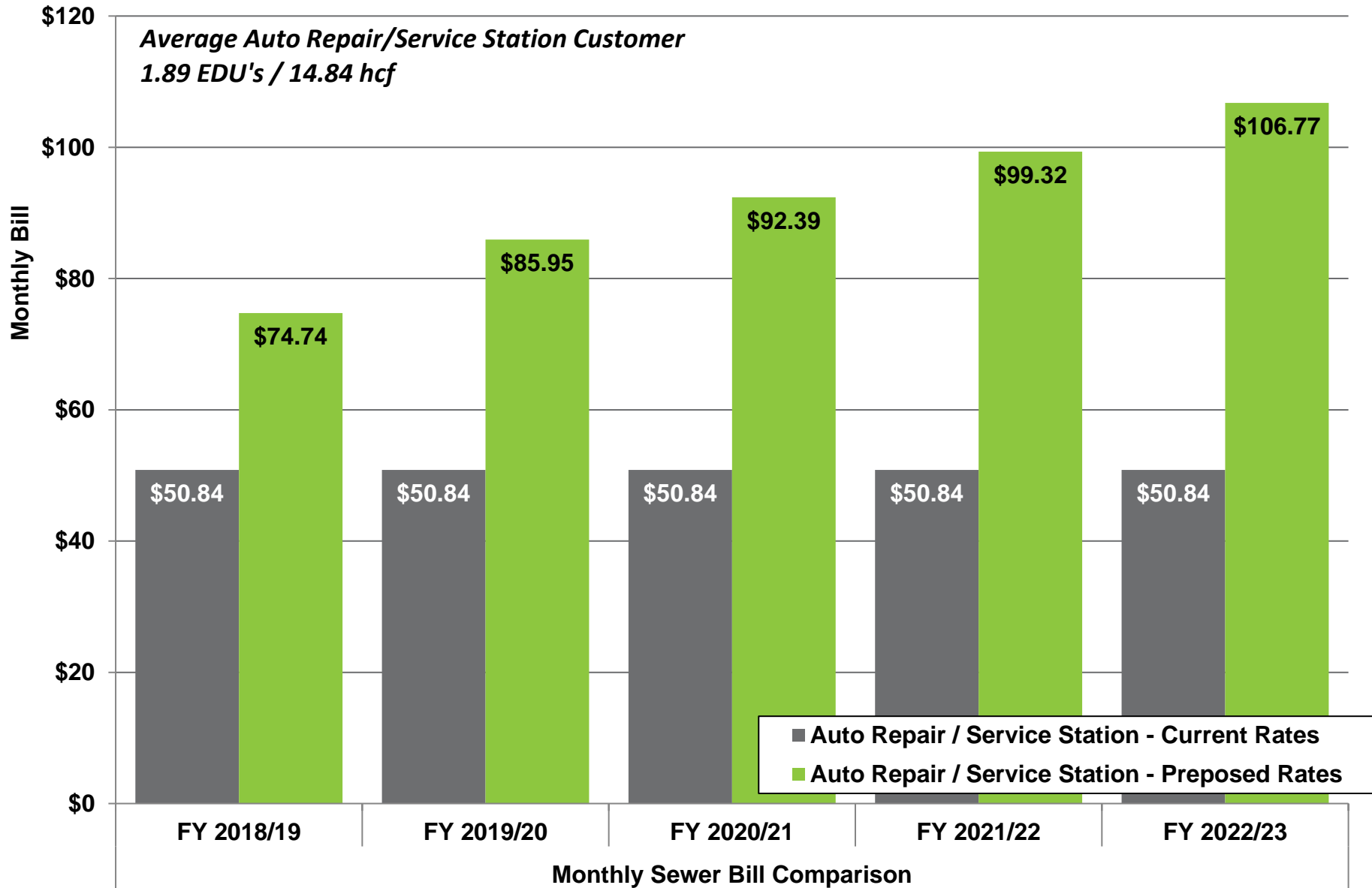
# Average Commercial Sewer Bill Comparison Current vs. Proposed Rates



# Average Professional Office Sewer Bill Comparison Current vs. Proposed Rates



# Average Auto Repair/Service Station Sewer Bill Comparison Current vs. Proposed Rates



# Appendix B: Woodard and Curran FDS Surcharge Development

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**Project** City of Victorville, CA  
**Project No.** 229959.01  
**Engineer** EDD  
**Date** 3/21/2018

<b>Mass TDS Removal per Trailer based on Pilot Test</b>		
lbs TDS removed	lbs/trailer	2,600
<b>Mass TDS Removal Assumed to achieve Compliance based on Pilot Testing</b>		
Estimated Influent TDS	(mg/l)	550
Estimated Effluent TDS	(mg/l)	450
TDS Reduction	(mg/l)	100
Flowrate	MGD	1.65
Flowrate	gpm	1,146
lbs TDS removed	lbs/day	1,376
lbs TDS removed	lbs/yr	502,277
Trailers required	trailers/year	193
	trailers/mo.	16.1
<b>Annual Cost of TDS Reduction Assuming Ion Exchange</b>		
<b>O&amp;M Cost - Fixed</b>		
GE equipment rental cost	From GE Proposal, \$450/day (\$255/day trailer rental + \$150/day FDA rental + \$45/day transfer pump skid rental) x 365 days	\$164,250
Taxes	7.75% total	\$12,729
W&C Markup on GE cost	10% markup	\$17,697.94
W&C O&M Cost	Per agreement between City and W&C, \$10,200/mo	\$122,400
<b>O&amp;M Cost - Variable based on actual TDS Loading</b>		
GE Ion Exchange Cost	From GE Proposal, \$4,820/trailer x No. trailers/year	\$931,143
Taxes	7.75% total	\$72,164
Markup on GE cost	10% markup	\$100,331
Total O&M Cost		\$1,420,715
<b>Estimated Cost/lb TDS removed via Ion Exchange Technology</b>	<b>\$/lb</b>	<b>\$2.83</b>
lb FDS Removed in IX/lb TDS in MBR Effluent		1.00
lb FDS in MBR Effluent/lb FDS in UASB Effluent		0.926
<b>Estimated Cost/lb FDS removed via Ion Exchange Technology*</b>	<b>\$/lb</b>	<b>\$2.62</b>

\* As measured at IU Point of Compliance