Innovative approaches
Practical results
Outstanding service

WATER AND WASTEWATER RATE STUDY

Prepared for:

City of Freeport

April 2020

Prepared by:

FREESE AND NICHOLS, INC.
11200 Broadway St., Suite 2320
Pearland, Texas 77584
832-456-4700

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FNI Project No.: FRE19483

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1.0 INTRODUCTION

The City of Freeport provides retail water and wastewater services to customers within the City and outside the City limits. In addition, they have an existing wholesale contract with Bryan Mound Strategic Petroleum Reserve and have recently begun providing wholesale water supply to Surfside. In June 2019, the City authorized Freese and Nichols, Inc. to perform a water and wastewater rate study. The purpose of the rate study is to develop a multi-year plan for rates that will provide sufficient revenue to implement needed capital improvements and allow the water and wastewater system to be self-supporting. Freese and Nichols' methodology for performing this study is based on accepted industry standards and practices, specifically the American Water Works Association (AWWA) Manual 1 (M1) "Principles of Water Rates, Fees, and Charges", Seventh Edition.

The study included the following steps:

- Obtain data from City needed for the rate study.
- Review and analyze the data and develop projections of the operating expenses and revenues at current rates.
- Identify the revenue requirements for the water and wastewater system using the projected operating expenses and projected capital expenses in the next few years.
- Develop a rate model for the City's water and wastewater systems that projects the rates needed to provide sufficient annual revenue.
- Document the findings in a report.

This report describes the findings and recommendations of the water and wastewater rate study. The calculations are based on the City of Freeport's Fiscal Year, which runs from October 1 through September 30.

2.0 WATER AND WASTEWATER SYSTEM

2.1 GENERAL DESCRIPTION

The City of Freeport has a population of approximately 12,000 people, owns its water and wastewater system, and commissions a private entity (Veolia) to operate its water and wastewater system. The City's water supply is predominately wholesale treated water delivered from the Brazosport Water Authority (BWA), with a small amount of water from its own groundwater wells. The City owns two wastewater treatment plants which are operated by Veolia, and shares the costs associated with the operation of a City of Oyster Creek wastewater treatment plant. Freeport has industrial customers that use significant amounts of water. In addition, Freeport provides wholesale water supply to Bryan Mound Strategic Petroleum Reserve and Surfside.

The City's retail water service area covers approximately 15 square miles. Under its treated water contract with the Brazosport Water Authority (BWA), the City agrees to pay for 2 million gallons of water per day (MGD) on an annual average and BWA agrees to provide up to 2 MGD on an annual average. The City also has three operational groundwater wells, one 0.03 MGD water treatment plant, and a potable water distribution system which includes meters, pump stations and storage tanks. Over the last several fiscal years, the City's average annual use has been approximately 1.55 MGD (including losses). This annual use is expected to increase with future population and industrial growth, although future rate increases, passive savings and conservation programs may serve to reduce per person usage over time.

The City of Freeport's retail wastewater service area covers approximately 15 square miles. Within the wastewater service area, there are approximately 50 miles of sewer lines that are owned and operated by the City. The City owns a 2.25 MGD wastewater treatment plant (WWTP) located southwest of the City. The wastewater collection system is a gravity flow system following the major drainage basins of the service area where possible. The wastewater lines range from 6-inches to 36-inches in diameter. There are currently 29 lift stations in the wastewater collection system. Average flow at the WWTP has been 0.96 MGD over the last four fiscal years.

The City's water and wastewater customer base includes residential, commercial, and industrial users within the City limits, some retail customers outside the City, and two wholesale customers (Bryan Mound Strategic Petroleum Reserve and Surfside). In total, the City has approximately 3,700 metered connections. Most of the meters serve residential uses, and most are 5/8" or ¾" meters (93%), typical for

residential users. Breakdowns of meter sizes and account types in the retail water system are provided in **Table 2-1** and **Table 2-2**. This breakdown is based on active meter data from 2019.

A review of FY15 through FY19 historical financial and billing data provided by the City showed the following general patterns:

- The combined water and wastewater revenue has averaged $4.7 million (not including transfers from the General Fund).
- Total annual water consumption by category generally follows the pattern of 40 percent by Residential (including Irrigation), 30 percent by Commercial with wastewater service, 6 percent by Commercial (Water Only), and 10 percent by Water Outside City Limits. In addition, there is also a small amount of water sold wholesale, and a percentage of authorized water transactions that are unbilled. It should be noted that 10 percent of water consumption occurs within the Water Outside City Limits customer class and only 0.59% of meters. This is due to the fact that the few customers/meters within that class (including Dow) consume a large amount of water.

Table 2-1: Meter Sizes in Water System

METER SIZE (inches)	% of Total Water Meters
5/8 or 3/4	92.6%
1	1.2%
1.5	0.1%
2	2.7%
3	0.2%
4	0.4%
6	0.3%
Unknown	2.4%

Table 2-2: Account Types in System

Sector	Description	% of total Meters
Water	Residential	86.96%
	Commercial	10.46%
	Commercial (Water Only)	1.99%
	Water Outside City Limits	0.59%
Sewer	Residential	89.27%
	Commercial	10.73%

2.2 HISTORICAL AND PROJECTED WATER NEEDS AND WASTEWATER FLOWS

Table 2-3 shows historical data on population, number of connections, water production, metered water sales, and wastewater flows for Freeport. The table shows slight increases in population over the past five years. **Table 2-3** also shows that the percentage of nonrevenue water in recent years varies between 15 and 22 percent. Values of nonrevenue water above 12 percent are considered high for a retail water supplier. However, not all this nonrevenue water is unaccounted for. Some is used for authorized, beneficial purposes such as fire flow, line flushing, and irrigating city facilities such as parks. Currently the city estimates the amount used for these purposes. We recommend that the City meter as much of its unbilled authorized usage as feasible, particularly irrigation of city facilities. This will enable the City to better track how much water is actually being lost through leaks in their system. The City should continue to monitor nonrevenue water and perform detailed water audits and seek to further reduce nonrevenue water. For this study, future projections of nonrevenue water will be 18 percent, based on the average of the three highest years out of the last five years. Wastewater flow has consistently been approximately 61 percent of the water production, and this has been used for projections of wastewater flow.

Table 2-3: Historical Population, Connections, Water Production, Water Sales, and Wastewater Flows

	Historical				*Budget*
	2015-16	2016-17	2017-18	2018-19	*2019-20*
Population	12,051	12,141	12,189	12,263	*12,355*
Water Connections*	3,628	3,623	3,644	3,672	*3,700*
Wastewater Connections*	3,499	3,499	3,482	3,508	*3,534*
Persons per Water Connection	3.32	3.35	3.35	3.34	*3.34*
Potable Water Production (MG)					
Groundwater Production	10	7	12	20	-
Water Plant/Purchase	549	564	589	609	-
Total Water Production	558	570	601	629	*591*
Nonrevenue Water (%)	15.5%	16.9%	22.3%	25.9%	*18.0%*
Retail Metered Water (billed & unbilled)*	472	474	467	466	*485*
Wastewater Flow (MG)					
Total Wastewater Billed*	307	300	310	304	*319*
Wastewater Flow at WWTP	378	332	334	391	*360*
Wastewater (% of Production)	67.8%	58.3%	55.6%	62.2%	*60.9%*

***Source: City of Freeport monthly billing data**

Table 2-4 shows projected service population, water and sewer connections, water production, metered water sales, and wastewater flows for Freeport. These projections are based on historical trends and input from City staff. These projections are for an average year. Water use will tend to be more in dry years and less in wet years. **Figure 2-1** shows the historical and projected number of water and wastewater connections. **Figure 2-2** shows the historical and projected water production and wastewater flows.

Key Assumptions for Projecting Water Production, Sales and Wastewater Flows:

- Growth in water meters: 0.75 percent per year based on historical trends.
- Service area population: 0.75 percent per year increase based on historical trends.
- Raw water production: 131 gallons per person per day based on the lowest three years out of the last five years. *Note: This per capita calculation includes total water production for Freeport and wholesale customers, but does not include the population of those wholesale customers. This creates an artificially high per capita. However, this per capita is suitable for the purposes of projecting water production. Since Freeport has very little wholesale sales, the impact is nominal.*
- Metered water sales: 18 percent less than raw water production based on recent years
- Wastewater flow: 61 percent of raw water production based on historical data

Table 2-4: Projected Population, Connections, Water Production, Water Sales, and Wastewater Flows

	Budget	Projected									
Fiscal Year	***2019-20***	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2029-30**
Population	*12,355*	12,448	12,542	12,636	12,730	12,826	12,922	13,019	13,117	13,215	13,314
Water Connections	*3,700*	3,727	3,756	3,784	3,812	3,841	3,869	3,898	3,928	3,957	3,987
Sewer Connections	*3,534*	3,561	3,588	3,615	3,642	3,669	3,696	3,724	3,752	3,780	3,808
Persons per Connection	*3.34*	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34	3.34
Retail Water Production* (MG)	*591*	595	600	604	609	613	618	623	627	632	637
Nonrevenue Water (%)	*18%*	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%
Retail Metered Water Sales (MG)	*485*	488	492	495	499	503	507	511	514	518	522
Future Industry Sales (billed)	*0*	0	0	0	0	0	0	0	0	0	0
All Other Metered Water Sales (billed)	*420*	423	426	429	432	436	439	443	445	448	452
All Other Metered Water Sales (unbilled)	*65*	65	66	66	67	67	68	68	69	70	70
Potential Wholesale Production (MG)	*69*	69	69	69	69	69	69	69	69	69	69
Nonrevenue Water (%)	*18%*	18%	18%	18%	18%	18%	18%	18%	18%	18%	18%
Potential Wholesale Sales (MG)	*57*	57	57	57	57	57	57	57	57	57	57
Total Wastewater Billed	*319*	321	324	326	328	331	334	336	338	341	343
Wastewater Flows (MG)	*360*	363	366	368	371	374	377	380	382	385	388

MG = Million Gallons **Normal Year Potable Water Production*

Figure 2-1: Historical and Projected Connections

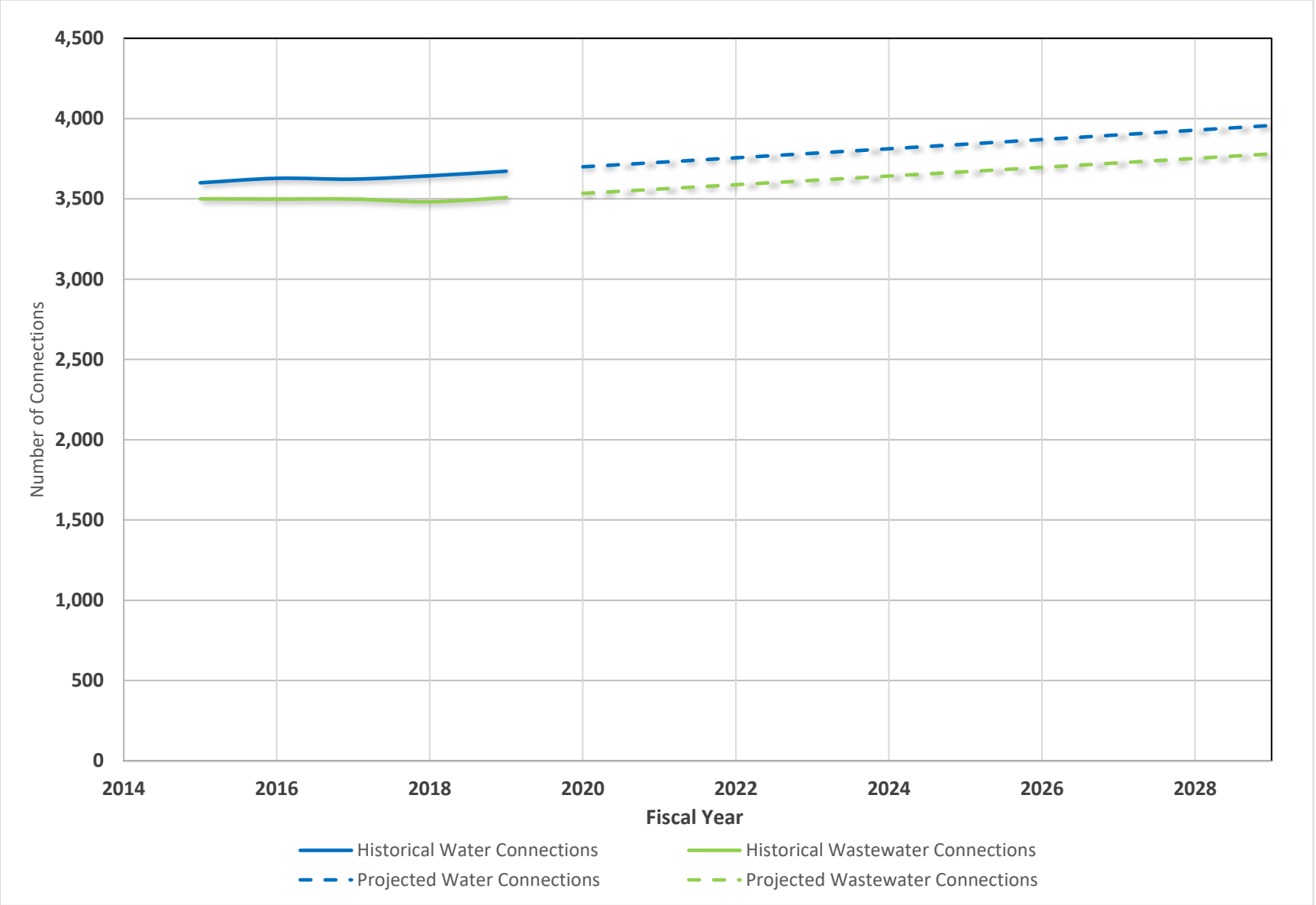
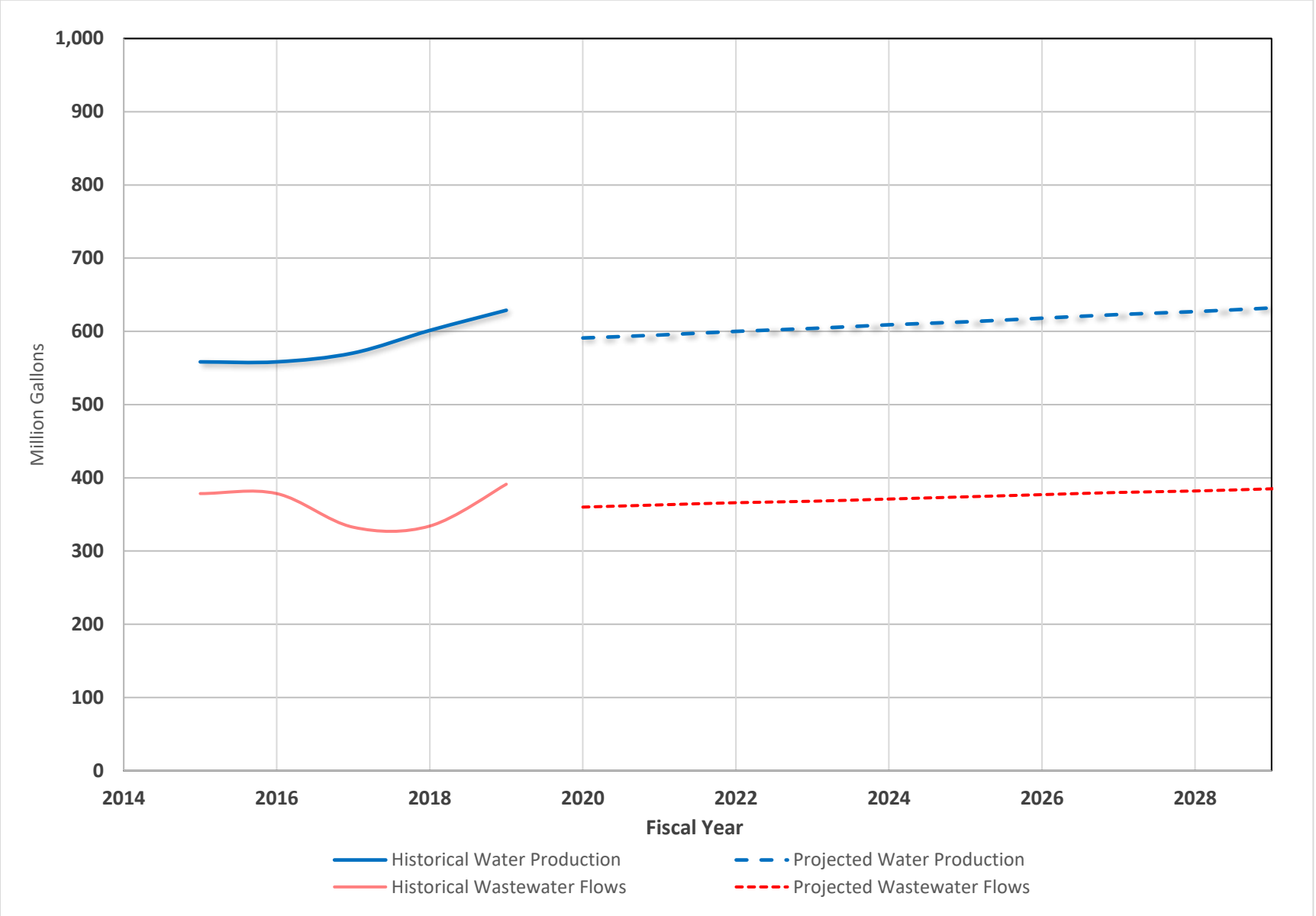


Figure 2-2: Historical and Projected Water Production and Wastewater Flow



3.0 HISTORICAL REVENUES AND EXPENSES

3.1 HISTORICAL REVENUES

Table 3-1 shows the historical revenues for the water and wastewater fund over the last five years and the budgeted revenues for Fiscal Year 2020. During this time, the City increased water and wastewater rates once, in July 2019 (to establish the existing rates). Current rates as of November 2019 are shown in **Table 3-2.** Annual revenue has averaged approximately $5 million over the previous five years (not including transfers from the General Fund). Over that time, Water Revenue made up on average approximately 60 percent of all revenue, and Wastewater Revenue made up on average approximately 40 percent.

3.2 HISTORICAL EXPENSES

Table 3-3 shows a summary of the historical expenses by major department. The annual expenses have averaged $5.3 million. Historically, Services expenses (to include water supply contract expenses and system operation contract expenses) make up on average approximately 90 percent of all expenses, followed by Capital Outlay at 6 percent of all expenses, Salaries at 2 percent of all expenses, Supplies at 1 percent of all expenses, and Benefits at 1 percent of all expenses.

Services expenses include the expenses related to the City's system operation contract as well as the City's water supply contract expenses. These two items represent the largest line item expenses, at 50 percent and 39 percent of all expenses, respectively.

3.3 COMPARISON OF HISTORICAL REVENUE AND EXPENSES

Figure 3-1 compares the historical revenue and expenses for the water and wastewater fund. Freese and Nichols acquired historical expense data from FY15 through FY20 and historical revenue data from FY16 through FY19. The figure shows that in FY16, FY17 and FY19, expenses were more than revenue without transfers (deficit), and in FY18 revenue without transfers was more than expenses (surplus). In years where there is a surplus, the surplus funds are transferred into the Water/Wastewater Reserve Fund. In years where there is a deficit, funds are transferred from Water/Wastewater Reserve Fund into the Operating Fund to cover expenses. On average between FY16 and FY19, expenses exceeded revenue.

Table 3-1: Historical Revenue for the Water and Wastewater Fund

Category	Historical				*Budget*
	2015-16	2016-17	2017-18	2018-19	*2019-20*
OPERATING REVENUE					
WATER REVENUE					
Residential Base	$410,707	$411,345	$418,253	$438,330	-
Commercial Base	$83,143	$81,843	$81,827	$82,973	-
Commercial (Water Only) Base	$19,258	$18,528	$19,324	$17,155	-
Water Outside City Limits Base	$5,689	$6,548	$5,991	$6,100	-
Residential Tier 1	$372,138	$351,724	$365,796	$329,762	-
Residential Tier 2	$62,435	$44,990	$58,155	$38,760	-
Commercial Tier 1	$126,603	$126,061	$120,415	$121,787	-
Commercial Tier 2	$1,194,109	$1,268,071	$1,286,255	$1,612,462	-
Commercial (Water Only) Tier 1	$19,495	$17,778	$17,702	$14,640	-
Commercial (Water Only) Tier 2	$377,860	$274,707	$174,649	$197,197	-
Water Outside City Limits Tier 1	$482,054	$466,134	$427,850	$384,542	-
Wholesale					
Surfside	$0	$0	$0	$0	*$0*
Subtotal Wholesale	$0	$0	$0	$0	*$0*
Subtotal Water Revenue	**$3,153,490**	**$3,067,729**	**$2,976,216**	**$3,243,707**	***$3,190,000***
WASTEWATER REVENUE					
Residential Base	$370,380	$371,300	$377,530	$395,616	-
Commercial Base	$70,819	$69,814	$69,747	$71,134	-
Residential Tier 1	$375,533	$346,104	$366,576	$297,563	-
Commercial Tier 1	$124,188	$123,780	$118,810	$120,772	-
Commercial Tier 2	$1,028,655	$1,053,201	$1,094,098	$1,238,371	-
Subtotal Wastewater Revenue	**$1,969,574**	**$1,964,199**	**$2,026,761**	**$2,123,456**	***$1,980,000***
TOTAL REVENUE	**$5,123,064**	**$5,031,929**	**$5,002,977**	**$5,367,164**	***$5,170,000***

Table 3-2: City of Freeport Monthly Water & Wastewater Rates (Effective July 2019)

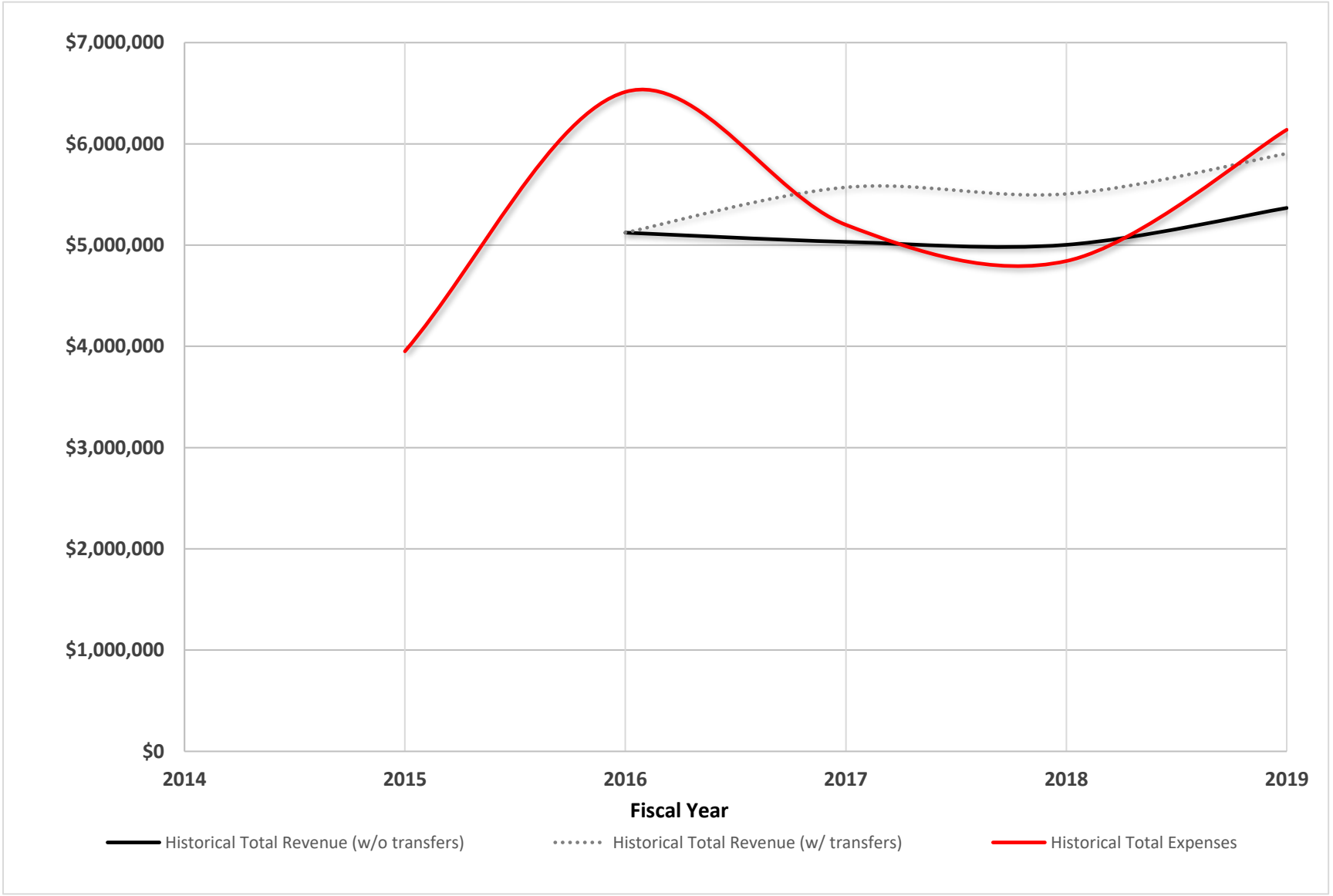
Current Water Rates		
Residential		
Service Charge (includes 2,000 gallons)	$12.10	
Volume Charge, Tier 1 (2,001-12,000 gallons)	$4.18	per 1,000 gal
Volume Charge, Tier 2 (12,001 gallons and above)	$5.50	per 1,000 gal
Commercial		
Service Charge (includes 2,000 gallons)	$17.03	
Volume Charge, Tier 1 (2,001-12,000 gallons)	$7.95	per 1,000 gal
Volume Charge, Tier 2 (12,001 gallons and above)	$10.48	per 1,000 gal
Commercial (Water Only)		
Service Charge (includes 2,000 gallons)	$24.32	
Volume Charge, Tier 1 (2,001-12,000 gallons)	$8.39	per 1,000 gal
Volume Charge, Tier 2 (12,001 gallons and above)	$11.06	per 1,000 gal
Outside City Limits		
Service Charge (includes 2,000 gallons)	$25.54	
Volume Charge, Tier 1 (2,001 gallons and above)	$11.91	per 1,000 gal
Current Wastewater Rates		
Residential		
Service Charge (includes 2,000 gallons)	$11.00	
Volume Charge, Tier 1 (2,001-12,000 gallons*)	$3.80	per 1,000 gal
Commercial		
Service Charge (includes 2,000 gallons)	$14.74	
Volume Charge, Tier 1 (2,001-12,000 gallons)	$7.94	per 1,000 gal
Volume Charge, Tier 2 (12,001 gallons and above)	$10.48	per 1,000 gal

**The wastewater volume charge is based on metered water use. There is no volume charge on Residential Wastewater above 12,000 gallons.*

Table 3-3: Historical Expenses for the Water and Wastewater Fund – by Category

Expense by Department	Historical					*Budget*
	2014-15	2015-16	2016-17	2017-18	2018-19	*2019-20*
Salaries						
SALARIES/WAGES	$69,343	$77,362	$83,606	$76,159	$90,717	*$87,100*
LONGEVITY	$2,137	$2,211	$1,775	$1,478	$1,440	*$1,000*
OVERTIME	$593	$620	$487	$2,624	$500	*$5,000*
Salaries Subtotal	**$72,072**	**$80,194**	**$85,868**	**$80,261**	**$92,657**	***$93,100***
Benefits						
F I C A & MEDICARE	$6,016	$6,241	$6,458	$6,777	$7,088	*$7,200*
GROUP INSURANCE	$16,146	$14,994	$13,708	$19,775	$19,844	*$18,900*
T M R S	$9,528	$16,667	$13,947	$4,909	$13,333	*$13,300*
WORKMEN'S COMP	$0	$0	$0	$0	$315	*$300*
OPEB EXPENSE	$460	$584	$392	$0	$0	*$0*
UNEMPLOYMENT INSURANCE	$0	$0	$0	$0	$0	*$200*
Benefits Subtotal	**$32,150**	**$38,486**	**$34,505**	**$31,461**	**$40,580**	***$39,900***
Supplies						
OFFICE/COMPUTER SUPPLIES	$9,815	$9,815	$18,225	$6,877	$9,500	*$9,500*
POSTAGE/SHIPPING	$21,607	$22,350	$23,900	$26,100	$17,500	*$17,500*
OTHER SUPPLIES	$0	$3,268	$134,881	$0	$0	*$0*
Supplies Subtotal	**$31,421**	**$35,432**	**$177,006**	**$32,977**	**$27,000**	***$27,000***
Services						
FEES	$30,530	$30,272	$53,971	$10,900	$33,000	*$33,000*
COLLECTION AGENCY	$97	$1,811	$2,824	$611	$1,000	*$1,000*
BANK CHARGES	$7,134	$11,358	$11,828	$11,518	$9,261	*$9,261*
TELEPHONE	$1,579	$2,226	$1,603	$4,170	$1,868	*$12,120*
PHYSICALS/SCREENING	$78	$0	$0	$0	$35	*$35*
OYSTER CREEK AGREEMENT	$0	$0	$0	$0	$73,825	*$116,000*
BWA WATER RESALE	$1,354,273	$2,199,757	$2,146,351	$2,279,825	$2,277,600	*$2,415,600*
VEOLIA - OTHER	$344,740	$533,528	$374,741	$1,867	$90,000	*$90,000*
VEOLIA - CONTRACT OPS	$2,065,235	$2,293,625	$2,302,857	$2,376,102	$2,429,297	*$2,485,030*
Services Subtotal	**$3,803,666**	**$5,072,577**	**$4,894,175**	**$4,684,993**	**$4,915,886**	***$5,162,046***
Maintenance						
ELECTRONICS/COMP MAINT	$8,639	$6,842	$9,122	$12,757	$9,075	*$9,075*
Maintenance Subtotal	**$8,639**	**$6,842**	**$9,122**	**$12,757**	**$9,075**	***$9,075***
Sundry						
SEMINARS/DUES/TRAVEL	$0	$319	$0	$0	$350	*$350*
OTHER - SUNDRY	$3,122	$0	$0	$0	$351	*$351*
Sundry Subtotal	**$3,122**	**$319**	**$0**	**$0**	**$701**	***$701***
Capital Outlay						
CAPITAL OUTLAY	$0	$1,279,495	$0	$0	$1,053,325	*$1,500,000*
Capital Outlay Subtotal	**$0**	**$1,279,495**	**$0**	**$0**	**$1,053,325**	***$1,500,000***
Total Operating Expenses	**$3,951,070**	**$6,513,345**	**$5,200,676**	**$4,842,449**	**$6,139,224**	***$6,831,822***
Total Revenue from Table 3-1	**-**	**$5,123,064**	**$5,031,929**	**$5,002,977**	**$5,367,164**	***$5,170,000***
Deficit (-) or Surplus (+)	**-**	**-$1,390,281**	**-$168,747**	**$160,528**	**-$772,060**	***-$1,661,822***

Figure 3-1: Historical Water and Wastewater Revenue and Expenses



4.0 WATER AND WASTEWATER FUND RATE ANALYSIS

4.1 PROJECTED REVENUES AT CURRENT RATES

Table 4-1 shows projected revenues at current rates for the water and wastewater fund. Projected Revenue for FY20 is approximately $5.5 million. If held to current rates, revenue is anticipated to increase by approximately 0.75 percent per year. This 0.75 percent increase generally follows the trend in increased population, connections, and water/wastewater use. **Figure 4-1** shows the historical water and wastewater revenues and projected revenues at current rates. The key assumptions in developing the projected revenues are provided in **Table 4-2.**

4.2 PROJECTED EXPENSES

Appendix Table A-2 outlines the basis for developing the projections for each detailed category. **Table 4-3** is a summary by major category of the projected expenses for the water and wastewater fund. Projected expenses for FY21 are approximately $5.9 million. In future years, expenses are projected to increase at a modest rate, primarily due to inflation and other escalators such as the Consumer Price Index. Expenses related to the City's contracts with Veolia and the Brazosport Water Authority currently make up approximately 45 percent of the overall expenses (each) and are projected to remain that same percentage between FY21 and FY30 (without including future debt service expenses).

Over the next 10 years, the City is anticipated to undertake approximately $10 million in improvements to its water and wastewater system. This study assumes the entire $10 million is issued in FY22, with a 30 percent principal forgiveness. About half of the funds will be for water projects and the remaining half for wastewater. These improvements are necessary to provide for future growth, replace aging infrastructure, maintain reliable service, keep facilities in compliance with new regulations, and improve efficiency. Debt service for each year's bond issue was calculated using an interest rate of 3 percent, 20-year repayment terms, and a yearly inflation rate of 3 percent applied to the present-day capital cost of CIP projects that will be constructed in future years. No coverage requirement was assumed since the City plans to use General Obligation Bonds which don't require coverage. This report also assumes that the City is able to take advantage of Texas Water Development Board funds that provide 30 percent principal forgiveness, such that the total capital financed is actually $7 million.

Figure 4-2 shows the historical and projected expenses for the water and wastewater fund, and **Figure 4-3** compares the total revenue and expenses, both historical and projected values, and shows that unless

the City increases its water and wastewater rates in FY21, expenses begin to exceed revenue nominally in FY22 and substantially in FY23 and all following years.

This rate study recommends that the City implement a 16 percent retail rate increase in FY21, followed by much smaller retail rate increases in FY22, FY23, FY24, FY27, FY28, FY29 and FY30. This rate study also recommends that the City establish a base fee tiered by meter size for all Commercial customers, using the meter equivalent ratio found in American Water Works Association's Manual M1. This tiered base fee does not appear in **Table 4-1**, **Figure 4-1** or **Figure 4-3** below because that table is designed to show projected revenue at current rates; however, it does get taken into account in the recommendations found in Section 5 and Section 6.

These rate adjustments are projected to provide sufficient revenue through FY30 while maintaining the water/wastewater fund with cash equal to at least 120 days of operating expenses.

Table 4-1: Projected Revenue at Current Rates for the Water and Wastewater Fund

	Budget	Projected									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Projected Water Connections	*3,700*	3,727	3,756	3,784	3,812	3,841	3,869	3,898	3,928	3,957	3,987
Metered Water Sales (MG) (billed)	*485*	488	492	495	499	503	507	511	514	518	522
Projected Sewer Connections	*3,534*	3,561	3,588	3,615	3,642	3,669	3,696	3,724	3,752	3,780	3,808
Projected Wastewater billed (MG)	*319*	321	324	326	328	331	334	336	338	341	343
OPERATING REVENUE											
WATER REVENUE											
Residential Service Demand Charge	*$419,659*	$422,806	$425,977	$429,172	$432,391	$435,634	$438,901	$442,193	$445,509	$448,851	$452,217
Commercial Service Demand Charge	*$82,447*	$83,065	$83,688	$84,316	$84,948	$85,585	$86,227	$86,874	$87,525	$88,182	$88,843
Commercial (Water Only) Service Demand Charge	*$18,566*	$18,706	$18,846	$18,987	$19,130	$19,273	$19,418	$19,563	$19,710	$19,858	$20,007
Water Outside City Limits Service Demand Charge	*$6,082*	$6,127	$6,173	$6,220	$6,266	$6,313	$6,361	$6,408	$6,456	$6,505	$6,554
Volume Charge*	*$2,580,819*	$2,596,729	$2,618,039	$2,633,946	$2,655,257	$2,676,561	$2,697,865	$2,719,166	$2,735,060	$2,756,358	$2,777,653
Pre-Adjusted Subtotal	*$3,107,572*	$3,127,433	$3,152,724	$3,172,641	$3,197,992	$3,223,366	$3,248,772	$3,274,204	$3,294,261	$3,319,753	$3,345,273
July 2019 Rate Increase Adjustment	*$217,530*	$218,920	$220,691	$222,085	$223,859	$225,636	$227,414	$229,194	$230,598	$232,383	$234,169
Transfer from GF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal	***$3,325,102***	**$3,346,353**	**$3,373,415**	**$3,394,726**	**$3,421,851**	**$3,449,002**	**$3,476,186**	**$3,503,399**	**$3,524,860**	**$3,552,136**	**$3,579,442**
WASTEWATER REVENUE											
Residential Service Demand Charge	*$378,707*	$381,547	$384,408	$387,291	$390,196	$393,123	$396,071	$399,042	$402,034	$405,050	$408,088
Commercial Service Demand Charge	*$70,378*	$70,906	$71,438	$71,974	$72,514	$73,058	$73,605	$74,158	$74,714	$75,274	$75,839
Volume Charge*	*$1,583,601*	$1,593,480	$1,608,436	$1,618,315	$1,628,195	$1,643,151	$1,658,107	$1,667,976	$1,677,845	$1,692,791	$1,702,661
Pre-Adjusted Subtotal	*$2,032,686*	$2,045,933	$2,064,283	$2,077,581	$2,090,905	$2,109,331	$2,127,784	$2,141,175	$2,154,593	$2,173,115	$2,186,587

Table 4-1: Projected Revenue at Current Rates for the Water and Wastewater Fund, continued

	Budget	Projected									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
July 2019 Rate Increase Adjustment	*$142,288*	$143,215	$144,500	$145,431	$146,363	$147,653	$148,945	$149,882	$150,822	$152,118	$153,061
Transfer from GF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Subtotal	***$2,174,974***	**$2,189,148**	**$2,208,782**	**$2,223,011**	**$2,237,268**	**$2,256,984**	**$2,276,728**	**$2,291,058**	**$2,305,415**	**$2,325,233**	**$2,339,648**
WHOLESALE TREATED SALES											
Surfside	*$0*	$90,193	$96,617	$99,187	$102,013	$132,617	$165,506	$200,814	$238,682	$279,258	$322,698
Subtotal	***$0***	**$90,193**	**$96,617**	**$99,187**	**$102,013**	**$132,617**	**$165,506**	**$200,814**	**$238,682**	**$279,258**	**$322,698**
TOTAL REVENUE	***$5,500,076***	**$5,625,695**	**$5,678,814**	**$5,716,924**	**$5,761,132**	**$5,838,603**	**$5,918,420**	**$5,995,270**	**$6,068,956**	**$6,156,627**	**$6,241,788**

MG = Million Gallons
**Based on weighted average of historic rates*

Table 4-2: Assumptions in Developing Projected Revenues

OPERATING REVENUE Category	Basis for projections
WATER REVENUE	
Residential Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Commercial Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Commercial (Water Only) Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Water Outside City Limits Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Volume Charge	$5.40 for every thousand gallons of water billed; based on historical collections per thousand gallons billed
July 2019 Rate Increase Adjustment	Assumes a 7% increase in revenue as a result of July 2019 rate increase of 10%
WASTEWATER REVENUE	
Residential Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Commercial Service Demand Charge	FY16 - FY18 average, increasing by 0.75% every year
Volume Charge	$5.05 for every thousand gallons of BILLED wastewater; based on historical collections per thousand gallons billed
July 2019 Rate Increase Adjustment	Assumes a 7% increase in revenue as a result of July 2019 rate increase of 10%
WHOLESALE TREATED SALES	
Surfside	Surfside purchases 100% of "Contract Quantity" (0.16 MGD) by FY30, front-loaded at 40% (0.064 MGD) in FY21 and growing starting in FY25.

Figure 4-1: Historical and Projected Water and Wastewater Revenue

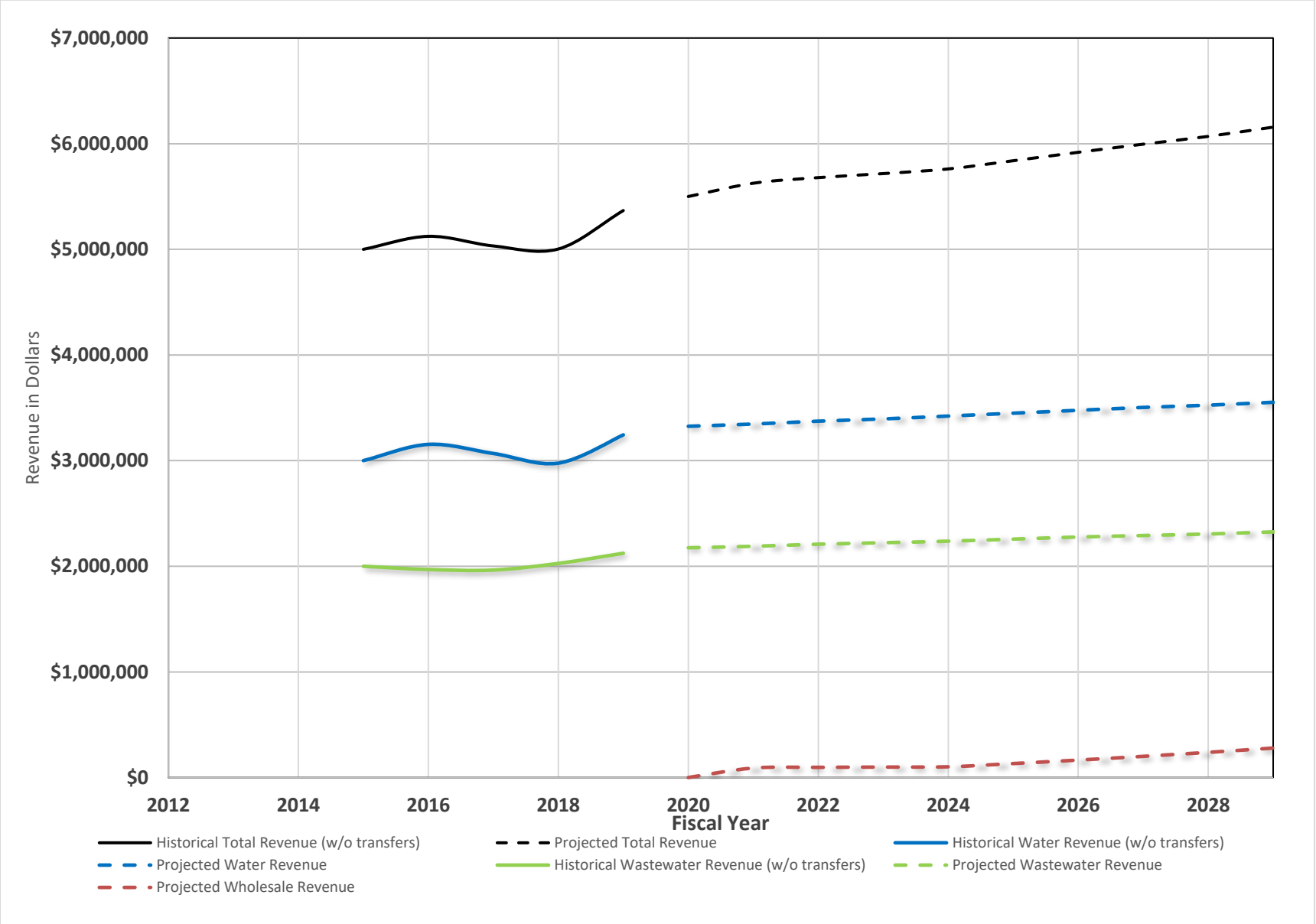


Table 4-3: Projected Expenses for the Water and Wastewater Fund

	Budget	Projected Expenses by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
WATER SYSTEM											
Salaries											
SALARIES/WAGES	*$43,550*	$45,075	$46,652	$48,285	$49,975	$51,724	$53,535	$55,408	$57,348	$59,355	$61,432
LONGEVITY	*$500*	$510	$520	$531	$541	$552	$563	$575	$586	$598	$610
OVERTIME	*$2,500*	$2,550	$2,601	$2,653	$2,706	$2,760	$2,815	$2,872	$2,929	$2,988	$3,048
Benefits											
F I C A & MEDICARE	*$3,600*	$3,726	$3,857	$3,992	$4,131	$4,276	$4,425	$4,580	$4,741	$4,907	$5,078
GROUP INSURANCE	*$9,450*	$9,828	$10,221	$10,630	$11,055	$11,497	$11,957	$12,436	$12,933	$13,451	$13,989
T M R S	*$6,650*	$6,783	$6,919	$7,057	$7,198	$7,342	$7,489	$7,639	$7,792	$7,948	$8,107
WORKMEN'S COMP	*$150*	$153	$156	$159	$162	$165	$169	$172	$176	$179	$183
OPEB EXPENSE	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
UNEMPLOYMENT INSURANCE	*$100*	$102	$104	$106	$108	$110	$112	$114	$117	$119	$122
Supplies											
OFFICE/COMPUTER SUPPLIES	*$4,750*	$4,845	$4,942	$5,041	$5,142	$5,245	$5,350	$5,457	$5,566	$5,678	$5,791
POSTAGE/SHIPPING	*$8,750*	$8,925	$9,104	$9,286	$9,471	$9,661	$9,854	$10,051	$10,252	$10,457	$10,666
OTHER SUPPLIES	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Services											
FEES	*$16,500*	$17,160	$17,847	$18,561	$19,303	$20,075	$20,878	$21,713	$22,582	$23,485	$24,425
COLLECTION AGENCY	*$500*	$510	$520	$531	$541	$552	$563	$575	$586	$598	$610
BANK CHARGES	*$4,631*	$4,723	$4,818	$4,914	$5,013	$5,113	$5,216	$5,320	$5,427	$5,535	$5,646
TELEPHONE	*$3,636*	$3,709	$3,783	$3,858	$3,935	$4,014	$4,094	$4,176	$4,260	$4,345	$4,432
PHYSICALS/SCREENING	*$18*	$18	$19	$19	$20	$20	$21	$21	$22	$22	$23
OYSTER CREEK AGREEMENT	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BWA WATER RESALE	*$2,415,600*	$2,562,300	$2,744,800	$2,817,800	$2,906,040	$3,038,462	$3,176,918	$3,321,684	$3,473,046	$3,631,305	$3,796,776
VEOLIA - OTHER	*$150,000*	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
VEOLIA - CONTRACT OPS	*$1,242,515*	$1,279,791	$1,318,184	$1,357,730	$1,398,462	$1,440,416	$1,483,628	$1,528,137	$1,573,981	$1,621,201	$1,669,837

Table 4-3: Projected Expenses for the Water and Wastewater Fund, continued

	Budget	Projected Expenses by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Maintenance											
ELECTRONICS/COMP MAINT	*$4,538*	$4,629	$4,721	$4,816	$4,912	$5,010	$5,110	$5,212	$5,316	$5,423	$5,531
Sundry											
SEMINARS/DUES/TRAVEL	*$175*	$179	$182	$186	$189	$193	$197	$201	$205	$209	$213
OTHER - SUNDRY	*$176*	$179	$183	$186	$190	$194	$198	$202	$206	$210	$214
Capital Outlay											
CAPITAL OUTLAY	*$750,000*	$105,000	$107,100	$109,242	$111,427	$113,656	$115,929	$118,247	$120,612	$123,024	$125,485
Repayment to General Fund											
REPAYMENT TO GENERAL FUND	*$0*	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
Debt Service											
DEBT SERVICE	*$0*	$0	$0	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655
TOTAL WATER SYSTEM	***$4,668,287***	**$4,160,693**	**$4,387,229**	**$4,755,234**	**$4,890,174**	**$5,070,689**	**$5,258,673**	**$5,454,443**	**$5,658,332**	**$5,870,686**	**$6,091,866**
SEWER SYSTEM											
Salaries	*$2,434,662*	$2,520,393	$2,608,607	$2,699,908	$2,794,404	$2,892,209	$2,993,435	$3,098,205	$3,206,643	$3,318,875	$3,435,036
SALARIES/WAGES	*$43,550*	$45,075	$46,652	$48,285	$49,975	$51,724	$53,535	$55,408	$57,348	$59,355	$61,432
LONGEVITY	*$500*	$510	$520	$531	$541	$552	$563	$575	$586	$598	$610
OVERTIME	*$2,500*	$2,550	$2,601	$2,653	$2,706	$2,760	$2,815	$2,872	$2,929	$2,988	$3,048
Benefits											
F I C A & MEDICARE	*$3,600*	$3,726	$3,857	$3,992	$4,131	$4,276	$4,425	$4,580	$4,741	$4,907	$5,078
GROUP INSURANCE	*$9,450*	$9,828	$10,221	$10,630	$11,055	$11,497	$11,957	$12,436	$12,933	$13,451	$13,989
T M R S	*$6,650*	$6,783	$6,919	$7,057	$7,198	$7,342	$7,489	$7,639	$7,792	$7,948	$8,107
WORKMEN'S COMP	*$150*	$153	$156	$159	$162	$165	$169	$172	$176	$179	$183
OPEB EXPENSE	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

Table 4-3: Projected Expenses for the Water and Wastewater Fund, continued

	Budget	Projected Expenses by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
UNEMPLOYMENT INSURANCE	*$100*	$102	$104	$106	$108	$110	$112	$114	$117	$119	$122
Supplies											
OFFICE/COMPUTER SUPPLIES	*$4,750*	$4,845	$4,942	$5,041	$5,142	$5,245	$5,350	$5,457	$5,566	$5,678	$5,791
POSTAGE/SHIPPING	*$8,750*	$8,925	$9,104	$9,286	$9,471	$9,661	$9,854	$10,051	$10,252	$10,457	$10,666
OTHER SUPPLIES	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Services											
FEES	*$16,500*	$17,160	$17,847	$18,561	$19,303	$20,075	$20,878	$21,713	$22,582	$23,485	$24,425
COLLECTION AGENCY	*$500*	$510	$520	$531	$541	$552	$563	$575	$586	$598	$610
BANK CHARGES	*$4,631*	$4,723	$4,818	$4,914	$5,013	$5,113	$5,216	$5,320	$5,427	$5,535	$5,646
TELEPHONE	*$8,484*	$8,653	$8,826	$9,003	$9,183	$9,366	$9,554	$9,745	$9,939	$10,138	$10,341
PHYSICALS/SCREENING	*$18*	$18	$19	$19	$20	$20	$21	$21	$22	$22	$23
OYSTER CREEK AGREEMENT	*$116,000*	$118,320	$120,686	$123,100	$125,562	$128,073	$130,634	$133,247	$135,912	$138,630	$141,403
BWA WATER RESALE	*$0*	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
VEOLIA - OTHER	*$150,000*	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
VEOLIA - CONTRACT OPS	*$1,242,515*	$1,279,791	$1,318,184	$1,357,730	$1,398,462	$1,440,416	$1,483,628	$1,528,137	$1,573,981	$1,621,201	$1,669,837
Maintenance											
ELECTRONICS/COMP MAINT	*$4,538*	$4,629	$4,721	$4,816	$4,912	$5,010	$5,110	$5,212	$5,316	$5,423	$5,531
Sundry											
SEMINARS/DUES/TRAVEL	*$175*	$179	$182	$186	$189	$193	$197	$201	$205	$209	$213
OTHER - SUNDRY	*$176*	$179	$183	$186	$190	$194	$198	$202	$206	$210	$214
Capital Outlay											
CAPITAL OUTLAY	*$750,000*	$105,000	$107,100	$109,242	$111,427	$113,656	$115,929	$118,247	$120,612	$123,024	$125,485
Repayment to General Fund											
REPAYMENT TO GENERAL FUND	*$0*	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
Debt Service											

Table 4-3: Projected Expenses for the Water and Wastewater Fund, continued

	Budget	Projected Expenses by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
DEBT SERVICE	*$0*	$0	$0	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655	$249,655
TOTAL SEWER SYSTEM	***$2,373,535***	**$1,721,657**	**$1,768,159**	**$2,065,678**	**$2,114,943**	**$2,165,652**	**$2,217,848**	**$2,271,575**	**$2,326,878**	**$2,383,804**	**$2,442,402**
TOTAL WATER AND SEWER	***$7,041,822***	**$5,882,350**	**$6,155,388**	**$6,820,912**	**$7,005,117**	**$7,236,341**	**$7,476,520**	**$7,726,019**	**$7,985,211**	**$8,254,490**	**$8,534,268**

Figure 4-2: Historical and Projected Water and Wastewater Expenses

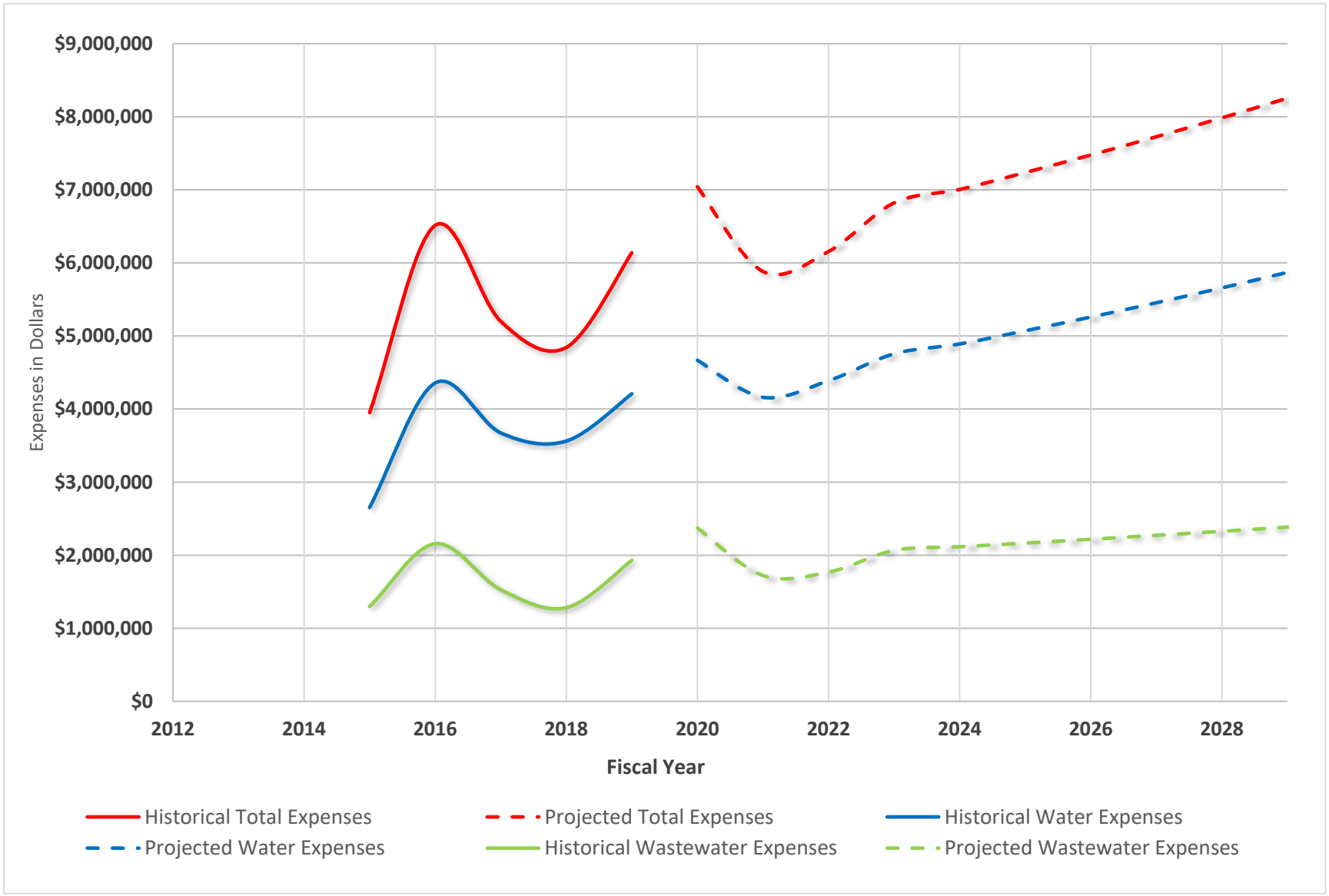
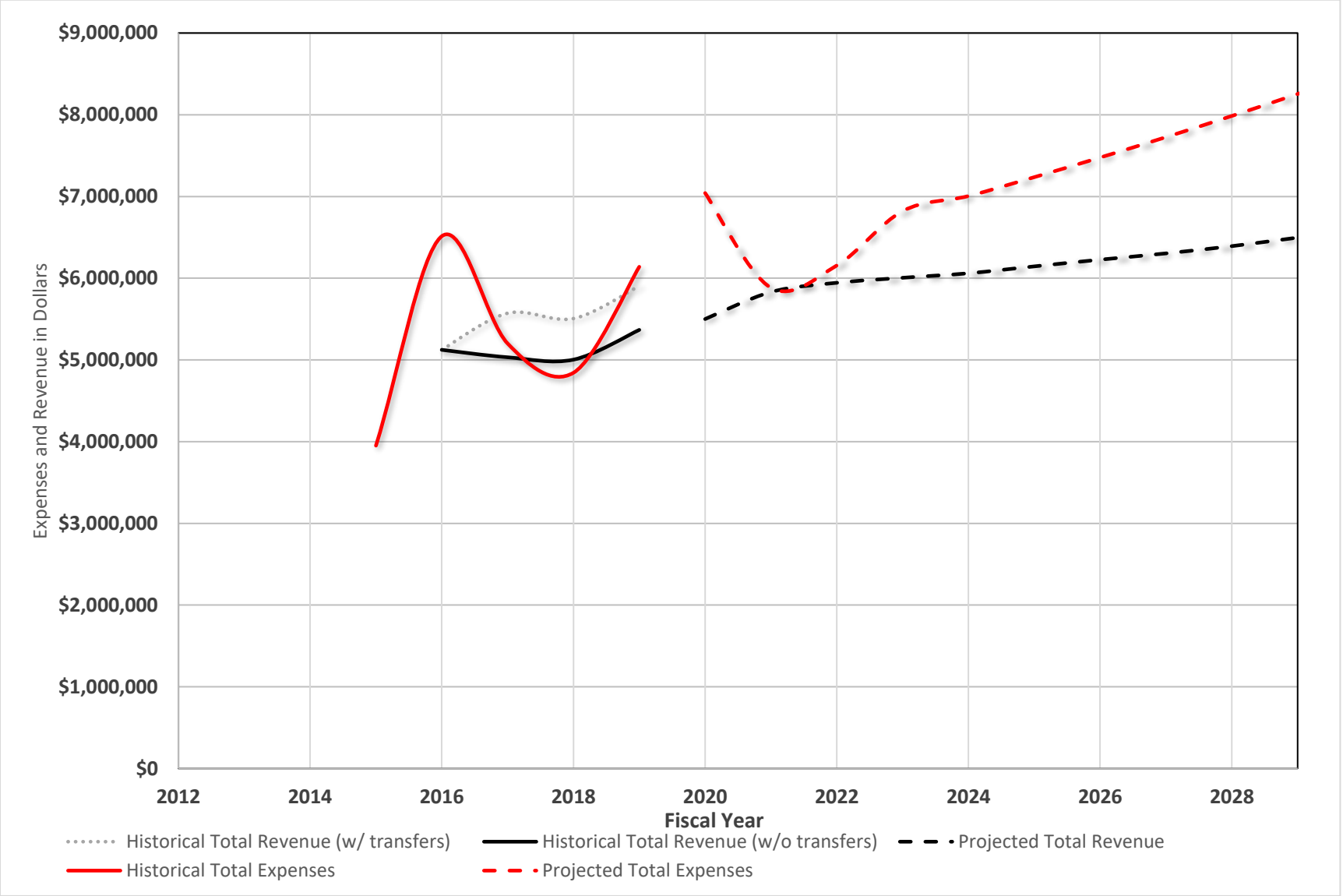


Figure 4-3: Historical and Projected Water and Wastewater Expenses and Revenue (at current rates)



5.0 RATE OPTIONS AND RECOMMENDATIONS

This rate study analyzed a number of options for adjusting Freeport's current water and wastewater rate structure. Those options are introduced below and are discussed in detail in the remainder of Section 5.0.

- One option for future rates would be to keep the current rate structure, increasing all elements of rates (base and volume, water and wastewater, fees) by the same percentages. This is a simple solution and is easily understood and implemented. This is further discussed in **Section 5.1**.
- Freeport currently charges the same monthly fee for all customers in a given classification, regardless of meter size. Some cities vary the monthly charge with meter size. This is further discussed in **Section 5.2** and is the recommended option**.**

5.1 OVERALL RATE ADJUSTMENTS NEEDED (OPTION 1)

Table 5-1 shows the projected overall rate increases for the combined water and wastewater fund. The table includes the effect of price elasticity, which is the assumption that the consumption of water will go down as the cost goes up. In this case, it is assumed that the price elasticity is -0.2, meaning that water consumption will go down by 2 percent if prices are raised by 10 percent. The projected rate increases include an allowance for this level of reduction in water use with increasing prices. In this Option 1, total water usage is assumed to reduce by 9.5 percent by FY30 due to price elasticity.

Based on the projected revenues and expenses, the City will need a 20 percent retail rate increase in both water and wastewater rates in FY21, followed by smaller increases in subsequent years as shown in **Table 5-1**, for a total cumulative rate increase by FY30 of approximately 41 percent (non-compounding). These projected rate increases would provide sufficient revenue to cover expenses each year with sufficient revenue to maintain a healthy fund balance and provide cash equal to at least 120 days of operating expenses. The rate increases could be reduced if additional revenues are raised by other means, such as varying monthly charges with meter size (see Option 2 below). In addition, the projected rate increases could be affected (positively or negatively) if actual expenses differ significantly from the assumptions used in this study. Examples of these differences could be shifting the timing of capital projects, higher or lower interest rates on debt service, shorter or longer repayment periods for bonds, higher or lower inflation rates on expenses and capital projects, changes to development-related fees, and higher or lower water use than projected. The projected rate increases should be examined annually in light of future growth, revenues and system expenses.

5.2 VARYING BASE RATES BY METER SIZE (OPTION 2)

Many cities vary their monthly base fee for water customers with the size of the meter. This is reasonable because larger meters take more flow from the system, requiring a greater commitment in water facilities to develop and deliver water. The City currently does not have this practice in place, although there are a number of utilities in the region that have implemented it.

Based on our analysis, implementing a base fee tiered by meter size for all of Freeport's Commercial customers would increase revenues by approximately $200,000 in FY21. This assumes instituting a tiered structure using meter equivalency standards found in industry leader American Water Works Association's M1 manual, and that the new tiered base fee would increase at the same rate as other rates. This is the recommended option.

Due to the differences in volumetric sales versus base sales in the large versus small commercial customers, the implementation of a tiered base fee would have a slightly higher impact on the smaller commercial customers whose bills are proportionally more base fee than the larger commercial customers.

It should be noted that there are 99 meters in Freeport's system with an unknown meter size. Those meters were assumed to be 2" meters, and larger or smaller actual meter sizes will either increase or decrease the approximately $200,000 per year of additional revenue. If any of these meters are part of the "No Charge" customer class, that would also decrease the additional revenue. It should also be noted that it was assumed that all Commercial meters fell within the Commercial customer class (not the Commercial (Water Only) or Water Outside City Limit customer class). A more refined and accurate analysis could be conducted to better quantify the potential additional revenue. Placing some of the meters in the Commercial (Water Only) or Water Outside City Limits customer class would result in higher water revenue but zero wastewater revenue.

Table 5-1: Projected Performance of Combined Water and Wastewater Fund – Not Recommended

	Budget	Projections by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
TOTAL EXPENSES (From Table 4-3)	***$7,041,822***	**$5,882,350**	**$6,155,388**	**$6,820,912**	**$7,005,117**	**$7,236,341**	**$7,476,520**	**$7,726,019**	**$7,985,211**	**$8,254,490**	**$8,534,268**
Projected RETAIL REVENUE at current rates (From Table 4-1)	***$5,500,076***	**$5,535,502**	**$5,582,197**	**$5,617,737**	**$5,659,119**	**$5,705,986**	**$5,752,914**	**$5,794,456**	**$5,830,275**	**$5,877,369**	**$5,919,090**
Reduced Retail Use due to Price Elasticity		4.0%	5.2%	6.5%	6.7%	6.7%	7.5%	8.1%	8.6%	9.2%	9.5%
Reduced Retail Revenue due to Price Elasticity		$0	$201,219	$252,025	$263,948	$266,081	$300,192	$324,711	$350,027	$375,426	$390,346
Yearly % Retail Rate Adjustment recommended to meet shortfall & Fund Balance Target		**20.0%**	**5.0%**	**5.0%**	**1.0%**	**0.0%**	**3.0%**	**2.0%**	**2.0%**	**2.0%**	**1.0%**
Retail Revenue with Rate Adjustment	*$5,500,076*	$6,642,602	$6,780,032	$7,098,837	$7,209,190	$7,268,965	$7,504,674	$7,678,664	$7,847,277	$8,035,909	$8,155,804
Projected WHOLESALE REVENUE at current rates (From Table 4-1)	***$0***	**$90,193**	**$96,617**	**$99,187**	**$102,013**	**$132,617**	**$165,506**	**$200,814**	**$238,682**	**$279,258**	**$322,698**
Deficit (-) or Surplus (+)	***-$1,541,747***	**$850,445**	**$721,261**	**$377,111**	**$306,086**	**$165,241**	**$193,660**	**$153,460**	**$100,748**	**$60,677**	**-$55,766**
Water and Wastewater Fund Ending Balance	*$0*	$850,445	$1,571,705	$1,948,817	$2,254,902	$2,420,143	$2,613,803	$2,767,263	$2,868,011	$2,928,688	$2,872,922
Water and Wastewater Fund Balance Target	*$2,347,274*	$1,960,783	$2,051,796	$2,107,201	$2,168,603	$2,245,677	$2,325,737	$2,408,903	$2,495,301	$2,585,060	$2,678,320
Target Met?		No	No	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

Table 5-2: Projected Performance of Combined Water and Wastewater Fund with Implementation of Commercial Tiered Base Fees in FY21 - Recommended

	Budget	Projections by Fiscal Year									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
TOTAL EXPENSES (From Table 4-3)	***$7,041,822***	**$5,882,350**	**$6,155,388**	**$6,820,912**	**$7,005,117**	**$7,236,341**	**$7,476,520**	**$7,726,019**	**$7,985,211**	**$8,254,490**	**$8,534,268**
Projected RETAIL REVENUE at current rates with Commercial Tiered Base Fee	***$5,500,076***	**$5,740,483**	**$5,847,010**	**$5,905,620**	**$5,957,945**	**$6,011,966**	**$6,061,189**	**$6,102,637**	**$6,153,492**	**$6,217,079**	**$6,270,501**
Reduced Retail Use due to Price Elasticity		3.2%	4.4%	4.8%	5.1%	5.1%	5.1%	5.8%	6.6%	7.2%	7.7%
Reduced Retail Revenue due to Price Elasticity		$0	$168,715	$189,105	$200,011	$201,627	$203,243	$235,127	$268,403	$291,682	$316,261
Yearly % Retail Rate Adjustment recommended to meet shortfall & Fund Balance Target		**16.0%**	**5.0%**	**2.0%**	**1.0%**	**0.0%**	**0.0%**	**3.0%**	**3.0%**	**2.0%**	**2.0%**
Retail Revenue with Rate Adjustment	*$5,500,076*	$6,658,960	$6,916,164	$7,101,969	$7,224,962	$7,290,718	$7,350,454	$7,583,329	$7,834,229	$8,045,647	$8,246,507
Projected WHOLESALE REVENUE at current rates (From Table 4-1)	***$0***	**$90,193**	**$96,617**	**$99,187**	**$102,013**	**$132,617**	**$165,506**	**$200,814**	**$238,682**	**$279,258**	**$322,698**
Deficit (-) or Surplus (+)	***-$1,541,747***	**$866,803**	**$857,393**	**$380,244**	**$321,858**	**$186,994**	**$39,440**	**$58,124**	**$87,700**	**$70,414**	**$34,937**
Water and Wastewater Fund Ending Balance	*$0*	$866,803	$1,724,196	$2,104,440	$2,426,298	$2,613,292	$2,652,732	$2,710,856	$2,798,556	$2,868,971	$2,903,907
Water and Wastewater Fund Balance Target	*$2,347,274*	$1,960,783	$2,051,796	$2,107,201	$2,168,603	$2,245,677	$2,325,737	$2,408,903	$2,495,301	$2,585,060	$2,678,320
Target Met?		No	No	No	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**

6.0 SUMMARY OF RATE RECOMMENDATIONS

The recommendations for water and wastewater rates and projected rate increases are summarized below. Projected rate increases should be examined annually in light of future growth, revenues and system expenses. **Figure 6-1** summarizes the monthly residential water and wastewater bills over time, which are the same in Option 1 and Option 2. The only difference between Option 1 and Option 2 is in the Commercial rates. **Option 2 is Freese and Nichols' recommended option.**

Option 1 – Overall Rate Adjustments applied equally to Water and Wastewater

This subsection summarizes the information presented in **Section 5.1**. In order to balance revenue with expenses, the City would need to implement an initial 20 percent water and wastewater rate increase in FY21, followed by subsequent rate increases totaling approximately 41 percent (non-compounding) by FY30 (as seen in **Table 5-1**).

Option 2 – Varying Commercial Base Fees by Meter Size

This option (presented in **Section 5.2**) assumes the implementation of tiered based fees for the Commercial customer class, based on meter equivalency standards found in American Water Works Association's M1 manual. These new tiered base fees would increase at the same rate as other rates and should raise an additional approximately $200,000 of revenue in FY21 which would reduce the rate increases needed. Assuming the institution of Commercial tiered base fees by meter size, the City will need to implement an initial 16 percent water and wastewater rate increase in FY21, followed by subsequent rate increases totaling approximately 34 percent (non-compounding) by FY30 (as seen in **Table 5-2**). **Table 6-1** through **Table 6-4** show this needed rate increase, along with the rates that would result each year.

Other Recommendations

- The City should refine policy and procedures for new account activation and overall billing operations. This includes researching computerized recordkeeping system to improve documentation format for service connections.
- The City should refine new account activation and billing operations procedures and ensure consistency with the utility policy regarding billing and minimize opportunity for missed/inaccurate billings. Upgrade or replace customer billing system for needed functionality

and ensure that billing adjustments don't corrupt the value of consumption volumes. Implement procedural internal annual audit process.

- The City should conduct outreach to Commercial customers prior to rate adjustments, particularly Commercial customers with large meters. The City should also ensure that the new tiered Commercial base fee structure is built into billing system correctly.
- The City should continue to closely monitor its nonrevenue water through audits, identification of leaks, and other appropriate measures.
- The City should update this rate study at least every five years. It should be done sooner if there are significant changes in the assumptions presented in this study, such as timing of the CIP projects.

Table 6-1: Option 2 – Residential Rate Adjustments Needed

			Budgeted	Projected								
			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Yearly % Rate Increase implemented (From Table 5-1)				16.0%	5.0%	2.0%	1.0%	0.0%	0.0%	3.0%	3.0%	2.0%	2.0%
Residential													
Water Monthly Fees			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Volume (gallons)	**Tier**	**Unit**		Fee									
0 – 2,000	Base		*$12.10*	$14.04	$14.74	$15.03	$15.19	$15.19	$15.19	$15.64	$16.11	$16.43	$16.76
2,001 – 12,000	1	per thousand gallons	*$4.18*	$4.85	$5.09	$5.19	$5.24	$5.24	$5.24	$5.40	$5.56	$5.68	$5.79
12,001 - 999999	2	per thousand gallons	*$5.50*	$6.38	$6.70	$6.83	$6.90	$6.90	$6.90	$7.11	$7.32	$7.47	$7.62
Wastewater Monthly Fees													
Volume (gallons)	**Tier**	**Unit**		Fee									
0 – 2,000	Base		*$11.00*	$12.76	$13.40	$13.67	$13.80	$13.80	$13.80	$14.22	$14.64	$14.94	$15.23
2,001 – 12,000	1	per thousand gallons	*$3.80*	$4.41	$4.63	$4.72	$4.77	$4.77	$4.77	$4.91	$5.06	$5.16	$5.26
Residential Average 5,000 gallons			***$47.04***	**$54.57**	**$57.30**	**$58.44**	**$59.03**	**$59.03**	**$59.03**	**$60.80**	**$62.62**	**$63.87**	**$65.15**
Residential Peak 10,000 gallons			***$86.94***	**$100.85**	**$105.90**	**$108.01**	**$109.09**	**$109.09**	**$109.09**	**$112.37**	**$115.74**	**$118.05**	**$120.41**

Table 6-2: Option 2 – Commercial Rate Adjustments Needed

Commercial	Budgeted	Projected								
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Yearly % Rate Increase implemented (From Table 5-1)		16.0%	5.0%	2.0%	1.0%	0.0%	0.0%	3.0%	3.0%	2.0%	2.0%

Commercial												
Water Monthly Fees			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Volume (gallons)	**Tier**	**Unit**		Fee									
0 – 2,000	Base (1" meter)		*$17.03*	$19.75	$20.74	$21.16	$21.37	$21.37	$21.37	$22.01	$22.67	$23.12	$23.59
0 – 2,000	Base (1 ½" meter		*$17.03*	$25.40	$26.67	$27.20	$27.47	$27.47	$27.47	$28.30	$29.15	$29.73	$30.33
0 – 2,000	Base (2" meter)		*$17.03*	$40.92	$42.97	$43.83	$44.26	$44.26	$44.26	$45.59	$46.96	$47.90	$48.86
0 – 2,000	Base (3" meter)		*$17.03*	$155.22	$162.98	$166.24	$167.90	$167.90	$167.90	$172.94	$178.12	$181.69	$185.32
0 – 2,000	Base (4" meter)		*$17.03*	$197.55	$207.43	$211.57	$213.69	$213.69	$213.69	$220.10	$226.70	$231.24	$235.86
0 – 2,000	Base (6" meter)		*$17.03*	$296.32	$311.14	$317.36	$320.53	$320.53	$320.53	$330.15	$340.06	$346.86	$353.79
0 – 2,000	Base (8" meter)		*$17.03*	$409.21	$429.67	$438.26	$442.64	$442.64	$442.64	$455.92	$469.60	$478.99	$488.57
0 – 2,000	Base (10" meter)		*$17.03*	$522.77	$548.91	$559.89	$565.49	$565.49	$565.49	$582.45	$599.93	$611.93	$624.16
2,001 – 12,000	1	per thousand gallons	*$7.95*	$9.22	$9.68	$9.87	$9.97	$9.97	$9.97	$10.27	$10.58	$10.79	$11.01
12,001 - 999999	2	per thousand gallons	*$10.48*	$12.16	$12.77	$13.02	$13.15	$13.15	$13.15	$13.55	$13.95	$14.23	$14.52

Table 6-2: Option 2 – Commercial Rate Adjustments Needed, continued

Commercial			Budgeted	Projected									
			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Wastewater Monthly Fees													
Volume (gallons)	**Tier**	**Unit**		**Fee**									
0 – 2,000	Base (1" meter)		*$14.74*	$17.10	$17.95	$18.31	$18.50	$18.50	$18.50	$19.05	$19.62	$20.01	$20.41
0 – 2,000	Base (1 ½" meter		*$14.74*	$21.98	$23.08	$23.54	$23.78	$23.78	$23.78	$24.49	$25.23	$25.73	$26.25
0 – 2,000	Base (2" meter)		*$14.74*	$35.42	$37.19	$37.93	$38.31	$38.31	$38.31	$39.46	$40.65	$41.46	$42.29
0 – 2,000	Base (3" meter)		*$14.74*	$134.34	$141.06	$143.88	$145.32	$145.32	$145.32	$149.68	$154.17	$157.26	$160.40
0 – 2,000	Base (4" meter)		*$14.74*	$170.98	$179.53	$183.12	$184.96	$184.96	$184.96	$190.50	$196.22	$200.14	$204.15
0 – 2,000	Base (6" meter)		*$14.74*	$256.48	$269.30	$274.69	$277.43	$277.43	$277.43	$285.76	$294.33	$300.21	$306.22
0 – 2,000	Base (8" meter)		*$14.74*	$354.18	$371.89	$379.33	$383.12	$383.12	$383.12	$394.61	$406.45	$414.58	$422.87
0 – 2,000	Base (10" meter)		*$14.74*	$452.48	$475.10	$484.60	$489.45	$489.45	$489.45	$504.13	$519.26	$529.64	$540.23
2,001 – 12,000	1	per thousand gallons	*$7.94*	$9.21	$9.67	$9.86	$9.96	$9.96	$9.96	$10.26	$10.57	$10.78	$11.00
12,001 – 999999	2		*$10.48*	$12.16	$12.76	$13.02	$13.15	$13.15	$13.15	$13.54	$13.95	$14.23	$14.51
Commercial 41,384 gallons (2-inch meter)			***$663.55***	**$809.30**	**$849.77**	**$866.76**	**$875.43**	**$875.43**	**$875.43**	**$901.69**	**$928.74**	**$947.32**	**$966.26**
Commercial 2,826,833 gallons (10-inch meter)			***$59,046.57***	**$69,441.42**	**$72,913.49**	**$74,371.76**	**$75,115.48**	**$75,115.48**	**$75,115.48**	**$77,368.94**	**$79,690.01**	**$81,283.81**	**$82,909.49**

Table 6-3: Option 2 – Commercial (Water Only) Rate Adjustments Needed

Commercial (Water Only)	Budgeted	Projected									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Yearly % Rate Increase implemented (From Table 5-1)		16.0%	5.0%	2.0%	1.0%	0.0%	0.0%	3.0%	3.0%	2.0%	2.0%

Commercial (Water Only)												
Water Monthly Fees			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Volume (gallons)	**Tier**	**Unit**		Fee									
0 – 2,000	Base (1" meter)		*$24.32*	$28.21	$29.62	$30.21	$30.52	$30.52	$30.52	$31.43	$32.37	$33.02	$33.68
0 – 2,000	Base (1 ½" meter		*$24.32*	$36.27	$38.09	$38.85	$39.24	$39.24	$39.24	$40.41	$41.62	$42.46	$43.31
0 – 2,000	Base (2" meter)		*$24.32*	$58.44	$61.36	$62.59	$63.21	$63.21	$63.21	$65.11	$67.06	$68.40	$69.77
0 – 2,000	Base (3" meter)		*$24.32*	$221.66	$232.74	$237.40	$239.77	$239.77	$239.77	$246.96	$254.37	$259.46	$264.65
0 – 2,000	Base (4" meter)		*$24.32*	$282.11	$296.22	$302.14	$305.16	$305.16	$305.16	$314.32	$323.75	$330.22	$336.83
0 – 2,000	Base (6" meter)		*$24.32*	$423.17	$444.33	$453.21	$457.75	$457.75	$457.75	$471.48	$485.62	$495.33	$505.24
0 – 2,000	Base (8" meter)		*$24.32*	$584.37	$613.59	$625.87	$632.12	$632.12	$632.12	$651.09	$670.62	$684.03	$697.71
0 – 2,000	Base (10" meter)		*$24.32*	$746.56	$783.88	$799.56	$807.56	$807.56	$807.56	$831.78	$856.74	$873.87	$891.35
2,001 – 12,000	1	per thousand gallons	*$8.39*	$9.73	$10.22	$10.42	$10.53	$10.53	$10.53	$10.84	$11.17	$11.39	$11.62
12,001 - 999999	2	per thousand gallons	*$11.06*	$12.83	$13.47	$13.74	$13.88	$13.88	$13.88	$14.29	$14.72	$15.02	$15.32
Commercial (Water Only) 8,732 gallons (2-inch meter)			***$81***	**$124**	**$130**	**$133**	**$134**	**$134**	**$134**	**$138**	**$142**	**$145**	**$148**

Table 6-4: Option 2 – Water Outside City Limits Rate Adjustments Needed

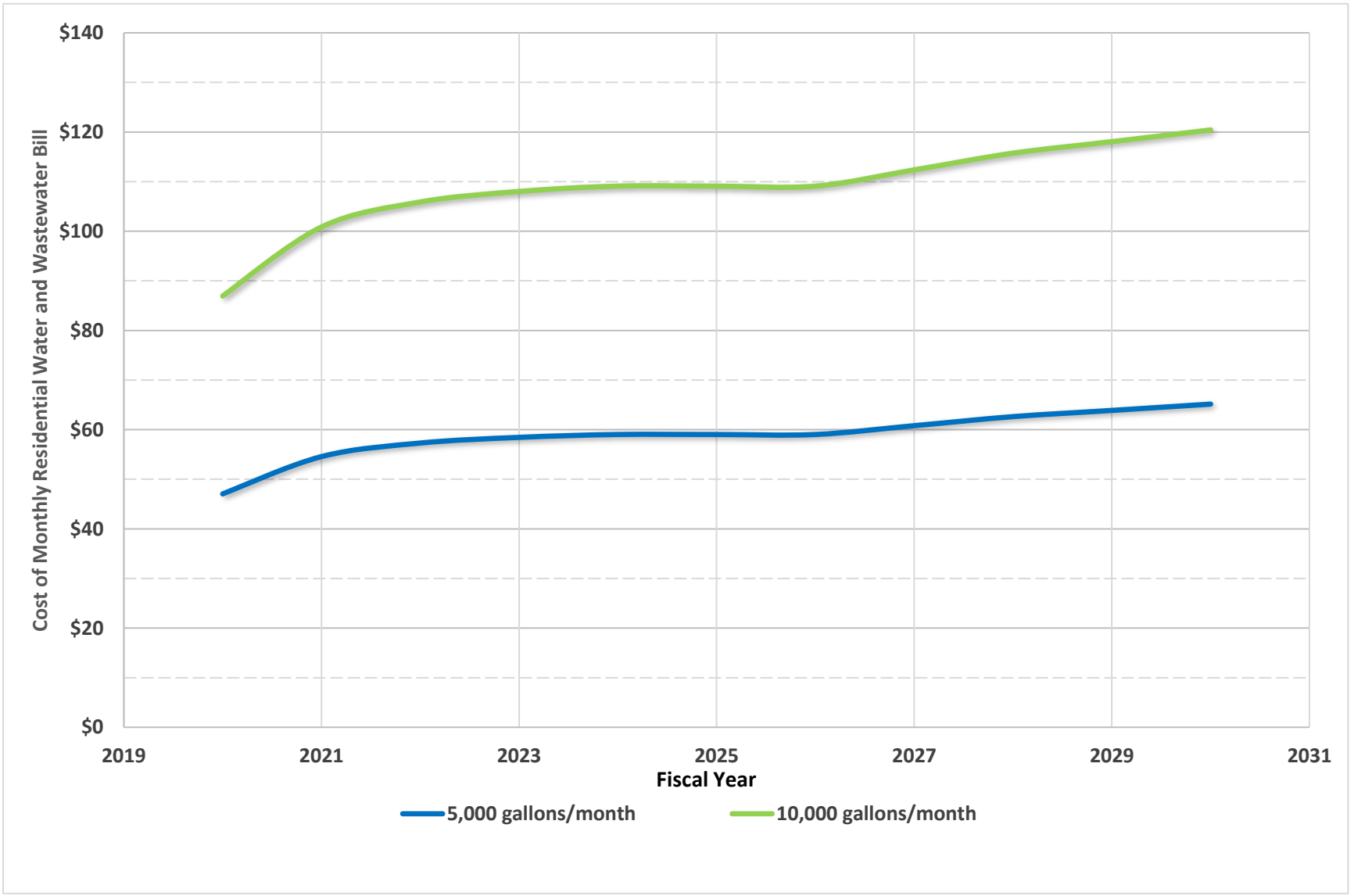
Water Outside City Limits	Budgeted	Projected									
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Yearly % Rate Increase implemented (From Table 5-1)		16.0%	5.0%	2.0%	1.0%	0.0%	0.0%	3.0%	3.0%	2.0%	2.0%

Water Outside City Limits												
Water Monthly Fees			2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Volume (gallons)	**Tier**	**Unit**		Fee									
0 – 2,000	Base (1" meter)		*$25.54*	$29.63	$31.11	$31.73	$32.05	$32.05	$32.05	$33.01	$34.00	$34.68	$35.37
0 – 2,000	Base (1 ½" meter		*$25.54*	$38.09	$40.00	$40.80	$41.20	$41.20	$41.20	$42.44	$43.71	$44.59	$45.48
0 – 2,000	Base (2" meter)		*$25.54*	$61.37	$64.44	$65.73	$66.38	$66.38	$66.38	$68.37	$70.43	$71.83	$73.27
0 – 2,000	Base (3" meter)		*$25.54*	$232.78	$244.42	$249.31	$251.80	$251.80	$251.80	$259.35	$267.13	$272.48	$277.93
0 – 2,000	Base (4" meter)		*$25.54*	$296.26	$311.08	$317.30	$320.47	$320.47	$320.47	$330.09	$339.99	$346.79	$353.72
0 – 2,000	Base (6" meter)		*$25.54*	$444.40	$466.62	$475.95	$480.71	$480.71	$480.71	$495.13	$509.98	$520.18	$530.59
0 – 2,000	Base (8" meter)		*$25.54*	$613.69	$644.37	$657.26	$663.83	$663.83	$663.83	$683.75	$704.26	$718.35	$732.71
0 – 2,000	Base (10" meter)		*$25.54*	$784.01	$823.21	$839.67	$848.07	$848.07	$848.07	$873.51	$899.71	$917.71	$936.06
2,001 – 999999	1	per thousand gallons	*$11.91*	$13.82	$14.51	$14.80	$14.94	$14.94	$14.94	$15.39	$15.85	$16.17	$16.50
Water Outside City Limits 63,333 gallons (2-inch meter)			***$756***	**$909**	**$954**	**$973**	**$983**	**$983**	**$983**	**$1,012**	**$1,043**	**$1,064**	**$1,085**
Water Outside City Limits 696,750 gallons (8-inch meter)			***$8,300***	**$10,382**	**$10,902**	**$11,120**	**$11,231**	**$11,231**	**$11,231**	**$11,568**	**$11,915**	**$12,153**	**$12,396**

Table 6-5: Average Consumption and Meter Count by Meter Size, Commercial Customers

		¾" Meter	1" Meter	2" Meter	3" Meter	4" Meter	6" Meter	8" Meter	10" Meter
Commercial	Average Monthly Consumption (gal)	5,688	10,780	41,384	222,235	274,347	24,583	N/A	2,826,833
	Meter Count	182	17	36	5	6	1	0	1
Commercial (Water Only)	Average Monthly Consumption (gal)	11,435	N/A	8,732	N/A	0	N/A	N/A	N/A
	Meter Count	14	0	5	0	1	0	0	0
Water Outside City Limits	Average Monthly Consumption (gal)	25,667	N/A	63,333	N/A	256,833	94,833	696,750	N/A
	Meter Count	1	0	2	0	1	2	1	0

Figure 6-1: Increase in Monthly Residential Water and Sewer Charges over Time



7.0 COMPARISON TO NEARBY CITIES

Table 7-1 shows the monthly cost for residential water and wastewater service for use of 5,000 gallons for Freeport and other nearby cities. The costs for water and wastewater services in other cities are based on information obtained from the cities' public websites as of November 2019.

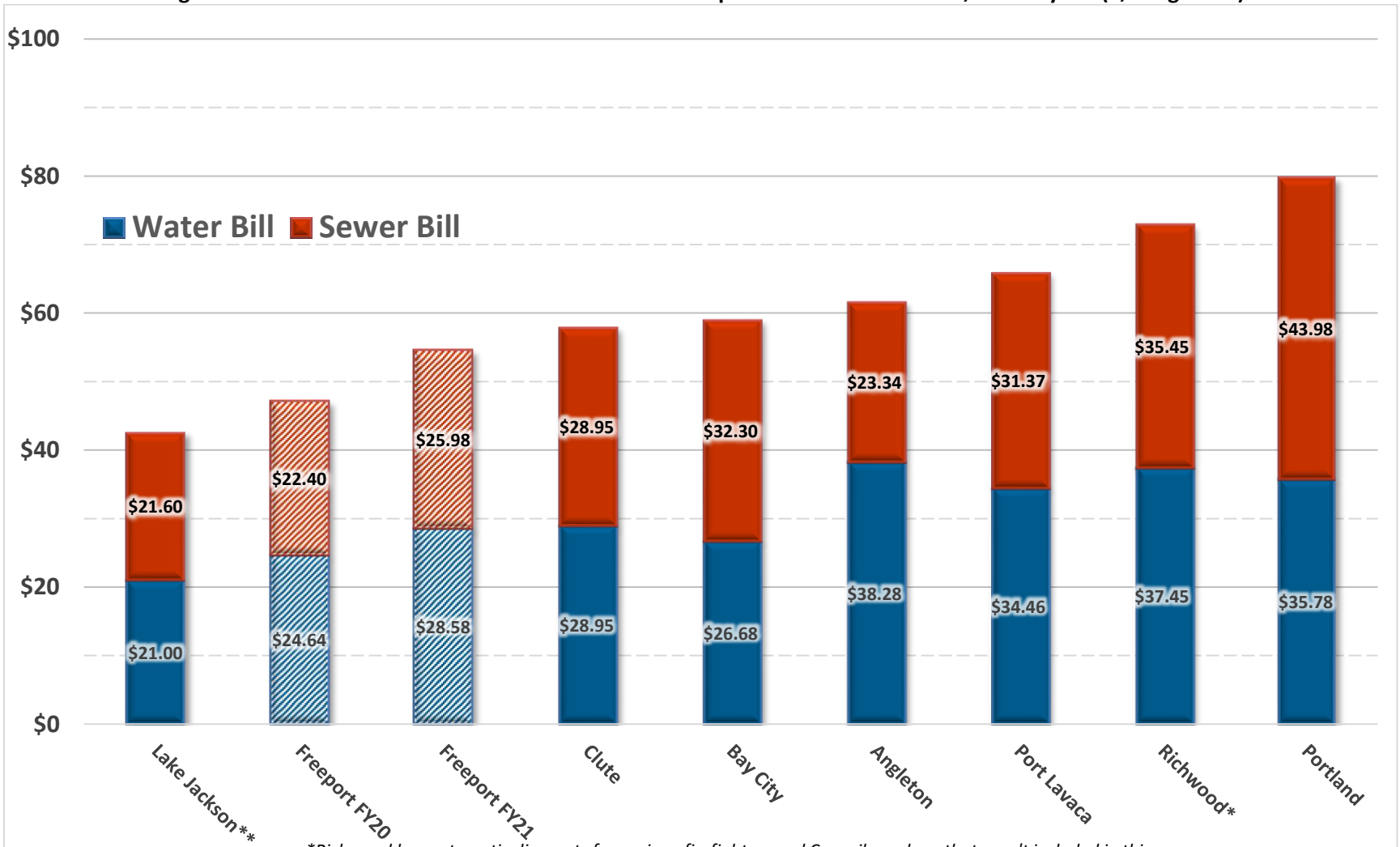
Figure 7-1 shows the comparison of costs for 5,000 gallons of water and wastewater service for a typical residential customer. With its current rates, Freeport has the second lowest total water and wastewater cost out of eight area cities surveyed for the cost for 5,000 gallons for residential use. With the recommended rate increase of 16 percent in FY21 from Option 2, Freeport will remain second lowest out of eight area cities surveyed for the cost for 5,000 gallons. It should be remembered that these graphs are comparing Freeport's FY20 and FY21 rates to the FY19 rates of these seven area cities, and these cities may also increase their rates for the upcoming fiscal year.

Table 7-1: Residential Water and Wastewater Rate Comparison to Other Cities

City	5,000 Gallons/month		
	Water	Sewer	Total
Freeport FY20 Residential	$24.64	$22.40	$47.04
Freeport FY21 Residential	$28.58	$25.98	$54.57
Port Lavaca	$34.46	$31.37	$65.83
Bay City	$26.68	$32.30	$58.98
Angleton	$38.28	$23.34	$61.62
Portland	$35.78	$43.98	$79.76
Richwood*	$37.45	$35.45	$72.90
Lake Jackson**	$21.09	$21.60	$42.69
Clute	$28.95	$28.95	$57.90

**Richwood provides discounts to seniors, firefighters and Councilmembers that aren't included in this comparison.*
***Lake Jackson provides discounts to seniors that aren't included in this comparison.*

Figure 7-1: Residential Water and Wastewater Rate Comparison with Other Cities, Monthly Bill (5,000 gallons)



**Richwood has automatic discounts for seniors, firefighters and Councilmembers that aren't included in this comparison.*

***Lake Jackson has automatic discounts for seniors that aren't included in this comparison.*

APPENDIX A

Projected Expenses for Water and Wastewater Fund

Table A-1: Projected Expenses for Debt Service

	Budget	Projected Expenses by Fiscal Year										
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-41
FUTURE DEBT SERVICE												
FY2022 Series $7.0M				$499,309	$499,309	$499,309	$499,309	$499,309	$499,309	$499,309	$499,309	$5,991,708
FUTURE *DEBT SERVICE Subtotal*	**$0**	**$0**	**$0**	**$499,309**	**$499,309**	**$499,309**	**$499,309**	**$499,309**	**$499,309**	**$499,309**	**$499,309**	**$5,991,708**

Table A-2: Basis for Projections of Expenses for the Water and Wastewater Fund

Expense Category	Basis for projections
Salaries	
Salaries & Wages	Begin w/ FY2020 budget, inflate at 3.5%/yr
Longevity	Begin w/ FY2020 budget, inflate at 2.0%/yr
Overtime	Begin w/ FY2020 budget, inflate at 2.0%/yr
Benefits	
FICA & Medicare	Begin w/ FY2020 budget, inflate at 3.5%/yr
Group Insurance	Begin w/ FY2020 budget, inflate at 4.0%/yr
TMRS	Begin w/ FY2020 budget, inflate at 2.0%/yr
Workmen's Comp	Begin w/ FY2020 budget, inflate at 2.0%/yr
OPEB Expense	Begin w/ FY2020 budget, inflate at 2.0%/yr
Unemployment Insurance	Begin w/ FY2020 budget, inflate at 2.0%/yr
Supplies	
Office/Computer Supplies	Begin w/ FY2020 budget, inflate at 2.0%/yr
Postage/Shipping	Begin w/ FY2020 budget, inflate at 2.0%/yr
Other Supplies	Begin w/ FY2020 budget, inflate at 2.0%/yr
Services	
Fees	Begin w/ FY2020 budget, inflate at 4.0%/yr
Collection Agency	Begin w/ FY2020 budget, inflate at 2.0%/yr
Bank Charges	Begin w/ FY2020 budget, inflate at 2.0%/yr
Telephone	Begin w/ FY2020 budget, inflate at 2.0%/yr
Physicals/Screening	Begin w/ FY2020 budget, inflate at 2.0%/yr
Oyster Creek Agreement	Begin w/ FY2020 budget, inflate at 2.0%/yr
BWA Water Resale	Begin w/ BWA 2019/2020 through 2024/2025 Plan, increase remainder by average % increase
Veolia – Other	Begin w/ $50,000 per year, no inflation
Veolia – Contract Ops	Begin w/ FY2020 budget, inflate at 3.0%/yr
Maintenance	
Electronics/Computer Maintenance	Begin w/ FY2020 budget, inflate at 2.0%/yr
Sundry	
Seminars/Dues/Travel	Begin w/ FY2020 budget, inflate at 2.0%/yr
Other - Sundry	Begin w/ FY2020 budget, inflate at 2.0%/yr
Capital Outlay	
Capital Outlay	Begin w/ $210,000, inflate at 2.0%/yr
Repayment to General Fund	
Repayment to General Fund	$150,000 per year
Debt Service	
Debt Service	$7,000,000 20-year loan at 3% interest rate