A dynamic background image showing water being poured from the top, creating a large splash with many bubbles and droplets. The water is clear and bright blue, set against a white background that transitions into a dark blue curved shape at the top.

CITY OF MORGAN HILL

FINAL WASTEWATER RATE STUDY REPORT

April 2019

OFFICE LOCATIONS:

Temecula –Headquarters
32605 Temecula Parkway, Suite
100
Temecula, CA 92592

San Francisco - Regional Office
San Francisco, CA 94102

Davis - Regional Office
Davis, CA 95616

Phone: 800.676.7516

www.nbsgov.com

TABLE OF CONTENTS

SECTION 1. PURPOSE AND OVERVIEW OF THE STUDY	1
A. PURPOSE	1
B. OVERVIEW OF THE STUDY	1
C. RATE STUDY METHODOLOGY	1
D. KEY FINANCIAL ASSUMPTIONS	2
SECTION 2. WASTEWATER RATE STUDY	3
A. KEY WASTEWATER RATE STUDY ISSUES	3
B. WASTEWATER UTILITY REVENUE REQUIREMENTS.....	3
C. WASTEWATER CUSTOMER CHARACTERISTICS.....	7
D. CURRENT VS. PROPOSED WASTEWATER RATES	8
SECTION 3. RECOMMENDATIONS AND NEXT STEPS.....	12
A. CONSULTANT RECOMMENDATIONS	12
B. NEXT STEPS.....	12
C. PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS	12
APPENDIX – WASTEWATER RATE ANALYSIS	14

This page intentionally left blank.

SECTION 1. PURPOSE AND OVERVIEW OF THE STUDY

A. PURPOSE

In 2018, the City of Morgan Hill (“City”) retained NBS to complete an update of the wastewater rates most recently established in January 2016. The City is now in the in the fourth year of its most recent five-year rate plan, from the 2016 Wastewater Rate Study¹ and unexpected capital improvement and rehabilitation projects have become necessary since rates were last updated. In light of these considerations, an updated rate study was needed in order to adjust rates so the City can fund the new capital improvement projects.

In developing the updated wastewater rates, NBS and City Staff worked cooperatively to review study results and develop various rate alternatives. The study will be presented to the City Council on February 20, 2019. An overview of the study is provided in this report.

B. OVERVIEW OF THE STUDY

As a part of the long-range financial plan, NBS evaluated projected revenues and expenditures to determine net revenue requirements. In light of the wastewater utility’s planned capital improvements, it will be critical to have a plan that maintains and replenishes reserve funds. While the wastewater utility has reasonably healthy reserves, they are not adequate to fund the wastewater treatment plant expansion and other repair and replacement projects. NBS recommends the City adopt the rate adjustments described in this report, as well as secure outside financing (as planned), to fully fund the capital improvements over the next five years.

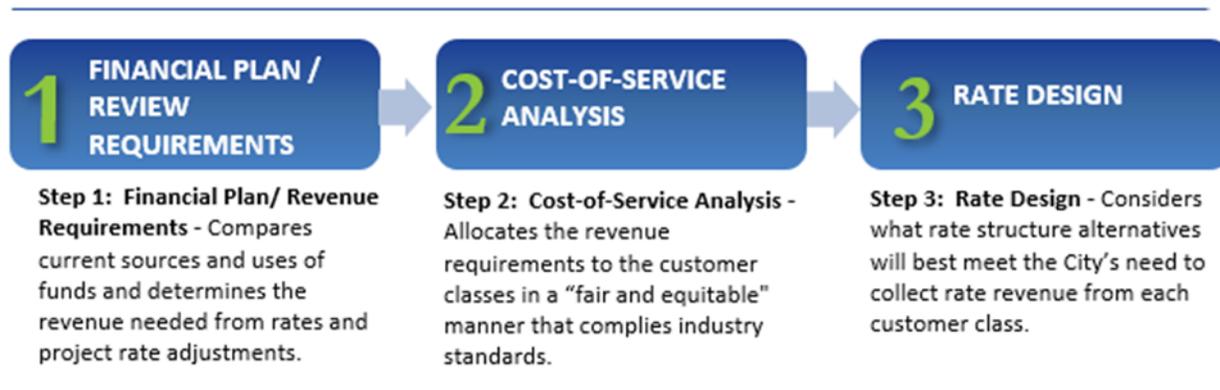
C. RATE STUDY METHODOLOGY

A comprehensive utility rate study typically has three major components: (1) the utility’s overall revenue requirements and financial plan, (2) the cost-of-service for each customer class, and (3) rate structure design, as shown in **Figure 1**. These components reflect industry standards, primarily from the American Water Works Association (AWWA)², and address the general requirements for equity and fairness. This study focused on the first component of a rate study, the Financial Plan. NBS recommends that the City complete the other two components of a rate study, the Cost of Service and Rate Design Analyses in the next rate review cycle. The additional analysis is intended to ensure rates reflect the proportionate cost of service for each customer class, and that the rate structure is best suited to the City’s customers and reflect recent industry standards.

¹ Referred to throughout this report as the “2016 Rate Study.”

² *Principles of Water Rates, Fees, and Charges*, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.

Figure 1. Components of a Rate Study



The following sections in this report present an overview of the methodologies, assumptions, and data used along with the financial plans and rates developed.

D. KEY FINANCIAL ASSUMPTIONS

Following are the key assumptions used in the wastewater rate analyses:

Funding of Capital Projects – After extensive review of the planned capital improvement projects (CIP) and funding requirements with City staff, the analysis assumes that the City will acquire outside financing to fund the wastewater treatment plant expansion and its other planned capital improvement projects.

Reserve Targets – Target reserves for operations and maintenance (O&M) and capital system replacement, which essentially follow industry standards for utility fund management, are set at the following minimum levels:

- ✓ Operating Reserve – 90-days of O&M expenses.
- ✓ System Replacement Reserve – approximately 3.0% of net assets.
- ✓ Rate Stabilization Reserve – equal to 20% of estimated rate revenue.

Inflation and Growth Projections – In order to project revenue requirements over the next five years, the City’s adopted budget for Fiscal Year 2018/19 was used as base planning year, and the following inflation factors were applied to revenue and expenses:

- ✓ Customer growth is assumed to be 1.50% annually.
- ✓ General cost inflation is approximately 2.44% annually.
- ✓ Operating expenses, which include but are not limited to labor costs, health benefits, and retirement benefits, are inflated at a rate of approximately 3.5% to 5% annually.
- ✓ Energy costs are expected to inflate at 4% annually.
- ✓ No inflation is added to other costs.

The next two sections discuss the wastewater rate study in more detail.

SECTION 2. WASTEWATER RATE STUDY

A. KEY WASTEWATER RATE STUDY ISSUES

The specific objectives addressed in the wastewater rate analysis included:

- Generating additional revenue needed to meet projected funding requirements.
- Continuing the City's existing rate structure which consists of a fixed monthly charge based on meter size, a volumetric charge for commercial customers that relies on monthly water use, and the volumetric charge for single and multi-family residential customer that is applied to average winter water use.

During the course of this study, NBS developed several financial plan alternatives that will allow the City to meet revenue requirements for the wastewater utility. The proposed rates presented in this report reflect input from City staff, which included the priority of maintaining the existing rate structure and applying an across-the-board increases to the existing rate schedule.

The proposed rate structure for residential customers continues to include a fixed monthly charge plus a volumetric rate based on average winter water consumption. This average winter consumption is used to set the volumetric charge each year for the subsequent 12 months and, in this respect, acts like a fixed charge except that it varies based on each customer's winter water consumption. The rate structure for commercial customers is similar, with a fixed monthly charge based on water meter size plus a volumetric rate based on *monthly* (not average winter) water consumption.

B. WASTEWATER UTILITY REVENUE REQUIREMENTS

Rate increases are governed by the need to meet the operating and capital costs, debt service payments and reserves included in the revenue requirements. The current financial position of the City's wastewater utility is as follows:

Meeting Net Revenue Requirements: The City's wastewater utility is projected to break even at year end. However, with the capital improvement plans over the next ten years, the City will run a large deficit starting in Fiscal Year 2019/20, without an adjustment to wastewater rates. The City is planning to secure outside financing in the form of bonds or loans to fund the necessary capital improvement projects. The proposed rate increases would stabilize this deficit over the next five years as well as cover the annual debt service payments for the two new debt issues. Net revenue requirements (i.e., total annual expenses less non-rate revenue) increase by approximately 40% in Fiscal Years 2018/19 through 2023/24 from approximately \$10.6 million to \$14.9 million.

Building and Maintaining Reserve Funds: The City should maintain sufficient reserves for the wastewater utility. NBS recommends that the City maintain the following minimum reserve fund targets, as established in the 2016 Rate Study:

- ✓ Operating Reserve equal to 25% of the Utility's budgeted annual operating expenses. This reserve target is equal to a three-month (or 90-day) cash cushion for normal operations. An Operating Reserve is intended to promote financial viability in the event of any short-term fluctuation in revenues and/or expenditures.

- ✓ Capital Projects Reserve equal to a minimum of 3% of net depreciable capital assets. This reserve provides for capital repair and replacement needs.
- ✓ Rate Stabilization Reserve equal to 20% of estimated annual rate revenue, as established by prior City policy. This reserve is used when operating reserves are low and is intended to further promote financial stability in the event of short-term fluctuations in rate revenue.
- ✓ Debt Reserve equal to the estimated reserve requirement for the planned debt that the City would use to fund capital projects, which is approximately \$2,100,000 annually.

Figures 2 and 3 summarize the sources and uses of funds, including net revenue requirements, and the recommended annual percent increases in total rate revenue for the next five years. This figure shows the new debt service payments that begin in Fiscal Year 2020/21, for the debt funded capital improvement projects. Going forward however, the City will be positioned to maintain healthy reserve funds for the future. With the planned rate increases, the City is projected to run a small surplus each year, which will be used to replenish reserve funds, with the intent of meeting the reserve targets described above.

Figure 2. Summary of Revenue Requirements

Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget		Projected			
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Sources of Wastewater Funds						
Rate Revenue Under Prevailing Rates ¹	\$ 10,391,000	\$ 10,796,865	\$ 10,958,818	\$ 11,123,200	\$ 11,290,048	\$ 11,459,399
Other Operating Revenue	318,700	328,660	336,877	345,298	353,932	362,779
Interest Earnings	96,002	164,115	192,054	198,320	215,765	251,014
Use of Impact Fees for Debt Service	232,695	232,635	2,732,740	2,732,980	2,714,020	2,566,255
Total Sources of Funds	\$ 11,038,397	\$ 11,522,275	\$ 14,220,488	\$ 14,399,798	\$ 14,573,765	\$ 14,639,447
Uses of Wastewater Funds						
Operating Expenses	\$ 9,051,382	\$ 9,177,519	\$ 9,423,428	\$ 9,760,289	\$ 9,931,201	\$ 10,401,015
Debt Service	1,939,125	1,938,625	1,939,500	1,941,500	1,783,500	552,125
Planned Debt Service ²	-	-	4,600,279	4,600,279	4,600,279	4,600,279
Total Use of Funds	\$ 10,990,507	\$ 11,116,144	\$ 15,963,207	\$ 16,302,068	\$ 16,314,980	\$ 15,553,419
Surplus (Deficiency) before Rate Increase	\$ 47,890	\$ 406,131	\$ (1,742,719)	\$ (1,902,271)	\$ (1,741,215)	\$ (913,972)
Additional Revenue from Rate Increases	-	949,218	2,013,623	2,689,301	3,417,554	4,201,961
Surplus (Deficiency) after Rate Increase	\$ 47,890	\$ 1,355,349	\$ 270,904	\$ 787,031	\$ 1,676,339	\$ 3,287,989
Projected Annual Increase to Rate Revenue ³	0.00%	9.00%	9.00%	5.00%	5.00%	5.00%
Net Revenue Requirement ⁴	\$ 10,575,805	\$ 10,623,369	\$ 15,434,277	\$ 15,758,451	\$ 15,745,283	\$ 14,939,626
Projected Debt Coverage After Rate Increase	1.65	2.22	1.76	1.90	2.13	3.15
Debt Coverage Requirement	1.25	1.25	1.25	1.25	1.25	1.25

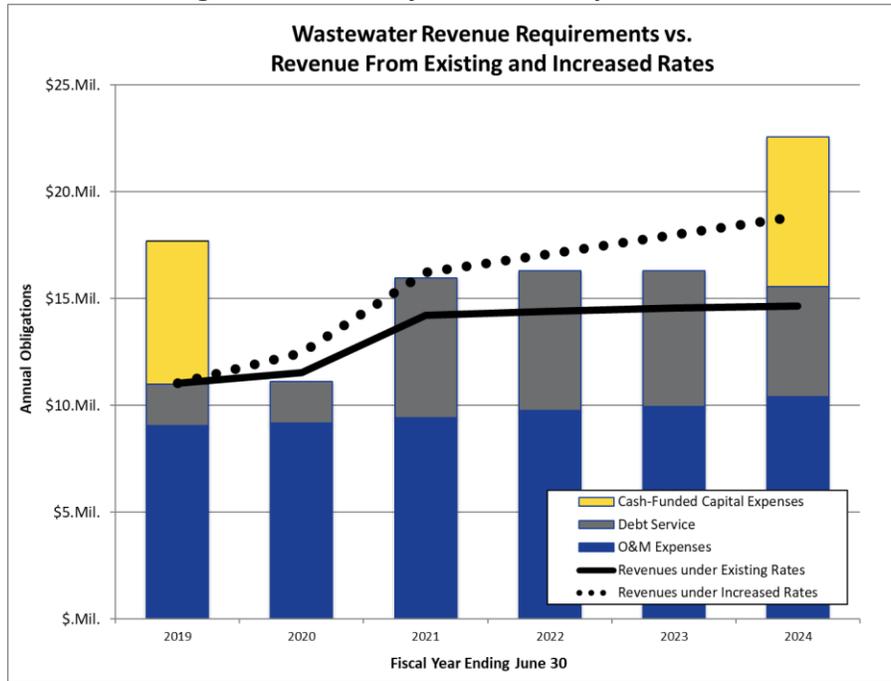
1. Includes additional rate revenue from removal of consumption cap.

2. The City plans to secure two debt issues to fund the wastewater treatment plant expansion and other capital improvement projects; this is the approx. annual payment.

3. Rate adjustments will be effective on July 1st of each year.

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

Figure 3. Summary Revenue Requirements

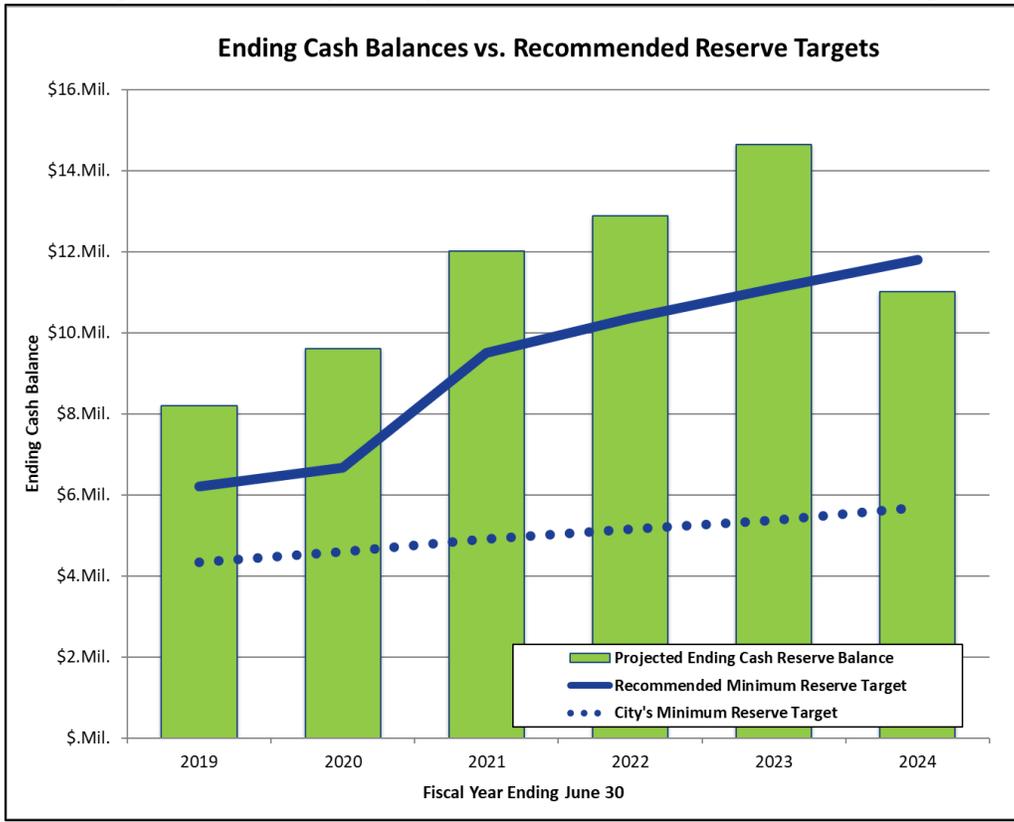


Figures 4 and 5 summarize the projected reserve fund balances and reserve targets, for the next five years. These figures show that if the proposed rate increases are adopted, and the new debt financing for capital projects are secured, the City will be able to maintain healthy reserve funds for the wastewater utility.

Figure 4. Summary of Projected Reserve Fund Balances and Targets

Beginning Reserve Fund Balances and Recommended Reserve Targets	Budget	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Sewer Operations Fund (640)	\$ 2,081,319	\$ 2,294,000	\$ 2,356,000	\$ 2,440,000	\$ 2,483,000	\$ 2,600,000
<i>Recommended Minimum Target</i>	<i>2,263,000</i>	<i>2,294,000</i>	<i>2,356,000</i>	<i>2,440,000</i>	<i>2,483,000</i>	<i>2,600,000</i>
Sewer System Replacement Fund (643)	\$ 4,046,243	\$ 5,188,911	\$ 5,397,816	\$ 6,142,852	\$ 7,818,197	\$ 4,013,187
<i>Recommended Minimum Target</i>	<i>1,857,900</i>	<i>2,077,900</i>	<i>2,503,000</i>	<i>3,102,100</i>	<i>3,621,100</i>	<i>4,014,300</i>
Rate Stabilization Fund (642)	\$ 2,078,200	\$ 2,119,764	\$ 2,162,159	\$ 2,205,402	\$ 2,249,511	\$ 2,294,501
<i>Recommended Minimum Target</i>	<i>2,078,200</i>	<i>2,299,217</i>	<i>2,543,738</i>	<i>2,710,989</i>	<i>2,889,237</i>	<i>3,079,204</i>
New Debt Reserve Fund	\$ -	\$ -	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279
<i>Recommended Minimum Target</i>	<i>-</i>	<i>-</i>	<i>2,100,279</i>	<i>2,100,279</i>	<i>2,100,279</i>	<i>2,100,279</i>
Total Ending Balance	\$ 8,205,762	\$ 9,602,675	\$ 12,016,255	\$ 12,888,534	\$ 14,650,987	\$ 11,007,967
<i>Total Recommended Minimum Target</i>	<i>\$ 6,199,100</i>	<i>\$ 6,671,117</i>	<i>\$ 9,503,018</i>	<i>\$ 10,353,368</i>	<i>\$ 11,093,616</i>	<i>\$ 11,793,783</i>

Figure 5. Summary of Projected Reserve Fund Balances and Targets



A more detailed version of the wastewater utility’s proposed 5-year financial plan is included in the **Appendix** to this report. These tables include a projection of revenue requirements, reserve funds, revenue sources and proposed rate increases for the 5-year period, through FY 2023/24.

C. WASTEWATER CUSTOMER CHARACTERISTICS

Water consumption data from July 2017 through June 2018 was used to estimate the flows to the City’s wastewater treatment plant. Residential bills reflect average winter consumption because it is correlated to the amount of residential effluent that is sent to the treatment plant. This winter average is then used to estimate the annual volume. Commercial volumetric charges are based on annual water use. **Figure 6** shows the estimated wastewater flows produced by each customer class, which is how revenue from volumetric rates is collected.

Figure 6. Estimated Wastewater Flow by Customer Class

Customer Class	FY 2017/18 Avg. WINTER Water Use (hcf/month) ¹	FY 2017/18 Annual Water Consumption (hcf) ¹	Estimated Annual Volume (hcf/yr.) ²	Percent of Annual Volume
Single Family	73,059	N/A	876,709	62.7%
Multi Family	19,637	N/A	235,646	16.9%
Commercial Flat	N/A	959	959	0.1%
Commercial 1	N/A	29,067	29,067	2.1%
Commercial 2	N/A	88,637	88,637	6.3%
Commercial 3	N/A	65,495	65,495	4.7%
Commercial 4	N/A	31,824	31,824	2.3%
Commercial 5	N/A	12,866	12,866	0.9%
Commercial 6	N/A	56,571	56,571	4.0%
Total	92,696	285,419	1,397,774	100%

1. Consumption data source file: *MorganHill_CustomerBillingData_ManipulatedV5.xlsx*

2. Estimated annual volume is based on average winter water consumption for SFR and MFR Water customers, and is equal to the annual water consumption for commercial customers.

Figure 7 compares the total number of accounts by water meter size and customer class. Fixed charges are determined by customer class and meter size.

Figure 7. Number of Accounts by Meter Size and Customer Class

Number of Accounts by Customer Class and Meter Size ¹	5/8 to 3/4 inch ³	1 inch ⁴	1.5 inch	2 inch	3 inch	4 inch	6 inch	Total
Single Family ²	-	9,673	-	-	-	-	-	9,673
Multi Family	-	2,222	-	8	-	6	1	2,237
Commercial Flat	-	2	-	-	-	-	-	2
Commercial 1	16	25	9	21	1	9	-	81
Commercial 2	74	163	55	86	2	2	1	383
Commercial 3	23	21	5	23	2	6	-	80
Commercial 4	11	12	26	47	2	3	-	101
Commercial 5	3	6	4	6	-	-	-	19
Commercial 6	18	37	21	21	-	2	-	99
Total	145	12,161	120	212	7	28	2	12,675

1. Number of accounts is from the Billed Consumption Report by Month spreadsheets. This is average meter count by size and customer class for FY2017/18. Source File: MorganHill_CustomerBillingData_ManipulatedV5.xlsx
2. Single Family meters are 5/8 to 1 inch size, per City customer data.
3. For commercial customers these meters are 5/8 to 3/4 inch, per City customer data.
4. Single Family meters are 5/8 to 1 inch size and Commercial meters are 1", per City's customer data.

D. CURRENT VS. PROPOSED WASTEWATER RATES

As mentioned earlier in this study, the City has chosen to maintain the existing rate structure. Single- and multi- family residential customers with meter sizes between 5/8-inch to 1-inch will pay a fixed monthly service charge, and a volumetric charge per hcf based on average winter water use. All other users will pay a fixed charge based on meter size and a volumetric rate based on actual monthly water consumption. There are six Commercial customer classifications that apply to volumetric rates (for all non-residential customers), that reflect the strength characteristics of each customer class.

Figure 8 shows current and proposed wastewater rates for FY 2018/19 through FY 2022/24. **Figure 9** compares the average monthly wastewater bills for residential customers under current and proposed rates. **Figure 10** compares commercial bills under current vs. proposed rates, for a Commercial 2 customer, with a 1-inch meter. Bill comparisons for a greater range of commercial customers can be found in the **Appendix**.

Figure 8. Current vs. Proposed Wastewater Rates

Sewer Rate Schedule	Current Rates Effective 1/1/19 ¹	Proposed Rates ²				
		7/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
		9.00%	9.00%	5.00%	5.00%	5.00%
Monthly Fixed Charges:						
Residential (5/8-1 inch meters)	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
All Other Customers:						
5/8 inch	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
3/4 inch	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
1 inch	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
1.5 inch	\$73.63	\$80.26	\$87.48	\$91.85	\$96.45	\$101.27
2 inch	\$117.23	\$127.78	\$139.28	\$146.25	\$153.56	\$161.24
3 inch	\$255.39	\$278.38	\$303.43	\$318.60	\$334.53	\$351.26
4 inch	\$458.73	\$500.02	\$545.02	\$572.27	\$600.88	\$630.93
6 inch	\$1,018.18	\$1,109.82	\$1,209.70	\$1,270.18	\$1,333.69	\$1,400.38
8 inch	\$1,572.90	\$1,714.46	\$1,868.76	\$1,962.20	\$2,060.31	\$2,163.33
10 inch	\$1,966.13	\$2,143.08	\$2,335.96	\$2,452.76	\$2,575.39	\$2,704.16
Monthly Volumetric Charges:						
Single-Family (Applied to Avg. Winter Water Use)	\$4.17	\$4.55	\$4.95	\$5.20	\$5.46	\$5.74
Multi-Family (Applied to Avg. Winter Water Use)	\$4.17	\$4.55	\$4.95	\$5.20	\$5.46	\$5.74
Commercial (Applied to Monthly Water Use):						
Commercial 1	\$3.99	\$4.35	\$4.74	\$4.98	\$5.23	\$5.49
Commercial 2	\$4.67	\$5.09	\$5.55	\$5.83	\$6.12	\$6.42
Commercial 3	\$5.68	\$6.19	\$6.75	\$7.09	\$7.44	\$7.81
Commercial 4	\$6.44	\$7.02	\$7.65	\$8.03	\$8.44	\$8.86
Commercial 5	\$7.65	\$8.34	\$9.09	\$9.54	\$10.02	\$10.52
Commercial 6	\$12.77	\$13.92	\$15.17	\$15.93	\$16.73	\$17.56

1. Source file: 2016 Water and Wastewater Adopted Rates.pdf, Page 2.

2. Proposed rates will be effective on July 1st of each year.

Figure 9. Residential Wastewater Bill Comparison – Current vs. Proposed Rates

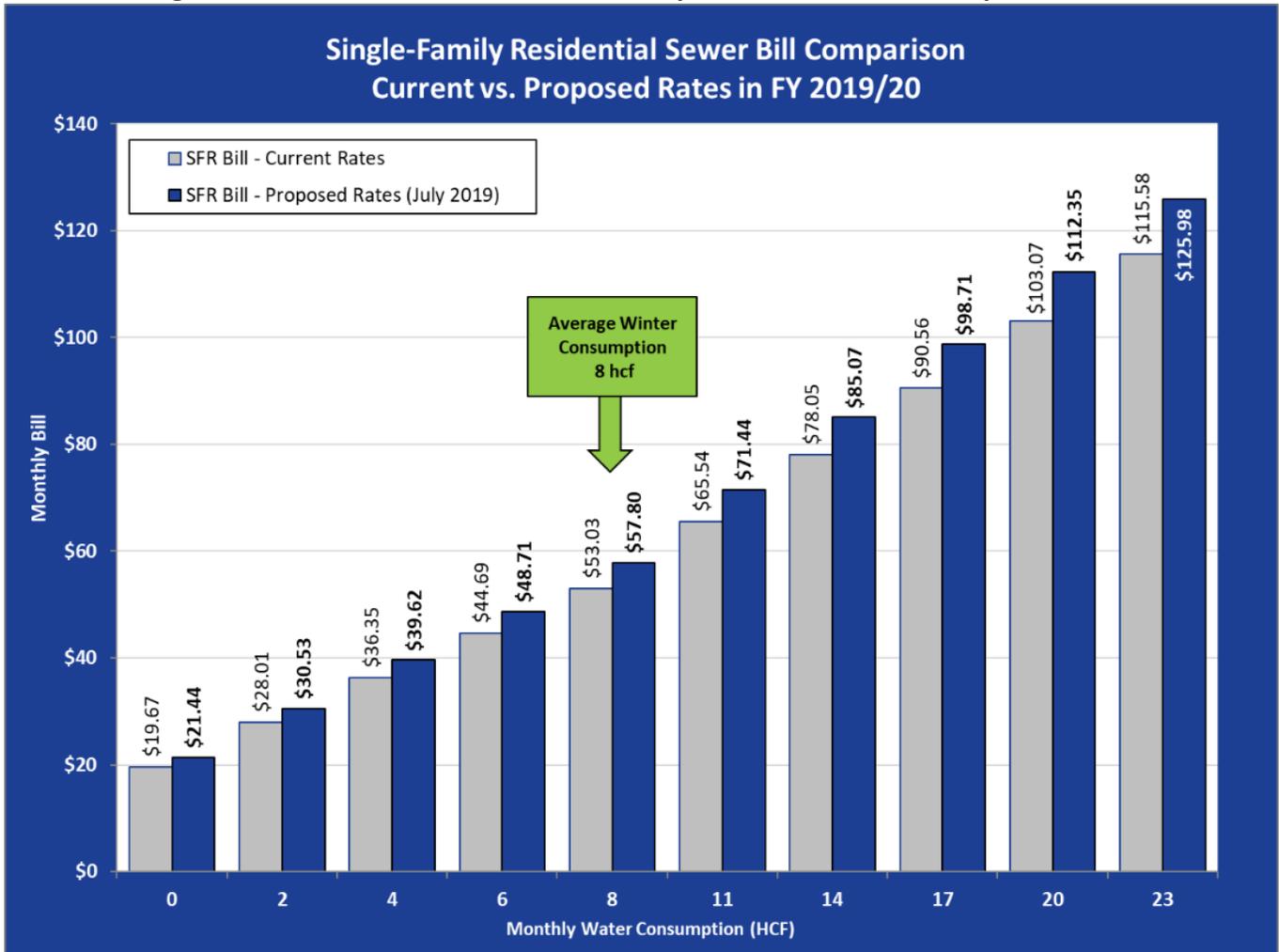
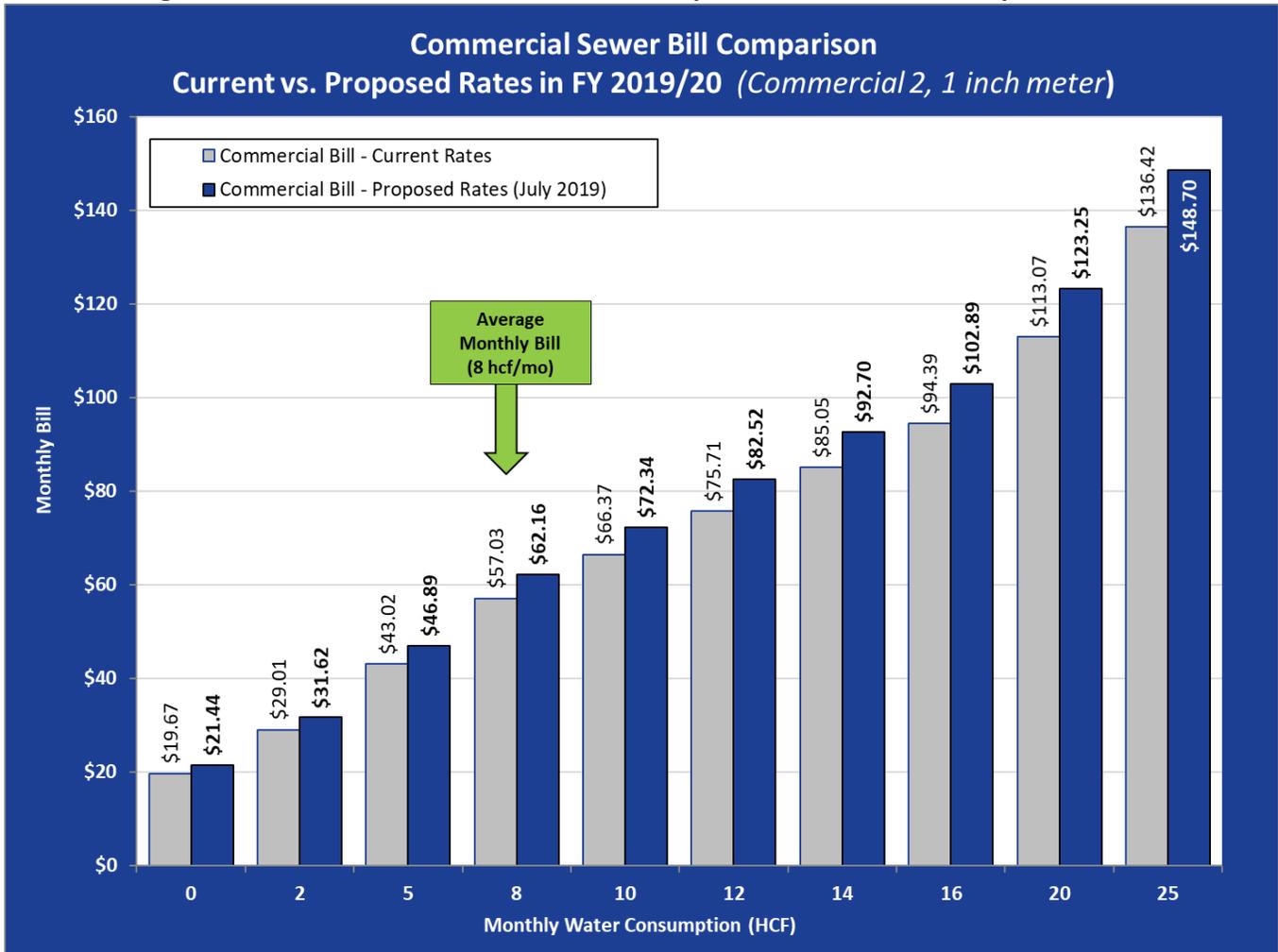


Figure 10. Commercial Wastewater Bill Comparison – Current vs. Proposed Rates



SECTION 3. RECOMMENDATIONS AND NEXT STEPS

A. CONSULTANT RECOMMENDATIONS

Over the last three years since the 2016 Rate Study was completed, the City of Morgan Hill has become aware of unexpected capital improvements that are needed to maintain current service levels and provide capacity for future customers. In light of these factors, NBS has updated the financial plan and rate analysis to develop a new five-year rate plan that will achieve the City's funding objectives.

The following are NBS' recommendations for the City following careful review of this report:

- **Approve and Accept This Study Report:** NBS recommends the City Council formally approve and adopt this report, its recommendations, and accompanying appendix. This will document the rate study analyses and the basis for updated rates.
- **Complete a Legal Review:** This rate study outlines proposed new rates. Particularly in light of changing legal requirements, these rates should be reviewed by competent legal counsel with respect to compliance with Proposition 218 and related State laws prior to adoption, including language for new resolutions and public notices required to implement these rates.
- **Implement Recommended Levels of Rate Increases and Proposed Rates:** Based on the analysis presented in this report, the City Council should implement the rates proposed in this report for the next five years. These rate adjustments are structured to ensure that the financial health of the City's wastewater utility is maintained.
- **Adopt Reserve Fund Targets:** NBS recommends the City Council adopt the proposed reserve fund targets described in Section 2 of this report. The City should periodically evaluate reserve fund levels and make it a long-term goal to achieve and maintain these levels for the Operating, Capital, Rate Stabilization and Debt Reserves.

B. NEXT STEPS

Annually Review Rates and Revenue – Any time an Agency adopts new utility rates or rate structures, those new rates should be closely monitored over the next several years to ensure the revenue generated is sufficient to meet the annual revenue requirements. Changing economic, water consumption patterns, new regulatory mandates, and unplanned capital improvements all underscore the need for this annual review.

Note: The attached Technical Appendix provides more detailed information on the analysis of the wastewater revenue requirements that have been summarized in this report.

C. PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this report and the recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, number of customer accounts, billing records, and other conditions and events that may occur in the future. This information and assumptions, including the City's budgets and customer account information provided by City staff, are 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 or 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 – WASTEWATER RATE ANALYSIS

TABLE 1 : FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget	Projected								
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Sources of Wastewater Funds¹										
Sewer Operations Fund (640) Rate Revenue										
Estimated Rate Revenue from Existing Rates ²	\$ 10,391,000	\$ 10,546,865	\$ 10,705,068	\$ 10,865,644	\$ 11,028,629	\$ 11,194,058	\$ 11,361,969	\$ 11,532,398	\$ 11,705,384	\$ 11,880,965
Additional Revenue from Removal of Cons. Cap	-	250,000	253,750	257,556	261,420	265,341	269,321	273,361	277,461	281,623
Non-Rate Revenue in Operations & System Replacement Funds										
Other Operating Revenue	318,700	331,665	345,580	360,109	375,284	391,130	407,682	424,968	443,024	461,887
Interest Earnings (in Operating & Unrestricted) ³	96,002	164,115	192,114	198,555	216,301	251,988	179,714	165,038	171,998	235,924
Use of Impact Fee Fund for Debt Service ⁴	232,695	232,635	2,732,740	2,732,980	2,714,020	2,566,255	2,566,210	2,566,075	2,565,640	2,565,700
Total Sources of Funds	\$ 11,038,397	\$ 11,525,280	\$ 14,229,252	\$ 14,414,844	\$ 14,595,654	\$ 14,668,773	\$ 14,784,896	\$ 14,961,840	\$ 15,163,508	\$ 15,426,099
Uses of Wastewater Funds										
Operating Expenses⁵										
Sewer Operations										
Salaries	\$ 2,089,145	\$ 2,170,633	\$ 2,255,368	\$ 2,330,248	\$ 2,404,964	\$ 2,477,810	\$ 2,551,206	\$ 2,623,306	\$ 2,697,605	\$ 2,774,179
Supplies (incl. Treatment by SCRWA)	5,105,942	5,355,221	5,489,103	5,626,328	5,766,984	5,911,165	6,058,943	6,210,415	6,365,675	6,524,817
Capital	345,000	120,250	107,881	110,579	113,343	116,176	119,080	122,057	125,109	128,237
Internal Services	629,976	631,031	649,545	667,256	685,481	704,241	723,550	743,428	763,891	784,959
Transfers	867,302	885,766	906,484	1,010,456	944,621	1,048,699	1,068,112	1,087,554	1,197,635	1,218,381
Rate Stabilization Fund (Internal Services, GF Admin)	1,027	1,078	1,111	1,138	1,167	1,196	1,226	1,257	1,288	1,320
System Replace. Fund (Debt Service Fees, GF Admin)	12,990	13,540	13,936	14,284	14,641	15,008	15,383	15,767	16,161	16,565
Master Plan O&M Projects -Sewer System CCTV	-	-	-	-	-	126,720	129,812	132,979	136,224	139,548
<i>Subtotal: Operating Expenses</i>	<i>\$ 9,051,382</i>	<i>\$ 9,177,519</i>	<i>\$ 9,423,428</i>	<i>\$ 9,760,289</i>	<i>\$ 9,931,201</i>	<i>\$ 10,401,015</i>	<i>\$ 10,667,312</i>	<i>\$ 10,936,763</i>	<i>\$ 11,303,588</i>	<i>\$ 11,588,006</i>
Other Expenditures:										
Existing Debt Service (Operations & Replacement Fund)	\$ 1,939,125	\$ 1,938,625	\$ 1,939,500	\$ 1,941,500	\$ 1,783,500	\$ 552,125	\$ 551,750	\$ 550,625	\$ 547,000	\$ 547,500
Planned Debt Service for Treatment Plant Expansion	-	-	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Future Debt Service for Master Plan Projects	-	-	2,100,279	2,100,279	2,100,279	2,100,279	2,100,279	2,100,279	2,100,279	2,100,279
Rate-Funded Capital Expenses	-	-	-	-	-	-	-	-	-	-
<i>Subtotal: Other Expenditures</i>	<i>\$ 1,939,125</i>	<i>\$ 1,938,625</i>	<i>\$ 6,539,779</i>	<i>\$ 6,541,779</i>	<i>\$ 6,383,779</i>	<i>\$ 5,152,404</i>	<i>\$ 5,152,029</i>	<i>\$ 5,150,904</i>	<i>\$ 5,147,279</i>	<i>\$ 5,147,779</i>
Total Uses of Wastewater Funds	\$ 10,990,507	\$ 11,116,144	\$ 15,963,207	\$ 16,302,068	\$ 16,314,980	\$ 15,553,419	\$ 15,819,341	\$ 16,087,668	\$ 16,450,867	\$ 16,735,785
plus: Revenue from Rate Increases ⁶	-	949,218	2,013,623	2,689,301	3,417,554	4,201,961	4,264,991	4,328,966	4,393,900	4,459,809
Increase/(Decrease) to Reserves	\$ 47,890	\$ 1,358,354	\$ 279,668	\$ 802,077	\$ 1,698,228	\$ 3,317,315	\$ 3,230,545	\$ 3,203,138	\$ 3,106,541	\$ 3,150,123
Net Revenue Req't. (Total Uses less Non-Rate Revenue)	\$ 10,575,805	\$ 10,620,364	\$ 15,425,514	\$ 15,743,404	\$ 15,723,395	\$ 14,910,301	\$ 15,231,945	\$ 15,497,662	\$ 15,835,845	\$ 16,037,974
Total Rate Revenue After Rate Increases	\$ 10,391,000	\$ 11,496,083	\$ 12,718,691	\$ 13,554,945	\$ 14,446,183	\$ 15,396,019	\$ 15,626,960	\$ 15,861,364	\$ 16,099,285	\$ 16,340,774
Projected Annual Rate Revenue Increase	0.00%	9.00%	9.00%	5.00%	5.00%	5.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Increase from Annual Revenue Increases	0.00%	9.00%	18.81%	24.75%	30.99%	37.54%	37.54%	37.54%	37.54%	37.54%
Debt Coverage After Rate Increase⁷	1.65	2.22	1.76	1.91	2.13	3.16	3.14	3.13	3.14	3.16
Target Debt Coverage	1.25									

TABLE 2 : RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY	Budget	Projected								
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Total Beginning Cash ¹	\$ 30,717,925									
Sewer Operations Fund (640)										
Beginning Reserve Balance ¹	\$ 1,505,059	\$ 2,081,319	\$ 2,294,000	\$ 2,356,000	\$ 2,440,000	\$ 2,483,000	\$ 2,600,000	\$ 2,667,000	\$ 2,734,000	\$ 2,826,000
Plus: Net Cash Flow (After Rate Increases)	47,890	1,358,354	279,668	802,077	1,698,228	3,317,315	3,230,545	3,203,138	3,106,541	3,150,123
Plus: Transfer of Rate Stabilization Fund Surplus	528,370	-	-	-	-	-	-	-	-	-
Plus: Transfer of Surplus in Bond Debt Reserve	-	-	-	42,006	42,006	42,006	42,006	42,006	42,006	42,006
Less: Transfer Out to Rate Stabilization Fund	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out to Sewer Capital Project Fund	-	(1,145,674)	(217,668)	(760,083)	(1,697,234)	(3,242,320)	(3,205,551)	(3,178,144)	(3,056,546)	(3,121,128)
Ending Operating Fund Balance	\$ 2,081,319	\$ 2,294,000	\$ 2,356,000	\$ 2,440,000	\$ 2,483,000	\$ 2,600,000	\$ 2,667,000	\$ 2,734,000	\$ 2,826,000	\$ 2,897,000
Target Ending Balance (90-days of O&M)	\$ 2,263,000	\$ 2,294,000	\$ 2,356,000	\$ 2,440,000	\$ 2,483,000	\$ 2,600,000	\$ 2,667,000	\$ 2,734,000	\$ 2,826,000	\$ 2,897,000
Sewer Capital Projects Fund (643)										
Beginning Reserve Balance ¹	\$ 10,733,194	\$ 4,046,243	\$ 5,191,916	\$ 5,409,584	\$ 6,169,667	\$ 7,866,900	\$ 4,091,216	\$ 3,244,511	\$ 3,478,706	\$ 6,535,252
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-	-
Plus: Transfer of Operating Fund Surplus	-	1,145,674	217,668	760,083	1,697,234	3,242,320	3,205,551	3,178,144	3,056,546	3,121,128
Less: Use of Reserves for Capital Projects	(6,686,951)	-	-	-	-	(7,018,005)	(4,052,255)	(2,943,949)	-	(521,909)
Ending Capital Projects Fund Balance	\$ 4,046,243	\$ 5,191,916	\$ 5,409,584	\$ 6,169,667	\$ 7,866,900	\$ 4,091,216	\$ 3,244,511	\$ 3,478,706	\$ 6,535,252	\$ 9,134,471
Target Ending Balance (3% of Assets) ²	\$ 1,857,900	\$ 2,077,900	\$ 2,503,000	\$ 3,102,100	\$ 3,621,100	\$ 4,014,300	\$ 4,016,600	\$ 4,034,200	\$ 3,929,900	\$ 3,844,500
Sewer Rate Stabilization Fund (642)										
Beginning Reserve Balance ¹	\$ 2,567,929	\$ 2,078,200	\$ 2,119,764	\$ 2,162,159	\$ 2,205,402	\$ 2,249,511	\$ 2,294,501	\$ 2,340,391	\$ 2,387,199	\$ 2,434,943
Plus: Contributions from Sewer Operations Fund	-	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings ³	38,641	41,564	42,395	43,243	44,108	44,990	45,890	46,808	47,744	48,699
Plus: Other Rate Stabilization Fund Revenue	-	-	-	-	-	-	-	-	-	-
Less: Transfer of Surplus to Operating Fund	(528,370)	-	-	-	-	-	-	-	-	-
Ending Sewer Rate Stabilization Reserve Balance	\$ 2,078,200	\$ 2,119,764	\$ 2,162,159	\$ 2,205,402	\$ 2,249,511	\$ 2,294,501	\$ 2,340,391	\$ 2,387,199	\$ 2,434,943	\$ 2,483,641
Target Ending Balance (20% of Estimated Rate Revenue)	\$ 2,078,200	\$ 2,299,217	\$ 2,543,738	\$ 2,710,989	\$ 2,889,237	\$ 3,079,204	\$ 3,125,392	\$ 3,172,273	\$ 3,219,857	\$ 3,268,155
Ending Balance - Excludes Restricted Reserves	\$ 8,205,762	\$ 9,605,680	\$ 9,927,743	\$ 10,815,069	\$ 12,599,411	\$ 8,985,716	\$ 8,251,902	\$ 8,599,904	\$ 11,796,195	\$ 14,515,113
Min. Target Ending Balance - Excludes Restricted Reser	\$ 6,199,100	\$ 6,671,117	\$ 7,402,738	\$ 8,253,089	\$ 8,993,337	\$ 9,693,504	\$ 9,808,992	\$ 9,940,473	\$ 9,975,757	\$ 10,009,655
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 2,006,662	\$ 2,934,564	\$ 2,525,005	\$ 2,561,980	\$ 3,606,074	\$ (707,788)	\$ (1,557,090)	\$ (1,340,568)	\$ 1,820,438	\$ 4,505,458
Days Cash on Hand ⁴	273	316	262	278	324	244	220	225	301	362

TABLE 3: RESERVE FUND SUMMARY, continued

SUMMARY OF CASH ACTIVITY, continued	Budget		Projected							
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Restricted Reserves:										
Impact Fee Fund (641)										
Beginning Reserve Balance ⁷	\$ 15,911,743	\$ 19,731,924	\$ 23,740,207	\$ 23,002,469	\$ 17,387,035	\$ 10,464,784	\$ 3,684,800	\$ 3,981,794	\$ 2,644,196	\$ 2,504,839
Plus: Interest Earnings ³	215,856	394,638	474,804	460,049	347,741	209,296	73,696	79,636	52,884	50,097
Plus: Impact Fee Revenue ⁵	4,717,263	4,801,041	2,951,607	3,561,567	3,640,401	3,721,205	3,000,000	3,000,000	3,000,000	3,000,000
Plus: Other Impact Fee Fund Revenue	-	-	-	-	-	-	-	-	-	-
Less: Annual Operating Expenditures	(70,671)	(73,395)	(75,323)	(77,013)	(78,747)	(80,522)	(82,343)	(84,209)	(86,122)	(88,082)
Less: Use of Reserves for Capital Projects	(809,572)	(881,367)	(1,356,086)	(6,827,058)	(8,117,625)	(8,063,708)	(128,149)	(1,766,949)	(540,479)	(556,693)
Less: Debt Service (Impact Fee Fund Allocation)	(232,695)	(232,635)	(2,732,740)	(2,732,980)	(2,714,020)	(2,566,255)	(2,566,210)	(2,566,075)	(2,565,640)	(2,565,700)
Ending Impact Fee Fund Balance	\$ 19,731,924	\$ 23,740,207	\$ 23,002,469	\$ 17,387,035	\$ 10,464,784	\$ 3,684,800	\$ 3,981,794	\$ 2,644,196	\$ 2,504,839	\$ 2,344,461
Bond Project Fund										
Beginning Reserve Balance	\$ -	\$ -	\$ 46,669,771	\$ 31,311,392	\$ 15,007,474	\$ 2,126,706	\$ (0)	\$ (0)	\$ (0)	\$ (0)
Plus: New SRF Loan Proceeds	-	-	-	-	-	-	-	-	-	-
Plus: New Revenue Bond Proceeds	-	55,231,511	-	-	-	-	-	-	-	-
Less: Use of Bond & Loan Funds for Capital Projects	-	(8,561,740)	(15,358,379)	(16,303,917)	(12,880,769)	(2,126,706)	-	-	-	-
Ending Bond Project Fund Balance	\$ -	\$ 46,669,771	\$ 31,311,392	\$ 15,007,474	\$ 2,126,706	\$ (0)				
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
New Debt Reserve										
Beginning Reserve Balance	\$ -	\$ -	\$ -	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279
Plus: Reserve Funding from New Debt Obligations	-	-	2,100,279	-	-	-	-	-	-	-
Plus: Interest Earnings	-	-	-	42,006	42,006	42,006	42,006	42,006	42,006	42,006
Less: Transfer of Surplus to Operating Reserve	-	-	-	(42,006)	(42,006)	(42,006)	(42,006)	(42,006)	(42,006)	(42,006)
Ending Debt Reserve Balance	\$ -	\$ -	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279
Target Ending Balance	\$ -	\$ -	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279
Annual Interest Earnings Rate ⁶	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

1. Total beginning cash is the sum of the cash balances in Funds 640, 642, and 643, as of 06/30/2018. Source file: *trial balances fy17-18 fund 640 through 643 revised 020619.pdf*.

2. The Sewer System Replacement reserve target is set to 3% of net assets.

3. Interest earnings for FY 2018/19 are projected in City budgets and are calculated thereafter. Calculations found in source file: *Item 1, 2, 3, 12 Wastewater Rate Study Data_jt.manipulated.xlsx*.

4. Days cash on hand represents the number of days cash the City has available to cover operating expenses and debt service payments.

5. Impact fee revenue projections for FY 2018/19 - 2019/20 are from the following file: *Item 1, 2, 3, 12 Wastewater Rate Study Data.xlsx*

6. Interest earning rates were provided by City staff on 1/28/19 conference call.

7. Beginning cash balance for Impact Fee Fund (641) found in source file: *trial balances fy17-18 fund 640 through 643 revised 092618.pdf, Page 5*.

CHART 1

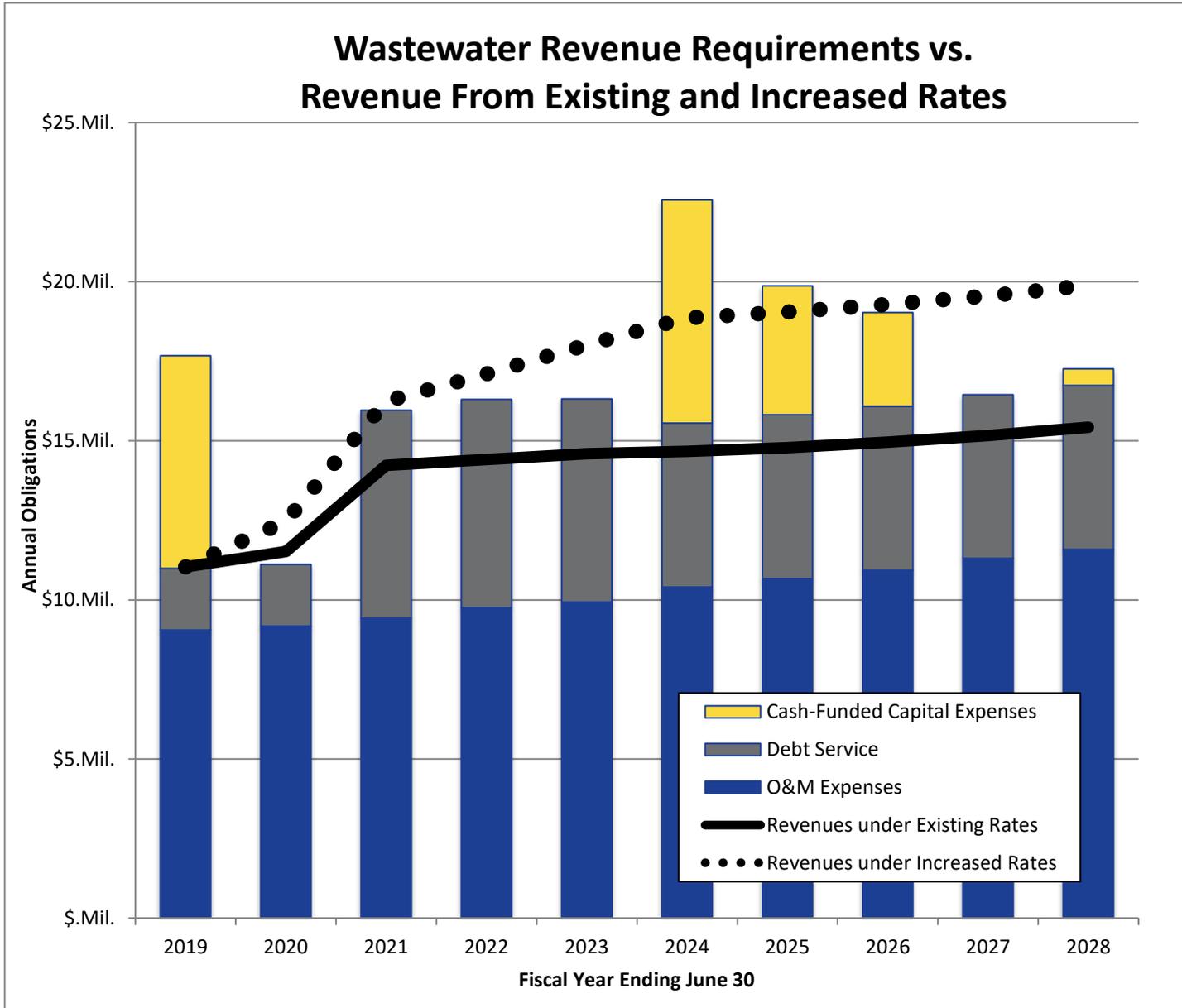


CHART 2

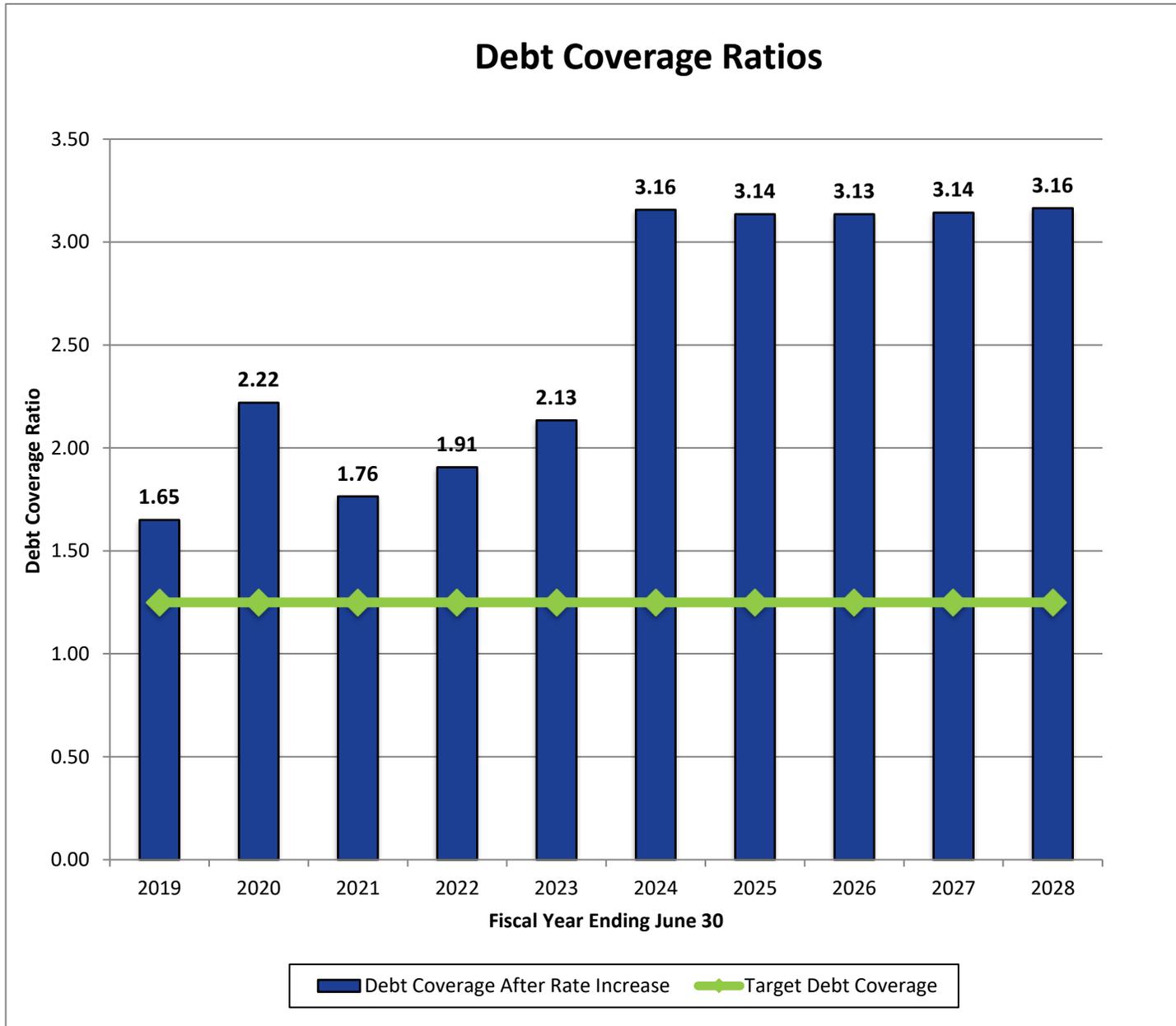


CHART 3

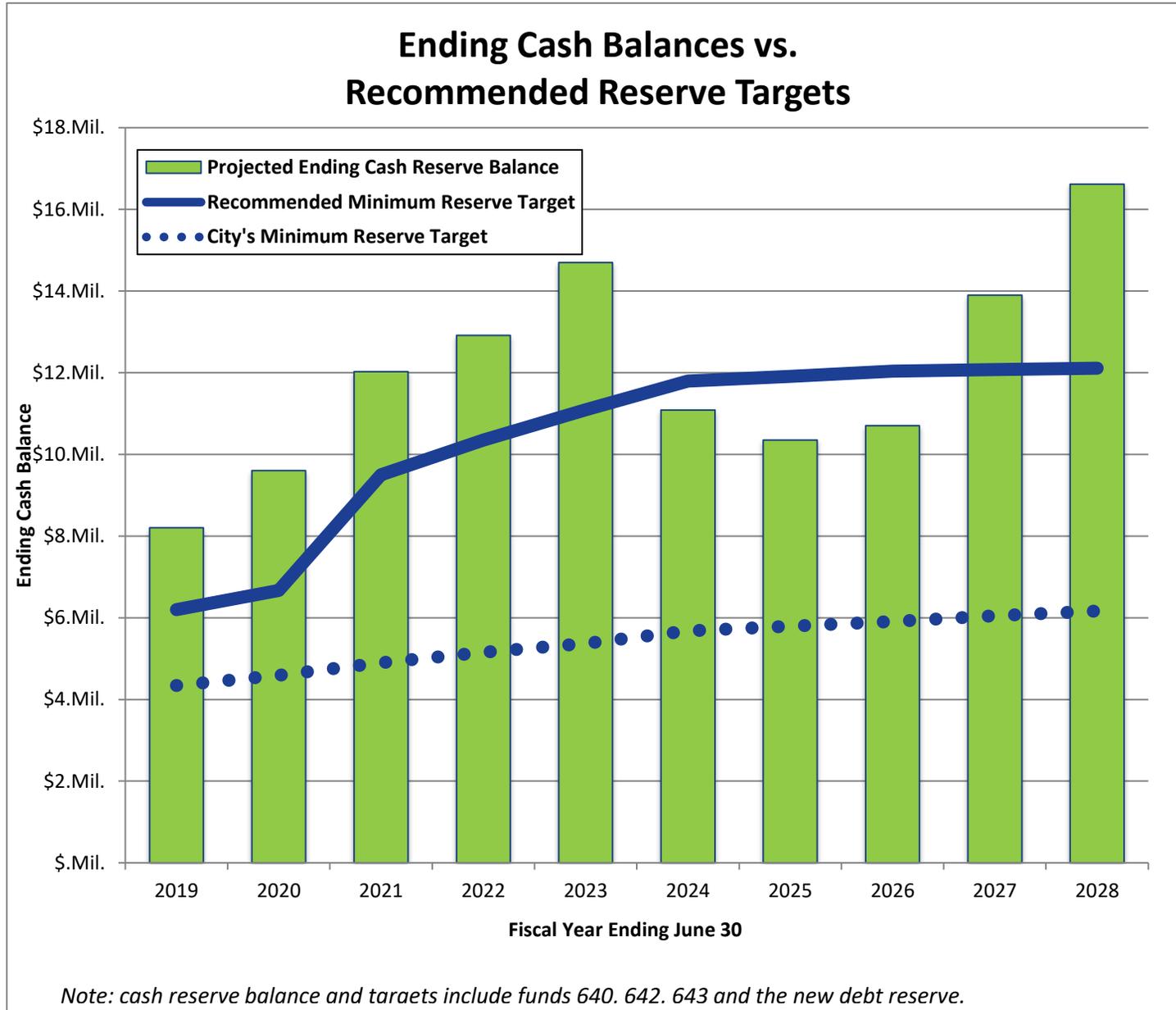
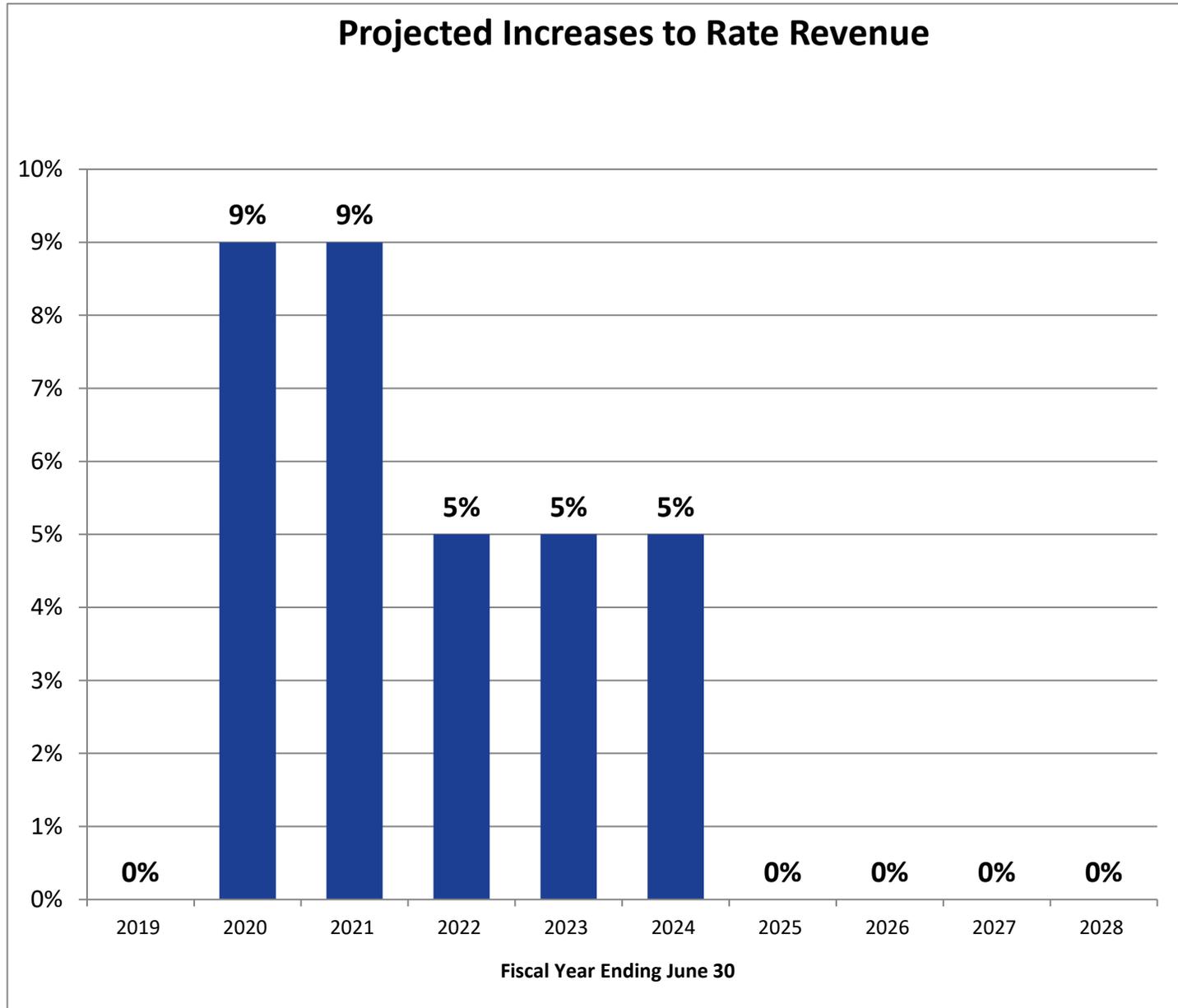


CHART 4



CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 4 : REVENUE FORECAST ¹

SOURCES OF REVENUE	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sewer Operations Fund (640)											
INTEREST INCOME	See FP	\$ 37,151	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SEWER SERVICE FEES	1	10,391,000	10,546,865	10,705,068	10,865,644	11,028,629	11,194,058	11,361,969	11,532,398	11,705,384	11,880,965
ADDITIONAL REVENUE FROM REMOVAL OF CAP	1	-	250,000	253,750	257,556	261,420	265,341	269,321	273,361	277,461	281,623
FRONT FOOTAGE/OFFSITE	2	61,200	62,500	64,063	65,664	67,306	68,988	70,713	72,481	74,293	76,150
UB COLLECTIONS	2	2,000	2,000	2,050	2,101	2,154	2,208	2,263	2,319	2,377	2,437
LIFT STATION CHARGES	4	237,500	248,805	260,648	273,055	286,052	299,668	313,933	328,876	344,530	360,930
UTILITY BILL DELINQ CHR	2	18,000	18,360	18,819	19,289	19,772	20,266	20,773	21,292	21,824	22,370
Subtotal: Sewer Ops Fund (640)		\$ 10,746,851	\$ 11,128,530	\$ 11,304,398	\$ 11,483,309	\$ 11,665,333	\$ 11,850,529	\$ 12,038,972	\$ 12,230,727	\$ 12,425,870	\$ 12,624,475
Sewer Impact Fund (641)											
INTEREST INCOME	See FP	215,856	-	-	-	-	-	-	-	-	-
DEVELOPMENT IMPACT FEES (AB1600)	8	4,717,263	4,801,041	2,951,607	3,561,567	3,640,401	3,721,205	3,000,000	3,000,000	3,000,000	3,000,000
Subtotal: Sewer Imp. Fund (641)		\$ 4,933,119	\$ 4,801,041	\$ 2,951,607	\$ 3,561,567	\$ 3,640,401	\$ 3,721,205	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000
Sewer Rate Stabilization Fund (642)											
INTEREST INCOME	See FP	38,641	52,262	53,307	54,373	55,461	56,570	57,701	58,856	60,033	61,233
Subtotal: Swr. Rate Stab. Fund (642)		\$ 38,641	\$ 52,262	\$ 53,307	\$ 54,373	\$ 55,461	\$ 56,570	\$ 57,701	\$ 58,856	\$ 60,033	\$ 61,233
Sewer System Replacement Fund (643)											
INTEREST INCOME	See FP	58,851	-	-	-	-	-	-	-	-	-
Subtotal: Swr. Sys. Rep. Fund (641)		\$ 58,851	\$ -								
TOTAL: REVENUE		\$ 15,777,462	\$ 15,981,833	\$ 14,309,312	\$ 15,099,249	\$ 15,361,195	\$ 15,628,304	\$ 15,096,673	\$ 15,289,583	\$ 15,485,903	\$ 15,685,708

1. Data sources for the FY 2018/19 adopted budget is from the following files: Item 1, 2, 3, 12 Wastewater Rate Study Data.xlsx, and MorganHill_FY18-19_Budget.pdf, Page 91, 270 . Budget data for FY 2018/19 - FY 2027/28 is forecasted by the City.

Inflationary factors are applied to project revenue and expenses in all future years.

2. Per City Staff 1/7/19, increase in rate revenue due to removal of cap on consumption/volumetric charges.

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 5 : REVENUE SUMMARY

REVENUE SUMMARY	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Sewer Operations Fund (640)										
SEWER RATE REVENUE	\$ 10,391,000	\$ 10,546,865	\$ 10,705,068	\$ 10,865,644	\$ 11,028,629	\$ 11,194,058	\$ 11,361,969	\$ 11,532,398	\$ 11,705,384	\$ 11,880,965
ADDITIONAL REVENUE FROM REMOVAL OF CAP	-	250,000	253,750	257,556	261,420	265,341	269,321	273,361	277,461	281,623
OTHER REVENUE	318,700	331,665	345,580	360,109	375,284	391,130	407,682	424,968	443,024	461,887
INTEREST INCOME	37,151	-	-	-	-	-	-	-	-	-
Sewer Impact Fund (641)										
IMPACT FEE REVENUE	4,717,263	4,801,041	2,951,607	3,561,567	3,640,401	3,721,205	3,000,000	3,000,000	3,000,000	3,000,000
INTEREST INCOME	215,856	-	-	-	-	-	-	-	-	-
OTHER REVENUE	-	-	-	-	-	-	-	-	-	-
Sewer Rate Stabilization Fund (642)										
INTEREST INCOME	38,641	52,262	53,307	54,373	55,461	56,570	57,701	58,856	60,033	61,233
OTHER REVENUE	-	-	-	-	-	-	-	-	-	-
Sewer System Replacement Fund (643)										
INTEREST INCOME	58,851	-	-	-	-	-	-	-	-	-
OTHER REVENUE	-	-	-	-	-	-	-	-	-	-
INTERFUND TRANSFERS	-	-	-	-	-	-	-	-	-	-
TOTAL: REVENUE	\$ 15,777,462	\$ 15,981,833	\$ 14,309,312	\$ 15,099,249	\$ 15,361,195	\$ 15,628,304	\$ 15,096,673	\$ 15,289,583	\$ 15,485,903	\$ 15,685,708

TABLE 6 : OPERATING EXPENSE FORECAST ¹

SEWER OPERATIONS FUND	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SALARIES											
SALARIES - GENERAL	2	\$ 1,274,981	\$ 1,312,798	\$ 1,352,182	\$ 1,385,986	\$ 1,420,636	\$ 1,456,152	\$ 1,492,556	\$ 1,529,870	\$ 1,568,116	\$ 1,607,319
SALARIES - PART-TIME TEMP ²	2	25,000	25,360	26,121	26,774	27,443	28,130	28,832	29,554	30,292	31,050
EARNED LEAVE LIABILITY	2	34,458	35,836	36,732	37,650	38,592	39,556	40,545	41,559	42,598	43,663
OVERTIME - GENERAL	2	28,500	29,500	30,238	30,993	31,768	32,562	33,377	34,211	35,066	35,943
RETIREMENT - GENERAL	2	245,019	266,278	288,677	307,481	324,388	337,638	349,586	358,326	367,284	376,466
DEFERRED COMPENSATION	2	20,932	21,401	22,364	22,923	23,496	24,084	24,686	25,303	25,935	26,584
GROUP INSURANCE	5	219,520	230,365	241,883	253,977	266,676	280,010	294,011	308,711	324,147	340,354
MEDICARE	2	15,530	16,157	16,884	17,306	17,739	18,183	18,637	19,103	19,581	20,070
MEDICARE - PTT & OT	2	602	616	644	660	677	693	711	729	747	765
INCOME PROTECTION INS	2	10,514	10,514	10,777	11,047	11,323	11,606	11,896	12,193	12,498	12,811
WORKERS COMP	2	31,874	32,820	34,296	35,154	36,033	36,933	37,857	38,803	39,773	40,768
WORKERS COMP - PTT & OT	2	1,038	1,063	1,110	1,138	1,167	1,196	1,226	1,256	1,288	1,320
BENEFITS	2	7,913	7,914	8,112	8,315	8,523	8,736	8,954	9,178	9,407	9,642
UNIFORM	2	12,264	12,571	12,885	13,207	13,537	13,876	14,223	14,578	14,943	15,316
SENIOR UTILITY ENGINEER .5 FTE	3	101,000	105,040	108,191	111,437	114,780	118,223	121,770	125,423	129,186	133,062
FLEET MANAGER .5 FTE	3	60,000	62,400	64,272	66,200	68,186	70,232	72,339	74,509	76,744	79,046
SUBTOTAL: SALARIES		\$ 2,089,145	\$ 2,170,633	\$ 2,255,368	\$ 2,330,248	\$ 2,404,964	\$ 2,477,810	\$ 2,551,206	\$ 2,623,306	\$ 2,697,605	\$ 2,774,179

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 7 : OPERATING EXPENSE FORECAST, continued ¹

SEWER OPERATIONS FUND, continued	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUPPLIES											
ELECTRIC	2	27,414	27,689	28,381	29,091	29,818	30,563	31,328	32,111	32,914	33,736
WATER/SEWER	2	4,796	5,026	5,152	5,280	5,412	5,548	5,686	5,829	5,974	6,124
TELEPHONE	2	19,570	20,157	20,661	21,177	21,707	22,250	22,806	23,376	23,960	24,559
GASOLINE & OIL	2	13,458	13,862	14,209	14,564	14,928	15,301	15,684	16,076	16,478	16,890
CONTRACT SERVICES	2	310,000	267,500	274,188	281,042	288,068	295,270	302,652	310,218	317,973	325,923
BANK CARD SERVICE FEES	2	500	500	513	525	538	552	566	580	594	609
RENTALS - OUTSIDE	2	2,781	2,871	2,943	3,016	3,092	3,169	3,248	3,329	3,413	3,498
STATIONERY & OFFICE SUPPLIES	2	3,250	3,500	3,588	3,677	3,769	3,863	3,960	4,059	4,160	4,264
COMPUTER HARDWARE-NON CAPITAL	2	8,919	9,186	9,416	9,651	9,892	10,140	10,393	10,653	10,919	11,192
COMPUTER SOFTWARE-NON CAPITAL	2	2,500	2,500	2,563	2,627	2,692	2,760	2,829	2,899	2,972	3,046
OTHER SUPPLIES	2	99,800	102,795	105,365	107,999	110,699	113,466	116,303	119,211	122,191	125,246
ADVERTISING	2	2,186	2,251	2,307	2,365	2,424	2,485	2,547	2,610	2,676	2,743
PHOTOCOPYING	2	530	530	543	557	571	585	600	615	630	646
POSTAGE & FREIGHT	2	279	288	295	303	310	318	326	334	342	351
PRINTING	2	1,673	1,723	1,766	1,810	1,855	1,902	1,949	1,998	2,048	2,099
AUTO MILEAGE	2	206	212	217	223	228	234	240	246	252	258
SEWER CHRGS MAINT/OPS (SCRWA)	2	4,339,302	4,618,421	4,733,882	4,852,229	4,973,534	5,097,873	5,225,319	5,355,952	5,489,851	5,627,098
WATER/SEWER MAINTENANCE SVS	2	115,250	118,708	121,676	124,718	127,836	131,031	134,307	137,665	141,107	144,634
SMALL TOOLS	2	4,460	4,594	4,709	4,827	4,947	5,071	5,198	5,328	5,461	5,597
OTHER EXPENSE	2	8,198	8,444	8,655	8,871	9,093	9,321	9,554	9,792	10,037	10,288
TRAINING & EDUCATION	2	10,900	10,900	11,173	11,452	11,738	12,032	12,332	12,641	12,957	13,281
CONFERENCE & MEETINGS	2	5,380	5,380	5,515	5,652	5,794	5,939	6,087	6,239	6,395	6,555
MEMBERSHIP & DUES	2	4,590	4,590	4,705	4,822	4,943	5,067	5,193	5,323	5,456	5,592
SUBSCRIPTION & PUBLICATIONS	2	200	200	205	210	215	221	226	232	238	244
MAINT - BLDGS/IMPROVEMENTS	2	10,000	10,300	10,558	10,821	11,092	11,369	11,654	11,945	12,243	12,550
MAINT - MACHINE/EQUIPMENT	2	48,000	49,440	50,676	51,943	53,241	54,573	55,937	57,335	58,769	60,238
MAINT - AUTO/TRUCKS	2	61,800	63,654	65,242	66,876	68,548	70,262	72,019	73,819	75,665	77,556
SUBTOTAL: SUPPLIES		\$ 5,105,942	\$ 5,355,221	\$ 5,489,103	\$ 5,626,328	\$ 5,766,984	\$ 5,911,165	\$ 6,058,943	\$ 6,210,415	\$ 6,365,675	\$ 6,524,817
SUB-TOTAL:		\$ 7,195,087	\$ 7,525,854	\$ 7,744,471	\$ 7,956,576	\$ 8,171,948	\$ 8,388,975	\$ 8,610,149	\$ 8,833,721	\$ 9,063,280	\$ 9,298,996

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 8 : OPERATING EXPENSE FORECAST, continued ¹

SEWER OPERATIONS FUND, continued	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
CAPITAL											
MACHINERY/EQUIPMENT	2	\$ 75,000	\$ 77,250	\$ 79,181	\$ 81,161	\$ 83,190	\$ 85,270	\$ 87,401	\$ 89,586	\$ 91,826	\$ 94,122
RADIO SYSTEM	2	135,000	3,000	3,075	3,152	3,231	3,311	3,394	3,479	3,566	3,655
WORK ORDER MANAGEMENT SYST.	2	135,000	25,000	25,625	26,266	26,922	27,595	28,285	28,992	29,717	30,460
COMPUTER EQUIPMENT	2	-	15,000	-	-	-	-	-	-	-	-
COMPUTER SOFTWARE	2	-	-	-	-	-	-	-	-	-	-
SUBTOTAL: CAPITAL		\$ 345,000	\$ 120,250	\$ 107,881	\$ 110,579	\$ 113,343	\$ 116,176	\$ 119,080	\$ 122,057	\$ 125,109	\$ 128,237
DEBT											
SERVICE FEES	2	-	-	-	-	-	-	-	-	-	-
INTERNAL SERVICES											
GENERAL LIABILITY INSURANCE	5	53,072	55,726	58,512	61,437	64,509	67,735	71,122	74,678	78,412	82,332
BUILDING MAINT - CURRENT	2	60,061	50,695	51,963	53,262	54,593	55,958	57,357	58,791	60,261	61,767
BUILDING MAINT - FUTURE	3	1,691	1,742	1,794	1,848	1,904	1,961	2,019	2,080	2,142	2,207
FLEET REPLACEMENT	2	124,163	124,163	127,267	130,449	133,710	137,053	140,479	143,991	147,591	151,281
GIS	2	15,626	12,432	12,743	13,062	13,388	13,723	14,066	14,418	14,778	15,148
INFO SYSTEM SERVICES	2	120,947	119,136	122,115	125,168	128,297	131,504	134,792	138,162	141,616	145,156
GF ADMIN	2	254,416	267,137	275,151	282,030	289,080	296,307	303,715	311,308	319,091	327,068
SUBTOTAL: INTERNAL SERVICES		\$ 629,976	\$ 631,031	\$ 649,545	\$ 667,256	\$ 685,481	\$ 704,241	\$ 723,550	\$ 743,428	\$ 763,891	\$ 784,959
TRANSFERS											
TRANS. OUT-010	2	349,376	351,845	354,437	357,159	360,017	363,018	366,169	369,477	372,951	376,599
TRANS. OUT-232	2	97,689	101,327	104,990	108,224	111,459	114,632	117,832	120,992	124,241	127,584
TRANS. OUT - SWR RATE STABILIZE	2	-	-	-	85,000	-	85,000	85,000	85,000	175,000	175,000
TRANS. OUT-650	2	398,098	410,455	424,918	437,934	451,006	463,910	476,972	489,946	503,304	517,059
TRANS. OUT - EMP. BENEFITS FUND	3	22,139	22,139	22,139	22,139	22,139	22,139	22,139	22,139	22,139	22,139
SUBTOTAL: TRANSFERS		\$ 867,302	\$ 885,766	\$ 906,484	\$ 1,010,456	\$ 944,621	\$ 1,048,699	\$ 1,068,112	\$ 1,087,554	\$ 1,197,635	\$ 1,218,381
SUB-TOTAL:		\$ 1,842,278	\$ 1,637,047	\$ 1,663,910	\$ 1,788,291	\$ 1,743,445	\$ 1,869,116	\$ 1,910,742	\$ 1,953,039	\$ 2,086,635	\$ 2,131,577
TOTAL: SEWER OPS FUND (640), EXPENSES		\$ 9,037,365	\$ 9,162,901	\$ 9,408,381	\$ 9,744,867	\$ 9,915,393	\$ 10,258,091	\$ 10,520,891	\$ 10,786,760	\$ 11,149,915	\$ 11,430,573

TABLE 9 : OPERATING EXPENSE FORECAST, continued ¹

SEWER IMPACT FUND	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
SUPPLIES											
CONTRACT SERVICES	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
BANK CARD SERVICE FEES	2	8,500	8,500	8,713	8,930	9,154	9,382	9,617	9,857	10,104	10,356
INTERNAL SERVICES											
GF ADMIN	2	54,471	57,195	58,910	60,383	61,893	63,440	65,026	66,652	68,318	70,026
TRANSFERS											
TRANSFER OUT-207	2	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700
TOTAL: SEWER IMP. FUND (641), EXPENSES		\$ 70,671	\$ 73,395	\$ 75,323	\$ 77,013	\$ 78,747	\$ 80,522	\$ 82,343	\$ 84,209	\$ 86,122	\$ 88,082

TABLE 10 : OPERATING EXPENSE FORECAST, continued ¹

SEWER RATE STABILIZATION FUND	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
INTERNAL SERVICES											
GF ADMIN	2	1,027	1,078	1,111	1,138	1,167	1,196	1,226	1,257	1,288	1,320
TOTAL: SWR RATE STAB. (642), EXPENSES		\$ 1,027	\$ 1,078	\$ 1,111	\$ 1,138	\$ 1,167	\$ 1,196	\$ 1,226	\$ 1,257	\$ 1,288	\$ 1,320

TABLE 11 : OPERATING EXPENSE FORECAST, continued ¹

SEWER SYSTEM REPLACEMENT FUND	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
DEBT											
SERVICE FEES	8	2,000	2,000	2,050	2,101	2,154	2,208	2,263	2,319	2,377	2,437
INTERNAL SERVICES											
GF ADMIN	2	10,990	11,540	11,886	12,183	12,487	12,800	13,120	13,448	13,784	14,128
TOTAL: SWR SYSTM REP. FUND (643), EXPENSES		\$ 12,990	\$ 13,540	\$ 13,936	\$ 14,284	\$ 14,641	\$ 15,008	\$ 15,383	\$ 15,767	\$ 16,161	\$ 16,565

TABLE 12 : MASTER PLAN O&M PROJECTS

ADDITIONAL EXPENSES	Basis	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
On-Going CCTV Sewer System (10 mi/year)	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 126,720	129,812	132,979	136,224	139,548
TOTAL: MASTER PLAN O&M PROJECTS		\$ -	\$ -	\$ -	\$ -	\$ -	\$ 126,720	\$ 129,812	\$ 132,979	\$ 136,224	\$ 139,548
Grand Total: Operating Expenses		\$ 9,122,053	\$ 9,250,914	\$ 9,498,751	\$ 9,837,302	\$ 10,009,948	\$ 10,481,537	\$ 10,749,655	\$ 11,020,972	\$ 11,389,710	\$ 11,676,088

TABLE 13 : FORECASTING ASSUMPTIONS

INFLATION FACTORS ⁵	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1 Customer Growth	-	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
2 General Cost Inflation	-	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%	2.44%
3 Labor Cost Inflation	-	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%	3.55%
4 Lift Station Charges Inflation	-	-	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%
5 Insurance Cost Inflation	-	4.76%	4.76%	4.76%	4.76%	4.76%	4.76%	4.76%	4.76%	4.76%
6 Energy Cost Inflation	-	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
7 Other Cost Inflation	-	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
8 No Escalation	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Data sources for the FY 2018/19 adopted budget is from the following files: Item 1, 2, 3, 12 Wastewater Rate Study Data.xlsx, and MorganHill_FY18-19_Budget.pdf, Page 91, 270. Budget data for FY 2018/19 - FY 2027/28 is forecasted by the City.

Inflationary factors are applied to project revenue and expenses in all future years.

2. Part time salaries include two line items in budget. Combined for this study. Source file: Item 1, 2, 3, 12 Wastewater Rate Study Data.xlsx, Tab 2.

3. Construction expenses are excluded from this analysis and are handled in Exhibit 2 (CIP).

4. The following revenues and expenses have been excluded from this analysis since they do not represent actual cash expenses, or are handled in the model elsewhere (i.e. Debt is on Exhibit 3)

5. Inflation factors calculated by NBS off of District budget. Source file: Item 1, 2, 3, 12 Wastewater Rate Study Data_jt.manipulated.xlsx, Tabs 2 and 3.

TABLE 14 : CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Budget					Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Funding Sources:										
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of SRF Loan Funding	-	-	-	-	-	-	-	-	-	-
Use of New Revenue Bond Proceeds ²	-	8,561,740	15,358,379	16,303,917	12,880,769	2,126,706	-	-	-	-
Use of Impact Fee Reserves (Fund 641) ¹	809,572	881,367	1,356,086	6,827,058	8,117,625	8,063,708	128,149	1,766,949	540,479	556,693
Use of Sewer System Replacement Reserve (Fund 643)	6,686,951	-	-	-	-	7,018,005	4,052,255	2,943,949	-	521,909
Rate Revenue	-	-	-	-	-	-	-	-	-	-
Total Sources of Capital Funds	\$ 7,496,523	\$ 9,443,107	\$ 16,714,465	\$ 23,130,975	\$ 20,998,394	\$ 17,208,419	\$ 4,180,405	\$ 4,710,898	\$ 540,479	\$ 1,078,602
Uses of Capital Funds:										
Total Project Costs	\$ 7,496,523	\$ 9,443,107	\$ 16,714,465	\$ 23,130,975	\$ 20,998,394	\$ 17,208,419	\$ 4,180,405	\$ 4,710,898	\$ 540,479	\$ 1,078,602
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New SRF Loan Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Revenue Bond Proceeds for Sewer Plant Expansion	\$ -	\$ 29,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Revenue Bond Proceeds	\$ -	\$ 26,231,511	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

1. To the extent that impact fees are available, they will be used to fund project costs allocated to Fund 641 (Impact Fees)/Future customers.
2. Per email from City staff 10/23/2018, the City is planning to fund \$29 million in treatment plant expansion costs with a revenue bond.

TABLE 15 : CAPITAL IMPROVEMENT PROGRAM FUNDING OPTIONS

Policy Choice : Funding from new bond proceeds for Fund 643 projects.	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
1 Full Funding of Capital Improvement Program	\$ -	\$ 8,072,490	\$ 4,749,379	\$ 7,146,865	\$ 6,262,777	\$ -	\$ -	\$ -	\$ -	\$ -
2 \$19M Funding of Capital Improvement Program (about 75%)	\$ -	\$ 4,750,000	\$ 4,750,000	\$ 4,750,000	\$ 4,750,000	\$ -	\$ -	\$ -	\$ -	\$ -
3 \$14M Funding of Capital Improvement Program (about 50%)	\$ -	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	\$ -
4 \$10M Funding of Capital Improvement Program (about 40%)	\$ -	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ -

Insert policy choice in box to right, based on options listed above:

Capital Improvement Program Funding Choice	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Effective Annual Funding Amount	\$ -	\$ 8,072,490	\$ 4,749,379	\$ 7,146,865	\$ 6,262,777	\$ -	\$ -	\$ -	\$ -	\$ -

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 16 : CAPITAL IMPROVEMENT PROGRAM

Capital Improvement Program Costs (in Current-Year Dollars) ²

Project Description	Fund	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Currently Planned Projects:												
302018 Sewer System Repair and Replacements	643	\$ 40,000	\$ 5,869,869	\$ 3,713,267	\$ 4,396,786	\$ 2,393,700	\$ 2,393,700	\$ 2,393,700	\$ 2,393,700	\$ -	\$ -	
302m15 Vault Lining Project	643	25,000	-	-	-	-	-	-	-	-	-	
302n15 Trouble Spot Evaluation and Repair	643	996,154	50,000	-	-	-	-	-	-	-	-	
302t17 East Dunne Ave & Tennant Ave Sewer Mains	643	2,285,000	1,600,000	-	-	-	-	-	-	-	-	
304k15 Lift Station Improvements	643	1,523,000	-	-	-	-	-	-	-	-	-	
308A08 New Trunk Line - CIP Funded	643	137,500	162,500	250,000	2,068,608	2,318,608	2,318,608	-	-	-	-	
315006 Sewer Capacity - CIP Funded	643	525,297	-	438,478	-	452,088	-	-	-	-	-	
317a18 Wastewater Planning	643	735,000	155,000	75,000	75,000	400,000	-	-	-	-	400,000	
303093 Sewer Plant Expansion (SCRWA)	643	420,000	475,000	10,000,000	8,380,000	5,880,000	3,176,000	1,000,000	-	-	-	
303a11 Sewer Plant Improvements	641	351,394	368,196	357,721	41,900	8,380	-	-	-	-	-	
308a08 New Trunk Line - Impact Funded	641	412,500	487,500	750,000	6,205,825	6,955,825	6,955,825	-	-	-	-	
315006 Sewer Capacity - Impact Funded	641	45,678	-	170,520	-	248,200	-	-	-	-	-	
Master Plan Projects:												
Pipeline Capacity Improvements	641	-	-	-	-	-	-	107,323	1,436,691	426,659	426,659	
Total: Capital Improvement Program Costs (Current-Year Dollars)		\$ 7,496,523	\$ 9,168,065	\$ 15,754,986	\$ 21,168,119	\$ 18,656,801	\$ 14,844,133	\$ 3,501,023	\$ 3,830,391	\$ 426,659	\$ 826,659	
Total: CIP Costs (Current Year) Paid with Impact Fees		641	\$ 809,572	\$ 855,696	\$ 1,278,241	\$ 6,247,725	\$ 7,212,405	\$ 6,955,825	\$ 107,323	\$ 1,436,691	\$ 426,659	\$ 426,659
Total: CIP Costs (Current Year) Paid with Sewer CIP Fund		643	\$ 6,686,951	\$ 8,312,369	\$ 14,476,745	\$ 14,920,394	\$ 11,444,396	\$ 7,888,308	\$ 3,393,700	\$ 2,393,700	\$ -	\$ 400,000

TABLE 17 : CAPITAL IMPROVEMENT PROGRAM

Capital Improvement Program Costs (in Future-Year Dollars) ³

Project Description	Fund	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Currently Planned Projects:											
302018 Sewer System Repair and Replacements	643	\$ 40,000	\$ 6,045,965	\$ 3,939,405	\$ 4,804,487	\$ 2,694,130	\$ 2,774,954	\$ 2,858,203	\$ 2,943,949	\$ -	\$ -
302m15 Vault Lining Project	643	25,000	-	-	-	-	-	-	-	-	-
302n15 Trouble Spot Evaluation and Repair	643	996,154	51,500	-	-	-	-	-	-	-	-
302t17 East Dunne Ave & Tennant Ave Sewer Mains	643	2,285,000	1,648,000	-	-	-	-	-	-	-	-
304k15 Lift Station Improvements	643	1,523,000	-	-	-	-	-	-	-	-	-
308A08 New Trunk Line - CIP Funded	643	137,500	167,375	265,225	2,260,424	2,609,614	2,687,902	-	-	-	-
315006 Sewer Capacity - CIP Funded	643	525,297	-	465,181	-	508,829	-	-	-	-	-
317a18 Wastewater Planning	643	735,000	159,650	79,568	81,955	450,204	-	-	-	-	521,909
303093 Sewer Plant Expansion (SCRWA)	643	420,000	489,250	10,609,000	9,157,052	6,617,992	3,681,854	1,194,052	-	-	-
303a11 Sewer Plant Improvements	641	351,394	379,242	379,506	45,785	9,432	-	-	-	-	-
308a08 New Trunk Line - Impact Funded	641	412,500	502,125	795,675	6,781,273	7,828,842	8,063,708	-	-	-	-
315006 Sewer Capacity - Impact Funded	641	45,678	-	180,905	-	279,351	-	-	-	-	-
Master Plan Projects:											
Pipeline Capacity Improvements	641	-	-	-	-	-	-	128,149	1,766,949	540,479	556,693
Total: Capital Improvement Program Costs (Future-Year Dollars)		\$ 7,496,523	\$ 9,443,107	\$ 16,714,465	\$ 23,130,975	\$ 20,998,394	\$ 17,208,419	\$ 4,180,405	\$ 4,710,898	\$ 540,479	\$ 1,078,602
Total: CIP Costs (Future Years) Paid with Impact Fees											
	641	\$ 809,572	\$ 881,367	\$ 1,356,086	\$ 6,827,058	\$ 8,117,625	\$ 8,063,708	\$ 128,149	\$ 1,766,949	\$ 540,479	\$ 556,693
Total: CIP Costs (Future Years) Paid with Sewer CIP											
	643	\$ 6,686,951	\$ 8,561,740	\$ 15,358,379	\$ 16,303,917	\$ 12,880,769	\$ 9,144,711	\$ 4,052,255	\$ 2,943,949	\$ -	\$ 521,909

TABLE 18 : FORECASTING ASSUMPTIONS

Economic Variables	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Annual Construction Cost Inflation, Per Engineering News Record ⁴	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2019	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30

1. Use of 2015 Revenue Bond Proceeds used for capital funding from last study.
2. Capital Improvement Program projects found in Source File: *Item 13-CIP Projects-Adopted.pdf, Pages 79-102 and CIP - Wastewater.pdf*.
Updated per City in source file: *MorganHill_Wastewater Rate Model_01.18.19 vDat.pdf*
3. Project costs are inflated by 3.00% per year, Engineering News Record estimates of construction cost inflation.
4. For reference purposes, the annual Construction Cost Inflation percentage is the 10 year average change in the Construction Cost Index for for January 2008 to January 2018. Source: Engineering News Record website (<http://enr.construction.com>).

TABLE 19 : OPEN DEBT SERVICE

EXISTING & PLANNED DEBT OBLIGATIONS	Budget		Projected							
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28
Annual Repayment Schedules:										
<u>Sewer Revenue Bonds - 2015 - \$15,690,000</u> ¹										
Principal Payment	\$ 1,375,000	\$ 1,445,000	\$ 1,520,000	\$ 1,600,000	\$ 1,520,000	\$ 335,000	\$ 350,000	\$ 365,000	\$ 380,000	\$ 400,000
Interest Payment	564,125	493,625	419,500	341,500	263,500	217,125	201,750	185,625	167,000	147,500
Subtotal: Annual Debt Service	\$ 1,939,125	\$ 1,938,625	\$ 1,939,500	\$ 1,941,500	\$ 1,783,500	\$ 552,125	\$ 551,750	\$ 550,625	\$ 547,000	\$ 547,500
Coverage Requirement (\$-Amnt. above annual payment) ²	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Reserve Requirement (total fund balance) ³	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<u>Planned Bond Funding for Treatment Plant Expansion</u> ⁴										
Estimated Principal and Interest Payment	-	-	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
<u>New Bond Proceeds for CIP</u> ⁵										
Principal Payment	\$ -	\$ -	\$ 365,680	\$ 387,621	\$ 410,878	\$ 435,531	\$ 461,662	\$ 489,362	\$ 518,724	\$ 549,847
Interest Payment	-	-	1,734,599	1,712,659	1,689,401	1,664,749	1,638,617	1,610,917	1,581,555	1,550,432
Subtotal: Annual Debt Service	\$ -	\$ -	\$ 2,100,279							
Coverage Requirement (\$-Amnt. above annual payment)	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279	\$ 2,100,279
Grand Total: Existing & Planned Annual Debt Service	\$ 1,939,125	\$ 1,938,625	\$ 6,539,779	\$ 6,541,779	\$ 6,383,779	\$ 5,152,404	\$ 5,152,029	\$ 5,150,904	\$ 5,147,279	\$ 5,147,779
Grand Total: Existing Debt Reserve Target	\$ -	\$ -	\$ 2,100,279							

1. The 2015 Sewer Bonds refunded the 2002 Bonds. File: *Item 8 - Morgan Hill 2015 Bond Document.pdf* and *Item 1, 2, 3, 12 Wastewater Rate Study Data.xlsx, Tab 5.*
2. The Coverage Requirement for the 2015 Sewer Bonds is at least equal to 125% of the Maximum Annual Debt Service, taking into account all Parity Debt. Source file: *8. Bond Document- Morgan Hill Sewer Series 2015.pdf, Page 19.*
3. There is no Reserve Requirement for the 2015 Sewer Bonds. Source file: *8. Bond Document- Morgan Hill Sewer Series 2015.pdf, Page 19.*
4. Estimated debt service for treatment plant expansion per email from City Staff 10/23/2018. Assumes \$29 million issue at 6%, with 20-year payoff.
5. *This debt service is dependant on the funding option chosen in Exhibit 2 in cell D35.*

TABLE 20 : CURRENT WASTEWATER RATES

Existing Sewer Rate Schedule		Current Adopted Rates				
		As of 4/1/16	As of 1/1/17	As of 1/1/18	As of 1/1/19	As of 1/1/20
Fixed Monthly Charge		2.0%	2.0%	2.0%	2.0%	2.0%
Service Charge:						
Residential (5/8-1 inch meters)		\$18.54	\$18.91	\$19.29	\$19.67	\$20.07
All Other Customers:						
5/8 inch		\$18.54	\$18.91	\$19.29	\$19.67	\$20.07
3/4 inch		\$18.54	\$18.91	\$19.29	\$19.67	\$20.07
1 inch		\$18.54	\$18.91	\$19.29	\$19.67	\$20.07
1.5 inch		\$69.38	\$70.77	\$72.18	\$73.63	\$75.10
2 inch		\$110.47	\$112.68	\$114.93	\$117.23	\$119.58
3 inch		\$240.66	\$245.47	\$250.38	\$255.39	\$260.50
4 inch		\$432.27	\$440.92	\$449.73	\$458.73	\$467.90
6 inch		\$959.45	\$978.64	\$998.21	\$1,018.18	\$1,038.54
8 inch		\$1,482.18	\$1,511.82	\$1,542.06	\$1,572.90	\$1,604.36
10 inch		\$1,852.73	\$1,889.78	\$1,927.58	\$1,966.13	\$2,005.45
Variable Consumption Monthly Charge (per hcf)						
<u>Residential:</u>						
Residential - all units		\$3.93	\$4.01	\$4.09	\$4.17	\$4.25
<u>Commercial:</u>						
	<u>Customer Class</u>					
Churches/schools	Commercial 1	\$3.84	\$3.91	\$3.99	\$3.99	\$4.07
Membership organizations	Commercial 1	\$3.84	\$3.91	\$3.99	\$3.99	\$4.07
Governments	Commercial 1	\$3.84	\$3.91	\$3.99	\$3.99	\$4.07
Car wash & laundromats	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Barber & beauty shops	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Department stores, retail stores & general commercial	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Medical offices	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Warehouses	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Hospitals & convalescent	Commercial 2	\$4.49	\$4.58	\$4.67	\$4.67	\$4.76
Hotels w/o dining	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Auto repair/sales/service	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Shopping centers	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Bars w/o dining	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Nurseries	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
RV parks	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Movie theatres	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Photo finishers/printers	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Laundry/dry cleaning	Commercial 3	\$5.46	\$5.57	\$5.68	\$5.68	\$5.79
Light industry	Commercial 4	\$6.19	\$6.32	\$6.44	\$6.44	\$6.57
Convenience/liquor with deli	Commercial 5	\$7.35	\$7.50	\$7.65	\$7.65	\$7.80
Lumber yards	Commercial 5	\$7.35	\$7.50	\$7.65	\$7.65	\$7.80
Industrial laundry	Commercial 5	\$7.35	\$7.50	\$7.65	\$7.65	\$7.80
Bakeries	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02
Food processors	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02
Restaurants & bars with food	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02
Groceries	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02
Mortuaries	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02
Auto repair w/steam	Commercial 6	\$12.27	\$12.52	\$12.77	\$12.77	\$13.02

Source file: 2016 Water and Wastewater Adopted Rates.pdf, Page 2.

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Wastewater Customer Statistics

Customer Statistics

TABLE 21 : ESTIMATED WASTEWATER FLOW BY CUSTOMER CLASS

Customer Class	FY 2017/18 Avg. WINTER Water Use (hcf/month) ¹	FY 2017/18 Annual Water Consumption (hcf) ¹	Estimated Annual Volume (hcf/yr.) ²	Percent of Annual Volume
Single Family	73,059	N/A	876,709	62.7%
Multi Family	19,637	N/A	235,646	16.9%
Commercial Flat	N/A	959	959	0.1%
Commercial 1	N/A	29,067	29,067	2.1%
Commercial 2	N/A	88,637	88,637	6.3%
Commercial 3	N/A	65,495	65,495	4.7%
Commercial 4	N/A	31,824	31,824	2.3%
Commercial 5	N/A	12,866	12,866	0.9%
Commercial 6	N/A	56,571	56,571	4.0%
Total	92,696	285,419	1,397,774	100%

1. Consumption data source file: *MorganHill_CustomerBillingData_ManipulatedV5.xlsx*
2. Estimated annual volume is based on average winter water consumption for SFR and MFR Water customers, and is equal to the annual water consumption for commercial customers.

TABLE 22 : NUMBER OF ACCOUNTS AND BILLING UNITS BY CUSTOMER CLASS

Customer Class	Number of Accounts ¹	Percent of Total Accounts	Number of Billing Units ¹	Percent of Total Billing Units
Single Family	9,673	76.3%	9,896	66.0%
Multi Family	2,237	17.6%	4,321	28.8%
Commercial Flat	2	0.0%	2	0.0%
Commercial 1	81	0.6%	81	0.5%
Commercial 2	383	3.0%	392	2.6%
Commercial 3	80	0.6%	80	0.5%
Commercial 4	101	0.8%	101	0.7%
Commercial 5	19	0.1%	19	0.1%
Commercial 6	99	0.8%	99	0.7%
Total	12,675	100.0%	14,991	100.0%

1. Number of accounts and billing units is from the Billed Consumption Report by Month spreadsheets.
Source File: *MorganHill_CustomerBillingData_ManipulatedV5.xlsx*, "Unit Count" Tab.

TABLE 23 : NUMBER OF METERS BY CUSTOMER CLASS AND METER SIZE

Number of Accounts by Customer Class and Meter Size ¹	5/8 inch	3/4 inch ³	1 inch ⁴	1.5 inch	2 inch	3 inch	4 inch	6 inch	Total
Single Family ²	-	-	9,673	-	-	-	-	-	9,673
Multi Family	-	-	2,222	-	8	-	6	1	2,237
Commercial Flat	-	-	2	-	-	-	-	-	2
Commercial 1	-	16	25	9	21	1	9	-	81
Commercial 2	-	74	163	55	86	2	2	1	383
Commercial 3	-	23	21	5	23	2	6	-	80
Commercial 4	-	11	12	26	47	2	3	-	101
Commercial 5	-	3	6	4	6	-	-	-	19
Commercial 6	-	18	37	21	21	-	2	-	99
Total	-	145	12,161	120	212	7	28	2	12,675

1. Number of accounts is from the Billed Consumption Report by Month spreadsheets. This is average meter count by size and customer class for FY 2017/18.

Source File: *MorganHill_CustomerBillingData_ManipulatedV5.xlsx*

- 2. Single Family meters are 5/8 to 1 inch size, per City customer data.
- 3. For commercial customers these meters are 5/8 to 3/4 inch, per City customer data.
- 4. Single Family meters are 5/8 to 1 inch size and Commercial meters are 1", per City's customer data.

TABLE 24 : TOTAL REVENUE BY CUSTOMER CLASS

Customer Class	Total Revenue FY 2017/18	% of Total Revenue
Single Family	\$ 5,243,841	53.6%
Multi Family	1,854,752	19.0%
Commercial Flat	952	0.0%
Commercial 1	213,632	2.2%
Commercial 2	646,468	6.6%
Commercial 3	444,359	4.5%
Commercial 4	311,630	3.2%
Commercial 5	250,960	2.6%
Commercial 6	807,647	8.3%
Total	\$ 9,774,240	100.0%

CITY OF MORGAN HILL
WASTEWATER RATE STUDY
Wastewater Rate Analysis

Current and Proposed Rates

TABLE 25 : CURRENT VS. PROPOSED SEWER RATES

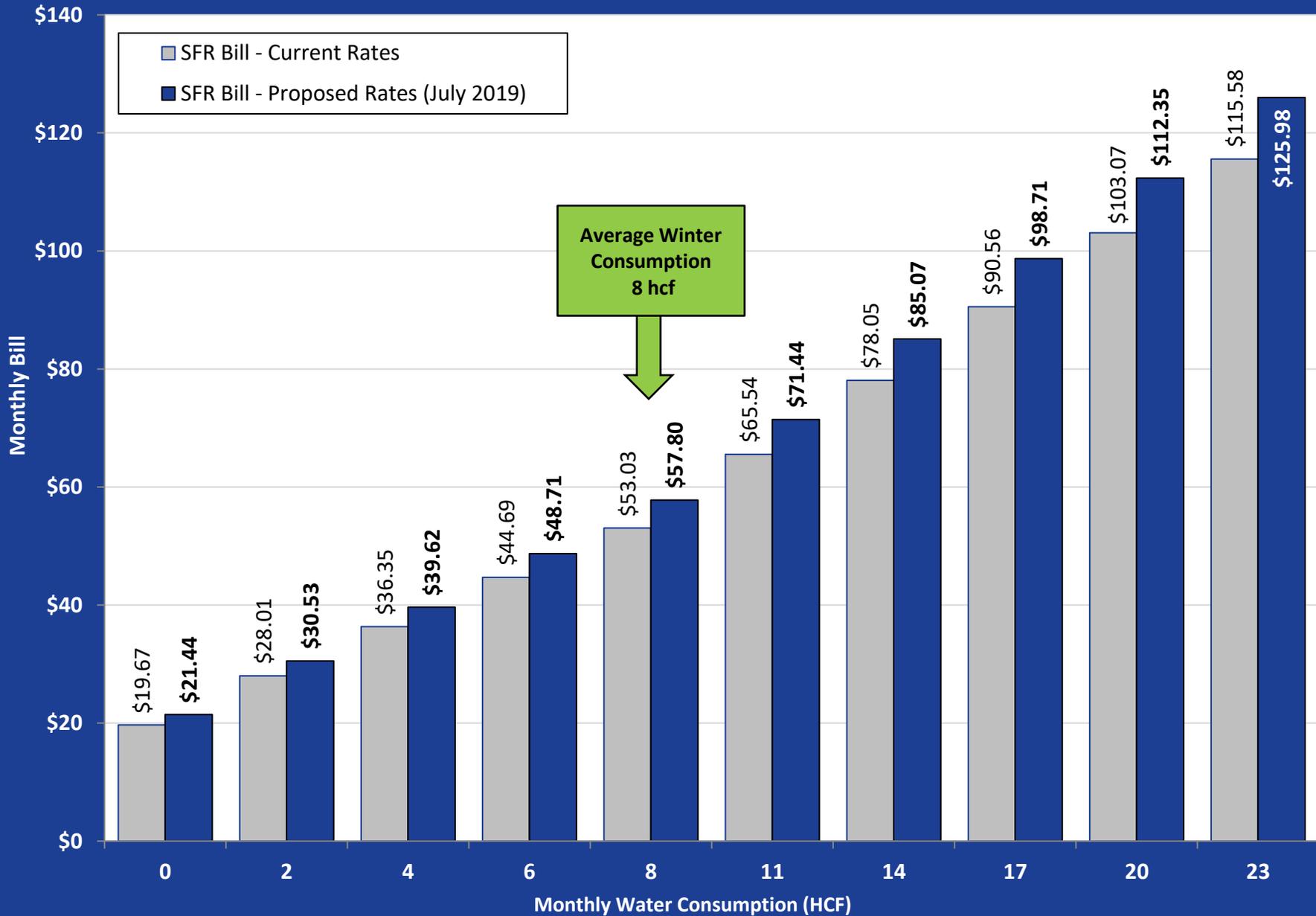
Sewer Rate Schedule	Current Rates Effective 1/1/18	New Rates Effective 1/1/19	Proposed Rates				
			7/1/2019	7/1/2020	7/1/2021	7/1/2022	7/1/2023
			9.00%	9.00%	5.00%	5.00%	5.00%
Monthly Fixed Charges:							
Residential (5/8-1 inch meters)	\$19.29	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
All Other Customers:							
5/8 inch	\$19.29	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
3/4 inch	\$19.29	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
1 inch ³	\$19.29	\$19.67	\$21.44	\$23.37	\$24.54	\$25.77	\$27.05
1.5 inch	\$72.18	\$73.63	\$80.26	\$87.48	\$91.85	\$96.45	\$101.27
2 inch	\$114.93	\$117.23	\$127.78	\$139.28	\$146.25	\$153.56	\$161.24
3 inch	\$250.38	\$255.39	\$278.38	\$303.43	\$318.60	\$334.53	\$351.26
4 inch	\$449.73	\$458.73	\$500.02	\$545.02	\$572.27	\$600.88	\$630.93
6 inch	\$998.21	\$1,018.18	\$1,109.82	\$1,209.70	\$1,270.18	\$1,333.69	\$1,400.38
8 inch	\$1,542.06	\$1,572.90	\$1,714.46	\$1,868.76	\$1,962.20	\$2,060.31	\$2,163.33
10 inch	\$1,927.58	\$1,966.13	\$2,143.08	\$2,335.96	\$2,452.76	\$2,575.39	\$2,704.16
Monthly Volumetric Charges:							
Single-Family (Applied to <u>Avg. Winter</u> Water Use)	\$4.09	\$4.17	\$4.55	\$4.95	\$5.20	\$5.46	\$5.74
Multi-Family (Applied to <u>Avg. Winter</u> Water Use)	\$4.09	\$4.17	\$4.55	\$4.95	\$5.20	\$5.46	\$5.74
Commercial Charge (Applied to <u>Monthly</u> Water Use):							
Commercial 1	\$3.91	\$3.99	\$4.35	\$4.74	\$4.98	\$5.23	\$5.49
Commercial 2	\$4.58	\$4.67	\$5.09	\$5.55	\$5.83	\$6.12	\$6.42
Commercial 3	\$5.57	\$5.68	\$6.19	\$6.75	\$7.09	\$7.44	\$7.81
Commercial 4	\$6.32	\$6.44	\$7.02	\$7.65	\$8.03	\$8.44	\$8.86
Commercial 5	\$7.50	\$7.65	\$8.34	\$9.09	\$9.54	\$10.02	\$10.52
Commercial 6	\$12.52	\$12.77	\$13.92	\$15.17	\$15.93	\$16.73	\$17.56

1. Source file: 2016 Water and Wastewater Adopted Rates.pdf, Page 2.

2. The first rate adjustment will be effective on January 1, 2019 and all subsequent increases will be effective on January 1st of each year thereafter.

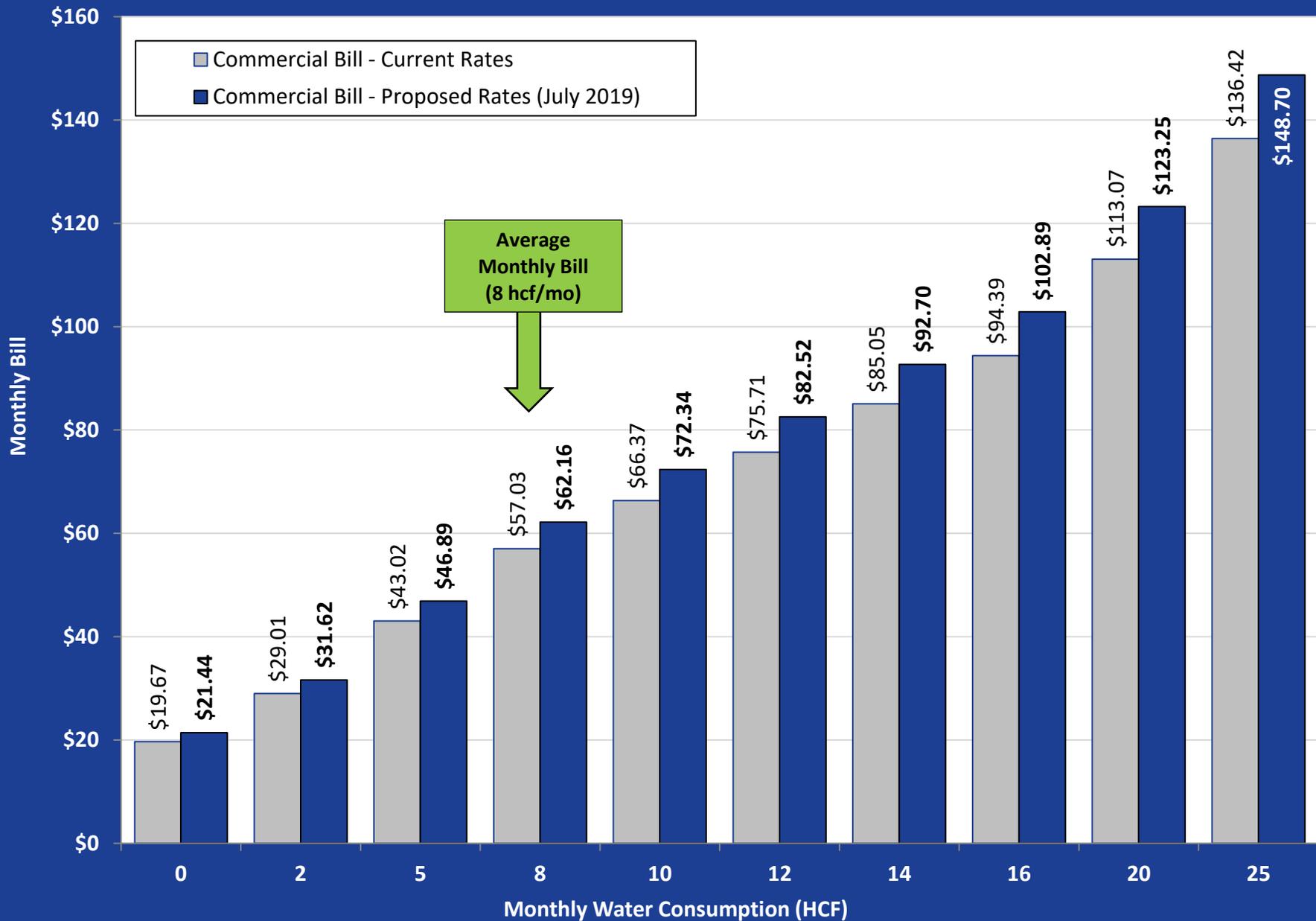
3. The 1 inch commercial meter fixed charge is the set equal to the residential 1 inch meter charge.

Single-Family Residential Sewer Bill Comparison Current vs. Proposed Rates in FY 2019/20



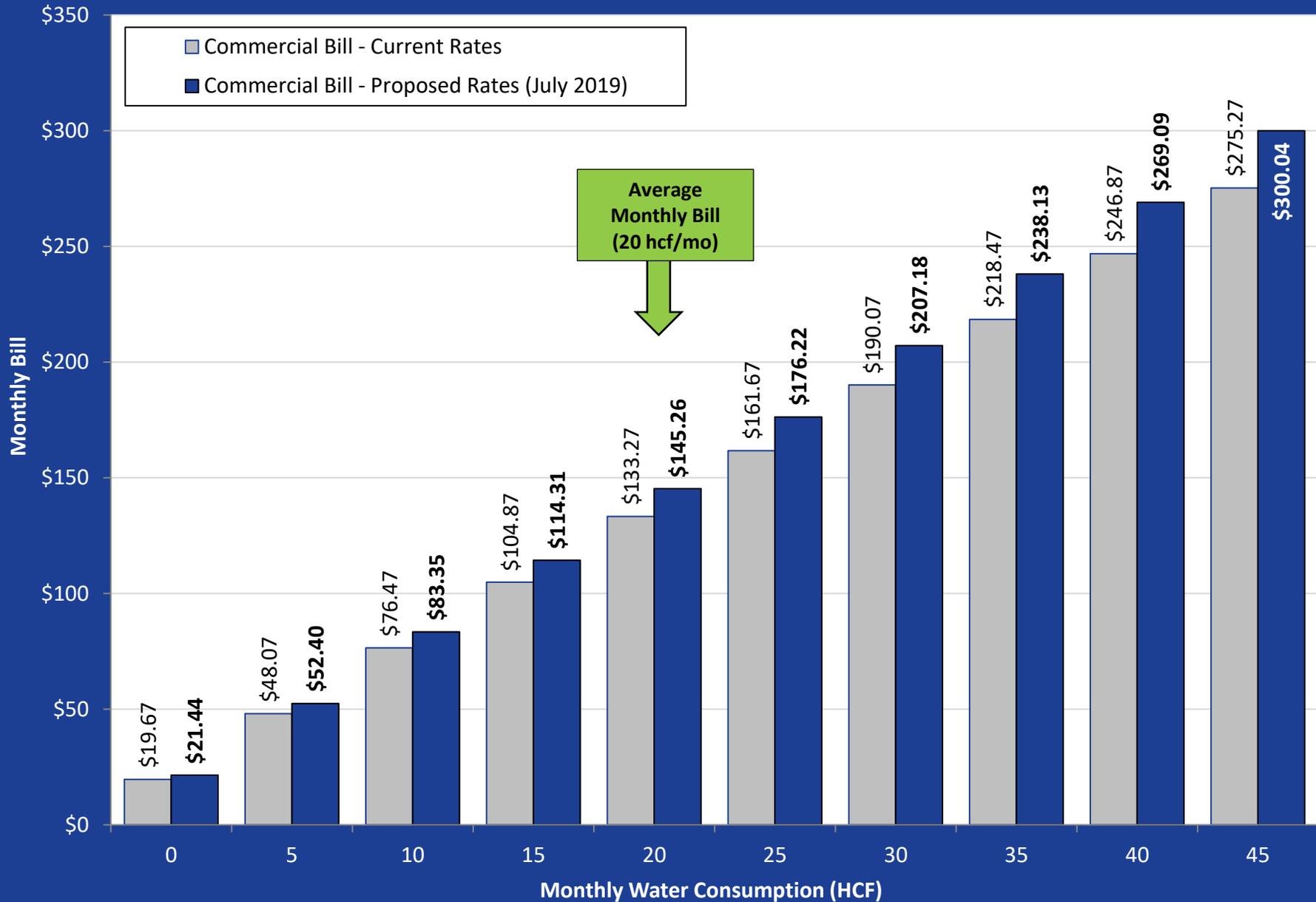
Commercial Sewer Bill Comparison

Current vs. Proposed Rates in FY 2019/20 (Commercial 2, 1 inch meter)



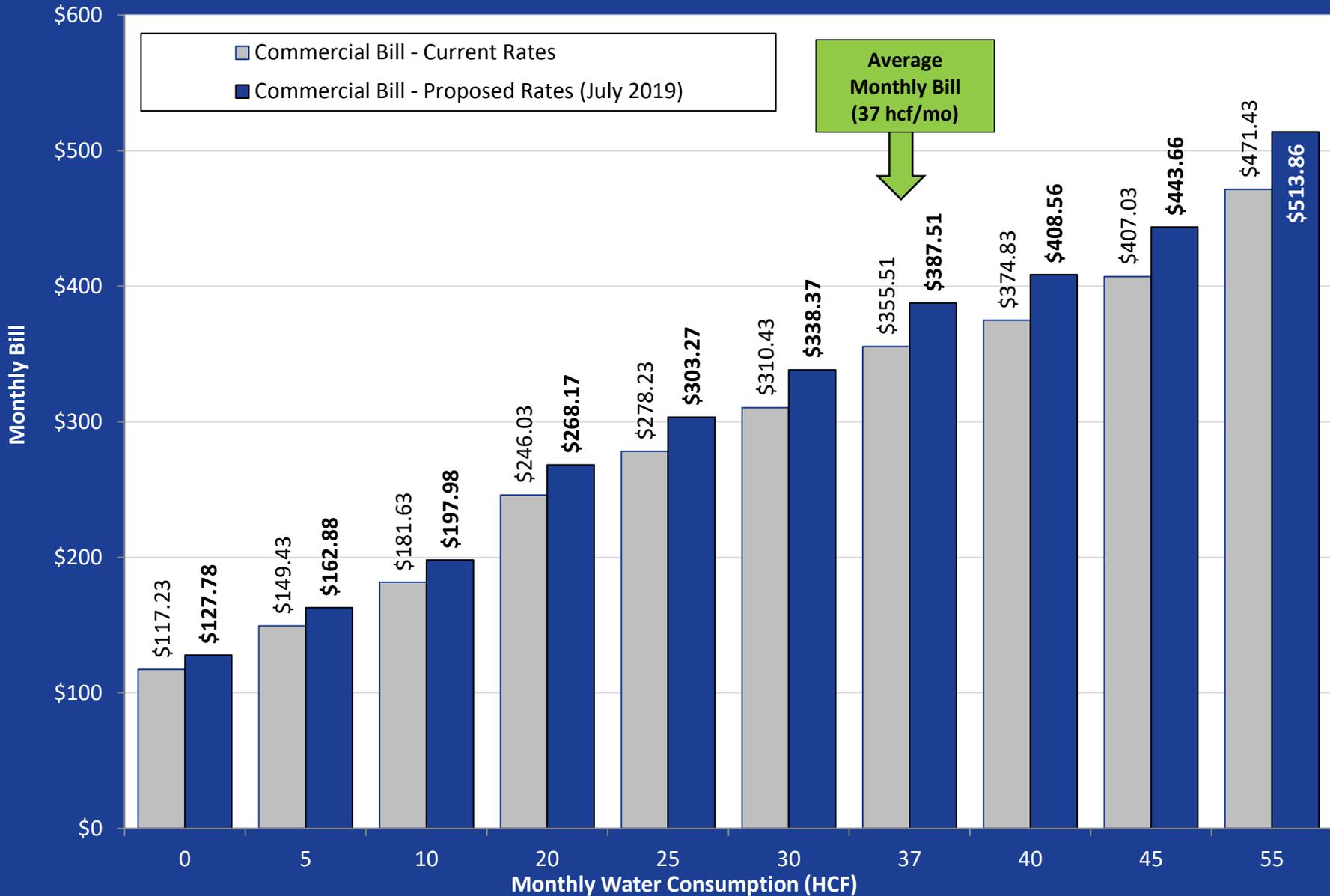
Commercial Sewer Bill Comparison

Current vs. Proposed Rates in FY 2019/20 (Commercial 3, 1 inch meter)

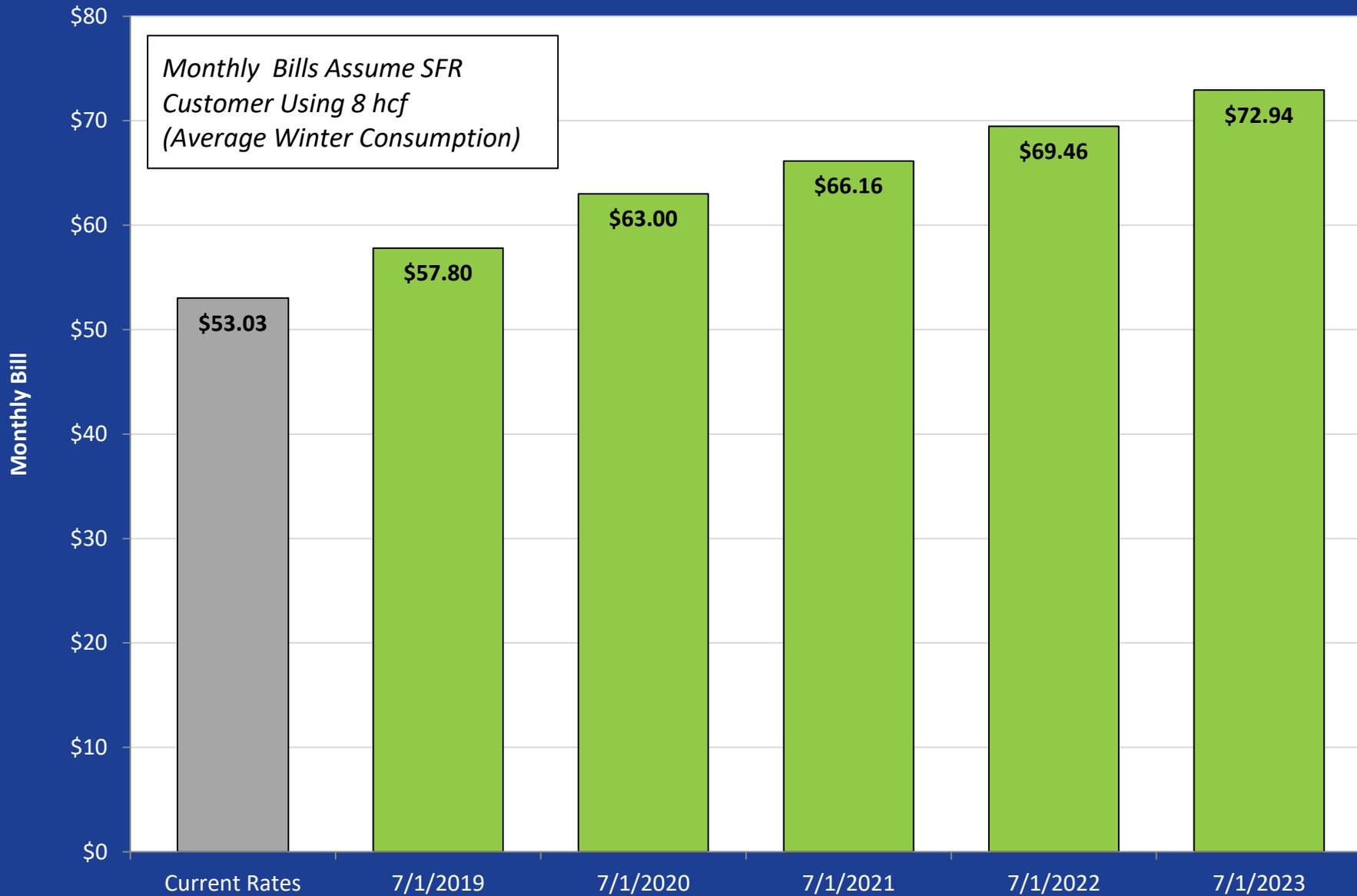


Commercial Sewer Bill Comparison

Current vs. Proposed Rates in FY 2019/20 (Commercial 4, 2 inch meter)



Average Single-Family Residential Bill Comparison Fiscal Years 2018/19 through 2022/23



Single-Family Residential Regional Bill Comparison

