



City of
Santa Monica[®]

FINAL REPORT

Water Rate Study

October 2019

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ABBREVIATIONS & ACRONYMS

AAF	Average Annual Flow
AF	Acre Foot, equal to 435.6 HCF/CCF or 325,851 gallons
Alt.	Alternative
Avg.	Average
AWWA	American Water Works Association
BMP	Best Management Practice
CA	Customer
CAP	Capacity
CCF	Hundred Cubic Feet (same as HCF); equal to 748 gallons
CCI	Construction Cost Index
COM	Commodity
Comm.	Commercial
COS	Cost of Service
COSA	Cost of Service Analysis
CPI	Consumer Price Index
CIP	Capital Improvement Program
DU	Dwelling Unit
Excl.	Exclude
ENR	Engineering News Record
EDU	Equivalent Dwelling Unit
Exp.	Expense
FP	Fire Protection
FY	Fiscal Year (e.g., July 1 st to June 30 th)
FY 2017/18	July 1, 2017 through June 30, 2018
GPD	Gallons per Day
GPM	Gallons per Minute
HCF	Hundred Cubic Feet; equal to 748 gallons or 1 CCF
Ind.	Industrial
Irr.	Irrigation
LAIF	Local Agency Investment Fund
MFR	Multi-Family Residential
Mo.	Month
Muni.	Municipal
N/A	Not Available or Not Applicable
O&M	Operational & Maintenance Expenses

This list identifies abbreviations and acronyms that may be used in this report. This list has not been viewed, arranged, or edited by an attorney, nor should it be relied on as legal advice. The intent of this list is to support the recognition and analysis of this report. Any questions regarding clarification of this document should be directed to staff or an attorney specializing in this particular subject matter.

Prop 13	Proposition 13 (1978) – Article XIII A of the California Constitution which limits taxes on real property to 1% of the full cash value of such property.
Prop 218	Proposition 218 (1996) – State Constitutional amendment expanded restrictions of local government revenue collections.
Req't	Requirement
Res.	Residential
Rev.	Revenue
RTS	Readiness-to-Serve
R&R	Rehabilitation & Replacement
SFR	Single Family Residential
SRF Loan	State Revolving Fund Loan
SWRCB	State Water Resources Control Board
V. / Vs. /vs.	Versus

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SECTION 1. PURPOSE AND OVERVIEW OF THE STUDY

A. Purpose

The City of Santa Monica (City) retained NBS to conduct a comprehensive water rate study for a number of reasons, including meeting revenue requirements, providing greater financial stability for the water enterprise, and complying with certain legal requirements (such as California Constitution article XIII D, Section 6, which is commonly referred to as Proposition 218 [Prop 218]). The rates resulting from this study were developed in a manner that is consistent with industry standard cost of service principles. In addition to documenting the rate study methodology, this report is provided with the intent of assisting the City to maintain transparent communications with its residents and businesses.

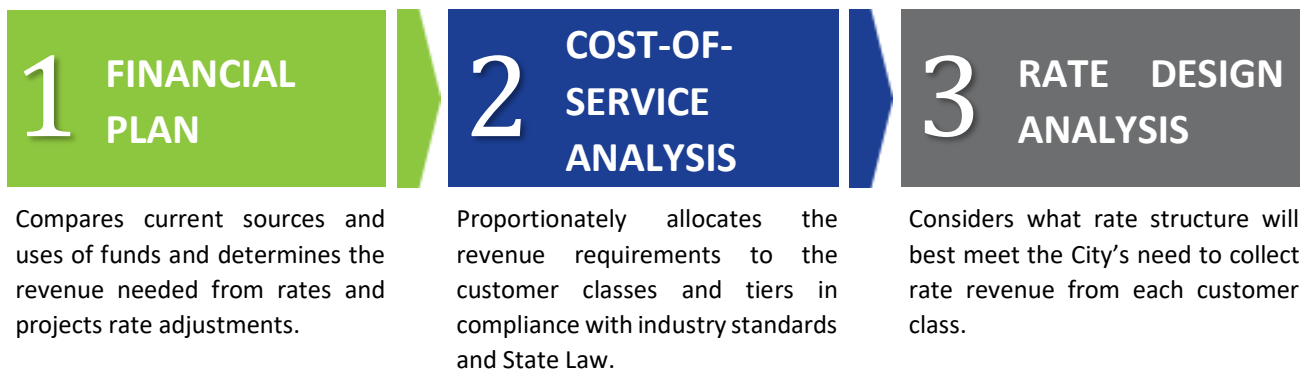
In developing new water rates, NBS worked cooperatively with City staff, the Task Force on the Environment (Task Force) and the City Council (Council), in selecting appropriate rate alternatives. Based on input from all stakeholders, the proposed rates are summarized in this report.

B. Overview of the Study

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

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

Figure 1. Primary Components of a Rate Study



These steps are intended to follow industry standards and reflect the fundamental principles of cost-of-service rate making embodied in the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges¹, also referred to as the M1 Manual. The rate study also address requirements under Proposition 218 that rates do not exceed the cost of providing the service, and that the rates be proportionate

¹ Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.

to the cost of providing service for all customers. In terms of the chronology of the study, these three steps represent the order they were performed in this Study. Detailed tables and figures documenting the development of the proposed rates are provided in the Appendix.

FINANCIAL PLAN

As a part of this rate study, NBS projected revenues and expenditures on a cash flow basis for the next five years. The amount of rate revenue required, that will allow reserves to be maintained at the recommended levels, is known as the *net revenue requirement*. As current rate revenue falls short of the net revenue requirement, rate adjustments -- or more accurately, adjustments in the total revenue collected from rates -- are recommended. This report presents an overview of the methodologies, assumptions, and data used, along with the financial plans and proposed rates developed in this study².

WATER RATE DESIGN ANALYSIS

Rate Design is typically the stage in the study where NBS, staff and the Board must work closely together, to develop rate alternatives that will meet the City's objectives. It is important for the water utility to send proper price signals to its customers about the actual cost of their water usage. This objective is typically addressed through both the magnitude of the rate adjustments, and the rate structure design. In other words, both the amount of revenue collected, and the way in which the revenue is collected from customers are important.

Several criteria are typically considered in setting rates and developing sound rate structures. The fundamentals of this process have been documented in a number of rate-setting manuals, such as the American Water Works Association (AWWA) Manual M1. The foundation for evaluating rate structures is generally credited to James C. Bonbright in the *Principles of Public Utility Rates*³, which outlines pricing policies, theories, and economic concepts along with various rate designs. The following is a simplified list of the attributes of a sound rate structure:

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

The following are the basic rate design criteria that were considered in this study:

Rate Structure Basics –The vast majority of rate structures contain a fixed or minimum charge in combination with a volumetric charge. The revenue requirements for each customer class are collected from both fixed bi-monthly meter charges and variable commodity charges. Based on input and direction from the Council during the August 13th, 2019 Study Session, the rates proposed in this report are designed to collect 15

² The complete financial plan is set forth in the Appendix.

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

percent (15%) of rate revenue from the fixed meter charge and 85 percent (85%) from the variable commodity charge⁴.

Fixed Charges – Fixed charges can be called base charges, minimum bi-monthly charges, customer charges, fixed meter charges, etc. Fixed charges for water utilities typically increase by meter size. From a financial stability perspective, if utilities recover all of their fixed costs from fixed charges and all of their variable costs from volumetric charges, fluctuations in water sales revenues are directly offset by reductions or increases in variable expenses. When rates are set in this manner, they provide the greatest revenue stability for the utility. However, other factors are often considered when designing water rates such as community values, water conservation goals, ease of understanding, and ease of administration.

Volumetric (Consumption-Based) Charges – In contrast to fixed charges, variable costs such as purchased water, the cost of electricity used in pumping water, and the cost of chemicals for treatment tend to change with the quantity of water produced. For a water utility, variable charges are based on metered consumption and charged on a dollar-per-unit cost (for example, per 100 cubic feet, or one hundred cubic feet (hcf), which is equal to approximately 748 gallons).

Multi-Tiered Water Charges – An inclining block rate structure attempts to send a price signal to customers that their consumption costs more as more water is consumed and is generally considered to be a more conservation-oriented rate structure. Tiered water charges are encouraged by state law and regulatory mandates but are also intended to represent the higher costs for customers that contribute more to peak summer time usage and place greater demands on the system. The types of higher costs reflected, for example, in the higher tiers of the rate structure may include:

- Conservation program costs: intended to encourage customers to eliminate inefficient and wasteful water use, and otherwise reduce consumption during peak periods.
- Purchased Water costs: the City purchases water from the Metropolitan Water District of Southern California (MWD), because its local supply is not sufficient to meet total water demand in the City. The purchased water from MWD comes at a higher cost than the City’s local groundwater supply.
- Energy costs: during summer months, the City may pay more in electric charges to pump, treat and deliver water, and have a higher percentage of its energy bill in higher electricity “tiers”.
- Higher maintenance costs: peak periods tend to have higher numbers of service calls, capacity costs, and system maintenance issues when the water system is running at peak demand.

REGULATORY ISSUES

Drought and Water Conservation - On January 17, 2014, Governor Jerry Brown declared a State of Emergency throughout California due to severe drought conditions. On April 1, 2015, the Governor issued Executive Order B-29-15 mandating statewide water conservation of 25 percent. The specific conservation mandate for each community in California varied from 4 to 36 percent.

During Fiscal Years 2015/16 to 2018/19, the City saw successful conservation program results that showed reduced annual water demand. While conservation is good from a supply and environmental standpoint, it places financial pressure on the utility. Consumption has an impact on both revenue and expenses and with

⁴ The California Urban Water Conservation Council recommends recovering at least 70 percent of rate revenue through volume-based rates. However, water utilities are allowed to develop their own allocations that accurately reflect their actual cost allocations.

positive conservation efforts continuing to be a high priority for the City, the revenue declines could put the water utility at risk in the future without changes in the consumption charges. Council directed staff to develop a drought rate structure which is presented in Section 2.G of this report. The drought rates presented in this report may be adopted at the Council's choosing in the future, in the event of a state issued drought mandate as was done in 2015.

SECTION 2. WATER RATE STUDY

A. Key Water Rate Study Issues

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

- Maintain routine operation and maintenance expenditures of the water system, including salaries and benefits of water resources staff, contracted services and water sustainability programs.
- Achieve water self-sufficiency by 2023.
- Fund routine capital projects to maintain a modern and reliable water network and infrastructure.
- Maintain reserve fund levels to ensure future financial stability for the water utility.
- Continuing to encourage water conservation with a tiered rate structure.
- Provide greater revenue stability for the Utility, due to the level of capital investment planned over the next five years.
- Comply with Prop 218 requirements to ensure cost of service are properly allocated amongst user classifications.

NBS developed various water rate alternatives as requested by City staff and the Task Force over the course of this Study. All rate structure alternatives relied on industry standards and cost-of-service principles. The rate alternative that will be implemented, is ultimately the decision of the Council. The fixed and volume-based charges were calculated based on the net revenue requirements, number of customer accounts and water consumption data provided by the City.

B. Financial Plan

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

- **Meeting Net Revenue Requirements:** For Fiscal Year (FY) 2019/20 through FY 2023/24, the projected net revenue requirement (that is, total annual expenses plus debt service and rate-funded capital costs, less non-rate revenues) for the City is approximately \$36 million on average, annually. The net revenue requirement increases to over \$39 million by the end of the five-year period. If no rate adjustments are implemented, the City is projected to average a \$12.4 million deficit each year, which would grow to nearly \$16 million annually by the end of the five-year period.
- **Building and Maintaining Reserve Funds:** Reserve funds provide a basis for a utility to cope with fiscal emergencies such as revenue shortfalls, asset failure, and natural disasters, among other events. Reserve policies provide guidelines for sound financial management, with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. The City plans to reach the proposed reserve target by the end of FY 2023/24. The reserve funds for the Utility are considered unrestricted reserves and consist of the following:
 - **The Operating Reserve** should equal approximately 90 days of operating expenses (reaching approximately \$6.9 million in FY 2023/24). An Operating Reserve is intended to promote

financial viability in the event of any short-term fluctuation in revenues and/or expenditures. Fluctuations in revenue can be caused by weather patterns, the natural inflow and outflow of cash during billing cycles, natural variability in demand-based revenue streams (such as volumetric charges), and – particularly in periods of economic distress – changes or trends in age of receivables.

- **The Capital Rehabilitation and Replacement Reserve** should equal at a minimum, 3 percent of net capital assets (approximately \$4.6 million by the end of FY 2023/24), which is set aside to address long-term and routine capital system replacement and rehabilitation needs.
- **Rate Stabilization Reserve** has a target reserve of \$1 million and is to remain unchanged from current City policy. This reserve is intended to provide additional financial security to the Utility should any unforeseen revenue shortages or capital emergency occur.
- **Funding Capital Improvement Projects:** The City must also be able to fund necessary capital improvements in order to maintain current service levels and fund strategic goals such as achieving water self-sufficiency by 2023. City staff has identified roughly \$144 million in expected capital expenditures for FY 2018/19 through 2023/24. With the recommended rate increases, these expenditures can be accomplished while increasing reserves to the minimum recommended target. To minimize impact to the ratepayers, the following strategies are implemented:
 - An interest-free loan, which is favorable to ratepayers compared to issuing bonds, and use of Capacity fee reserves (approximately \$3.2 million) will be used to fund approximately \$45.9 million of the \$144 million to implement one-time water self-sufficiency capital projects
 - The \$28.3 million for restoring additional local groundwater supplies (Olympic Well Field Restoration) will be paid for using the Gillette-Boeing Settlement fund.
- **Achieving Water Self-Sufficiency:** The City has the goal of achieving self-sufficiency from MWD by January 2023. As a result of projects dedicated to self-sufficiency, water purchases are expected to decrease significantly in FY 2023/24.
- **Inflation and Growth Projections:** Assumptions regarding cost inflation were made in order to project future revenues and expenses for the study period. Customer growth is expected to be nearly 0.42 percent annually. This factor was used in the analysis for some revenues and expenses, and all other factors were set by the City’s Annual budget document.
- **Maintaining Adequate Bond Coverage:** Although the City currently has an interest free loan from an internal settlement fund that does not require a bond coverage maintenance, moving forward, the best practice by industry standard is to maintain a debt service coverage ratio of at least 1.20. The benefit of exceeding the minimum debt coverage ratio is that it strengthens the City’s credit rating, which can help lower the interest rates for debt-funded capital projects in the future, should the City decide to use them.
- **Impact of Annual Rate Adjustment Date:** The financial plan modelling assumes that rate adjustments occur in January of each year⁵. This means that only about half of the planned revenue to be collected from the rate adjustment listed for one fiscal year will be collected in that year. For example, there is a 20 percent increase in rate revenue planned for FY 2019/20; meaning, the rates are developed to recover \$28.6 million, which is a 20 percent increase over the expected \$23.8 million that would be collected without a rate increase. However, because of the timing for when the rates will go into

⁵ The first rate increase is scheduled for January 1, 2020 but could be delayed to March 1, 2020 pending public hearing and rate adoption council meeting date.

effect, the Financial Plan results in only \$26.2 million in rate revenue that will be collected for FY 2019/20, due to the mid-fiscal year implementation.

Rate revenue adjustments of twenty percent (20%) in FY 2019/20, eighteen percent (18%) in FY 2020/21, and fourteen percent (14%) in FY 2021/22 through FY 2023/24, will be needed in order to fund operating expenses, reduced planned capital projects, debt service obligations and maintain reserves at the recommended targets by FY 2023/24⁶. **Figure 2** summarizes the sources and uses of funds, net revenue requirements, and the recommended annual percent adjustments in total rate revenue recommended for the next 5 years for the City. This figure assumes the City’s full CIP funding and additional rates that were analyzed resulting from CIP efficiencies are shown in Appendix B.

Figure 2. Summary of Water Revenue Requirements

Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Sources of Water Funds						
Rate Revenue Under Prevailing Rates	\$23,811,878	\$23,811,878	\$ 23,911,888	\$ 24,012,318	\$ 24,113,170	\$ 24,214,445
Non-Rate Revenues	1,987,782	2,262,770	2,275,669	2,554,997	2,074,951	2,145,144
Interest Earnings	800,000	395,162	290,865	195,700	190,078	218,695
Total Sources of Funds	\$26,599,660	\$26,469,810	\$ 26,478,422	\$ 26,763,015	\$ 26,378,198	\$ 26,578,285
Uses of Water Funds						
Operating Expenses	\$ 28,340,104	\$ 26,126,976	\$ 27,161,250	\$ 27,988,313	\$ 30,536,414	\$ 27,548,789
Debt Service	-	-	1,864,700	1,864,700	1,864,700	1,864,700
Rate-Funded Capital Expenses	104,164	1,815,789	11,968,093	9,560,333	10,082,174	12,053,708
Total Use of Funds	\$28,444,268	\$27,942,765	\$ 40,994,043	\$ 39,413,346	\$ 42,483,289	\$ 41,467,198
Surplus (Deficiency) before Rate Increase	\$ (1,844,608)	\$ (1,472,955)	\$ (14,515,621)	\$ (12,650,332)	\$ (16,105,090)	\$ (14,888,913)
Additional Revenue from Rate Increases ¹	-	2,381,188	7,364,861	12,369,225	17,535,984	23,465,007
Surplus (Deficiency) after Rate Increase	\$ (1,844,608)	\$ 908,233	\$ (7,150,760)	\$ (281,107)	\$ 1,430,894	\$ 8,576,094
Projected Increase to Rate Revenue Over	0.00%	20.00%	18.00%	14.00%	14.00%	14.00%
<i>Cumulative Increases</i>	0.00%	20.00%	41.60%	61.42%	84.02%	109.79%
Net Revenue Requirement ²	\$25,656,486	\$25,284,833	\$ 38,427,509	\$ 36,662,649	\$ 40,218,260	\$ 39,103,358

1. Assumes new rates are implemented January 1, 2020 and January 1 each year thereafter.

2. Total Use of Funds less non-rate revenues and interest earnings. This is the annual amount needed from water rates to cover planned expenses.

Figure 3 summarizes the Capital Improvement Plan, providing the expected cost and timing of capital projects during the 5-year rate period.

Figure 3. Summary of Capital Improvement Plan

Capital Improvement Program	Budget	Projected				
	2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Water Main Replacement	\$ 8,265,928	\$ 6,180,000	\$ 6,365,400	\$ 6,556,362	\$ 6,753,053	\$ 6,955,644
Arcadia Capacity Expansion	3,180,000	-	10,609,000	18,379,668	-	-
Olympic Groundwater Remediation	7,956,139	-	5,145,365	15,243,542	-	-
Other One-Time Capital Projects	7,457,007	6,494,969	8,022,526	1,208,556	2,764,250	5,861,290
Other Recurring Projects	2,014,920	1,308,885	1,317,682	1,318,747	3,120,872	1,792,774
Total	\$28,873,993	\$13,983,854	\$31,459,973	\$42,706,875	\$12,638,174	\$14,609,708

⁶ Because of the mid-year adjustment to the rates, the full impact of each year’s adjustment does not affect revenue until the following year.

Figure 4 summarizes the projected reserve fund balances and reserve targets for the water utility’s unrestricted funds. A more detailed version of the proposed 5-year financial plan is included in the Appendix. The appendix tables include revenue requirements, reserve funds, revenue sources, proposed rate adjustments, and the City’s capital improvement program. As can be seen in Figure 4, given proposed rate adjustments, reserves will meet the minimum target by FY 2023/24.

Figure 4. Summary of Reserve Funds

Beginning Reserve Fund Balances and Recommended Reserve Targets	Projected				
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Operating Reserve					
Ending Balance	\$ 10,031,744	\$ 5,880,984	\$ 5,599,878	\$ 7,030,772	\$ 3,887,197
<i>Recommended Minimum Target (90-days O&M)</i>	<i>6,531,744</i>	<i>6,790,313</i>	<i>6,997,078</i>	<i>7,634,104</i>	<i>6,887,197</i>
Capital Rehabilitation & Replacement Reserve					
Ending Balance	\$ 3,511,515	\$ 2,904,000	\$ 2,904,000	\$ 2,904,000	\$ 11,623,668
<i>Recommended Minimum Target (3% Net Assets)</i>	<i>2,050,000</i>	<i>2,904,000</i>	<i>4,059,700</i>	<i>4,305,700</i>	<i>4,601,700</i>
Rate Stabilization Reserve					
Ending Balance	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
<i>Recommended Minimum Target</i>	<i>1,000,000</i>	<i>1,000,000</i>	<i>1,000,000</i>	<i>1,000,000</i>	<i>1,000,000</i>
Total Ending Balance	\$ 14,543,259	\$ 9,784,984	\$ 9,503,878	\$ 10,934,772	\$ 16,510,865
Total Recommended Minimum Target	\$ 9,581,744	\$ 10,694,313	\$ 12,056,778	\$ 12,939,804	\$ 12,488,897
Surplus/(Deficit) Compared to Targets	\$ 4,961,515	\$ (909,328)	\$ (2,552,901)	\$ (2,005,032)	\$ 4,021,968

C. Cost of Service Analysis

Once the net revenue requirements are determined, the cost of service analysis proportionately distributes the revenue requirements to each of the customer classes. The cost of service analysis consists of two major components: (1) the classification of expenses, and (2) the allocation of costs to customer classes. Costs were classified corresponding to the function they serve. All costs in the City’s budget are allocated to each component of the rate structure in proportion to the level of service required by customers. The levels of service are related to volumes of peak and non-peak demand, infrastructure capacity, and customer service. These are based on allocation factors, such as water consumption, peaking factors, and number of accounts by meter size. Ultimately, a cost-of-service analysis is intended to result in rates that are proportional to the cost of providing service to each customer.

CLASSIFICATION OF COSTS

Most costs are not typically allocated 100 percent to fixed or variable categories and, therefore, are allocated to multiple functions of water service. Costs were classified using the commodity-demand method which is found in the AWWA M1 Manual⁷. In accordance with this method, budgeted costs were “classified” into seven categories: base commodity, groundwater, purchased water, conservation, capacity, customer and fire protection. The classification process provides the basis for allocating costs to various customer classes based on the cost causation (classification) components described below:

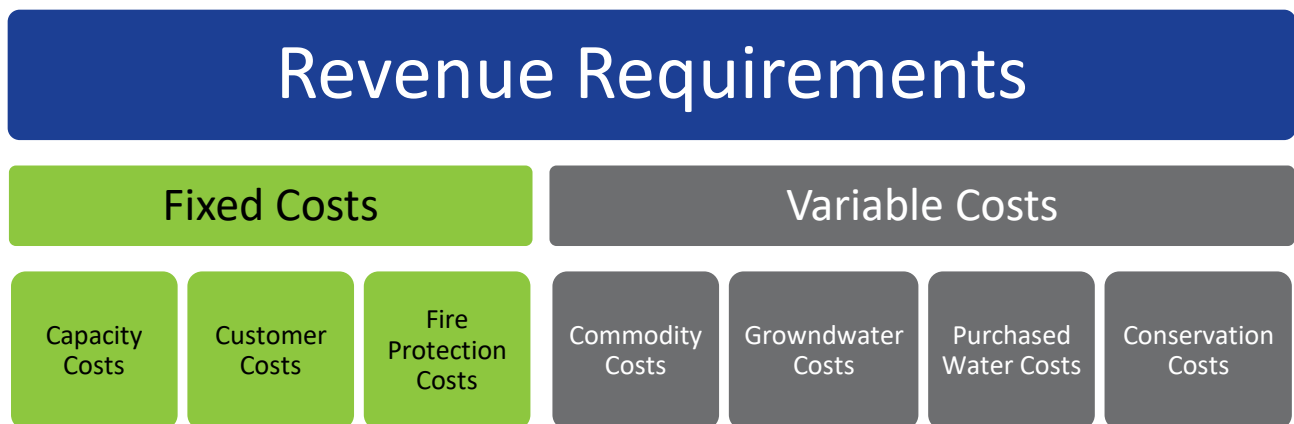
- **Commodity related costs** are those that change as the volume of water produced and delivered changes. These commonly include the costs of water quality testing, energy related to pumping for transmission and distribution, and source of supply.

⁷ Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 83.

- **Groundwater related costs** are allocated to the lower tiered commodity costs that are incurred for managing the City’s groundwater supply.
- **Purchased Water related costs** are the costs incurred from purchasing water from Metropolitan Water District (MWD) and are allocated to the highest tiered commodity costs only. These costs are expected to significantly decrease when the City achieves water self-sufficiency in 2024.
- **Conservation related costs** are the costs associated with efforts made by the City to permanently reduce water usage.
- **Capacity related costs** are associated with sizing facilities to meet the maximum, or peak demand. This includes both operating costs and capital infrastructure costs incurred to accommodate peak system capacity events.
- **Customer related costs** are associated with having a customer on the water system, such as meter reading, postage, billing and other administrative duties.
- **Fire Protection related costs** are associated with providing sufficient capacity in the system for fire meters and other operations and maintenance costs of providing water to properties for private fire service protection.

The City’s budgeted costs were reviewed and allocated to these cost causation components which are used as the basis for establishing new water rates and translate to fixed and variable charges. Tables in the Appendix show how the City’s expenses were classified and allocated to these cost causation components. Additionally, each cost causation component is considered fixed or variable, as summarized in **Figure 5**.

Figure 5. Cost Classification Summary



Based on the City’s projected costs, the Cost of Service Analysis (COSA) resulted in a distribution that is approximately 75 percent fixed and 25 percent variable. Given the City’s water self-sufficiency goals, the City has historically collected a majority of the water rate revenue from their volumetric charges. The City’s current rate structure collects 100 percent of rate revenue from variable charges, except for the fixed fire meter rates. The City Council has decided that revenue stability is an important factor in this rate setting process and has selected a rate structure that will collect 15 percent (15%) of revenue from fixed charges and 85 percent (85%) from variable rates. This adjustment moves the City closer to the cost of service analysis results and will provide more financial stability for the City, while maintaining a tiered rate structure that will encourage conservation. However, a share of the City’s capacity costs, will need to be collected from the

variable rates in order to achieve this. Thus, most capacity related costs (which are normally considered fixed) will be collected from both fixed and variable rates.

Figure 6 summarizes the allocation of the net revenue requirements to each cost causation component for the proposed new rate structure.

Figure 6. Allocation of Water Revenue Requirements

Customer Classes	FY 2019/20 Net Revenue Requirements 15% Fixed / 85% Variable	
Variable Costs		
Base Commodity	\$ 1,037,626	3.6%
Groundwater	2,913,453	10.2%
MWD Purchased Water	3,652,596	12.8%
Conservation Programs	1,544,769	5.4%
Capacity (Allocated to Variable Rate)	15,140,214	53.0%
Fixed Costs		
Capacity	\$ 971,251	3.4%
Customer	724,979	2.5%
Fire Protection	2,589,366	9.1%
Net Revenue Requirement	\$28,574,254	100%

CUSTOMER CLASSES

Customer classes are determined by combining customers with similar demand characteristics and types of use into categories that reflect the cost differentials to serve each type of customer. This process is limited by the desire to not overcomplicate the City’s rate structure.

For the City, the customer classes are split between single-family residential, multi-family residential, commercial, municipal, irrigation and fire protection. Single-family residential customers are separated from other customers for the purpose of the rate calculation because non-single family customers:

1. Are using more water on average per account.
2. Water usage varies greatly among these customers based on the specific type of customer and meter size.

As shown in **Figure 7**, consumption by single-family customers of meter size from ¾ inch to 1 inch are sufficiently similar to consider those meters a single class for the sake of the rate calculation (they will all pay the same fee). 1.5-inch and 2-inch meters will have a slightly higher fixed charge for single-family customers with larger meters. The similarities are apparent in the peaking factors shown in this figure.

Figure 7. Single Family Meter Size Characteristics

Meter Size	Number of Meters	Average Bi-Monthly Con./Acct (hcf) FY 2017/18	Peak Bi-Monthly Con./Acct (hcf) FY 2017/18	Peaking Factor
3/4 inch	3,411	18.3	21	1.12
1 inch	3,142	28.1	32	1.14
1.5 inch	1,095	43.4	50	1.16
2 inch	62	71.7	90	1.25
Total / Average	7,710	26.3	30	1.14

1. Consumption and Meters from source file: *Item 15-WaterBillingData_FY15-18.xlsx*

The amount of consumption, the peaking factors and the number of meters by size are used in the cost-of-service analysis to allocate costs to customer classes and determine the appropriate rate structures for each. The City’s most recent consumption is summarized in **Figure 8**, peaking factors in **Figure 9**, and number of customers by customer class is shown in **Figure 10**.

Commodity related costs are costs associated with the total annual consumption of water by customer class, as shown in Figure 9. This figure shows a three-year consumption range with a three-year average percent of total volume calculated.

Figure 8. Water Consumption by Customer Class

Customer Class	Consumption (hcf) FY2015/16	FY 2015/16 Percent of Total Volume	Consumption (hcf) FY2016/17	FY 2016/17 Percent of Total Volume	Consumption (hcf) FY2017/18	FY 2017/18 Percent of Total Volume	3-Year Average
Single Family	1,095,930	22.5%	1,126,398	22.6%	1,217,255	24.1%	23.0%
Multi Family	2,086,042	42.8%	2,121,328	42.5%	2,119,000	41.9%	42.4%
Commercial	1,337,980	27.4%	1,373,826	27.5%	1,348,382	26.7%	27.2%
Municipal	169,635	3.5%	168,906	3.4%	164,240	3.2%	3.4%
Irrigation	185,853	3.8%	202,935	4.1%	203,665	4.0%	4.0%
Fire	1,299	0.0%	1,195	0.0%	2,373	0.0%	0.0%
Total	4,876,739	100.0%	4,994,588	100.0%	5,054,915	100.0%	100.0%
Percentage Change in Consumption from Prior Year			2%	--	1%	--	
<i>Recycled Water</i>	<i>34,631</i>	<i>0.7%</i>	<i>40,863</i>	<i>0.8%</i>	<i>42,708</i>	<i>0.8%</i>	

1. Consumption and Meters from source files: *Item 15-WaterBillingData_FY15-18.xlsx*, and *Item 15-RecycledWaterBillingData_FY15-18.xlsx*

Peaking factors for each customer class are shown in **Figure 9**. A “peaking factor” is the relationship of each customer class’ average use to peak (generally summer) use. A peaking factor is indicative of a customers’ maximum water demand and the impact each customer class places on the City’s water system.

Figure 9. Peaking Factors by Customer Class

Customer Class	Peak Bi-Monthly Use FY2017/18 (hcf)	Average Bi-Monthly Use FY2017/18 (hcf)	Bi-Monthly Peaking Factor	FY 2017/18 Bi-Monthly Max Capacity Factor
Single Family	230,931	203,033	1.14	25.1%
Multi Family	365,102	353,455	1.03	39.7%
Commercial	241,585	224,367	1.08	26.3%
Municipal	33,518	27,368	1.22	3.6%
Irrigation	47,027	34,672	1.36	5.1%
Fire	1,248	399	3.13	0.1%
Total	919,411	843,294	1.09	100.0%
<i>Recycled Water</i>	<i>9,571</i>	<i>7,210</i>	<i>1.33</i>	<i>54.9%</i>

1. Based on bi-monthly billing data (peak day data not available).

The number of customers for each customer class (also known as customer allocation factors) are shown in **Figure 10**.

Figure 10. Number of Meters by Customer Class

Customer Class	Number of Meters	Percent of Total
Single Family	7,710	41.8%
Multi Family	6,515	35.3%
Commercial	2,092	11.3%
Municipal	253	1.4%
Irrigation	635	3.4%
Fire	1,243	6.7%
Total	18,448	100.0%
<i>Recycled Water</i>	<i>29</i>	<i>0.2%</i>

1. Meter count from source files: *Item 15-WaterBillingData_FY15-18.xlsx*, and *Item 15-RecycledWaterBillingData_FY15-18.xlsx*

COSTS ALLOCATED TO CUSTOMER CLASSES

Costs are allocated to each customer class based on the customer characteristics of each class in order to reflect the cost differentials to serve each type of customer. **Figure 11** summarizes how the costs for each cost causation component from Figure 6 are allocated to each customer class.

Figure 11. Cost Allocation Methodology

Capacity Related Costs (fixed share)	<ul style="list-style-type: none"> •Allocated based on peak water consumption by customer class •Then, allocated based on the hydraulic capacity of each meter size
Customer Related Costs	<ul style="list-style-type: none"> •Allocated based on the total number of meters
Fire Protection Related Costs	<ul style="list-style-type: none"> •Allocated based on the hydraulic capacity of fire meters
Commodity Related Costs	<ul style="list-style-type: none"> •Allocated based on water consumption by customer class
Ground Water Related Costs	<ul style="list-style-type: none"> •Allocated to Tier 1 and Tier 2 water rates as the number one source of supply
Purchased Water Costs	<ul style="list-style-type: none"> •Allocated to Tier 3 water rates as the additional source of supply from MWD
Conservation Related Costs	<ul style="list-style-type: none"> •Recovered from Tier 2 and Tier 3 water rates to encourage conservation
Water Self-Sufficiency Related Costs	<ul style="list-style-type: none"> •Allocated to Tier 3 water rates
Capacity Related Costs (volumetric share)	<ul style="list-style-type: none"> •Allocated based on peak consumption by customer class

The costs allocated to each causation component are assigned to each customer class using the cost allocation methodology described in Figure 11. This process is shown in the following sections.

Capacity Related Costs (fixed share) and Fire Protection

The capacity related costs (fixed share) allocation is summarized in **Figure 12**. Capacity related costs are those costs associated with constructing and operating the water system to ensure there is sufficient capacity in the system to meet the demand of each meter connected. These costs are first allocated to customer classes based on bi-monthly peak capacity factors and then by hydraulic capacity. It should be noted that all meter sizes for single-family residential customers are combined. For non-single-family residential customers, costs are allocated by meter size.

Larger meters have the potential to use more of the system’s capacity, compared to smaller meters. The potential capacity demanded is proportional to the maximum safe meter capacity each meter size as established by the AWWA⁸. The meter capacity factors used in this study are shown in the third and fifth columns of **Figure 13**.

A “hydraulic capacity factor” is calculated by dividing the maximum capacity or flow of large meters by the capacity of the base meter size, which is typically the most common residential meter size (in this case a 1-inch meter). For example, Figure 13 shows the hydraulic capacity of a two-inch meter is 3.20 times that of a

⁸ Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 338.

1-inch meter and therefore, the capacity component of the fixed meter charge is 3.20 times that of the 1-inch meter.

The actual number of meters by size is multiplied by the corresponding capacity ratios to calculate the total number of equivalent meters. The number of equivalent meters is used as a proxy for the potential demand that each customer can place on the water system and the percentage of capacity related costs (fixed share) distributed to each meter size by the Percent of Total Hydraulic Capacity.

The fire protection cost allocation is also summarized in **Figure 12**. Only Fire Protection meters are allocated this cost component. A direct allocation is made in the functionalization and classification step in the cost of service analysis to represent their share of system capacity and other related operations and maintenance costs and then allocate to Fire Protection meters through Hydraulic Capacity.

Customer Related Costs

The customer related cost allocation is also summarized in **Figure 12**. Customer related costs are comprised of those costs related to reading and maintaining meters, customer billing and collection, and other customer service related costs. The customer service costs do not differ among the various meter sizes; therefore, these costs are spread equally among all meters. Each customer class is allocated customer related costs based upon the percentage of total meters that are in that class.

Figure 12. Capacity Related Costs (fixed share), Customer & Fire Protection Costs Allocation

Customer Classes	Classification Components (Fixed Costs)			Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Capacity (Fixed Share)	Customer	Fire Protection		
Single Family	\$ 243,952	\$ 302,991	\$ -	\$ 546,943	1.9%
Multi Family	385,688	256,030	-	641,718	2.2%
Commercial	255,207	82,212	-	337,419	1.2%
Municipal	35,408	9,943	-	45,350	0.2%
Irrigation	49,679	24,955	-	74,633	0.3%
Fire	1,318	48,848	2,589,366	2,639,533	9.2%
Fixed Costs	\$ 971,251	\$ 724,979	\$2,589,366	\$ 4,285,596	15%
Volumetric Costs	Allocated to Tiered Volumetric Charges			\$ 24,288,657	85%
Total Net Revenue Requirement	\$ 971,251	\$ 724,979	\$2,589,366	\$ 28,574,254	100%

Figure 13. Meter Equivalency Factors

Meter Size	Standard Meters		Fire Service Meters	
	Meter Capacity (gpm)	Equivalency to 1-inch	Meter Capacity (gpm)	Equivalency to 1-inch
	<u>Displacement Meters</u>		<u>Displacement Meters</u>	
3/4 - 1 inch	50	1.00	50	1.00
1.5 inch	100	2.00	100	2.00
2 inch	160	3.20	160	3.20
	<u>Compound Class I Meters</u>		<u>Fire Service Type I & II</u>	
3 inch	320	6.40	350	7.00
4 inch	500	10.00	700	14.00
6 inch	1,000	20.00	1,600	32.00
	<u>Turbine Class II Meters</u>		<u>Turbine Class I Meters</u>	
8 inch	2,800	56.00	2,800	56.00
10 inch	4,200	84.00	4,200	84.00

1. Meter flow rates are from AWWA M-1 (Seventh Edition) Table B-2.
2. Fire Service meter flow rates are from AWWA M-6 Table 5-3.

Commodity Related Costs

The commodity related cost allocation begins by analyzing water supply records for the City, as shown in **Figure 14**. Commodity related costs are those costs related to the amount of water sold and commonly include the costs of chemicals used in the treatment process, energy related to pumping for transmission and distribution, and source of supply. Each customer class is allocated commodity related costs based upon the percentage of total consumption by that class.

Figure 14. Summary of Water Supply Records

Fiscal Year	City of Santa Monica Water (hcf)	MWD Purchased Water (hcf)	Total Supply (hcf)	City of Santa Monica Supply	Purchased Water
FY 2015/16	3,750,942	1,215,833	4,966,776	76%	24%
FY 2016/17	3,354,205	1,554,462	4,908,667	68%	32%
FY 2017/18	3,256,217	1,766,546	5,022,764	65%	35%

The City currently has a four-tiered volumetric rate for all residential customers and a two-tiered volumetric rate structure for all non-residential customers. NBS recommends that the tiered rate structure be adjusted by changing the number of tiers to three for all customers and setting new breakpoints based on consumption patterns by each customer class. In addition to these changes, the proposed tiered volumetric rates will apply to all customer classes and the tier breakpoints will vary between customer classes. This simplifies the City’s current rate structure from the customers’ standpoint.

Tier breakpoints were established based on the City's current available water supply, and expected consumption in each tier was determined based on customer class. The justification when setting the tier breakpoints includes:

1. Tier 1 breakpoint is set to assumed indoor water use based on 55 gallons per capita per day (GPCD), per the indoor residential water use standard outlined in "Making Water Conservation a California Way of Life, Implementing Executive Order B-37-16", pages 3-6 from April 2017. Single family residential water use is based on 2.56 persons per home and multi-family residential water use is based on 1.75 persons per home. This is per City staff in the Office of Sustainability and the Environment estimates of residential occupancy rates and used for Water Neutrality calculations. The planning department provided these estimates to the Water Department for this study. Tier breakpoints for non-residential start at the SFR equivalent and are scaled based on meter size.
2. Tier 2 breakpoint is set to the total volume of Santa Monica groundwater minus the Tier 1 usage for each customer class.
3. Tier 3 water is set to include all purchased water from MWD, as this is the highest current cost for water.

Figure 15 summarizes the new proposed tier breakpoints by customer class and meter size.

Capacity Related Costs (variable share)

Capacity related costs collected from the volumetric rate are allocated to each customer class based upon their total consumption within the proposed tiers.

Figure 15. Summary of Proposed Tier Breakpoints

Customer Class and Meter Size	Equivalency to 1-inch	# of Meters	# of 1-inch Equivalent Meters	% of Equivalent Meters	Tier 1 Breakpoint ¹	Tier 2 Breakpoint ²	Tier 3 Breakpoint ³
Single Family					Per Unit		
3/4 inch	1.00	3,411	3,411	13%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1 inch	1.00	3,142	3,142	12%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1.5 inch	2.00	1,095	2,190	8%	0 - 11 hcf	12 - 18 hcf	19+ hcf
2 inch	3.20	62	198	1%	0 - 11 hcf	12 - 18 hcf	19+ hcf
Subtotal: Single Family		7,710	8,941	34%			
Multi Family					Per Unit		
3/4 inch	1.00	1,779	1,779	7%	0 - 8 hcf	9 - 13 hcf	14+ hcf
1 inch	1.00	1,742	1,742	7%	0 - 8 hcf	9 - 13 hcf	14+ hcf
1.5 inch	2.00	2,409	4,818	18%	0 - 8 hcf	9 - 13 hcf	14+ hcf
2 inch	3.20	481	1,539	6%	0 - 8 hcf	9 - 13 hcf	14+ hcf
3 inch	6.40	60	384	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
4 inch	10.00	30	300	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
6 inch	20.00	12	240	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
8 inch	56.00	2	112	0%	0 - 8 hcf	9 - 13 hcf	14+ hcf
Subtotal: Multi Family		6,515	10,914	41%			
Non-Residential					Per Meter		
3/4 inch	1.00	859	859	3%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1 inch	1.00	691	691	3%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1.5 inch	2.00	714	1,428	5%	0 - 22 hcf	23 - 36 hcf	37+ hcf
2 inch	3.20	485	1,552	6%	0 - 35 hcf	36 - 58 hcf	59+ hcf
3 inch	6.40	140	896	3%	0 - 70 hcf	71 - 115 hcf	116+ hcf
4 inch	10.00	66	660	2%	0 - 110 hcf	111 - 180 hcf	181+ hcf
6 inch	20.00	22	440	2%	0 - 220 hcf	221 - 360 hcf	361+ hcf
8 inch	84.00	3	252	1%	0 - 924 hcf	925 - 1,512 hcf	1,513+ hcf
Subtotal: Non-Residential		2,980	6,778	25%			
Total		17,205	26,634	100%			

1. Tier 1 breakpoint set to assumed indoor consumption for a typical SFR customer using 55 gallons per capita per day (GPCD) with 2.56 people per SFR, 1.78 people per MFR and allocated to non-residential based on 55 GPCD and equivalent meters. Tier breakpoints for non-residential start at the SFR equivalent and are scaled based on meter size.
2. Tier 2 breakpoint set to volume of Santa Monica groundwater source minus the Tier 1 usage for each customer class.
3. Tier 3 water is set to include all purchased water from MWD.

Source file for Tier breakpoints and calculations: *Santa Monica Tier Analysis_3 Tiers_07.28.19.xlsx*

D. Rate Design Analysis

The process of evaluating the water rate structure provides the opportunity to incorporate a number of rate-design objectives and policies, including revenue stability, equity among customer classes, and water conservation. NBS discussed several water rate alternatives and methodologies with City Staff over the course of this study, such as the percentage of revenue collected from fixed vs. variable charges and differentiating rates by customer class. Based on input provided by all stakeholders, the proposed rates were developed. The following sections describe this process.

NBS recommends that the City make the following modifications to the water rate structure:

1. Introduce a modest 15% fixed charge per customer account.
2. Update the volumetric rates for all customers as follows:

- a. Change the number of tiers from four (single family residential and multi-family residential) or two (commercial customers) to three.
- b. Establish new tier breakpoints based on recent consumption statistics and cost of service analysis.

FIXED CHARGES

The fixed meter charge recognizes that the water utility incurs fixed costs regardless of whether customers use any water. There are two components that comprise the fixed meter charge: the customer component and the capacity component, as described in the previous section. Using the costs allocated to each meter size from Figure 9 and Figure 10; **Figure 16** shows the calculations for the bi-monthly charge for single-family residential customers based on meter size and **Figure 17** shows the calculations for the bi-monthly charge for all non-SFR customers based on meter size.

Figure 16. Fixed Meter Charges FY 2019/20 – Single Family Residential

Number of Meters by Class and Size	3/4 inch	1 inch	1.5 inch	2 inch
Single Family	3,411	3,142	1,095	62
Total Meters/Accounts	3,411	3,142	1,095	62
<i>Hydraulic Capacity Factor</i>	<i>1.00</i>	<i>1.00</i>	<i>2.00</i>	<i>3.20</i>
Total Equivalent Meters	3,411	3,142	2,190	198
Bi-Monthly Fixed Service Charges				
Customer Costs (\$/Acct/bi-month)	\$6.55	\$6.55	\$6.55	\$6.55
Capacity Costs (\$/Acct/bi-month)	\$4.55	\$4.55	\$9.09	\$14.55
Total Monthly Meter Charge	\$11.10	\$11.10	\$15.64	\$21.10

Figure 17. Fixed Meter Charges FY 2019/20 – All Other Customers

Number of Meters by Class and Size	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch
Multi Family	1,779	1,742	2,409	481	60	30	12	2
Commercial	603	491	531	308	90	49	17	3
Municipal	43	18	46	93	36	13	4	-
Irrigation	213	182	137	84	14	4	1	-
Total Meters/Accounts	2,638	2,433	3,123	966	200	96	34	5
<i>Hydraulic Capacity Factor</i>	<i>1.00</i>	<i>1.00</i>	<i>2.00</i>	<i>3.20</i>	<i>6.40</i>	<i>10.00</i>	<i>20.00</i>	<i>56.00</i>
Total Equivalent Meters	2,638	2,433	6,246	3,091	1,280	960	680	280
Bi-Monthly Fixed Service Charges								
Customer Costs (\$/Acct/bi-month)	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55
Capacity Costs (\$/Acct/bi-month)	\$6.87	\$6.87	\$13.74	\$21.99	\$43.98	\$68.72	\$137.43	\$384.81
Total Monthly Meter Charge	\$13.42	\$13.42	\$20.29	\$28.54	\$50.53	\$75.27	\$143.98	\$391.36

VARIABLE CHARGES

NBS' recommendation regarding rate structure is to implement the new tier breakpoints for each customer class and use a three-tiered volumetric rate structure.

Using the costs allocated to volumetric charges including water supplies shown in Figure 14, **Figure 18** shows the calculation per unit volumetric charge for each consumption tier. It should be noted that these costs are spread evenly across all customer classes, but each customer class has independent tier breakpoints, as shown in Figure 15.

Figure 18. Calculated Variable Charges for FY 2019/20

Calculation of Cost Per Tier	Tier 1	Tier 2	Tier 3	Total
	GW - Basic Water Use	Ground Water	Purchased Water	
Sources of Supply (hcf)	2,562,255	663,169	1,872,453	5,097,877
% of Total Consumption	50%	13%	37%	100%
% of Groundwater	79%	21%	--	100%
% of Tier 2 and 3 Water	--	26%	74%	100%
Costs Allocated to Volumetric Charges:				
	Tier 1	Tier 2	Tier 3	Total
Base Commodity	\$ 521,523	\$ 134,982	\$ 381,120	\$ 1,037,626
Ground Water	2,314,427	599,026	-	2,913,453
Purchased Water	-	-	3,652,596	3,652,596
Conservation	-	404,020	1,140,749	1,544,769
Water Self-Sufficiency Projects	-	-	1,531,367	1,531,367
Capacity (Allocated to Variable Rate)	6,839,972	1,770,338	4,998,537	\$13,608,847
Total	\$ 9,675,922	\$ 2,908,366	\$11,704,369	\$24,288,657
<i>% of Variable Revenue</i>	<i>40%</i>	<i>12%</i>	<i>48%</i>	<i>100%</i>
Cost Per Unit of Water	\$3.78	\$4.39	\$6.25	

E. Proposed Water Rates

The Cost of Service analysis is used to establish the rates for the first year in the five-year rate plan, FY 2019/20. In the subsequent four years of the rate planning period, proposed charges are simply adjusted by the proposed adjustment in total rate revenue needed, to meet projected revenue requirements. **Figure 19** provides a comparison of the proposed rates for FY 2019/20 through FY 2023/24. More detailed tables on the developed of the proposed charges are documented in the Appendix.

Figure 19. Proposed Water Rates

Water Rate Schedule	Number of Customers	Proposed Rates				
		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
<i>Overall Increase in Rate Revenue</i>		20.00%	18.00%	14.00%	14.00%	14.00%
<i>Bi-Monthly Fixed Service Charges</i>						
<i>Single Family Residential</i>						
3/4 inch	3,411	\$11.10	\$13.09	\$14.93	\$17.02	\$19.40
1 inch	3,142	\$11.10	\$13.09	\$14.93	\$17.02	\$19.40
1.5 inch	1,095	\$15.64	\$18.46	\$21.04	\$23.99	\$27.35
2 inch	62	\$21.10	\$24.90	\$28.38	\$32.36	\$36.89
<i>All Other Customers</i>						
3/4 inch	2,638	\$13.42	\$15.84	\$18.05	\$20.58	\$23.46
1 inch	2,433	\$13.42	\$15.84	\$18.05	\$20.58	\$23.46
1.5 inch	3,123	\$20.29	\$23.95	\$27.30	\$31.12	\$35.48
2 inch	966	\$28.54	\$33.68	\$38.39	\$43.77	\$49.89
3 inch	200	\$50.53	\$59.62	\$67.97	\$77.49	\$88.33
4 inch	96	\$75.27	\$88.81	\$101.25	\$115.42	\$131.58
6 inch	34	\$143.98	\$169.90	\$193.68	\$220.80	\$251.71
8 inch	5	\$391.36	\$461.81	\$526.46	\$600.16	\$684.18
<i>Fire Service Charges</i>						
1.5 inch	1	\$42.61	\$50.28	\$57.32	\$65.34	\$74.49
2 inch	67	\$64.25	\$75.81	\$86.43	\$98.52	\$112.32
3 inch	73	\$132.76	\$156.66	\$178.59	\$203.59	\$232.10
4 inch	768	\$258.98	\$305.59	\$348.37	\$397.15	\$452.75
6 inch	268	\$583.52	\$688.56	\$784.95	\$894.85	\$1,020.13
8 inch	59	\$1,016.25	\$1,199.18	\$1,367.06	\$1,558.45	\$1,776.63
10 inch	7	\$1,521.10	\$1,794.90	\$2,046.19	\$2,332.65	\$2,659.22
<i>Commodity Charges</i>						
<u>All Customers (\$/hcf)</u>						
Tier 1		\$3.78	\$4.46	\$5.08	\$5.80	\$6.61
Tier 2		\$4.39	\$5.18	\$5.91	\$6.73	\$7.67
Tier 3		\$6.25	\$7.38	\$8.41	\$9.58	\$10.93

F. Comparison of Current and Proposed Water Bills

Figure 20, Figure 21 and Figure 22 compare a range of bi-monthly water bills for the current and proposed water rates as a result of the initial single-family residential customers (with a 3/4 to 1-inch meter), multi-family customers (with a 1.5-inch meter with 8 units) and business customers (the bill comparison for a commercial customer with a 1.5-inch meter). This comparison is for the first year increase only. These bi-monthly bills are based on typical meter sizes, and the average consumption levels for each customer class are highlighted.

Figure 20. Bi-Monthly Bill Comparison for Single Family Customers (3/4 to 1 inch meters)

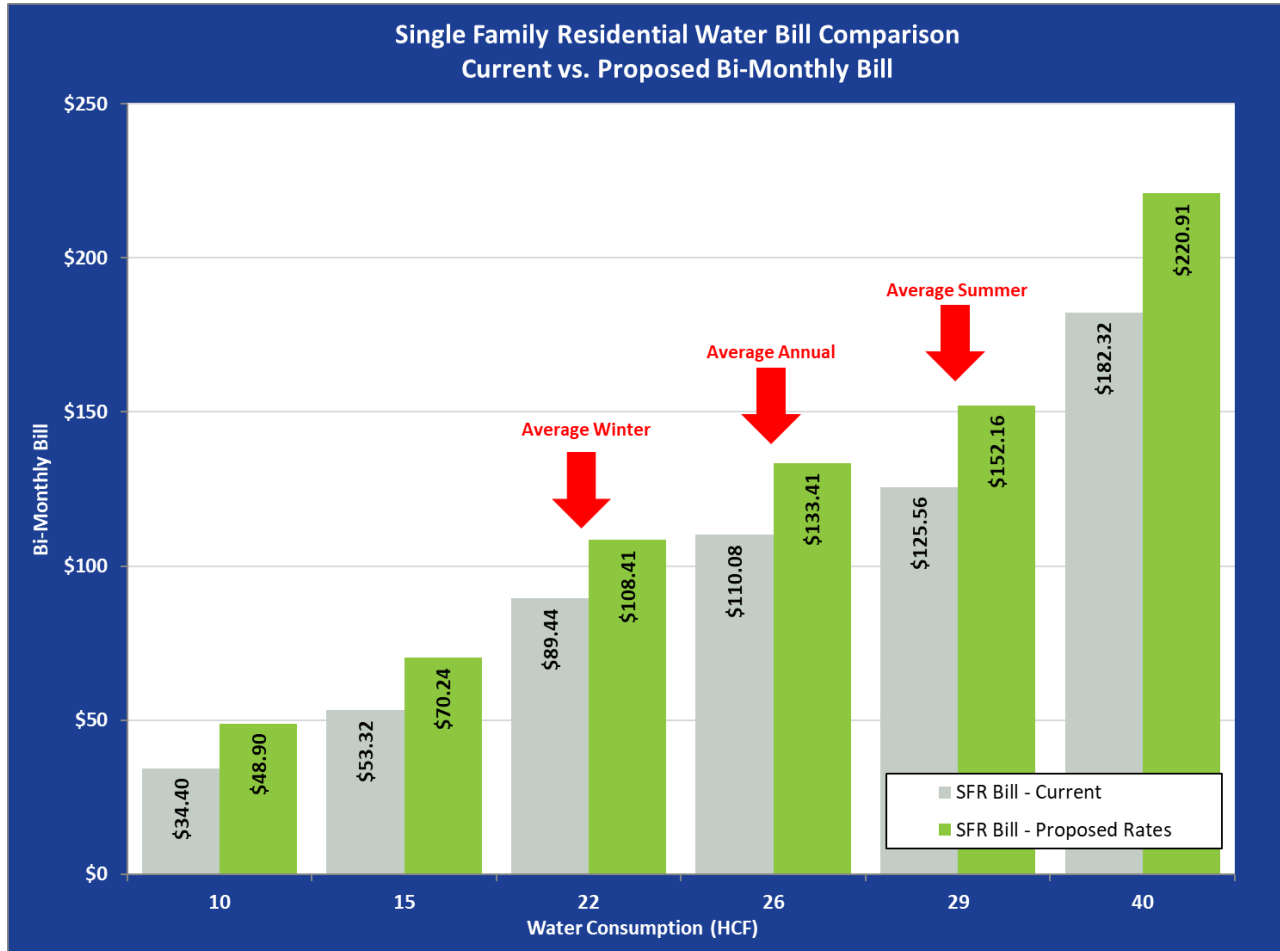


Figure 21. Bi-Monthly Water Bill Comparison for Multi-Family Customers

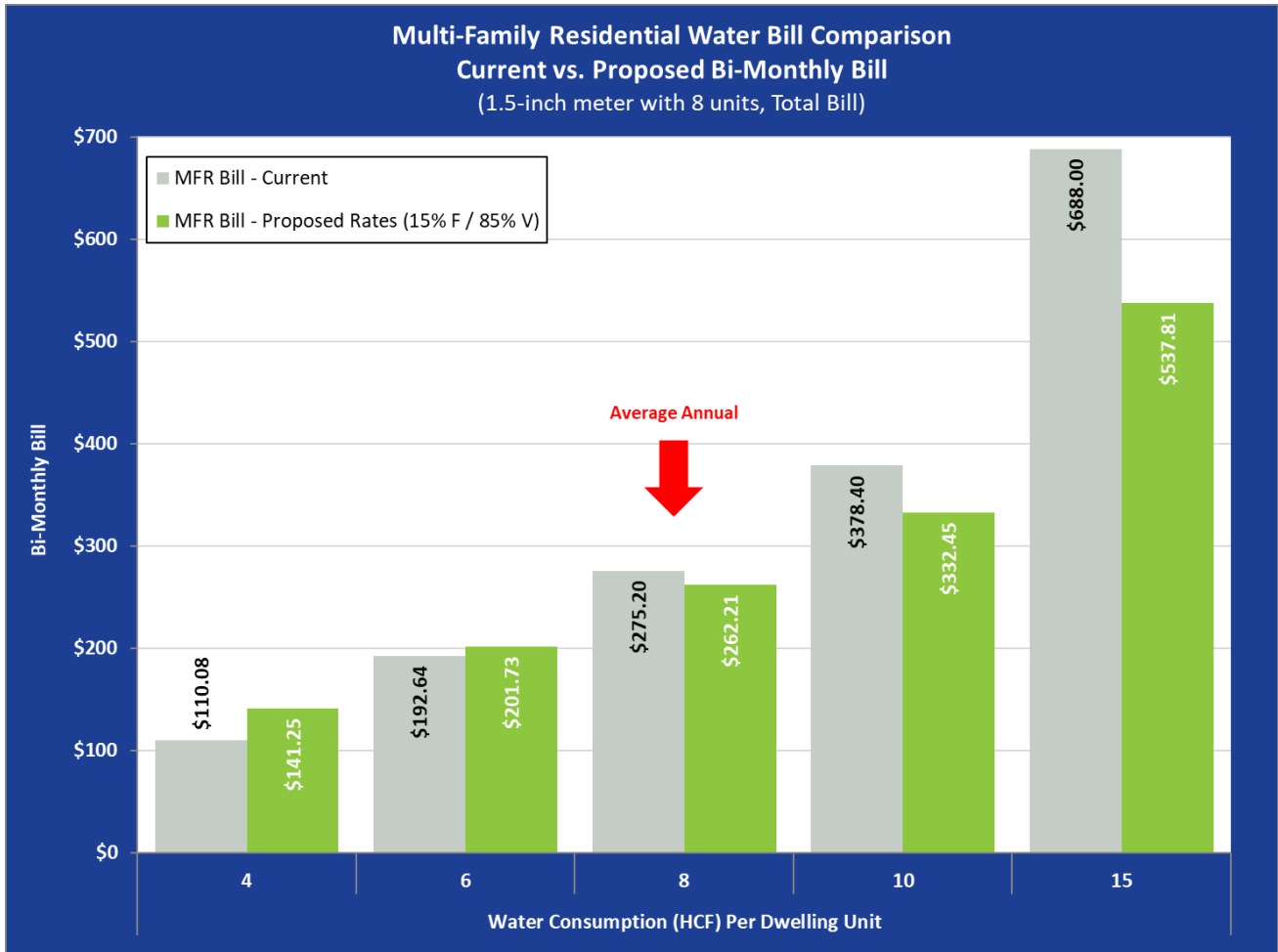
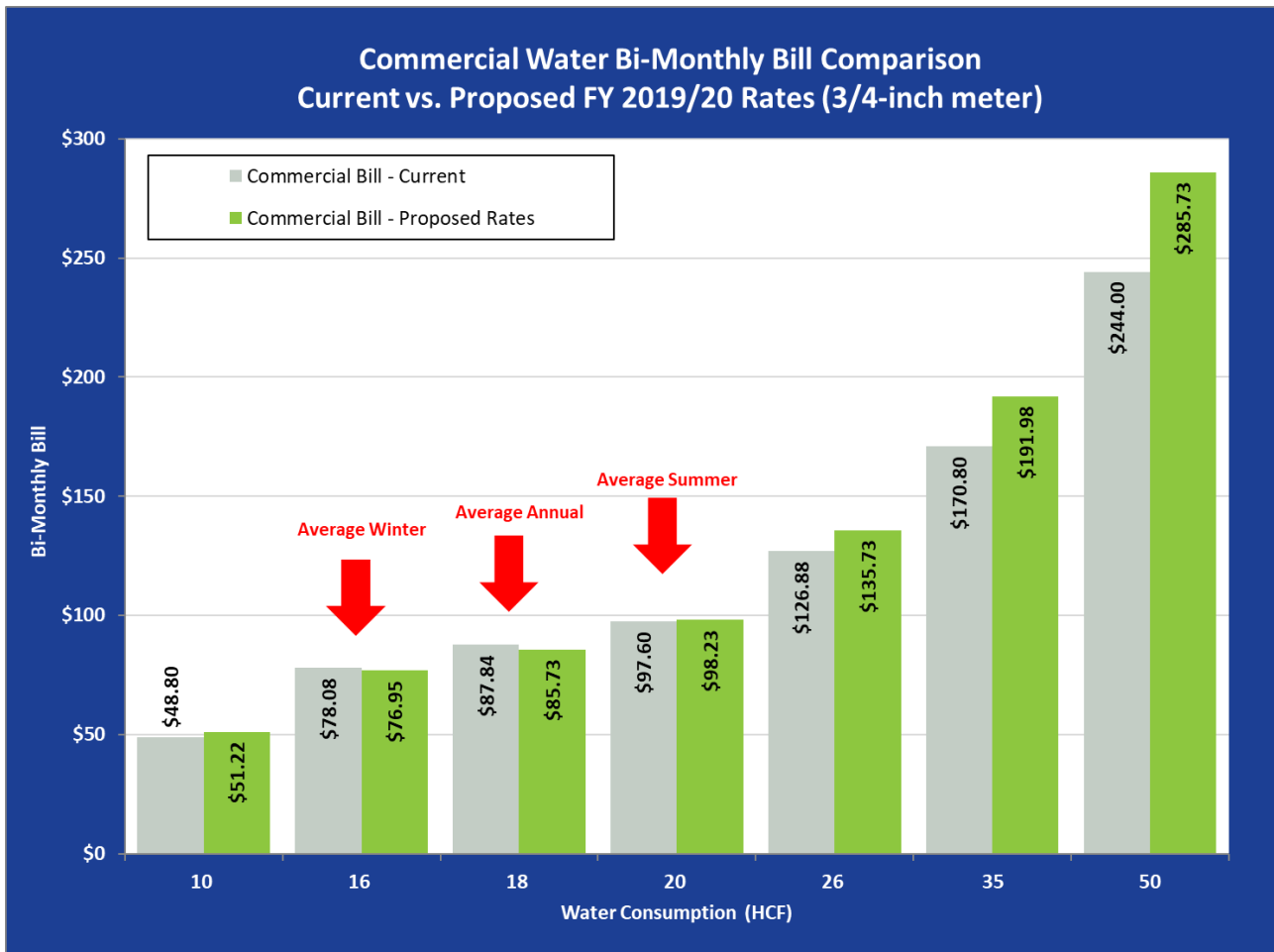


Figure 22. Bi-Monthly Water Bill Comparison for Commercial Customers



G. Drought Rate Analysis

Should conservation increase beyond currently expected levels, the City is still obligated to meet its annual net revenue requirements to keep the utility operating and functional. At the request of the City, drought rates have been developed so that if total consumption should decrease further due to an increase in conservation required by the state, another regulatory agency, or if the City Council declares that it is in more severe drought stages, the City’s Water Utility would still be kept whole, financially. In the event that consumption decreases beyond projected baseline consumption levels, some costs will also decrease, and the proposed drought rates have taken this reduced revenue need into consideration.

Figure 23 shows the expenses directly impacted by conservation over the next five years. Because these expenses are a significant portion of the City’s budget, drought rates will offset the loss of variable revenue, if needed and implemented by the City in different stages of drought severity.

Figure 23. Expenses Directly Impacted by Conservation

Expense Description	Commodity Costs ¹				
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
AOP/UV Pollution Remediation Systems - O&M	\$ -	\$ -	\$ -	\$ 400,000	\$ 410,000
Chemicals	475,000	485,000	496,640	508,559	520,765
Contra-Charnock Pollution Expense	-	-	-	-	-
Direct Install Program	-	-	-	-	-
Environmental Reimbursement	1,978,306	2,025,785	2,074,404	2,124,189	2,175,170
SMMUSD Program	470,000	-	-	-	-
Utilities - Electricity	2,050,000	2,142,080	2,193,490	2,246,134	2,300,041
Waste Disposal (Brining)	835,000	834,464	854,491	874,999	895,999
Water Purchases	4,900,000	4,900,000	5,200,000	5,300,000	1,600,000
Adjusted Commodity Assigned Costs	\$ 10,708,306	\$ 10,387,329	\$ 10,819,025	\$ 11,453,881	\$ 7,901,975

1. Costs change due to expected inflation.

Figure 24 then shows the calculation of the updated commodity costs for each percentage of conservation the City is looking to achieve with the drought rates for FY 2019/20. From here, the updated commodity cost is used in the variable rate calculation shown for the water rates in Figure 18. This calculation is performed for all levels of conservation and summarized in **Figure 25** for the next five fiscal years. For a more detailed look at how drought rates are calculated, please refer to the Appendix.

Figure 24. FY 2019/20 Calculation of Commodity Costs at Various Levels of Conservation

Percentage of Conservation	Total Consumption (hcf)	Base Commodity Cost	Impacted Commodity Cost	Savings	Updated Commodity Cost
<i>a</i>		<i>b</i>	<i>c</i>	<i>d = (-a) * c</i>	<i>e = b + c</i>
0%	5,097,877	\$ 24,288,657	\$ 10,708,306	\$ -	\$ 24,288,657
10%	4,588,089	\$ 24,288,657	\$ 10,708,306	\$ (1,070,831)	\$ 23,217,827
20%	4,078,302	\$ 24,288,657	\$ 10,708,306	\$ (2,141,661)	\$ 22,146,996
30%	3,568,514	\$ 24,288,657	\$ 10,708,306	\$ (3,212,492)	\$ 21,076,166
40%	3,058,726	\$ 24,288,657	\$ 10,708,306	\$ (4,283,322)	\$ 20,005,335
50%	2,548,939	\$ 24,288,657	\$ 10,708,306	\$ (5,354,153)	\$ 18,934,505
60%	2,039,151	\$ 24,288,657	\$ 10,708,306	\$ (6,424,983)	\$ 17,863,674

Figure 25. Proposed Drought Rates

Percent increase to Rev. Req't		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
		20.00%	18.00%	14.00%	14.00%	14.00%
10%	Tier 1	\$3.90	\$4.60	\$5.24	\$5.97	\$6.81
	Tier 2	\$4.64	\$5.48	\$6.24	\$7.12	\$8.11
	Tier 3	\$6.80	\$8.03	\$9.15	\$10.43	\$11.89
20%	Tier 1	\$4.18	\$4.93	\$5.62	\$6.41	\$7.31
	Tier 2	\$4.98	\$5.88	\$6.70	\$7.64	\$8.71
	Tier 3	\$7.30	\$8.62	\$9.82	\$11.20	\$12.76
30%	Tier 1	\$4.55	\$5.36	\$6.12	\$6.97	\$7.95
	Tier 2	\$5.42	\$6.39	\$7.29	\$8.31	\$9.47
	Tier 3	\$7.94	\$9.37	\$10.68	\$12.18	\$13.88
40%	Tier 1	\$5.03	\$5.94	\$6.77	\$7.72	\$8.80
	Tier 2	\$6.00	\$7.08	\$8.07	\$9.20	\$10.49
	Tier 3	\$8.79	\$10.38	\$11.83	\$13.49	\$15.37
50%	Tier 1	\$5.72	\$6.75	\$7.69	\$8.77	\$10.00
	Tier 2	\$6.81	\$8.04	\$9.16	\$10.45	\$11.91
	Tier 3	\$9.99	\$11.79	\$13.43	\$15.32	\$17.46
60%	Tier 1	\$6.74	\$7.96	\$9.07	\$10.34	\$11.79
	Tier 2	\$8.03	\$9.48	\$10.81	\$12.32	\$14.04
	Tier 3	\$11.78	\$13.90	\$15.84	\$18.06	\$20.59

SECTION 3. RECOMMENDATIONS AND NEXT STEPS

A. Consultant Recommendations

NBS recommends the City take the following actions:

Approve and accept this Study: NBS recommends the City Council formally approve and adopt this Study and its recommendations and proceed with the steps required to implement the proposed rates. This will provide documentation of the rate study analyses and the basis for analyzing potential changes to future rates. For information on the resulting rates analyzed with CIP efficiencies, see Appendix B.

Implement Recommended Levels of Rate Adjustments and Proposed Rates: Based on successfully meeting the Proposition 218 procedural requirements, the City Council should proceed with implementing the 5-year schedule of proposed rates and rate adjustments previously shown in Figure 19. This will help ensure the continued financial health of City’s water utility.

B. Next Steps

Annually Review Rates and Revenue – Any time an agency adopts new utility rates or rate structures, those new rates should be closely monitored over the next several years to ensure the revenue generated is sufficient to meet the annual revenue requirements. Changing economic and water consumption patterns underscore the need for this review, as well as potential and unseen changing revenue requirements—particularly those related to environmental regulations that can significantly affect capital improvements and repair and replacement costs.

Note: The attached Appendix provide more detailed information on the analysis of the water revenue requirements, cost-of-service analysis and cost allocations, and the rate design analyses that have been summarized in this report.

C. NBS’ Principal Assumptions and Considerations

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

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

Appendix A: Detailed Water Study Tables and Figures

CITY OF SANTA MONICA
WATER RATE STUDY
Financial Plan and Reserve Projections

Financial Plan & Reserve Summary

TABLE 1 : FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget		Projected			
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Sources of Water Funds						
<i>Water Rate Revenue</i>						
Water Sales Revenue Under Current Rates	\$ 23,811,878	\$ 23,811,878	\$ 23,911,888	\$ 24,012,318	\$ 24,113,170	\$ 24,214,445
Revenue from Rate Increases ¹	-	2,381,188	7,364,861	12,369,225	17,535,984	23,465,007
Subtotal: Rate Revenue After Rate Increases	\$ 23,811,878	\$ 26,193,066	\$ 31,276,749	\$ 36,381,543	\$ 41,649,154	\$ 47,679,451
<i>Non-Rate Revenue</i>						
Reimbursement from other funds	\$ 354,399	\$ 404,067	\$ 405,040	\$ 414,761	\$ 424,715	\$ 434,908
Water Neutrality Fee Revenue	378,041	596,703	608,629	623,236	623,236	623,236
Charges for Service (other than Rate Revenue)	717,000	717,000	717,000	617,000	617,000	617,000
Investment Income	800,000	395,162	290,865	195,700	190,078	218,695
Other Revenues	538,342	545,000	545,000	900,000	410,000	470,000
Subtotal: Non-Rate Revenue	\$ 2,787,782	\$ 2,657,932	\$ 2,566,534	\$ 2,750,697	\$ 2,265,029	\$ 2,363,840
Total Sources of Funds	\$ 26,599,660	\$ 28,850,998	\$ 33,843,284	\$ 39,132,240	\$ 43,914,183	\$ 50,043,291
Uses of Water Funds						
<i>Operating Expenses</i>						
Salaries and Benefits	\$ 6,443,570	\$ 6,768,860	\$ 7,190,486	\$ 7,450,252	\$ 7,745,235	\$ 8,019,674
Water Purchases	5,000,000	4,900,000	4,900,000	5,200,000	5,300,000	1,600,000
Supplies and Expenses ²	9,659,992	9,264,132	9,455,027	9,520,202	11,550,891	11,837,458
Charnock Well Field & Treatment Site	2,332,807	2,190,176	2,471,098	2,530,404	2,591,134	2,653,321
New Arcadia Water Plant	716,000	632,000	747,000	764,928	783,286	802,085
Retirement and OPEB	61,733	189,806	157,484	223,836	206,251	215,663
Interfund Transfers	4,126,002	2,182,002	2,240,155	2,298,691	2,359,617	2,420,587
Subtotal: Operating Expenses	\$ 28,340,104	\$ 26,126,976	\$ 27,161,250	\$ 27,988,313	\$ 30,536,414	\$ 27,548,789
<i>Other Expenditures</i>						
New Debt Service (Interfund Loan Repayment)	\$ -	\$ -	\$ 1,864,700	\$ 1,864,700	\$ 1,864,700	\$ 1,864,700
New Debt Service (SRF Loan)	-	-	-	-	-	-
Rate-Funded Capital Expenses	104,164	1,815,789	11,968,093	9,560,333	10,082,174	12,053,708
Subtotal: Other Expenditures	\$ 104,164	\$ 1,815,789	\$ 13,832,793	\$ 11,425,033	\$ 11,946,874	\$ 13,918,408
Total Uses of Water Funds	\$ 28,444,268	\$ 27,942,765	\$ 40,994,043	\$ 39,413,346	\$ 42,483,289	\$ 41,467,198
Annual Surplus/(Deficit)	\$ (1,844,608)	\$ 908,233	\$ (7,150,760)	\$ (281,107)	\$ 1,430,894	\$ 8,576,094
Net Revenue Req^t. (Total Uses less Non-Rate)	\$ 25,656,486	\$ 25,284,833	\$ 38,427,509	\$ 36,662,649	\$ 40,218,260	\$ 39,103,358
Projected Annual Rate Revenue Adjustment	0.00%	20.00%	18.00%	14.00%	14.00%	14.00%
<i>Cumulative Increase from Annual Revenue Increases</i>	0.00%	20.00%	41.60%	61.42%	84.02%	109.79%
<i>Debt Coverage After Rate Increase</i>	N/A	N/A	3.58	5.98	7.17	12.06

1. Analysis assumes new rates are effective January 1, 2020 and each January 1st thereafter.

2. Net of water purchases and Arcadia AOP/UV System that is funded with the Gillette-Boeing Settlement Funds (shown in restricted reserves section of Table 2).

CITY OF SANTA MONICA
WATER RATE STUDY
Financial Plan and Reserve Projections

Financial Plan & Reserve Summary

TABLE 2 : RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY UN-RESTRICTED RESERVES	Budget	Projected				
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Total Beginning Cash ¹	\$ 34,820,796	\$ 19,758,091	\$ 14,543,259	\$ 9,784,984		
Operating Reserve						
Beginning Reserve Balance	\$ 18,908,799	\$ 7,085,026	\$ 10,031,744	\$ 5,880,984	\$ 5,599,878	\$ 7,030,772
Plus: Net Cash Flow (After Rate Increases)	(1,844,608)	908,233	(7,150,760)	(281,107)	1,430,894	8,576,094
Plus: Transfer in of Settlement Funds to reach target	-	3,500,000	3,000,000	-	-	(3,000,000)
Transfer Out/In to Capital R&R Reserve	(9,979,165)	(1,461,515)	-	-	-	(8,719,668)
Ending Operating Reserve Balance	\$ 7,085,026	\$ 10,031,744	\$ 5,880,984	\$ 5,599,878	\$ 7,030,772	\$ 3,887,197
Target Ending Balance (90-days of O&M) ²	\$ 7,085,026	\$ 6,531,744	\$ 6,790,313	\$ 6,997,078	\$ 7,634,104	\$ 6,887,197
Capital Rehabilitation & Replacement Reserve						
Beginning Reserve Balance	\$ 14,911,997	\$ 11,673,065	\$ 3,511,515	\$ 2,904,000	\$ 2,904,000	\$ 2,904,000
Plus: Transfer of Operating Reserve Surplus	9,979,165	1,461,515	-	-	-	8,719,668
Less: Use of Reserves for Capital Projects	(13,218,097)	(9,623,065)	(607,515)	-	-	-
Ending Capital Rehab & Replacement Reserve Balance	\$ 11,673,065	\$ 3,511,515	\$ 2,904,000	\$ 2,904,000	\$ 2,904,000	\$ 11,623,668
Capital R&R Reserve (3.0% of Net Assets)	\$ 1,693,900	\$ 2,050,000	\$ 2,904,000	\$ 4,059,700	\$ 4,305,700	\$ 4,601,700
Rate Stabilization Reserve						
Beginning Reserve Balance	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Less: Use of Reserves for Operating Expenses	-	-	-	-	-	-
Ending Rate Stabilization Reserve Balance	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Rate Stabilization Reserve (\$1 million) ¹	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
Ending Balance	\$ 19,758,091	\$ 14,543,259	\$ 9,784,984	\$ 9,503,878	\$ 10,934,772	\$ 16,510,865
Minimum Target Ending Balance	\$ 9,778,926	\$ 9,581,744	\$ 10,694,313	\$ 12,056,778	\$ 12,939,804	\$ 12,488,897
Ending Surplus/(Deficit) Compared to Targets	\$ 9,979,165	\$ 4,961,515	\$ (909,328)	\$ (2,552,901)	\$ (2,005,032)	\$ 4,021,968
Days Cash On Hand	254	203	123	116	123	205

TABLE 3 : RESERVE FUND SUMMARY, CONTINUED

Restricted Reserves						
Connection Fee Reserve						
Beginning Reserve Balance	\$ 840,593	\$ 427,000	\$ 427,000	\$ 427,000	\$ 400,000	\$ 400,000
Plus: Reserve Funding from New Connection Fees	427,000	427,000	427,000	400,000	400,000	400,000
Plus: Interest Income	-	-	-	-	-	-
Less: Use of Connection Fees for CIP	(840,593)	(427,000)	(427,000)	(427,000)	(400,000)	(400,000)
Ending Debt Reserve Balance	\$ 427,000	\$ 427,000	\$ 427,000	\$ 400,000	\$ 400,000	\$ 400,000
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Reserved for Olympic Sub-basin Remediation						
Beginning Reserve Balance ³	\$ 11,100,000	\$ 56,915,000	\$ 46,105,300	\$ 30,596,225	\$ (155,208)	\$ (1,358,128)
Plus: Funding from Gillette/Boeing Settlement ⁴	3,670,000	3,670,000	3,670,000	-	-	-
Plus: Transfer in from General Fund ⁴	56,856,139	-	-	-	-	-
Plus: Interest Income	-	1,138,300	922,106	611,924	(3,104)	(27,163)
Less: Use of Settlement Funds for CIP ⁴	(7,956,139)	-	(5,145,365)	(15,243,542)	-	-
Less: Borrow Settlement Funds for CIP (interest free)	(6,755,000)	(2,118,000)	(13,312,000)	(17,476,000)	(2,156,000)	(2,156,000)
Less: Borrow Settlement Funds for City Yard Master	-	(10,000,000)	-	-	-	-
Less: Use of Settlement Funds for O&M ⁴	-	-	-	-	(400,000)	(410,000)
Less: Transfer to O&M to reach Reserve Targets	-	(3,500,000)	(3,000,000)	-	-	3,000,000
Plus: Loan Repayment	-	-	1,356,184	1,356,184	1,356,184	1,356,184
Ending Olympic Sub-Basin Remediation Fund	\$ 56,915,000	\$ 46,105,300	\$ 30,596,225	\$ (155,208)	\$ (1,358,128)	\$ 404,893
Annual Interest Earnings Rate⁵	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

1. Total beginning cash for the Water Fund and Reserve Targets for FY 2018/19 found in source file: 50 (25) Fund Forecast - Water Fund (May 2019) - 20181217.xlsx, Summary Tab.
2. NBS is recommending setting the Operating Reserve Target to 90-days of O&M expenses.
3. Beginning reserve balance for Olympic Sub basin Remediation Fund found in source file: Item 14 - Olympic - Gillette and Boeing fund balance 10.25.18.xlsx.
4. Boeing annual payments and contributions to the Water Fund CIP found in Source file: 50 (25) Fund Forecast - Water Fund (May 2019) - 20181217.xlsx, 'GBS Reserve'
5. Interest earnings estimated by City at 2% in line with LAIF. Source file: 50 (25) Fund Forecast - Water Fund (May 2019) - 20181217.xlsx, 'Interest Schedule' tab.

CHART 1

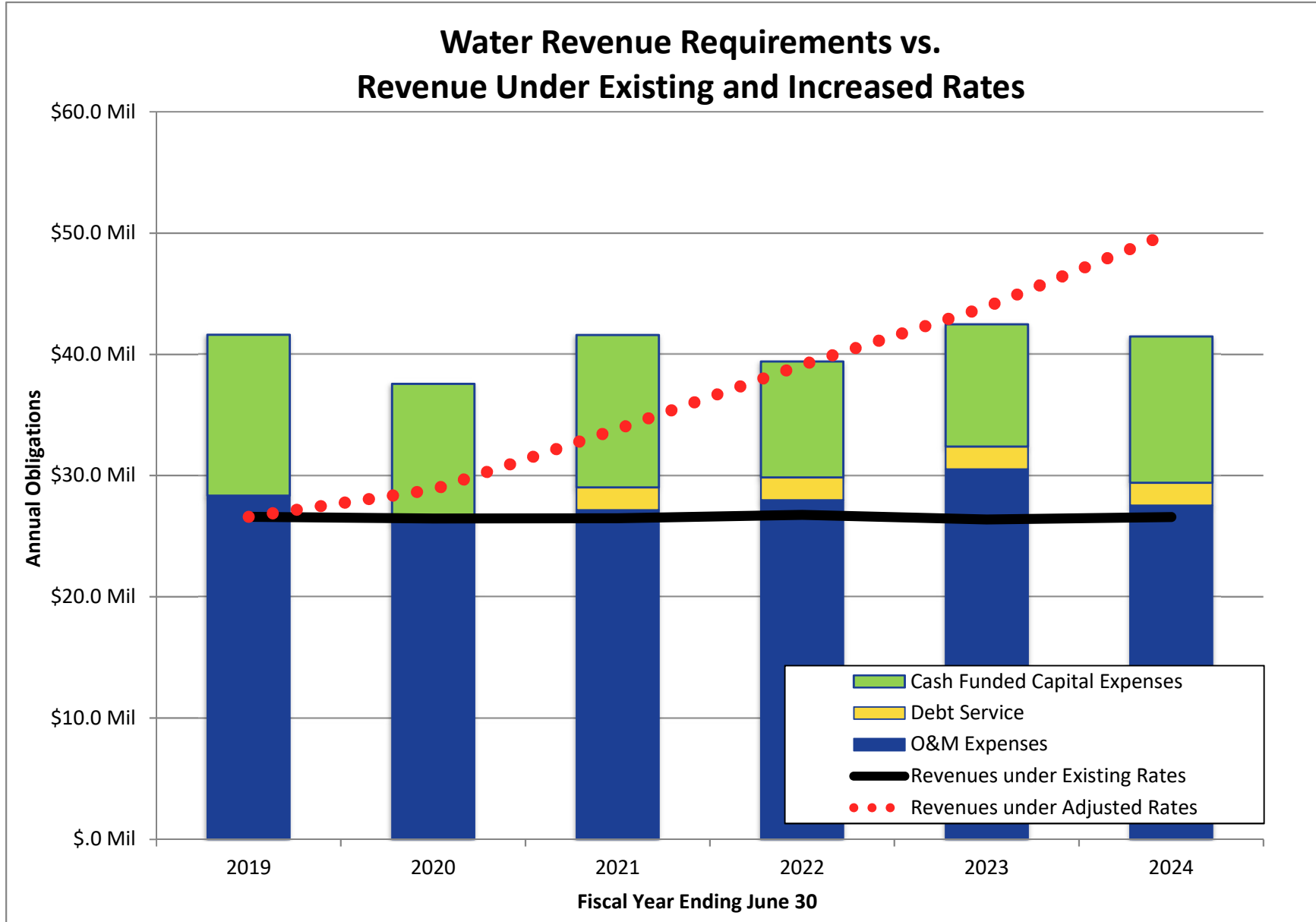


CHART 2

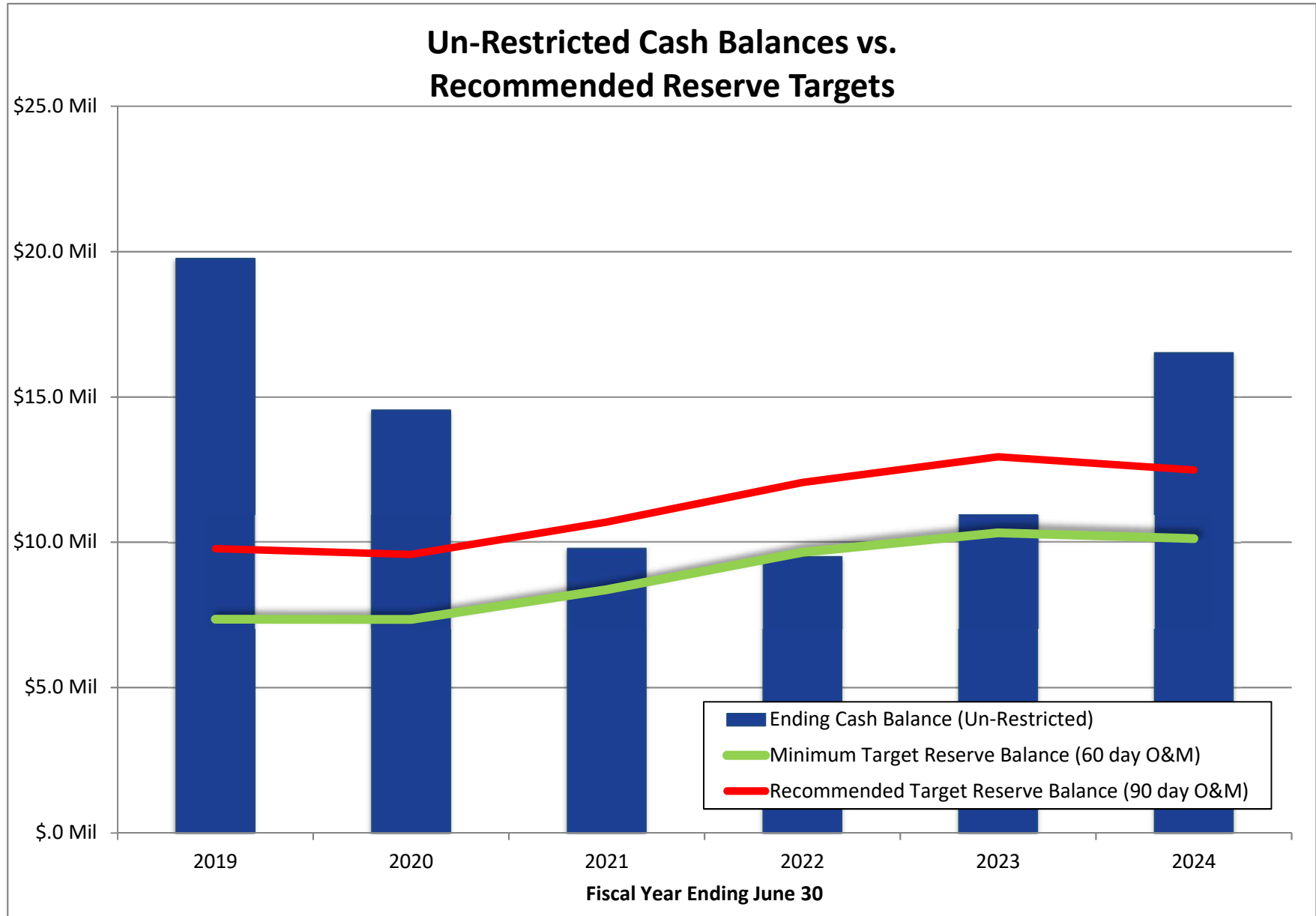
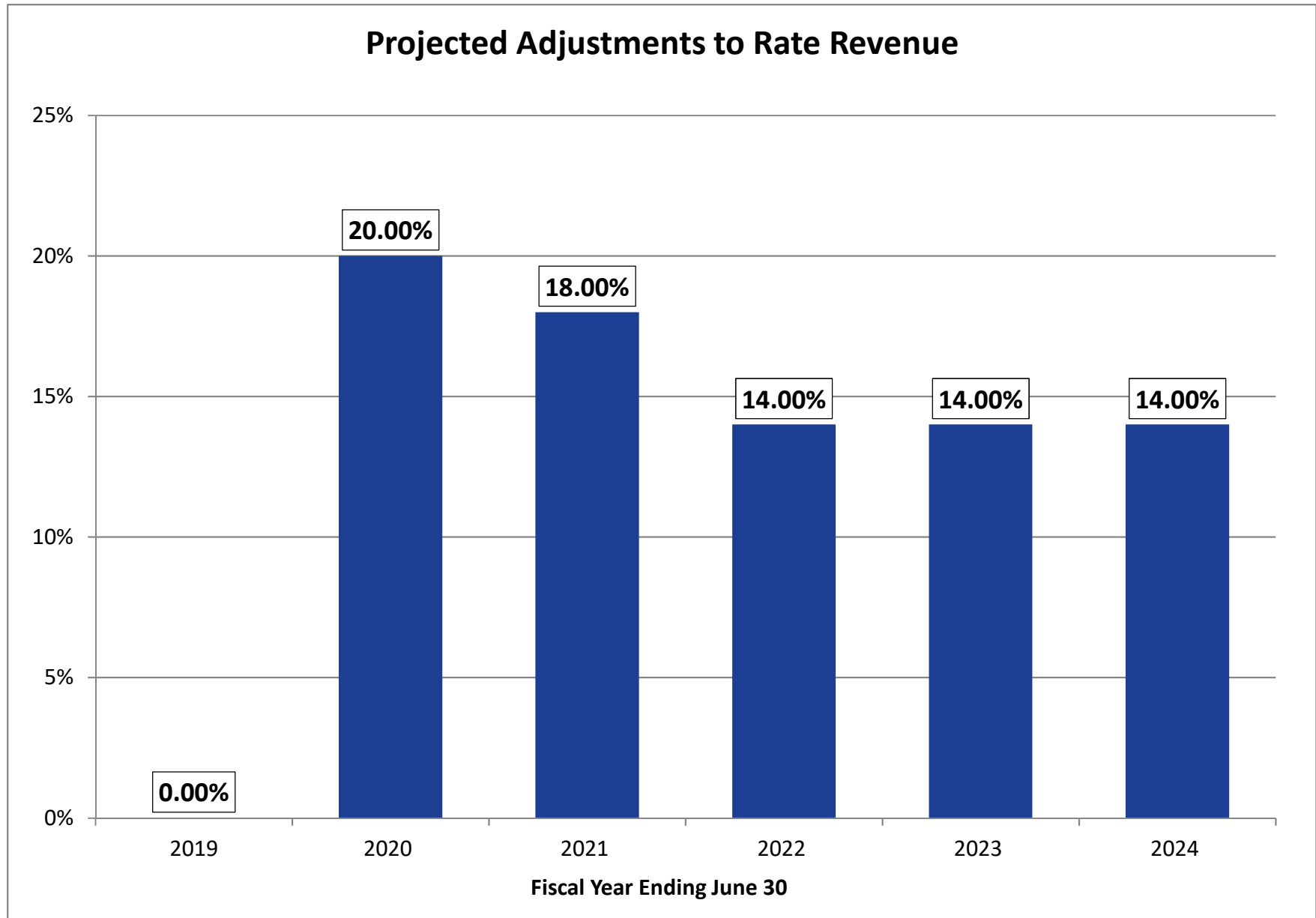


CHART 3



CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 4 : OPERATING REVENUE FORECAST

DESCRIPTION	Basis	Budget ¹ (Draft 5-year Forecast) ²					
		FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Water Fund, 50							
Charges for Service							
Water - Commercial Sales	1	\$23,811,878	\$23,811,878	\$23,911,888	\$24,012,318	\$24,113,170	\$24,214,445
Water - Meter Services/Install	15	700,000	700,000	700,000	600,000	600,000	600,000
Reimbursement from other funds	2	354,399	404,067	405,040	414,761	424,715	434,908
Damage Repair Work	15	17,000	17,000	17,000	17,000	17,000	17,000
Water Capital Facilities Fee	15	400,000	400,000	400,000	400,000	400,000	400,000
Water Demand Mitigation Fee	15	27,000	27,000	27,000	-	-	-
Admin Fee Water Neutrality	2	52,483	66,517	67,847	69,475	69,475	69,475
In Lieu Fee Water Neutrality	2	294,984	489,678	499,472	511,459	511,459	511,459
Plan Check Fee Water Neutrality	2	30,242	40,010	40,810	41,789	41,789	41,789
Inspection Fee Water Neutrality	2	332	498	500	512	512	512
Subtotal: Charges for Service		\$25,688,318	\$25,956,648	\$26,069,557	\$26,067,315	\$26,178,121	\$26,289,589
Interest Income							
Internal Dep./Investment	15	800,000	-	-	-	-	-
Unrealized Gain (Loss)	15	-	-	-	-	-	-
Accrued Investment Income	15	-	-	-	-	-	-
Subtotal: Interest Income		\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ -
Other Revenues							
Water - Misc. Non-Operating	15	346,342	350,000	350,000	750,000	260,000	320,000
Other Revenue - Misc.	15	-	-	-	-	-	-
Bay saver Fees	15	175,000	175,000	175,000	150,000	150,000	150,000
Alt. Fuel Tax Credit.	15	-	-	-	-	-	-
MWD SoCal Water smart Rebate	15	17,000	20,000	20,000	-	-	-
Subtotal: Other Revenues		\$ 538,342	\$ 545,000	\$ 545,000	\$ 900,000	\$ 410,000	\$ 470,000
TOTAL: REVENUE ¹		\$27,026,660	\$26,501,648	\$26,614,557	\$26,967,315	\$26,588,121	\$26,759,589

CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 5 : REVENUE SUMMARY

DESCRIPTION	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Water Fund, 50						
Rate Revenue	\$23,811,878	\$23,811,878	\$23,911,888	\$24,012,318	\$24,113,170	\$24,214,445
Connection Fee Revenue	427,000	427,000	427,000	400,000	400,000	400,000
Reimbursement from other funds	354,399	404,067	405,040	414,761	424,715	434,908
Water Neutrality Fee Revenue	378,041	596,703	608,629	623,236	623,236	623,236
Charges for Service (other than Rate Revenue)	717,000	717,000	717,000	617,000	617,000	617,000
Investment Income	800,000	-	-	-	-	-
Other Revenues	538,342	545,000	545,000	900,000	410,000	470,000
TOTAL: WATER OPERATING REVENUE ¹	\$27,026,660	\$26,501,648	\$26,614,557	\$26,967,315	\$26,588,121	\$26,759,589

1. Revenue and expenses for FY 2017/18 & FY 2018-19 are from source files: *Item 1-O&M Budgets.xlsx* and *Item 1-FYE2018_OperatingBudget_LineItem.pdf*, Pages 78-80 and 405-407.

2. Source file for 10-year budget: 50 (25) *Fund Forecast - Water Fund (May 2019) - Final - 5.15.19.xlsx*

CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 6 : OPERATING EXPENSE FORECAST

DESCRIPTION	Basis	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Water Fund, 50							
Permanent Employees	3	\$ 4,178,332	\$ 4,266,423	\$ 4,469,525	\$ 4,558,916	\$ 4,650,094	\$ 4,743,096
Vacation Lump Sum Pays	15	-	-	-	-	-	-
Council/Board Allowance	15	2,400	2,448	2,497	2,497	2,497	2,497
Standby Pay	3	25,720	26,234	26,759	27,294	27,840	28,397
Overtime	3	148,287	151,253	154,278	157,363	160,511	163,721
Temporary Employees	15	-	-	-	-	-	-
Medicare Employer Contribution	5	62,518	63,522	65,574	66,558	67,556	68,569
Workers' Comp Insurance	4	125,917	193,719	204,490	220,849	238,517	257,599
Medical - Misc. Employee	5	865,959	880,680	949,440	1,025,395	1,117,681	1,218,272
Medical Trust - Misc. Employee	3	88,206	89,970	93,469	95,338	97,245	99,190
Dental	7	45,245	46,602	48,950	50,419	51,931	53,489
Vision	6	6,428	6,524	6,762	6,863	6,966	7,071
Employee Health Contribution	8	(59,386)	(61,648)	(66,185)	(71,778)	(78,238)	(85,279)
Retirement - Misc. Employee	9	886,503	1,034,606	1,164,029	1,238,521	1,329,462	1,388,684
Retirement - As Needed	15	-	-	-	-	-	-
Unemployment	15	19,717	19,740	20,080	20,080	20,080	20,080
EAP	15	4,584	4,630	4,776	4,824	4,872	4,921
DCAP	15	3,304	3,304	3,374	3,374	3,374	3,374
Life Insurance and AD&D	10	10,981	11,530	12,307	12,922	13,568	14,247
Disability Insurance	6	28,855	29,321	30,361	30,816	31,279	31,748
Salaries and Benefits - SUBTOTAL		\$ 6,443,570	\$ 6,768,860	\$ 7,190,486	\$ 7,450,252	\$ 7,745,235	\$ 8,019,674

CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 7 : OPERATING EXPENSE FORECAST, CONTINUED

DESCRIPTION	Basis	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Supplies and Expenses							
Utilities - Electricity	12	\$ 1,230,000	\$ 1,200,000	\$ 1,200,000	\$ 1,228,800	\$ 1,258,291	\$ 1,288,490
Utilities - Natural Gas	12	1,500	1,500	1,500	1,536	1,573	1,611
Utilities - Water	12	-	-	-	-	-	-
Water Purchases	15	5,000,000	4,900,000	4,900,000	5,200,000	5,300,000	1,600,000
Transfer Station Fee	2	1,000	1,000	1,024	1,049	1,074	1,100
Bank Fees	2	5,100	5,000	5,000	5,120	5,243	5,369
Utilities - Telephone	12	61,000	61,000	62,464	63,963	65,498	67,070
Office Supplies / Expense	2	26,000	15,000	15,000	15,360	15,729	16,106
Metered Postage	2	28,000	28,000	28,000	28,672	29,360	30,065
Rent	2	113,000	118,000	122,000	124,928	-	-
Other Operating Rent	2	226,556	226,556	226,556	231,993	237,561	243,263
Conferences / Meetings / Travel	2	20,500	25,000	25,000	25,600	26,214	26,844
Food Purchases	2	1,500	2,500	2,000	2,048	2,097	2,147
Memberships and Dues	2	12,800	13,000	13,000	13,312	13,631	13,959
Vehicles - Fuels / Lubrication	2	31,000	31,000	31,000	31,744	32,506	33,286
CNG Fuel	2	46,000	40,000	40,000	40,960	41,943	42,950
Vehicle Management Fund Maintenance	2	310,000	270,000	270,000	276,480	283,116	289,910
General Liability Insurance - Auto	10	116,998	142,380	142,380	156,618	172,280	180,894
Property Insurance	11	172,119	211,592	232,751	256,026	281,629	309,792
Computer Equipment / Software Maintenance	2	79,462	76,234	78,064	79,937	81,856	83,820
Special Department Supplies	2	1,195,729	1,225,729	1,273,136	1,303,691	1,334,980	1,367,019
Rideshare and Parking Programs	15	-	18,000	18,000	-	-	-
Uniform / Protective Clothing	2	20,500	35,000	35,000	35,840	36,700	37,581
Indirect Cost Allocation	2	1,563,307	1,628,966	1,699,012	1,739,788	1,781,543	1,824,300
Training Costs	15	-	-	-	-	-	-
Contractual Services	2	560,000	562,131	924,347	946,531	969,248	992,510
Employee Medical Exams	2	7,200	7,200	7,373	7,550	7,731	7,916
Professional Services	2	505,000	550,000	550,000	563,200	576,717	590,558
Reimburse Engineering Office	15	34,594	34,594	35,424	36,274	37,145	38,037
Training	2	20,500	20,000	20,000	20,480	20,972	21,475
Waste Disposal (Brining)	2	710,000	700,000	700,000	716,800	734,003	751,619
Regulatory Agency Fees	2	61,000	90,000	90,000	92,160	94,372	96,637
Water Demand Mitigation Rebate	2	-	-	-	-	-	-
Bay saver - Indoor Plumbing	15	299,925	150,000	150,000	150,000	150,000	150,000
SCADA O&M	2	25,600	57,000	57,000	58,368	59,769	61,203
Interest Expense	15	-	-	-	-	-	-
Debris Removal	2	-	-	-	-	-	-
Property Taxes	15	123,000	85,000	85,000	87,040	89,129	91,268
Water Conservation Rebates	15	-	-	-	-	-	-
Laundromat Rebates	15	48,000	75,000	75,000	-	-	-
Landscape Rebates	15	1,353,942	500,000	500,000	400,000	400,000	400,000
Landscape Consultant	15	103,025	55,000	55,296	54,000	54,000	54,000
SMMUSD Program	15	-	470,000	-	-	-	-

CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 8 : OPERATING EXPENSE FORECAST, CONTINUED

DESCRIPTION	Basis	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Supplies and Expenses, cont.							
Direct Install Program	15	-	-	-	-	-	-
MWD Water Conservation Rebates	15	199,363	75,000	75,000	100,000	100,000	100,000
Utilities Billing Services	2	350,000	411,500	421,370	431,483	441,838	452,443
Computer Equipment	15	(3,228)	-	-	-	-	-
Furniture and Furnishings	15	-	-	-	-	-	-
AOP/UV Pollution Remediation Systems - O&M	15	-	-	-	-	400,000	410,000
City Services Bldg. Well/Cistern System Maint.	15	-	46,250	188,330	192,850	197,478	202,218
CCRP - O&M	15	-	-	-	-	1,915,665	1,962,000
Supplies and Expenses - SUBTOTAL		\$14,659,992	\$14,164,132	\$14,355,027	\$14,720,202	\$17,250,891	\$13,847,458
Charnock Well Field & Treatment Site							
Utilities - Electricity	12	\$ 920,000	\$ 850,000	\$ 942,080	\$ 964,690	\$ 987,842	\$ 1,011,551
Special Department Supplies	2	77,000	75,000	70,000	71,680	73,400	75,162
Chemicals	13	77,000	75,000	70,000	71,680	73,400	75,162
Filter Media Replacement	2	510,000	450,000	522,240	534,774	547,608	560,751
Contractual Services	2	677,807	668,176	794,074	813,132	832,647	852,630
Professional Services	2	-	-	-	-	-	-
Waste Disposal (Brining)	2	61,000	63,000	62,464	63,963	65,498	67,070
Contra-Charnock Pollution Expense	2	-	-	-	-	-	-
Regulatory Agency Fees	2	10,000	9,000	10,240	10,486	10,737	10,995
Charnock Well Field & Treatment Site - SUBTOTAL ³		\$ 2,332,807	\$ 2,190,176	\$ 2,471,098	\$ 2,530,404	\$ 2,591,134	\$ 2,653,321
New Arcadia Water Plant (Post 2011)							
Utilities - Electricity		-	-	-	-	-	-
Special Department Supplies	2	51,000	30,000	30,000	30,720	31,457	32,212
Chemicals	13	410,000	400,000	415,000	424,960	435,159	445,603
Membrane Replacement		-	-	-	-	-	-
Cartridge Filter Replacement	2	51,000	-	-	-	-	-
Filter Media Replacement	2	51,000	-	-	-	-	-
Contractual Services	2	102,000	130,000	230,000	235,520	241,172	246,961
Professional Services		-	-	-	-	-	-
Waste Disposal (Brining)	2	51,000	72,000	72,000	73,728	75,497	77,309
Contra-Arcadia Pollution Expense	2	-	-	-	-	-	-
New Arcadia Water Plant - SUBTOTAL ³		\$ 716,000	\$ 632,000	\$ 747,000	\$ 764,928	\$ 783,286	\$ 802,085
All Other Transactions							
Retirement - Misc. Employee	2	21,282	149,355	117,003	181,331	161,621	168,802
Retirement - GASB 68	15	-	-	-	-	-	-
OPEB Payment ARC	10	73,855	73,855	73,885	77,579	81,458	85,531
Reimbursement from OPEB Trust	10	(33,404)	(33,404)	(33,404)	(35,074)	(36,828)	(38,669)
OPEB Expense	15	-	-	-	-	-	-
Retirement and OPEB - SUBTOTAL ³		\$ 61,733	\$ 189,806	\$ 157,484	\$ 223,836	\$ 206,251	\$ 215,663

CITY OF SANTA MONICA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 9 : OPERATING EXPENSE FORECAST, CONTINUED

DESCRIPTION	Basis	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Environmental Reimbursement	2	\$ 3,931,939	\$ 1,978,306	\$ 2,025,785	\$ 2,074,404	\$ 2,124,189	\$ 2,175,170
Transfer Out - Water Efficiency	15	-	-	-	-	-	-
Transfer Out - Engineering Reimb.	2	163,262	169,445	176,520	183,151	190,620	197,291
Reimbursement General Fund SCADA	2	73,242	76,415	79,730	82,725	86,098	89,112
MWD Recycled Water Rebate	2	11,559	11,836	12,120	12,411	12,709	13,014
Legal Expense	15	50,000	50,000	50,000	50,000	50,000	50,000
Transfer-In from General Fund - Low Income Disc.	15	(104,000)	(104,000)	(104,000)	(104,000)	(104,000)	(104,000)
Interfund Transactions - SUBTOTAL ³		\$ 4,126,002	\$ 2,182,002	\$ 2,240,155	\$ 2,298,691	\$ 2,359,617	\$ 2,420,587
TOTAL : WATER OPERATING EXPENSES ^{1, 2, 3}		\$28,340,104	\$26,126,976	\$27,161,250	\$27,988,313	\$30,936,414	\$27,958,789

TABLE 10 : FORECASTING ASSUMPTIONS

INFLATION FACTORS ⁴	Basis	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Customer Growth ⁵	1	--	0.00%	0.42%	0.42%	0.42%	0.42%
General Cost Inflation	2	--	2.40%	2.40%	2.40%	2.40%	2.40%
Salary Inflation	3	--	2.00%	2.00%	2.00%	2.00%	2.00%
Workers' Comp Insurance	4	--	0.00%	8.00%	8.00%	8.00%	8.00%
Medical, Misc. Employees	5	--	5.90%	7.95%	9.00%	9.00%	9.00%
Medical Inflation	6	--	1.50%	1.50%	1.50%	1.50%	1.50%
Dental Inflation	7	--	3.00%	3.00%	3.00%	3.00%	3.00%
Employee Health Contribution	8	--	6.86%	7.00%	7.00%	7.00%	7.00%
Retirement	9	--	24.17%	25.97%	27.17%	28.59%	29.28%
Insurance	10	--	5.00%	5.00%	5.00%	5.00%	5.00%
Property Insurance	11	--	10.00%	10.00%	10.00%	10.00%	10.00%
Energy	12	--	2.40%	2.40%	2.40%	2.40%	2.40%
Chemicals	13	--	2.40%	2.40%	2.40%	2.40%	2.40%
Fuel	14	--	3.00%	3.00%	3.00%	3.00%	3.00%
No Escalation	15	--	0.00%	0.00%	0.00%	0.00%	0.00%

1. Revenue and expenses for FY 2017/18 & FY 2018-19 are from source files: *Item 1-O&M Budgets.xlsx* and *Item 1-FYE2018_OperatingBudget_LineItem.pdf*, Pages 78-80 and 405-407.
2. Source file for 10-year budget: *Fund Forecast - Water Fund (50) 20181217.xlsx*
3. Some revenues and expenditures found in source file: *Item 1-WaterFund25_ExpendituresTransfers_FY15-18.pdf*, Pages 8-13.
4. Inflation factors estimated by City. Found in source file: *Fund Forecast - Water Fund (50) - 20181217, Assumptions tab*.
5. Customer growth estimated in 2015 Urban Water Master Plan. Source file: *Item 22-UWMP_Final_2015.pdf, Page 13 of pdf*.

CITY OF SANTA MONICA
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 11 : CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST Funding Sources	Budget		Projected			
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of SRF Loan Proceeds	-	-	-	-	-	-
Use of New Revenue Loan Proceeds	6,755,000	2,118,000	13,312,000	17,476,000	2,156,000	2,156,000
Use of Settlement Funds ²	7,956,139	-	5,145,365	15,243,542	-	-
Use of Capital Rehabilitation and Replacement Reserve	13,218,097	9,623,065	607,515	-	-	-
Use of Connection Fee Reserve	840,593	427,000	427,000	427,000	400,000	400,000
Rate Revenue	104,164	1,815,789	11,968,093	9,560,333	10,082,174	12,053,708
Total Sources of Capital Funds	\$ 28,873,993	\$ 13,983,854	\$ 31,459,973	\$ 42,706,875	\$ 12,638,174	\$ 14,609,708
Uses of Capital Funds						
Total Project Costs	\$ 28,873,993	\$ 13,983,854	\$ 31,459,973	\$ 42,706,875	\$ 12,638,174	\$ 14,609,708
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New SRF Loan Proceeds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interfund Loan ¹	\$ 6,755,000	\$ 2,118,000	\$ 13,312,000	\$ 17,476,000	\$ 2,156,000	\$ 2,156,000
Settlement Funds ²	\$ 7,956,139	\$ -	\$ 5,145,365	\$ 15,243,542	\$ -	\$ -

1. Interest free loan from Gillette-Boeing Settlement, per discussion w/ City staff 5/20/19. 30 year payoff assumed.

2. Gillette-Boeing Settlement Fund and General Fund transfers for certain Water projects. Source file: 50(25)Fund Forecast - Water (May 2019) - Final-5-15-19.xlsx, 'GBS Reserve' tab, and Item 14 - Olympic - Gillette and Boeing Fund Balance 10.25.18.xlsx.

CITY OF SANTA MONICA
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

CAPITAL IMPROVEMENT PROGRAM

TABLE 12 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN CURRENT-YEAR DOLLARS)

Project Description ¹	2019	2020	2021	2022	2023	2024
Water Main Replacement	\$ 8,265,928	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000	\$ 6,000,000
Water Resources Tenant Improvements	250,445	1,687,612	-	-	-	-
Auto Meter Reading Pilot Progress	44,378	-	-	-	-	-
Water System Improvement	112,023	-	-	-	-	-
San Vic. Booster St Emergency Generator	-	-	-	-	-	-
Utility Billing Software	84,907	-	-	-	300,000	-
Construction	76,212	-	-	-	-	-
GMP	-	-	-	-	-	-
Colorado Ave ESP-Water Main	-	-	-	-	-	-
Expo Water Improvements	-	-	-	-	-	-
Water Systems Data Integration	-	-	-	-	-	-
Hansen 8 Software Upgrade	68,180	-	300,000	-	-	-
SCADA Systems Upgrade	120,000	30,000	-	-	-	-
Arcadia Reverse Osmosis Membrane Replacement	-	-	-	-	1,250,000	-
Booster Pump Charnock	-	-	-	-	-	-
Valve Study/Replacement	-	-	-	-	-	-
Water Main Replace-Oly. Loop	-	-	-	-	-	-
Booster Pump Station for 500-F	-	-	-	-	-	-
Climate Action Plan	-	-	-	-	-	-
Urban Water Management Plan	-	70,000	-	-	-	-
Groundwater Sustainability Plan	500,000	100,000	100,000	100,000	-	-
<i>Sustainable Yield</i>	-	-	500,000	-	-	500,000
CA Incline Construction	-	-	-	-	-	-
Irrigation Controller Replant.	322,137	-	-	-	-	-
Turf & Irrigation Improvement	-	-	-	-	-	-
EPA Water Main Replacement	693,818	-	-	-	-	-
Coastal Sub basin Borings	5,090	-	-	-	-	-
Computer Equipment Replacement Program	49,031	52,471	52,471	52,471	52,471	52,471
Telecommunications Services	41,757	41,757	41,757	41,757	41,757	41,757
Fleet Vehicle Replacement Program	392,786	406,534	422,814	437,612	453,626	467,235
Annual Paving and Sidewalk Repair Program	531,346	300,000	325,000	325,000	325,000	325,000
Water Main Improvements - City Forces	250,000	250,000	250,000	250,000	250,000	250,000

TABLE 13 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN CURRENT-YEAR DOLLARS)

Project Description ¹	2019	2020	2021	2022	2023	2024
Fleet Software and Telematics Prorate share/Placeholder	-	31,183	-	-	-	-
Arcadia Enhanced RO Recovery Pilot (is C5007370 a duplicate?)	213,193	-	-	-	-	-
Arcadia Reverse Osmosis Pilot II	493,500	-	-	-	-	-
Reservoir Improvements	1,000,000	-	-	-	-	-
Supplemental DInSAR Study	63,124	-	-	-	-	-
City/USGS Numerical Flow Model/Monitoring Well - City	300,000	-	-	-	-	2,400,000
Water Facility Controller & Hardware Upgrades	250,000	50,000	50,000	-	-	-
Arcadia Vapor Phase GAC System	35,000	475,000	-	-	-	-
Redrill Santa Monica Well #3	-	950,000	-	-	-	-
NEW CIP - Well Equipping (SM-8, SM-9)?	-	-	3,000,000	-	-	-
NEW CIP - SWIP \$11M shortage (shifted all to Wastewater)	-	-	-	-	-	-
NEW CIP - Airport Wells 2 & 3, Civil Work & Pipeline to Arcadia	-	-	-	-	400,000	410,000
NEW CIP - C5007180.689520 - Coastal Sub basin Borings - City	-	200,000	-	-	-	-
Services Building Well Outfitting	-	-	-	-	-	-
Citywide Municipal Drinking Water Wells - WDMF	-	355,000	-	-	-	-
Rooftop Fall Protection and Access Retrofits	-	459,000	-	-	-	-
Sustainable Water Infrastructure Project Injection Well	-	1,500,000	1,500,000	-	1,500,000	1,500,000
Non-Potable Water Main Expansion	-	618,000	637,000	656,000	656,000	656,000
WSS - Arcadia Capacity Expansion and Enhancement Project (CCRO) \$30M	3,180,000	-	10,000,000	16,820,000	-	-
Groundwater Resiliency Well \$8M (\$4.75M Water, \$3.25M WW - Charnock-10)	3,575,000	-	1,175,000	-	-	-
City/USGS Monitoring Well - GBS	1,800,000	-	-	-	-	-
Redrill Santa Monica Well #3 - GBS	500,000	-	-	-	-	-
Olympic Wellfield Restoration (Arcadia AOP & GAC, UV) + SWIP/Olympic Pipeline - \$20.6M - GBS	1,800,000	-	4,850,000	13,950,000	-	-
Olympic Sub basin Remediation (General Fund Transfer) - GBS	1,909,732	-	-	-	-	-
Olympic Well Hydrology (General Fund Transfer) - GBS	1,946,407	-	-	-	-	-
Sampling Valves	-	-	-	-	-	-
Green Sand Media	-	-	450,000	450,000	-	-
Nano Second ATS	-	-	-	-	-	-
Retrofit Vault (Booster Pump Arcadia)	-	-	-	-	-	-
Zone Flowmeters (Water Main Replacement)	-	-	-	-	-	-
Future CIP Costs	-	-	-	-	-	-
Reduction in CIP	-	-	-	-	-	-
Total: CIP Program Costs (Current-Year Dollars)	\$ 28,873,993	\$ 13,576,557	\$ 29,654,042	\$ 39,082,840	\$ 11,228,854	\$ 12,602,463

CITY OF SANTA MONICA
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 14 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN FUTURE-YEAR DOLLARS)

Project Description ¹	2019	2020	2021	2022	2023	2024
Water Main Replacement	\$ 8,265,928	\$ 6,180,000	\$ 6,365,400	\$ 6,556,362	\$ 6,753,053	\$ 6,955,644
Water Resources Tenant Improvements	250,445	1,738,240	-	-	-	-
Auto Meter Reading Pilot Progress	44,378	-	-	-	-	-
Water System Improvement	112,023	-	-	-	-	-
San Vic. Booster St Emergency Generator	-	-	-	-	-	-
Utility Billing Software	84,907	-	-	-	337,653	-
Construction	76,212	-	-	-	-	-
GMP	-	-	-	-	-	-
Colorado Ave ESP-Water Main	-	-	-	-	-	-
Expo Water Improvements	-	-	-	-	-	-
Water Systems Data Integration	-	-	-	-	-	-
Hansen 8 Software Upgrade	68,180	-	318,270	-	-	-
SCADA Systems Upgrade	120,000	30,900	-	-	-	-
Arcadia Reverse Osmosis Membrane Replacement	-	-	-	-	1,406,886	-
Booster Pump Charnock	-	-	-	-	-	-
Valve Study/Replacement	-	-	-	-	-	-
Water Main Replace-Oly. Loop	-	-	-	-	-	-
Booster Pump Station for 500-F	-	-	-	-	-	-
Climate Action Plan	-	-	-	-	-	-
Urban Water Management Plan	-	72,100	-	-	-	-
Groundwater Sustainability Plan	500,000	103,000	106,090	109,273	-	-
Sustainable Yield	-	-	530,450	-	-	579,637
CA Incline Construction	-	-	-	-	-	-
Irrigation Controller Replant.	322,137	-	-	-	-	-
Turf & Irrigation Improvement	-	-	-	-	-	-
EPA Water Main Replacement	693,818	-	-	-	-	-
Coastal Sub basin Borings	5,090	-	-	-	-	-
Computer Equipment Replacement Program	49,031	54,045	55,666	57,336	59,057	60,828
Telecommunications Services	41,757	43,010	44,300	45,629	46,998	48,408
Fleet Vehicle Replacement Program	392,786	418,730	448,563	478,190	510,560	541,653
Annual Paving and Sidewalk Repair Program	531,346	309,000	344,793	355,136	365,790	376,764
Water Main Improvements - City Forces	250,000	257,500	265,225	273,182	281,377	289,819

TABLE 15 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN FUTURE-YEAR DOLLARS)

Project Description ¹	2019	2020	2021	2022	2023	2024
Fleet Software and Telematics Prorate share/Placeholder	-	32,118	-	-	-	-
Arcadia Enhanced RO Recovery Pilot (is C5007370 a duplicate?)	213,193	-	-	-	-	-
Arcadia Reverse Osmosis Pilot II	493,500	-	-	-	-	-
Reservoir Improvements	1,000,000	-	-	-	-	-
Supplemental DInSAR Study	63,124	-	-	-	-	-
City/USGS Numerical Flow Model/Monitoring Well - City	300,000	-	-	-	-	2,782,258
Water Facility Controller & Hardware Upgrades	250,000	51,500	53,045	-	-	-
Arcadia Vapor Phase GAC System	35,000	489,250	-	-	-	-
Redrill Santa Monica Well #3	-	978,500	-	-	-	-
NEW CIP - Well Equipping (SM-8, SM-9)?	-	-	3,182,700	-	-	-
NEW CIP - SWIP \$11M shortage (shifted all to Wastewater)	-	-	-	-	-	-
NEW CIP - Airport Wells 2 & 3, Civil Work & Pipeline to Arcadia	-	-	-	-	450,204	475,302
NEW CIP - C5007180.689520 - Coastal Sub basin Borings - City	-	-	-	-	-	-
Services Building Well Outfitting	-	206,000	-	-	-	-
Citywide Municipal Drinking Water Wells - WDMF	-	365,650	-	-	-	-
Rooftop Fall Protection and Access Retrofits	-	472,770	-	-	-	-
Sustainable Water Infrastructure Project Injection Well	-	1,545,000	1,591,350	-	1,688,263	1,738,911
Non-Potable Water Main Expansion	-	636,540	675,793	716,829	738,334	760,484
WSS - Arcadia Capacity Expansion and Enhancement Project (CCRO) \$30M	3,180,000	-	10,609,000	18,379,668	-	-
Groundwater Resiliency Well \$8M (\$4.75M Water, \$3.25M WW - Charnock-10)	3,575,000	-	1,246,558	-	-	-
City/USGS Monitoring Well - GBS	1,800,000	-	-	-	-	-
Redrill Santa Monica Well #3 - GBS	500,000	-	-	-	-	-
Olympic Wellfield Restoration (Arcadia AOP & GAC, UV) + SWIP/Olympic Pipeline - \$20.6M - GBS	1,800,000	-	5,145,365	15,243,542	-	-
Olympic Sub basin Remediation (General Fund Transfer) - GBS	1,909,732	-	-	-	-	-
Olympic Well Hydrology (General Fund Transfer) - GBS	1,946,407	-	-	-	-	-
Sampling Valves	-	-	-	-	-	-
Green Sand Media	-	-	477,405	491,727	-	-
Nano Second ATS	-	-	-	-	-	-
Retrofit Vault (Booster Pump Arcadia)	-	-	-	-	-	-
Zone Flowmeters (Water Main Replacement)	-	-	-	-	-	-
Future CIP Costs ²	-	-	-	-	-	-
Reduction in CIP	-	-	-	-	-	-
Total: CIP Program Costs (Future-Year Dollars)	28,873,993	13,983,854	31,459,973	42,706,875	12,638,174	14,609,708

CITY OF SANTA MONICA
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 16 : FORECASTING ASSUMPTIONS

Economic Variables ²	2019	2020	2021	2022	2023	2024
Annual Construction Cost Inflation, Per Engineering News Record	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2019	1.00	1.03	1.06	1.09	1.13	1.16

1. FY 2018/19 - 2028/29 given from City and assumed for future years. Source file: *Item 17-FYE2019_CIP_Budget.pdf, Pages 147-148 in Water Fund 50 and 50(25)Fund Forecast - Water (May 2019) - Final-5-15-19.xlsx, "Capital (CIP)" tab.*

Updates made to CIP on 04.30.2019 per source file: *Santa Monica Water Rate Model (20190430).xlsx*

2. Construction inflator is based on the most current 10 year average of the Engineering News-Record Construction Cost Index. Source: *www.enr.com/economics*

CITY OF SANTA MONICA
WATER RATE STUDY
Debt Service

EXHIBIT 3

TABLE 17 : INTERFUND LOAN DEBT OBLIGATIONS

Annual Repayment Schedules	Budget		Projected			
	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Interfund Loan (City Yards Master Plan, Injection Well & Non-potable Water Main Expansion)¹						
Principal Payment	\$ -	\$ -	\$ 706,367	\$ 706,367	\$ 706,367	\$ 706,367
Subtotal: Annual Debt Service	\$ -	\$ -	\$ 706,367	\$ 706,367	\$ 706,367	\$ 706,367
Coverage Requirement (\$-Amnt above annual payment)	100%	100%	100%	100%	100%	100%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ 706,367	\$ 706,367	\$ 706,367	\$ 706,367
\$34 Million Interfund Loan (SWMP - Treatment Plant Expansion & Well Purchase)						
Principal Payment	\$ -	\$ -	\$ 1,158,333	\$ 1,158,333	\$ 1,158,333	\$ 1,158,333
Subtotal: Annual Debt Service	\$ -	\$ -	\$ 1,158,333	\$ 1,158,333	\$ 1,158,333	\$ 1,158,333
Coverage Requirement (\$-Amnt above annual payment)	100%	100%	100%	100%	100%	100%
Reserve Requirement (total fund balance)	\$ 868,750	\$ 1,085,938	\$ 1,158,333	\$ 1,158,333	\$ 1,158,333	\$ -

1. Per discussion w/ City Staff 7/26/19 and email dated 7/25/19.
2. Source files: 50(25)Fund Forecast - Water (May 2019) - Final-5-15-19.xlsx, "Exp 50800001 (695)" tab and Item 8-BondEstimate_WaterRevenueBond\$34million_AA Rating_20181019.pdf, Page 5.

TABLE 18 : SUMMARY OF INTERFUND LOAN DEBT OBLIGATIONS

Existing Annual Debt Service	\$ -	\$ -	\$ 1,864,700	\$ 1,864,700	\$ 1,864,700	\$ 1,864,700
Existing Annual Coverage Requirement	100%	100%	100%	100%	100%	100%
Existing Debt Reserve Target	\$ 868,750	\$ 1,085,938	\$ 1,864,700	\$ 1,864,700	\$ 1,864,700	\$ 706,367

TABLE 19 : CURRENT WATER RATE SCHEDULE

Current Bi-Monthly Water Rates ^{1,2}			
Single Family Accounts	Bi-Monthly Use (hcf)	2018 Rate per hcf	2019 Rate per hcf
Tier 1	0 - 14	\$3.16	\$3.44
Tier 2	15 - 40	\$4.73	\$5.16
Tier 3	41 - 148	\$7.10	\$7.74
Tier 4	Over 149	\$11.10	\$12.10
Multi-Family Accounts	Bi-Monthly Use (hcf per dwelling unit)	2018 Rate per hcf	2019 Rate per hcf
Tier 1	0 - 4	\$3.16	\$3.44
Tier 2	5 - 9	\$4.73	\$5.16
Tier 3	10 - 20	\$7.10	\$7.74
Tier 4	Over 20	\$11.10	\$12.10
Residential Low Income Rate	Bi-Monthly Use (hcf)	2018 Rate per hcf	2019 Rate per hcf
Tier 1	0 - 14	\$2.16	\$2.36
Non-Residential Accounts	Bi-Monthly Use (hcf)	2018 Rate per hcf	2019 Rate per hcf
Tier 1	Based on Meter Size *	\$4.48	\$4.88
Tier 2	Based on Meter Size *	\$11.06	\$12.06
Recycled Water	All Usage	\$4.03	\$4.39
Meter Size *	Tier 1 Usage (hcf)	Tier 2 Usage (hcf)	
3/4"	0 - 210	Over 211	
1"	0 - 210	Over 211	
1-1/2"	0 - 465	Over 466	
2"	0 - 870	Over 871	
3"	0 - 1,700	Over 1,701	
4"	0 - 2,550	Over 2,551	
6"	0 - 5,280	Over 5,281	
Fireline Services	2018 Bi-Monthly Service Charge	2019 Bi-Monthly Service Charge	
Meter Size:			
1-1/2"	\$45.20	\$49.27	
2"	\$72.52	\$79.05	
3"	\$124.81	\$136.04	
4"	\$199.49	\$217.44	
6"	\$386.10	\$420.85	
8"	\$610.04	\$664.94	
10"	\$871.29	\$949.71	

1. Bi-Monthly Water Rates per source files: *water and sewer rates and capital facility fees 2018.pdf*, and *2019 Rate Schedule - Attachment - 7317(1).pdf*
2. HCF = Hundred Cubic Feet or 748 gallons.

TABLE 20 : CLASSIFICATION OF EXPENSES

Budget Categories	Total Revenue Req.	Base Commodity	Groundwater	Purchased Water	Conservation	Capacity	Customer	Fire Protection	Basis of Classification						
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP
Water Fund, 50															
Salaries and Benefits															
Permanent Employees	\$ 4,469,525	\$ -	\$ -	\$ -	\$ -	\$ 3,640,075	\$ 223,476	\$ 605,974	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Vacation Lump Sum Pays	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Council/Board Allowance	2,497	-	-	-	-	2,034	125	339	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Standby Pay	26,759	-	-	-	-	21,793	1,338	3,628	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Overtime	154,278	-	-	-	-	125,647	7,714	20,917	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Temporary Employees	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Medicare Employer Contribution	65,574	-	-	-	-	53,405	3,279	8,890	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Workers' Comp Insurance	204,490	-	-	-	-	166,541	10,225	27,725	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Medical - Misc. Employee	949,440	-	-	-	-	773,244	47,472	128,724	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Medical Trust - Misc. Employee	93,469	-	-	-	-	76,123	4,673	12,672	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Dental	48,950	-	-	-	-	39,866	2,448	6,637	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Vision	6,762	-	-	-	-	5,507	338	917	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Employee Health Contribution	(66,185)	-	-	-	-	(53,902)	(3,309)	(8,973)	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Retirement - Misc. Employee	1,164,029	-	-	-	-	948,010	58,201	157,818	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Retirement - As Needed	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Uniform/Tool Allowance	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Unemployment	20,080	-	-	-	-	16,354	1,004	2,722	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
EAP	4,776	-	-	-	-	3,890	239	648	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
DCAP	3,374	-	-	-	-	2,748	169	457	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Life Insurance and AD&D	12,307	-	-	-	-	10,023	615	1,669	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Disability Insurance	30,361	-	-	-	-	24,727	1,518	4,116	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Salaries and Benefits - SUBTOTAL	\$ 7,190,486	\$ -	\$ -	\$ -	\$ -	\$ 5,856,083	\$ 359,524	\$ 974,879	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%

TABLE 21 : CLASSIFICATION OF EXPENSES, CONTINUED

Budget Categories	Total Revenue Req.	Base Commodity	Groundwater	MWD Purchased	Conservation	Capacity	Customer	Fire Protection	Basis of Classification						
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP
Water Fund, 50															
Supplies and Expenses															
Utilities - Electricity	\$ 1,200,000	\$ 1,200,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Utilities - Natural Gas	1,500	-	-	-	-	1,222	75	203	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Utilities - Water	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	88.3%	5.0%	6.7%
Water Purchases	4,900,000	-	-	4,900,000	-	-	-	-	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Transfer Station Fee	1,024	-	-	-	-	834	51	139	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Bank Fees	5,000	-	-	-	-	4,072	250	678	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Utilities - Telephone	62,464	-	-	-	-	50,872	3,123	8,469	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Office Supplies / Expense	15,000	-	-	-	-	12,216	750	2,034	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Metered Postage	28,000	-	-	-	-	-	28,000	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	
Rent	122,000	-	-	-	-	99,359	6,100	16,541	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Other Operating Rent	226,556	-	-	-	-	184,512	11,328	30,716	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Conferences / Meetings / Travel	25,000	-	-	-	-	20,361	1,250	3,389	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Food Purchases	2,000	-	-	-	-	1,629	100	271	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Memberships and Dues	13,000	-	-	-	-	10,587	650	1,763	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Vehicles - Fuels / Lubrication	31,000	-	-	-	-	25,247	1,550	4,203	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
CNG Fuel	40,000	-	-	-	-	32,577	2,000	5,423	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Vehicle Management Fund Maintenance	270,000	-	-	-	-	219,894	13,500	36,606	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
General Liability Insurance - Auto	142,380	-	-	-	-	115,957	7,119	19,304	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Property Insurance	232,751	-	-	-	-	189,557	11,638	31,556	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Computer Equipment / Software Maintenance	78,064	-	-	-	-	63,577	3,903	10,584	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Special Department Supplies	1,273,136	-	-	-	-	1,036,869	63,657	172,610	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Rideshare and Parking Programs	18,000	-	-	-	-	14,660	900	2,440	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Uniform / Protective Clothing	35,000	-	-	-	-	28,505	1,750	4,745	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Indirect Cost Allocation	1,699,012	-	-	-	-	1,403,008	65,654	230,350	0.0%	0.0%	0.0%	0.0%	82.6%	3.9%	13.6%
Training Costs	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Contractual Services	924,347	-	-	-	-	752,808	46,217	125,322	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Employee Medical Exams	7,373	-	-	-	-	6,005	369	1,000	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%

TABLE 22 : CLASSIFICATION OF EXPENSES, CONTINUED

Budget Categories	Total Revenue Requirements	Base Commodity	Groundwater	MWD Purchased	Conservation	Capacity	Customer	Fire Protection	Basis of Classification						
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP
Water Fund, 50															
Supplies and Expenses, cont.															
Professional Services	\$ 550,000	\$ -	\$ -	\$ -	\$ -	\$ 447,932	\$ 27,500	\$ 74,568	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Legal Expense	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Reimburse Engineering Office	35,424	-	-	-	-	28,850	1,771	4,803	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Training	20,000	-	-	-	-	16,288	1,000	2,712	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Waste Disposal (Brining)	700,000	-	700,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Regulatory Agency Fees	90,000	-	-	-	-	73,298	4,500	12,202	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Water Demand Mitigation Rebate	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Bay saver - Indoor Plumbing	150,000	-	-	-	150,000	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
SCADA O&M	57,000	2,850	-	-	-	46,422	-	7,728	5.0%	0.0%	0.0%	0.0%	81.4%	0.0%	13.6%
Interest Expense	-	-	-	-	-	-	-	-	5.0%	0.0%	0.0%	0.0%	81.4%	0.0%	13.6%
Debris Removal	-	-	-	-	-	-	-	-	5.0%	0.0%	0.0%	0.0%	81.4%	0.0%	13.6%
Property Taxes	85,000	4,250	-	-	-	69,226	-	11,524	5.0%	0.0%	0.0%	0.0%	81.4%	0.0%	13.6%
Water Conservation Rebates	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Laundromat Rebates	75,000	-	-	-	75,000	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Landscape Rebates	500,000	-	-	-	500,000	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Landscape Consultant	55,296	-	-	-	55,296	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
SMMUSD Program	-	-	-	-	-	-	-	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Direct Install Program	-	-	-	-	-	-	-	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MWD Water Conservation Rebates	75,000	-	-	-	75,000	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Amortization Expense	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Utilities Billing Services	421,370	-	-	-	-	-	421,370	-	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Computer Equipment	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Furniture and Furnishings	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
AOP/UV Pollution Remediation Systems - O&M	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
City Services Bldg. Well/Cistern System Maint.	188,330	188,330	-	-	-	-	-	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CCRP - O&M	-	-	-	-	-	-	-	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Supplies and Expenses - SUBTOTAL	\$ 14,355,027	\$ 1,395,430	\$ 700,000	\$ 4,900,000	\$ 855,296	\$ 4,956,342	\$ 726,075	\$ 821,884	9.7%	4.9%	34.1%	6.0%	34.5%	5.1%	5.7%

TABLE 23 : CLASSIFICATION OF EXPENSES, CONTINUED

Budget Categories	Total Revenue Requirements	Base Commodity	Groundwater	MWD Purchased	Conservation	Capacity	Customer	Fire Protection	Basis of Classification						
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP
Water Fund, 50															
Charnock Well Field & Treatment Site															
Utilities - Electricity	942,080	-	942,080	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Special Department Supplies	70,000	-	70,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chemicals	70,000	-	70,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Filter Media Replacement	522,240	-	522,240	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contractual Services	794,074	-	794,074	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Professional Services	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Waste Disposal (Brining)	62,464	-	62,464	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contra-Charnock Pollution Expense	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Regulatory Agency Fees	10,240	-	10,240	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Charnock Well Field & Treatment Site - SUBTOTAL	\$ 2,471,098	\$ -	\$ 2,471,098	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
New Arcadia Water Plant															
Special Department Supplies	30,000	-	30,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chemicals	415,000	-	415,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Membrane Replacement	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cartridge Filter Replacement	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Filter Media Replacement	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contractual Services	230,000	-	230,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Waste Disposal (Brining)	72,000	-	72,000	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Contra-Arcadia Pollution Expense	-	-	-	-	-	-	-	-	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
New Arcadia Water Plant - SUBTOTAL	\$ 747,000	\$ -	\$ 747,000	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Retirement and OPEB															
Retirement - Misc. Employee	117,003	-	-	-	-	95,290	5,850	15,863	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Retirement - GASB 68	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
OPEB Payment ARC	73,885	-	-	-	-	60,173	3,694	10,017	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Reimbursement from OPEB Trust	(33,404)	-	-	-	-	(27,205)	(1,670)	(4,529)	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
OPEB Expense	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Retirement and OPEB - SUBTOTAL	\$ 157,484	\$ -	\$ -	\$ -	\$ -	\$ 128,258	\$ 7,874	\$ 21,352	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%

TABLE 24 : CLASSIFICATION OF EXPENSES, CONTINUED

Budget Categories	Total Revenue Requirements	Base Commodity	Groundwater	MWD Purchased	Conservation	Capacity	Customer	Fire Protection	Basis of Classification						
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP
Water Fund, 50															
Environmental Reimbursement	\$ 2,025,785	\$ -	\$ -	\$ -	\$ 2,025,785	\$ -	\$ -	\$ -	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Transfer Out - Water Efficiency	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Transfer Out - Engineering Reimb.	176,520	-	-	-	-	152,588	-	23,932	0.0%	0.0%	0.0%	0.0%	86.4%	0.0%	13.6%
Reimbursement General Fund SCADA	79,730	-	-	-	-	68,920	-	10,810	0.0%	0.0%	0.0%	0.0%	86.4%	0.0%	13.6%
MWD Recycled Water Rebate	12,120	-	-	12,120	-	-	-	-	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Legal Expense	50,000	-	-	-	-	40,721	2,500	6,779	0.0%	0.0%	0.0%	0.0%	81.4%	5.0%	13.6%
Transfer-In from General Fund - Low Income Disc.	(104,000)	-	-	-	-	-	(104,000)	-	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Interfund Transactions - SUBTOTAL	\$ 2,240,155	\$ -	\$ -	\$ 12,120	\$ 2,025,785	\$ 262,229	\$ (101,500)	\$ 41,521	0.0%	0.0%	0.5%	90.4%	11.7%	-4.5%	1.9%
Total Operating Expenses	\$ 27,161,250	\$ 1,395,430	\$ 3,918,098	\$ 4,912,120	\$ 2,881,081	\$ 11,202,912	\$ 991,973	\$ 1,859,635	5.1%	14.4%	18.1%	10.6%	41.2%	3.7%	6.8%

TABLE 25 : CLASSIFICATION OF EXPENSES, CONTINUED

Budget Categories	Total Revenue Requirements	Base Commodity	Groundwater	MWD Purchased	Conservation	Capacity	Customer	Fire Protection	Basis of Classification							
	FY 2020/21	COM	GW	PW	CONSV	CAP	CA	FP	COM	GW	PW	CONSV	CAP	CA	FP	
Debt Service Payments																
New Debt Service (Interfund Loan Repayment)	\$ 1,864,700	\$ -	\$ -	\$ -	\$ -	\$ 1,864,700	\$ -	\$ -	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
New Debt Service (SRF Loan)	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Total Debt Service Payments	\$ 1,864,700	\$ -	\$ -	\$ -	\$ -	\$ 1,864,700	\$ -	\$ -	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Capital Expenditures																
Rate Funded Capital Expenses	\$ 11,968,093	\$ -	\$ -	\$ -	\$ -	\$ 10,345,471	\$ -	\$ 1,622,622	0.0%	0.0%	0.0%	0.0%	86.4%	0.0%	13.6%	
TOTAL REVENUE REQUIREMENTS	\$ 40,994,043	\$ 1,395,430	\$ 3,918,098	\$ 4,912,120	\$ 2,881,081	\$ 23,413,084	\$ 991,973	\$ 3,482,257	3.4%	9.6%	12.0%	7.0%	57.1%	2.4%	8.5%	
Less: Non-Rate Revenues																
Water Fund, 50																
Water - Commercial Sales																
Water - Meter Services/Install	\$ (700,000)	\$ -	\$ -	\$ -	\$ -	\$ (700,000)	\$ -	\$ -	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Reimbursement from other funds	(405,040)	-	-	-	-	(405,040)	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Damage Repair Work	(17,000)	-	-	-	-	-	(17,000)	-	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	
Water Capital Facilities Fee																
Water Demand Mitigation Fee																
Admin Fee Water Neutrality	(67,847)	-	-	-	(67,847)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
In Lieu Fee Water Neutrality	(499,472)	-	-	-	(499,472)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
Plan Check Fee Water Neutrality	(40,810)	-	-	-	(40,810)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
Inspection Fee Water Neutrality	(500)	-	-	-	(500)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
Internal Dep./Investment	(290,865)	-	-	-	-	(290,865)	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Unrealized Gain (Loss)	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Accrued Investment Income	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Water - Misc. Non-Operating	(350,000)	-	-	-	-	(350,000)	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Other Revenue - Misc.	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
Bay saver Fees	(175,000)	-	-	-	(175,000)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
Alt. Fuel Tax Credit.	-	-	-	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
MWD SoCal Water smart Rebate	(20,000)	-	-	-	(20,000)	-	-	-	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
NET REVENUE REQUIREMENTS	\$ 38,427,509	\$ 1,395,430	\$ 3,918,098	\$ 4,912,120	\$ 2,077,452	\$ 21,667,179	\$ 974,973	\$ 3,482,257								
<i>Allocation of Revenue Requirements</i>	<i>100.0%</i>	<i>3.6%</i>	<i>10.2%</i>	<i>12.8%</i>	<i>5.4%</i>	<i>56.4%</i>	<i>2.5%</i>	<i>9.1%</i>								

TABLE 26 : ADJUSTMENTS TO CLASSIFICATION OF EXPENSES

Adjustment for Current Rate Level	Total	COM	GW	PW	CONSV	CAP	CA	FP
FY 2019/20 Target Rate Rev. After Rate Increases	\$ 28,574,254							
Projected Rate Revenue at Current Rates	\$ 23,811,878							
FY 2019/20 Projected Rate Increases 20%								
Adjusted Net Revenue Req'ts	\$ 28,574,254	\$ 1,037,626	\$ 2,913,453	\$ 3,652,596	\$ 1,544,769	\$ 16,111,465	\$ 724,979	\$ 2,589,366
<i>Percent of Revenue</i>	<i>100.0%</i>	<i>3.6%</i>	<i>10.2%</i>	<i>12.8%</i>	<i>5.4%</i>	<i>56.4%</i>	<i>2.5%</i>	<i>9.1%</i>

CITY OF SANTA MONICA
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TABLE 27 : SINGLE FAMILY RESIDENTIAL METER CHARACTERISTICS

Meter Size	Number of Meters	Average Bi-Monthly Con./Acct (hcf) FY 2017/18	Peak Bi-Monthly Con./Acct (hcf) FY 2017/18	Peaking Factor
3/4 inch	3,411	18.3	21	1.12
1 inch	3,142	28.1	32	1.14
1.5 inch	1,095	43.4	50	1.16
2 inch	62	71.7	90	1.25
Total	7,710	26.3	30	1.14

1. Consumption and Meters from source file: *Item 15-WaterBillingData_FY15-18_jtManipulated_3.14.19.xlsx*

TABLE 28 : MULTI-FAMILY RESIDENTIAL METER CHARACTERISTICS

Meter Size	Number of Meters	Number of Units	Average Bi-Monthly Con./Acct (hcf) FY 2017/18	Peak Bi-Monthly Con./Acct (hcf) FY 2017/18	Average Bi-Monthly Con./Unit (hcf) FY 2017/18	Peak Bi-Monthly Con./Unit (hcf) FY 2017/18	Peaking Factor
3/4 inch	1,779	3,216	14	15	7.7	8.1	1.05
1 inch	1,742	5,706	26	28	8.0	8.5	1.06
1.5 inch	2,409	18,462	63	65	8.2	8.5	1.03
2 inch	481	9,070	154	157	8.2	8.3	1.02
3 inch	60	2,753	354	376	7.7	8.2	1.06
4 inch	30	2,791	569	588	6.1	6.3	1.03
6 inch	12	2,716	1,441	1,501	6.4	6.6	1.04
8 inch	2	422	1,098	1,196	5.2	5.7	1.09
Total	6,515	45,136	54	47	7.8	8.1	1.04

1. Consumption and Meters from source file: *Item 15-WaterBillingData_FY15-18_jtManipulated_3.14.19.xlsx*

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WATER RATE STUDY
Water Cost of Service Analysis

TABLE 29 : WATER USAGE BY CUSTOMER CLASS

Customer Class	Consumption (hcf) FY2015/16	FY 2015/16 Percent of Total Volume	Consumption (hcf) FY2016/17	FY 2016/17 Percent of Total Volume	Consumption (hcf) FY2017/18	FY 2017/18 Percent of Total Volume	3-Year Average
Single Family	1,095,930	22.5%	1,126,398	22.6%	1,217,255	24.1%	23.0%
Multi Family	2,086,042	42.8%	2,121,328	42.5%	2,119,000	41.9%	42.4%
Commercial	1,337,980	27.4%	1,373,826	27.5%	1,348,382	26.7%	27.2%
Municipal	169,635	3.5%	168,906	3.4%	164,240	3.2%	3.4%
Irrigation	185,853	3.8%	202,935	4.1%	203,665	4.0%	4.0%
Fire	1,299	0.0%	1,195	0.0%	2,373	0.0%	0.0%
Total	4,876,739	100.0%	4,994,588	100.0%	5,054,915	100.0%	100.0%
<i>Percentage Change in Consumption from Prior Year</i>			2%	--	1%	--	
<i>Recycled Water</i>	<i>34,631</i>	<i>0.7%</i>	<i>40,863</i>	<i>0.8%</i>	<i>42,708</i>	<i>0.8%</i>	

1. Consumption and Meters from source files: *Item 15-WaterBillingData_FY15-18_jtManipulated_3.14.19.xlsx*, and *Item 15-RecycledWaterBillingData_FY15-18_jtManipulated.xlsx*

TABLE 30 : PEAK BI-MONTHLY WATER USAGE

Customer Class	Peak Bi-Monthly Use FY2015/16 (hcf)	FY 2015/16 Bi-Monthly Max Capacity Factor	Peak Bi-Monthly Use FY2016/17 (hcf)	FY 2016/17 Bi-Monthly Max Capacity Factor	Peak Bi-Monthly Use FY2017/18 (hcf)	Average Bi-Monthly Use FY2017/18 (hcf)	Bi-Monthly Peaking Factor	FY 2017/18 Bi-Monthly Max Capacity Factor
Single Family	198,214	22.8%	226,761	24.6%	230,931	203,033	1.14	25.1%
Multi Family	354,675	40.8%	364,190	39.6%	365,102	353,455	1.03	39.7%
Commercial	242,953	27.9%	246,125	26.7%	241,585	224,367	1.08	26.3%
Municipal	33,415	3.8%	34,965	3.8%	33,518	27,368	1.22	3.6%
Irrigation	40,527	4.7%	48,508	5.3%	47,027	34,672	1.36	5.1%
Fire	493	0.1%	281	0.0%	1,248	399	3.13	0.1%
Total	870,277	100.0%	920,830	100.0%	919,411	843,294	1.09	100.0%
<i>Recycled Water</i>	<i>7,218</i>	<i>0.8%</i>	<i>9,371</i>	<i>1.0%</i>	<i>9,571</i>	<i>7,210</i>	1.33	54.9%

1. Based on bi-monthly billing data (peak day data not available).

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TABLE 31 : NUMBER OF METERS BY CUSTOMER CLASS

Customer Class	Number of Meters	Percent of Total
Single Family	7,710	41.8%
Multi Family	6,515	35.3%
Commercial	2,092	11.3%
Municipal	253	1.4%
Irrigation	635	3.4%
Fire	1,243	6.7%
Total	18,448	100.0%
<i>Recycled Water</i>	29	0.2%

1. Meter count from source files: *Item 15-WaterBillingData_FY15-18_jtManipulated_3.14.19.xlsx*,
and *Item 15-RecycledWaterBillingData_FY15-18_jtManipulated.xlsx*

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TABLE 32 : METER EQUIVALENCY FACTORS

Meter Size	Standard Meters		Fire Service Meters	
	Meter Capacity (gpm)	Equivalency to 1-inch	Meter Capacity (gpm)	Equivalency to 1-inch
	<u>Displacement Meters</u>		<u>Displacement Meters</u>	
3/4 inch	30	1.00	30	1.00
1 inch	50	1.00	50	1.00
1.5 inch	100	2.00	100	2.00
2 inch	160	3.20	160	3.20
	<u>Compound Class I Meters</u>		<u>Fire Service Type I & II</u>	
3 inch	320	6.40	350	7.00
4 inch	500	10.00	700	14.00
6 inch	1,000	20.00	1,600	32.00
	<u>Turbine Class II Meters</u>		<u>Turbine Class I Meters</u>	
8 inch	2,800	56.00	2,800	56.00
10 inch	4,200	84.00	4,200	84.00

1. Meter flow rates are from AWWA M-1 (Seventh Edition) Table B-2.

2. Fire Service meter flow rates are from AWWA M-6 Table 5-3.

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TABLE 33 : ALLOCATION OF WATER REVENUE REQUIREMENTS

Customer Classes	Proposed Rates	
	FY 2019/20 Net Revenue Requirements 15% Fixed / 85% Variable	
Variable Costs		
Base Commodity	\$ 1,037,626	3.6%
Groundwater	2,913,453	10.2%
MWD Purchased Water	3,652,596	12.8%
Conservation	1,544,769	5.4%
Capacity (Allocated to Variable Rate)	15,140,214	53.0%
Customer (Allocated to Variable Rate)	-	0.0%
Fixed Costs		
Capacity	\$ 971,251	3.4%
Customer	724,979	2.5%
Fire Protection	2,589,366	9.1%
Net Revenue Requirement	\$ 28,574,254	100%

TABLE 34 : ALLOCATION OF NET REVENUE REQUIREMENTS

Proposed Rates (15% Fixed / 85% Variable)					
Customer Classes	Classification Components (Fixed Costs)			Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Capacity (Fixed Share)	Customer	Fire Protection		
Single Family	\$ 243,952	\$ 302,991	\$ -	\$ 546,943	12.8%
Multi Family	385,688	256,030	-	641,718	15.0%
Commercial	255,207	82,212	-	337,419	7.9%
Municipal	35,408	9,943	-	45,350	1.1%
Irrigation	49,679	24,955	-	74,633	1.7%
Fire	1,318	48,848	2,589,366	2,639,533	61.6%
Total Net Revenue Requirement	\$ 971,251	\$ 724,979	\$ 2,589,366	\$ 4,285,596	100%

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TABLE 35 : SUMMARY OF FIXED REVENUE REQUIREMENTS

Customer Class	Proposed Rates	
	C.O.S. Rev. Req't	% of C.O.S. Rev. Req't.
Single Family	\$ 546,943	1.9%
Multi Family	\$ 641,718	2.2%
Commercial	\$ 337,419	1.2%
Municipal	\$ 45,350	0.2%
Irrigation	\$ 74,633	0.3%
Fire	\$ 2,639,533	9.2%
Total	\$ 4,285,596	15%

TABLE 36 : CALCULATION OF SINGLE FAMILY BI-MONTHLY FIXED METER SERVICE CHARGES

<i>Proposed Rates (15% Fixed / 85% Variable)</i>					
Number of Meters by Class and Size	3/4 inch	1 inch	1.5 inch	2 inch	Total
Single Family	3,411	3,142	1,095	62	7,710
Total Meters/Accounts	3,411	3,142	1,095	62	7,710
<i>Hydraulic Capacity Factor</i>	<i>1.00</i>	<i>1.00</i>	<i>2.00</i>	<i>3.20</i>	
Total Equivalent Meters	3,411	3,142	2,190	198	8,941
Bi-Monthly Fixed Service Charges					
Customer Costs (\$/Acct/bi-month)	\$6.55	\$6.55	\$6.55	\$6.55	
Capacity Costs (\$/Acct/bi-month)	\$4.55	\$4.55	\$9.09	\$14.55	
Total Monthly Meter Charge	\$11.10	\$11.10	\$15.64	\$21.10	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges					
Customer Costs	\$ 302,991				
Capacity Costs	243,952				
Total Fixed Meter Costs	\$ 546,943				
Annual Revenue from Bi-Monthly Meter Charges					
Customer Charges	\$ 134,047	\$ 123,476	\$ 43,032	\$ 2,437	\$ 302,991
Capacity Charges	93,064	85,724	59,751	5,413	243,952
Total Revenue	\$ 227,111	\$ 209,200	\$ 102,783	\$ 7,850	\$ 546,943

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TABLE 37 : CALCULATION OF BI-MONTHLY FIXED METER SERVICE CHARGES

<i>Proposed Rates (15% Fixed / 85% Variable)</i>									
Number of Meters by Class and Size	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	Total
Multi Family	1,779	1,742	2,409	481	60	30	12	2	6,515
Commercial	603	491	531	308	90	49	17	3	2,092
Municipal	43	18	46	93	36	13	4	-	253
Irrigation	213	182	137	84	14	4	1	-	635
Total Meters/Accounts	2,638	2,433	3,123	966	200	96	34	5	9,495
<i>Hydraulic Capacity Factor</i>	<i>1.00</i>	<i>1.00</i>	<i>2.00</i>	<i>3.20</i>	<i>6.40</i>	<i>10.00</i>	<i>20.00</i>	<i>56.00</i>	
Total Equivalent Meters	2,638	2,433	6,246	3,091	1,280	960	680	280	17,608
Bi-Monthly Fixed Service Charges									
Customer Costs (\$/Acct/bi-month)	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	
Capacity Costs (\$/Acct/bi-month)	\$6.87	\$6.87	\$13.74	\$21.99	\$43.98	\$68.72	\$137.43	\$384.81	
Total Monthly Meter Charge	\$13.42	\$13.42	\$20.29	\$28.54	\$50.53	\$75.27	\$143.98	\$391.36	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges									
Customer Costs	\$ 373,139								
Capacity Costs	<u>725,981</u>								
Total Fixed Meter Costs	\$ 1,099,120								
Annual Revenue from Bi-Monthly Meter Charges									
Customer Charges	\$ 103,669	\$ 95,613	\$ 122,729	\$ 37,962	\$ 7,860	\$ 3,773	\$ 1,336	\$ 196	\$ 373,139
Capacity Charges	<u>108,764</u>	<u>100,312</u>	<u>257,521</u>	<u>127,449</u>	<u>52,774</u>	<u>39,581</u>	<u>28,036</u>	<u>11,544</u>	725,981
Total Revenue	\$ 212,433	\$ 195,925	\$ 380,250	\$ 165,412	\$ 60,634	\$ 43,353	\$ 29,372	\$ 11,741	\$ 1,099,120

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TABLE 38 : CALCULATION OF BI-MONTHLY FIRE METER SERVICE CHARGES

<i>Proposed Rates (15% Fixed / 85% Variable)</i>								
Number of Meters by Class and Size	1.5 Inch	2 Inch	3 Inch	4 Inch	6 Inch	8 Inch	10 Inch	Total
Fire	1	67	73	768	268	59	7	1,243
Total Meters/Accounts	1	67	73	768	268	59	7	1,243
<i>Hydraulic Capacity Factor</i>	<i>2.00</i>	<i>3.20</i>	<i>7.00</i>	<i>14.00</i>	<i>32.00</i>	<i>56.00</i>	<i>84.00</i>	
Total Equivalent Meters	2	214	511	10,752	8,576	3,304	588	23,947
Bi-Monthly Fixed Service Charges								
Customer Costs (\$/Acct/bi-month)	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	\$6.55	
Capacity Costs (\$/Acct/bi-month)	\$36.06	\$57.70	\$126.21	\$252.43	\$576.97	\$1,009.70	\$1,514.55	
Total Monthly Meter Charge	\$42.61	\$64.25	\$132.76	\$258.98	\$583.52	\$1,016.25	\$1,521.10	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges								
Customer Costs	\$ 48,848							
Capacity & Fire Protection Costs	<u>2,590,685</u>							
Total Fixed Meter Costs	\$ 2,639,533							
Annual Revenue from Bi-Monthly Meter Charges								
Customer Charges	\$ 39	\$ 2,633	\$ 2,869	\$ 30,181	\$ 10,532	\$ 2,319	\$ 275	\$ 48,848
Capacity Charges	<u>216</u>	<u>23,194</u>	<u>55,281</u>	<u>1,163,176</u>	<u>927,771</u>	<u>357,434</u>	<u>63,611</u>	2,590,685
Total Revenue	\$ 256	\$ 25,827	\$ 58,150	\$ 1,193,357	\$ 938,303	\$ 359,753	\$ 63,886	\$ 2,639,533

1. Meter count from source files: *Item 15-WaterBillingData_FY15-18_jtManipulated.xlsx*, and *Item 15-RecycledWaterBillingData_FY15-18_jtManipulated.xlsx*
2. Meter flow rates & hydraulic capacity ratio are from AWWA M-1 (*Seventh Edition*) Table B-2.
3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.
4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

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TABLE 39 : SUMMARY OF WATER SUPPLY RECORDS

Fiscal Year	SM Water (MG)	MWD Purchased Water (MG)	% MWD Purchased	SM Water (hcf)	MWD Purchased Water (hcf)	Total Supply (hcf)	SM Supply	Purchased Water
FY 2015/16	2,806	910	24.5%	3,750,942	1,215,833	4,966,776	76%	24%
FY 2016/17	2,509	1,163	31.7%	3,354,205	1,554,462	4,908,667	68%	32%
FY 2017/18	2,436	1,321	35.2%	3,256,217	1,766,546	5,022,764	65%	35%

TABLE 40 : SUMMARY OF WATER SUPPLY COSTS

Fiscal Year	Total Volume (AF) Col. D+R	Total Volume Treated / Delivered (AF)	Total Invoice Cost	Variable		Fixed				% Fixed	% Variable
				Total Cost Treated / Delivered	Local Resource Credit	Readiness To Serve Charge	Capacity Charge	Conservation Debit / Credit	Misc. Debit / Credit		
2015-16	2,848	2,809	\$ 3,709,521	\$ 2,618,428	\$ (5,820)	\$ 953,981	\$ 249,700	\$ (106,767)	\$ -	30%	70%
2016-17	3,651	3,571	\$ 4,517,630	\$ 3,438,014	\$ (12,075)	\$ 816,955	\$ 214,515	\$ 60,222	\$ (0)	24%	76%
2017-18	4,155	4,057	\$ 4,889,873	\$ 4,041,328	\$ (14,670)	\$ 705,657	\$ 156,920	\$ 637	\$ (0)	18%	82%
2018-19*	1,416	1,390	\$ 1,625,431	\$ 1,410,343	\$ (3,975)	\$ 341,407	\$ 66,120	\$ 15,300	\$ -	26%	87%

Source file: Item 18-MWDInvoiceSummary_2015.16-20180930.xlsx

* Data is for July 2018 - December 2018 only.

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TABLE 41 : TOTAL CAPACITY BY CUSTOMER CLASS

Customer Class and Meter Size	Equivalency to 1-inch	# of Meters	# of 1-inch Equivalent Meters	% of Equivalent Meters	Tier 1 Breakpoint ¹	Tier 2 Breakpoint ²	Tier 3 Breakpoint ³
Single Family					Per Unit		
3/4 inch	1.00	3,411	3,411	13%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1 inch	1.00	3,142	3,142	12%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1.5 inch	2.00	1,095	2,190	8%	0 - 11 hcf	12 - 18 hcf	19+ hcf
2 inch	3.20	62	198	1%	0 - 11 hcf	12 - 18 hcf	19+ hcf
Subtotal: Single Family		7,710	8,941	34%			
Multi Family					Per Unit		
3/4 inch	1.00	1,779	1,779	7%	0 - 8 hcf	9 - 13 hcf	14+ hcf
1 inch	1.00	1,742	1,742	7%	0 - 8 hcf	9 - 13 hcf	14+ hcf
1.5 inch	2.00	2,409	4,818	18%	0 - 8 hcf	9 - 13 hcf	14+ hcf
2 inch	3.20	481	1,539	6%	0 - 8 hcf	9 - 13 hcf	14+ hcf
3 inch	6.40	60	384	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
4 inch	10.00	30	300	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
6 inch	20.00	12	240	1%	0 - 8 hcf	9 - 13 hcf	14+ hcf
8 inch	56.00	2	112	0%	0 - 8 hcf	9 - 13 hcf	14+ hcf
Subtotal: Multi Family		6,515	10,914	41%			
Non-Residential					Per Meter		
3/4 inch	1.00	859	859	3%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1 inch	1.00	691	691	3%	0 - 11 hcf	12 - 18 hcf	19+ hcf
1.5 inch	2.00	714	1,428	5%	0 - 22 hcf	23 - 36 hcf	37+ hcf
2 inch	3.20	485	1,552	6%	0 - 35 hcf	36 - 58 hcf	59+ hcf
3 inch	6.40	140	896	3%	0 - 70 hcf	71 - 115 hcf	116+ hcf
4 inch	10.00	66	660	2%	0 - 110 hcf	111 - 180 hcf	181+ hcf
6 inch	20.00	22	440	2%	0 - 220 hcf	221 - 360 hcf	361+ hcf
8 inch	84.00	3	252	1%	0 - 924 hcf	925 - 1,512 hcf	1,513+ hcf
Subtotal: Non-Residential		2,980	6,778	25%			
Total		17,205	26,634	100%			

- Tier 1 breakpoint set to assumed indoor consumption for a typical SFR customer using 55 gallons per capita per day (GPCD) with 2.56 people per SFR, 1.78 people per MFR and allocated to non-residential based on 55 GPCD and equivalent meters. Tier breakpoints for non-residential start at the SFR equivalent and are scaled based on meter size.
- Tier 2 breakpoint set to volume of Santa Monica groundwater source minus the Tier 1 usage for each customer class.
- Tier 3 water is set to include all purchased water from MWD.
Source file for Tier breakpoints and calculations: *Santa Monica Tier Analysis_3 Tiers_07.28.19.xlsx*

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TABLE 42 : SUMMARY OF WATER CONSUMPTION BY TIER (NEW BREAKPOINTS)

Customer Class and Meter Size	Estimated Water Consumption by Tier				Proposed Tier Breakpoints		
	Tier 1	Tier 2	Tier 3	Total	Tier 1	Tier 2	Tier 3
<u>Residential:</u>							
Single Family	454,966	221,934	544,988	1,221,888	0 - 11	12 - 18	19 +
Multi Family	1,755,559	268,879	130,367	2,154,805	0 - 8 / unit	9 - 13 /unit	14 + / unit
<u>Non-Residential:</u>							
0.75-1 inch	65,884	25,663	111,580	203,127	0 - 11	12 - 18	19 +
1.5 inch	71,833	31,313	179,607	282,753	0 - 22	23 - 36	37 +
2 inch	79,227	37,772	253,584	370,583	0 - 35	36 - 58	59 +
3 inch	51,323	27,996	210,182	289,501	0 - 70	71 - 115	116 +
4 inch	40,734	24,328	173,565	238,627	0 - 110	111 - 180	181 +
6 inch	26,097	14,700	212,053	252,850	0 - 220	221 - 360	360 +
8 inch	16,632	10,584	56,527	83,743	0 - 924	925 - 1,512	1,513 +
Total	2,562,255	663,169	1,872,453	5,097,877			
% of Total	50%	13%	37%	100%			

- Tier 1 breakpoint set to assumed indoor consumption for a typical SFR customer using 55 gallons per capita per day (GPCD) with 2.56 people per SFR, 1.78 people per MFR and allocated to non-residential based on 55 GPCD and equivalent meters. Tier breakpoints for non-residential start at the SFR equivalent and are scaled based on meter size.
- Tier 2 breakpoint set to volume of Santa Monica groundwater source minus the Tier 1 usage for each customer class.
- Tier 3 water is set to include all purchased water from MWD.
Source file for Tier breakpoints and calculations: *Santa Monica Tier Analysis_3 Tiers_07.28.19.xlsx*

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TABLE 43 : DEVELOPMENT OF TIERED VOLUMETRIC RATES

<i>Proposed Rates (15% Fixed / 85% Variable)</i>					
Calculation of Cost Per Tier	<u>Tier 1</u> GW - Basic Water Use	<u>Tier 2</u> Ground Water	<u>Tier 3</u> Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	2,562,255	663,169	1,872,453	5,097,877	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	<u>Tier 1</u>	<u>Tier 2</u>	<u>Tier 3</u>	<u>Total</u>	
Base Commodity	\$ 521,523	\$ 134,982	\$ 381,120	\$ 1,037,626	<i>Base commodity costs should be collected for each unit of water sold based on % of Total Consumption</i>
Ground Water	2,314,427	599,026	-	2,913,453	<i>Groundwater allocated to Tier 1 and Tier 2 % of Groundwater</i>
Purchased Water	-	-	3,652,596	3,652,596	<i>Purchased Water allocated to Tier 4 only</i>
Conservation	-	404,020	1,140,749	1,544,769	<i>Recovered from Tiers 2-3 base on % of Consumption</i>
Water Self-Sufficiency Projects	-	-	1,531,367	1,531,367	<i>Water self sufficiency projects allocated based on Tier 3 Only</i>
Capacity (Allocated to Variable Rate)	6,839,972	1,770,338	4,998,537	\$13,608,847	<i>Split between all Tiers based on % of Total Consumption</i>
Total	\$ 9,675,922	\$ 2,908,366	\$11,704,369	\$24,288,657	
<i>% of Variable Revenue</i>	<i>40%</i>	<i>12%</i>	<i>48%</i>	<i>100%</i>	
Cost Per Unit of Water	\$3.78	\$4.39	\$6.25		

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TABLE 44 : PROPOSED RATES

<i>Proposed Rates (15% Fixed / 85% Variable)</i>						
Water Rate Schedule	Number of Customers	Proposed Rates				
		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
<i>Overall Increase in Rate Revenue</i>		20.00%	18.00%	14.00%	14.00%	14.00%
<i>Bi-Monthly Fixed Service Charges</i>						
<i>Single Family Residential</i>						
3/4 inch	3,411	\$11.10	\$13.09	\$14.93	\$17.02	\$19.40
1 inch	3,142	\$11.10	\$13.09	\$14.93	\$17.02	\$19.40
1.5 inch	1,095	\$15.64	\$18.46	\$21.04	\$23.99	\$27.35
2 inch	62	\$21.10	\$24.90	\$28.38	\$32.36	\$36.89
<i>All Other Customers</i>						
3/4 inch	2,638	\$13.42	\$15.84	\$18.05	\$20.58	\$23.46
1 inch	2,433	\$13.42	\$15.84	\$18.05	\$20.58	\$23.46
1.5 inch	3,123	\$20.29	\$23.95	\$27.30	\$31.12	\$35.48
2 inch	966	\$28.54	\$33.68	\$38.39	\$43.77	\$49.89
3 inch	200	\$50.53	\$59.62	\$67.97	\$77.49	\$88.33
4 inch	96	\$75.27	\$88.81	\$101.25	\$115.42	\$131.58
6 inch	34	\$143.98	\$169.90	\$193.68	\$220.80	\$251.71
8 inch	5	\$391.36	\$461.81	\$526.46	\$600.16	\$684.18
<i>Fire Service Charges</i>						
1.5 inch	1	\$42.61	\$50.28	\$57.32	\$65.34	\$74.49
2 inch	67	\$64.25	\$75.81	\$86.43	\$98.52	\$112.32
3 inch	73	\$132.76	\$156.66	\$178.59	\$203.59	\$232.10
4 inch	768	\$258.98	\$305.59	\$348.37	\$397.15	\$452.75
6 inch	268	\$583.52	\$688.56	\$784.95	\$894.85	\$1,020.13
8 inch	59	\$1,016.25	\$1,199.18	\$1,367.06	\$1,558.45	\$1,776.63
10 inch	7	\$1,521.10	\$1,794.90	\$2,046.19	\$2,332.65	\$2,659.22
<i>Commodity Charges</i>						
All Customers (\$/hcf)						
Tier 1		\$3.78	\$4.46	\$5.08	\$5.80	\$6.61
Tier 2		\$4.39	\$5.18	\$5.91	\$6.73	\$7.67
Tier 3		\$6.25	\$7.38	\$8.41	\$9.58	\$10.93

* Tier Breakpoints shown in Table 41

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TABLE 45 : EXPENSES DIRECTLY IMPACTED BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Expense Description	Commodity Costs ¹				
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
AOP/UV Pollution Remediation Systems - O&M	\$ -	\$ -	\$ -	\$ 400,000	\$ 410,000
Chemicals	\$ 475,000	\$ 485,000	\$ 496,640	\$ 508,559	\$ 520,765
Contra-Charnock Pollution Expense	\$ -	\$ -	\$ -	\$ -	\$ -
Direct Install Program	\$ -	\$ -	\$ -	\$ -	\$ -
Environmental Reimbursement	\$ 1,978,306	\$ 2,025,785	\$ 2,074,404	\$ 2,124,189	\$ 2,175,170
SMMUSD Program	\$ 470,000	\$ -	\$ -	\$ -	\$ -
Utilities - Electricity	\$ 2,050,000	\$ 2,142,080	\$ 2,193,490	\$ 2,246,134	\$ 2,300,041
Waste Disposal (Brining)	\$ 835,000	\$ 834,464	\$ 854,491	\$ 874,999	\$ 895,999
Water Purchases	\$ 4,900,000	\$ 4,900,000	\$ 5,200,000	\$ 5,300,000	\$ 1,600,000
Adjusted Commodity Assigned Costs	\$ 10,708,306	\$ 10,387,329	\$ 10,819,025	\$ 11,453,881	\$ 7,901,975

1. Costs change due to expected inflation.

TABLE 46 : YEAR 1 POTABLE NET REVENUE REQUIREMENTS BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Percentage of Conservation	Total Consumption (hcf)	Base Commodity Cost	Impacted Commodity Cost	Savings	Updated Commodity Cost
<i>a</i>		<i>b</i>	<i>c</i>	<i>d = (-a) * c</i>	<i>e = b + c</i>
0%	5,097,877	\$ 24,288,657	\$ 10,708,306	\$ -	\$ 24,288,657
10%	4,588,089	\$ 24,288,657	\$ 10,708,306	\$ (1,070,831)	\$ 23,217,827
20%	4,078,302	\$ 24,288,657	\$ 10,708,306	\$ (2,141,661)	\$ 22,146,996
30%	3,568,514	\$ 24,288,657	\$ 10,708,306	\$ (3,212,492)	\$ 21,076,166
40%	3,058,726	\$ 24,288,657	\$ 10,708,306	\$ (4,283,322)	\$ 20,005,335
50%	2,548,939	\$ 24,288,657	\$ 10,708,306	\$ (5,354,153)	\$ 18,934,505
60%	2,039,151	\$ 24,288,657	\$ 10,708,306	\$ (6,424,983)	\$ 17,863,674

TABLE 47 : YEAR 1 POTABLE NET REVENUE REQUIREMENTS BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)				
Drought Level	Level of Conservation	Tier 1 Rate	Tier 2 Rate	Tier 3 Rate
No Level	Baseline ¹	\$3.78	\$4.39	\$6.25
Level 1	10%	\$3.90	\$4.64	\$6.80
Level 2	20%	\$4.18	\$4.98	\$7.30
Level 3	30%	\$4.55	\$5.42	\$7.94
Level 4	40%	\$5.03	\$6.00	\$8.79
Level 5	50%	\$5.72	\$6.81	\$9.99
Level 6	60%	\$6.74	\$8.03	\$11.78

1. Baseline level of consumption assumes 2018 consumption.

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TABLE 48 : LEVEL 1 - 10% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	2,306,030	596,852	1,685,208	4,588,089	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 574,220	\$ 148,621	\$ 419,630	\$ 1,142,472	Base commodity costs should be collected for each unit of water sold based on
Ground Water	2,548,286	659,554	-	\$ 3,207,840	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	4,021,669	\$ 4,021,669	Purchased Water allocated to Tier 3 only
Conservation	-	444,844	1,256,015	\$ 1,700,859	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,485,988	\$ 1,485,988	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	5,458,753	1,412,848	3,989,165	\$ 10,860,766	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	401,202	103,840	293,192	\$ 798,234	Split between all Tiers based on % of Total Consumption
Total	\$ 8,982,461	\$ 2,769,706	\$ 11,465,659	\$ 23,217,827	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$3.895	\$4.641	\$6.804		
	93%	95%	98%		

TABLE 49 : LEVEL 2 - 20% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	2,049,804	530,535	1,497,962	4,078,302	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 547,736	\$ 141,766	\$ 400,277	\$ 1,089,780	Base commodity costs should be collected for each unit of water sold based on
Ground Water	2,430,756	629,134	-	\$ 3,059,891	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	3,836,186	\$ 3,836,186	Purchased Water allocated to Tier 3 only
Conservation	-	424,328	1,198,086	\$ 1,622,414	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,417,453	\$ 1,417,453	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	5,206,990	1,347,686	3,805,181	\$ 10,359,856	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	382,698	99,051	279,669	\$ 761,418	Split between all Tiers based on % of Total Consumption
Total	\$ 8,568,181	\$ 2,641,965	\$ 10,936,851	\$ 22,146,996	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$4.180	\$4.980	\$7.301		
	89%	91%	93%		

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TABLE 50 : LEVEL 3 - 30% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	1,793,579	464,218	1,310,717	3,568,514	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 521,253	\$ 134,912	\$ 380,923	\$ 1,037,088	Base commodity costs should be collected for each unit of water sold based on
Ground Water	2,313,227	598,715	-	\$ 2,911,942	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	3,650,702	\$ 3,650,702	Purchased Water allocated to Tier 3 only
Conservation	-	403,811	1,140,157	\$ 1,543,968	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,348,917	\$ 1,348,917	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	4,955,226	1,282,524	3,621,196	\$ 9,858,946	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	364,194	94,262	266,147	\$ 724,603	Split between all Tiers based on % of Total Consumption
Total	\$ 8,153,900	\$ 2,514,223	\$ 10,408,043	\$ 21,076,166	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$4.546	\$5.416	\$7.941		
	84%	86%	89%		

TABLE 51 : LEVEL 4 - 40% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	1,537,353	397,901	1,123,472	3,058,726	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 494,769	\$ 128,057	\$ 361,569	\$ 984,396	Base commodity costs should be collected for each unit of water sold based on
Ground Water	2,195,697	568,296	-	\$ 2,763,993	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	3,465,218	\$ 3,465,218	Purchased Water allocated to Tier 3 only
Conservation	-	383,294	1,082,229	\$ 1,465,523	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,280,382	\$ 1,280,382	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	4,703,463	1,217,362	3,437,212	\$ 9,358,036	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	345,690	89,472	252,625	\$ 687,787	Split between all Tiers based on % of Total Consumption
Total	\$ 7,739,620	\$ 2,386,481	\$ 9,879,235	\$ 20,005,335	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$5.034	\$5.998	\$8.793		
	80%	82%	84%		

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TABLE 52 : LEVEL 5 - 50% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	1,281,128	331,585	936,227	2,548,939	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 468,286	\$ 121,203	\$ 342,215	\$ 931,704	Base commodity costs should be collected for each unit of water sold based on
Ground Water	2,078,167	537,876	-	\$ 2,616,044	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	3,279,735	\$ 3,279,735	Purchased Water allocated to Tier 3 only
Conservation	-	362,778	1,024,300	\$ 1,387,077	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,211,847	\$ 1,211,847	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	4,451,699	1,152,200	3,253,227	\$ 8,857,126	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	327,187	84,683	239,102	\$ 650,972	Split between all Tiers based on % of Total Consumption
Total	\$ 7,325,339	\$ 2,258,739	\$ 9,350,426	\$ 18,934,505	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$5.718	\$6.812	\$9.987		
	76%	78%	80%		

TABLE 53 : LEVEL 6 - 60% FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

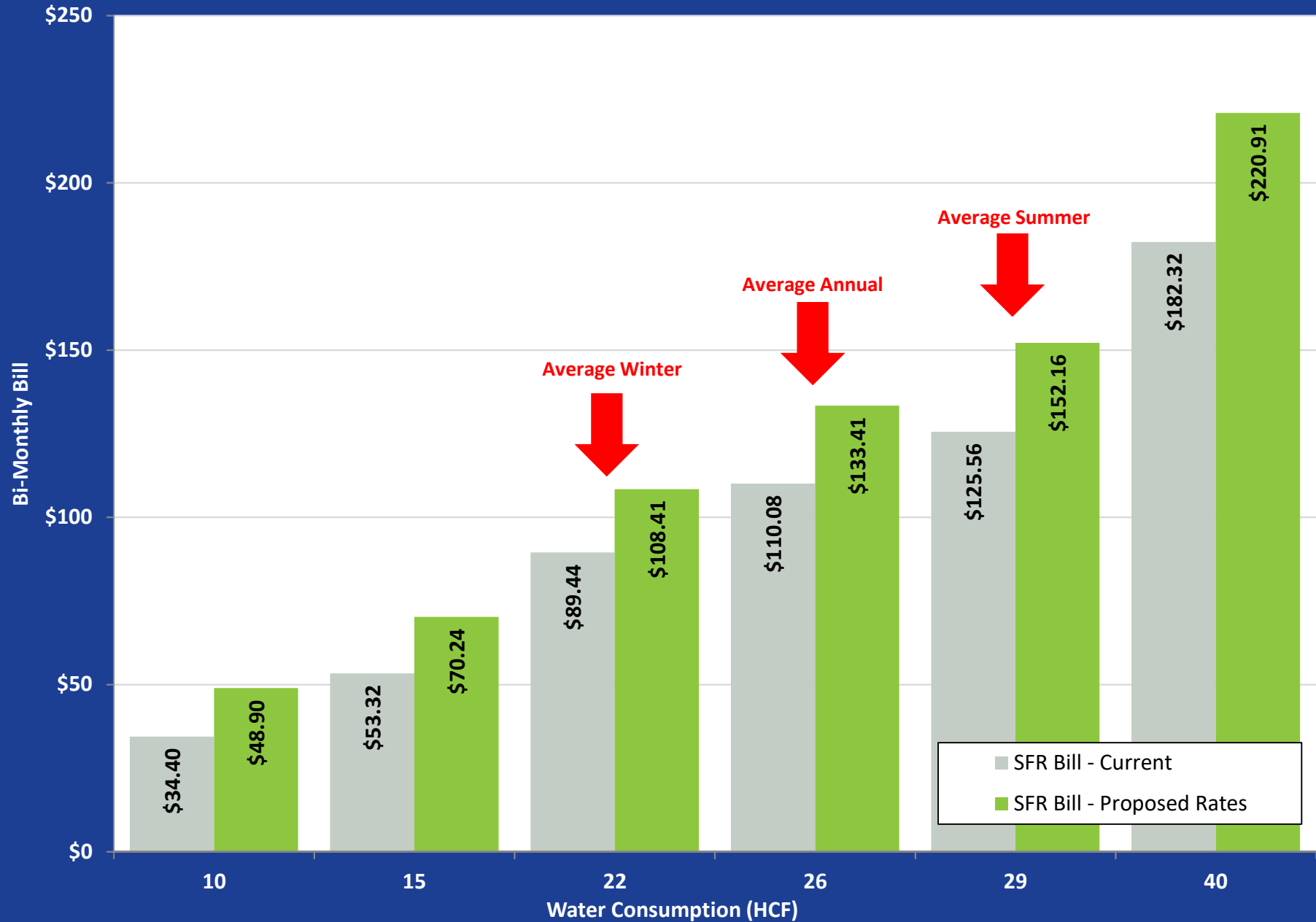
Proposed Rates (15% Fixed / 85% Variable)					
Calculation of Cost Per Tier	Tier 1 GW - Basic Water Use	Tier 2 Ground Water	Tier 3 Purchased Water	Total	Basis for Allocation
Sources of Supply (hcf)	1,024,902	265,268	748,981	2,039,151	
% of Total Consumption	50%	13%	37%	100%	
% of Groundwater	79%	21%	--	100%	
% of Tier 2 and 3 Water	--	26%	74%	100%	
Costs Allocated to Volumetric Charges:					
	Tier 1	Tier 2	Tier 3	Total	
Base Commodity	\$ 441,802	\$ 114,348	\$ 322,861	\$ 879,012	Base commodity costs should be collected for each unit of water sold based on
Ground Water	1,960,638	507,457	-	\$ 2,468,095	Groundwater allocated to Tier 1 and Tier 2 % of Groundwater
Purchased Water	-	-	3,094,251	\$ 3,094,251	Purchased Water allocated to Tier 3 only
Conservation	-	342,261	966,371	\$ 1,308,632	Recovered from Tiers 2-3 base on % of Consumption
Water Self-Sufficiency Projects	-	-	1,143,311	\$ 1,143,311	Water self sufficiency projects allocated based on Tier 3 Only
Capacity (Allocated to Variable Rate)	4,199,936	1,087,038	3,069,243	\$ 8,356,216	Split between all Tiers based on % of Total Consumption
Customer (Allocated to Variable Rate)	308,683	79,894	225,580	\$ 614,157	Split between all Tiers based on % of Total Consumption
Total	\$ 6,911,058	\$ 2,130,998	\$ 8,821,618	\$ 17,863,674	
% of Variable Revenue	39%	12%	49%	100%	
Cost Per Unit of Water	\$6.743	\$8.033	\$11.778		
	71%	73%	75%		

CITY OF SANTA MONICA
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TABLE 54 : PROPOSED DROUGHT RATES FOR FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Percent increase to Rev. Req't		20.00%	18.00%	14.00%	14.00%	14.00%
Proposed Rates (15% Fixed / 85% Variable)						
10%	Tier 1	\$3.90	\$4.60	\$5.24	\$5.97	\$6.81
	Tier 2	\$4.64	\$5.48	\$6.24	\$7.12	\$8.11
	Tier 3	\$6.80	\$8.03	\$9.15	\$10.43	\$11.89
20%	Tier 1	\$4.18	\$4.93	\$5.62	\$6.41	\$7.31
	Tier 2	\$4.98	\$5.88	\$6.70	\$7.64	\$8.71
	Tier 3	\$7.30	\$8.62	\$9.82	\$11.20	\$12.76
30%	Tier 1	\$4.55	\$5.36	\$6.12	\$6.97	\$7.95
	Tier 2	\$5.42	\$6.39	\$7.29	\$8.31	\$9.47
	Tier 3	\$7.94	\$9.37	\$10.68	\$12.18	\$13.88
40%	Tier 1	\$5.03	\$5.94	\$6.77	\$7.72	\$8.80
	Tier 2	\$6.00	\$7.08	\$8.07	\$9.20	\$10.49
	Tier 3	\$8.79	\$10.38	\$11.83	\$13.49	\$15.37
50%	Tier 1	\$5.72	\$6.75	\$7.69	\$8.77	\$10.00
	Tier 2	\$6.81	\$8.04	\$9.16	\$10.45	\$11.91
	Tier 3	\$9.99	\$11.79	\$13.43	\$15.32	\$17.46
60%	Tier 1	\$6.74	\$7.96	\$9.07	\$10.34	\$11.79
	Tier 2	\$8.03	\$9.48	\$10.81	\$12.32	\$14.04
	Tier 3	\$11.78	\$13.90	\$15.84	\$18.06	\$20.59

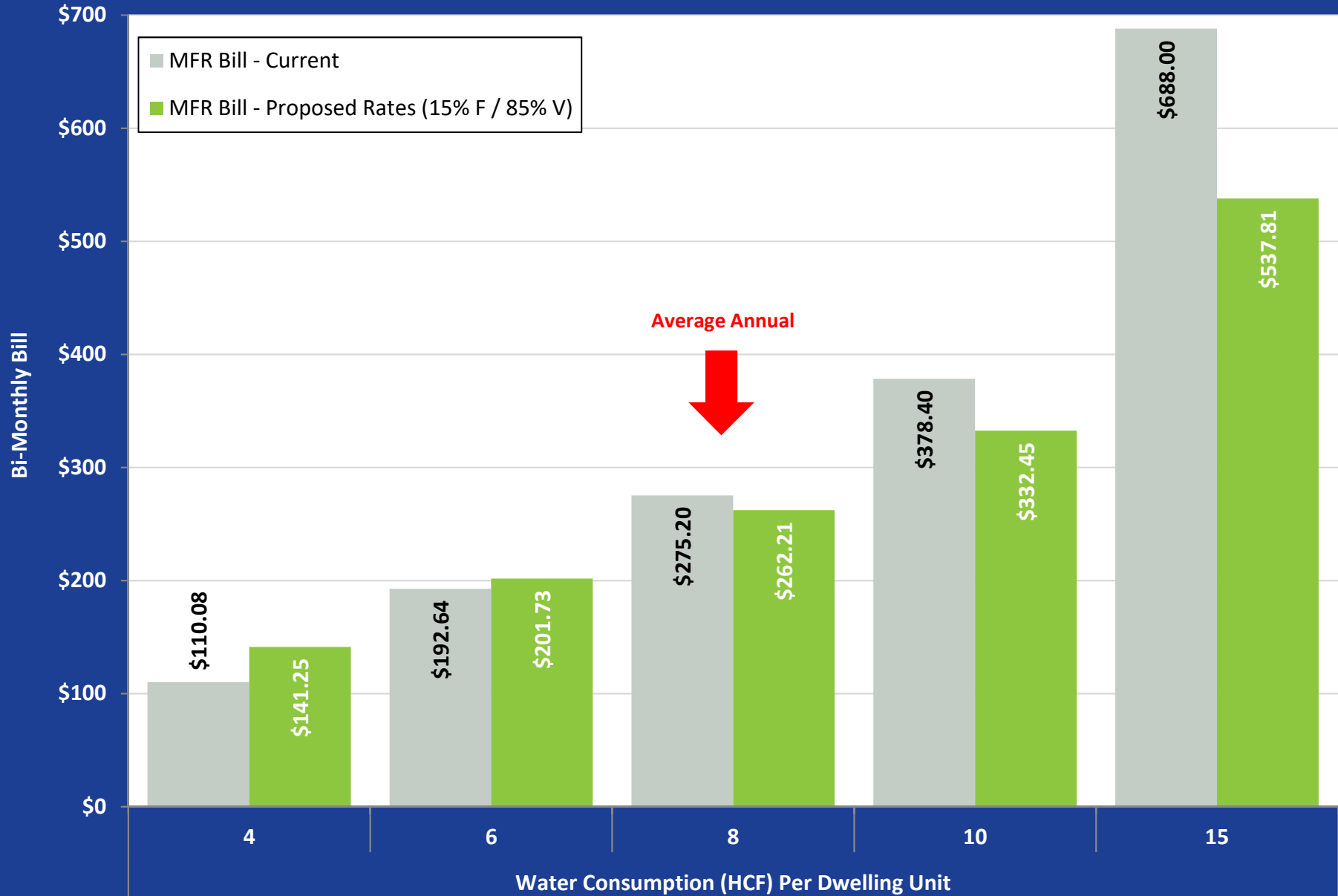
Single Family Residential Water Bill Comparison Current vs. Proposed Bi-Monthly Bill



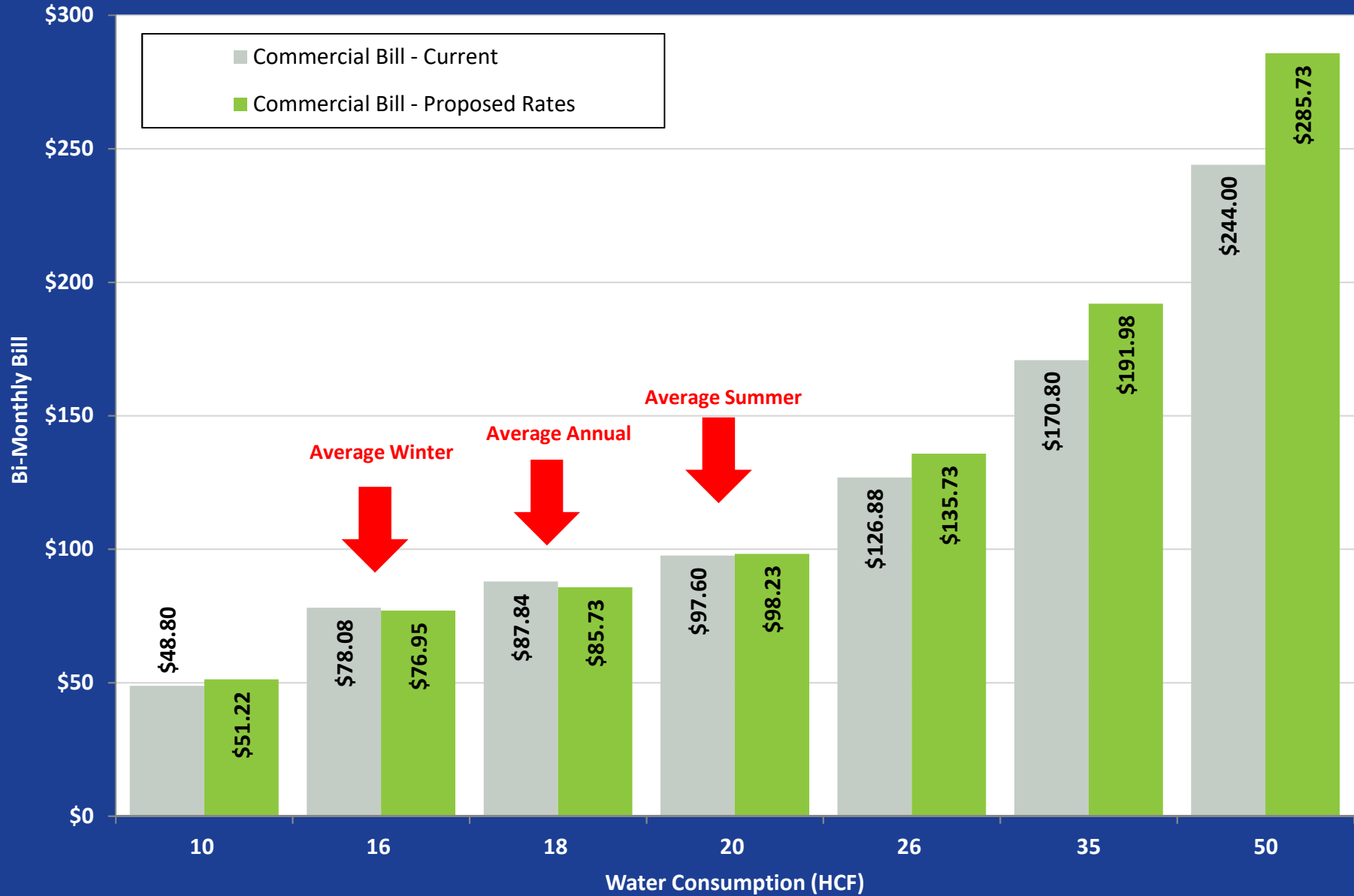
Multi-Family Residential Water Bill Comparison

Current vs. Proposed Bi-Monthly Bill

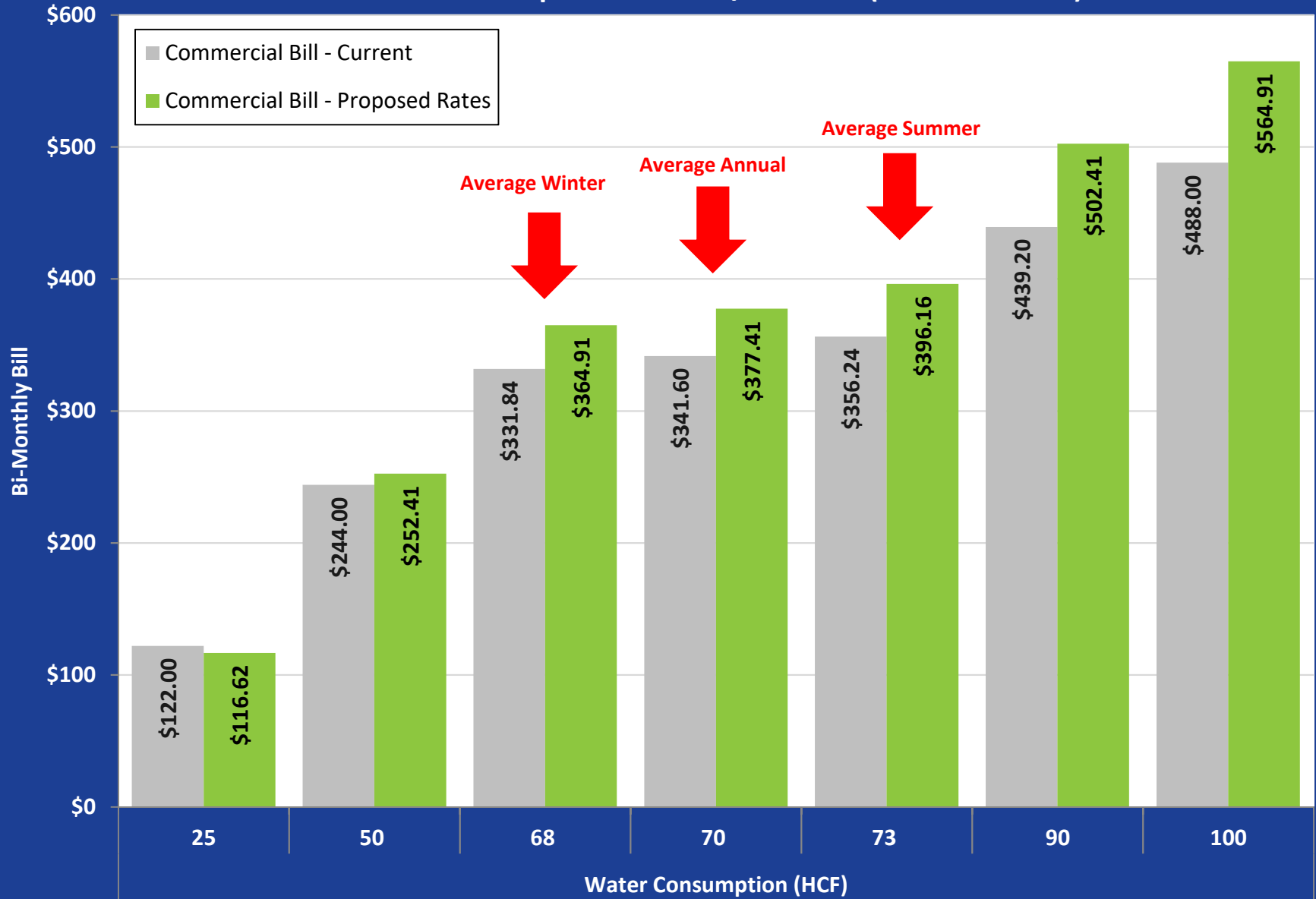
(1.5-inch meter with 8 units, Total Bill)



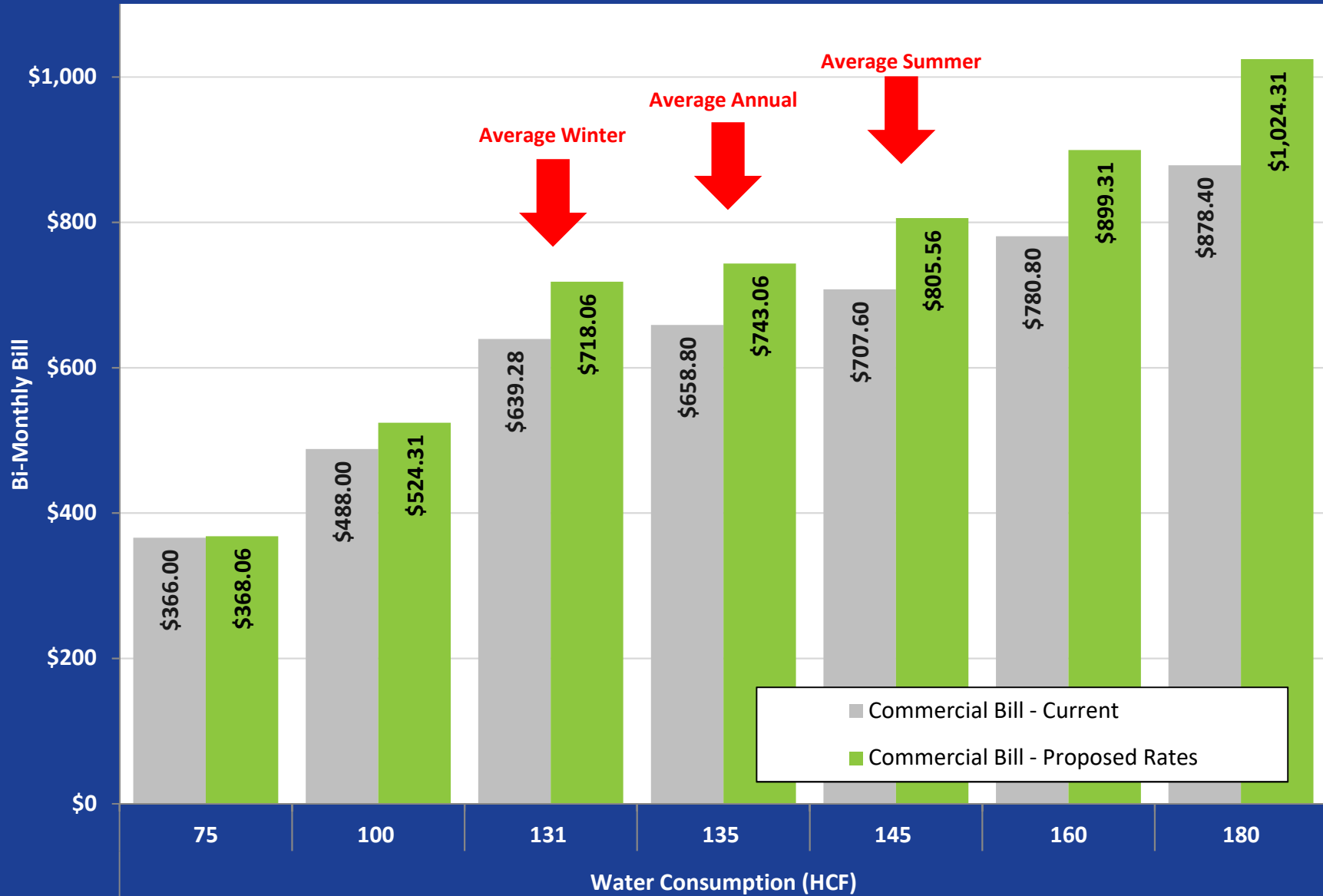
Commercial Water Bi-Monthly Bill Comparison Current vs. Proposed FY 2019/20 Rates (3/4-inch meter)



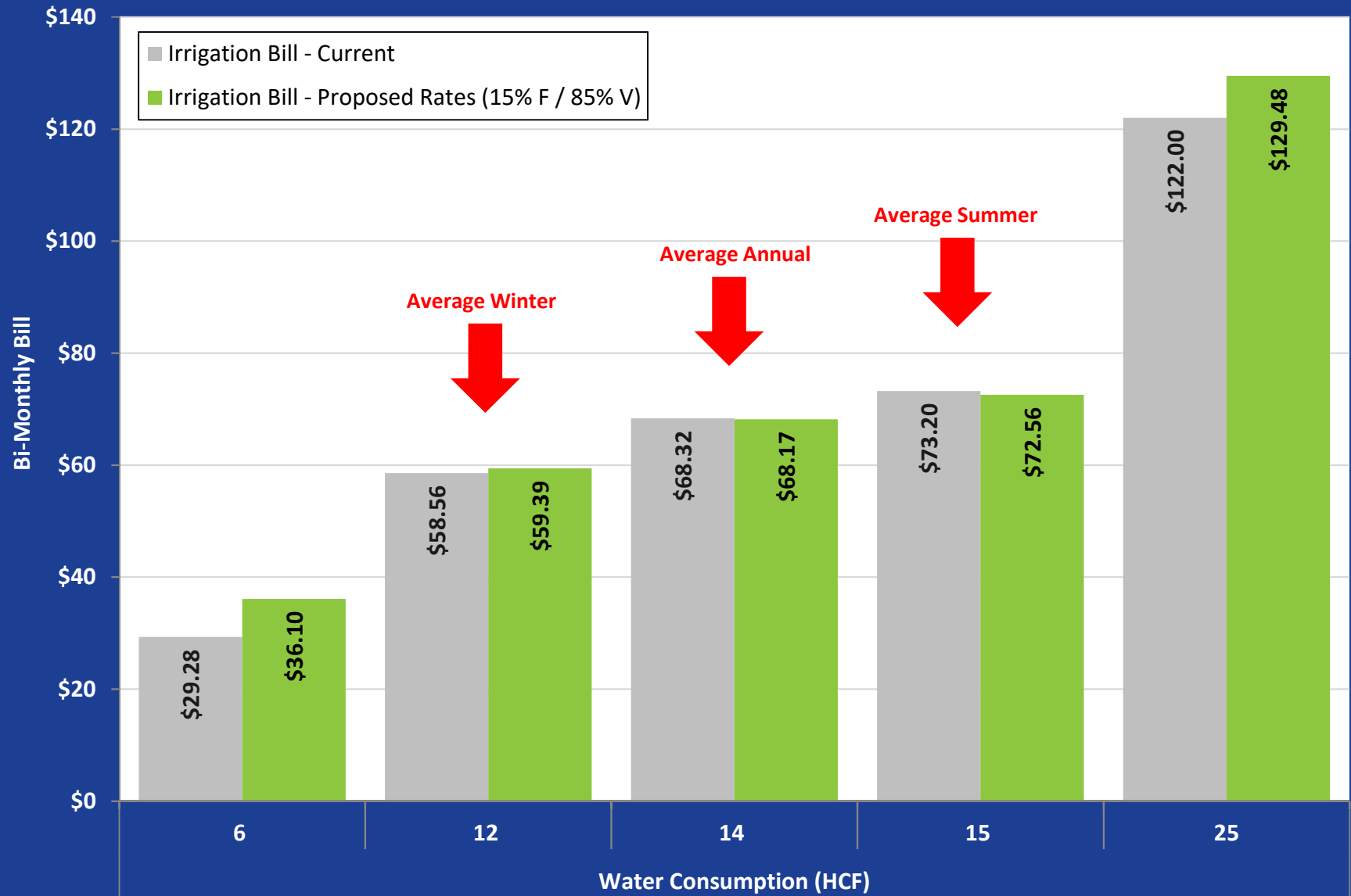
Commercial Water Bi-Monthly Bill Comparison Current vs. Proposed FY 2019/20 Rates (1.5-inch meter)



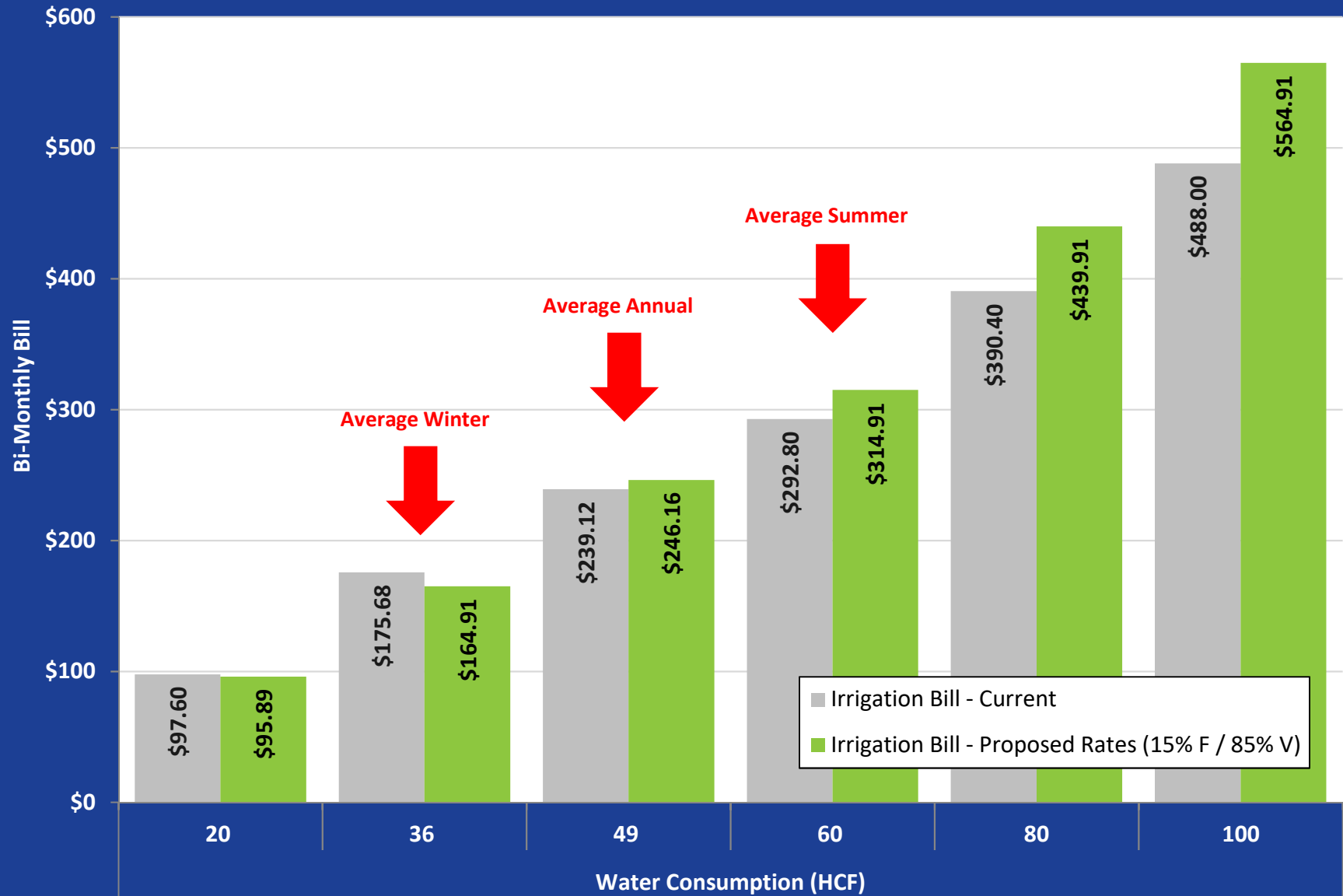
Commercial Water Bi-Monthly Bill Comparison Current vs. Proposed FY 2019/20 Rates (2-inch meter)



Irrigation Water Bi-Monthly Bill Comparison Current vs. Proposed FY 2019/20 Rate (3/4-inch meter)

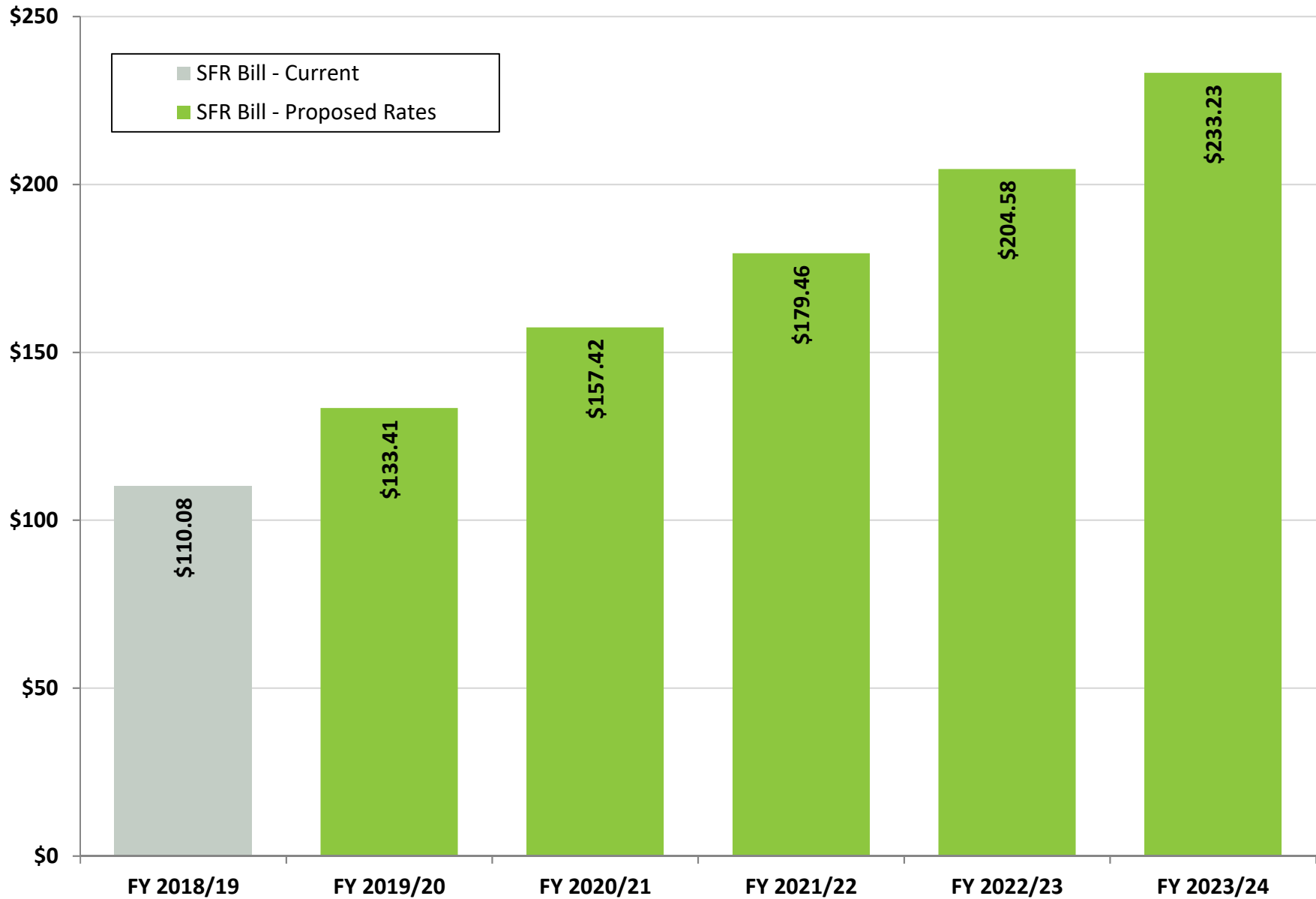


Irrigation Water Bi-Monthly Bill Comparison Current vs. Proposed FY 2019/20 Rate (1.5-inch meter)



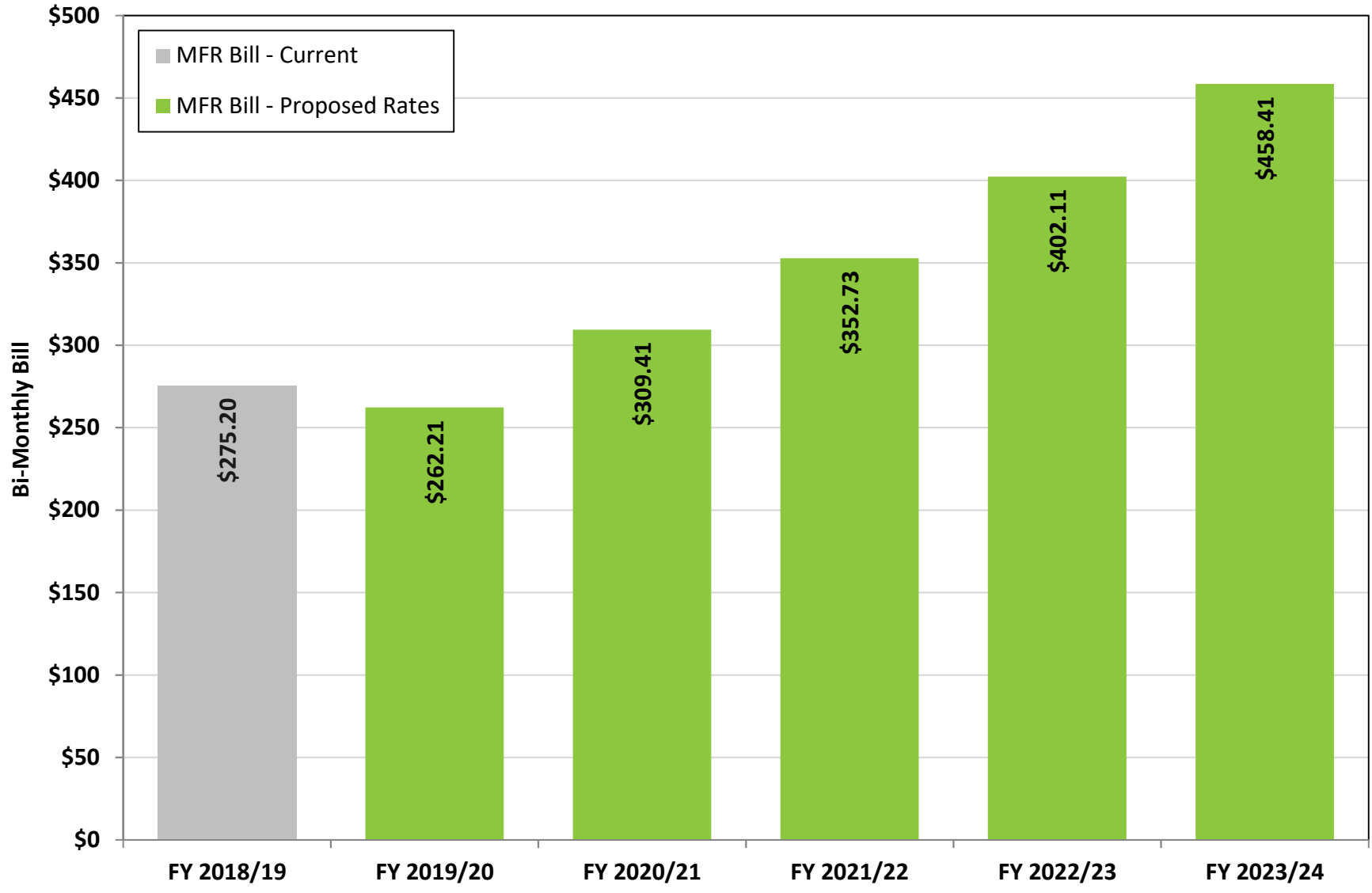
Single Family Residential Water Bill Comparison

Current vs. Proposed FY 2019/24 Rates (Assumes 3/4 inch meter, 26 hcf consumption)



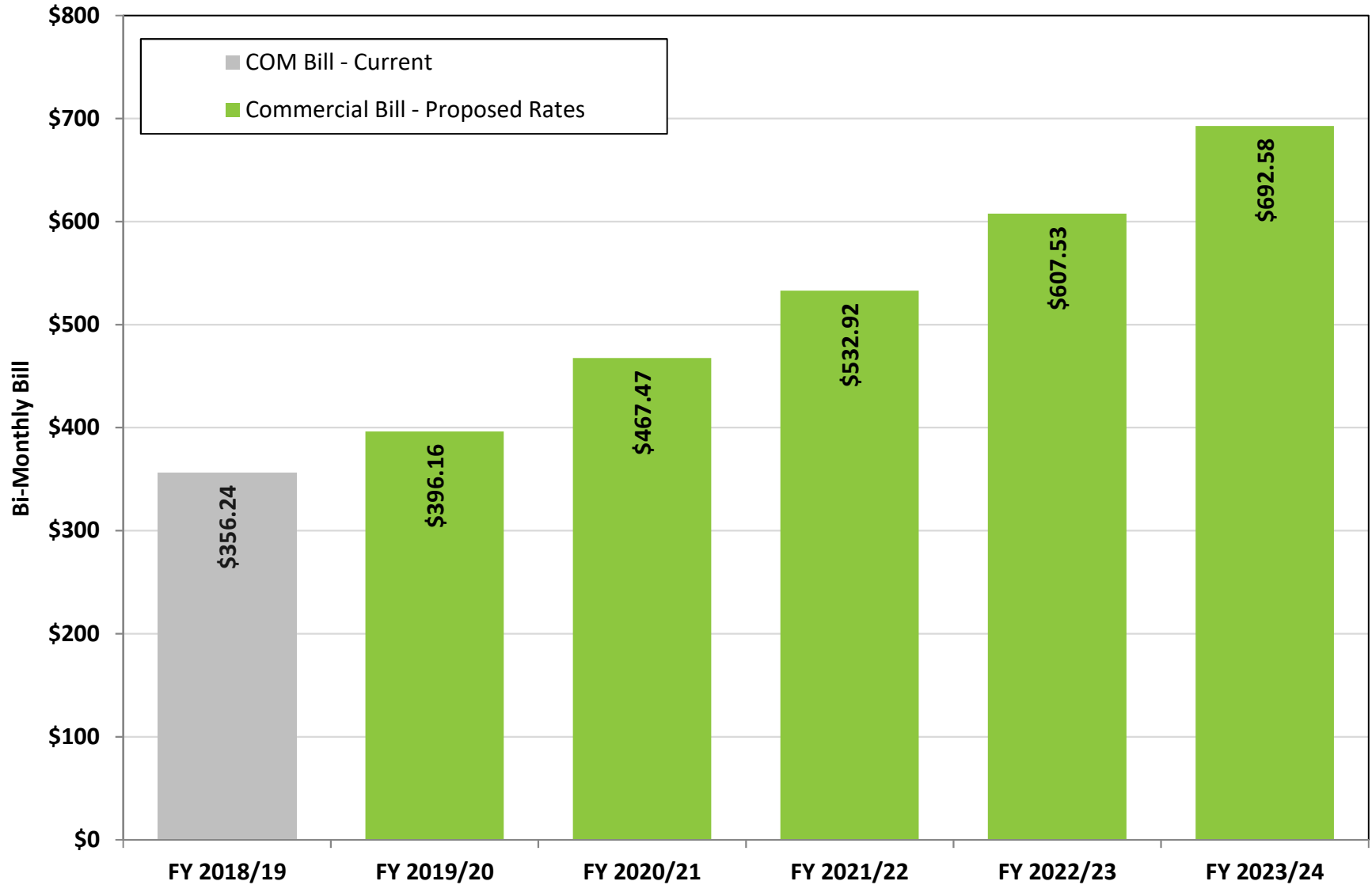
Multi-Family Residential Water Bi-Monthly Bill Comparison

Current vs. Proposed FY 2019/24 Rates (1.5-inch meter, 8 units, 8 hcf consumption)



Commercial Water Bi-Monthly Bill Comparison

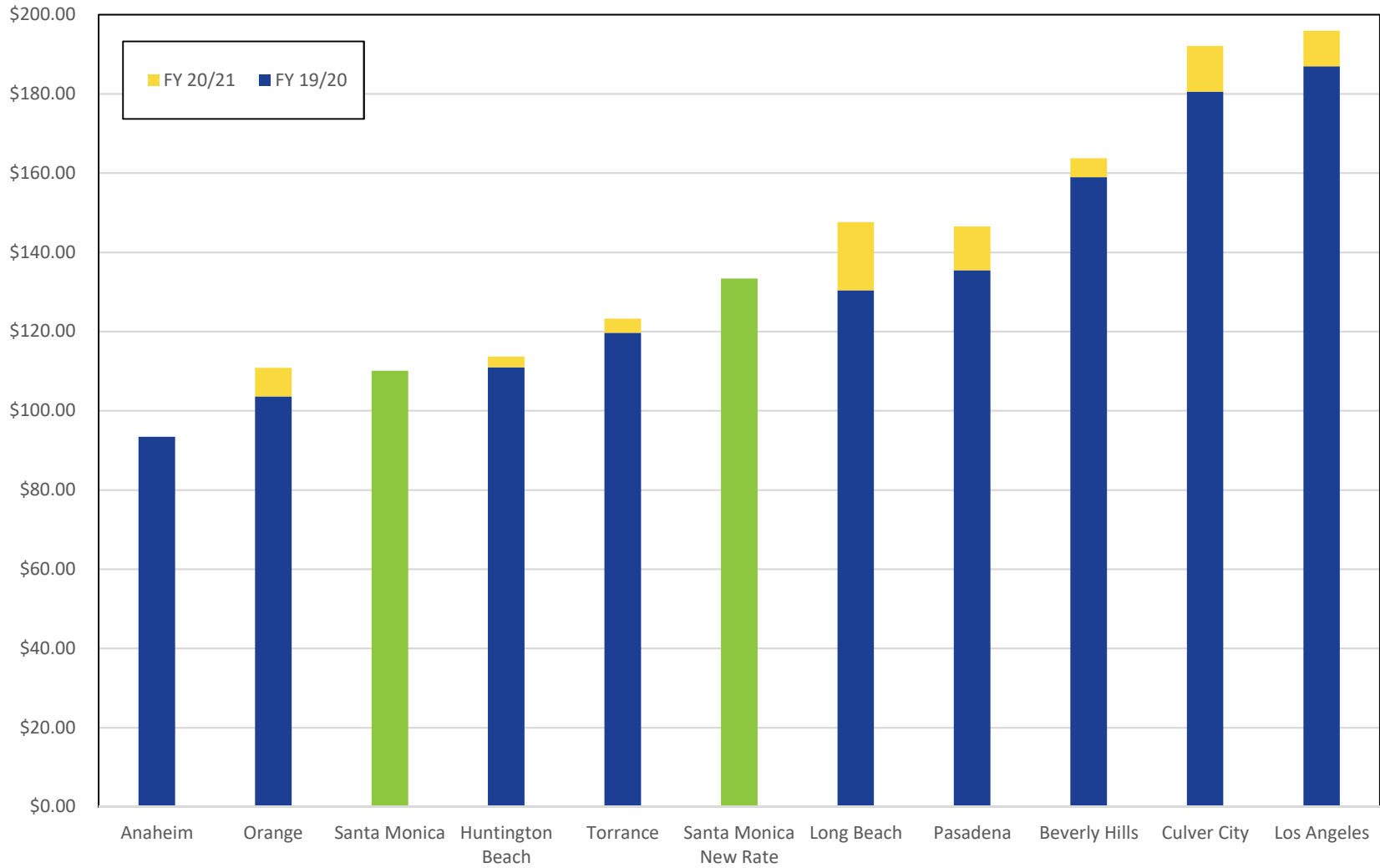
Current vs. Proposed FY 2019/24 Rates (1.5-inch meter, 73 hcf consumption)



Water Bill Comparison With Neighboring Agencies

Single Family Residential Accounts

(assumes 3/4-inch meter and 26 hcf consumption)



Note: City of Santa Monica staff put together this regional rate comparison for the purpose of the water rate study.

Appendix B: Alternatives Considered – Detailed Water Rate Study Tables and Figures

CURRENT VS. PROPOSED WATER RATES (BI-MONTHLY) WITH LOW REDUCED CIP

Proposed Rates (15% Fixed / 85% Variable)						
Water Rate Schedule	Number of Customers	Proposed Rates				
		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
<i>Overall Increase in Rate Revenue</i>		9.00%	9.00%	9.00%	9.00%	9.00%
Bi-Monthly Fixed Service Charges						
<i>Single Family Residential</i>						
3/4 inch	3,411	\$12.98	\$14.15	\$15.42	\$16.81	\$18.33
1 inch	3,142	\$12.98	\$14.15	\$15.42	\$16.81	\$18.33
1.5 inch	1,095	\$17.97	\$19.59	\$21.36	\$23.28	\$25.37
2 inch	62	\$23.97	\$26.12	\$28.47	\$31.04	\$33.83
<i>All Other Customers</i>						
3/4 inch	2,638	\$15.53	\$16.93	\$18.46	\$20.12	\$21.93
1 inch	2,433	\$15.53	\$16.93	\$18.46	\$20.12	\$21.93
1.5 inch	3,123	\$23.08	\$25.16	\$27.42	\$29.89	\$32.58
2 inch	966	\$32.13	\$35.02	\$38.18	\$41.61	\$45.36
3 inch	200	\$56.27	\$61.34	\$66.86	\$72.87	\$79.43
4 inch	96	\$83.43	\$90.94	\$99.12	\$108.04	\$117.77
6 inch	34	\$158.87	\$173.17	\$188.75	\$205.74	\$224.26
8 inch	5	\$430.45	\$469.19	\$511.42	\$557.45	\$607.62
<i>Fire Service Charges</i>						
1.5 inch	1	\$35.07	\$38.23	\$41.67	\$45.42	\$49.51
2 inch	67	\$51.32	\$55.94	\$60.97	\$66.46	\$72.44
3 inch	73	\$102.78	\$112.03	\$122.11	\$133.10	\$145.08
4 inch	768	\$197.56	\$215.34	\$234.72	\$255.85	\$278.87
6 inch	268	\$441.30	\$481.01	\$524.30	\$571.49	\$622.93
8 inch	59	\$766.28	\$835.24	\$910.41	\$992.35	\$1,081.66
10 inch	7	\$1,145.42	\$1,248.51	\$1,360.87	\$1,483.35	\$1,616.85
Commodity Charges						
All Customers (\$/hcf)						
Tier 1		\$3.19	\$3.48	\$3.79	\$4.13	\$4.50
Tier 2		\$3.93	\$4.28	\$4.67	\$5.09	\$5.55
Tier 3		\$6.03	\$6.57	\$7.16	\$7.81	\$8.51

* Tier Breakpoints shown in Table 41

CURRENT VS. PROPOSED WATER RATES (BI-MONTHLY) WITH MEDIUM REDUCED CIP

<i>Proposed Rates (15% Fixed / 85% Variable)</i>						
Water Rate Schedule	Number of Customers	Proposed Rates				
		FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
<i>Overall Increase in Rate Revenue</i>		15.00%	15.00%	15.00%	10.00%	10.00%
<i>Bi-Monthly Fixed Service Charges</i>						
<i>Single Family Residential</i>						
3/4 inch	3,411	\$12.33	\$14.18	\$16.31	\$17.94	\$19.74
1 inch	3,142	\$12.33	\$14.18	\$16.31	\$17.94	\$19.74
1.5 inch	1,095	\$16.75	\$19.27	\$22.16	\$24.37	\$26.81
2 inch	62	\$22.05	\$25.36	\$29.17	\$32.08	\$35.29
<i>All Other Customers</i>						
3/4 inch	2,638	\$14.59	\$16.78	\$19.30	\$21.23	\$23.35
1 inch	2,433	\$14.59	\$16.78	\$19.30	\$21.23	\$23.35
1.5 inch	3,123	\$21.27	\$24.46	\$28.13	\$30.94	\$34.04
2 inch	966	\$29.28	\$33.67	\$38.72	\$42.60	\$46.85
3 inch	200	\$50.64	\$58.24	\$66.98	\$73.67	\$81.04
4 inch	96	\$74.68	\$85.88	\$98.76	\$108.64	\$119.50
6 inch	34	\$141.44	\$162.65	\$187.05	\$205.76	\$226.33
8 inch	5	\$381.77	\$439.04	\$504.89	\$555.38	\$610.92
<i>Fire Service Charges</i>						
1.5 inch	1	\$37.99	\$43.68	\$50.24	\$55.26	\$60.79
2 inch	67	\$56.03	\$64.43	\$74.10	\$81.51	\$89.66
3 inch	73	\$113.16	\$130.13	\$149.65	\$164.62	\$181.08
4 inch	768	\$218.40	\$251.16	\$288.84	\$317.72	\$349.49
6 inch	268	\$489.02	\$562.38	\$646.73	\$711.41	\$782.55
8 inch	59	\$849.86	\$977.33	\$1,123.93	\$1,236.33	\$1,359.96
10 inch	7	\$1,270.82	\$1,461.45	\$1,680.66	\$1,848.73	\$2,033.60
<i>Commodity Charges</i>						
<u>All Customers (\$/hcf)</u>						
Tier 1		\$3.46	\$3.98	\$4.58	\$5.03	\$5.54
Tier 2		\$4.20	\$4.83	\$5.55	\$6.11	\$6.72
Tier 3		\$6.28	\$7.22	\$8.31	\$9.14	\$10.05

* Tier Breakpoints shown in Table 41