

CITY OF DIXON

Water Rate Study

Final Report / November 19, 2018





November 8, 2018

Mr. Joe Leach
City Engineer/Public Works Direct
City of Dixon
600 East A Street
Dixon, CA 95620

Subject: Water Rate Study Report

Dear Mr. Leach,

Raftelis Financial Consultants, Inc. (Raftelis), along with The Reed Group, is pleased to provide this Water Rate Study Report (Report) for the City of Dixon (City) to establish water rates that are equitable and in compliance with Proposition 218.

The major objectives of the study include the following:

-) Develop a financial plan for the City's water enterprise to ensure financial sufficiency, recover operation and maintenance (O&M) costs, ensure sufficient funding for capital projects, and improve the financial health of the water enterprise
-) Perform a Cost of Service (COS) analysis for the water enterprise
-) Review the current rate structure for the City's water enterprise and suggest changes if indicated
-) Establish water rates that are fair, equitable, and in proportion to the cost of providing service to the City's water customers

The Report summarizes the key findings and recommendations related to the development of the financial plan for the water enterprise and the calculation of the proposed water rates.

It has been a pleasure assisting the City in this effort, and we would like to thank you, Ms. Joan Michael Aguilar, and other City staff for the support provided during the course of this study.

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Handwritten signature of Sally Van Etten in black ink.

Sally Van Etten
Senior Consultant

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Victor Smith
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Table of Contents

1. Executive Summary	1
1.1. Background of the Study	1
1.2. Objectives of the Study	1
1.3. Rate Setting Methodology	1
1.4. Legal Requirements	2
1.5. Results and Recommendations	3
1.5.1. <i>Proposed Revenue Adjustments</i>	3
1.5.2. <i>Proposed Changes to rate structure</i>	3
1.5.3. <i>Proposed Bi-Monthly Base Service Charge Rates</i>	4
1.5.4. <i>Proposed Bi-Monthly Water Usage Rates</i>	4
2. Water System	5
2.1. Water Sources and System Facilities	5
2.2. Number of Accounts	5
2.3. Water Use	6
2.4. Account and Water Use Growth Assumptions	6
3. Financial Plan	8
3.1. Inflationary and Other Assumptions	8
3.2. Current Rate Revenue	9
3.2.1. <i>Base Service Charge Revenue</i>	9
3.2.2. <i>Water Usage Charge Rate Revenue</i>	10
3.2.3. <i>Non-Operating Revenue</i>	12
3.3. Water Utility Expenses	12
3.3.1. <i>Operations and Maintenance (O&M) Expenses</i>	12
3.3.2. <i>Capital Improvement Plan (CIP) Project Expenditures</i>	13
3.3.3. <i>Existing and Proposed Debt Service</i>	13
3.4. Financial Policies	14
3.4.1. <i>Recommended Debt Coverage</i>	14
3.4.2. <i>Reserve Policies</i>	14
3.5. Proposed Financial Plan	15
4. Legal Framework and Rate Setting Methodology	20

4.1. Legal Framework	20
4.2. Cost-Based Rate-Setting Methodology	21
5. Cost of Service Analysis	22
5.1. Revenue Requirement Determination	22
5.2. Functionalization of O&M Expenses	23
5.3. Allocation of O&M Expenses to Cost Causation Components	24
5.4. Functionalization of Assets.....	28
5.5. Allocation of Capital Expenses to Cost Causation Components	28
5.6. Adjusted Cost of Service	30
6. Rate Development	32
6.1. Proposed Rate Structure.....	32
6.2. Proposed Bi-Monthly Base Service Charge Rates.....	32
6.3. Proposed Bi-Monthly Water Usage Rates.....	34
6.4. Bi-Monthly Bill Impacts	36

List of Tables

Table 1: Proposed Revenue Adjustments	3
Table 2: Proposed Bi-Monthly Base Service Charge Rates (Annual April 1 Increases)	4
Table 3: Proposed Bi-Monthly Water Usage Rates (\$/ccf).....	4
Table 4: Water Accounts by Meter Size (FY 2019 Actual).....	5
Table 5: Water Use by Customer Class and Tier (FY 2019 Projected)	6
Table 6: Account Growth and Water Use Assumptions	7
Table 7: Escalation Factors.....	8
Table 8: Current Bi-monthly Base Service Charge.....	9
Table 9: Account Projection through FY 2023	10
Table 10: Projected Base Service Charge Revenue through FY 2023 (with Current Rates).....	10
Table 11: Current Water Usage Rates	11
Table 12: Water Use Projections through FY 2023	11
Table 13: Water Usage Rate Revenue Projections through FY 2023 (with Current FY 2018 Rates).....	12
Table 14: Projected Non-Operating Revenue through FY 2023	12
Table 15: Projected Operations & Maintenance Expenses through FY 2023	13
Table 16: Capital Improvement Plan through FY 2023	13
Table 17: Existing Debt Service	13
Table 18: Proposed Debt Issuances.....	14
Table 19: Existing and Proposed Debt Service.....	14
Table 20: Reserve Fund Targets	15
Table 21: Proposed Revenue Adjustments	15
Table 22: Water Utility Cash Flow Detail through FY 2023	17
Table 23: FY 2019 Revenue Requirement Determination	23
Table 24: FY 2019 O&M Expenses by Functional Category	24
Table 25: System-Wide Peaking Factors and Allocation to Cost Causation Components.....	25
Table 26: Functional Category Allocation Summary	26
Table 27: Allocation of Functionalized O&M Expenses to Cost Causation Components.....	27
Table 28: Current Asset Value by Functional Category	28
Table 29: Allocation of Capital Expenses to Cost Causation Components	29
Table 30: Allocation of Total Revenue Requirement to Cost Causation Components	31
Table 31: Adjusted Cost of Service	31
Table 32: Bi-Monthly Base Service Charge Units of Service	33
Table 33: Bi-Monthly Base Service Charge Unit Costs.....	33
Table 34: Derivation of FY 2019 Bi-Monthly Base Service Charge	34
Table 35: Proposed Bi-Monthly Service Charges through FY 2023	34
Table 36: Derivation of FY 2019 Water Usage Rate	35
Table 37: Proposed Water Usage Rates through FY 2023.....	35

List of Figures

Figure 1: Proposed Revenue Adjustments	18
Figure 2: Proposed Operating Financial Plan	18
Figure 3: Projected CIP and Funding Sources.....	19
Figure 4: Total Reserve Ending Balance	19
Figure 5: Single-Family Residential Bi-Monthly Bill Impacts	36

List of Appendices

APPENDIX A: Ten-Year Cash Flow Detail

APPENDIX B: Ten-Year CIP Detail

APPENDIX C: Budget Functionalization Detail

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1. Executive Summary

1.1. Background of the Study

The City of Dixon (City) engaged Raftelis Financial Consultants, Inc. (Raftelis) in 2018 to conduct a Water Rate Study (Study) to develop updated water rates for the City’s water enterprise. The Study includes a ten-year Financial Plan, Cost of Service (COS) analysis, and the resulting proposed water rates for five years beginning in Fiscal Year (FY) 2019.¹

This Executive Summary includes the current and proposed water rates and charges, and contains a description of the rate study process, methodology, results, and recommendations. The City’s last rate adjustment was effective in 2013. The City wishes to establish fair and equitable rates that:

- » Proportionately allocate the costs of providing service in accordance with California Constitution Article XIII D, Section 6 (commonly referred to as Proposition 218)
- » Meet the City’s fiscal needs in terms of operational expenses, reserve targets, and capital investment to maintain the water system
- » Are easy for customers to understand and easy for City staff to implement and update in the future

1.2. Objectives of the Study

The major objectives of the study include the following:

- » Develop a financial plan for the City’s water enterprise to ensure financial sufficiency, recover operation and maintenance (O&M) costs, ensure sufficient funding for capital projects, and improve the financial health of the enterprise
- » Perform a Cost of Service (COS) analysis for the water enterprise
- » Review the current rate structure for the City’s water enterprise
- » Establish water rates that are fair, equitable, and in proportion to the cost of providing service to the City’s water customers

1.3. Rate Setting Methodology

The COS analysis and rate design was prepared using the principles established by the American Water Works Association (AWWA). AWWA “*Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1*” Sixth Edition (the “M1 Manual”). The general principles of rate structure design are described below.

According to the M1 Manual, the first step in the ratemaking process is to determine the adequate and appropriate level of funding for a given utility. This is referred to as determining the “revenue requirement.” This analysis considers the short-term and long-term service objectives of the utility over a given planning horizon, including capital facilities, system operations and maintenance, and financial reserve policies, to determine the adequacy of a utility’s existing rates to recover its costs. A number of factors may affect these projections, including the number of customers served, water use trends, extraordinary gains or expenses, weather, conservation, use restrictions, inflation, interest rates, capital finance needs, and other changes in operating and economic conditions.

¹ The City’s Fiscal Year begins on July 1 of the preceding Calendar Year and ends on June 30 of the corresponding Calendar Year. For example, FY 2019 begins on July 1, 2018 and ends on June 30, 2019. The City’s proposed water rate increases for the City of Dixon are planned for implementation in April of each Fiscal Year.

After determining a utility’s revenue requirements, the next step is to perform the COS analysis. Utilizing a public agency’s approved budget, financial reports, operating data, and capital improvement plan, a COS analysis generally categorizes the operating system costs by function (e.g., water supply, base, treatment, storage, etc.). Asset costs are similarly functionalized to determine the cost of service.

After the assets and the costs of operating those assets are properly categorized by function, these “functionalized costs” are allocated first to cost causation components, and then to the various customer classes (such as single family residential) by determining the characteristics of each customer class and the contribution of each to incurred costs such as supply costs, base costs, peaking costs, and service characteristics.

Rate design is the final part of the rate-making process and uses the revenue requirement and COS analysis to determine appropriate rates. Rates utilize “rate components” that build up to rates for commodity charges and fixed charges.

1.4. Legal Requirements

California Constitution - Article XIII D, Section 6 (Proposition 218)

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements, as they relate to public water service are as follows:

1. A property-related charge (such as water rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property related service.
2. Revenues derived by the charge shall not be used for any purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed charge shall be mailed to the record owner of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

As stated in AWWA’s M1 Manual, “water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” Raftelis follows industry standard rate setting methodologies set forth by the AWWA M1 Manual to ensure this Study meets Proposition 218 requirements and creates rates that do not exceed the proportionate cost of providing water services on a parcel basis.

California Constitution - Article X, Section 2

Article X, Section 2 of the California Constitution states the following:

“It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.”

Article X, Section 2 of the State Constitution institutes the need to preserve the State’s water supplies and to discourage the wasteful or unreasonable use of water by encouraging conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

In addition, Section 106 of the Water Code declares that the highest priority use of water is for domestic purposes, with irrigation secondary. To meet the objectives of Article X, Section 2, Water Code Section 375 et seq., a water purveyor may utilize its water rate design to incentivize the efficient use of water.

1.5. Results and Recommendations

1.5.1. PROPOSED REVENUE ADJUSTMENTS

The proposed revenue adjustments are shown below in Table 1. These revenue adjustments were chosen as part of financial plan designed to meet the City’s extensive capital needs while also attempting to minimize rate increases through strategic use of debt issuances.

Table 1: Proposed Revenue Adjustments

Fiscal Year	Revenue Adjustment	Date Effective
FY 2019	85%	April 1, 2019
FY 2020	50%	April 1, 2020
FY 2021	20%	April 1, 2021
FY 2022	7%	April 1, 2022
FY 2023	0%	April 1, 2023

1.5.2. PROPOSED CHANGES TO RATE STRUCTURE

The City bills its customers on a bi-monthly basis for water service. The water rates are comprised of two parts: (1) bi-monthly Base Service Charge and (2) Water Usage Rates. The Base Service Charge is a fixed charge based on the size of the water meter serving a property. The City’s Water Usage Rates are volumetric-based and are assessed per hundred cubic feet (ccf) of water delivered. The current structure of the City’s Water Usage Rates includes three tiered rates for single-family residential customers and a single uniform rate for all other customers. Under the existing tiered rate structure for single-family residential customers, the first 20 ccf of water consumed per bi-monthly billing period is charged at the Tier 1 rate, the next 60 ccf of water consumed per billing period is assessed at the Tier 2 rate, and any additional usage per billing period is charged at the Tier 3 rate. All other customers are charged a single uniform Water Usage Rate per ccf of water delivered.

Based on discussions with City staff, Raftelis recommends that the City eliminate the existing three-tiered Water Usage Rate structure for single-family residential customers and adopt a single uniform Water Usage Rate for all customers. The proposed change is based on the following key considerations. Firstly, a uniform Water Usage Rate is simpler for customers to understand than a tiered rate structure. Secondly, a change from tiered rates to a uniform rate enhances revenue stability. Lastly, tiered rates are generally better suited for water agencies that obtain a water supply from multiple sources. Because the City obtains its water supply solely from groundwater, uniform rates may be better suited to the City’s unique characteristics.

1.5.3. PROPOSED BI-MONTHLY BASE SERVICE CHARGE RATES

Table 2 shows the City’s current and proposed Bi-Monthly Base Service Charges through FY 2023. The proposed FY 2019 Base Service Charges were determined based on a detailed COS analysis and reflect the proposed 85 percent revenue adjustment in FY 2019 (from Table 1 above). The proposed Base Service Charges are then increased in April of each fiscal year by the revenue adjustments shown in Table 1.

Table 2: Proposed Bi-Monthly Base Service Charge Rates (Annual April 1 Increases)

Meter Size	Current FY 2018	Proposed FY 2019	Proposed FY 2020	Proposed FY 2021	Proposed FY 2022	Proposed FY 2023
3/4"	\$28.68	\$50.51	\$75.77	\$90.93	\$97.30	\$97.30
1"	\$47.80	\$79.98	\$119.97	\$143.97	\$154.05	\$154.05
1 1/2"	\$95.58	\$153.67	\$230.51	\$276.62	\$295.99	\$295.99
2"	\$152.93	\$242.09	\$363.14	\$435.77	\$466.28	\$466.28
3"	\$320.20	\$522.10	\$783.15	\$939.78	\$1,005.57	\$1,005.57
4"	\$540.03	\$934.75	\$1,402.13	\$1,682.56	\$1,800.34	\$1,800.34
6"	\$1,146.98	\$1,922.15	\$2,883.23	\$3,459.88	\$3,702.08	\$3,702.08
8"	\$1,911.64	\$4,132.75	\$6,199.13	\$7,438.96	\$7,959.69	\$7,959.69

1.5.4. PROPOSED BI-MONTHLY WATER USAGE RATES

Table 3 shows the current tiered and uniform Water Usage Rates and proposed uniform Water Usage Rates for FY 2019 through FY 2023. Because of the proposed elimination of tiered rates for single-family residential customers, only uniform rates are shown for FY 2019 through FY 2023. The current uniform Water Usage rate shown reflects the existing rate for all customers not classified as single-family residential. Beginning in FY 2019, all customers (including single-family residential) will be charged the uniform Water Usage Rate. The proposed FY 2019 Water Usage Rate was determined based on a detailed COS analysis and reflects the proposed 85 percent revenue adjustment in FY 2019. The proposed Water Usage Rate is then increased in April of each fiscal year by the revenue adjustments shown in Table 1.

Table 3: Proposed Bi-Monthly Water Usage Rates (\$/ccf)

Customer Class/Tier	Current FY 2018	Proposed FY 2019	Proposed FY 2020	Proposed FY 2021	Proposed FY 2022	Proposed FY 2023
Tiered Water Usage Rates						
SFR Tier 1	\$1.23	N/A	N/A	N/A	N/A	N/A
SFR Tier 2	\$1.54	N/A	N/A	N/A	N/A	N/A
SFR Tier 3	\$2.32	N/A	N/A	N/A	N/A	N/A
Uniform Water Usage Rates¹						
	\$1.40	\$2.69	\$4.04	\$4.85	\$5.19	\$5.19

¹Uniform rates will apply all usage regardless of customer class starting in April 2019.

2. Water System

2.1. Water Sources and System Facilities

Water service to customers within the City of Dixon is split between two water service providers. The California Water Service (Cal Water) provides water to the city center. The City of Dixon (City, or Dixon) itself serves the outer areas, where significant customer growth is projected. Both utilities rely entirely on groundwater. The two utilities currently operate under a Mutual Aid Agreement, which is on-going and is expected to expire in March 2019. At that time, the City will assume operations of the outer service area through a newly established Water Operations Division, as directed by City Council.

Given the significant recent and pending changes in water service provision, the City conducted a water rate study (Study). Prior to this Study, the most recent rate study was conducted in 2012 when the service was still under the Dixon/Solano Irrigation District joint power authority (JPA). The City dissolved the JPA and assumed responsibility for the provision of water services within the areas of the City previously served by the JPA. The City made this change in order to provide water service more effectively and to assure sustainability of the water system into the future. As was anticipated, there are substantial new costs to the City associated with this change including hiring new personnel, repairing and rehabilitating aging water infrastructure, and constructing new capital projects including new wells.

2.2. Number of Accounts

The City's water enterprise currently delivers water to 2,760 accounts. The majority of these are served by ¾" meters, and a majority of these ¾" meter accounts are residential accounts. The total number of accounts by meter size in fiscal year (FY) 2019 are shown in Table 4. The meter counts shown below reflect the number of meters billed at each meter size's rate. The City charges a number of 1-inch meters at the ¾-inch rate.² Note that these 1-inch meters billed by the City at the ¾-inch rate are included in the ¾-inch meter count below. The remaining 74 1-inch accounts, which are not sized based on fire flow requirements, are billed at the 1-inch meter rates. This ensures that revenues from fixed Base Service Charges are accurately projected. The City bills accounts by their meter size on a bi-monthly basis.

Table 4: Water Accounts by Meter Size (FY 2019 Actual)

Meter Size	No. of Accounts
5/8"	0
3/4"	2,546
1"	74
1 1/2"	53
2"	70
3"	10
4"	5
6"	2
8"	0
Total Accounts	2,760

² The California Building Code mandates fire suppression sprinkler systems in new residential construction. These systems require a 1" metered connection to provide the necessary fire suppression flow rates.

2.3. Water Use

The City currently has a tiered use water rate structure for single-family residential (SFR) customers and a uniform water rate for all other classes of customers. The majority of the City’s water usage is residential, and just under a third of it is in the current Tier 1 bracket. The City delivers just under 1,700 acre feet (AF) annually. FY 2019 water use projections are based on account-level use data provided for FY 2017, which were the most recent data available at the time of this Study.

Table 5: Water Use by Customer Class and Tier (FY 2019 Projected)

Customer Class/Tier	Water Use (ccf)	Percent of Total Water Use
Single Family Residential		
Tier 1	234,056	32%
Tier 2	137,705	19%
Tier 3	18,097	2%
Subtotal - Single Family Residential	389,858	53%
All Other Classes (Uniform Rate)		
Multi-Family Residential	36,063	5%
Commercial	67,086	9%
Industrial	67,700	9%
Institutional	18,050	2%
Irrigation Only	161,718	22%
Subtotal - All Other Classes	350,617	47%
TOTAL WATER USE (CCF)	740,475	100%
TOTAL WATER USE (AF)	1,700	100%

2.4. Account and Water Use Growth Assumptions

The City provided Raftelis with growth projections that were used for the study period. The City estimated, conservatively, that there would be no growth in water consumption in future years and expressed concerns that there may be a decrease in water consumption after the first year of the proposed rate increases due to the magnitude of the proposed rate increases. These considerations are shown by the demand factor incorporated in the financial plan model. Although actual customer behavior is hard to predict, according to the AWWA M1 Manual, the price elasticity of water demand is between 10% to 30% meaning a 100% increase in the cost of water could correspond to a 10% to 30% reduction in usage. The proposed rate adjustment of 85% in FY 2019 would likely correspond to a water use reduction of between 8.5% and 25.5%. Raftelis used a reduction factor of 15% in FY 2020, meaning average water use per account would be reduced to 85% of FY 2019 usage, reflecting a 15% water use reduction. Raftelis assumed that the City’s average demand would not rebound following the reduction in use, so the 100% demand factors in future years show that water use per capita will remain the same, the increases in water use shown are wholly due to growth.

Additionally, the City anticipates that a high school within City limits will disconnect its 6” meter and stop using municipal water (opting to use groundwater instead) pending the City’s water rate increases. Raftelis excluded the high school’s projected irrigation usage completely in years FY 2020 and after and applied the 85% reduction figure to other customer classes. The total reduction in demand from FY 2019 to FY 2020 is slightly more than 20%.

Account growth projections were provided by the City and are expected to be minimal. Both account growth and water use assumptions are shown in Table 6, below.

Table 6: Account Growth and Water Use Assumptions

Fiscal Year	Account Growth	Water Demand Factor	Water Sold (ccf)	Water Sold (AF)
FY 2019	N/A	N/A	740,475	1,700
FY 2020	1.50%	85%	587,730	1,349
FY 2021	1.50%	100%	596,546	1,369
FY 2022	1.50%	100%	605,494	1,390
FY 2023	0.50%	100%	608,522	1,397
FY 2024	0.50%	100%	611,565	1,404
FY 2025	0.50%	100%	614,622	1,411
FY 2026	0.50%	100%	617,695	1,418
FY 2027	0.50%	100%	620,784	1,425

3. Financial Plan

This section describes the first five years (FY 2019-FY 2023) of the ten-year Financial Plan. The first five years of the Study Period significantly influences the proposed revenue adjustments and resulting proposed rates through FY 2023 and are therefore described in detail in this section. A detailed cash flow projection is shown over the entire ten-years planning period in Appendix A. The proposed Financial Plan is used to determine the overall revenue adjustments and total amount of revenue required from rates. The revenue covers operating and maintenance (O&M), capital expenses, and reserve funding. Revenue adjustments represent the average rate increase for the City as a whole; rate changes for individual customers will depend on the Cost of Service analysis described in Section 5.

To develop the Financial Plan, Raftelis projected annual expenses and revenues, modeled reserve balances and transfers between funds, and accounted for planned capital expenditures. Expenses related to debt financing needed to fund capital improvements are included. This section of the report provides a discussion of projected revenue, O&M expenses, debt service, the Capital Improvement Plan (CIP), reserve funding under existing rates, and the revenue adjustments needed to ensure fiscal sustainability. The Financial Plan starts with current account data and water use as well as current rates to determine if the current rates are adequately meeting the revenue requirements. Although the proposed rate structure will differ significantly from the current structure, Raftelis presents and analyzes the existing rate structure in the following sections for the purposes of identifying current revenue requirements, as well as for contrast and comparison to the proposed rate structure and rates. Proposed Financial Plan revenue adjustments are thus in reference to revenues derived from current water rates.

3.1. Inflationary and Other Assumptions

To ensure that future costs are reasonably projected, Raftelis worked with the City to generate assumptions regarding inflationary factors. The City provided the water utility’s proposed FY 2019 budget. The inflationary factors shown in Table 7 were then applied to the FY 2019 budgeted costs for each cost category to project annual expenses for each year of the planning period. The San Francisco area Consumer Price Index has been increasing by approximately three percent (3%) per year in recent years, so this factor was used for most escalation factors except for Benefits escalation estimates of seven percent (7%), which were provided by the City.

Table 7: Escalation Factors

Escalation Factors	Annual Inflation
Salary	3.0%
Benefits	7.0%
Repairs & Maintenance	3.0%
Power & Utilities	3.0%
Contractual Services	3.0%
Administration	3.0%
Construction	3.0%

3.2. Current Rate Revenue

The City's existing rate structure consists of two different types of charges: 1) a bi-monthly Base Service Charge assessed based on meter size; and 2) a variable Water Usage Rate that is assessed per unit of water delivered to the customer. The City's current Water Usage Rate structure has three tiers for Single Family Residential (SFR) customers and uniform rates for all other customers. The City's current Base Service Charges by meter size and Water Usage Rates by customer class and tier are shown in the following subsections.

3.2.1. BASE SERVICE CHARGE REVENUE

The City charges a bi-monthly Base Service Charge to its customers based on meter size. Raftelis projected the City's future revenues based on its current Base Service Charges and its projected growth in accounts over the study period. The City's bi-monthly base service charges are shown below in Table 8.

Table 8: Current Bi-monthly Base Service Charge

Meter Size	Base Service Charge
5/8"	\$19.12
3/4"	\$28.68
1"	\$47.80
1 1/2"	\$95.58
2"	\$152.93
3"	\$320.20
4"	\$540.03
6"	\$1,146.98
8"	\$1,911.64

Before determining annual revenues from the Fixed Charges, Raftelis first forecast the number of accounts by meter size in each year. The account growth percentages discussed in Section 2.4 were used to project the total number of meters through 2024. The number of accounts by meter size through FY 2023 are shown in Table 9 and are projected based on growth assumptions previously defined in Table 9. The anticipated disconnection of the 6-inch meter used for irrigation pending the proposed rate increases is reflected in the FY 2020 reduction in the number of 6-inch meters. Based on updated meter counts provided in FY 2019 by City staff, the City no longer charges any meters at the 5/8-inch rate.

Table 9: Account Projection through FY 2023

Meter Size	FY 2018	FY 2019	FY 2020	FY2021	FY 2022	FY 2023
5/8"	1	0	0	0	0	0
3/4"	2,548	2,546	2,584	2,623	2,662	2,675
1"	70	74	75	76	77	77
1 1/2"	49	53	54	55	56	56
2"	66	70	71	72	73	73
3"	7	10	10	10	10	10
4"	5	5	5	5	5	5
6"	2	2	1	1	1	1
8"	0	0	0	0	0	0
Total Accounts	2,748	2,760	2,800	2,842	2,884	2,897

Raftelis calculated the Base Service Charge revenue projections for each fiscal year through the rate study period assuming no change in the rates provided in Table 8 and the account projections provided in Table 9. FY 2018 rates are used to project fixed revenue in the out-years in order to determine status quo rate revenue that would be generated in the absence of any proposed change to the current rates or rate structure.

Table 10: Projected Base Service Charge Revenue through FY 2023 (with Current Rates)

Meter Size	FY 2018	FY 2019	FY 2020	FY2021	FY 2022	FY 2023
5/8"	\$115	\$0	\$0	\$0	\$0	\$0
3/4"	\$438,460	\$438,116	\$444,655	\$451,366	\$458,077	\$460,314
1"	\$20,076	\$21,223	\$21,510	\$21,797	\$22,084	\$22,084
1 1/2"	\$28,101	\$30,394	\$30,968	\$31,541	\$32,115	\$32,115
2"	\$60,560	\$64,231	\$65,148	\$66,066	\$66,983	\$66,983
3"	\$13,448	\$19,212	\$19,212	\$19,212	\$19,212	\$19,212
4"	\$16,201	\$16,201	\$16,201	\$16,201	\$16,201	\$16,201
6"	\$13,764	\$13,764	\$6,882	\$6,882	\$6,882	\$6,882
8"	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenue	\$590,724	\$603,141	\$604,576	\$613,065	\$621,554	\$623,791

3.2.2. WATER USAGE CHARGE RATE REVENUE

In addition to Fixed Charge revenue from the Base Service Charge, the City also collects Volumetric Charge revenue based on water use. The City's current Volumetric Charge rate structure includes three tiers for single-family residential (SFR) customers and uniform rates all other customer classes. The current tier widths and FY 2018 Water Usage rates are shown for all customer classes and tiers in Table 11.

Table 11: Current Water Usage Rates

Class/Tier	Usage Rates
Single Family Residential	
Tier 1 (0-20 ccf)	\$1.23
Tier 2 (21-80 ccf)	\$1.54
Tier 3 (81+ ccf)	\$2.32
All Other Classes	
Uniform	\$1.40

Raftelis projected annual water use by class and tier for based on the FY 2017 water use data, which is shown previously in Table 5. This usage data was also used as projected water use for FY 2019. Raftelis applied annual growth estimates and water demand factors shown in Table 6 to estimate future water use. All changes in water usage over the Study Period are assumed to result from growth in the number of accounts and anticipated reduction in water demand in FY 2020. Water use projections are shown in Table 12.

Table 12: Water Use Projections through FY 2023

Class/Tier	FY 2018	FY 2019	FY 2020	FY2021	FY 2022	FY 2023
Single Family Residential						
Tier 1 (0-20 ccf)	233,122	234,056	201,932	204,961	208,035	209,076
Tier 2 (21-80 ccf)	137,155	137,705	118,805	120,587	122,396	123,008
Tier 3 (81+ ccf)	18,025	18,097	15,613	15,847	16,085	16,165
Subtotal SFR Usage	388,301	389,858	336,350	341,395	346,516	348,249
All Other Classes						
Uniform	349,217	350,617	251,380	255,151	258,978	260,273
Total Usage	737,518	740,475	587,730	596,546	605,494	608,522

Annual projected Water Usage Rate revenues for FY 2018 through FY 2023 are shown in Table 13 and are calculated by multiplying the projected consumption found in Table 12 by the rates found in Table 11. Again, FY 2018 rates are used to project variable revenue in the out-years in order to determine status quo rate revenue that would be generated in the absence of any proposed change to the current rates or rate structure. (Columns may not add exactly due to rounding.)

Table 13: Water Usage Rate Revenue Projections through FY 2023 (with Current FY 2018 Rates)

Class/Tier	FY 2018	FY 2019	FY 2020	FY2021	FY 2022	FY 2023
Single Family Residential						
Tier 1 (0-20 ccf)	\$286,740	\$287,889	\$248,376	\$252,102	\$255,884	\$257,163
Tier 2 (21-80 ccf)	\$211,219	\$212,066	\$182,960	\$185,704	\$188,490	\$189,432
Tier 3 (81+ ccf)	\$41,817	\$41,985	\$36,222	\$36,766	\$37,317	\$37,504
All Other Classes						
Uniform	\$488,904	\$490,864	\$351,932	\$357,211	\$362,569	\$364,382
Total Revenue	\$1,028,679	\$1,032,804	\$819,491	\$831,783	\$844,260	\$848,481

3.2.3. NON-OPERATING REVENUE

In addition to the revenues from Base Service Charges and Water Usage Rate revenues, the water utility also has several sources of other revenue shown below in Table 14. Other revenues include items related to administration, backflow, construction sales, installations, plan checks, penalties, General Fund contributions, and other miscellaneous income. Other revenues (excluding General Fund contributions) are based on City's FY 2019 proposed budget and are escalated based on a non-rate revenue escalation factor of two percent (2%). Interest income is calculated assuming an interest rate of 1.5 percent (1.5%). The City General Fund loaned \$400,000 to the water enterprise in FY 2019 on a one-time basis, the water enterprise is repaying the General Fund with interest as shown in Table 17 below. The decrease in Other Revenues in FY 2020 reflects that General Fund loan is a onetime revenue.

Table 14: Projected Non-Operating Revenue through FY 2023

Revenue Source	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Interest Income	\$9,975	\$22,872	\$18,325	\$62,896	\$78,892	\$70,349
Other Revenue	\$151,222	\$439,788	\$40,584	\$41,395	\$42,223	\$43,068
Total Non-Operating Revenue	\$161,197	\$462,660	\$58,908	\$104,291	\$121,115	\$113,417

3.3. Water Utility Expenses

The City's water utility expenses include O&M expenses, capital expenses, and debt service payments. Section 3.3 provides details for each of these expenses.

3.3.1. OPERATIONS AND MAINTENANCE (O&M) EXPENSES

The City provided Raftelis with its water utility budget for FY 2018 and projected budget for FY 2019. In order to project the City's O&M expenses in future years, Raftelis used the escalation percentages shown in Table 7 to escalate expenses in each year of the planning period. A Summary of the City's projected O&M budget is shown by fiscal year in Table 15. The total O&M budget was approximately \$1.9 million for FY 2018 and is projected to decrease to approximately \$1.8 million by FY 2023. The net decrease is primarily due to anticipated savings in repairs and maintenance from FY 2018 to FY 2019 and a decrease in contractual services as water utility operations transition over to City personnel from FY 2018 to FY 2020. The increase in Administration costs in FY 2019 relative to FY 2018 is due primarily to the addition of a new line item in the O&M of Project Admin-Direct. This item consists of costs allocated to the Water Enterprise as a result of a cost allocation plan.

Table 15: Projected Operations & Maintenance Expenses through FY 2023

O&M Expenses	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Category						
Salary	\$215,530	\$501,745	\$516,797	\$532,301	\$548,270	\$564,718
Benefits	\$30,805	\$122,038	\$130,581	\$139,721	\$149,502	\$159,967
Materials/Supplies/Operational Expenses	\$135,220	\$103,101	\$101,945	\$105,256	\$108,677	\$112,030
Repairs & Maintenance	\$510,500	\$121,955	\$125,614	\$129,382	\$133,264	\$137,261
Power & Utilities	\$353,750	\$378,750	\$390,113	\$401,816	\$413,870	\$426,286
Contractual Services	\$639,145	\$489,110	\$256,583	\$264,281	\$272,209	\$280,375
Administration	\$43,908	\$144,560	\$148,897	\$153,364	\$157,965	\$162,704
Total Fund 331 O&M Expenses	\$1,928,859	\$1,861,259	\$1,670,529	\$1,726,121	\$1,783,757	\$1,843,342

3.3.2. CAPITAL IMPROVEMENT PLAN (CIP) PROJECT EXPENDITURES

Projected Capital Improvement Program (CIP) costs throughout the Study Period were provided by the City. Individual CIP project costs are shown in Table 16 below and were escalated using a three percent (3%) annual construction cost inflation factor. This inflation factor is based on the Engineering News-Record Construction Cost Index for the San Francisco Area, which has been increasing at approximately three percent (3%) for the past 10 years. The detail of the City's scheduled CIP can be seen in the appendix.

Table 16: Capital Improvement Plan through FY 2023

Capital Improvement Plan	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Category						
Rehab & Replacement Projects	\$125,000	\$659,000	\$4,450,115	\$5,686,424	\$4,415,710	\$4,400,739
All Other Projects	\$40,000	\$42,518	\$300,779	\$30,785	\$6,915,889	\$512,127
Total - Capital Projects	\$165,000	\$701,518	\$4,750,894	\$5,717,209	\$11,331,599	\$4,912,866

3.3.3. EXISTING AND PROPOSED DEBT SERVICE

The City has one interfund General Fund loan that it will repay between FY 2020 and FY 2024. The existing debt service schedule is shown on Table 17. The City Council approved Resolution 18-041 approving an up to \$500,000 interfund loan from the General Fund to the Water Operations and Maintenance Fund in March 2018. To date no draw has yet been made, thus re-payment has been scheduled to begin in FY 2020.

Table 17: Existing Debt Service

Existing Debt Service	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Category					
Interfund GF Loan	\$0	\$92,220	\$100,501	\$108,250	\$115,750
Total Existing Debt Service	\$0	\$92,220	\$100,501	\$108,250	\$115,750

In addition to the General Fund loan, the City anticipates new debt issuances in FY 2020 and FY 2022 amounting to \$11.5 million and \$5.8 million, respectively. The debt issuance amounts, interest rates and issuances costs were discussed with and suggested by the City's independent financial advisor. These debt issuances will help limit rate

increases by smoothing out the burden of capital improvement expenses. The proposed debt issuance amounts and terms are shown in Table 18.

Table 18: Proposed Debt Issuances

	FY 2020	FY 2022
Debt Issuance Amount	\$11,500,000	\$5,800,000
Issuance Cost	\$230,000	\$116,000
Contribution to Debt Retirement Reserve	\$748,092	\$377,298
Debt Proceeds to Fund CIP	\$10,521,908	\$5,306,702
Annual Debt Service	\$748,092	\$377,298

Table 17 and Table 18 are summarized in Table 19 below to show the City’s total debt service obligation over the 5-year Study Period. There are significant costs to financing. The total debt service obligation over the 30-year terms of each bond is estimated to be \$22.4 million for the \$11.5 million bond issuance and \$11.3 million for the \$5.8 million bond issuance.

Table 19: Existing and Proposed Debt Service

Existing Debt Service	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Category					
Interfund GF Loan	\$0	\$92,220	\$100,501	\$108,250	\$115,750
Proposed Debt	\$0	\$748,092	\$748,092	\$1,125,390	\$1,125,390
Total Debt Service	\$0	\$840,312	\$848,593	\$1,233,640	\$1,241,140

3.4. Financial Policies

3.4.1. RECOMMENDED DEBT COVERAGE

The financial plan assumes a recommended debt service coverage level of 125 percent in each fiscal year. Debt service coverage is defined as net revenues (revenue less operating expenses) divided by debt service payments, it represents the City’s ability to meet its debt obligations via its operating cash flow. Maintaining a higher coverage ratio makes the City a more attractive prospect for bond issuances. The above 125 percent recommendation is only a recommended target and not based on an official statement for any debt issuance. Debt coverage is calculated by dividing net operating revenues by total debt service in each fiscal year.

3.4.2. RESERVE POLICIES

City Staff, the City’s Financial Advisor, and Raftelis worked together to develop the below financial policies. The reserves and reserve policies for the City’s water utility are outlined as follows:

- 1. Operating Fund Target:** The Operating Reserve is used primarily to meet ongoing cash flow requirements. The City has an Operating Reserve target level equal to 50% of annual O&M expenses, which is used to calculate Operating Reserve target levels throughout the Study Period. An operating reserve ensures that the City can meet its operating costs in the event of an emergency. Maintaining a sufficient operations reserve allows the City to meet its expenses on an ongoing basis without being dependent on the revenues from each rate cycle.

- 2. Capital Fund:** The Capital Reserve is used to cover any unexpected and unplanned infrastructure repairs and replacements not included in the CIP budget. Raftelis included a Capital Fund Target equal to a rolling 5-year average of Rehabilitation and Replacement (R&R) capital expenses. The Capital Reserve target levels do not include well replacement projects. This fund level is a recommendation, not a formalized City policy. The Capital Reserve is also important if the City is constructing any CIP projects on a PAYGO basis, as it provides the City with a reserve for upfront capital costs.

Reserve fund targets are shown in Table 20.

Table 20: Reserve Fund Targets

Reserve Fund Target	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Category					
Operating Fund	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787
Capital Fund	\$2,051,341	\$2,612,787	\$2,159,071	\$2,334,350	\$2,372,591
Total Reserve Requirement	\$2,762,112	\$3,265,266	\$2,834,008	\$3,032,034	\$3,093,378

3.5. Proposed Financial Plan

This section displays the proposed revenue adjustments necessary to ensure adequate revenue to fund operating expenses, capital expenditures, and meet reserve targets. Each revenue adjustment represents an increase in rate revenue from Fixed Charges and Water Usage Rates relative to the prior fiscal year. The Financial Plan assumes that all revenue adjustments occur annually on April 1 of each fiscal year. The proposed revenue adjustments would enable the City to meet operating costs and to execute the CIP shown in Table 15. Table 21 shows the proposed revenue adjustments over the course of the Study Period.

Table 21: Proposed Revenue Adjustments

Fiscal Year	Revenue Adjustment	Date Effective
FY 2019	85%	April 1, 2019
FY 2020	50%	April 1, 2020
FY 2021	20%	April 1, 2021
FY 2022	7%	April 1, 2022
FY 2023	0%	April 1, 2023

The proposed rate adjustments on Table 21 are quite large (85% in FY 2019 and 50% in FY 2020), however, these are necessitated in large part by the City's upcoming CIP plan. The City's projected operating revenue, absent revenue adjustments, is \$1.6 million in FY 2019. Assuming no change across the next five years, the City's total revenue through FY 2024 would be \$8 million. The City's CIP (excluding grant funded projects) across that time period totals over \$20 million, and its operating expenses are roughly \$9 million as well. While the City intends to lessen immediate rate impacts by debt funding a significant portion of these projects, it is critical for the City to build its reserves and increase its revenue to meet coverage requirements resulting from these large debt issuances. Absent large rate increases in the first two years of the financial plan, the City's reserves would be depleted, and with lower revenue adjustments the City may have difficulty meeting its debt coverage requirements in FY 2020.

Table 22 shows the cash flow detail through FY 2023 for the proposed Financial Plan. Line 5 shows total revenue, which is the sum of revenue from current rates (Table 10 and Table 13), additional rate revenue resulting from the proposed revenue adjustments (from Table 21), non-operating revenue (from Table 14), and estimated interest

earnings (calculated assuming a 1.5% percent rate interest rate). Line 12 shows net operating cash flow, which is calculated by subtracting operating expenses in Line 7 (from Table 15) from total revenue in Line 5. Other factors affecting net operating cash flow include existing debt service in Line 8 and proposed debt service in Line 9 (from Table 19).

Debt service coverage in Line 14 is calculated by dividing net operating revenue (excluding debt service payments) by total debt service. Total CIP costs in Line 3 (from Table 16) are paid for by developer fees in line 28, and debt proceeds in Line 29. Debt proceeds are assumed to be fully utilized when available before returning to “PAYGO” (pay as you go) funding of capital projects.

Ending balances for the water operating fund in Line 23 are determined by summing the starting balance in Line 20 and the net cash change in Line 21. Any fund balance in excess of the Operating Reserve Target is transferred to the Capital Reserve Fund in Line 22. The City provided the starting balance for FY 2019. Ending balances for the water capital reserve fund in Line 31 are determined by summing the starting balance in Line 26, transfers in from the operating reserve in Line 27, capital funding sources in Lines 28-29 and Capital Improvement Projects in Line 30. Line 33 is the projected total ending balance, which is calculated by adding the Operating Reserve ending balance to the Capital Reserve ending balance. Lastly, the total reserve target balance in Line 37 is the sum of the individual reserve target balances in Lines 35-36, which were calculated based on current reserve policies outlined in Section 3.4.2.

Table 22: Water Utility Cash Flow Detail through FY 2023

Line		FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
1	Current Rate Revenue	\$1,635,944	\$1,424,066	\$1,444,848	\$1,465,813	\$1,472,272
2	Revenue Adjustments	\$231,759	\$1,430,000	\$2,698,253	\$3,472,292	\$3,773,580
3	Other Revenue	\$439,788	\$40,584	\$41,395	\$42,223	\$43,068
4	Interest	\$22,872	\$18,325	\$62,880	\$78,845	\$70,269
5	Total Revenue	\$2,330,363	\$2,912,975	\$4,247,376	\$5,059,173	\$5,359,188
6						
7	O&M Expenses	\$1,861,259	\$1,670,529	\$1,726,121	\$1,783,757	\$1,843,342
8	Existing Debt Service	\$0	\$92,220	\$100,501	\$108,250	\$115,750
9	Proposed Debt Service	\$0	\$748,092	\$748,092	\$1,125,390	\$1,125,390
10	Total Expenses	\$1,861,259	\$2,510,840	\$2,574,713	\$3,017,397	\$3,084,482
11						
12	Net Operating Cash Flow	\$469,104	\$402,134	\$1,672,663	\$2,041,776	\$2,274,706
13						
14	Debt Service Coverage	#N/A	148%	297%	266%	283%
18						
19	Operating Reserve					
20	Beginning Balance	\$944,876	\$710,771	\$652,479	\$674,937	\$697,684
21	Net Cash from Operations	\$469,104	\$402,134	\$1,672,663	\$2,041,776	\$2,274,706
22	Transfer Out to Capital Reserve	(\$703,209)	(\$460,426)	(\$1,650,205)	(\$2,019,029)	(\$2,251,603)
23	Ending Balance	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787
24						
25	Capital Reserve					
26	Beginning Balance	\$392,973	\$394,664	\$6,626,105	\$2,559,100	\$5,437,413
27	Transfer In from Operating Reserve	\$703,209	\$460,426	\$1,650,205	\$2,019,029	\$2,251,603
28	CIP Funding from Developer Agreements/Grants	\$0	\$0	\$0	\$6,884,180	\$0
29	Debt Proceeds to Fund	\$0	\$10,521,908	\$0	\$5,306,702	\$0
30	Capital Projects	(\$701,518)	(\$4,750,894)	(\$5,717,209)	(\$11,331,599)	(\$4,912,866)
31	Ending Balance	\$394,664	\$6,626,105	\$2,559,100	\$5,437,413	\$2,776,149
32						
33	Total Ending Balance	\$1,105,434	\$7,278,584	\$3,234,037	\$6,135,097	\$3,496,936
34						
35	Operating Reserve Target	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787
36	Capital Reserve Target	\$2,051,341	\$2,612,787	\$2,159,071	\$2,334,350	\$2,372,591
37	Total Reserve Target	\$2,762,112	\$3,265,266	\$2,834,008	\$3,032,034	\$3,093,378

Figure 1 through Figure 4 display the proposed Financial Plan in graphical form over ten years. Figure 1 shows proposed revenue adjustments in blue bars on the left axis. Figure 1 also shows the calculated debt coverage percentage (see green line) and the recommended debt coverage requirement percentage with the red line (see percentages on the right axis).

Figure 1: Proposed Revenue Adjustments

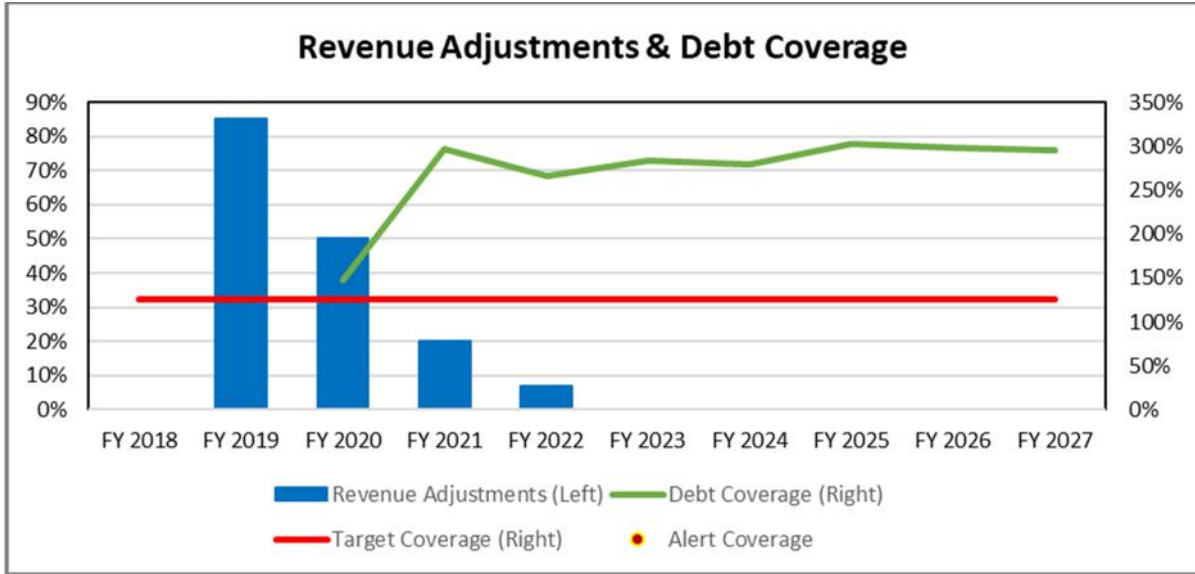


Figure 2 illustrates the Operating Financial Plan – it compares existing and proposed revenues with projected expenses. The expenses include O&M, debt service, rate-funded CIP, and reserve funding. Expenses are represented by the stacked bars. Total projected revenues at existing and proposed rates are shown by the red and green lines respectively. Figure 2 shows that projected revenue from existing rates (red line) would not generate sufficient revenue to fund O&M expenses (blue bars) and debt service (orange bars) over the Study Period. Figure 2 clearly demonstrates that the proposed revenue adjustments shown in Figure 1 are necessary to generate sufficient revenues to cover operating expenses and build up reserve levels necessary to cover substantial rate-funded capital expenditures (green bars) starting in FY 2023.

Figure 2: Proposed Operating Financial Plan

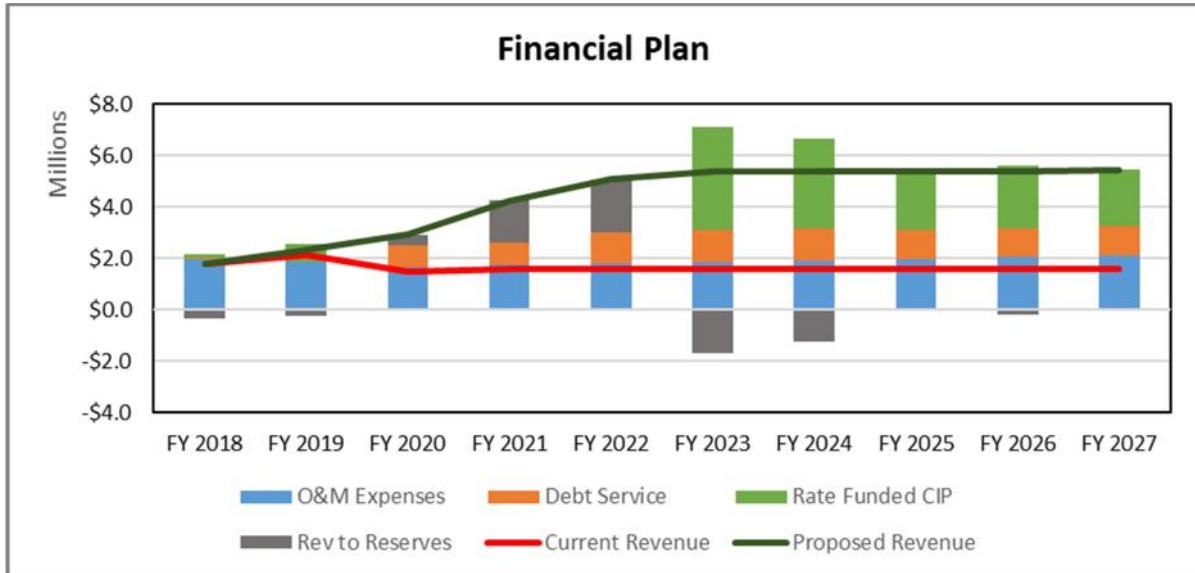


Figure 3 summarizes projected CIP expenditures by funding source: debt funded (orange stacked bar), developer agreement/ grant funded (yellow stacked bar), or rate-funded (green stacked bar). Total CIP expenditures in millions

of dollars in each fiscal year are displayed at the top of the stacked bars in Figure 3. Proceeds from the proposed FY 2020 and 2022 debt issuances described in Section 3.3.3 are assumed to provide all debt funding for CIP from FY 2020 through FY 2022 after factoring in developer fees and potential grant revenues. Remaining CIP expenditures are assumed to be rate-funded.

Figure 3: Projected CIP and Funding Sources

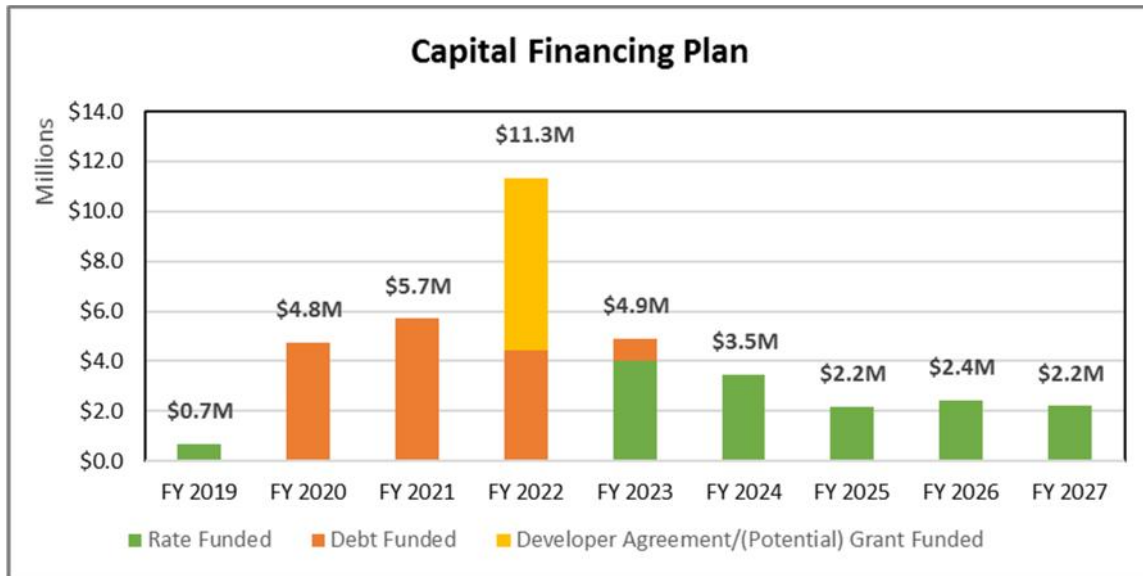
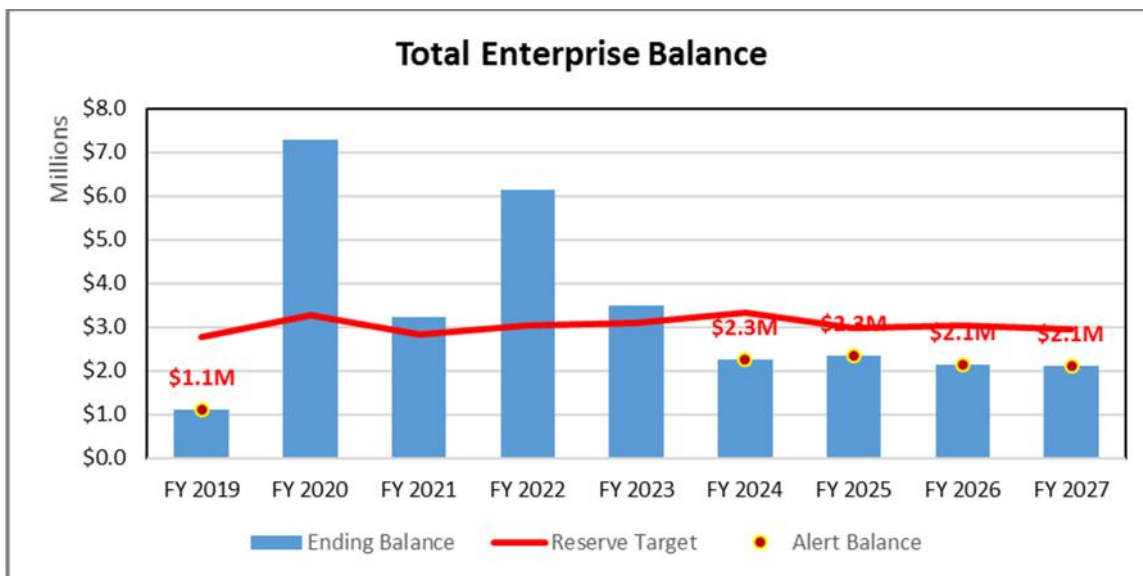


Figure 4 displays the water utility’s yearly ending balance (blue bars). The total reserve target is the sum of each individual reserve target and is represented by the red line. Figure 4 demonstrates that under the proposed Financial Plan, the total reserve target is met through 2023, though additional revenue adjustments will be required to meet fund balance targets starting in 2024.

Figure 4: Total Reserve Ending Balance



4. Legal Framework and Rate Setting Methodology

4.1. Legal Framework

This section of the report describes the legal framework that was considered throughout the course of the Study. Raftelis ensures that its rate setting process is undertaken in accordance with the legal framework described in further detail below

California Constitution - Article XIII D, Section 6 (Proposition 218)

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements for fairness of the fees, as they relate to public water service are as follows:

1. A property-related charge (such as water rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property related service.
2. Revenues derived by the charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional Cost of Service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.
6. A written notice of the proposed charge shall be mailed to the record owner of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

Prop 218 requires that water rates cannot be “arbitrary and capricious,” meaning that the rate-setting methodology must be sound and that there must be a nexus between costs and the rates charged. Raftelis followed industry standard rate setting methodologies set forth by the AWWA M1 Manual to ensure this study meets Proposition 218 requirements and creates rates that do not exceed the proportionate cost of providing water services.

California Constitution - Article X, Section 2

Article X, Section 2 of the California Constitution (established in 1976) states the following:

“It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.”

As stated above Article X, section 2 of the State Constitution institutes the need to preserve the State’s water supplies and to discourage the wasteful or unreasonable use of water by encouraging conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

In addition, Section 106 of the Water Code declares that the highest priority use of water is for domestic purposes, with irrigation secondary. To meet the objectives of Article X, section 2, Water Code Section 375 et seq., a water purveyor may utilize its water rate design to incentivize the efficient use of water.

4.2. Cost-Based Rate-Setting Methodology

To develop utility rates that comply with Proposition 218 and industry standards while meeting other emerging goals and objectives of the utility, there are four major steps discussed below.

1) Calculate Revenue Requirement

The rate-making process starts by determining the test year (rate-setting year) revenue requirement - which for this study is FY 2019. The revenue requirement should sufficiently fund the utility's O&M, debt service (where applicable), capital expenses, and reserve funding.

2) Cost of Service Analysis (COS)

The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalizing costs: Examples of functions are supply, treatment, transmission, distribution, storage, meter servicing and customer billing and collection.
2. Allocating functionalized costs to rate components: Rate components include Monthly Service Charges and a Water Usage Rates.
3. Distributing the cost components: Distribute rate components, using unit costs, in proportion to the demands on the water system. This is described in the M1 Manual published by AWWA.

3) Rate Design and Calculations

Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as conservation, affordability for essential needs and revenue stability among other objectives. Rates may also act as a public information tool in communicating these objectives to customers.

4) Rate Adoption

Rate adoption is the last step of the rate-making process to comply with Proposition 218. Raftelis documented the rate study results in this Study Report to help educate the public about the proposed changes, the rationale and justifications behind the changes and their anticipated financial impacts in lay terms.

5. Cost of Service Analysis

The principles and methodology of a Cost of Service analysis were described in Section 4. This section explains the details of the Cost of Service analysis conducted by Raftelis, which provides the basis for distributing the City's water enterprise rate revenue requirement (costs) between its fixed Base Service Charges and variable Water Usage Rates.

5.1. Revenue Requirement Determination

The first step of the Cost of Service analysis is to determine the total rate revenue requirement, which represents the amount of revenue to be recovered by the City's proposed water rates. Table 23 shows the revenue requirement calculation, with the total revenue required from rates in FY 2019 shown in Column C, Line 17. Raftelis calculated the revenue requirement using FY 2019 expenses (determined previously in Table 22), which include O&M expenses (Line 2), existing debt service (Line 3), and proposed debt service (Line 4). Interest income (Line 8) and non-operating revenues (Line 9) are then applied as offsets to the total revenue requirement to determine revenue required from rates only.

Two adjustments are then incorporated to arrive at the total rate revenue requirement. The adjustments are subtracted, but in the City's case both adjustments are negative numbers, which results in an addition to the total revenue requirement. A capital/reserve funding adjustment (Line 13) is included to account for funding or drawing down of reserves. The negative cash balance adjustment shown in Line 13 represents additional reserve funding required in FY 2019. The additional reserve funding primarily supplements the water enterprise's capital reserve and anticipated future capital spending, so the cash balance adjustment is allocated to the capital revenue requirement. An adjustment for mid-year rate increase (Line 14) augments the revenue requirement based on the effective date of the proposed rates (April 1, 2019); the cashflow, which is the source of revenue and expense totals presented in this table, only includes additional revenue collected in April through June. This adjustment ensures that the calculated rates are designed to collect revenues that would result from a full year of rate adjustments.

The subtotal of operating revenue requirements is shown in Column A, Line 5 and the sum of capital revenue requirements is shown in Column B, Line 5. Total revenue requirements are shown in Column C, Line 5. To arrive at the total rate revenue requirement in Line 17, revenue from other sources (Line 10) and adjustments (Line 15) are subtracted from the revenue requirement (Line 5). Adjustments shown as negative values are subtracted (therefore added as a result of subtracting a negative number) to arrive at the total revenue required from rates in Column C, Line 17.

The adjustment for cash balance is an amount collected above operating expenses that will be set aside for future capital funding. The adjustment for mid-year rate increases is a way of accounting for the fact that the rate adjustments will not be made until April. This amount is allocated to capital expenses because the proposed rate increases are almost entirely driven by the City's capital needs. This amount represents a significant revenue amount beyond the City's cash needs in FY 2019, and takes into account the City's need for revenue to fund its capital program across the five-year study period. This is the annualized dollar amount that fixed Base Service Charges and variable Water Usage Rates are designed to collect in FY 2019.

Table 23: FY 2019 Revenue Requirement Determination

Line	Description	Operating (A)	Capital (B)	Total (C)
1	Revenue Requirements			
2	O&M Expenses	\$1,861,259		\$1,861,259
3	Existing Debt Service		\$0	\$0
4	Proposed Debt Service		\$0	\$0
5	Subtotal	\$1,861,259	\$0	\$1,861,259
6				
7	Less: Revenue from Other Sources			
8	Interest Income	\$22,872		\$22,872
9	Non-Operating Revenues	\$439,788		\$439,788
10	Subtotal	\$462,660	\$0	\$462,660
11				
12	Less: Adjustments			
13	Adjustment for Capital/Reserve Funding		(\$469,104)	(\$469,104)
14	Adjustment for Mid-Year Rate Increase		(\$1,158,794)	(\$1,158,794)
15	Subtotal	\$0	(\$1,627,898)	(\$1,627,898)
16				
17	Total Rate Revenue Required	\$1,398,599	\$1,627,898	\$3,026,497

5.2. Functionalization of O&M Expenses

After determining the total rate revenue requirement, the next step in the Cost of Service analysis is to functionalize O&M costs to the following **functional categories**:

1. **Water Supply**
2. **Base³**
3. **Treatment**
4. **Transmission and Distribution (T&D)**
5. **Meter Service**
6. **Billing and Collection**
7. **Cost Allocation⁴**
8. **Administrative/General**

Raftelis functionalized the water enterprise’s FY 2019 O&M budget on a line item basis. This functionalization is presented in the Appendix. Each line item was assigned to one of the functional categories listed above. Table 24 includes a summary of the functionalization of the water enterprise’s O&M expenses. Functionalization of O&M expenses is an essential part of the rate-setting process and is a necessary first step in the eventual allocation of O&M expenses to cost causation components (described in the following subsection).

³ The “Base” functional category is associated with the day to day costs of running the water utility under average water use conditions.

⁴ This function is related to one O&M item, the Transfer to General Fund, of this transfer amount, \$58,339 was identified as being associated with billing and collection as a salary item. This amount was allocated to Billing and Collection, with the remaining allocated to General.

Table 24: FY 2019 O&M Expenses by Functional Category

Functional Category	O&M Expenses by Function (\$)	O&M Expenses by Function (%)
Water Supply	\$627,100	34%
Base	\$575,318	31%
Treatment	\$73,600	4%
T&D	\$176,034	9%
Meter Service	\$35,000	2%
Billing & Collection	\$18,000	1%
Cost Allocation	\$184,065	10%
Admin/General	\$172,142	9%
Total	\$1,861,259	100%

5.3. Allocation of O&M Expenses to Cost Causation Components

The functionalization of O&M expenses allows for the allocation of costs to cost causation components. The ultimate goal of the Cost of Service analysis is to distribute the total rate revenue requirement among cost causation components, which is then used to determine the amount of revenue to be recovered by the fixed Base Service Charge and variable Water Usage Rate. The **cost causation components** used in this Study are:

- 1. Supply:** Costs related to the production of groundwater from City wells.
- 2. Base Delivery:** Costs incurred to provide service under average conditions. Such costs are associated with serving customers at a constant, or average, annual rate of use.
- 3. Max Day:** Different facilities, such as distribution and storage facilities, and the O&M costs associated with those facilities, are designed to meet the peak demands placed on the system by customers. Peaking costs include the O&M and capital costs associated with meeting peak customer demand in excess of the average annual rate of use or base use requirements. Peaking costs are separated into max day and max hour. Max day pertains to the maximum amount of water used in a single day in a year.
- 4. Max Hour:** Peaking costs pertaining to the maximum usage experienced by the system in an hourlong period. Note that the maximum hour does not necessarily occur on the maximum usage day.
- 5. Meter Capacity:** Maintenance and capital costs related to water meters and associated services. Costs incurred are generally proportional to the size of the water meter.
- 6. Customer Service:** Pertains to costs directly associated with serving customers irrespective of the amount of water used, and generally include meter reading, bill generation, accounting, customer service, and collection expenses.
- 7. General:** Costs incurred in operating and maintaining the water system not otherwise recovered in the other functionalized cost components. These costs are later reallocated in proportion to the relative percentages of the other cost causation components.

The next step is to allocate the functionalized expenses to the cost causation components defined above. To do so, system-wide peaking factors (shown below in Table 25) must be identified. Peaking factors represent the ratio of water moving through the system during the maximum day and maximum hour of water use relative to the water use during an average day within a year (or the base delivery). Peaking is important because water systems must be

designed, built, and operated in a way that can provide service during peak demand delivery times and not just to accommodate delivery needs under average conditions.

The system-wide peaking factors are used to derive the allocation bases (i.e., percentages) for the following functional categories: Base, Treatment, T&D, and Storage. Raftelis utilized maximum day and maximum hour peaking factors provided in the City’s most recent Water System Master Plan. Per the Water System Master Plan, the maximum day flow amount is 2.20 times greater than the average day flow and maximum hour flow amount is 3.30 times greater than the average day flow.

To understand the interpretation of the percentages shown in Columns B-D of Table 25, we must first establish the base use equal to the average daily demand during the year, which is assigned a factor of 1.00. The base factor in Line 1 is used to determine the allocation basis for the Base functional category.

The Max Day factor in Line 2 attributes 45.5 percent (1.00/2.20) of the demand (and therefore costs) to Base Delivery (average daily demand) use and the remaining 54.5 percent [(2.20-1.00)/2.20] to Max Day (peaking) use. The Treatment and Storage functional categories are allocated to cost causation components based on this Max Day allocation basis.

The Max Hour factor in Line 3 attributes 30.3 percent (1.00/3.30) of demand (and therefore costs) Base Delivery, 36.4 percent [(2.20-1.00)/3.30] to Max Day, and the remaining 33.3 percent [(3.30-2.20)/3.30] of costs to the Max Hour cost causation component. The T&D functional category is allocated to cost causation components based on the average of the Max Day and Max Hour bases (shown in Line 4). Because T&D infrastructure has to be sized for maximum hour demands, its associated costs are based on Max Hour peaking characteristics as well.

Table 25: System-Wide Peaking Factors and Allocation to Cost Causation Components

Line	Factor	Peaking Factor (A)	Base Delivery (B)	Max Day (C)	Max Hour (D)	Total (F)
1	Base (Average Day)	1.00	100.0%			100.00%
2	Max Day	2.20	45.5%	54.5%	0.0%	100.00%
3	Max Hour	3.30	30.3%	36.4%	33.3%	100.00%
4	Average of Max Day & Max Hour	N/A	37.9%	45.5%	16.7%	100.00%

Table 26 below shows a summary of the allocations of each functional category to the various cost causation components. The allocation bases for the Base, Treatment, and T&D functional categories were determined based on the peaking factor analysis presented above in Table 25. The Water Supply, Meter Service, Billing & Collection, and Admin/General functional categories are allocated based on industry norms. The Cost Allocation basis is allocated based on allocating the \$58,339 in the transfer to the General Fund that is associated with customer service and billing to the Customer Service allocation and the remaining to General costs.

Table 26: Functional Category Allocation Summary

Functional Category	Allocation to Cost Causation Components	Allocation Basis
Water Supply	100% Supply	N/A
Base	100% Base Delivery	Base
Treatment	45.5% Base Delivery / 54.5% Max Day	Max Day
Trans. & Distrib.	37.9% Base Delivery / 45.5% Max Day / 16.7% Max Hour	Average of Max Day/Max Hour
Meter Service	100% Meter Capacity	N/A
Billing & Collection	100% Customer Service	N/A
Cost Allocation	\$58,339 to Customer Service, remainder to General	See footnote 4
Administrative/General	100% General	N/A

Table 27 shows a detailed allocation of the water enterprise’s O&M costs to each cost causation component in Columns A-G. O&M expenses by functional category are allocated to each cost causation component based on the allocation summary provided previously in Table 26. Lines 1-8 in Table 27 show the allocation bases for each cost causation component in percentages.

These percentages are then multiplied by O&M expenses within each functional category (Column H, Lines 9-16) to determine the dollar amount allocated to each cost causation component in Lines 9-16. For example, the \$627,100 in Water Supply costs allocated to the Supply cost causation component (Column A, Line 9) is determined by multiplying Column A, Line 1 by Column H, Line 9. This calculation is repeated for each functional category and cost causation component. Columns A-G in Line 17 show the allocation of total O&M expenses (\$1,861,259) to each cost causation component.

Total General costs (Column G, Line 17) are then reallocated to all other cost causation components (excluding Base Delivery) in proportion to the distribution of costs to each cost causation component in Line 17. The total O&M allocation to each cost causation component in Line 19 is the sum of the initial O&M allocation (Line 17) and Reallocation of General costs (Line 18).

Table 27: Allocation of Functionalized O&M Expenses to Cost Causation Components

Line	Functional Category	Supply (A)	Base Delivery (B)	Max Day (C)	Max Hour (D)	Meter Capacity (E)	Customer Service (F)	General (G)	Total (H)
O&M Allocation by Cost Causation Component (%)									
1	Water Supply	100%							100%
2	Base		100%						100%
3	Treatment		45%	55%					100%
4	Trans. & Distrib.		38%	45%	17%				100%
5	Meter Service					100%			100%
6	Billing & Collection						100%		100%
7	Cost Allocation						32%	68%	100%
8	Admin/General							100%	100%
O&M Allocation by Cost Causation Component (\$)									
9	Water Supply	\$627,100	\$0	\$0	\$0	\$0	\$0	\$0	\$627,100
10	Base	\$0	\$575,318	\$0	\$0	\$0	\$0	\$0	\$575,318
11	Treatment	\$0	\$33,455	\$40,145	\$0	\$0	\$0	\$0	\$73,600
12	Trans. & Distrib.	\$0	\$66,680	\$80,015	\$29,339	\$0	\$0	\$0	\$176,034
13	Meter Service	\$0	\$0	\$0	\$0	\$35,000	\$0	\$0	\$35,000
14	Billing & Collection	\$0	\$0	\$0	\$0	\$0	\$18,000	\$0	\$18,000
15	Cost Allocation	\$0	\$0	\$0	\$0	\$0	\$58,339	\$125,726	\$184,065
16	Admin/General	\$0	\$0	\$0	\$0	\$0	\$0	\$172,142	\$172,142
17	Total	\$627,100	\$675,452	\$120,161	\$29,339	\$35,000	\$76,339	\$297,868	\$1,861,259
18	Reallocation of General Costs	\$210,367	\$0	\$40,309	\$9,842	\$11,741	\$25,609	(\$297,868)	\$0
19	Total O&M Allocation	\$837,467	\$675,452	\$160,470	\$39,181	\$46,741	\$101,948	\$0	\$1,861,259

5.4. Functionalization of Assets

Capital costs are allocated based on the functionalization of the City’s water system assets. The rationale for this allocation basis is that water system assets need to be replaced over time and that capital expenses will generally match the overall water system asset base. The distribution of assets by functional category allows for the allocation of the capital revenue requirement to the cost causation components previously defined in Section 5.3. Raftelis was provided an asset list for the City’s water enterprise for FY 2018. Raftelis assigned each listed asset to a functional category (defined in Section 5.2) and calculated the value of each asset using the Replacement Cost Less Depreciation (RCLD) valuation method. There are assets associated with storage, and (although these have largely been depreciated) the value associated with these assets are allocated according to the max day allocation. The assets categorized as Administrative/General are related to fire suppression (fire hydrants, etc.) as these represent a public fire cost which is spread evenly through the system. No assets are assigned to the Base or Billing & Collection functional categories, which are therefore omitted from the summary of the City’s water enterprise assets by functional category in Table 28. The percentages shown provide the basis of allocating the capital revenue requirements to each cost causation component in the following subsection.

Table 28: Current Asset Value by Functional Category

Assets by Functional Category	Asset Value (RCLD)	% of Total Assets
Water Supply	\$10,421,444	43%
Treatment	\$2,936	0%
Trans. & Distrib.	\$11,449,590	47%
Storage	\$8,174	0%
Meter Service	\$1,509,077	6%
Administrative/General	\$1,112,215	5%
Total	\$24,503,437	100.00%

5.5. Allocation of Capital Expenses to Cost Causation Components

Table 29 shows a detailed allocation of the capital revenue requirement to each cost causation component in Columns A-G. Lines 1-6 in Table 29 show the allocation bases for each cost causation component in percentages. The allocation bases are identical for both O&M and capital revenue requirements and were previously described in detail in Section 5.3.

Allocation percentages (Column A-G, Lines 1-6) are multiplied by the water system asset valuation associated with each functional category (Column H, Lines 7-13) to provide a breakdown of total asset value by cost causation component (Line 14). For example, the \$10,421,444 in Water Supply assets attributed to the Supply cost causation component (Column A, Line 7) is determined by multiplying Column A, Line 1 by Column H, Line 7. This calculation is repeated for each functional category and cost causation component. Columns A-G in Line 14 show the total asset value (\$24,503,437) distributed to each cost causation component.

Line 15 shows the percent of total asset value associated with each cost causation component and provides the allocation basis for each individual capital revenue requirement shown in Lines 16-19. Each individual capital revenue requirement (Column H, Lines 16-19) is allocated to the various cost causation components based on the percentages shown in Line 15. For example, the \$199,512 in capital/reserve funding allocated to the Supply cost causation component (Column A, Line 18) is determined by multiplying Column A, Line 15 by Column H, Line 18.

Table 29: Allocation of Capital Expenses to Cost Causation Components

Line	Functional Category	Supply (A)	Base Delivery (B)	Max Day (C)	Max Hour (D)	Meter Capacity (E)	Customer Service (F)	General (G)	Total (H)
Capital Allocation by Cost Causation Component (%)									
1	Water Supply	100%							100%
2	Treatment		45%	55%					100%
3	Trans. & Distrib.		38%	45%	17%				100%
4	Storage		45%	55%					100%
5	Meter Service					100%			100%
6	Admin/General							100%	100%
Water System Asset Valuation (RCLD) by Cost Causation Component (\$)									
7	Water Supply	\$10,421,444	\$0	\$0	\$0	\$0	\$0	\$0	\$10,421,444
8	Treatment	\$0	\$1,334	\$1,601	\$0	\$0	\$0	\$0	\$2,936
9	Trans. & Distrib.	\$0	\$4,336,966	\$5,204,359	\$1,908,265	\$0	\$0	\$0	\$11,449,590
10	Storage	\$0	\$3,716	\$4,459	\$0	\$0	\$0	\$0	\$8,174
11	Meter Service	\$0	\$0	\$0	\$0	\$1,509,077	\$0	\$0	\$1,509,077
12	Admin/General	\$0	\$0	\$0	\$0	\$0	\$0	\$1,112,215	\$1,112,215
13	Total	\$10,421,444	\$4,342,016	\$5,210,419	\$1,908,265	\$1,509,077	\$0	\$1,112,215	\$24,503,437
14	<i>% of Total Asset Value</i>	<i>42.5%</i>	<i>17.7%</i>	<i>21.3%</i>	<i>7.8%</i>	<i>6.2%</i>	<i>0.0%</i>	<i>4.5%</i>	<i>100.0%</i>
Capital Allocation by Cost Causation Component (\$)									
15	Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
16	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
17	Capital/Reserve Funding	\$199,512	\$83,125	\$99,750	\$36,533	\$28,890	\$0	\$21,293	\$469,104
18	Mid-Year Increase	\$492,841	\$205,339	\$246,406	\$90,244	\$71,366	\$0	\$52,598	\$1,158,794
19	Total	\$692,354	\$288,464	\$346,157	\$126,777	\$100,256	\$0	\$73,891	\$1,627,898

5.6. Adjusted Cost of Service

Table 30 on the following page shows the allocation of operating expenses in Line 1, capital revenue requirements in Lines 2-5, and revenue offsets in Line 6. The allocations of the operating and capital revenue requirements were determined in Table 27 and Table 29 respectively. Note that the revenue offsets shown in Line 6 of Table 30 were previously defined in Table 23, and are maintained through the remainder of the Cost of Service analysis as a separate cost causation component. Line 7 of Table 30 shows the total cost of service prior to reallocation of General costs associated with the capital revenue requirement. These remaining General costs (Column G, Line 7) are reallocated to all other cost causation components (excluding Revenue Offsets) in proportion to the distribution of costs among cost causation components in Line 7. The total cost of service in Line 9 is determined by summing Line 7 and Line 8.

Table 31 on following page shows a final adjustment of the total cost of service shown in Line 9 of Table 30. Cost causation components shown in Lines 1-7 are reallocated to final rate components in Columns A-H. The Meter Capacity (Column E) and Customer Service (Column F) rate components represent the amount of revenue to be recovered by the City's fixed Bi-Monthly Base Service Charges. The Supply (Column A), Base Delivery (Column B), and Revenue Offsets (Column H) rate components collectively constitute the amount of total revenue to be recovered by the City's Water Usage Rates.

Note that the Supply (Line 1), Meter Capacity (Line 5), and Revenue Offsets (Line H) cost causation components are allocated entirely to the corresponding rate component in Table 31. The Base Delivery cost causation component (Line 2) is allocated 10 percent to Meter Capacity to shift some cost recovery over to the fixed Base Service Charge. This will enhance revenue stability, as revenues from Water Usage Rates vary with water usage and are therefore inherently less stable. The total adjusted cost of service (Line 9) results in an approximate revenue recovery split of 34 percent fixed (from Base Service Charge) and 66 percent variable (from Water Usage Rates), which is consistent with the current revenue recovery split.

The Max Day (Line 3) and Max Hour (Line 4) cost causation components are allocated entirely to the Meter Capacity rate component, as peaking costs tend to increase with meter size. Because Meter Capacity costs are recovered based on meter size (to be described in detail in the following section), it is most appropriate to reallocate peaking costs to the Meter Capacity rate component in Column E.

Table 30: Allocation of Total Revenue Requirement to Cost Causation Components

Line	Cost of Service	Supply (A)	Base Delivery (B)	Max Day (C)	Max Hour (D)	Meter Capacity (E)	Customer Service (F)	General (G)	Revenue Offsets (H)	Total (I)
1	Operating Expenses	\$837,467	\$675,452	\$160,470	\$39,181	\$46,741	\$101,948	\$0	\$0	\$1,861,259
2	Existing Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	Capital/Reserve Funding	\$199,512	\$83,125	\$99,750	\$36,533	\$28,890	\$0	\$21,293	\$0	\$469,104
5	Mid-Year Increase	\$492,841	\$205,339	\$246,406	\$90,244	\$71,366	\$0	\$52,598	\$0	\$1,158,794
6	Revenue Offsets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$462,660)	(\$462,660)
7	Total	\$1,529,821	\$963,916	\$506,627	\$165,958	\$146,997	\$101,948	\$73,891	(\$462,660)	\$3,026,497
8	Reallocation of General Cost	\$33,098	\$20,855	\$10,961	\$3,591	\$3,180	\$2,206	(\$73,891)	N/A	\$0
9	Total Cost of Service	\$1,562,919	\$984,771	\$517,588	\$169,548	\$150,178	\$104,153	\$0	(\$462,660)	\$3,026,497

Table 31: Adjusted Cost of Service

Line	Cost Causation Component	FY 2019	FINAL RATE COMPONENTS					Total (I)
			Supply (A)	Base Delivery (B)	Meter Capacity (E)	Customer Service (F)	Revenue Offsets (H)	
1	Supply	\$1,562,919	100%					100%
2	Base Delivery	\$984,771		90%	10%			100%
3	Max Day	\$517,588			100%			100%
4	Max Hour	\$169,548			100%			100%
5	Meter Capacity	\$0			100%			100%
6	Customer Service	\$150,178				100%		100%
7	Revenue Offsets	(\$462,660)					100%	100%
8	Total Adjusted Cost of Service	\$3,026,497	\$1,562,919	\$886,294	\$935,791	\$104,153	(\$462,660)	\$3,026,497

6. Rate Development

This section first provides an overview of the City's existing rate structure and details a proposed change to the structure of the City's Water Usage Rates. Detailed derivations of the proposed Bi-Monthly Base Service Charges and Water Usage Rates are then presented. Lastly, single-family residential bill impacts resulting from implementation of the proposed FY 2019 rates are shown.

6.1. Proposed Rate Structure

The City's water rates are comprised of two parts: (1) a Bi-Monthly Base Service Charge and (2) Water Usage Rates. The Base Service Charge is a fixed charge based on the size of the water meter serving a property. The Base Service Charge is designed to primarily recover the City's fixed costs related to billing and collection, customer service, meter reading, and meter maintenance. Water Usage Rates are assessed per ccf of water delivered and are designed to recover the remainder of the total rate revenue requirement, which consists of costs that vary more closely with the quantity of water delivered to customers.

The current structure of the City's Water Usage Rates includes three tiered rates for single-family residential customers and a single uniform rate for all other customer. Under the existing tiered rate structure for single-family residential customers, the first 20 ccf of water consumed per bi-monthly billing period is charged at the Tier 1 rate, the next 60 ccf of water consumed per billing period is assessed at the Tier 2 rate, and any additional usage per billing period is charged at the Tier 3 rate. All other customers are charged a single uniform Water Usage Rate per ccf of water delivered.

Based on discussions with City staff, Raftelis recommends that the City eliminate the existing three-tiered Water Usage Rate structure for single-family residential customers and adopt a single uniform Water Usage Rate for all customers. The proposed change is based on the following key considerations. Firstly, a uniform Water Usage Rate is simpler for customers to understand than a tiered rate structure. Secondly, a change from tiered rates to a uniform rate enhances revenue stability. This is because under a tiered rate structure, any reduction in water sales will generally first reduce the units of water assessed at the highest tiered rate. Lastly, tiered rates are generally better suited for water agencies that obtain a water supply from multiple sources. Supply costs associated with the more expensive water supply sources can then be allocated to higher tiers. Because the City obtains its water supply solely from groundwater, tiered rates cannot be differentiated based on varying water supply costs.

6.2. Proposed Bi-Monthly Base Service Charge Rates

The proposed Bi-Monthly Base Service Charges are designed to recover the total amounts associated with the Meter Capacity and Customer Service rate components (shown in Columns E and F in Line 8 of Table 31). To calculate the Base Service Charges, the proper denominator by which to divide the Customer Service and Meter Capacity revenue requirements must be determined. The Customer Service revenue requirement is allocated evenly to all accounts, as these costs are not related to meter size. However, the Meter Capacity revenue requirement pertains to fixed costs necessary to maintain a water system capable of operating under peak capacity conditions. As larger meter sizes have greater flow capacity, Equivalent Meter Units (EMUs) are used to allocate the Meter Capacity revenue requirement proportionally based on the flow capacity of each meter.

Table 32 shows the determination of total EMUs. Total meters in FY 2019 shown in Column A were determined previously in Table 4. Rated capacity in Column B shows the safe flow capacity of each meter size in gallons per

minute (gpm). Rated capacity values are from the AWWA M1 Manual and are considered industry standard. EMU ratios shown in Column C are calculated using a 3/4-inch meter size as the base, which is the smallest meter size used in the City's water service area. All other EMU ratios are determined by dividing the rated capacity for the meter size in question by the rated capacity of the 3/4-inch base meter. For example, the EMU ratio of 5.33 for 2-inch meters (Column C, Line 4) is determined by dividing 160 gpm (Column B, Line 4) by 30 gpm (Column B, Line 1). Total EMUs in Column D are then determined by multiplying total meters (Column A) by the EMU ratio (Column C) for each meter size in Lines 1-8. Total meters and EMUs in Line 9 are the sum of Lines 1-8. The annual total in Line 10 is simply Line 9 multiplied by six bi-monthly billing periods per year to determine the units of service by which to divide the FY 2019 Customer Service and Meter Capacity revenue requirements. (Calculations are subject to rounding.)

Table 32: Bi-Monthly Base Service Charge Units of Service

Line	Meter Size	Total Meters (A)	Rated Capacity (B)	EMU Ratio (C)	Total EMUs (D=A x C)
1	3/4"	2,546	30 gpm	1.00	2,546
2	1"	74	50 gpm	1.67	123
3	1 1/2"	53	100 gpm	3.33	177
4	2"	70	160 gpm	5.33	373
5	3"	10	350 gpm	11.67	117
6	4"	5	630 gpm	21.00	105
7	6"	2	1300 gpm	43.33	87
8	8"	0	2800 gpm	93.33	-
9	Total	2,760			3,528
10	Annual Total	16,560			21,166

Table 33 shows the determination of unit costs for the Customer Service and Meter Capacity rate components, which are used to determine the proposed bi-monthly Base Service Charges. The unit costs are calculated by dividing the revenue requirement for each cost causation component in Table 31 by the units of service in Table 32. The Meter Capacity Unit Cost per Bi-Monthly EMU calculation in line 6 has been rounded up.

Table 33: Bi-Monthly Base Service Charge Unit Costs

Line	Description	Total	Source/Notes
1	Customer Service Revenue Requirement	\$104,153	Table 31 (Column F, Line 8)
2	Total Annual Bills	16,560	Table 32 (Column A, Line 10)
3	Customer Service Unit Cost per Bi-Monthly Bill	\$6.29	Line 1 / Line 2
4	Meter Capacity Cost	\$935,791	Table 31 (Column E, Line 8)
5	Total Annual EMUs	21,166	Table 32 (Column D, Line 10)
6	Meter Capacity Unit Cost per Monthly EMU	\$44.22	Line 4 / Line 5

Table 34 shows the determination of the proposed bi-monthly Base Service Charge by meter size for FY 2019. The Meter Capacity cost by meter size in Column C is determined by multiplying the Meter Capacity unit cost (Line 6 in Table 33) by the EMU ratios previously shown in Table 32. The Customer Service cost shown in Column D was

determined in Line 3 of Table 33 and equivalent for all meter sizes. The total proposed bi-monthly Base Service Charge by meter size for FY 2019 in Column E is determined by summing the Meter Capacity and Customer Service costs in Column C and Column D respectively. The Meter Capacity Unit Cost in Column B and the Meter Capacity Cost in Column C are rounded up to the nearest penny. Column G shows the dollar difference between proposed FY 2019 (Column E) and current (Column F) bi-monthly Base Service Charges by meter size.

Table 34: Derivation of FY 2019 Bi-Monthly Base Service Charge

Meter Size	EMU Ratio	Meter Capacity Unit Cost	Meter Capacity Cost	Customer Service Cost	Proposed FY 2019 Charge	Current Charge	Difference
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Source/Notes:	Table 32	Table 33	A x B	Table 33	C + D	Table 8	E - F
3/4"	1.00	\$44.22	\$44.22	\$6.29	\$50.51	\$28.68	\$21.83
1"	1.67	\$44.22	\$73.69	\$6.29	\$79.98	\$47.80	\$32.18
1 1/2"	3.33	\$44.22	\$147.38	\$6.29	\$153.67	\$95.58	\$58.09
2"	5.33	\$44.22	\$235.80	\$6.29	\$242.09	\$152.93	\$89.16
3"	11.67	\$44.22	\$515.81	\$6.29	\$522.10	\$320.20	\$201.90
4"	21.00	\$44.22	\$928.46	\$6.29	\$934.75	\$540.03	\$394.72
6"	43.33	\$44.22	\$1,915.86	\$6.29	\$1,922.15	\$1,146.98	\$775.17
8"	93.33	\$44.22	\$4,126.46	\$6.29	\$4,132.75	\$1,911.64	\$2,221.11

Table 35 shows the current bi-monthly Base Service Charges and proposed bi-monthly Base Service Charges for FY 2019 through FY 2023. The Base Service Charges in FY 2019 were determined in Column E of Table 34. The charges are increased in each subsequent year by the revenue adjustments shown in Table 21, and rounded up to the nearest cent.

Table 35: Proposed Bi-Monthly Service Charges through FY 2023

Meter Size	Current	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Source/Notes:	Table 8	Table 34	50% Adjustment	20% Adjustment	7% Adjustment	0% Adjustment
3/4"	\$28.68	\$50.51	\$75.77	\$90.93	\$97.30	\$97.30
1"	\$47.80	\$79.98	\$119.97	\$143.97	\$154.05	\$154.05
1 1/2"	\$95.58	\$153.67	\$230.51	\$276.62	\$295.99	\$295.99
2"	\$152.93	\$242.09	\$363.14	\$435.77	\$466.28	\$466.28
3"	\$320.20	\$522.10	\$783.15	\$939.78	\$1,005.57	\$1,005.57
4"	\$540.03	\$934.75	\$1,402.13	\$1,682.56	\$1,800.34	\$1,800.34
6"	\$1,146.98	\$1,922.15	\$2,883.23	\$3,459.88	\$3,702.08	\$3,702.08
8"	\$1,911.64	\$4,132.75	\$6,199.13	\$7,438.96	\$7,959.69	\$7,959.69

6.3. Proposed Bi-Monthly Water Usage Rates

The proposed bi-monthly Water Usage Rates are designed to recover the total amounts associated with the Supply, Base Delivery, and Revenue Offsets rate components (shown respectively in Column A, Column B, and Column H

of Line 8 in Table 31). Table 36 shows the determination of the proposed FY 2019 Water Usage Rate. Lines 1-3 show the individual revenue requirement of each rate component assigned to be recovered by the Water Usage Rate and are summed to determine the total Water Usage Rate revenue requirement in Line 4. The total Water Usage Rate revenue requirement in Line 4 is divided by projected FY 2019 water sales in ccf (previously shown in Table 5) and rounded up to the nearest cent to determine the proposed FY 2019 Water Usage Rate in Line 6. Line 8 shows the difference between the proposed FY 2019 Water Usage Rate in Line 6 and current weighted average Water Usage Rate in Line 7.

Table 36: Derivation of FY 2019 Water Usage Rate

Line	Description	Total	Source/Notes
1	Supply Revenue Requirement	\$1,562,919	Table 31 (Column A, Line 8)
2	Base Delivery Revenue Requirement	\$886,294	Table 31 (Column B, Line 8)
3	Revenue Offsets	(\$462,660)	Table 31 (Column H, Line 8)
4	Total Water Usage Rate Revenue Requirement	\$1,986,553	Sum of Lines 1-3
5	Projected FY 2019 Water Sales (ccf)	740,475	Table 5
6	Proposed FY 2019 Water Usage Rate	\$2.69	Line 4 / Line 5
7	Current Water Usage Rate*	\$1.39	
8	Difference	\$1.30	Line 6 – Line 7

*Current Rate shown is the estimated weighted average water usage rate in FY 2018 (determined by dividing estimated FY 2018 Water Usage Rate revenue by estimated FY 2018 water sales). This provides a direct comparison of current tiered water usage rates and proposed uniform water usage rates.

Table 37 shows the current tiered and uniform Water Usage Rates and proposed uniform Water Usage Rates for FY 2019 through FY 2023. Note that because of the proposed elimination of tiered rates for single-family residential customers, only uniform rates are shown for FY 2019 through FY 2023. The current uniform Water Usage rate shown reflects the existing rate for all customers not classified as single-family residential. Beginning in FY 2019, all customers (including single-family residential) will be charged the uniform Water Usage Rate shown. The proposed uniform Water Usage Rate in FY 2019 was determined in Line 6 of Table 36. The Water Usage Rates are increased in each subsequent year by the revenue adjustments shown in Table 21 and rounded up to the nearest cent.

Table 37: Proposed Water Usage Rates through FY 2023

Description	Current*	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Notes:	Table 11	Table 36	50% Adjustment	20% Adjustment	7% Adjustment	0% Adjustment
Tiered Water Usage Rates						
SFR Tier 1	\$1.23	N/A	N/A	N/A	N/A	N/A
SFR Tier 2	\$1.54	N/A	N/A	N/A	N/A	N/A
SFR Tier 3	\$2.32	N/A	N/A	N/A	N/A	N/A
Uniform Water Usage Rates	\$1.40	\$2.69	\$4.04	\$4.85	\$5.19	\$5.19

6.4. Bi-Monthly Bill Impacts

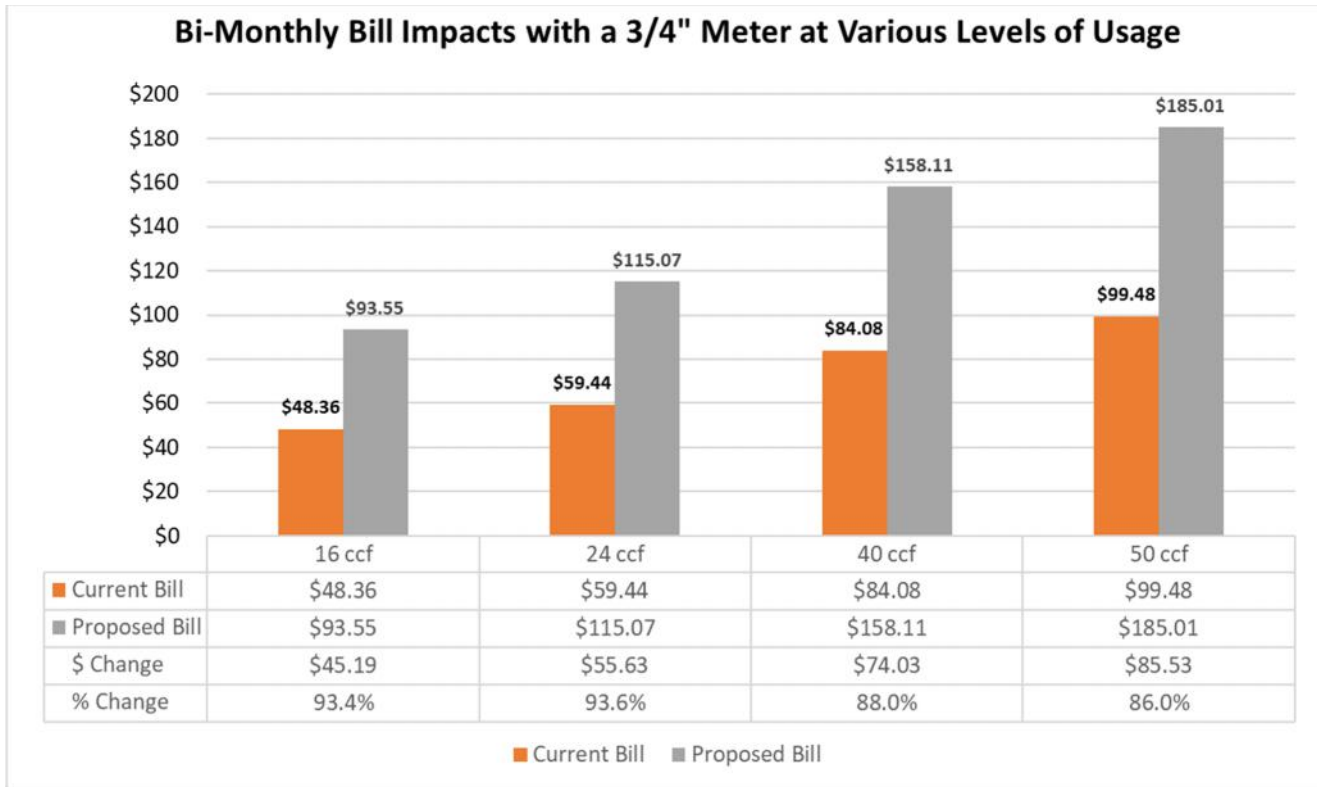
Figure 5 shows the bi-monthly bill impacts for a single-family residential customer with a 3/4" meter that would result from implementation of the proposed FY 2019 rates. The chart shows two sets of bars at four different levels of bi-monthly water usage. The orange bars represent bi-monthly bills at each usage level assuming current rates under the existing tiered rate structure. The grey bars represent bi-monthly bills under each usage level assuming proposed FY 2019 rates under the proposed uniform rate structure. Note that 24 ccf represents average bi-monthly water usage for single-family residential customers based on a detailed analysis of FY 2017 water consumption data. Note that each customer's proposed bi-monthly bill is calculated thusly:

$$T_{b} = [B_{S} \text{ Cha}] + [U_{W} \text{ U} \text{ R} \text{ x} \text{ c} \text{ c} \text{ o} \text{ w} \text{ c}]$$

Therefore, a customer with a 3/4-inch meter consuming 24 ccf of water within a bi-monthly billing period would calculate its bi-monthly bill under the proposed FY 2019 rates thusly:

$$T_{b} = [\$50.51] + [\$2.69 \times 24 \text{ c} \text{ c}] = \$115.07$$

Figure 5: Single-Family Residential Bi-Monthly Bill Impacts



APPENDIX A:
TEN-YEAR CASH FLOW DETAIL

Operating Cash Flow			FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Revenues												
Current Rate Revenues			\$1,619,404	\$1,635,944	\$1,424,066	\$1,444,848	\$1,465,813	\$1,472,272	\$1,478,751	\$1,485,252	\$1,491,946	\$1,498,661
Revenue Adjustments	Adj.	Month										
FY 2018	0%	July	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FY 2019	85%	April		\$231,759	\$1,210,456	\$1,228,120	\$1,245,941	\$1,251,431	\$1,256,938	\$1,262,464	\$1,268,154	\$1,273,862
FY 2020	50%	April			\$219,544	\$1,336,484	\$1,355,877	\$1,361,851	\$1,367,845	\$1,373,858	\$1,380,050	\$1,386,262
FY 2021	20%	April				\$133,648	\$813,526	\$817,111	\$820,707	\$824,315	\$828,030	\$831,757
FY 2022	7%	April					\$56,947	\$343,187	\$344,697	\$346,212	\$347,773	\$349,338
FY 2023	0%	April						\$0	\$0	\$0	\$0	\$0
FY 2024	0%	April							\$0	\$0	\$0	\$0
FY 2025	0%	April								\$0	\$0	\$0
FY 2026	0%	April									\$0	\$0
FY 2027	0%	April										\$0
Total Revenues from Rates			\$1,619,404	\$1,867,703	\$2,854,066	\$4,143,101	\$4,938,105	\$5,245,851	\$5,268,938	\$5,292,101	\$5,315,952	\$5,339,880
Interest Income			\$9,975	\$22,872	\$18,325	\$62,880	\$78,845	\$70,269	\$72,240	\$43,107	\$34,430	\$33,563
Other Revenue			\$151,222	\$439,788	\$40,584	\$41,395	\$42,223	\$43,068	\$43,929	\$44,808	\$45,704	\$46,618
Subtotal - Revenues			\$1,780,600	\$2,330,363	\$2,912,975	\$4,247,376	\$5,059,173	\$5,359,188	\$5,385,108	\$5,380,015	\$5,396,086	\$5,420,061
Expenses												
O&M Expenses			\$1,928,859	\$1,861,259	\$1,670,529	\$1,726,121	\$1,783,757	\$1,843,342	\$1,905,136	\$1,969,236	\$2,035,741	\$2,104,757
Existing Debt Service			\$60,604	\$0	\$92,220	\$100,501	\$108,250	\$115,750	\$120,750	\$0	\$0	\$0
Proposed Debt Service			\$0	\$0	\$748,092	\$748,092	\$1,125,390	\$1,125,390	\$1,125,390	\$1,125,390	\$1,125,390	\$1,125,390
Subtotal - Expenses			\$1,989,463	\$1,861,259	\$2,510,840	\$2,574,713	\$3,017,397	\$3,084,482	\$3,151,276	\$3,094,625	\$3,161,130	\$3,230,147
Net Operating Cash Flow			(\$208,862)	\$469,104	\$402,134	\$1,672,663	\$2,041,776	\$2,274,706	\$2,233,831	\$2,285,390	\$2,234,956	\$2,189,914
Debt Coverage			-245%	#N/A	148%	297%	266%	283%	279%	303%	299%	295%
Target Coverage			125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Reserve Balances			FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Operating Reserve												
Beginning Balance			\$1,890,816	\$944,876	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787	\$743,222	\$703,381	\$724,534
Net Cash (Excluding CIP)			(\$208,862)	\$469,104	\$402,134	\$1,672,663	\$2,041,776	\$2,274,706	\$2,233,831	\$2,285,390	\$2,234,956	\$2,189,914
Transfer Out to Capital Reserve			(\$737,078)	(\$703,209)	(\$460,426)	(\$1,650,205)	(\$2,019,029)	(\$2,251,603)	(\$2,211,396)	(\$2,325,230)	(\$2,213,804)	(\$2,168,126)
Ending Balance			\$944,876	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787	\$743,222	\$703,381	\$724,534	\$746,323
Interest Income			\$21,268	\$12,417	\$10,224	\$9,956	\$10,295	\$10,639	\$10,980	\$10,850	\$10,709	\$11,031
<i>Operating Reserve Target</i>			\$944,876	\$710,771	\$652,479	\$674,937	\$697,684	\$720,787	\$743,222	\$703,381	\$724,534	\$746,323
Capital Reserve												
Beginning Balance			(\$179,105)	\$392,973	\$394,664	\$6,626,105	\$2,559,100	\$5,437,413	\$2,776,149	\$1,507,384	\$1,636,730	\$1,410,442
Transfer In from Operating Reserve			\$737,078	\$703,209	\$460,426	\$1,650,205	\$2,019,029	\$2,251,603	\$2,211,396	\$2,325,230	\$2,213,804	\$2,168,126
CIP Funding from Developer Agreements/Grants			\$0	\$0	\$0	\$0	\$6,884,180	\$0	\$0	\$0	\$0	\$0
Debt Proceeds to Fund			\$0	\$0	\$10,521,908	\$0	\$5,306,702	\$0	\$0	\$0	\$0	\$0
Capital Projects			(\$165,000)	(\$701,518)	(\$4,750,894)	(\$5,717,209)	(\$11,331,599)	(\$4,912,866)	(\$3,480,162)	(\$2,195,884)	(\$2,440,092)	(\$2,218,137)
Ending Balance			\$392,973	\$394,664	\$6,626,105	\$2,559,100	\$5,437,413	\$2,776,149	\$1,507,384	\$1,636,730	\$1,410,442	\$1,360,430
Interest Income			\$1,604	\$5,907	\$52,656	\$68,889	\$59,974	\$61,602	\$32,127	\$23,581	\$22,854	\$20,782
<i>Capital Reserve Target</i>			\$1,758,948	\$2,051,341	\$2,612,787	\$2,159,071	\$2,334,350	\$2,372,591	\$2,568,997	\$2,269,919	\$2,314,112	\$2,202,913
Total Reserves												
Beginning Balance			\$1,711,711	\$1,337,849	\$1,105,434	\$7,278,584	\$3,234,037	\$6,135,097	\$3,496,936	\$2,250,606	\$2,340,112	\$2,134,976
Ending Balance			\$1,337,849	\$1,105,434	\$7,278,584	\$3,234,037	\$6,135,097	\$3,496,936	\$2,250,606	\$2,340,112	\$2,134,976	\$2,106,753
Change in Cash			(\$373,862)	(\$232,414)	\$6,173,149	(\$4,044,546)	\$2,901,059	(\$2,638,161)	(\$1,246,330)	\$89,506	(\$205,136)	(\$28,223)

APPENDIX B:
TEN-YEAR CIP DETAIL

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Capital Projects											
AB1600 Program Update	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Northeast Quadrant North #3 Facility	\$0	\$0	\$0	\$0	\$0	\$6,884,180	\$0	\$0	\$0	\$0	\$0
SCADA System Improvements	\$24,000	\$20,000	\$30,000	\$133,900	\$12,731	\$13,113	\$13,506	\$0	\$0	\$0	\$0
Water Master Plan Update	\$100,000	\$0	\$0	\$10,300	\$10,609	\$10,927	\$11,255	\$11,593	\$11,941	\$12,299	\$12,668
Water Rate & Fee Study	\$95,000	\$0	\$7,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Chromium-6 Study	\$115,000	\$20,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Strategic Asset Management Plan	\$110,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Solano GSA GSP	\$0	\$0	\$3,000	\$51,500	\$5,305	\$5,464	\$5,628	\$0	\$0	\$0	\$0
Urban Water Management Plan	\$0	\$0	\$0	\$103,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Meter Replacement Program	\$6,000	\$0	\$0	\$226,600	\$116,699	\$120,200	\$123,806	\$1,213,760	\$0	\$0	\$0
Valve Replacement Program	\$55,000	\$50,000	\$22,000	\$113,300	\$53,045	\$54,636	\$0	\$0	\$0	\$0	\$0
Chromium-6 Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watson Ranch Well Improvements	\$0	\$0	\$0	\$239,990	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watson Ranch Well Replacement	\$0	\$0	\$0	\$0	\$0	\$2,403,999	\$0	\$0	\$0	\$0	\$0
Valley Glen Instrumentation Upgrades	\$0	\$0	\$0	\$28,840	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Industrial Well & Hydro Tank Improvements	\$0	\$0	\$0	\$568,560	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Industrial Well Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$2,813,772	\$0	\$0	\$0	\$0
School Well Site Upgrades	\$0	\$0	\$0	\$0	\$636,540	\$0	\$0	\$0	\$0	\$0	\$0
School Well Replacement	\$0	\$0	\$0	\$0	\$4,137,510	\$0	\$0	\$0	\$0	\$0	\$0
Parklane VFD & Instrumentation Upgrades	\$0	\$0	\$0	\$0	\$0	\$416,329	\$0	\$0	\$0	\$0	\$0
Arc Flash Study & Labeling	\$0	\$0	\$0	\$34,505	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Valley Glen Electrical Upgrades	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$745,413	\$0	\$0	\$0
School Well Generator Replacement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$275,826	\$0	\$0
Watson Ranch Misc Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$353,439	\$0	\$0
Parklane Electrical Upgrades	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$826,475	\$0
Industrial Well Site Building Replacements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$230,552
Fitzgerald Mechanical Improvements	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$325,560
Asbestos Concrete Pipe Replacement	\$0	\$0	\$0	\$0	\$0	\$655,636	\$675,305	\$695,564	\$716,431	\$737,924	\$760,062
Distribution System Appurtenance Replacement	\$0	\$0	\$0	\$824,000	\$742,630	\$764,909	\$787,856	\$811,492	\$835,837	\$860,912	\$886,739
Watson Ranch Tank Cleaning	\$0	\$0	\$0	\$216,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0
School Well Upgrades	\$0	\$0	\$0	\$447,020	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Industrial Electrical System Upgrades	\$0	\$0	\$0	\$598,430	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fitzgerald VFD/Instrumentation Upgrades	\$0	\$0	\$0	\$139,050	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watson Ranch Service Replacement	\$0	\$0	\$0	\$566,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Watson Ranch Site Improvements	\$0	\$0	\$0	\$154,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fitzgerald Booster Pump Add	\$0	\$0	\$0	\$95,790	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storage Tank Piping Seismic Upgrades	\$0	\$0	\$0	\$196,730	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fitzgerald & Parklane Tank Cleaning	\$0	\$75,000	\$525,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fitzgerald/Parklane/Watson Booster	\$0	\$0	\$112,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fitzgerald Electrical Upgrades	\$0	\$0	\$0	\$0	\$0	\$0	\$479,467	\$0	\$0	\$0	\$0
Cost Allocation (Transfer to General Fund)	\$0	\$0	\$2,018	\$2,079	\$2,141	\$2,205	\$2,271	\$2,339	\$2,410	\$2,482	\$2,556
Placeholder	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Placeholder	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total - Capital Projects	\$530,000	\$165,000	\$701,518	\$4,750,894	\$5,717,209	\$11,331,599	\$4,912,866	\$3,480,162	\$2,195,884	\$2,440,092	\$2,218,137

APPENDIX C:
BUDGET FUNCTIONALIZATION DETAIL

Description	Function	Supply	Base	Max Day	Max Hour	Meters	Customer	General	Total
Salaries/Wages	Base	0%	100%	0%	0%	0%	0%	0%	100%
Admin Leave Paid	Base	0%	100%	0%	0%	0%	0%	0%	100%
Overtime	Base	0%	100%	0%	0%	0%	0%	0%	100%
Standby	Base	0%	100%	0%	0%	0%	0%	0%	100%
Separation Pay	Base	0%	100%	0%	0%	0%	0%	0%	100%
Medicare	Base	0%	100%	0%	0%	0%	0%	0%	100%
Retirement	Base	0%	100%	0%	0%	0%	0%	0%	100%
Disability Insurance	Base	0%	100%	0%	0%	0%	0%	0%	100%
Health Insurance	Base	0%	100%	0%	0%	0%	0%	0%	100%
Worker's Comp Insurance	Base	0%	100%	0%	0%	0%	0%	0%	100%
Administration Costs - General	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Advertising/Publications	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Bld/Site Maintenance	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Chemicals	Treatment	0%	45%	55%	0%	0%	0%	0%	100%
Communications	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Bank Fees	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Credit Card Payments	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Consultants - Professional	T&D	0%	38%	45%	17%	0%	0%	0%	100%
Consultants-Non-Professional	T&D	0%	38%	45%	17%	0%	0%	0%	100%
Consultants - Lab Testing	Treatment	0%	45%	55%	0%	0%	0%	0%	100%
Contract Services - Audit	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
DMV Physicals & Exams	Base	0%	100%	0%	0%	0%	0%	0%	100%
Equipment Repairs/Maintenance	Base	0%	100%	0%	0%	0%	0%	0%	100%
Landscape Maintenance	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Legal Services	Base	0%	100%	0%	0%	0%	0%	0%	100%
Legal Svcs-Groundwater Agency	Water Supply	100%	0%	0%	0%	0%	0%	0%	100%
Meetings/Seminars	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Office Equipment Maint/Rental	Billing & Collection	0%	0%	0%	0%	0%	100%	0%	100%
Office Supplies/Postage	Billing & Collection	0%	0%	0%	0%	0%	100%	0%	100%
Office/Software Maintenance	T&D	0%	38%	45%	17%	0%	0%	0%	100%
Small Tools	T&D	0%	38%	45%	17%	0%	0%	0%	100%
Special Supplies	Meter Service	0%	0%	0%	0%	100%	0%	0%	100%
Special Supp- Meter- Developer	Meter Service	0%	0%	0%	0%	100%	0%	0%	100%
Special Supp - Meter Replace	Base	0%	100%	0%	0%	0%	0%	0%	100%
Training	Base	0%	100%	0%	0%	0%	0%	0%	100%
Uniforms	Treatment	0%	45%	55%	0%	0%	0%	0%	100%
Utilities	Water Supply	100%	0%	0%	0%	0%	0%	0%	100%
Vehicle Fuel	T&D	0%	38%	45%	17%	0%	0%	0%	100%
Vehicle Maintenance	Base	0%	100%	0%	0%	0%	0%	0%	100%
Water Conservation	Water Supply	100%	0%	0%	0%	0%	0%	0%	100%
Operation of Systems	Water Supply	100%	0%	0%	0%	0%	0%	0%	100%
Capital Outaly	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Permitting Fees	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Project Admin-Direct	Admin/General	0%	0%	0%	0%	0%	0%	100%	100%
Transfer to the General Fund	Cost Allocation	0%	0%	0%	0%	0%	32%	68%	100%