



DATE: March 25, 2019

TO: President and Members of the Estero Municipal Improvement District (EMID) Board of Directors

VIA: Jeff Moneda, District Manager

FROM: Norm Dorais, Public Works Director/City Engineer
Edmund Suen, Finance Director

SUBJECT: REVIEW OF PROJECTED WATER RATES FOR FY 2019-2020;
POLICY DIRECTION FOR RATE NOTIFICATION UNDER
PROPOSITION 218

RECOMMENDATION

It is recommended that the EMID Board of Directors:

1. Review and approve the proposed water rates for FY 2019-2020 based on a conservation-based rate model with two rate tiers; and
2. Based on that direction, authorize District staff to establish the proposed water rates for FY 2019-2020 that will be noticed to all rate payers under the requirements of Proposition 218.

EXECUTIVE SUMMARY

The EMID water enterprise is currently in good financial shape, its water service rates remain below the average rates compared to other agencies on the Bay Area Peninsula, and it is currently debt free. As of July 1, 2018, the Operating Reserve balance was \$873,267 to be used in case of an operational emergency or to smooth any “rate shocks” to water customers.

However, as much of EMID’s infrastructure enters its 5th decade in service, some of its components are nearing the end of their expected service life. As in past years, the District

engaged Bartle Wells Associates (BWA) to develop 10-year projections for its Water Enterprise and to recommend water rate recommendations to cover maintenance, operations, and capital improvements for FY 2019-2020 and the following five-year period. In future years, the District will incorporate the results of a 20-year master plan study of its water system that will result in the identification and prioritization of projects in the 20-year time horizon expected to be completed by the end of this fiscal year.

The below table shows the proposed water rates for FY 2019-2020 and a projection of possible water rates in the future. Water bills are composed of two charges, a fixed monthly charge based on meter size, plus a water consumption charge based on each customer's metered water use. The fixed monthly charge represents a flat rate charge to each customer for water delivery to their homes or business service lines, and is based upon the size of the meter.

Table 3
City of Foster City / Estero Municipal Improvement District

Proposed Water Rates - Two Tier Hybrid Model

Recommended Rates	Current Rates	TWO TIER HYBRID MODEL									
		FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029
Monthly Meter Charge											
3/4"	\$21.45	\$23.15	\$23.85	\$24.55	\$25.30	\$26.05	\$26.85	\$27.65	\$28.50	\$29.35	\$30.25
1"	35.75	38.58	39.75	40.92	42.17	43.42	44.75	46.08	47.50	48.92	50.42
1-1/2"	85.80	92.60	95.40	98.20	101.20	104.20	107.40	110.60	114.00	117.40	121.00
2"	114.40	123.47	127.20	130.93	134.93	138.93	143.20	147.47	152.00	156.53	161.33
3"	250.25	270.08	278.25	286.42	295.17	303.92	313.25	322.58	332.50	342.42	352.92
4"	450.45	486.15	500.85	515.55	531.30	547.05	563.85	580.65	598.50	616.35	635.25
6"	1,001.00	1,080.33	1,113.00	1,145.67	1,180.67	1,215.67	1,253.00	1,290.33	1,330.00	1,369.67	1,411.67
8" or greater	1,716.00	1,852.00	1,908.00	1,964.00	2,024.00	2,084.00	2,148.00	2,212.00	2,280.00	2,348.00	2,420.00
Conservation-Based Water Rate Model (based on bi-monthly allotments)											
Single Family Residential											
Tier 1 0-20 per ccf	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 Over 20 ccf	6.10	6.20	6.39	6.58	6.69	6.87	7.08	7.36	7.76	8.03	8.36
Multi-Family Residential (per living unit)											
Tier 1 0-10 ccf per living unit	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 Over 10 ccf per living unit	6.10	6.20	6.39	6.58	6.69	6.87	7.08	7.36	7.76	8.03	8.36
Irrigation Customers											
Tier 1 <=100% of annual budget	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 >100% of annual budget	6.47	6.17	6.36	6.56	6.66	6.85	7.06	7.34	7.74	8.00	8.34
Commercial and Fire Line Customers											
Base Consumption Rate	5.54	5.70	5.89	6.07	6.22	6.43	6.64	6.92	7.33	7.60	7.93

Monthly Fire Meter Charge												
3/4"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35	
1"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35	
1-1/2"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35	
2"	40.11	43.29	44.60	45.91	47.31	48.71	50.21	51.71	53.30	54.88	56.57	
3"	87.52	94.45	97.31	100.16	103.22	106.28	109.55	112.81	116.28	119.75	123.42	
4"	157.66	170.15	175.30	180.44	185.96	191.47	197.35	203.23	209.48	215.72	222.34	
6"	350.28	378.04	389.47	400.90	413.15	425.40	438.46	451.52	465.41	479.29	493.98	
8" or greater (Minimum charge is equivalent to 1-1/2" meter charge)	600.60	648.20	667.80	687.40	708.40	729.40	751.80	774.20	798.00	821.80	847.00	

The following chart provides more information about how the proposed new rates impact the ratepayer in FY 2019-2020 and projects the impact into the future.

Table 5
Foster City / Estero Municipal Improvement District
Projected Water Rate Impacts

Projected Water Bills	Current	Fiscal Year Ending June 30					Extended Year Projection				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Two Tier Hybrid Model Single Family Residential Monthly Rate	\$64.89	\$67.87	\$70.01	\$72.15	\$74.26	\$76.61	\$79.17	\$82.21	\$86.34	\$89.27	\$92.89
\$ Increase		2.98	2.14	2.14	2.11	2.35	2.56	3.04	4.13	2.93	3.62
% Increase		4.6%	3.2%	3.1%	2.9%	3.2%	3.3%	3.8%	5.0%	3.4%	4.1%

Based on Single Family Residential Use of 8 ccf

The primary drivers for the proposed FY 2019-2020 rates include funding for capital water improvements, an allocation Water Conservation and Sustainability Rebate Program, an increase in maintenance and operation costs, and the higher-than-expected system water losses over past years. After several years of increased water losses, District staff has been able to troubleshoot and begin to reduce this number. Additionally, the proposed rates include an annual transfer from Water Operating Revenues to the City's Capital Improvement Fund, continuation to the Water Sustainability Rebate Program, and an increase in operational charges to keep revenues in line with operating expenses.

Based upon the EMID Board of Directors' policy direction this evening, the District will mail a notice to all ratepayers on or before April 15, 2019 for a public hearing to be held on June 3, 2019 to consider the new rates. If adopted, the new rates will go into effect on July 1, 2019.

BACKGROUND/ANALYSIS

The District currently provides water service to a population of approximately 37,700. Most of the District's customers are residential. There are approximately 8,166 water accounts that allow for water service and fire protection service.

The primary drivers for the proposed FY 2019-2020 rates include the following:

- **Cost of Wholesale Water from the San Francisco Public Utility Commission (SFPUC):** The SFPUC, sole source of water supply for the District, released updated projections for their wholesale rate for water in February 2019. SFPUC projects the current rate of \$4.10 per hundred cubic feet (ccf) will remain the same in FY 2019-2020 and is projected to remain steady for the following three years.
- **Bay Area Water Supply and Conservation Agency (BAWSCA) Surcharge:** The District will continue to make annual payments to BAWSCA for capital improvement costs associated with the \$4.8 billion Water System Improvement Project (WSIP) to upgrade the Hetch Hetchy Water System. For FY 2019-2020, the payment will be \$820,776. The fixed monthly impact in dollars to water customers would be \$0.40. The WSIP is over 96% complete, however, SFPUC operating costs and debt service are projected to increase over the next five years.
- **Higher-Than-Expected System Water Losses:** Water utilities incur real losses from pipeline leakage and apparent losses when customer water consumption is not properly measured or billed. The current water rates are based on 7% water loss derived from historical data over a number of years that showed a positive loss from SFPUC purchases. An investigation by the SFPUC in 2016 revealed that the water loss figure was due to an SFPUC meter which had been under-reporting. The SFPUC meter was replaced in 2016, and actual water purchase and sales data from FY 2016-2017 revealed water losses of approximately 11.5%. While this water loss percentage is within the normal range that other municipalities experience, the City is developing a water master plan that would implement controls to reduce these losses to below 10% in the future.

The proposed water rates are designed to cover the water loss and replenish the operating fund above target levels by FY 2020-2021. As a result, the rate model includes a 3% variable volumetric rate increase to cover operation and maintenance costs and meet the operating fund balance target.

- **Capital Funding:** The District's strategy for funding long-term capital water improvements calls for an annual transfer from water operating revenues to the City's Capital Improvement Fund to fund those projects over the next 10 years. The proposed rate projections include a transfer out of \$205,000 for FY 2019-2020.

- **Conservation Costs:** District staff is recommending that the EMID Board of Directors maintain the current allocation of \$200,000 to the Water Sustainability Rebate Program for FY 2019-2020 to continue to support water conservation.
- **Operational Costs:** Draft operations and maintenance projections assume 3.3% annual cost increase to keep revenues in line with operating expenses (excluding wholesale water purchases).

Rate Smoothing

The EMID Board of Directors has implemented a long-term rate smoothing model that takes into consideration the long-range projections by the SFPUC in terms of wholesale water rates and significant capital improvements that have a profound impact on rates, such as the WSIP program. The rate smoothing model attempts to maintain revenue increases at no greater than 10% per year. The proposed FY 2019-2020 rates continue the use of a 10-year model which has proven to be successful in dampening the impacts of significant rate increases imposed by the SFPUC on the ratepayers.

Rate Survey

A survey of communities along the San Francisco Peninsula was conducted to compare the District's typical residential monthly bill with the neighboring communities. The results of the survey are summarized in the comparison chart attached to this report (Attachment 3). The survey indicates the District's water rates remain among the lowest on the Peninsula. The average monthly water bill for the region (based on eight units of water for monthly usage) is \$77.56 per month and the District's current average monthly residential water bill is \$64.89 per month, or about 16% less than the current average of neighboring communities.

Proposition 218 Notification

District staff requests that the EMID Board of Directors review the information prepared by BWA and provide District staff with direction regarding the water rates. Based on that direction, District staff will prepare a notice that will be mailed to all ratepayers on or before April 15, 2019 in compliance with the provisions of Proposition 218. A public hearing on and adoption of the proposed rates will occur at the June 3, 2019 EMID Board of Directors regular meeting in conjunction with the FY 2019-2020 Annual Budget Public Hearing. The new rates will become effective July 1, 2019.

It should be noted that between the notification date and the public hearing date, the EMID Board of Directors will receive the FY 2019-2020 Preliminary Annual Budget and 5-Year Financial Plan. Any adjustments that occur based upon EMID Board direction at the

Budget Study Session will be incorporated into an updated rate model at the time of the public hearing. However, it is the opinion of District staff that conservative assumptions have been employed in the creation of the attached rate models. Accordingly, District staff believes that the rates proposed herein are the maximum rates that would be recommended for FY 2019-2020. At the public hearing, the EMID Board would have the option of reducing rates lower than what was noticed to rate payers under Proposition 218 if budgetary estimates change, but it could not increase the rates above what was noticed.

Attachment:

- Attachment 1 - Bartle Wells Associates Water and Wastewater Rate Study Update Results



DATE: March 6th, 2019
TO: City of Foster City/Estero Municipal Improvement District
FROM: Bartle Wells Associates
SUBJECT: Water and Wastewater Rate Study Update Results

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Introduction and Background

The Estero Municipal Improvement District (District) engaged Bartle Wells Associates (BWA) to develop 10-year financial projections for the District's Water and Wastewater Enterprises and to recommend water and wastewater rate increases for the next five-year period. BWA last conducted formal rate studies in 2018, which resulted in a one-year rate approval for water rates for FY 2019 and five-year rate approval for wastewater rates.

Current and projected water service rates are in the lower range compared to other agencies on the Peninsula and wastewater service rates are in the low to mid-range compared to other agencies on the Peninsula. The District water and wastewater enterprises are currently debt free, however, the District faces unique infrastructure funding challenges in each enterprise.

Water

The primary driver for the proposed rate increases are higher than expected system water losses over past years, which has contributed to the depletion of the operating fund below target levels (90 days of operating expenses). Additionally, the District faces costs associated with the \$4.8 billion Water System Improvement Project (WSIP) to upgrade the Hetch Hetchy Water System, resulting in significant additional wholesale SFPUC rate increases beginning in FY 2023. The WSIP is over 96% complete, however SFPUC operating costs and debt service are projected to increase over the next five years.

The San Francisco Public Utilities Commission (SFPUC), the sole source of water supply for the District, released updated projections for their wholesale rate for the next year (FY

2020). SFPUC is projecting the current rate of \$4.10 in FY 2019 per hundred cubic feet (ccf) will remain the same in FY 2020.

SFPUC rates are projected to be held level at \$4.10/ccf for the next three years despite escalating SFPUC debt service and operating costs through use of a balancing account. The balancing account was built up from SFPUC wholesale water sales exceeding projections used in rate setting. SFPUC rates are projected to increase by 15% in FY 2022 and 8% in FY 2023. BWA proposed water rates are designed to phase in District rate increases over time to avoid sharp increases.

The District will also continue to make annual payments, projected to be \$820,776 in FY 2020, to the Bay Area Water Supply and Conservation Agency (BAWSCA) for the WSIP capital improvements that were funded through the issuance of bonds. The water enterprise's single largest cost is water purchases from SFPUC.

BWA proposed water rates are designed to replenish the operating fund above target levels by FY 2021, which was depleted due to higher than expected water losses. Current and proposed water rates are based on 11.5% water loss. That is, 88.5% of the water EMID purchases is sold to retail customers. Actual water purchase and sales data from FY 2017 revealed realized water losses of approximately 11.5%, whereas prior estimates were between 2% and 7%. This water loss is primarily due to an SFPUC meter which had been under-reporting. The SFPUC meter was of age and was replaced in 2016. The water loss is within the range that other municipalities experience.

To replenish the operating reserve and phase in volumetric rates as wholesale costs are projected to increase, BWA recommends the District implement an approximately 3% volumetric rate increase in FY 2020. Additionally, meter charges are recommended to be increased by about 8%.

Detailed water rate calculations are shown in APPENDIX C.

Wastewater

The District has entered into a Joint Powers Agreement with the City of San Mateo where the District receives treatment of its wastewater via the San Mateo Wastewater Treatment Plant (WWTP). The District is responsible for its share of operating and maintenance costs that San Mateo (as the lead agency and the contracting party) incurs treating the District's wastewater, as well as approximately 24.5% of the capital improvement costs incurred as part of the Clean Water Program (CWP), a 10-year comprehensive capital improvement project initiated in 2014 at the WWTP. The Cities of San Mateo and Foster City (District) are expanding the jointly owned WWTP at an estimated cost of about \$586 million of which the District is responsible for approximately \$157.5 million. This is in addition to local capital projects for the District's own sewage collection system. The wastewater enterprise intends to fund collection system capital expenditures through annual transfers of \$1,600,000 from the operating fund to the capital improvement fund.

In June 2017, to fund the anticipated costs of the WWTP CWP improvements, the District Board approved a 5-year wastewater rate increase of 14.25% per year from FY 2018 through FY 2022. Based on updated cash flow estimates, BWA recommended that the District extend the 14.25% rate increase one additional year to FY 2023 and approve a rolling 5-year wastewater rate increase schedule of 14.25% per year from FY 2019 to FY 2023 to ensure that the District remain eligible to receive debt proceeds. Rates must be in place to ensure adequate funds to cover debt service. BWA's 2019 analysis shows that the District has adequate financing capacity for projected debt issuances in the next several years. Additional rate increases of 10% in FY 2024 and 2% each year thereafter are projected, however BWA recommends reevaluating outer year increases over the next several years as financing terms and capital costs materialize.

Detailed wastewater rate calculations are shown in APPENDIX E.

Rate Surveys

BWA conducted a water and wastewater rate survey of neighboring communities along the San Francisco Peninsula. The results of the water survey are summarized in APPENDIX B and the results of the wastewater survey are summarized in APPENDIX D.

The survey found that the District's water rates are among the lowest in the region. The average monthly water bill for the region (based on 8 ccf of monthly usage) is \$77.56 per month and the District's current average monthly residential water bill is \$64.89 per month, or about 16% less than the current average of neighboring communities.

The District's wastewater rates are also low amongst its comparator agencies. The average monthly bill among the comparator agencies is \$95.09 and the District's current monthly residential wastewater bills for FY 2018 is \$74.57 per month, or about 22% less than the average of the neighboring communities.

Water Enterprise Fund

The District currently provides water service to a population of approximately 37,687. Most of the District's customers are residential. Table 1 shows the approximately 8,166 accounts/meters that allow for water service and fire protection service.

Table 1
City of Foster City / Estero Municipal Improvement District
Water Meters By Size

Data as of: 01/17/19

Meter Size	Accounts	Meter Ratio ^{1,2}	Est. Meter Equivalents ³
Water Service			
3/4"	6,777	1.00	6,777
1"	433	1.67	722
1-1/2"	171	4.00	684
2"	387	5.33	2,064
3"	86	11.67	1,003
4"	52	21.00	1,092
6"	28	46.67	1,307
8" or greater	18	80.00	1,440
Subtotal	7,952		15,089
Private Fire Protection Service			
3/4"	0	1.40	0
1"	7	1.40	10
1-1/2"	3	1.40	4
2"	0	1.87	0
3"	2	4.08	8
4"	27	7.35	198
6"	100	16.33	1,633
8" or greater	75	28.00	2,100
Subtotal	214		3,954
Total	8,166		19,043

Source: Foster City/Estero Municipal Improvement District water use records

[1] The meter ratios shall be based on meter size in compliance with ratios established by the American Water Works Association (AWWA) Sizing Water Service Lines and Meters M22, Second Edition, 2004 (M22 Manual)

[2] Private fire protection service ratio based on the fire service line; Resolution No. 2715

[3] Equals the number of accounts multiplied by the meter ratio for each meter size.

Table 2 illustrates the current reserves that the District can draw down in case of emergency or to smooth any “rate shocks” to its customers. In recent years reserves were used as a buffer due to unexpected increases in system water losses.

BWA projected rate increases to meet the District’s 90-day operating fund reserve target by FY 2021 (estimated to be \$4.07 million in FY 2021.)

Table 2
 City of Foster City / Estero Municipal Improvement District
 Water Enterprise Operating Reserves

Fund Reserve Component	July 1, 2018
	Reserve Balance
Reserved for Maintenance & Operation (401)	<u>\$873,267</u>
Total	\$873,267

Note: Rate model only includes fund reserve components available to fund ongoing operating expenditures.

Source: City of Foster City/Estero Municipal Improvement District Staff

The wholesale water purchase rates that SFPUC is projecting through FY 2025 are shown graphically in CHART A. The SFPUC also collects the BAWSCA Bond Surcharge from the District. The chart incorporates the BAWSCA Bond Surcharge estimated at \$0.40 cents per ccf. The SFPUC rates and BAWSCA surcharge combined are projected to remain flat from FY 2018 to FY 2022 at \$4.50/ccf (\$4.10 SFPUC + \$.40 BAWSCA). The SFPUC rate is projected to increase by almost 25% from FY 2023 to FY 2024.

CHART A

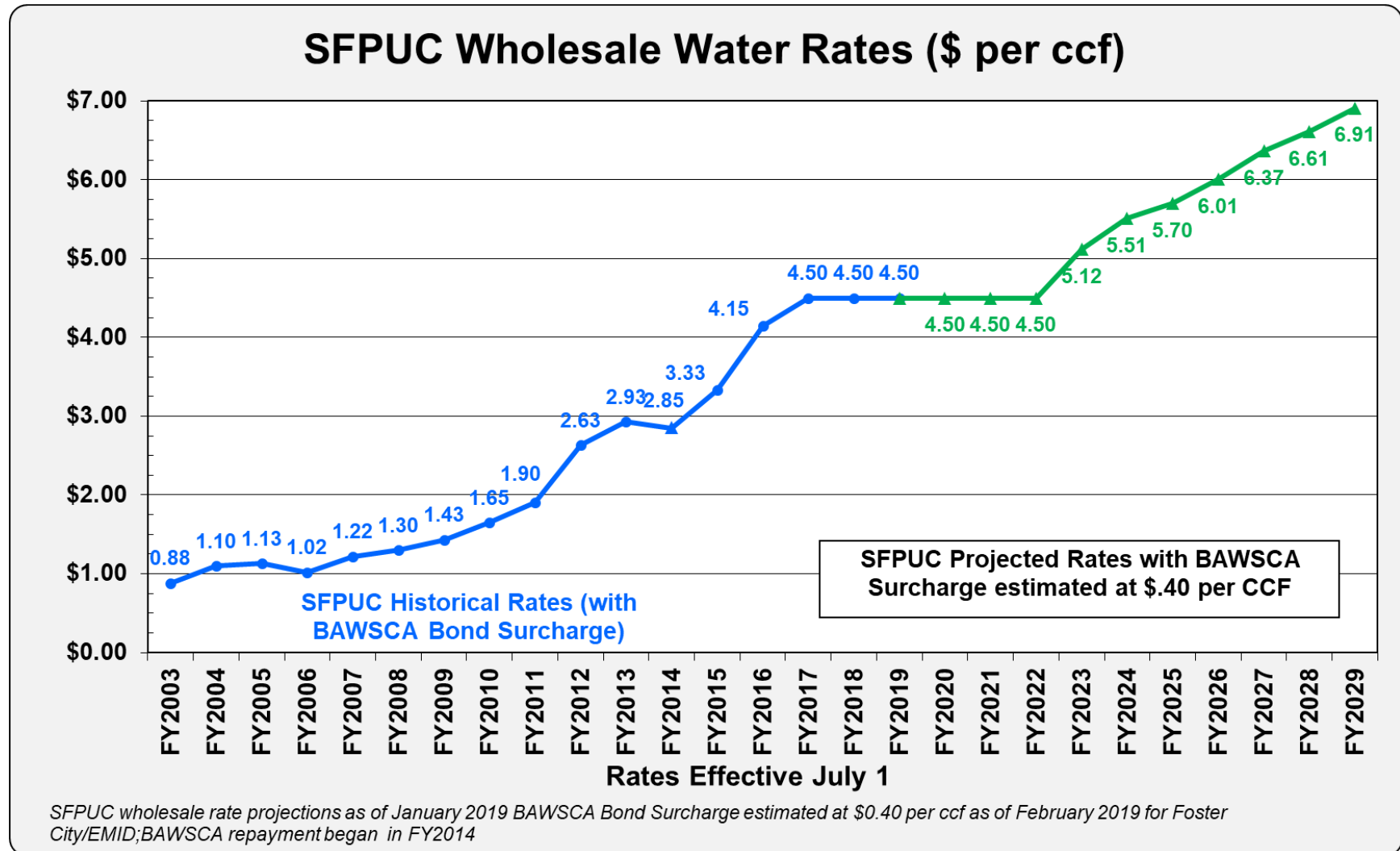


Table 3 summarizes the District’s projected operating expenditures which are anticipated to increase over the next five years by about 25%.

Table 3
 City of Foster City / Estero Municipal Improvement District
 Water Enterprise O&M Projection

Expenditures	Five Year Projection						Annual % Increase [1]
	FY2019 Projected	FY2020	FY2021	FY2022	FY2023	FY2024	
Employee Services	1,960,700	2,230,800	2,320,032	2,412,833	2,509,347	2,609,720	4.0%
Internal Services - Others	732,011	719,669	737,661	756,102	775,005	794,380	2.5%
Internal Services - ERF	316,582	456,701	468,119	479,821	491,817	504,112	2.5%
Services & Supplies	570,550	560,550	574,564	588,928	603,651	618,742	2.5%
SFPUC Water Purchases	8,883,644	8,929,000	8,974,000	9,019,000	10,423,000	11,334,000	varies
BAWSCA Bond Repayment	869,496	820,776	870,000	870,000	870,000	870,000	
Reallocation	946,168	1,064,229	1,090,835	1,118,106	1,146,058	1,174,710	2.5%
Water Sustainability	200,000	200,000	200,000	200,000	200,000	200,000	
Capital Outlay	25,000	-	-	-	-	-	2.5%
TOTAL O&M Expenditures	14,504,151	14,981,725	15,235,210	15,444,790	17,018,878	18,105,665	
		3.3%	1.7%	1.4%	10.2%	6.4%	

[1] Based on City/District Staff direction

Table 4 summarizes the current water rates. The District has variable expenditures which are expenditures that are impacted by the amount of water its customers consume. These costs must be recouped via its volumetric water charge, \$5.54 per ccf in FY 2019. Likewise the District's meter charges recover fixed expenditures, expenditures that are fixed regardless of amount of water that is consumed, \$21.45 for a ¾" meter in FY 2019.

The District has a two-tiered model for its residential customers where higher levels of water consumption are subject to higher water rates based on a proportionate share of conservation program costs. Commercial customers are charged a uniform rate, which includes commercial customer's proportionate share of conservation program costs.

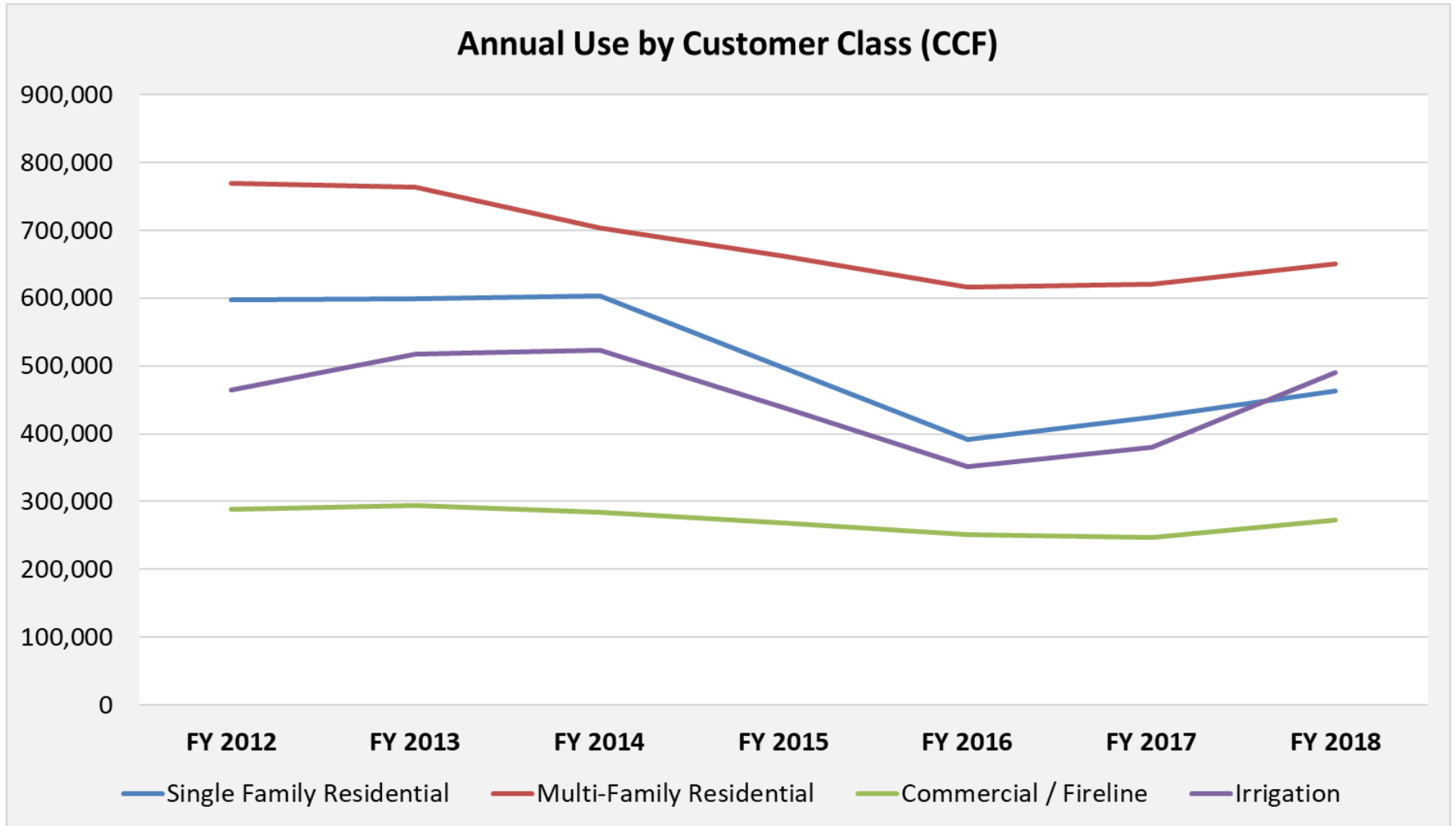
For its irrigation customers, the District has worked with John Whitcomb of Waterfluence to assign each irrigation customer a water budget. Any water consumed above the irrigation customers allotted amount is subject to a higher Tier 2 rate based on each customer's share of conservation program costs.

APPENDIX A shows District historical water use trends. Customer use has reversed declines due to drought and has bumped up from FY 2016 lows. BWA's proposed rates are designed to match volumetric expenses (such as water purchases) with volumetric revenue. The rate structure mitigates over or under collecting revenue due to fluctuations in water use.

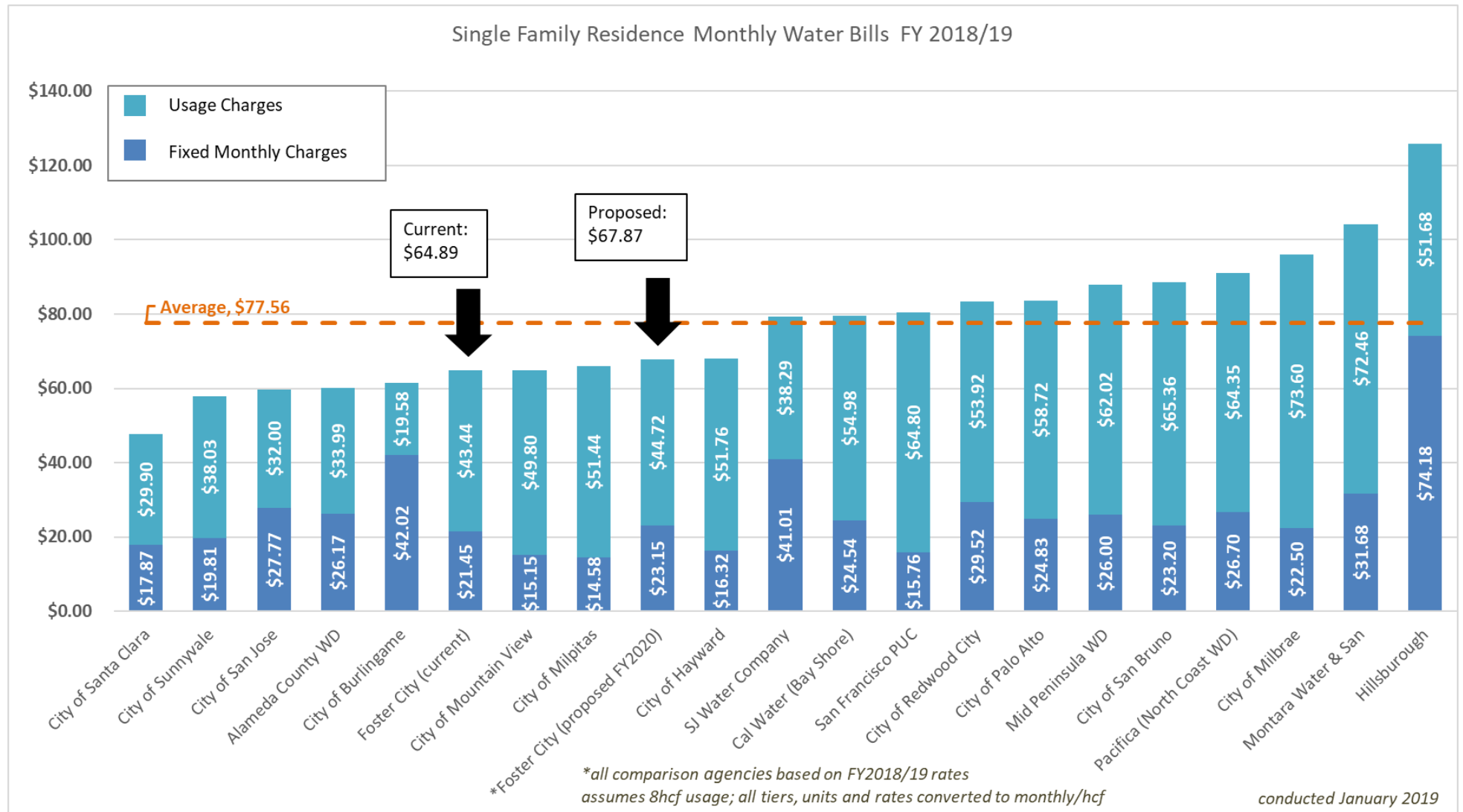
Table 4
 City of Foster City / Estero Municipal Improvement District
 Current Rates

Current Rates	2019
Fixed Meter Charge	
Monthly Meter Charge	
<u>Meter Size</u>	
3/4"	\$21.45
1"	\$35.75
1-1/2"	\$85.80
2"	\$114.40
3"	\$250.25
4"	\$450.45
6"	\$1,001.00
8" or greater	\$1,716.00
Bi-Monthly Water Consumption Tiers and Rates	
<u>Single Family Residential</u>	
Tier 1 0-20 per ccf	\$5.43
Tier 2 Over 20 ccf	\$6.10
<u>Multi-Family Residential</u>	
Tier 1 0-10 ccf per living unit	\$5.43
Tier 2 Over 10 ccf per living unit	\$6.10
<u>Irrigation Customers</u>	
Tier 1 <=100% of annual budget	\$5.43
Tier 2 >100% of annual budget	\$6.47
<u>Commercial and Fire Line</u>	
All usage	\$5.54
Monthly Private Fire Protection Charge	
<u>Meter Size</u>	
3/4"	\$30.03
1"	\$30.03
1-1/2"	\$30.03
2"	\$40.11
3"	\$87.52
4"	\$157.66
6"	\$350.28
8" or greater	\$600.60

APPENDIX A



APPENDIX B



APPENDIX C

Table 1
 City of Foster City / Estero Municipal Improvement District
 Water Enterprise Cash Flow Projection - Residential Two Tier Rate Structure Hybrid Model

Fiscal Year Ending June 30	Five Year Projection						Extended Year Projection				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Assumptions:											
Interest Earnings Rate	1.00%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Revenue Increase from Growth [1]		0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Fixed Charge	\$21.45	\$23.15	\$23.85	\$24.55	\$25.30	\$26.05	\$26.85	\$27.65	\$28.50	\$29.35	\$30.25
Fixed Rate Adjustment		7.9%	3.0%	2.9%	3.1%	3.0%	3.1%	3.0%	3.1%	3.0%	3.1%
SFR Variable Charge	\$5.43	\$5.59	\$5.77	\$5.95	\$6.12	\$6.32	\$6.54	\$6.82	\$7.23	\$7.49	\$7.83
Variable Rate Adjustment		2.9%	3.2%	3.1%	2.9%	3.3%	3.5%	4.3%	6.0%	3.6%	4.5%
Monthly Service Charge Single Family (8 ccf)	\$64.89	\$67.87	\$70.01	\$72.15	\$74.26	\$76.61	\$79.17	\$82.21	\$86.34	\$89.27	\$92.89
Rate Adjustment		4.6%	3.2%	3.1%	2.9%	3.2%	3.3%	3.8%	5.0%	3.4%	4.1%
Beginning Fund Balance	\$873,267	\$1,701,000	\$2,814,300	\$4,286,100	\$6,165,300	\$7,065,400	\$7,547,700	\$8,087,700	\$8,531,700	\$9,034,700	\$9,571,700
Revenues											
Water Sales & Service Charges											
Meter Charge Revenue Estimate	4,902,000	5,317,000	5,505,000	5,695,000	5,898,000	6,103,000	6,322,000	6,543,000	6,778,000	7,015,000	7,267,000
Volumetric Revenue Estimate	10,526,000	10,896,000	11,304,000	11,709,000	12,073,000	12,523,000	13,012,000	13,623,000	14,500,000	15,095,000	15,837,000
Connection Fees [1]	33,140	0	0	0	0	0	0	0	0	0	0
Interest Earnings - Operating Reserve [2]	15,000	26,000	42,000	64,000	92,000	106,000	113,000	121,000	128,000	136,000	144,000
Interest Earnings - Capital Improvement Fund [3]	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000	61,000
Other	0	0	0	0	0	0	0	0	0	0	0
Operating Revenues	15,537,140	16,300,000	16,912,000	17,529,000	18,124,000	18,793,000	19,508,000	20,348,000	21,467,000	22,307,000	23,309,000
Expenses											
Employee Services											
	1,960,700	2,230,800	2,320,032	2,412,833	2,509,347	2,609,720	2,714,000	2,823,000	2,936,000	3,053,000	3,175,000
Internal Services - Others											
	732,011	719,669	737,661	756,102	775,005	794,380	814,000	834,000	855,000	876,000	898,000
Internal Services - ERF											
	316,582	456,701	468,119	479,821	491,817	504,112	517,000	530,000	543,000	557,000	571,000
Services & Supplies											
	570,550	560,550	574,564	588,928	603,651	618,742	634,000	650,000	666,000	683,000	700,000
SFPUC Water Purchases											
	8,883,644	8,929,000	8,974,000	9,019,000	10,423,000	11,334,000	11,810,000	12,558,000	13,424,000	14,029,000	14,774,000
BAWSCA Bond Repayment											
	869,496	820,776	870,000	870,000	870,000	870,000	870,000	870,000	870,000	870,000	870,000
Reallocation											
	946,168	1,064,229	1,090,835	1,118,106	1,146,058	1,174,710	1,204,000	1,234,000	1,265,000	1,297,000	1,329,000
Capital Outlay											
	25,000	0	0	0	0	0	0	0	0	0	0
Operating Expenses	14,304,151	14,781,725	15,035,210	15,244,790	16,818,878	17,905,665	18,563,000	19,499,000	20,559,000	21,365,000	22,317,000
Operating Net Revenues	1,232,989	1,518,275	1,876,790	2,284,210	1,305,122	887,335	945,000	849,000	908,000	942,000	992,000
Water Sustainability Fund Transfer	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Capital Improvement Transfer [4]	205,000	205,000	205,000	205,000	205,000	205,000	205,000	205,000	205,000	205,000	205,000
Total Expenses	14,709,151	15,186,725	15,440,210	15,649,790	17,223,878	18,310,665	18,968,000	19,904,000	20,964,000	21,770,000	22,722,000
Revenues Less O&M Expenses	1,232,989	1,518,275	1,876,790	2,284,210	1,305,122	887,335	945,000	849,000	908,000	942,000	992,000
Revenues Less Total Expenses	827,989	1,113,275	1,471,790	1,879,210	900,122	482,335	540,000	444,000	503,000	537,000	587,000
Ending Fund Balance	1,701,256	2,814,275	4,286,090	6,165,310	7,065,422	7,547,735	8,087,700	8,531,700	9,034,700	9,571,700	10,158,700
Revenue Test: Annual Revenues > O&M Expenses											
Annual Revenues Less O&M Expenses	1,232,989	1,518,275	1,876,790	2,284,210	1,305,122	887,335	945,000	849,000	908,000	942,000	992,000
Pass/fail	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
Fund Reserve Test: Minimum Fund Balance > 25% O&M Expenses											
Year-end fund balance	1,701,256	2,814,275	4,286,090	6,165,310	7,065,422	7,547,735	8,087,700	8,531,700	9,034,700	9,571,700	10,158,700
25% operating expenses	3,530,000	3,640,000	3,710,000	3,760,000	4,150,000	4,420,000	4,580,000	4,810,000	5,070,000	5,270,000	5,500,000
# of Days O&M in Reserves	43	69	104	148	153	154	159	160	160	164	166
Pass/fail	FAIL	FAIL	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

[1] Estimated for planning purposes

[2] Calculated as 1% of the Beginning Fund Balance of the Water Revenue Fund

[3] Calculated as 1% of the Beginning Fund Balance of the Water Capital Improvement Project Fund

[4] Capital Improvements are funded through the Long-Term Capital Improvement Project Fund

Table 2
 City of Foster City / Estero Municipal Improvement District
 Water Rate Calculation - Two Tier Hybrid Model

Fiscal Year Ending June 30	Five Year Projection						Extended Year Projection				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Fixed Meter Charge Increase		8.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Fixed Revenues +/- 5% of Fixed Costs?		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Reserves % Above (Below) Reserve Target		77.3%	115.5%	164.0%	170.3%	170.8%	176.6%	177.4%	178.2%	181.6%	184.7%
Reserve Target Met?		NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Revenue Estimates											
Meter Charge Revenue	\$ 4,902,000	\$ 5,317,000	\$ 5,505,000	\$ 5,695,000	\$ 5,898,000	\$ 6,103,000	\$ 6,322,000	\$ 6,543,000	\$ 6,778,000	\$ 7,015,000	\$ 7,267,000
Other Fixed Revenue	\$ 109,140	\$ 87,000	\$ 103,000	\$ 125,000	\$ 153,000	\$ 167,000	\$ 174,000	\$ 182,000	\$ 189,000	\$ 197,000	\$ 205,000
Volumetric Revenue	\$10,526,000	\$ 10,887,000	\$ 11,309,000	\$ 11,709,000	\$ 12,061,000	\$ 12,532,000	\$ 13,008,000	\$ 13,619,000	\$ 14,499,000	\$ 15,109,000	\$ 15,836,000
Total Projected	\$15,537,140	\$16,291,000	\$16,917,000	\$17,529,000	\$18,112,000	\$18,802,000	\$19,504,000	\$20,344,000	\$21,466,000	\$22,321,000	\$23,308,000
Total Projected Revenue (Rounded '000's)	\$15,537,140	\$16,291,000	\$16,917,000	\$17,529,000	\$18,112,000	\$18,802,000	\$19,504,000	\$20,344,000	\$21,466,000	\$22,321,000	\$23,308,000
Revenue Allocation											
Fixed	32.3%	33.2%	33.2%	33.2%	33.4%	33.3%	33.3%	33.1%	32.5%	32.3%	32.1%
Variable	67.7%	66.8%	66.8%	66.8%	66.6%	66.7%	66.7%	66.9%	67.5%	67.7%	67.9%
Costs Estimates											
Fixed Costs [1]	\$4,756,011	\$5,236,949	\$5,396,210	\$5,560,790	\$5,730,878	\$5,906,665	\$6,088,000	\$6,276,000	\$6,470,000	\$6,671,000	\$7,078,000
Variable Costs [2]	\$9,953,140	\$9,949,776	\$10,044,000	\$10,089,000	\$11,493,000	\$12,404,000	\$12,880,000	\$13,628,000	\$14,494,000	\$15,099,000	\$15,844,000
Total Projected Costs	\$14,709,151	\$15,186,725	\$15,440,210	\$15,649,790	\$17,223,878	\$18,310,665	\$18,968,000	\$19,904,000	\$20,964,000	\$21,770,000	\$22,922,000
Net Revenue											
Fixed Charges	\$255,129	\$167,051	\$211,790	\$259,210	\$320,122	\$363,335	\$408,000	\$449,000	\$497,000	\$541,000	\$394,000
Volumetric Charges	\$572,860	\$937,224	\$1,265,000	\$1,620,000	\$568,000	\$128,000	\$128,000	-\$9,000	\$5,000	\$10,000	-\$8,000
Total	\$827,989	\$1,104,275	\$1,476,790	\$1,879,210	\$888,122	\$491,335	\$536,000	\$440,000	\$502,000	\$551,000	\$386,000
Cost Analysis											
Fixed	32.3%	34.5%	34.9%	35.5%	33.3%	32.3%	32.1%	31.5%	30.9%	30.6%	30.9%
Variable	67.7%	65.5%	65.1%	64.5%	66.7%	67.7%	67.9%	68.5%	69.1%	69.4%	69.1%
Meter Charge Calculation											
Monthly charge per meter equivalent (Rounded to nearest \$0.05)	\$ 21.45	\$ 23.15	\$ 23.85	\$ 24.55	\$ 25.30	\$ 26.05	\$ 26.85	\$ 27.65	\$ 28.50	\$ 29.35	\$ 30.25
Annual charge per meter equivalent	\$ 257.40	\$ 277.80	\$ 286.20	\$ 294.60	\$ 303.60	\$ 312.60	\$ 322.20	\$ 331.80	\$ 342.00	\$ 352.20	\$ 363.00
Meter equivalents [3]	19,043	19,138	19,234	19,330	19,427	19,524	19,622	19,720	19,819	19,918	20,018
Meter Charge Revenue Estimate	\$ 4,902,000	\$ 5,317,000	\$ 5,505,000	\$ 5,695,000	\$ 5,898,000	\$ 6,103,000	\$ 6,322,000	\$ 6,543,000	\$ 6,778,000	\$ 7,015,000	\$ 7,267,000
Volumetric Rate Calculation											
EMID Proposed Uniform Rate	\$5.54	\$ 5.70	\$ 5.89	\$ 6.07	\$ 6.22	\$ 6.43	\$ 6.64	\$ 6.92	\$ 7.33	\$ 7.60	\$ 7.93
Projected annual water sales (ccf) [4]	1,900,000	1,910,000	1,920,000	1,929,000	1,939,000	1,949,000	1,959,000	1,968,000	1,978,000	1,988,000	1,997,000
Variable revenue estimate	\$10,526,000	\$10,887,000	\$11,309,000	\$11,709,000	\$12,061,000	\$12,532,000	\$13,008,000	\$13,619,000	\$14,499,000	\$15,109,000	\$15,836,000
% Spread between EMID and SFPUC											
Surcharge	35.1%	39.0%	43.7%	48.0%	51.8%	55.8%	59.9%	64.1%	68.4%	72.8%	77.3%
SFPUC PROJECTED RATES	\$4.10	\$4.10	\$4.10	\$4.10	\$4.72	\$5.11	\$5.30	\$5.61	\$5.97	\$6.21	\$6.51
Increase (Decrease) %		0.0%	0.0%	0.0%	15.1%	8.3%	3.7%	5.8%	6.4%	4.0%	4.8%
BAWSCA Surcharge	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40	\$0.40
SFPUC Rate + BAWSCA Surcharge	\$4.50	\$4.50	\$4.50	\$4.50	\$5.12	\$5.51	\$5.70	\$6.01	\$6.37	\$6.61	\$6.91
EMID Fixed Meter Charge Increase (Decrease)		7.9%	3.0%	2.9%	3.1%	3.0%	3.1%	3.0%	3.1%	3.0%	3.1%
EMID Volumetric Rate Increase (Decrease)		2.9%	3.3%	3.1%	2.5%	3.4%	3.3%	4.2%	5.9%	3.7%	4.3%

Note:
 [1] Includes: Employee Services, Internal Services - Other, Internal Services - ERF, Services & Supplies, Reallocation, Capital Outlay, Capital Improvement Fund Transfers, and net revenues for the operating fund.
 [2] Includes: SFPUC Water Purchases, BAWSCA Bond Repayment, and Water Sustainability Fund Transfers.
 [3] 0.5% growth estimated for planning purposes
 [4] Includes 11.5% water loss factor

Table 3
 City of Foster City / Estero Municipal Improvement District
 Proposed Water Rates - Two Tier Hybrid Model

TWO TIER HYBRID MODEL

Recommended Rates	Current Rates	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029
Monthly Meter Charge											
3/4"	\$21.45	\$23.15	\$23.85	\$24.55	\$25.30	\$26.05	\$26.85	\$27.65	\$28.50	\$29.35	\$30.25
1"	35.75	38.58	39.75	40.92	42.17	43.42	44.75	46.08	47.50	48.92	50.42
1-1/2"	85.80	92.60	95.40	98.20	101.20	104.20	107.40	110.60	114.00	117.40	121.00
2"	114.40	123.47	127.20	130.93	134.93	138.93	143.20	147.47	152.00	156.53	161.33
3"	250.25	270.08	278.25	286.42	295.17	303.92	313.25	322.58	332.50	342.42	352.92
4"	450.45	486.15	500.85	515.55	531.30	547.05	563.85	580.65	598.50	616.35	635.25
6"	1,001.00	1,080.33	1,113.00	1,145.67	1,180.67	1,215.67	1,253.00	1,290.33	1,330.00	1,369.67	1,411.67
8" or greater	1,716.00	1,852.00	1,908.00	1,964.00	2,024.00	2,084.00	2,148.00	2,212.00	2,280.00	2,348.00	2,420.00
Conservation-Based Water Rate Model (based on bi-monthly allotments)											
<i>Single Family Residential</i>											
Tier 1 0-20 per ccf	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 Over 20 ccf	6.10	6.20	6.39	6.58	6.69	6.87	7.08	7.36	7.76	8.03	8.36
<i>Multi-Family Residential (per living unit)</i>											
Tier 1 0-10 ccf per living unit	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 Over 10 ccf per living unit	6.10	6.20	6.39	6.58	6.69	6.87	7.08	7.36	7.76	8.03	8.36
<i>Irrigation Customers</i>											
Tier 1 <=100% of annual budget	5.43	5.59	5.77	5.95	6.12	6.32	6.54	6.82	7.23	7.49	7.83
Tier 2 >100% of annual budget	6.47	6.17	6.36	6.56	6.66	6.85	7.06	7.34	7.74	8.00	8.34
<i>Commercial and Fire Line Customers</i>											
Base Consumption Rate	5.54	5.70	5.89	6.07	6.22	6.43	6.64	6.92	7.33	7.60	7.93
Monthly Fire Meter Charge											
3/4"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35
1"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35
1-1/2"	30.03	32.41	33.39	34.37	35.42	36.47	37.59	38.71	39.90	41.09	42.35
2"	40.11	43.29	44.60	45.91	47.31	48.71	50.21	51.71	53.30	54.88	56.57
3"	87.52	94.45	97.31	100.16	103.22	106.28	109.55	112.81	116.28	119.75	123.42
4"	157.66	170.15	175.30	180.44	185.96	191.47	197.35	203.23	209.48	215.72	222.34
6"	350.28	378.04	389.47	400.90	413.15	425.40	438.46	451.52	465.41	479.29	493.98
8" or greater	600.60	648.20	667.80	687.40	708.40	729.40	751.80	774.20	798.00	821.80	847.00
(Minimum charge is equivalent to 1-1/2" meter charge)											

Table 4
 Foster City / Estero Municipal Improvement District
 Projected Water Rate Impacts

		Current	FY2020
		Rates	Two Tier Hybrid Model
Monthly meter charge		\$21.45	\$23.15
% Change			7.9%
Single Family Residential			
Bi-Monthly Tiers			
Tier 1: 0 to 20 ccf		\$5.43	\$5.59
Tier 2: over 20 ccf		\$6.10	\$6.20
<u>Water Use Level</u>	<u>Monthly Use (ccf)</u>		<u>Monthly Bill</u>
Low User	5	\$48.60	\$51.10
<i>\$ Increase</i>			2.50
<i>% Increase</i>			5.1%
Average User	8	\$64.89	\$67.87
<i>\$ Increase</i>			2.98
<i>% Increase</i>			4.6%
High User	10	\$75.75	\$79.05
<i>\$ Increase</i>			3.30
<i>% Increase</i>			4.4%
Very High User	20	\$130.05	\$141.05
<i>\$ Increase</i>			11.00
<i>% Increase</i>			8.5%
Excessive User	50	\$313.05	\$327.05
<i>\$ Increase</i>			14.00
<i>% Increase</i>			4.5%

Table 5
 Foster City / Estero Municipal Improvement District
 Projected Water Rate Impacts

Projected Water Bills	Current	Fiscal Year Ending June 30,					Extended Year Projection				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029

Two Tier Hybrid Model

Single Family Residential Monthly Rate	\$64.89	\$67.87	\$70.01	\$72.15	\$74.26	\$76.61	\$79.17	\$82.21	\$86.34	\$89.27	\$92.89
\$ Increase		2.98	2.14	2.14	2.11	2.35	2.56	3.04	4.13	2.93	3.62
% Increase		4.6%	3.2%	3.1%	2.9%	3.2%	3.3%	3.8%	5.0%	3.4%	4.1%

Based on Single Family Residential Use of 8 ccf

Wastewater Enterprise Fund

There are approximately 13,751 wastewater accounts serviced by the District. The majority of accounts are residential with the remainder consisting of commercial and institutional accounts as shown in Table 1.

Table 1
Foster City / Estero Municipal Improvement District
Wastewater Service Accounts

Data as of: 01/29/19

Customer Class	Number of Accounts
<u>Residential</u>	
Single Family	4,533
Townhouse/Duplex	2,222
Apartment/Condominium (Pools w/ Restrooms)	<u>6,732</u>
Residential Total	13,487
<u>Commercial</u>	
Restaurants	51
Commercial/Hotels/Offices/Industrial/Laundromats	<u>179</u>
Commercial Total	230
<u>Institutional</u>	
Institutional/Schools	<u>34</u>
Insitutional Total	34
Total	13,751

Source: Cognos Sewer Customer Count Report

The District has approximately \$8,492,644 in its wastewater maintenance and operations reserve fund as shown in Table 2. The District's minimum operating reserve target is 25% of operating and maintenance expenses (est. to be \$2 million).

Table 2
 Foster City / Estero Municipal Improvement District
 Wastewater Operating Fund Reserves

Fund Reserve Component	July 1, 2018
	Balance
Reserved for Maintenance & Operation	<u>\$8,492,644</u>
Total	\$8,492,644

Note: Rate model only includes fund reserve components available to fund ongoing operating and capital expenditures.

Source: City of Foster City/Estero Municipal Improvement District Staff

Table 3 summarizes the current wastewater service rates.

Table 3
 Foster City / Estero Municipal Improvement District
 Current Wastewater Rates

Fiscal Year Ending June 30	Current 2019
Residential (flat monthly rate)	
Single Family	\$74.57
Townhouse/Duplex	62.64
Apartment/Condominium (Pools w/ Restrooms)	62.64
Commercial (rate per ccf of water use)	
Restaurants	13.55
Commercial/Hotels/Offices/Industrial/Laundromats	4.76
Institutional (rate per ccf of water use)	
Institutional/Schools	3.13

Table 4 summarizes the operating expenditures of the enterprise. Costs are expected to remain relatively stable over the next five years.

Table 4
 City of Foster City / Estero Municipal Improvement District
 Wastewater Enterprise O&M Projection

Expenditures		Five Year Projection					Annual % Increase [1]
	<u>FY2019 Approved</u>	<u>FY2020</u>	<u>FY2021</u>	<u>FY2022</u>	<u>FY2023</u>	<u>FY2024</u>	
Employee Services	\$2,082,625	\$2,325,925	\$2,418,962	\$2,515,720	\$2,616,349	\$2,721,003	4.0%
Internal Services (from City)	815,340	825,032	845,658	866,799	888,469	910,681	2.5%
Internal Services -ERF	261,950	279,163	286,142	293,296	300,628	308,144	2.5%
Services & Supplies	799,650	545,250	558,881	572,853	587,174	601,853	2.5%
EMID Share WWTP O&M	2,500,000	2,900,000	3,045,000	3,197,250	3,357,113	3,524,969	5.0%
EMID Share WWTP Capital Improvements	1,000,000	0	0	0	0	0	0.0%
Reallocation	<u>739,510</u>	<u>806,442</u>	<u>826,603</u>	<u>847,268</u>	<u>868,450</u>	<u>890,161</u>	2.5%
TOTAL O&M Expenditures	\$8,199,075	\$7,681,812	\$7,981,246	\$8,293,186	\$8,618,183	\$8,956,811	
		-6.3%	3.9%	3.9%	3.9%	3.9%	

[1] Based on historical results

Wastewater Financial Projections

Wastewater projections are shown in APPENDIX E.

San Mateo-Foster City Public Financing Authority:

Projections anticipate a \$137.4 million of debt issues between FY 2019 and FY 2023 (\$64.9 MM of WIFIA proceeds and \$72.5 MM of bonds) to fund WWTP expansion costs and to refund interfund loans totaling \$17.9 million. BWA affirms the annual overall rate increases of 14.25% on all wastewater rates for FY 2019 to FY 2023 are adequate to secure projected debt issuances over the next several years. Additional increases of 10% in FY 2024 and 2% thereafter are projected to meet fund balance and debt service coverage requirements in later years.

Table 5 shows debt service estimates for the District's share of WWTP costs. Annual debt service for the combined total debt issuances is estimated to amount to \$6.6 MM by FY 2026.

Table 5

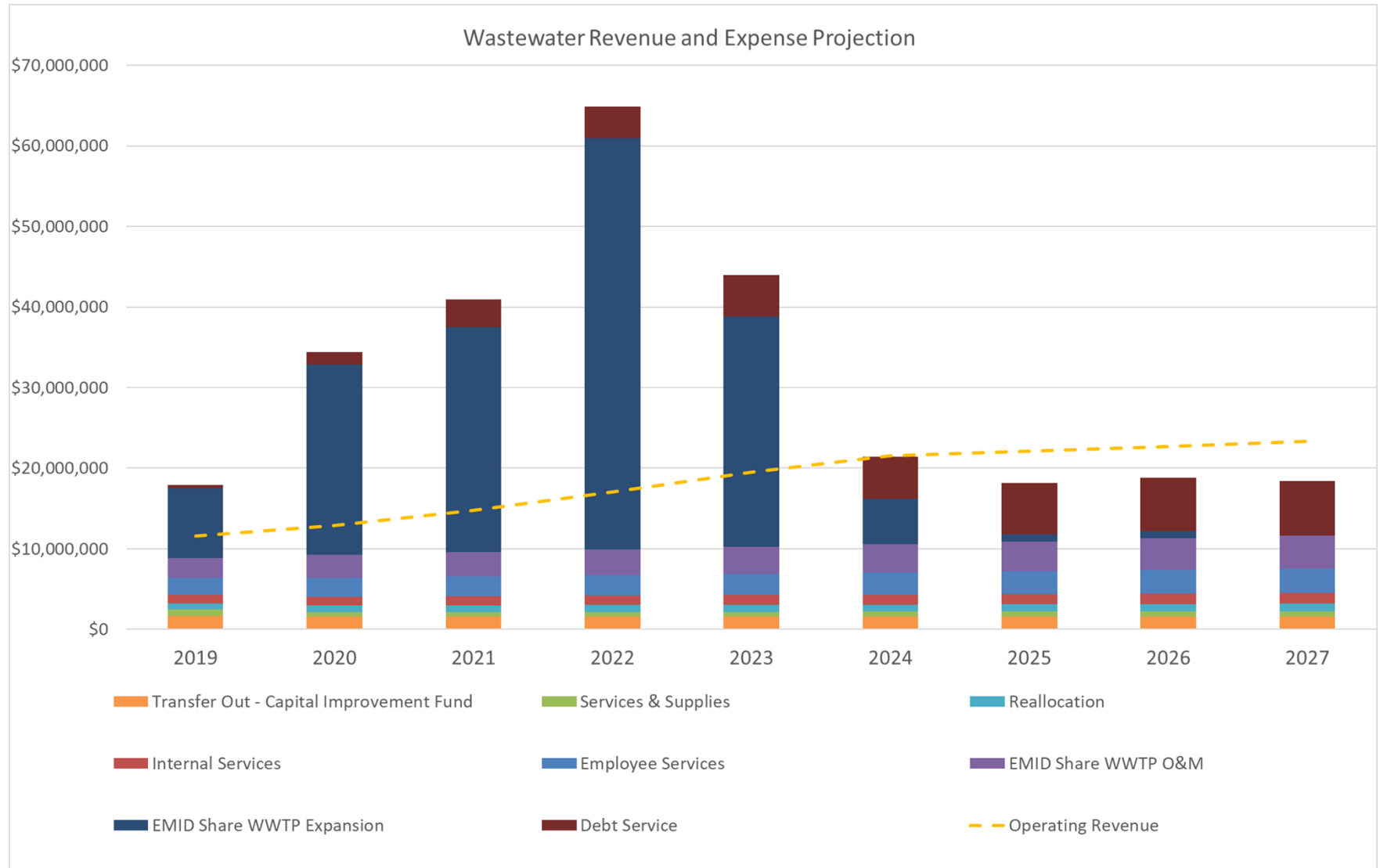
City of Foster City / Estero Municipal Improvement District
Debt Service Estimates

<u>Sources</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>Total</u>
WIFIA Proceeds	0	0	25,393,430	39,468,435	0	0	0	0	64,861,865
GF Loan in FY 18/19 (assumes GF Loan = 75% of FY 18/19 CWP cash outlay)	4,098,411	0	0	0	0	0	0	0	4,098,411
Collection Reserve	10,211,465	0	1,050,000	1,120,000	5,400,000	0	300,000	1,100,000	19,181,465
Bonds Sold	13,422,078	21,284,389	5,796,468	8,054,186	23,954,268	0	0	0	72,511,389
Cash	6,727,800	1,888,993	(3,540,245)	3,307,858	4,465,695	5,505,573	1,700,302	1,744,443	21,800,419
Total Sources	34,459,754	23,173,382	28,699,653	51,950,479	33,819,963	5,505,573	2,000,302	2,844,443	182,453,549
<u>Uses</u>									
Repay GF Loan (Est balance thru Q2 + interest thru 5/31/19)	17,873,591	0	0	0	0	0	0	0	17,873,591
WWTP Project	7,658,753	23,563,382	27,909,653	51,090,478	28,569,963	5,655,573	850,302	894,443	146,192,547
Collection System Projects	10,211,465	0	1,050,000	1,120,000	5,400,000	0	1,300,000	2,100,000	21,181,465
Financing Expenses	367,922	0	118,532	165,814	480,732	0	0	0	1,133,000
Total Uses	36,111,731	23,563,382	29,078,185	52,376,292	34,450,695	5,655,573	2,150,302	2,994,443	186,380,603

Source: Clean Water Financing Strategy 3.3.2019

Projected Debt Service	1,597,375	3,326,032	3,756,550	4,678,762	5,255,340	6,429,260	6,613,758	31,657,077
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CHART B



Wastewater Cost of Service Analysis

Bartle Wells performed a Wastewater Cost of Service Analysis to determine equitable cost allocation to the various user classes. BWA recommends continuing the practice of placing commercial customers into three wastewater strength categories, (low, medium and high) based on the State Water Resources Control Board (SWRCB) Wastewater Revenue Program Guidelines. Low strength wastewater (Class A) customers include banks, laundromats, retail stores, schools, churches and others as shown in Table 6.

Medium strength wastewater (Class B) customers have wastewater strength factors that are assumed to be similar to residential wastewater strength factors. They include typical commercial activities such as libraries, spas, nail salons, gas stations and bars.

High strength wastewater (Class C) customers primarily include food-related businesses such as restaurants, bakeries, dairies, wineries, catering, butcher shops and fish markets.

Table 6
City of Foster City/Estero Municipal Improvement District
Strength Classifications into Low, Medium/Domestic, and High Strength Dischargers

Low Strength

Banks & Financial Institutions
Barber Shops/Hair Salons (hair cutting only)
Post Offices/Government
Retail Stores
Libraries
Schools
Churches, Halls & Lodges

Medium/Commercial/ Domestic Strength

Residential - All
Appliance Repair
Beauty Shops (hair cutting w/additional treatments)
Dry Cleaners
Nail Salons
Pet Groomers
Commercial Laundromats
Bars & Taverns
Tasting Rooms
Hospitals - General, Convalescent & Veterinarian

Hotels, Motels, B&Bs, and Vacation Rentals
Offices - Business and Professional
Offices - Medical/Dental
Pools with Restrooms (Clubhouse)
Theaters
Warehouses
Car Washes
High Tech Medical Manufacturing
Light Manufacturing/Industrial
Gym or Health Club
Machine Shops
Service Stations, Garages, Auto Repair Shops
Mini Marts - W/O Dish Washer or Garbage Disposal
Mini Mart with Gas Pumps - W/O Dish Washer or Garbage Disposal
Spa with Various Beauty Treatments
Parking Garages

High Strength

Restaurants
Coffee Shops
Ice Cream Parlors
Catering
Eatery
Bakeries
Butcher Shops
Fish Market/Shop
Markets - with Dish Washer or Garbage Disposal
Markets - with Bakeries or Butcher Shops
Mini Marts - with Dish Washer or Garbage Disposal
Wineries
Market
Dairies (milk producers, yogurt, ice cream maker)
Specialty Foods Manufacturing (e.g., cheese or olive oil maker)

Note: Wastewater users who have Fats, Oils, and Grease (FOG) waste will be put into the High Strength user category

Table 7 summarizes the assumed wastewater strength factors for the low, medium and high strength groups that are based on typical strengths provided in the SWRCB’s Revenue Program Guidelines. The strength factor for medium strength customers is equivalent to residential or “domestic” strength, of 1.00. The strength factor for low strength is calculated at 0.66 and for high strength is calculated at 2.85 based on the SWRCB guidelines.

Table 7
 City of Foster City/Estero Municipal Improvement District
 Assumed Wastewater Strength Factors

Strength Class	LOW	LOW-MEDIUM	MEDIUM	HIGH
Examples:	Institutional Bank	Townhouse, Duplex, Apartment, Condo	Residential Offices	Restaurant Bakery
Flow (gpd)	200	168	200	200
BOD ¹ (mg/l)	130	240	240	1000
TSS ² (mg/l)	100	240	240	800
Strength Factor	0.66	0.84	1.00	2.85
Strength Factor Formula	SF=(Flow(gpd)/200)*(0.34+(0.33*BOD(mg/l)/240)+(0.33*TSS(mg/l)/240))			

WW flows and strengths based on State Water Resources Control Board's Revenue Program Guidelines

1 "BOD" stands for Biochemical Oxygen Demand

2 "TSS" stands for Total Suspended Solids

Table 8 summarizes the mass-balance analysis for the City's wastewater system and calculates the wastewater rates for each customer class. Single family residences are assumed to have an average daily (dry weather) flow of 200 gallons per day (gpd).

Based on residential occupancy data provided by the City of Foster City, single family residences are estimated to have an average of 2.67 residents per household and multi-family residences are estimated to have an average of 2.25 residents per household (84% of a single family household).

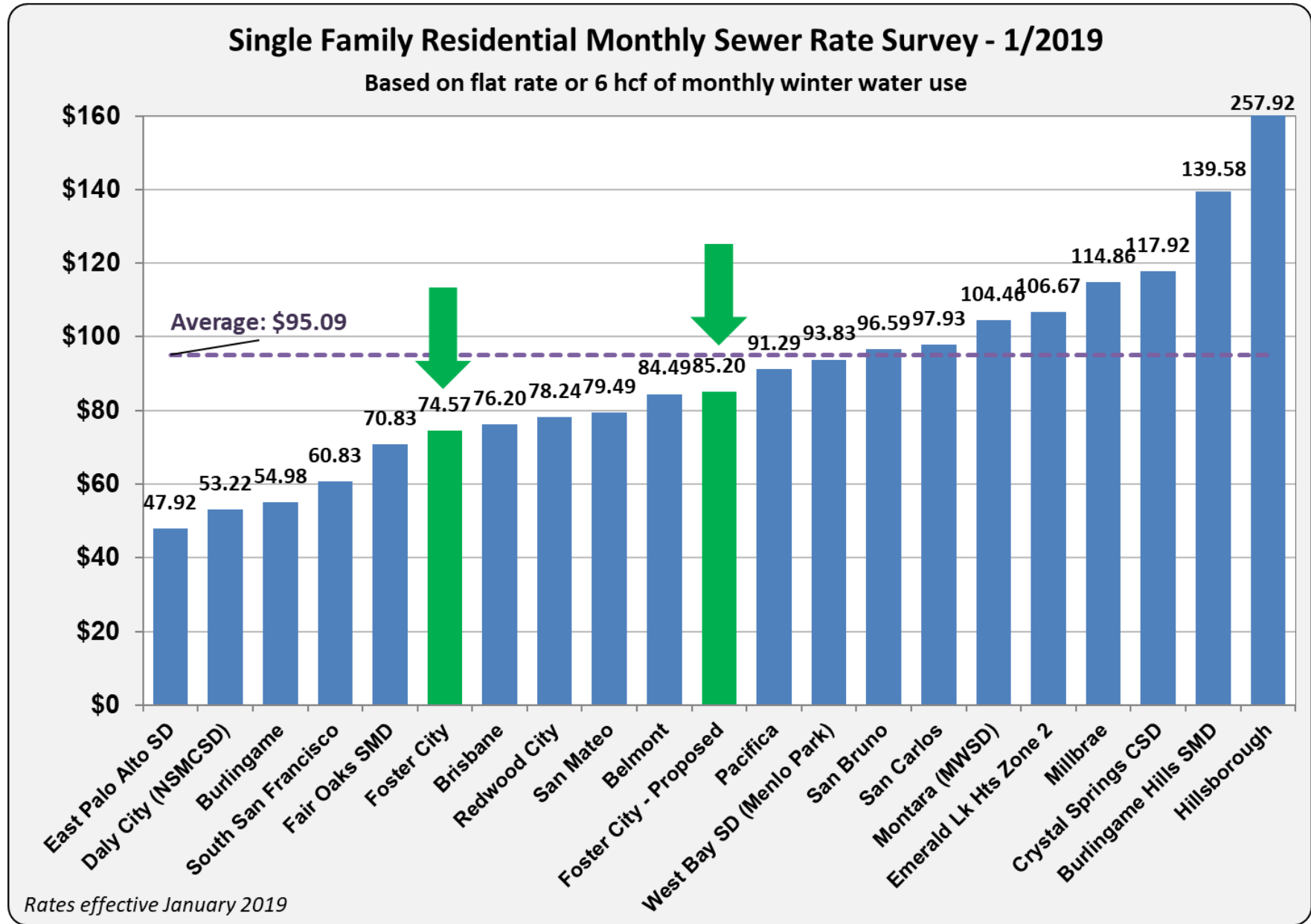
Multi-family dwellings are billed based on an estimated flow of 168 gpd or 0.84 times the single family flow. As a check, the mass balance in Table 8 compares the total calculated and measured daily wastewater flows for Foster City (average dry weather flow).

The results agree well with the estimated daily flow at 2.63 million gallons per day (mgd) and the measured flow at 2.37 mgd.

Table 8
 City of Foster City/Estero Municipal Improvement District
 Summary of Wastewater Users by Customer Class

Customer Class	EDUs ¹		ADWF Flow (gal/day)	FY 2019 Estimate EDU x Flow ADWF Flow (gal/day)	BOD ³ (mg/l)	TSS ⁴ (mg/l)	Calculated Current Rate
Residential							
Single Family Residential	4,533		200	906,600	240	240	74.57
Townhouse/Duplex	2,222		168	373,296	240	240	62.64
Apartment/Condos	6,732		168	1,130,976	240	240	62.64
Subtotal				2,410,872			
Commercial							
	Accounts	Use (gal/day)	Flow Factor	Estimated ADWF Flow (gal/day)	BOD ³ (mg/l)	TSS ⁴ (mg/l)	Calculated Current Rate
Low Strength	34	54,604	65%	35,492	130	100	3.13
Medium/Domestic Strength	179	244,651	53%	129,421	240	240	4.76
High Strength	51	75,973	70%	53,181	1000	800	13.55
Subtotal		375,228		218,094			
Totals				2,628,966			
Check Against Lowest Actual Monthly Avg. Day Flow (May 2014 from LS 59 Flow Log):				2,367,806			

- 1 "EDU" stands for Equivalent Dwelling Unit
- 2 "ADWF" stands for Average Dry Weather Flow
- 3 "BOD" stands for Biochemical Oxygen Demand
- 4 "TSS" stands for Total Suspended Solids



APPENDIX E

Table 1
City of Foster City / Estero Municipal Improvement District
Wastewater Enterprise Cash Flow Projection

	Five Year Projection						Extended Year Projection				
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Assumptions:											
Interest Earnings Rate	1.00%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Revenue Increase from Growth		0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Rate Adjustment		14.25%	14.25%	14.25%	14.25%	10.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Monthly Service Charge for Single Family	\$74.57	\$85.20	\$97.34	\$111.21	\$127.05	\$139.76	\$142.55	\$145.41	\$148.31	\$151.28	\$154.31
Beginning O&M Fund Balance	\$8,492,644	\$2,385,700	\$2,126,500	\$7,172,900	\$6,834,500	\$6,379,100	\$6,483,400	\$10,404,200	\$14,337,600	\$19,303,800	\$24,436,700
Operating Revenues											
Service Charges	11,209,000	12,862,000	14,759,000	16,936,000	19,434,000	21,475,000	22,012,000	22,562,000	23,126,000	23,704,000	24,297,000
Connection Fees [1]	45,500										
Interest Earnings [2]	310,000	36,000	32,000	108,000	103,000	96,000	97,000	156,000	215,000	290,000	367,000
Other Revenue	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Operating Revenue	11,565,500	12,899,000	14,792,000	17,045,000	19,538,000	21,572,000	22,110,000	22,719,000	23,342,000	23,995,000	24,665,000
Non Operating Revenue											
Interfund Loan - General Fund through 5/30/19	4,684,825										
Bond / Loan [3]	13,422,078	21,284,389	31,189,898	47,522,621	23,954,268	0	0	0	0	0	0
Non Operating Revenue	18,106,903	21,284,389	31,189,898	47,522,621	23,954,268	0	0	0	0	0	0
Total Revenue	29,672,403	34,183,389	45,981,898	64,567,621	43,492,268	21,572,000	22,110,000	22,719,000	23,342,000	23,995,000	24,665,000
Operating Expenses											
Employee Services	2,082,625	2,325,925	2,418,962	2,515,720	2,616,349	2,721,003	2,829,843	2,943,037	3,060,758	3,183,188	3,310,516
Internal Services (from City)	815,340	825,032	845,658	866,799	888,469	910,681	933,448	956,784	980,704	1,005,222	1,030,353
Internal Services -ERF	261,950	279,163	286,142	293,296	300,628	308,144	315,848	323,744	331,838	340,134	348,637
Services & Supplies	799,650	545,250	558,881	572,853	587,174	601,853	616,899	632,321	648,129	664,332	680,940
EMID Share WWTP O&M	2,500,000	2,900,000	3,045,000	3,197,250	3,357,113	3,524,969	3,701,217	3,886,278	4,080,592	4,284,622	4,498,853
EMID Share WWTP Capital Improvements	1,000,000	0	0	0	0	0	0	0	0	0	0
Reallocation	739,510	806,442	826,603	847,268	868,450	890,161	912,415	935,225	958,606	982,571	1,007,135
Operating Expenses	8,199,075	7,681,812	7,981,246	8,293,186	8,618,183	8,956,811	9,309,670	9,677,389	10,060,627	10,460,069	10,876,434
Operating Net Revenue	3,366,425	5,217,188	6,810,754	8,751,814	10,919,817	12,615,189	12,800,330	13,041,611	13,281,373	13,534,931	13,788,566
Repayment of Interfund Loan	17,873,591										
Capital Expenses											
Transfer Out - Capital Improvement Fund	1,680,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000	1,600,000
EMID Share WWTP Expansion	7,658,753	23,563,382	27,909,653	51,090,478	28,569,963	5,655,573	850,302	894,443	0	0	0
Capital Expenses	9,338,753	25,163,382	29,509,653	52,690,478	30,169,963	7,255,573	2,450,302	2,494,443	1,600,000	1,600,000	1,600,000
Annual Debt Service	367,922	1,597,375	3,444,564	3,922,364	5,159,494	5,255,340	6,429,260	6,613,758	6,715,216	6,802,036	6,905,025
Debt Service	367,922	1,597,375	3,444,564	3,922,364	5,159,494	5,255,340	6,429,260	6,613,758	6,715,216	6,802,036	6,905,025
Debt Coverage [4]		3.27	1.98	2.23	2.12	2.40	1.99	1.97	1.98	1.99	2.00
Total Expenditures	35,779,341	34,442,569	40,935,463	64,906,028	43,947,640	21,467,724	18,189,232	18,785,590	18,375,843	18,862,105	19,381,459
Revenues Less Total Expenditures	(6,106,938)	(259,180)	5,046,435	(338,407)	(455,372)	104,276	3,920,768	3,933,410	4,966,157	5,132,895	5,283,541
Ending O&M Fund	2,385,706	2,126,520	7,172,935	6,834,493	6,379,128	6,483,376	10,404,168	14,337,610	19,303,757	24,436,695	29,720,241
Cash Fund Reserve Test: Minimum Fund Balance > 25% O&M Expenses											
Year-end O&M Fund	2,385,706	2,126,520	7,172,935	6,834,493	6,379,128	6,483,376	10,404,168	14,337,610	19,303,757	24,436,695	29,720,241
25% Operating Expenses	2,049,769	1,920,453	1,995,312	2,073,297	2,154,546	2,239,203	2,327,418	2,419,347	2,515,157	2,615,017	2,719,109
# of Days O&M in Reserves	106	101	328	301	270	264	408	541	700	853	997
Pass/fail	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS

[1] Growth projections for planning purposes
 [2] Projected interest calculated as 1% of the Beginning Fund Balance of the Wastewater O&M Fund.
 [3] Calculated by William Euphrat Municipal Finance, Inc. 3/3/19
 [4] Minimum requirement debt service coverage requirement = 1.25x

Table 2
City of Foster City / Estero Municipal Improvement District
Projected Wastewater Rate Impacts

Projected Rates	Current	Projected - Fiscal Year Ending June 30				
	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
% Rate Increase		14.25%	14.25%	14.25%	14.25%	10.00%
Residential (flat monthly rate)						
Single Family	\$74.57	\$85.20	\$97.34	\$111.21	\$127.06	\$139.77
<i>Increase (Decrease)</i>		10.63	12.14	13.87	15.85	12.71
Townhouse/Duplex	\$62.64	\$71.57	\$81.77	\$93.42	\$106.73	\$117.40
<i>Increase (Decrease)</i>		8.93	10.20	11.65	13.31	10.67
Apartment/Condominium (Pools w/ Restrooms)	\$62.64	\$71.57	\$81.77	\$93.42	\$106.73	\$117.40
<i>Increase (Decrease)</i>		8.93	10.20	11.65	13.31	10.67
Commercial (rate per ccf of water use)						
High Strength	\$13.55	\$15.48	\$17.69	\$20.21	\$23.09	\$25.40
<i>Increase (Decrease) per ccf</i>		1.93	2.21	2.52	2.88	2.31
Medium/Domestic Strength	\$4.76	\$5.44	\$6.22	\$7.11	\$8.12	\$8.93
<i>Increase (Decrease) per ccf</i>		0.68	0.78	0.89	1.01	0.81
Low Strength	\$3.13	\$3.58	\$4.09	\$4.67	\$5.34	\$5.87
<i>Increase (Decrease) per ccf</i>		0.45	0.51	0.58	0.67	0.53

CHART C

