



# CITY OF MADERA

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FINAL REPORT

## Water Rate Study

MARCH 2022

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## ABBREVIATIONS & ACRONYMS

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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 <sup>st</sup> to June 30 <sup>th</sup> )
FY 2021/22	July 1, 2021 through June 30, 2022
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
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.

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 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 Madera (City) retained NBS to conduct a comprehensive water rate study for several 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.

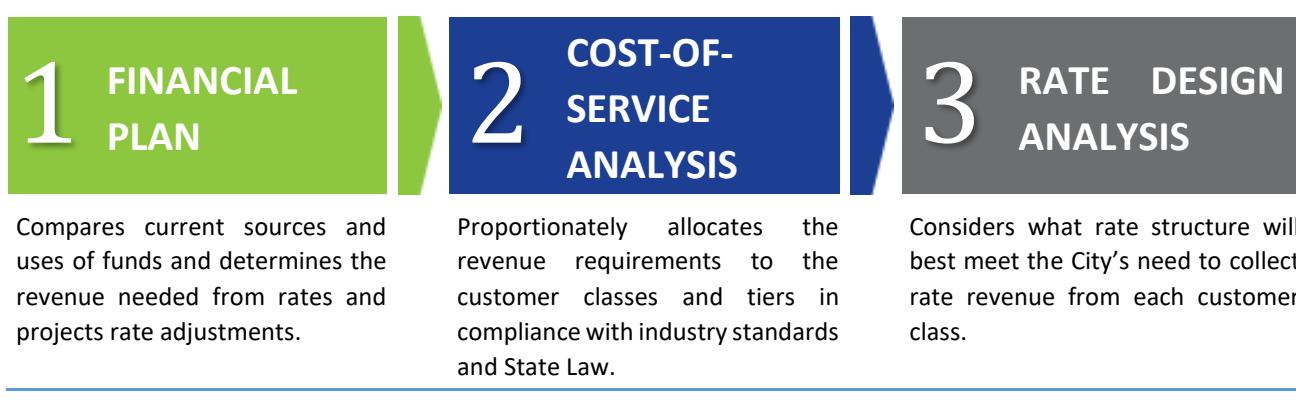
In developing new water rates, NBS worked cooperatively with City staff and the City Council (Council), in selecting appropriate rate alternatives. Based on input from all stakeholders, the proposed rates are summarized in this report.

## 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 Charges<sup>1</sup>, also referred to as the M1 Manual. The rate study also addresses requirements under

<sup>1</sup> *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.*

Proposition 218 that rates do not exceed the cost of providing the service, and that the rates be proportionate 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 study<sup>2</sup>.

## WATER RATE DESIGN ANALYSIS

Rate Design is typically the stage in the study where NBS, staff and the Council 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 practical 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*<sup>3</sup>, 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 monthly meter charges and variable commodity charges. The rates proposed in this report are designed to

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<sup>2</sup> The complete financial plan is set forth in the Appendix.

<sup>3</sup> 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.

collect the almost the same revenue split as current rates; about 36 percent (36%) of rate revenue from the fixed meter charge and 64 percent (64%) from the variable commodity charge<sup>4</sup>.

**Fixed Charges** – Fixed charges can be called base charges, minimum 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 summertime 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 which are intended to encourage customers to eliminate inefficient and wasteful water use, and otherwise reduce consumption during peak periods.

## 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.

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 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. The City directed NBS to develop a drought rate structure which is presented in Section 2 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.

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<sup>4</sup> 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.

## SECTION 2. WATER RATE STUDY

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### 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.
- 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.
- Provide 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.
- Evaluate the appropriateness of the current tiered rate structure and compare it to a uniformed rate structure.

The rate structures NBS is proposing relied on industry standards and cost-of-service principles. 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) 2022/23 through FY 2026/27, 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 \$11.1 million on average, annually.
- **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 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 \$2.1 million in FY 2026/27). 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 Outlay Reserve** should equal roughly 6% of asset values, reaching \$4 million annually over the next five years. These monies are set aside to address long-term and routine capital system replacement and rehabilitation needs.
- **Funding Capital Improvement Projects:** The City must also be able to fund necessary capital improvements in order to maintain current service levels. City staff has identified roughly \$48.4 million (in current year dollars) in expected capital expenditures for FY 2021/22 through 2026/27. With the recommended rate increases, these expenditures can be accomplished but reserves will fall below the minimum recommended target. The City was able to secure grant monies from the American Rescue Plan Act (ARPA), in which \$6 million is allocated towards the water enterprises' capital projects. This grant funding significantly helps offset the financial burden on rate payers.
- **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 0% annually.
  - General inflation is assumed to be 3% annually.
  - Water supply, salaries, benefits, fuel, and electricity are all assumed to be 5% annually.
  - Some expenses are assumed to have no escalation annually.
- **Maintaining Adequate Bond Coverage:** The City currently has two outstanding water revenue bonds from 2015 and 2019 that require the City 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.

Rate revenue adjustments of one percent (1%) annually in FY 2022/23 through FY 2024/25 are recommended in order to fund operating expenses, planned capital projects, debt service obligations but the reserve levels will fall below the minimum target. **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.

**Figure 2. Summary of Water Revenue Requirements**

Summary of Sources and Uses of Funds and Net Revenue Requirements	Projected					
	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Sources of Water Funds</b>						
Rate Revenue Under Prevailing Rates	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381
Additional Revenue from Rate Increases <sup>1</sup>	-	115,724	232,605	350,655	350,655	350,655
Projected Annual Rate Increase	0.00%	1.00%	1.00%	1.00%	0.00%	0.00%
Non-Rate Revenues	318,705	318,705	318,705	318,705	318,705	318,705
Interest Earnings	415,410	337,685	70,894	84,195	98,390	116,366
<b>Total Sources of Funds</b>	<b>\$ 12,306,496</b>	<b>\$ 12,344,495</b>	<b>\$ 12,194,585</b>	<b>\$ 12,325,936</b>	<b>\$ 12,340,130</b>	<b>\$ 12,358,107</b>
<b>Uses of Water Funds</b>						
Operating Expenses	\$ 7,258,284	\$ 7,511,453	\$ 7,767,973	\$ 8,301,238	\$ 8,590,059	\$ 8,881,667
Debt Service	778,791	781,889	783,744	784,327	783,599	784,950
Rate-Funded Capital Expenses	1,948,133	6,894,764	927,771	477,227	-	4,600,399
<b>Total Use of Funds</b>	<b>\$ 9,985,208</b>	<b>\$ 15,188,106</b>	<b>\$ 9,479,488</b>	<b>\$ 9,562,791</b>	<b>\$ 9,373,658</b>	<b>\$ 14,267,016</b>
<b>Surplus (Deficiency) after Rate Increase</b>	<b>\$ 2,321,288</b>	<b>\$ (2,843,610)</b>	<b>\$ 2,715,098</b>	<b>\$ 2,763,144</b>	<b>\$ 2,966,472</b>	<b>\$ (1,908,909)</b>
Cumulative Rate Increases	0.00%	1.00%	2.01%	3.03%	3.03%	3.03%
<b>Net Revenue Requirement<sup>2</sup></b>	<b>\$ 9,251,093</b>	<b>\$ 14,531,715</b>	<b>\$ 9,089,888</b>	<b>\$ 9,159,891</b>	<b>\$ 8,956,564</b>	<b>\$ 13,831,945</b>

1. Revenue from rate increases assume an implementation date of July 1, 2022 and then July 1st, 2023 through 2024.

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

**Figure 3** summarizes the Capital Improvement Plan, providing the expected cost and timing of capital projects during the 5-year rate period. The American Rescue Plan Act (ARPA) grant monies, in which \$6 million are allocated to capital projects in the water enterprise fund are shown in this figure.

**Figure 3. Summary of Capital Improvement Plan**

CAPITAL FUNDING FORECAST		Projected					
Funding Sources:		FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Grants <sup>1</sup>	\$ -	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Development Impact Fee Fund <sup>2</sup>	155,367	155,367	155,367	155,367	155,367	155,367	155,367
Use of American Rescue Plan Proceeds <sup>3</sup>	1,380,000	4,620,000	-	-	-	-	-
Use of Capital Expenditure Reserve Fund	6,500,000	11,500,000	2,000,000	2,000,000	2,000,000	138,140	
Rate Revenue	1,948,133	6,894,764	927,771	477,227	-	4,600,399	
<b>Total Sources of Capital Funds</b>	<b>\$ 9,983,500</b>	<b>\$ 25,670,131</b>	<b>\$ 3,083,138</b>	<b>\$ 2,632,594</b>	<b>\$ 2,155,367</b>	<b>\$ 4,893,906</b>	

1. Grant Funding is per source file: *Enterprise Funds Budget 2020-21.pdf*, pages 21-32.

FY 2022/23 grant from updated CIP file: *Water CIP Table ARPA.xlsx*.

2. Development Impact Fee Fund to fund some projects used for future customers only per *Water CIP Table ARPA.xlsx*.

This amount drains the DIF fund in order to contribute to projects over time.

3. The City was awarded American Rescue Plan Act funds in which \$6 million is allocated to water capital projects.

**Figure 4** summarizes the projected reserve fund balances and reserve targets for the water utility's unrestricted reserve funds. The appendix tables include the detailed 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 not meet the minimum target all but FY 25/26 in the projected years, and will dip below targets in order to cash fund the capital improvement program that is not funded with ARPA funding.

**Figure 4. Summary of Reserve Funds**

Debt Service Reserve Fund	Projected					
	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Operating Reserve Fund</b>						
Ending Balance	\$ 1,789,714	\$ 1,946,103	\$ 1,915,391	\$ 2,046,881	\$ 2,118,097	\$ 209,187
<i>Recommended Minimum Target</i>	<i>1,789,714</i>	<i>1,852,139</i>	<i>1,915,391</i>	<i>2,046,881</i>	<i>2,118,097</i>	<i>2,190,000</i>
<b>Capital Outlay Reserve Fund</b>						
Ending Balance	\$ 16,365,419	\$ 1,865,419	\$ 2,611,229	\$ 3,242,884	\$ 4,138,140	\$ 4,000,000
<i>Recommended Minimum Target</i>	<i>2,000,000</i>	<i>4,000,000</i>	<i>4,000,000</i>	<i>4,000,000</i>	<i>4,000,000</i>	<i>4,000,000</i>
<b>Debt Service Reserve Fund</b>						
Ending Balance	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383
<i>Recommended Minimum Target</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>-</i>
<b>Total Ending Balance</b>	<b>\$ 18,155,133</b>	<b>\$ 3,811,522</b>	<b>\$ 4,526,620</b>	<b>\$ 5,289,764</b>	<b>\$ 6,256,237</b>	<b>\$ 4,209,187</b>
<b>Total Recommended Minimum Target</b>	<b>\$ 3,789,714</b>	<b>\$ 5,852,139</b>	<b>\$ 5,915,391</b>	<b>\$ 6,046,881</b>	<b>\$ 6,118,097</b>	<b>\$ 6,190,000</b>

## 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.

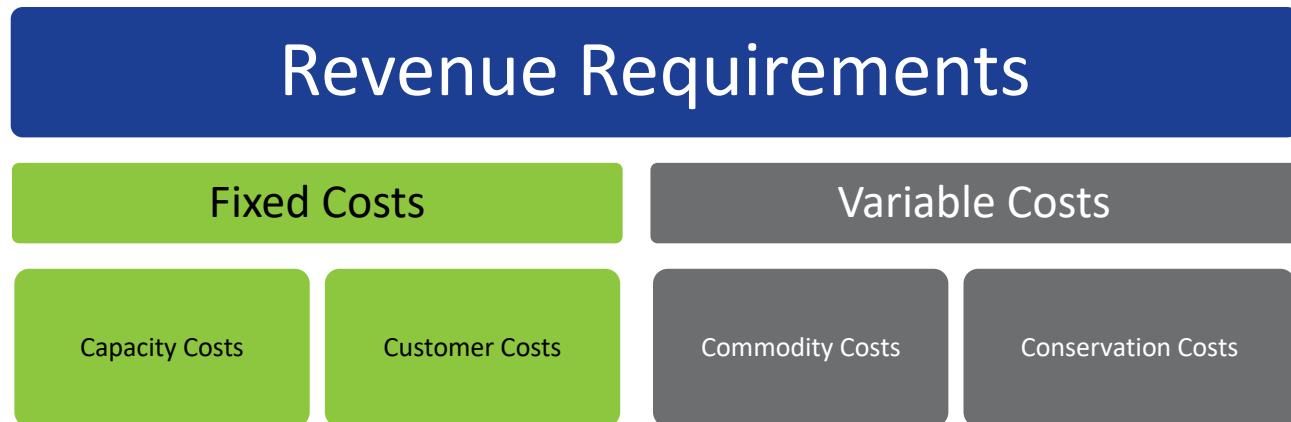
## CLASSIFICATION OF COSTS

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 Manual<sup>5</sup>. In accordance with this method, budgeted costs were “classified” into four categories: base commodity, conservation, capacity, and customer. 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.
- **Conservation related costs** are associated with efforts made by the City to permanently reduce water usage.
- **Capacity related costs** are related 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 correlated with having a customer on the water system, such as meter reading, postage, billing and other administrative duties.

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 36% fixed and 64% variable. The City’s current rate structure collects about 33% of rate revenue from fixed charges and 67% from variable charges. **Figure 6** summarizes the allocation of the net revenue requirements to each cost causation component for the proposed new rate structure.

<sup>5</sup> *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 83.*

**Figure 6. Allocation of Water Revenue Requirements**

Functional Category	Proposed Rates for FY 2021/22	
	Adjusted Net Revenue Requirements	
	36% Fixed / 64% Variable	
Commodity - Related Costs	\$ 7,001,348	59.1%
Conservation - Related Costs	\$ 632,653	5.3%
Capacity - Related Costs	\$ 2,758,809	23.3%
Customer - Related Costs	\$ 1,459,629	12.3%
<b>Total</b>	<b>\$ 11,852,440</b>	<b>100%</b>

## 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, industrial, and irrigation. 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.

The amount of consumption, the peaking factors, the number of meters, and the number of dwelling units by customer class 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 7**.

Commodity (and conservation) related costs are associated with the total annual consumption of water by customer class, as shown in Figure 7. This figure also shows the average monthly statistics for each customer class.

**Figure 7. Commodity and Conservation Allocation Factors**

Customer Class	Volume (hcf) <sup>1</sup>	Percent of Total Volume	Average Monthly Statistics		
			Winter	Annual	Summer
Single-Family	2,253,906	<b>63.4%</b>	8	15	22
Multi-Family	467,097	<b>13.1%</b>	9	12	17
Commercial	679,591	<b>19.1%</b>	42	70	103
Industrial	37,010	<b>1.0%</b>	101	134	168
Irrigation	115,456	<b>3.2%</b>	44	141	261
<b>Total</b>	<b>3,553,060</b>	<b>100%</b>			

1. Consumption is from January through December 2020.

As shown in **Figure 8**, the capacity related costs are determined from the peak monthly use of each customer class. The peaking factors of each customer class are also calculated in this figure.

**Figure 8. Capacity Allocation Factor**

Customer Class	Average Monthly Use (hcf)	Peak Monthly Use (hcf) <sup>2</sup>	Peaking Factor	Max Monthly Capacity Factor
Single-Family	187,825	286,177	<b>1.52</b>	<b>63.9%</b>
Multi-Family	38,925	54,661	<b>1.40</b>	<b>12.2%</b>
Commercial	56,633	84,950	<b>1.50</b>	<b>19.0%</b>
Industrial	3,084	4,013	<b>1.30</b>	<b>0.9%</b>
Irrigation	9,621	18,378	<b>1.91</b>	<b>4.1%</b>
<b>Total</b>	<b>296,088</b>	<b>448,180</b>		<b>100%</b>

2. Based on peak monthly data (peak day data not available).

The number of customers for each customer class (also known as customer allocation factors) are shown in **Figure 9**.

**Figure 9. Customer Allocation Factor**

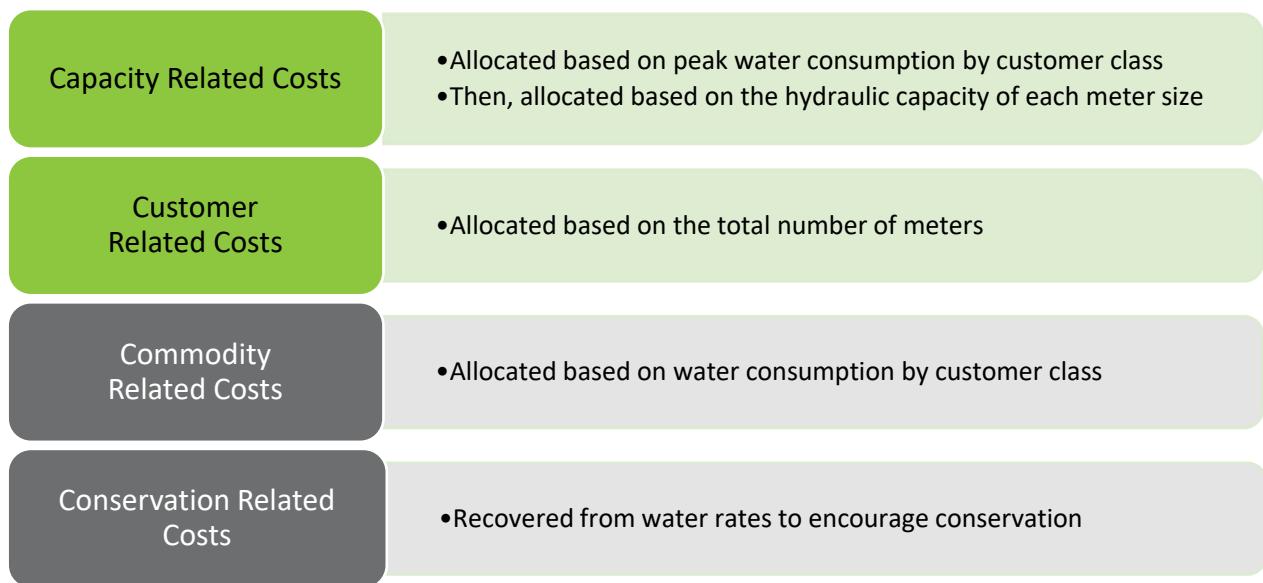
Customer Class	Number of Meters <sup>1</sup>	Percent of Total Accounts	Number of Units <sup>1</sup>	Percent of Total Units
Single-Family	12,663	<b>89.8%</b>	12,663	<b>75.6%</b>
Multi-Family	528	<b>3.7%</b>	3,183	<b>19.0%</b>
Commercial	813	<b>5.8%</b>	813	<b>4.9%</b>
Industrial	23	<b>0.2%</b>	23	<b>0.1%</b>
Irrigation	68	<b>0.5%</b>	68	<b>0.4%</b>
<b>Total</b>	<b>14,095</b>	<b>100.0%</b>	<b>16,750</b>	<b>100.0%</b>

1. Meter Count is from December 2020.

## 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 10** summarizes how the costs for each cost causation component from Figure 6 are allocated to each customer class.

**Figure 10. Cost Allocation Methodology**



The costs allocated to each causation component are assigned to each customer class using the cost allocation methodology described in Figure 10. This process is shown in the following sections.

#### **Capacity Related Costs**

The capacity related costs allocation is summarized in **Figure 11**. 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 monthly peak capacity factors and then by hydraulic capacity.

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 (hydraulic capacity) of each meter size as established by the AWWA<sup>6</sup>. The meter capacity factors used in this study are shown in **Figure 12**.

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 12 shows the hydraulic capacity of a two-inch meter is 3.20 times that of a 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 distributed to each meter size by the Percent of Total Hydraulic Capacity.

<sup>6</sup> Water Meters - Selection, Installation, Testing, and Maintenance, Manual of Water Supply Practices, M6, AWWA, fifth edition, 2027, p. 63.

## Customer Related Costs

The customer related cost allocation is also summarized in **Figure 11**. 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 11. Capacity Related Costs and Customer Costs Allocation**

Customer Classes	Classification Components		Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Capacity - Related Costs	Customer - Related Costs		
Single-Family	\$ 1,761,585	\$ 1,103,479	\$ 2,865,064	67.9%
Multi-Family	336,472	277,373	613,845	14.6%
Commercial	522,920	70,846	593,766	14.1%
Industrial	24,704	2,004	26,708	0.6%
Irrigation	113,129	5,926	119,055	2.8%
<b>Total Net Revenue Requirement</b>	<b>\$ 2,758,809</b>	<b>\$ 1,459,629</b>	<b>\$ 4,218,438</b>	<b>100%</b>

**Figure 12. Meter Equivalency Factors**

Meter Size	Standard Meters <sup>1</sup>	
	Meter Capacity (gpm)	Equivalency to 1 inch
<i>Displacement Meters</i>		
5/8 inch	20	0.40
3/4 inch	30	0.60
1 inch	50	1.00
1.5 inch	100	2.00
2 inch	160	3.20
<i>Compound Class I Meters</i>		
3 inch	320	6.40
4 inch	500	10.00
6 inch	1,000	20.00
8 inch	1,600	32.00

1. Meter flow rates are from AWWA M-1 Table B-1.

## Commodity and Conservation Related Costs

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. These costs are summarized in **Figure 13**.

Conservation related costs are those costs related to the water conservation program expenses in the City's budget. These are also summarized by customer class in Figure 13.

**Figure 13. Commodity and Conservation Cost Allocations**

Customer Classes	Classification Components		Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Commodity - Related Costs	Conservation - Related Costs		
Single-Family	\$ 4,441,349	\$ 401,327	\$ 4,842,676	63.4%
Multi-Family	920,421	83,171	1,003,592	13.1%
Commercial	1,339,142	121,007	1,460,150	19.1%
Industrial	72,929	6,590	79,519	1.0%
Irrigation	227,507	20,558	248,065	3.2%
<b>Total Net Revenue Requirement</b>	<b>\$ 7,001,348</b>	<b>\$ 632,653</b>	<b>\$ 7,634,002</b>	<b>100%</b>

The City currently has a three-tiered volumetric rate for single-family residential customers and a two-tiered volumetric rate structure for multi-family residential customers. Non-residential customers are charged on a single, uniform volumetric rate per unit of water.

Because of the City's concern about the current tiered rate structure, NBS recommends eliminating tiers from residential customers and charge one uniform rate for single family residential, multi-family residential and non-residential customers.

## 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. The following sections describe this process.

NBS developed a water rate structure for the City to consider with the following components:

1. Maintain a monthly fixed charge designed to collect 36% of rate revenue.
2. Maintain a volumetric charge per unit of water designed to collect 64% of rate revenue:  
Eliminate tiered rate structure for single family residential customers and collect variable revenue from a single, uniform rate per hcf for single family residential, multi-family residential and non-residential customers.

### 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 customer from Figure 11; **Figure 14** shows the calculations for the monthly charge for each customer class.

**Figure 14. Calculated Fixed Meter Charges**

Number of Meters by Class and Size <sup>1</sup>	5/8 inch	3/4 inch	1 inch	1 1/2 inch	2 inch	3 inch	4 inch	6 inch	8 inch
Single-Family	1	2	12,369	34	229	12	16	-	-
Multi-Family	-	1	416	11	91	2	1	4	2
Commercial	1	4	597	29	146	14	17	4	1
Industrial	-	-	13	3	4	2	1	-	-
Irrigation	-	-	46	3	14	3	2	-	-
<b>Total Meters/Accounts</b>	<b>2</b>	<b>7</b>	<b>13,441</b>	<b>80</b>	<b>484</b>	<b>33</b>	<b>37</b>	<b>8</b>	<b>3</b>
<i>Hydraulic Capacity Factor<sup>2</sup></i>	0.40	0.60	1.00	2.00	3.20	6.40	10.00	20.00	32.00
<b>Total Equivalent Meters</b>	<b>0.8</b>	<b>4.2</b>	<b>13,441</b>	<b>160</b>	<b>1,548.8</b>	<b>211.2</b>	<b>370</b>	<b>160</b>	<b>96</b>
<b>Monthly Fixed Service Charges</b>									
Customer Costs (\$/Acct/month) <sup>3</sup>	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63
Capacity Costs (\$/Acct/month) <sup>4</sup>	\$5.75	\$8.63	\$14.38	\$28.75	\$46.00	\$92.01	\$143.76	\$287.52	\$460.03
<b>Total Monthly Meter Charge</b>	<b>\$14.38</b>	<b>\$17.26</b>	<b>\$23.01</b>	<b>\$37.38</b>	<b>\$54.63</b>	<b>\$100.64</b>	<b>\$152.39</b>	<b>\$296.15</b>	<b>\$468.66</b>

1. Number of meters by size and customer class for December 2020.

Source file: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx

2. Source file: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table B-1.

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.

## VARIABLE CHARGES

Using the costs allocated to volumetric charges including water conservation shown in Figure 13, **Figure 15** shows the calculation for a uniform rate per hcf for all residential and non-residential customers.

**Figure 15. Calculated Variable Charges**

Customer Classes	Water Consumption (hcf/yr.) <sup>1</sup>	Commodity - Related Costs	Conservation- Related Costs	Target Rev. Req't from Vol. Charges	Cost Per Unit of Water (\$/hcf)	Base Volumetric Rates (\$/hcf)
	a	b	c	d = b+c	d / a	
Single-Family	2,253,906	\$ 4,441,349	\$ 401,327	\$ 4,842,676	\$2.15	\$2.15
Multi-Family	467,097	920,421	83,171	1,003,592	\$2.15	
Commercial	679,591	1,339,142	121,007	1,460,150	\$2.15	
Industrial	37,010	72,929	6,590	79,519	\$2.15	\$2.15
Irrigation	115,456	227,507	20,558	248,065	\$2.15	
<b>Total</b>	<b>3,553,060</b>	<b>\$ 7,001,348</b>	<b>\$ 632,653</b>	<b>\$ 7,634,002</b>		

1. Consumption by customer class from January-December 2020.

## 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 2022/23. 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 16** provides a comparison of the proposed rates for FY 2022/23 through FY 2026/27. More detailed tables on the development of the proposed charges are documented in the Appendix.

**Figure 16. Proposed Water Rates**

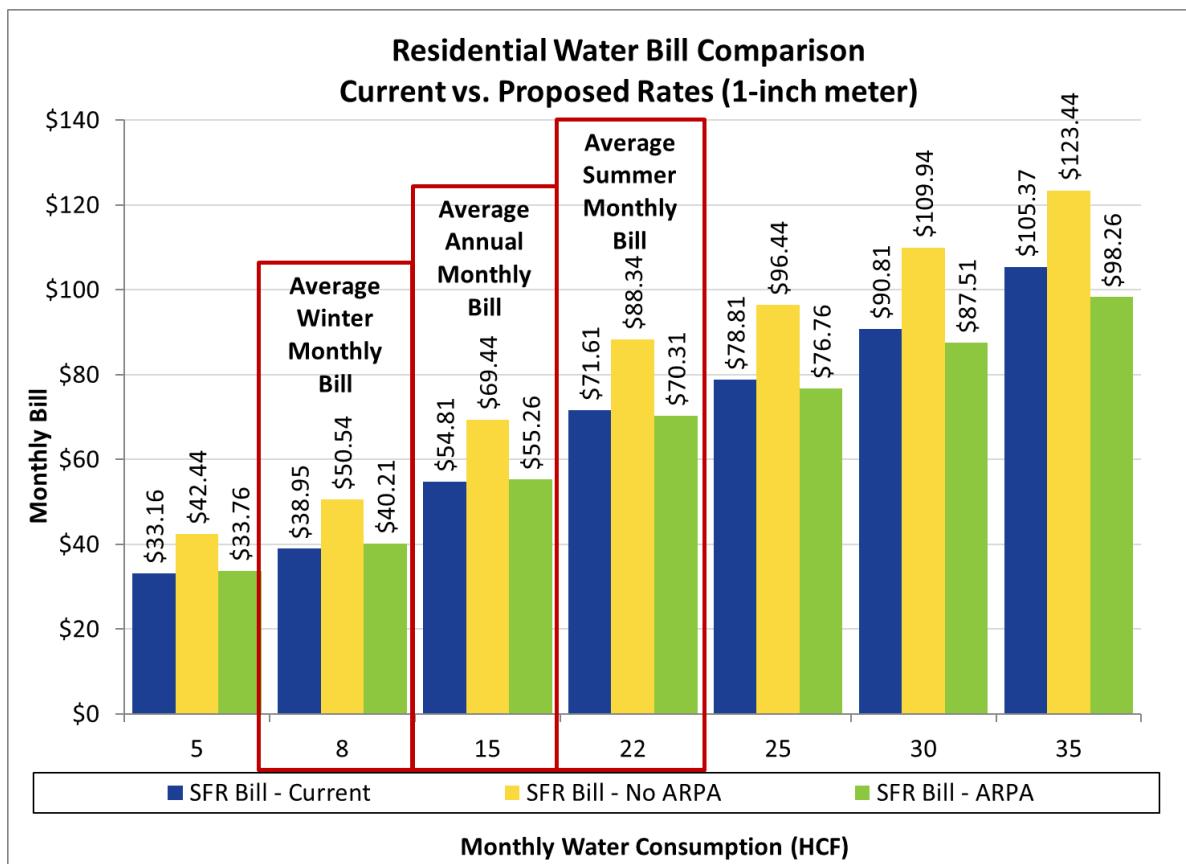
Water Rate Schedule	Current Rates	Proposed Rates					
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	
<b><i>Fixed Meter Charges</i></b>							
<u>Monthly Fixed Service Charges:</u>							
5/8 inch	\$16.88	\$14.38	\$14.52	\$14.67	\$14.67	\$14.67	
3/4 inch	\$19.09	\$17.26	\$17.43	\$17.60	\$17.60	\$17.60	
1 inch	\$23.51	\$23.01	\$23.24	\$23.47	\$23.47	\$23.47	
1.5 inch	\$34.56	\$37.38	\$37.75	\$38.13	\$38.13	\$38.13	
2 inch	\$47.82	\$54.63	\$55.18	\$55.73	\$55.73	\$55.73	
3 inch	\$89.81	\$100.64	\$101.65	\$102.67	\$102.67	\$102.67	
4 inch	\$151.69	\$152.39	\$153.91	\$155.45	\$155.45	\$155.45	
6 inch	\$299.76	\$296.15	\$299.11	\$302.10	\$302.10	\$302.10	
8 inch	\$542.86	\$468.66	\$473.35	\$478.08	\$478.08	\$478.08	
<b><i>Commodity Charges</i></b>							
<u>Rate per hcf of Water Consumed:</u>							
Non-Residential	\$2.41	\$2.15	\$2.17	\$2.19	\$2.19	\$2.19	
Residential Uniform Rates	N/A	\$2.15	\$2.17	\$2.19	\$2.19	\$2.19	

## F. Comparison of Current and Proposed Water Bills

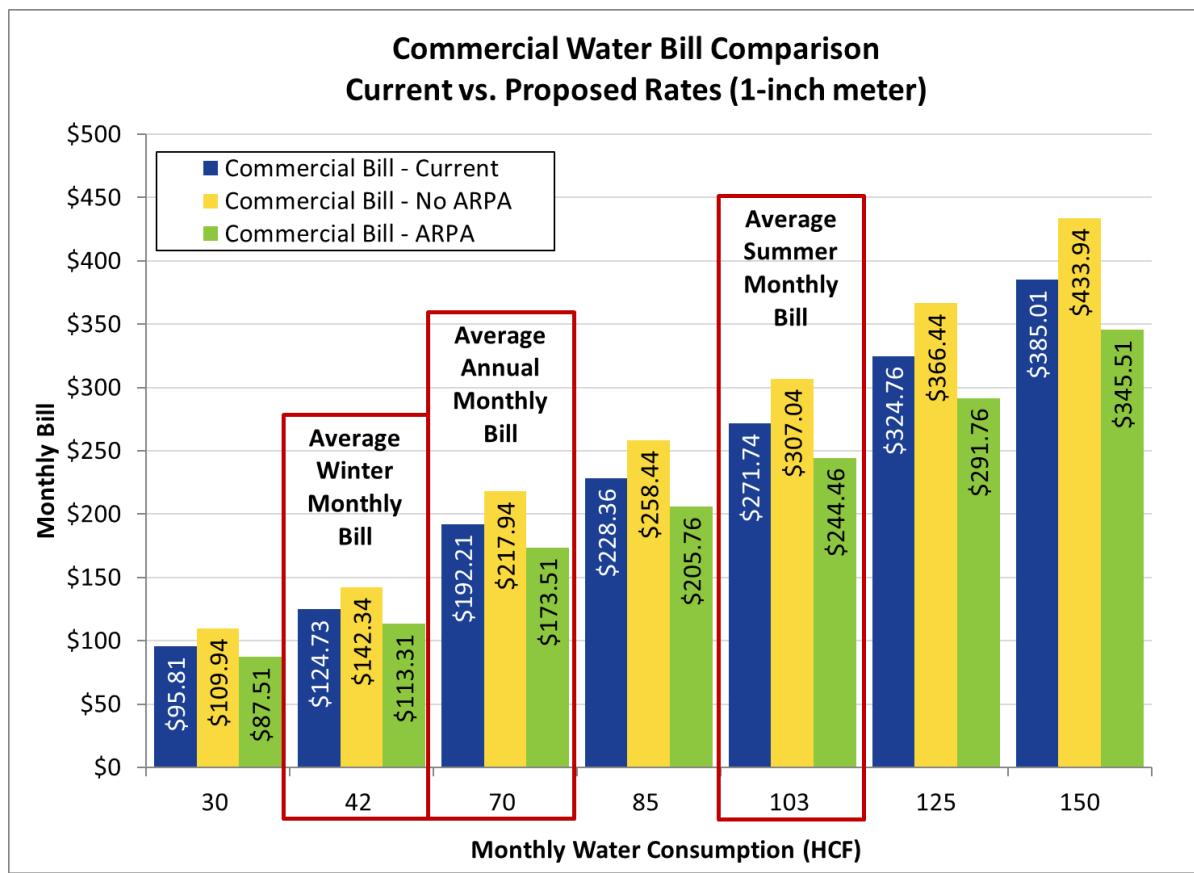
**Figure 17** and **Figure 18** compare a range of monthly water bills for the current and proposed water rates for single-family residential customers (with a 1-inch meter), and commercial customers (with a 1-inch meter). This comparison is for the first year increase only. These monthly bills are based on typical meter sizes, and the average consumption levels for each customer class are highlighted. The rates without the ARPA funding are also shown for informational purposes.

**Figure 19** and **Figure 20** summarize bill comparisons against regional Utilities for both single-family residential and commercial customers.

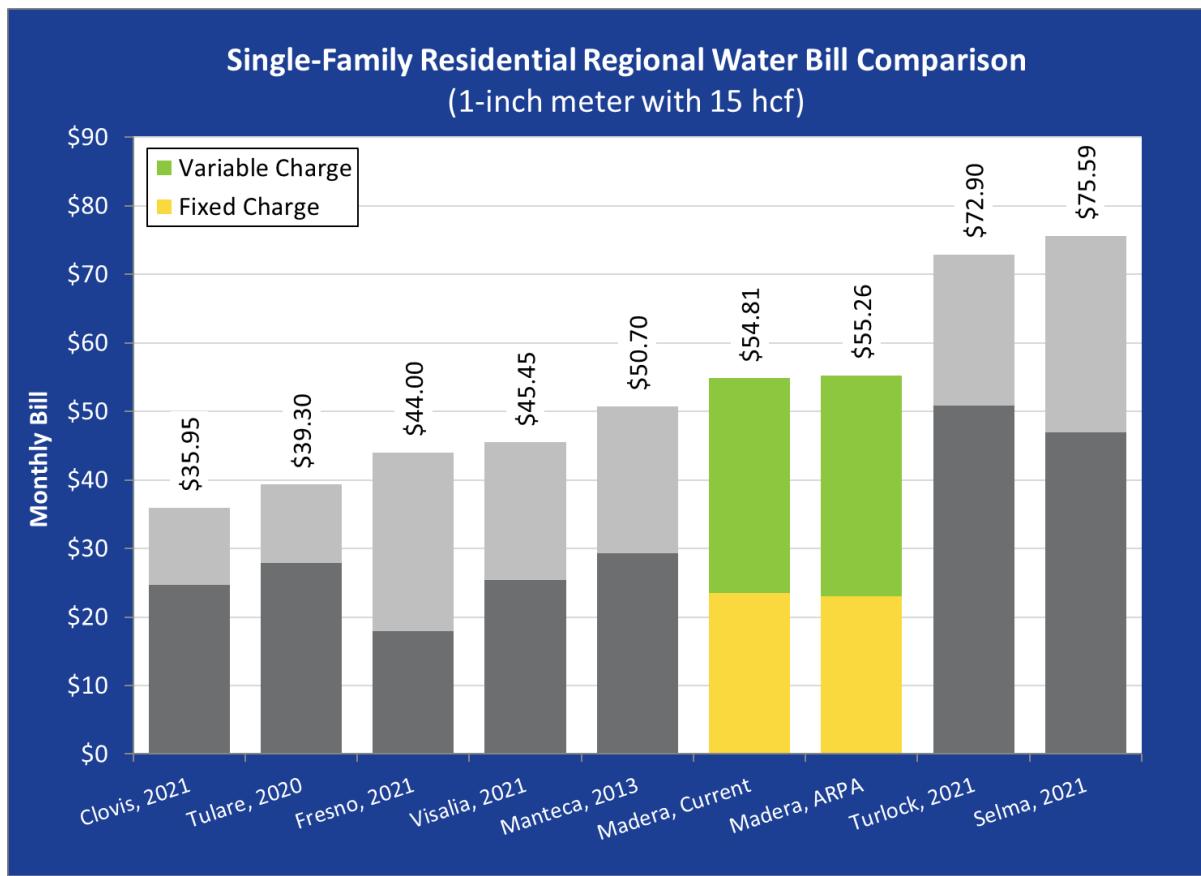
**Figure 17. Monthly Bill Comparison for Single Family Customers (1-inch meters)**



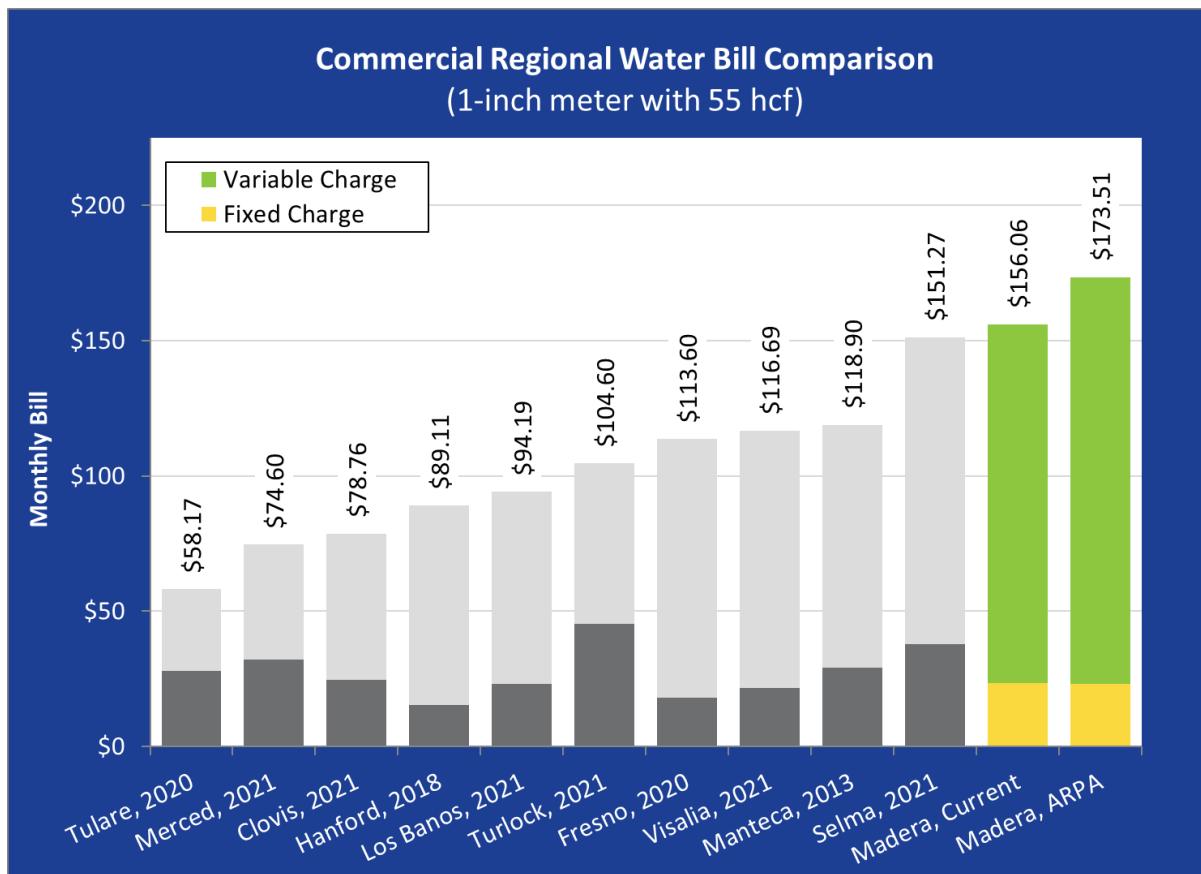
**Figure 18. Monthly Water Bill Comparison for Commercial Customers (1-inch meters)**



**Figure 19. Regional Bill Comparison for Single-Family Customers**



**Figure 20. Regional Bill Comparison for Commercial Customers**



## SECTION 3. RECOMMENDATIONS AND NEXT STEPS

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### 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 chosen rate structure. This will provide documentation of the rate study analyses and the basis for analyzing potential changes to future rates.

**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 16. 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: Detailed Water Study Tables and Figures

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TABLE 1 : FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY <sup>1</sup>		Budget	Projected					5-Year Rate Period
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Sources of Water Funds</b>								
<i>Rate Revenue:</i>								
Water Sales Revenue Under Current Rates	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381
<i>Revenue from Rate Increases</i>	-	-	11,572,381	11,688,105	11,804,986	11,923,036	11,923,036	11,923,036
<b>Subtotal: Rate Revenue After Rate Increases</b>								
<i>Non-Rate Revenue:</i>								
Licenses & Permits	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498
Fines & Forfeiture	242,633	242,633	242,633	242,633	242,633	242,633	242,633	242,633
Other Charges for Services	47,223	47,223	47,223	47,223	47,223	47,223	47,223	47,223
Refunds	5,025	5,025	5,025	5,025	5,025	5,025	5,025	5,025
Other Revenue	4,326	4,326	4,326	4,326	4,326	4,326	4,326	4,326
Interest Income	122,632	415,410	337,685	70,894	84,195	98,390	116,366	116,366
<b>Subtotal: Non-Rate Revenue</b>								
<b>Total Sources of Funds</b>	<b>\$ 12,013,718</b>	<b>\$ 12,306,496</b>	<b>\$ 12,344,495</b>	<b>\$ 12,194,585</b>	<b>\$ 12,325,936</b>	<b>\$ 12,340,130</b>	<b>\$ 12,358,107</b>	<b>435,071</b>
<b>Uses of Water Funds</b>								
<i>Operating Expenses</i>								
Salaries & Benefits	\$ 2,077,594	\$ 2,281,084	\$ 2,392,253	\$ 2,500,273	\$ 2,878,338	\$ 3,004,559	\$ 3,126,267	\$ 3,126,267
Materials & Services	2,406,078	2,510,800	2,620,400	2,735,100	2,854,900	2,980,300	3,111,200	3,111,200
Interfund Charges	1,398,374	1,401,000	1,403,600	1,406,300	1,409,000	1,411,800	1,414,800	1,414,800
Special Payments	579,254	607,300	637,100	668,200	700,900	735,300	771,300	771,300
Water Conservation Program	355,640	355,600	355,600	355,600	355,600	355,600	355,600	355,600
Capital Outlay	750	800	800	800	800	800	800	800
Transfer Out	101,635	101,700	101,700	101,700	101,700	101,700	101,700	101,700
<b>Subtotal: Operating Expenses</b>								
<i>Other Expenditures:</i>								
Existing Debt Service	\$ 779,257	\$ 778,791	\$ 781,889	\$ 783,744	\$ 784,327	\$ 783,599	\$ 784,950	\$ 784,950
Rate-Funded Capital Expenses	649,884	1,948,133	6,894,764	927,771	477,227	-	4,600,399	4,600,399
<b>Subtotal: Other Expenditures</b>								
<b>Total Uses of Water Funds</b>	<b>\$ 8,348,566</b>	<b>\$ 9,985,208</b>	<b>\$ 15,188,106</b>	<b>\$ 9,479,488</b>	<b>\$ 9,562,791</b>	<b>\$ 9,373,658</b>	<b>\$ 14,267,016</b>	<b>\$ 14,267,016</b>
<b>Annual Surplus/(Deficit)</b>	<b>\$ 3,665,152</b>	<b>\$ 2,321,288</b>	<b>\$ (2,843,610)</b>	<b>\$ 2,715,098</b>	<b>\$ 2,763,144</b>	<b>\$ 2,966,472</b>	<b>\$ (1,908,909)</b>	<b>\$ (1,908,909)</b>
<b>Net Revenue Req't. /Total Uses less Non-Rate Revenue)</b>	<b>\$ 7,907,229</b>	<b>\$ 9,251,093</b>	<b>\$ 14,531,715</b>	<b>\$ 9,089,888</b>	<b>\$ 9,159,891</b>	<b>\$ 8,956,564</b>	<b>\$ 13,831,945</b>	<b>\$ 13,831,945</b>
<i>Net Revenue Requirement Increase (Decrease) Each Year</i>								
<b>Projected Annual Rate Revenue Adjustment</b>	<b>0.00%</b>	<b>0.00%</b>	<b>1.00%</b>	<b>1.00%</b>	<b>1.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Cumulative Increase from Annual Revenue Increases</i>	0.00%	0.00%	1.00%	2.01%	3.03%	3.03%	3.03%	3.03%
<i>Debt Coverage After Rate Increase</i>	6.54	6.48	6.18	5.65	5.13	4.79	4.43	4.43

1. Revenue and expenses for FY 2019/20 through FY 2020/21 are from source file: *Enterprise Funds Budget 2020-21.pdf*, pages 21-32.

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Financial Plan and Reserve Projections

**Financial Plan & Reserve Summary**

**TABLE 2 : RESERVE FUND SUMMARY**

		5-Year Rate Period				
SUMMARY OF CASH ACTIVITY		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25
UN-RESTRICTED RESERVES		\$ 24,654,076	\$ 22,819,228	\$ 18,640,516	\$ 4,296,906	\$ 5,012,003
Total Beginning Cash <sup>1,2,3</sup>						\$ 5,775,148
<b>Water Operating Reserve Fund</b>						
Beginning Reserve Balance <sup>1</sup>	\$ 1,500,000	\$ 1,706,160	\$ 1,789,714	\$ 1,946,103	\$ 1,915,391	\$ 2,046,881
Plus: Net Cash Flow (After Rate Increases)	3,665,152	2,321,288	(2,843,610)	2,715,098	2,763,144	2,966,472
Less: Transfer Out to Capital Replacement Reserve	(3,458,993)	(2,237,734)	3,000,000	(2,745,810)	(2,631,654)	(2,895,256)
<b>Ending Operating Reserve Balance</b>	<b>\$ 1,706,160</b>	<b>\$ 1,789,714</b>	<b>\$ 1,946,103</b>	<b>\$ 1,915,391</b>	<b>\$ 2,046,881</b>	<b>\$ 2,118,097</b>
<b>Target Ending Balance (90-days of O&amp;M)<sup>3</sup></b>	<b>\$ 1,706,160</b>	<b>\$ 1,789,714</b>	<b>\$ 1,852,139</b>	<b>\$ 1,915,391</b>	<b>\$ 2,046,881</b>	<b>\$ 2,118,097</b>
<b>Capital Outlay Reserve Fund</b>						
Beginning Reserve Balance	\$ 22,668,693	\$ 20,627,685	\$ 16,365,419	\$ 1,865,419	\$ 2,611,229	\$ 3,242,884
Plus: Transfer of Operating Reserve Surplus	3,458,993	2,237,734	(3,000,000)	2,745,810	2,631,654	2,895,256
Less: Use of Reserves for Capital Projects	(5,500,000)	(6,500,000)	(11,500,000)	(2,000,000)	(2,000,000)	(2,000,000)
<b>Ending Capital Rehab &amp; Replacement Reserve Balance</b>	<b>\$ 20,627,685</b>	<b>\$ 16,355,419</b>	<b>\$ 1,865,419</b>	<b>\$ 2,611,229</b>	<b>\$ 3,242,884</b>	<b>\$ 4,138,140</b>
<b>Target Ending Balance (6% of Net Assets = \$3M)<sup>4</sup></b>	<b>\$ 2,000,000</b>	<b>\$ 2,000,000</b>	<b>\$ 4,000,000</b>	<b>\$ 4,000,000</b>	<b>\$ 4,000,000</b>	<b>\$ 4,000,000</b>
<b>Ending Balance</b>	<b>\$ 22,333,845</b>	<b>\$ 18,155,133</b>	<b>\$ 3,811,522</b>	<b>\$ 4,526,620</b>	<b>\$ 5,289,764</b>	<b>\$ 6,256,237</b>
<b>Minimum Target Ending Balance</b>	<b>\$ 3,706,160</b>	<b>\$ 3,789,714</b>	<b>\$ 5,852,139</b>	<b>\$ 5,915,391</b>	<b>\$ 6,046,881</b>	<b>\$ 6,118,097</b>
<b>Ending Surplus/(Deficit) Compared to Reserve Targets</b>	<b>\$ 18,627,685</b>	<b>\$ 14,355,419</b>	<b>\$ (2,040,617)</b>	<b>\$ (1,388,771)</b>	<b>\$ (757,116)</b>	<b>\$ 138,140</b>
<b>Restricted Reserves:</b>						
<b>Dent Service Reserve Fund</b>						
Beginning Reserve Balance <sup>5</sup>	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383	\$ 485,383
Plus: Reserve Funding from New Debt Obligations	-	-	-	-	-	-
Less: Transfer of Surplus to Operating Reserve	-	-	-	-	-	-
<b>Ending Debt Reserve Balance</b>	<b>\$ 485,383</b>	<b>\$ 485,383</b>	<b>\$ 485,383</b>	<b>\$ 485,383</b>	<b>\$ 485,383</b>	<b>\$ 485,383</b>
<b>Target Ending Balance</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Development Impact Fee Reserve Fund</b>						
Beginning Reserve Balance <sup>6</sup>	\$ (56,414)	\$ -	\$ -	\$ -	\$ -	\$ -
Plus: Water Pipe Dev. Impact Fee Revenue <sup>7</sup>	57,207	57,207	57,207	57,207	57,207	57,207
Plus: Water Well Dev. Impact Fee Revenue <sup>7</sup>	98,160	98,160	98,160	98,160	98,160	98,160
Plus: Interest Revenue	-	-	-	-	-	-
Less: Use of Reserves for Capital Projects	(98,993)	(155,367)	(155,367)	(155,367)	(155,367)	(155,367)
<b>Ending DIF Reserve Fund Balance</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Annual Interest Earnings Rate<sup>8</sup></b>	<b>0.00%</b>	<b>1.86%</b>	<b>1.86%</b>	<b>1.86%</b>	<b>1.86%</b>	<b>1.86%</b>

- Revenue and expense for FY 2019/20 through FY 2020/21 are from source file: *Enterprise Funds Budget 2020-21.pdf*, pages 21-32.
- Beginning cash balance for the Water Fund is found in CAFR. Source File: *FY 2018-2019 Comprehensive Annual Financial Report.pdf*, Page 42.

City staff updated beginning cash balance on 05-04-21.

- NBS Recommends keeping the Operating Reserve Fund target at 90 days of operating and maintenance expenses. *Source file: Rate Study 2015.pdf*, Section 2.1.4, Page 15.

4. NBS recommends keeping the Capital Outlay Reserve to a minimum of 6% of net assets.

5. Beginning cash balance for Restricted Cash and Investments in source file: *FY 2018-2019 Comprehensive Annual Financial Report.pdf*, Page 42.

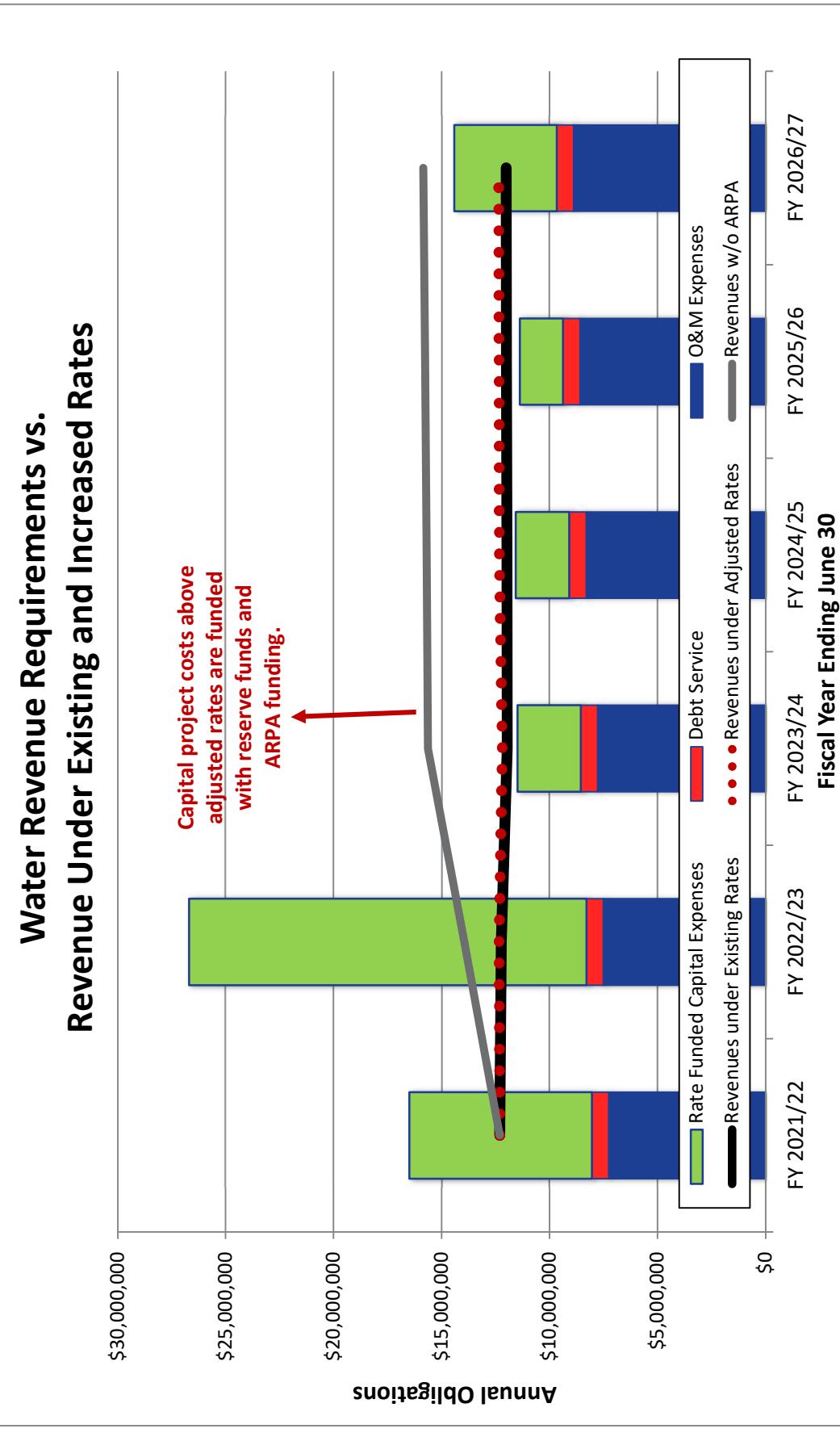
6. Beginning cash balance for development impact fee funds 4080, 4081 and 4082 from City staff in source file: *Water and Sewer DIF FB 7-1-20.xlsx*

7. Development Impact Fee revenue from current budget: *FY 20-21-Adopted-Budget-City-of-Madera.pdf*, pages 346-348.

8. City's actual or budgeted interest earnings are used in analysis for unrestricted reserves in FY 2020/21. For 2021/22 and beyond, interest earning rates are estimated at the 3-year average (FY '17/18 - '19/20) for funds invested in LAIF, per the California Treasurer's Office website, for the restricted reserves. *Source: https://www.treasury.ca.gov/pmta-laif/historical/annual.asp*

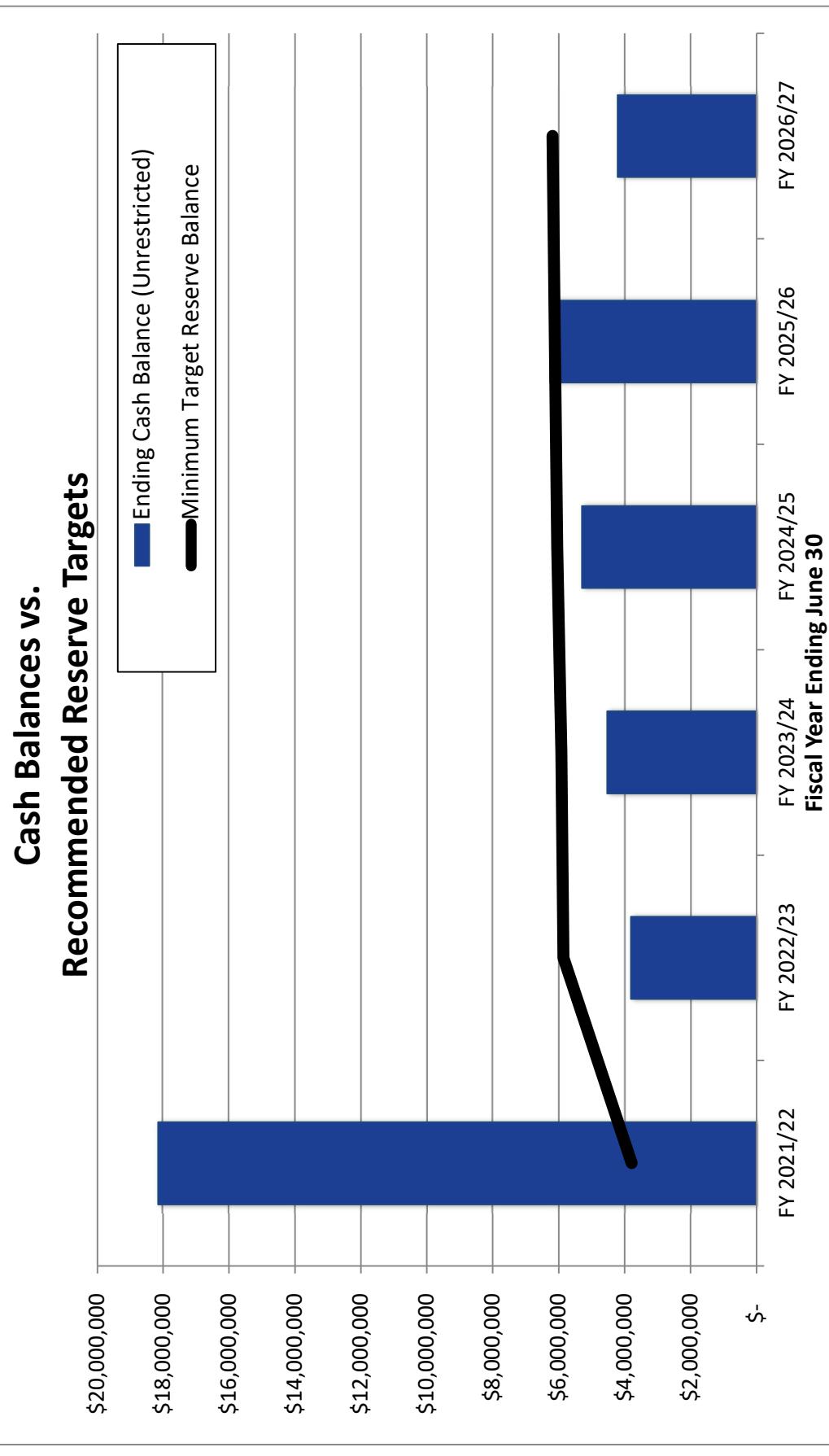
CITY OF MADERA  
WATER RATE STUDY  
Rate Adjustment Charts and Report Tables

CHART 1



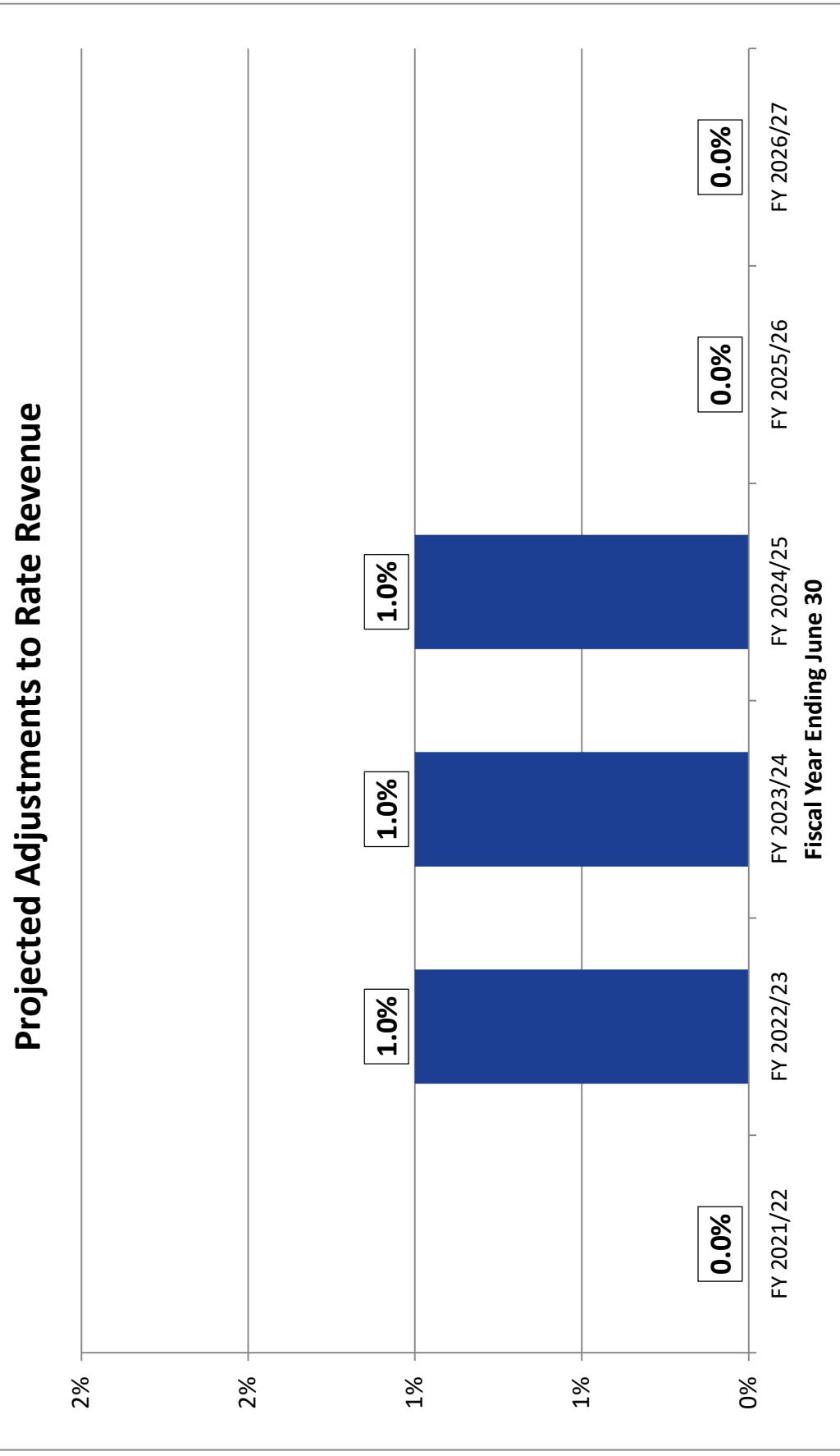
**CITY OF MADERA  
WATER RATE STUDY  
Rate Adjustment Charts and Report Tables**

**CHART 2**



**CITY OF MADERA**  
**WATER RATE STUDY**  
Rate Adjustment Charts and Report Tables

**CHART 3**



**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 3 : REVENUE FORECAST<sup>1</sup>**

SOURCES OF REVENUE		Basis	2021	2022	2023	2024	2025	2026	2027	Prop 218 Rate Period
<b>WATER UTILITY</b>										
<b>Licenses &amp; Permits</b>			\$ 3,561	\$ 3,561	\$ 3,561	\$ 3,561	\$ 3,561	\$ 3,561	\$ 3,561	\$ 3,561
State SB1186 Fees/Business License	1	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937	\$ 5,937
Infrastructure Cost Payback	1	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
Meter Amortization	1	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498
<b>Subtotal</b>										
<b>Fines &amp; Forfeiture</b>										
Late Payment/Other Penalty	1	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650	\$ 196,650
Revenue/Water Patrol Fines	1	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983	\$ 45,983
<b>Subtotal</b>										
<b>Charges for Services</b>										
Application Fee	1	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547	\$ 34,547
Construction Usage Fee	1	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860	\$ 7,860
Meter Setup/Relocation Fee	1	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169	\$ 3,169
User Charges	1	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381
Water Permits and Fees	1	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647	\$ 1,647
<b>Subtotal</b>										
<b>Interest</b>										
Interest Income <sup>2</sup>	5	\$ 122,632	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Subtotal</b>										
<b>Interfund Charges</b>										
Interfund Charges Revenue - Co	8	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326
<b>Subtotal</b>										
<b>Refunds</b>										
Refunds & Reimbursements	1	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246	\$ 2,246
Collection Recovery	1	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938	\$ 1,938
<b>Subtotal</b>										

CITY OF MADERA  
WATER RATE STUDY  
Operating Revenue and Expenses

EXHIBIT 1

TABLE 4 : REVENUE FORECAST<sup>1</sup>

SOURCES OF REVENUE		Basis	2021	2022	2023	2024	2025	2026	2027
<b>UTILITY BILLING AND WATER</b>									
<b>Refunds</b>	1	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841
Refunds and Reimbursements		\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841	\$ 841
Subtotal									
<b>TOTAL: REVENUE</b>		<b>\$ 12,013,718</b>	<b>\$ 11,891,086</b>						

Prop 218 Rate Period

TABLE 5 : REVENUE SUMMARY

Budget									
<b>Prop 218 Rate Period</b>									
<b>RATE REVENUE:</b>									
User Charges		\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381	\$ 11,572,381
<b>OTHER REVENUE:</b>									
Licenses & Permits		\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498	\$ 19,498
Fines & Forfeiture		\$ 242,633	\$ 242,633	\$ 242,633	\$ 242,633	\$ 242,633	\$ 242,633	\$ 242,633	\$ 242,633
Other Charges for Services		\$ 47,223	\$ 47,223	\$ 47,223	\$ 47,223	\$ 47,223	\$ 47,223	\$ 47,223	\$ 47,223
Refunds		\$ 5,025	\$ 5,025	\$ 5,025	\$ 5,025	\$ 5,025	\$ 5,025	\$ 5,025	\$ 5,025
Other Revenue		\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326	\$ 4,326
Interest Income		\$ 122,632	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>TOTAL: REVENUE</b>		<b>\$ 12,013,718</b>	<b>\$ 11,891,086</b>						

Prop 218 Rate Period

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 6 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Basis</b>	<b>Budget</b>						<b>Prop 218 Rate Period</b>
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	
<b>UTILITY BILLING AND WATER</b>								
<b>Salaries &amp; Benefits</b>								
Salaries / Full-Time	\$ 3	\$ 285,372	\$ 299,600	\$ 314,600	\$ 330,300	\$ 346,800	\$ 364,100	\$ 382,300
Salaries / Auto & Expense	\$ 3	\$ 135	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100
Public Employees Retirement	\$ 4	\$ 32,809	\$ 67,284	\$ 71,053	\$ 75,073	\$ 77,138	\$ 79,259	\$ 70,467
Long Term Disability Insurance	\$ 4	\$ 966	\$ 1,000	\$ 1,100	\$ 1,200	\$ 1,300	\$ 1,400	\$ 1,500
Life Insurance Premiums	\$ 4	\$ 371	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
Workers Compensation Insurance	\$ 4	\$ 24,978	\$ 26,200	\$ 27,500	\$ 28,900	\$ 30,300	\$ 31,800	\$ 33,400
Medicare Tax-Employer's Share	\$ 4	\$ 4,124	\$ 4,300	\$ 4,500	\$ 4,700	\$ 4,900	\$ 5,100	\$ 5,400
Unfunded Accrued Liability	\$ 4	\$ 51,499	\$ 54,100	\$ 56,800	\$ 59,600	\$ 62,600	\$ 65,700	\$ 69,000
Deferred Comp/Full Time	\$ 3	\$ 9,970	\$ 10,500	\$ 11,000	\$ 11,600	\$ 12,200	\$ 12,800	\$ 13,400
Unemployment Insurance	\$ 4	\$ 1,051	\$ 1,100	\$ 1,200	\$ 1,300	\$ 1,400	\$ 1,500	\$ 1,600
Section 125 Benefit Allowance	\$ 4	\$ 81,408	\$ 85,500	\$ 89,800	\$ 94,300	\$ 99,000	\$ 104,000	\$ 109,200
Subtotal	\$ 4	\$ 492,683	\$ 550,084	\$ 578,053	\$ 607,473	\$ 636,138	\$ 666,159	\$ 686,767
<b>Materials &amp; Services</b>								
Telephone & Fax Charges	\$ 5	\$ 8,000	\$ 8,200	\$ 8,400	\$ 8,700	\$ 9,000	\$ 9,300	\$ 9,600
Advertising/Bids & Notices	\$ 5	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500	\$ 500
Office Supplies/Expendable	\$ 5	\$ 6,000	\$ 6,200	\$ 6,400	\$ 6,600	\$ 6,800	\$ 7,000	\$ 7,200
Postage/Other Mailing	\$ 5	\$ 40,000	\$ 41,200	\$ 42,400	\$ 43,700	\$ 45,000	\$ 46,400	\$ 47,800
Customer Relations	\$ 5	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500
Other Administrative Expenses	\$ 5	\$ 60,000	\$ 61,800	\$ 63,700	\$ 65,600	\$ 67,600	\$ 69,600	\$ 71,700
Election Costs	\$ 5	\$ 30,000	\$ 31,800	\$ 32,800	\$ 33,800	\$ 34,800	\$ 35,800	\$ 35,800
Misc. Expenses	\$ 5	\$ 3,000	\$ 3,100	\$ 3,200	\$ 3,300	\$ 3,400	\$ 3,500	\$ 3,600
Subtotal	\$ 5	\$ 149,000	\$ 153,400	\$ 157,900	\$ 162,700	\$ 167,600	\$ 172,600	\$ 177,700

**CITY OF MADERA  
WATER RATE STUDY**  
Operating Revenue and Expenses

**EXHIBIT 1**

**TABLE 7 : OPERATING EXPENSE FORECAST<sup>1</sup>**

DESCRIPTION	Basis	Budget					Prop 218 Rate Period
		2021	2022	2023	2024	2025	
<b>Interfund Charges</b>							
Central Su.	\$ 5	\$ 117	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100
Admin. Ove.	\$ 5	\$ 40,760	\$ 42,000	\$ 43,300	\$ 44,600	\$ 45,900	\$ 47,300
Computer Maintenance	\$ 5	\$ 33,211	\$ 34,200	\$ 35,200	\$ 36,300	\$ 37,400	\$ 38,500
Computer R.	\$ 5	\$ 7,486	\$ 7,700	\$ 7,900	\$ 8,100	\$ 8,300	\$ 8,500
Motor Rental.	\$ 5	\$ 2,970	\$ 3,100	\$ 3,200	\$ 3,300	\$ 3,400	\$ 3,500
<b>Subtotal</b>							\$ 3,600
<b>Special Payments</b>							
OPEB Obligation Expense	\$ 4	\$ 1,650	\$ 1,700	\$ 1,800	\$ 1,900	\$ 2,000	\$ 2,100
Pension Expense-GASB 68	\$ 4	\$ 71,817	\$ 75,400	\$ 79,200	\$ 83,200	\$ 87,400	\$ 91,800
Interest Expense	\$ 5	\$ 35,000	\$ 36,100	\$ 37,200	\$ 38,300	\$ 39,400	\$ 40,600
<b>Subtotal</b>							\$ 41,800
<b>Capital Outlay</b>							
Other Operations Expense	\$ 8	\$ 750	\$ 800	\$ 800	\$ 800	\$ 800	\$ 800
<b>Subtotal</b>							\$ 800
<b>Transfer Out</b>							
Transfer Out - Insurance Rese.	\$ 8	\$ 9,390	\$ 9,400	\$ 9,400	\$ 9,400	\$ 9,400	\$ 9,400
<b>Subtotal</b>							\$ 9,400
<b>Sub-Total: Utility Billing and Water</b>		\$ 844,834	\$ 913,984	\$ 954,053	\$ 996,173	\$ 1,037,838	\$ 1,081,359
							\$ 1,115,967

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 8 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Basis</b>	Budget						<b>Prop 218 Rate Period</b>
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	
<b>WATER MAINTENANCE AND OPERATIONS</b>								
<b>Salaries &amp; Benefits</b>								
Salaries / Full-Time	3	\$ 575,531	\$ 604,300	\$ 634,500	\$ 666,200	\$ 699,500	\$ 734,500	\$ 771,200
Salaries / Overtime	3	\$ 40,000	\$ 42,000	\$ 44,100	\$ 46,300	\$ 48,600	\$ 51,000	\$ 53,600
Salaries / Uniform Pay	3	\$ 1,250	\$ 1,300	\$ 1,400	\$ 1,500	\$ 1,600	\$ 1,700	\$ 1,800
Public Employees Retirement	4	\$ 76,408	\$ 80,200	\$ 84,200	\$ 88,400	\$ 92,800	\$ 97,400	\$ 102,300
Long Term Disability Insurance	4	\$ 1,787	\$ 1,900	\$ 2,000	\$ 2,100	\$ 2,200	\$ 2,300	\$ 2,400
Life Insurance Premiums	4	\$ 712	\$ 700	\$ 700	\$ 700	\$ 700	\$ 700	\$ 700
Workers Compensation Insurance	4	\$ 58,539	\$ 61,500	\$ 64,600	\$ 67,800	\$ 71,200	\$ 74,800	\$ 78,500
Medicare Tax - Employer's Share	4	\$ 8,921	\$ 9,400	\$ 9,900	\$ 10,400	\$ 10,900	\$ 11,400	\$ 12,000
Unfunded Accrued Liability	4	\$ 120,717	\$ 126,800	\$ 133,100	\$ 139,800	\$ 146,800	\$ 154,100	\$ 161,800
Deferred Compensation/Full-Time	3	\$ 19,519	\$ 20,500	\$ 21,500	\$ 22,600	\$ 23,700	\$ 24,900	\$ 26,100
Unemployment Insurance	4	\$ 2,173	\$ 2,300	\$ 2,400	\$ 2,500	\$ 2,600	\$ 2,700	\$ 2,800
Section 125 Benefit Allowance	4	\$ 99,524	\$ 104,500	\$ 109,700	\$ 115,200	\$ 121,000	\$ 127,100	\$ 133,500
Subtotal		\$ 1,005,081	\$ 1,055,400	\$ 1,108,100	\$ 1,163,500	\$ 1,221,600	\$ 1,282,600	\$ 1,346,700
<b>Materials &amp; Services</b>								
Gas & Electric Utilities	7	\$ 1,600,000	\$ 1,680,000	\$ 1,764,000	\$ 1,852,200	\$ 1,944,800	\$ 2,042,000	\$ 2,144,100
Telephone & Fax Charges	5	\$ 8,626	\$ 8,900	\$ 9,200	\$ 9,500	\$ 9,800	\$ 10,100	\$ 10,400
Advertising/Other	5	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000	\$ 1,000
Professional Dues	5	\$ 2,103	\$ 2,200	\$ 2,300	\$ 2,400	\$ 2,500	\$ 2,600	\$ 2,700
Office Supplies/Expendable	5	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500	\$ 1,500
Postage/Other Mailing Charge	5	\$ 800	\$ 800	\$ 800	\$ 800	\$ 800	\$ 800	\$ 800
Vehicle Fuel, Supplies & Maint.	6	\$ 33,800	\$ 35,500	\$ 37,300	\$ 39,200	\$ 41,200	\$ 43,300	\$ 45,500
Contracted Services	5	\$ 260,000	\$ 267,800	\$ 275,800	\$ 284,100	\$ 292,600	\$ 301,400	\$ 310,400
Taxes & Assessments	5	\$ 8,800	\$ 9,100	\$ 9,400	\$ 9,700	\$ 10,000	\$ 10,300	\$ 10,600
Conference/Training/Education	5	\$ 18,000	\$ 18,500	\$ 19,100	\$ 19,700	\$ 20,300	\$ 20,900	\$ 21,500
Maintenance/Other Supplies	5	\$ 135,000	\$ 139,100	\$ 143,300	\$ 147,600	\$ 152,000	\$ 156,600	\$ 161,300
Subtotal		\$ 2,069,629	\$ 2,164,400	\$ 2,263,700	\$ 2,367,700	\$ 2,476,500	\$ 2,590,500	\$ 2,709,800

CITY OF MADERA  
WATER RATE STUDY  
Operating Revenue and Expenses

**EXHIBIT 1**

TABLE 9 : OPERATING EXPENSE FORECAST<sup>1</sup>

DESCRIPTION	Basis	Budget					Prop 218 Rate Period
		2021	2022	2023	2024	2025	
<b>Interfund Charges</b>							
Interfund Charge - Facility Maintenance	\$ 8	\$ 130,739	\$ 130,700	\$ 130,700	\$ 130,700	\$ 130,700	\$ 130,700
Interfund Charge - Central Su.	\$ 8	\$ 37,652	\$ 37,700	\$ 37,700	\$ 37,700	\$ 37,700	\$ 37,700
Interfund Charge - Cost Distribution	\$ 8	\$ 214,917	\$ 214,900	\$ 214,900	\$ 214,900	\$ 214,900	\$ 214,900
Interfund Charge - Admin. Overhead	\$ 8	\$ 303,081	\$ 303,100	\$ 303,100	\$ 303,100	\$ 303,100	\$ 303,100
Interfund Charge - Vehicle Replacement	\$ 8	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000	\$ 85,000
Interfund Charge - Vehicle Maintenance	\$ 8	\$ 66,104	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100
Interfund Charge - Comp. Maintenance	\$ 8	\$ 88,411	\$ 88,400	\$ 88,400	\$ 88,400	\$ 88,400	\$ 88,400
Interfund Charge - Computer	\$ 8	\$ 19,302	\$ 19,300	\$ 19,300	\$ 19,300	\$ 19,300	\$ 19,300
Interfund Charge - Software	\$ 8	\$ 2,085	\$ 2,100	\$ 2,100	\$ 2,100	\$ 2,100	\$ 2,100
Interfund Charge - Motor Rental.	\$ 8	\$ 4,670	\$ 4,700	\$ 4,700	\$ 4,700	\$ 4,700	\$ 4,700
<b>Subtotal</b>		<b>\$ 951,961</b>	<b>\$ 952,000</b>				
<b>SGMA Costs<sup>1</sup></b>							
Five-Year Update	\$ 8	\$ -	\$ -	\$ -	\$ -	\$ 275,000	\$ 275,000
GSP Annual Report	\$ 8	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	-	-
Point of Contact - GSP	\$ 8	\$ 12,500	\$ 12,500	\$ 12,500	\$ 12,500	30,000	30,000
Data Management Software	\$ 8	\$ 10,000	\$ 9,100	\$ 9,100	\$ 9,100	300	300
Regional Water Management Group	\$ 8	\$ 9,000	\$ 10,000	\$ 10,000	\$ 10,000	10,000	10,000
<b>Subtotal</b>		<b>\$ -</b>	<b>\$ 66,500</b>	<b>\$ 66,600</b>	<b>\$ 57,800</b>	<b>\$ 315,300</b>	<b>\$ 315,300</b>
<b>Special Payments</b>							
Liability/Property Insurance	\$ 4	\$ 152,900	\$ 160,500	\$ 168,500	\$ 176,900	\$ 185,700	\$ 195,000
Retiree Insurance Premiums	\$ 4	\$ 1,994	\$ 2,100	\$ 2,200	\$ 2,300	\$ 2,400	\$ 2,500
OPEB Obligation Expense	\$ 4	\$ 44,119	\$ 46,300	\$ 48,600	\$ 51,000	\$ 53,600	\$ 56,300
Pension Expense-GASB 68	\$ 4	\$ 164,996	\$ 173,200	\$ 181,900	\$ 191,000	\$ 200,600	\$ 210,600
<b>Subtotal</b>		<b>\$ 364,009</b>	<b>\$ 382,100</b>	<b>\$ 401,200</b>	<b>\$ 421,200</b>	<b>\$ 442,300</b>	<b>\$ 464,400</b>
<b>Transfer Out</b>							
Transfer Out	\$ 8	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000	\$ 60,000
Transfer Out - Insurance Rese.	\$ 8	\$ 20,080	\$ 20,100	\$ 20,100	\$ 20,100	\$ 20,100	\$ 20,100
<b>Subtotal</b>		<b>\$ 80,080</b>	<b>\$ 80,100</b>				
<b>Sub-Total: Water Maintenance and Operations<sup>3</sup></b>							
Depreciation (Non-cash item left out of analysis) <sup>3</sup>	\$ 8	\$ 41,631	\$ 41,600	\$ 41,600	\$ 41,600	\$ 41,600	\$ 41,600
<b>Subtotal</b>		<b>\$ 41,631</b>	<b>\$ 41,600</b>				

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 10 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Basis</b>	<b>2021</b>	Budget					<b>Prop 218 Rate Period</b>
			<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	
<b>WATER QUALITY CONTROL</b>								
<b>Salaries &amp; Benefits</b>								
Salaries / Full-Time	\$ 3	\$ 230,932	\$ 242,500	\$ 254,600	\$ 267,300	\$ 280,700	\$ 294,700	\$ 309,400
Salaries / Overtime	3	1,000	1,100	1,200	1,300	1,400	1,500	1,600
Salaries / Uniform Pay	3	1,000	1,100	1,200	1,300	1,400	1,500	1,600
Public Employees Retirement	3	29,569	31,000	32,600	34,200	35,900	37,700	39,600
Long Term Disability Insurance	4	644	700	700	700	700	700	700
Life Insurance Premiums	4	367	400	400	400	400	400	400
Workers Compensation Insurance	4	22,058	23,200	24,400	25,600	26,900	28,200	29,600
Medicare Tax - Employer's Share	4	3,559	3,700	3,900	4,100	4,300	4,500	4,700
Unfunded Accrued Liability	4	42,599	44,700	46,900	49,200	51,700	54,300	57,000
Deferred Compensation/Full-Time	3	7,196	7,600	8,000	8,400	8,800	9,200	9,700
Unemployment Insurance	4	1,092	1,100	1,200	1,300	1,400	1,500	1,600
Section 125 Benefit Allowance	4	48,050	50,500	53,000	55,700	58,500	61,400	64,500
<b>Subtotal</b>		\$ 388,066	\$ 407,600	\$ 428,100	\$ 449,500	\$ 472,100	\$ 495,600	\$ 520,400
<b>Materials &amp; Services</b>								
Telephone & Fax Charges	5	\$ 2,500	\$ 2,600	\$ 2,700	\$ 2,800	\$ 2,900	\$ 3,000	\$ 3,100
Advertising/Bids & Notices	5	331	300	300	300	300	300	300
Advertising/Other	5	2,500	2,600	2,700	2,800	2,900	3,000	3,100
Professional Dues	5	210	200	200	200	200	200	200
Office Supplies Expendable	5	2,090	2,200	2,300	2,400	2,500	2,600	2,700
Postage/Other Mailing Charge	5	3,400	3,500	3,600	3,700	3,800	3,900	4,000
Vehicle Fuel, Supplies & Maintenance	6	4,500	4,700	4,900	5,100	5,400	5,700	6,000
Contracted Services	5	60,000	61,800	63,700	65,600	67,600	69,600	71,700
Taxes and Assessments	5	37,800	38,900	40,100	41,300	42,500	43,800	45,100
Conference/Training/Education	5	7,000	7,200	7,400	7,600	7,800	8,000	8,200
Maintenance/Other Supplies	5	40,000	41,200	42,400	43,700	45,000	46,400	47,800
<b>Subtotal</b>		\$ 160,331	\$ 165,200	\$ 170,300	\$ 175,500	\$ 180,900	\$ 186,500	\$ 192,200

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 11 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Basis</b>	<b>Budget</b>					<b>Prop 218 Rate Period</b>
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	
<b>Interfund Charges</b>							
Interfund Charge - Facility Maintenance	\$ 85,497	\$ 85,500	\$ 85,500	\$ 85,500	\$ 85,500	\$ 85,500	\$ 85,500
Interfund Charge - Central Su.	\$ 1,175	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200
Interfund Charge - Cost Distribution	\$ 170,000	\$ 170,000	\$ 170,000	\$ 170,000	\$ 170,000	\$ 170,000	\$ 170,000
Interfund Charge - Admin. Overhead	\$ 57,361	\$ 57,400	\$ 57,400	\$ 57,400	\$ 57,400	\$ 57,400	\$ 57,400
Interfund Charge - Vehicle Replacement	\$ 14,883	\$ 14,900	\$ 14,900	\$ 14,900	\$ 14,900	\$ 14,900	\$ 14,900
Interfund Charge - Vehicle Maintenance	\$ 15,219	\$ 15,200	\$ 15,200	\$ 15,200	\$ 15,200	\$ 15,200	\$ 15,200
<b>Subtotal</b>	<b>\$ 344,135</b>	<b>\$ 344,200</b>					
<b>Functional Expenses</b>							
Water Conservation Program	\$ 255,640	\$ 255,600	\$ 255,600	\$ 255,600	\$ 255,600	\$ 255,600	\$ 255,600
<b>Subtotal</b>	<b>\$ 255,640</b>	<b>\$ 255,600</b>					
<b>Special Payments</b>							
OPEB Obligation Expense	\$ 22,900	\$ 24,000	\$ 25,200	\$ 26,500	\$ 27,800	\$ 29,200	\$ 30,700
Pension Expense-GASB 68	\$ 58,390	\$ 61,300	\$ 64,400	\$ 67,600	\$ 71,000	\$ 74,600	\$ 78,300
<b>Subtotal</b>	<b>\$ 81,290</b>	<b>\$ 85,300</b>	<b>\$ 89,600</b>	<b>\$ 94,100</b>	<b>\$ 98,800</b>	<b>\$ 103,800</b>	<b>\$ 109,000</b>
<b>Transfer Out</b>							
Transfer Out - Insurance Res.	\$ 8,490	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500
<b>Subtotal</b>	<b>\$ 8,490</b>	<b>\$ 8,500</b>					
<b>Sub-Total: Water Quality Control</b>	<b>\$ 1,237,952</b>	<b>\$ 1,266,400</b>	<b>\$ 1,296,300</b>	<b>\$ 1,327,400</b>	<b>\$ 1,360,100</b>	<b>\$ 1,394,200</b>	<b>\$ 1,429,900</b>
<b>Depreciation (Non-cash item left out of analysis)<sup>3</sup></b>							
Depreciation/Replacement	\$ 14,012	\$ 14,000	\$ 14,000	\$ 14,000	\$ 14,000	\$ 14,000	\$ 14,000
<b>Subtotal</b>	<b>\$ 14,012</b>	<b>\$ 14,000</b>					

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 12 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Basis</b>	Budget						<b>Prop 218 Rate Period</b>
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	
<b>WATER CONSERVATION PROGRAM</b>								
<b>Salaries &amp; Benefits</b>								
Salaries / Full-Time	\$ 3	\$ 106,208	\$ 111,500	\$ 117,100	\$ 123,000	\$ 129,200	\$ 135,700	\$ 142,500
Salaries / Uniform Pay	\$ 3	\$ 250	\$ 300	\$ 300	\$ 300	\$ 300	\$ 300	\$ 300
Public Employees Retirement	\$ 4	\$ 16,023	\$ 16,800	\$ 17,600	\$ 18,500	\$ 19,400	\$ 20,400	\$ 21,400
Long Term Disability Insurance	\$ 4	\$ 355	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
Life Insurance Premiums	\$ 4	\$ 105	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100	\$ 100
Workers Compensation Insurance	\$ 4	\$ 10,100	\$ 10,600	\$ 11,100	\$ 11,700	\$ 12,300	\$ 12,900	\$ 13,500
Medicare Tax - Employer's Share	\$ 4	\$ 1,572	\$ 1,700	\$ 1,800	\$ 1,900	\$ 2,000	\$ 2,100	\$ 2,200
Unfunded Accrued Liability	\$ 4	\$ 29,004	\$ 30,500	\$ 32,000	\$ 33,600	\$ 35,300	\$ 37,100	\$ 39,000
Deferred Compensation/Full-Time	\$ 3	\$ 4,460	\$ 4,700	\$ 4,900	\$ 5,100	\$ 5,400	\$ 5,700	\$ 6,000
Unemployment Insurance	\$ 4	\$ 420	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400	\$ 400
Section 125 Benefit Allowance	\$ 4	\$ 23,367	\$ 24,500	\$ 25,700	\$ 27,000	\$ 28,400	\$ 29,800	\$ 31,300
<b>Subtotal</b>		\$ 191,864	\$ 201,500	\$ 211,400	\$ 222,000	\$ 233,200	\$ 244,900	\$ 257,100
<b>Materials &amp; Services</b>								
Advertising/Other	\$ 5	\$ 22,618	\$ 23,300	\$ 24,000	\$ 24,700	\$ 25,400	\$ 26,200	\$ 27,000
Subtotal		\$ 22,618	\$ 23,300	\$ 24,000	\$ 24,700	\$ 25,400	\$ 26,200	\$ 27,000
<b>Interfund Charges</b>								
Interfund Charge - Admin. Overhead	\$ 8	\$ 17,734	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700
Subtotal		\$ 17,734	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700	\$ 17,700
<b>Functional Expenses</b>								
Water Conservation Program	\$ 1	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Subtotal		\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
<b>Special Payments</b>								
OPEB Obligation Expense	\$ 4	\$ (2,263)	\$ (2,400)	\$ (2,500)	\$ (2,600)	\$ (2,700)	\$ (2,800)	\$ (2,900)
Pension Expense-GASB 68	\$ 4	\$ 27,751	\$ 29,100	\$ 30,600	\$ 32,100	\$ 33,700	\$ 35,400	\$ 37,200
Subtotal		\$ 25,488	\$ 26,700	\$ 28,100	\$ 29,500	\$ 31,000	\$ 32,600	\$ 34,300
<b>Transfer Out</b>								
Transfer Out - Insurance Rese.	\$ 8	\$ 3,675	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700
Subtotal		\$ 3,675	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700	\$ 3,700
<b>Sub-Total: Water Conservation Program</b>		\$ 361,379	\$ 372,900	\$ 384,900	\$ 397,600	\$ 411,000	\$ 425,100	\$ 439,800

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Operating Revenue and Expenses**

**EXHIBIT 1**

**TABLE 13 : OPERATING EXPENSE FORECAST<sup>1</sup>**

<b>DESCRIPTION</b>	<b>Budget</b>						<b>Prop 218 Rate Period</b>
	<b>Basis</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	
<b>WATER DEBT SERVICE &amp; REVENUE BONDS</b>							
Materials & Services	\$ 8	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500
Contracted Services	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500	\$ 4,500
Subtotal							
<b>Sub-Total: Water Capital Outlay</b>	<b>\$ 4,500</b>						
<b>Depreciation (Non-cash item left out of analysis)<sup>3</sup></b>							
Amortization	\$ 8	\$ 3,352	\$ 3,400	\$ 3,400	\$ 3,400	\$ 3,400	\$ 3,400
Subtotal	\$ 3,352	\$ 3,400	\$ 3,400	\$ 3,400	\$ 3,400	\$ 3,400	\$ 3,400
<b>GRAND TOTAL: WATER OPERATING EXPENSES</b>	<b>\$ 6,919,425</b>	<b>\$ 7,258,284</b>	<b>\$ 7,511,453</b>	<b>\$ 7,767,973</b>	<b>\$ 8,012,238</b>	<b>\$ 8,590,059</b>	<b>\$ 8,831,667</b>

**TABLE 14 : FORECASTING ASSUMPTIONS**

<b>INFLATION FACTORS<sup>4</sup></b>	<b>Basis</b>	<b>Budget</b>						<b>Prop 218 Rate Period</b>
		<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	
Customer Growth	1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Water Supply	2	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Salaries	3	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Benefits	4	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
General Inflation	5	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Fuel	6	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Electricity	7	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
No Escalation	8	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Revenue and expenses for FY 2019/20 through FY 2020/21 are from source file: *Enterprise Funds Budget 2020-21.pdf*, pages 21-32.

SGMA costs in expenses from source file: *Future SGMA Costs.docx*

2. Interest income is calculated in the Financial Plan and excluded from this table.

3. Depreciation expense is not considered in this projection since it is not a cash expense.

4. Inflation factor values follow previous assumptions from 2015 Rate Study.

Source file: *Rate Study 2015.pdf*, Table 1-1, Page 12.

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Capital Improvement Plan Expenditures**

**EXHIBIT 2**

**TABLE 15 : CAPITAL FUNDING SUMMARY**

<b>CAPITAL FUNDING FORECAST</b>		<b>Budget</b>					<b>Projected</b>			<b>5-Year Rate Period</b>	
<b>Funding Sources:</b>		<b>FY 2020/21</b>	<b>FY 2021/22</b>	<b>FY 2022/23</b>	<b>FY 2023/24</b>	<b>FY 2024/25</b>	<b>FY 2025/26</b>	<b>FY 2026/27</b>			
Grants <sup>1</sup>	\$ 779,663	\$ -	\$ 2,500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Use of Development Impact Fee Fund <sup>2</sup>	98,953	155,367	155,367	155,367	155,367	155,367	155,367	155,367	155,367	155,367	
Use of American Rescue Plan Proceeds <sup>3</sup>	-	1,380,000	4,620,000	-	-	-	-	-	-	-	
Use of Capital Expenditure Reserve Fund	<b>5,500,000</b>	<b>6,500,000</b>	<b>11,500,000</b>	<b>2,000,000</b>	<b>2,000,000</b>	<b>2,000,000</b>	<b>2,000,000</b>	<b>2,000,000</b>	<b>138,140</b>	<b>138,140</b>	
Rate Revenue	649,884	1,948,133	6,894,764	927,771	477,227	-	-	-	4,600,399	4,600,399	
<b>Total Sources of Capital Funds</b>	<b>\$ 7,028,500</b>	<b>\$ 9,983,500</b>	<b>\$ 25,670,131</b>	<b>\$ 3,083,138</b>	<b>\$ 2,632,594</b>	<b>\$ 2,155,367</b>	<b>\$ 2,155,367</b>	<b>\$ 4,893,906</b>			

1. Grant Funding is per source file: *Enterprise Funds Budget 2020-21.pdf*, pages 21-32.

FY 2022/23 grant from updated CIP file: *Water CIP Table ARPA.xlsx*.

2. Development Impact Fee Fund to fund some projects used for future customers only per *Water CIP Table ARPA.xlsx*.

This amount drains the DIF fund in order to contribute to projects over time.

3. The City was awarded American Rescue Plan Act funds in which \$6 million is allocated to water capital projects.

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Capital Improvement Plan Expenditures

**CAPITAL IMPROVEMENT PROGRAM**

**TABLE 16 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN CURRENT-YEAR DOLLARS)<sup>1</sup>**

Project #	Water System Improvements	2021	2022	2023	2024	2025	2026	2027
W-00000	Engineering Support for Water Projects	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
	Other Items Identified from Public Works	-	-	-	-	-	-	-
<b>Planning, Studies, Reports</b>		-	-	-	-	-	-	-
W-STDY-1	Water Feasibility Project - New Water Supply	-	-	-	-	-	-	-
W-STDY-2	Water Distribution System Condition Assessment Study	106,000	-	-	-	-	-	-
W-STDY-2	Water Distribution System Condition Assessment Study	240,000	-	-	-	-	-	-
W-STDY-3	W-STDY-3: Asset Management Software	150,000	-	-	-	-	-	-
<b>Major O&amp;M Projects</b>	MUP-UDII Master Plan Update	-	-	-	-	-	-	-
W-03	Water Main Upgrades - Locations 1-12	115,000	835,000	1,380,000	-	-	-	-
W-04	Water Main Upgrades - Locations 13-23	135,000	283,000	20,000	1,370,000	-	-	-
W-09	System Upgrade - River Crossing @ Gateway	-	-	480,000	-	-	-	-
W-22	Water Tower Recoating	-	-	-	-	-	-	-
W-26	Water Tower Demolition	-	-	-	-	-	-	-
W-GW-00	Energy Efficient Upgrades at Well Sites	106,000	-	-	-	-	-	-
W-29	Valve replacement Down town area 26 valves	130,000	-	-	-	-	-	-
W-31	Manual Read Meter Replacement / Commercial Meter Replacement Program	870,000	270,000	335,000	335,000	335,000	335,000	220,000
W-33	Meter Replacement Program	920,000	55,000	530,000	540,000	550,000	-	-
W-34	South St Water Tower Exterior Rehab	35,000	265,000	-	-	-	-	-
W-36	4th/Gateway Line & Valve Well 27 Rehabilitation	60,000	440,000	-	-	-	-	-
W-38	Leak Repair Project identified from Condition Assessment	30,000	290,000	-	-	-	-	-
tbd		-	80,000	-	-	-	-	-

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Capital Improvement Plan Expenditures**

<b>New Capital Projects</b>					
tbd	Dunham Lewis Water Main Rehabilitation	-	-	-	-
tbd	Year 1 Pipeline Replacement Project from Condition Assessment	1,100,000	-	-	-
tbd	Year 2 Pipeline Replacement from Project Condition Assessment	-	1,100,000	-	-
	Average Annual R&R CIP - Placeholder	-	-	1,300,000	1,300,000
	possible \n generators, 10-year life	3 new chlorine analyzers &	175,000	175,000	175,000
		generators, 10-year life	-	-	-
	<b>New Capital Projects</b>	-	-	-	-
W-06	System Upgrades, H St to Madera Ave	15,000	400,000	-	-
W-08	Water Main Upgrades - 10th St.	20,000	1,040,000	-	-
	New Wells - Replacement of Diminished Production Capacity	-	-	-	-
	Meter Installation - continue installation of meters on unmetered services	1,240,000	-	-	-
	<b>Master Plan Recommendations</b>	-	-	-	-
PSW-45	Pipe, Almond Ave, From Pine St to Stadium Rd	-	88,000	188,000	-
R-000072	Sharon Blvd Pipeline, Love's Reimbursement	48,500	-	-	-
W-GW-00 Loves Well	2,000,000	-	-	-	2,500,000
GW-002	New Well - Ellis/Chapin Well 35	-	-	-	-
GW-003	Well, Well No. 36, Hwy 145 and Indigo Dr	-	120,000	2,200,000	-
T-1	Above Ground Storage 7 MG Tank at Ave. 17 & RD. 27	-	868,000	9,000,000	-
PS-1	Pump Station for Tank at Ave. 17 & Road 27	-	462,000	6,270,000	-
PNE-4	Pipe, Lake Street (Road 27) 24" from Ellis to Avenue 17	-	85,000	615,000	-
W-37	Northeast Water Transmission Main	-	430,000	3,025,200	-
	New Well 37 Granada north of Cleveland aka GW-4 in Master Plan	-	50,000	1,070,000	-
	<b>Total: CIP Program Costs (Current-Year Dollars)</b>	\$ 7,028,500	\$ 9,740,000	\$ 24,433,200	\$ 2,385,000
					\$ 1,835,000
					\$ 4,220,000

**EXHIBIT 2**

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Capital Improvement Plan Expenditures**

**EXHIBIT 2**

**TABLE 17 : CAPITAL IMPROVEMENT PROGRAM COSTS (IN FUTURE-YEAR DOLLARS)<sup>2</sup>**

<b>Project Description</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
W-00000 Projects	\$ 25,000	\$ 25,625	\$ 26,266	\$ 26,922	\$ 27,595	\$ 28,285	\$ 28,992
-- Other Items Identified from Public Works	-	-	-	-	-	-	-
<b>Planning, Studies, Reports</b>	-	-	-	-	-	-	-
W-STDY-1 Water Feasibility Project - New Water Supply	-	-	-	-	-	-	-
W-STDY-2 Water Distribution System Condition Assessment Study	106,000	-	-	-	-	-	-
W-STDY-2 Water Distribution System Condition Assessment Study	240,000	-	-	-	-	-	-
W-STDY-3 W-STDY-3; Asset Management Software	150,000	-	-	-	-	-	-
<b>MUP-UDII Master Plan Update</b>	-	-	-	-	-	-	-
<b>Major O&amp;M Projects</b>	-	-	-	-	-	-	-
W-03 Water Main Upgrades - Locations 1-12	115,000	855,875	-	-	-	-	-
W-04 Water Main Upgrades - Locations 13-23	135,000	1,414,500	-	-	-	-	-
W-09 System Upgrade - River Crossing @ Gateway	283,000	-	-	-	-	-	-
W-22 Water Tower Recoating	20,000	1,404,250	-	-	-	-	-
W-26 Water Tower Demolition	480,000	-	-	-	-	-	-
W-GW-00 Energy Efficient Upgrades at Well Sites	106,000	-	-	-	-	-	-
W-29 Valve replacement Down town area 26 valves	130,000	-	-	-	-	-	-
W-31 Manual Read Meter Replacement / Commercial Meter Replacement	870,000	276,750	351,959	360,758	369,777	379,022	255,133
W-33 Meter Replacement Program	920,000	56,375	556,831	581,521	607,097	-	-
W-34 South St Water Tower Exterior Rehab	35,000	271,625	-	-	-	-	-
W-36 4th/Gateway Line & Valve	60,000	451,000	-	-	-	-	-
W-38 Well 27 Rehabilitation	30,000	297,250	-	-	-	-	-
tbd Leak Repair Project identified from Condition Assessment	-	82,000	-	-	-	-	-
tbd Dunham Lewis Water Main Rehabilitation	-	-	-	-	-	-	-

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**CITY OF MADERA**  
**WATER RATE STUDY**  
**Capital Improvement Plan Expenditures**

		Capital Improvement Plan Expenditures			
tbd	Year 1 Pipeline Replacement Project from Condition Assessment	-	1,127,500	-	-
tbd	Year 2 Pipeline Replacement from Project Condition Assessment	-	-	1,155,688	-
--	Average Annual R&R CIP - Placeholder	-	-	-	-
--	possible 1/4 generators, 10-year life	-	-	1,399,958	-
<b>New Capital Projects</b>	<b>3 new chlorine analyzers &amp; System Upgrades, H St to Madera Ave</b>	<b>-</b>	<b>179,375</b>	<b>183,859</b>	<b>1,434,957</b>
W-06	Water Main Upgrades - 10th St.	-	-	188,456	193,167
W-08	New Wells - Replacement of Diminished Production Capacity	-	-	-	-
--	Meter Installation - continue	-	-	-	-
W-32	installation of meters on unmetered services	-	1,240,000	-	-
<b>Master Plan Recommendations</b>		-	-	-	-
PSW-45	Pipe, Almond Ave, From Pine St to Stadium Rd	-	-	92,455	202,455
R-000072	Reimbursement Sharon Blvd Pipeline, Love's	48,500	-	-	-
W-GW-00	Loves Well	2,000,000	-	-	-
GW-002	New Well - Ellis/Chapin Well 35 Well, Well No. 36, Hwy 145 and Indigo Dr	-	123,000	2,311,375	-
T-1	Above Ground Storage 7 MG Tank at Ave. 17 & RD. 27	-	889,700	9,455,625	-
PS-1	Pump Station for Tank at Ave. 17 & Road 27	-	473,550	6,587,419	-
PNE-4	Pipe, Lake Street (Road 27) 24" from Ellis to Avenue 17	-	87,125	646,134	-
W-37	Northeast Water Transmission Main	-	440,750	3,178,351	-
W-GW-00	New Well 37 Granada north of Cleveland aka GW-4 in Master Plan	-	51,250	1,124,169	-
<b>Total: CIP Program Costs (Future-Year Dollars)</b>		<b>\$ 7,028,500</b>	<b>\$ 9,983,500</b>	<b>\$ 25,670,131</b>	<b>\$ 3,083,138</b>
				<b>\$ 2,632,594</b>	<b>\$ 2,076,134</b>
					<b>\$ 4,893,906</b>

**EXHIBIT 2**

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Capital Improvement Plan Expenditures**

**EXHIBIT 2**

**TABLE 18 : FORECASTING ASSUMPTIONS**

Economic Variables	2021	2022	2023	2024	2025	2026	2027
Annual Construction Cost Inflation, Per Engineering News Record <sup>3</sup>	<b>0.00%</b>	<b>2.50%</b>	<b>2.50%</b>	<b>2.50%</b>	<b>2.50%</b>	<b>2.50%</b>	<b>2.50%</b>
Cumulative Construction Cost Multiplier from 2021	1.00	1.03	1.05	1.08	1.10	1.13	1.16

1. Estimated capital improvement project costs found in source files: Water CIP Table ARPA.xlsx.

2. Capital improvement projects are inflated to future year estimated costs with ENR CCI for the region.

3. Construction inflator is based on the most current 10 year average of the Engineering News-Record Construction Cost Index.  
Source: www.enr.com/economics (August 2010 to August 2020).

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Debt Service**

**EXHIBIT 3**

**TABLE 19**

<b>ASSESSMENT DISTRICT DEBT OBLIGATIONS</b>		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Annual Repayment Schedules:</b>								
<b>2015 Water Revenue Bonds (\$2,025,000)<sup>1</sup></b>		\$ 80,000 64,010	\$ 85,000 61,050	\$ 85,000 57,905	\$ 90,000 54,760	\$ 95,000 51,430	\$ 100,000 47,915	\$ 105,000 44,215
Principal Payment		\$ 144,010 120%	\$ 146,050 120%	\$ 142,905 120%	\$ 144,760 120%	\$ 146,430 120%	\$ 147,915 120%	\$ 149,215 120%
Interest Payment		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Subtotal: Annual Debt Service</b>								
Coverage Requirement (\$-Amnt above annual payment)								
Reserve Requirement								
<b>2019 Water Revenue Bonds (\$9,016,903)<sup>2</sup></b>								
Principal Payment		\$ 409,781 225,466	\$ 418,148 214,593	\$ 435,546 203,438	\$ 447,120 191,864	\$ 457,908 179,989	\$ 467,850 167,834	\$ 480,334 155,401
Interest Payment		\$ 635,247 120%	\$ 632,741 120%	\$ 638,984 120%	\$ 638,984 120%	\$ 637,897 120%	\$ 635,684 120%	\$ 635,735 120%
<b>Subtotal: Annual Debt Service</b>								
Coverage Requirement (\$-Amnt above annual payment)								
Reserve Requirement								

1. Water revenue bonds due to mature in 2036. Source file: *2015 Water Amortization Schedule.pdf*

Reserve Requirement not required per Bond Document: *Water Refunding 2015 3rd Install.pdf*, page 14.

2. Water revenue bonds due to mature in 2037. Source file: *Water\_Refunding 2019 Amortization Schedule.pdf*  
 Refunded the Water Revenue Bonds, Series 2010. Source file: *Water\_Refunding 2019 4th Install.pdf*

**TABLE 20 : EXISTING ANNUAL DEBT OBLIGATIONS TO BE SATISFIED BY WATER RATES**

<b>Existing Annual Debt Service</b>	\$ 779,257 120%	\$ 778,791 120%	\$ 781,889 120%	\$ 783,744 120%	\$ 784,327 120%	\$ 783,599 120%	\$ 784,950 120%
<b>Existing Annual Coverage Requirement</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Existing Debt Reserve Target</b>							

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Projected Water Rates Under Existing Rate Schedule

**TABLE 21 : CURRENT RATES**

Current Rates	Effective Jan. 26, 2020	
<b>Monthly Fixed Charge<sup>1</sup></b>		
5/8 inch	\$16.88	
3/4 inch	\$19.09	
1 inch	\$23.51	
1 1/2 inch	\$34.56	
2 inch	\$47.82	
3 inch	\$89.81	
4 inch	\$151.69	
6 inch	\$299.76	
8 inch	\$542.86	
<b>Volumetric Charge, per CCF<sup>1,2</sup></b>		
<i>Residential Tiered Rates</i>		
Tier 1	0-10	\$1.93
Tier 2	11-33	\$2.40
Tier 3	34+	\$3.68
<i>Multi-Residential Tiered Rates</i>		
Tier 1	0-10	\$2.03
Tier 2	11+	\$2.88
<i>Non-Residential</i>		
<i>Uniform Rate</i>		
		\$2.41

1. Combination of monthly service fee and variable use charge.

*Source file: 2543\_001 Water Rates 1.26.19 to 1.26.20.pdf*

2. CCF = Hundred Cubic Feet or 748.05 gallons.

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

Function & Classification

TABLE 22 - CLASSIFICATION OF EXPENSES

Classification of Expenses		Total Revenue Requirements	Commodity (COM)	Conservation (CON)	Capacity (CAP)	Customer (CA)	Basis of Classification		
Budget Categories	FY 2021/22						(COM)	(CON)	(CAP)
<b>UTILITY BILLING AND WATER</b>									
<b>Salaries &amp; Benefits</b>									
Salaries / Full-Time	\$ 299,600	\$ -	\$ -	\$ -	\$ -	\$ 299,600	0.0%	0.0%	100.0%
Salaries / Auto & Expense	\$ 100	\$ -	\$ -	\$ -	\$ 100	0.0%	0.0%	0.0%	100.0%
Public Employees Retirement	\$ 67,284	\$ -	\$ -	\$ -	\$ 67,284	0.0%	0.0%	0.0%	100.0%
Long Term Disability Insurance	\$ 1,000	\$ -	\$ -	\$ -	\$ 1,000	0.0%	0.0%	0.0%	100.0%
Life Insurance Premiums	\$ 400	\$ -	\$ -	\$ -	\$ 400	0.0%	0.0%	0.0%	100.0%
Workers Compensation Insurance	\$ 26,200	\$ -	\$ -	\$ -	\$ 26,200	0.0%	0.0%	0.0%	100.0%
Medicare Tax-Employer's Share	\$ 4,300	\$ -	\$ -	\$ -	\$ 4,300	0.0%	0.0%	0.0%	100.0%
Unfunded Accrued Liability	\$ 54,100	\$ -	\$ -	\$ -	\$ 54,100	0.0%	0.0%	0.0%	100.0%
Deferred Comp/Full Time	\$ 10,500	\$ -	\$ -	\$ -	\$ 10,500	0.0%	0.0%	0.0%	100.0%
Unemployment Insurance	\$ 1,100	\$ -	\$ -	\$ -	\$ 1,100	0.0%	0.0%	0.0%	100.0%
Section 125 Benefit Allowance	\$ 85,500	\$ -	\$ -	\$ -	\$ 85,500	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 550,084</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 550,084</b>				
<b>Materials &amp; Services</b>									
Telephone & Fax Charges	\$ 8,200	\$ -	\$ -	\$ -	\$ 8,200	0.0%	0.0%	0.0%	100.0%
Advertising/Bids & Notices	\$ 500	\$ -	\$ -	\$ -	\$ 500	0.0%	0.0%	0.0%	100.0%
Office Supplies/Expendable	\$ 6,200	\$ -	\$ -	\$ -	\$ 6,200	0.0%	0.0%	0.0%	100.0%
Postage/Other Mailing	\$ 41,200	\$ -	\$ -	\$ -	\$ 41,200	0.0%	0.0%	0.0%	100.0%
Customer Relations	\$ 1,500	\$ -	\$ -	\$ -	\$ 1,500	0.0%	0.0%	0.0%	100.0%
Other Administrative Expenses	\$ 61,800	\$ -	\$ -	\$ -	\$ 61,800	0.0%	0.0%	0.0%	100.0%
Election Costs	\$ 30,900	\$ -	\$ -	\$ -	\$ 30,900	0.0%	0.0%	0.0%	100.0%
Misc. Expenses	\$ 3,100	\$ -	\$ -	\$ -	\$ 3,100	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 153,400</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 153,400</b>				

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

Function & Classification

TABLE 23 : CLASSIFICATION OF EXPENSES

Classification of Expenses		Total Revenue Requirements	Commodity	Conservation	Capacity	Customer	Basis of Classification		
Budget Categories	FY 2021/22	(COM)	(CON)	(CAP)	(CA)	(COM)	(CON)	(CAP)	(CA)
Central Su.	\$ 100	\$ -	\$ -	\$ 100	0.0%	0.0%	0.0%	0.0%	100.0%
Admin. Ove.	\$ 42,000	\$ -	\$ -	\$ 42,000	0.0%	0.0%	0.0%	0.0%	100.0%
Computer Maintenance	\$ 34,200	\$ -	\$ -	\$ 34,200	0.0%	0.0%	0.0%	0.0%	100.0%
Computer R.	\$ 7,700	\$ -	\$ -	\$ 7,700	0.0%	0.0%	0.0%	0.0%	100.0%
Motor Rental.	\$ 3,100	\$ -	\$ -	\$ 3,100	0.0%	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 87,100</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 87,100</b>					
<b>Special Payments</b>									
OPEB Obligation Expense	\$ 1,700	\$ -	\$ -	\$ 1,700	0.0%	0.0%	0.0%	0.0%	100.0%
Pension Expense-GASB 68	\$ 75,400	\$ -	\$ -	\$ 75,400	0.0%	0.0%	0.0%	0.0%	100.0%
Interest Expense	\$ 36,100	\$ -	\$ -	\$ 36,100	0.0%	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 113,200</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 113,200</b>					
<b>Capital Outlay</b>									
Other Operations Expense	\$ 800	\$ -	\$ -	\$ 800	0.0%	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 800</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 800</b>					
<b>Transfer Out</b>									
Transfer Out - Insurance Rese.	\$ 9,400	\$ -	\$ -	\$ 9,400	0.0%	0.0%	0.0%	0.0%	100.0%
<b>Subtotal</b>	<b>\$ 9,400</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 9,400</b>					
<b>Sub-Total: Utility Billing and Water</b>	<b>\$ 913,984</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 913,984</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>100.0%</b>

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

Function & Classification

TABLE 24 - CLASSIFICATION OF EXPENSES

Classification of Expenses, continued		Total Revenue Requirements	Commodity (COM)	Conservation (CON)	Capacity (CAP)	Customer (CA)	Basis of Classification
Budget Categories	FY 2021/22						
<b>WATER MAINTENANCE AND OPERATIONS</b>							
<b>Salaries &amp; Benefits</b>							
Salaries / Full-Time	\$ 604,300	\$ 453,225	\$ -	\$ 90,645	\$ 60,430	0.0%	15.0%
Salaries / Overtime	\$ 42,000	\$ 31,500	\$ -	\$ 6,300	\$ 4,200	0.0%	10.0%
Salaries / Uniform Pay	\$ 1,300	\$ 975	\$ -	\$ 195	\$ 130	0.0%	15.0%
Public Employees Retirement	\$ 80,200	\$ 60,150	\$ -	\$ 12,030	\$ 8,020	0.0%	15.0%
Long Term Disability Insurance	\$ 1,900	\$ 1,425	\$ -	\$ 285	\$ 190	0.0%	15.0%
Life Insurance Premiums	\$ 700	\$ 525	\$ -	\$ 105	\$ 70	0.0%	15.0%
Workers Compensation Insurance	\$ 61,500	\$ 46,125	\$ -	\$ 9,225	\$ 6,150	0.0%	15.0%
Medicare Tax - Employer's Share	\$ 9,400	\$ 7,050	\$ -	\$ 1,410	\$ 940	0.0%	15.0%
Unfunded Accrued Liability	\$ 126,800	\$ 95,100	\$ -	\$ 19,020	\$ 12,680	0.0%	15.0%
Deferred Compensation/Part-Time	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	10.0%
Deferred Compensation/Full-Time	\$ 20,500	\$ 15,375	\$ -	\$ 3,075	\$ 2,050	0.0%	15.0%
Unemployment Insurance	\$ 2,300	\$ 1,725	\$ -	\$ 345	\$ 230	0.0%	15.0%
Section 125 Benefit Allowance	\$ 104,500	\$ 78,375	\$ -	\$ 15,675	\$ 10,450	0.0%	15.0%
<b>Subtotal</b>	\$ 1,055,400	\$ 791,550	\$ -	\$ 158,310	\$ 105,540		
<b>Materials &amp; Services</b>							
Gas & Electric Utilities	\$ 1,680,000	\$ 1,680,000	\$ -	\$ -	\$ -	0.0%	0.0%
Telephone & Fax Charges	\$ 8,900	\$ 6,675	\$ -	\$ 1,335	\$ 890	0.0%	15.0%
Advertising/Other	\$ 1,000	\$ 750	\$ -	\$ 150	\$ 100	0.0%	15.0%
Professional Dues	\$ 2,200	\$ 1,650	\$ -	\$ 330	\$ 220	0.0%	15.0%
Office Supplies/Expendable	\$ 1,500	\$ 1,125	\$ -	\$ 225	\$ 150	0.0%	15.0%
Postage/Other Mailing Charge	\$ 800	\$ 600	\$ -	\$ 120	\$ 80	0.0%	15.0%
Vehicle Fuel, Supplies & Maint.	\$ 35,500	\$ 26,625	\$ -	\$ 5,325	\$ 3,550	0.0%	15.0%
Contracted Services	\$ 267,800	\$ 200,850	\$ -	\$ 40,170	\$ 26,780	0.0%	15.0%
Taxes & Assessments	\$ 9,100	\$ 6,825	\$ -	\$ 1,365	\$ 910	0.0%	15.0%
Conference/Training/Education	\$ 18,500	\$ 13,875	\$ -	\$ 2,775	\$ 1,850	0.0%	15.0%
Maintenance/Other Supplies	\$ 139,100	\$ 104,325	\$ -	\$ 20,865	\$ 13,910	0.0%	15.0%
<b>Subtotal</b>	\$ 2,164,400	\$ 2,043,300	\$ -	\$ 72,660	\$ 48,440		

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

TABLE 25 : CLASSIFICATION OF EXPENSES

Classification of Expenses, continued		Total Revenue Requirements	Commodity (COM)	Conservation (CON)	Capacity (CAP)	Customer (CA)	(COM)	(CON)	(CAP)	Basis of Classification
Budget Categories	FY 2021/22									
<b>Interfund Charges</b>										
Interfund Charge - Facility Maintenance	\$ 130,700	\$ 98,025	\$ 28,275	\$ -	\$ 19,605	\$ 13,070	75.0%	0.0%	15.0%	10.0%
Interfund Charge - Central Su.	\$ 37,700	\$ 161,175	\$ -	\$ 5,655	\$ 3,770	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Cost Distribution	\$ 214,900	\$ 227,325	\$ -	\$ 32,235	\$ 21,490	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Admin. Overhead	\$ 303,100	\$ 63,750	\$ -	\$ 45,465	\$ 30,310	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Vehicle Replacement	\$ 85,000	\$ 49,575	\$ -	\$ 12,750	\$ 8,500	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Vehicle Maintenance	\$ 66,100	\$ 66,300	\$ -	\$ 9,915	\$ 6,610	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Comp. Maintenance	\$ 88,400	\$ 14,475	\$ -	\$ 13,260	\$ 8,840	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Computer	\$ 19,300	\$ 1,575	\$ -	\$ 2,895	\$ 1,930	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Software	\$ 2,100	\$ 3,525	\$ -	\$ 315	\$ 210	75.0%	0.0%	15.0%	10.0%	10.0%
Interfund Charge - Motor Rental.	\$ 4,700	\$ -	\$ 705	\$ 705	\$ 470	75.0%	0.0%	15.0%	10.0%	10.0%
<b>Subtotal</b>	\$ 952,000	\$ 714,000	\$ -	\$ 142,800	\$ 95,200					
<b>Five-Year Update</b>										
GSP Annual Report	\$ 35,000	\$ 26,250	\$ -	\$ 5,250	\$ 3,500	75.0%	0.0%	15.0%	10.0%	10.0%
Point of Contact - GSP	\$ 12,500	\$ 9,375	\$ -	\$ 1,875	\$ 1,250	75.0%	0.0%	15.0%	10.0%	10.0%
Data Management Software	\$ 10,000	\$ 7,500	\$ -	\$ 1,500	\$ 1,000	75.0%	0.0%	15.0%	10.0%	10.0%
Regional Water Management Group	\$ 9,000	\$ 6,750	\$ -	\$ 1,350	\$ 900	75.0%	0.0%	15.0%	10.0%	10.0%
<b>Subtotal</b>	\$ 66,500	\$ 49,875	\$ -	\$ 9,975	\$ 6,650					
<b>Special Payments</b>										
Liability/Property Insurance	\$ 160,500	\$ 120,375	\$ -	\$ 24,075	\$ 16,050	75.0%	0.0%	15.0%	10.0%	10.0%
Retiree Insurance Premiums	\$ 2,100	\$ 1,575	\$ -	\$ 315	\$ 210	75.0%	0.0%	15.0%	10.0%	10.0%
OPEB Obligation Expense	\$ 46,300	\$ 34,725	\$ -	\$ 6,945	\$ 4,630	75.0%	0.0%	15.0%	10.0%	10.0%
Pension Expense-GASB 68	\$ 173,200	\$ 129,900	\$ -	\$ 25,980	\$ 17,320	75.0%	0.0%	15.0%	10.0%	10.0%
<b>Subtotal</b>	\$ 382,100	\$ 286,575	\$ -	\$ 57,315	\$ 38,210					
<b>Transfer Out</b>										
Transfer Out	\$ 60,000	\$ 45,000	\$ -	\$ 9,000	\$ 6,000	75.0%	0.0%	15.0%	10.0%	10.0%
Transfer Out - Insurance Rese.	\$ 20,100	\$ 15,075	\$ -	\$ 3,015	\$ 2,010	75.0%	0.0%	15.0%	10.0%	10.0%
<b>Subtotal</b>	\$ 80,100	\$ 60,075	\$ -	\$ 12,015	\$ 8,010					
<b>Sub-Total: Water Maintenance and Operations</b>	<b>\$ 4,700,500</b>	<b>\$ 3,945,375</b>	<b>\$ -</b>	<b>\$ 453,075</b>	<b>\$ 302,050</b>	<b>83.9%</b>	<b>0.0%</b>	<b>9.6%</b>	<b>6.4%</b>	

TABLE 26 . CLASSIFICATION OF EXPENSES

Classification of Expenses, continued		Total Revenue Requirements	Commodity (COM)	Conservation (CON)	Capacity (CAP)	Customer (CA)	Basis of Classification
Budget Categories	FY 2021/22						
<b>WATER QUALITY CONTROL</b>							
<b>Salaries &amp; Benefits</b>							
Salaries / Full-Time	\$ 242,500	\$ 1,100	\$ 121,250	\$ -	\$ 121,250	\$ -	50.0% 0.0%
Salaries / Overtime			550	-	550	-	50.0% 0.0%
Salaries / Uniform Pay			550	-	550	-	50.0% 0.0%
Public Employees Retirement	31,000	15,500	-	15,500	-	50.0% 0.0%	50.0% 0.0%
Long Term Disability Insurance	700	350	-	350	-	50.0% 0.0%	50.0% 0.0%
Life Insurance Premiums	400	200	-	200	-	50.0% 0.0%	50.0% 0.0%
Workers Compensation Insurance	23,200	11,600	-	11,600	-	50.0% 0.0%	50.0% 0.0%
Medicare Tax - Employer's Share	3,700	1,850	-	1,850	-	50.0% 0.0%	50.0% 0.0%
Unfunded Accrued Liability	44,700	22,350	-	22,350	-	50.0% 0.0%	50.0% 0.0%
Deferred Compensation/Part-Time	-	-	-	-	-	50.0% 0.0%	50.0% 0.0%
Deferred Compensation/Full-Time	7,600	3,800	-	3,800	-	50.0% 0.0%	50.0% 0.0%
Unemployment Insurance	1,100	550	-	550	-	50.0% 0.0%	50.0% 0.0%
Section 125 Benefit Allowance	50,500	25,250	-	25,250	-	50.0% 0.0%	50.0% 0.0%
<b>Subtotal</b>	\$ 407,600	\$ 203,800	\$ -	\$ 203,800	\$ -		
<b>Materials &amp; Services</b>							
Telephone & Fax Charges	\$ 2,600	\$ 1,300	\$ -	\$ 1,300	\$ -	50.0% 0.0%	50.0% 0.0%
Advertising/Bids & Notices	300	150	-	150	-	50.0% 0.0%	50.0% 0.0%
Advertising/Other	2,600	1,300	-	1,300	-	50.0% 0.0%	50.0% 0.0%
Professional Dues	200	100	-	100	-	50.0% 0.0%	50.0% 0.0%
Office Supplies Expendable	2,200	1,100	-	1,100	-	50.0% 0.0%	50.0% 0.0%
Postage/Other Mailing Charge	3,500	1,750	-	1,750	-	50.0% 0.0%	50.0% 0.0%
Vehicle Fuel, Supplies & Maintenance	4,700	2,350	-	2,350	-	50.0% 0.0%	50.0% 0.0%
Contracted Services	61,800	30,900	-	30,900	-	50.0% 0.0%	50.0% 0.0%
Taxes and Assessments	38,900	19,450	-	19,450	-	50.0% 0.0%	50.0% 0.0%
Conference/Training/Education	7,200	3,600	-	3,600	-	50.0% 0.0%	50.0% 0.0%
Maintenance/Other Supplies	41,200	20,600	-	20,600	-	50.0% 0.0%	50.0% 0.0%
<b>Subtotal</b>	\$ 165,200	\$ 82,600	\$ -	\$ 82,600	\$ -		

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

TABLE 27 : CLASSIFICATION OF EXPENSES

Budget Categories	Classification of Expenses, continued						Basis of Classification							
	Total Revenue Requirements	Commodity	Conservation	Capacity	Customer	(COM)	(CON)	(CAP)	(CA)	(COM)	(CON)	(CAP)	(CA)	
FY 2021/22	\$ 85,500	\$ 42,750	\$ -	\$ 42,750	\$ -	\$ 42,750	\$ -	\$ 42,750	\$ -	\$ 42,750	\$ -	\$ 42,750	\$ -	
Interfund Charge - Facility Maintenance	\$ 1,200	\$ 600	\$ -	\$ 600	\$ -	\$ 600	\$ -	\$ 600	\$ -	\$ 600	\$ -	\$ 600	\$ -	
Interfund Charge - Central Su.	\$ 170,000	\$ 85,000	\$ -	\$ 85,000	\$ -	\$ 85,000	\$ -	\$ 85,000	\$ -	\$ 85,000	\$ -	\$ 85,000	\$ -	
Interfund Charge - Cost Distribution	\$ 57,400	\$ 28,700	\$ -	\$ 28,700	\$ -	\$ 28,700	\$ -	\$ 28,700	\$ -	\$ 28,700	\$ -	\$ 28,700	\$ -	
Interfund Charge - Admin. Overhead	\$ 14,900	\$ 7,450	\$ -	\$ 7,450	\$ -	\$ 7,450	\$ -	\$ 7,450	\$ -	\$ 7,450	\$ -	\$ 7,450	\$ -	
Interfund Charge - Vehicle Replacement	\$ 15,200	\$ 7,600	\$ -	\$ 7,600	\$ -	\$ 7,600	\$ -	\$ 7,600	\$ -	\$ 7,600	\$ -	\$ 7,600	\$ -	
Subtotal	\$ 344,200	\$ 172,100	\$ -	\$ 172,100	\$ -	\$ 172,100	\$ -	\$ 172,100	\$ -	\$ 172,100	\$ -	\$ 172,100	\$ -	
<b>Functional Expenses</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>	<b>\$ 255,600</b>	<b>\$ -</b>
Water Conservation Program	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -
Subtotal	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -	\$ 255,600	\$ -
<b>Special Payments</b>	<b>\$ 61,300</b>	<b>\$ 30,650</b>	<b>\$ -</b>	<b>\$ 30,650</b>	<b>\$ -</b>	<b>\$ 30,650</b>	<b>\$ -</b>	<b>\$ 30,650</b>	<b>\$ -</b>	<b>\$ 30,650</b>	<b>\$ -</b>	<b>\$ 30,650</b>	<b>\$ -</b>	
OPEB Obligation Expense	\$ 24,000	\$ 12,000	\$ -	\$ 12,000	\$ -	\$ 12,000	\$ -	\$ 12,000	\$ -	\$ 12,000	\$ -	\$ 12,000	\$ -	
Pension Expense-GASB 68	\$ 61,300	\$ 30,650	\$ -	\$ 30,650	\$ -	\$ 30,650	\$ -	\$ 30,650	\$ -	\$ 30,650	\$ -	\$ 30,650	\$ -	
Subtotal	\$ 85,300	\$ 42,650	\$ -	\$ 42,650	\$ -	\$ 42,650	\$ -	\$ 42,650	\$ -	\$ 42,650	\$ -	\$ 42,650	\$ -	
<b>Transfer Out</b>	<b>\$ 8,500</b>	<b>\$ 4,250</b>	<b>\$ -</b>	<b>\$ 4,250</b>	<b>\$ -</b>	<b>\$ 4,250</b>	<b>\$ -</b>	<b>\$ 4,250</b>	<b>\$ -</b>	<b>\$ 4,250</b>	<b>\$ -</b>	<b>\$ 4,250</b>	<b>\$ -</b>	
Transfer Out - Insurance Rese.	\$ 8,500	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	
Subtotal	\$ 8,500	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	\$ 4,250	\$ -	
<b>Sub-Total: Water Quality Control</b>	<b>\$ 1,266,400</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	<b>\$ 505,400</b>	<b>\$ 255,600</b>	

TABLE 28 . CLASSIFICATION OF EXPENSES

Budget Categories	Classification of Expenses, continued		Total Revenue Requirements FY 2021/22	(COM)	Commodity (CON)	Conservation (CAP)	Capacity (CA)	Customer (COM)	(CON)	(CAP)	(CA)	Basis of Classification	
<b>WATER CONSERVATION PROGRAM</b>													
<b>Salaries &amp; Benefits</b>													
Salaries / Full-Time	\$ 111,500	\$ 33,450	\$ 72,475	\$ 195	-	\$ 5,75	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Salaries / Uniform Pay	\$ 300	\$ 90	\$ 10,920	-	-	\$ 15	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Public Employees Retirement	\$ 16,800	\$ 5,040	\$ 260	-	-	\$ 840	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Long Term Disability Insurance	\$ 400	\$ 120	\$ 65	-	-	\$ 20	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Life Insurance Premiums	\$ 100	\$ 30	\$ 6,890	-	-	\$ 5	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Workers Compensation Insurance	\$ 10,600	\$ 3,180	\$ 1,105	-	-	\$ 530	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Medicare Tax - Employer's Share	\$ 1,700	\$ 510	\$ 19,825	-	-	\$ 85	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Unfunded Accrued Liability	\$ 30,500	\$ 9,150	\$ 3,055	-	-	\$ 1,525	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Deferred Compensation/Full-Time	\$ 4,700	\$ 1,410	\$ 260	-	-	\$ 235	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Unemployment Insurance	\$ 400	\$ 120	\$ 15,925	-	-	\$ 20	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Section 125 Benefit Allowance	\$ 24,500	\$ 7,350	\$ 130,975	-	-	\$ 1,225	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Subtotal	\$ 201,500	\$ 60,450	\$ 130,975	\$ -	\$ -	\$ 10,075	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Materials &amp; Services</b>													
Advertising/Other	\$ 23,300	\$ 6,990	\$ 15,145	\$ -	\$ -	\$ 1,165	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Subtotal	\$ 23,300	\$ 6,990	\$ 15,145	\$ -	\$ -	\$ 1,165	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Interfund Charges</b>													
Interfund Charge - Admin. Overhead	\$ 17,700	\$ 5,310	\$ 11,505	\$ -	\$ -	\$ 885	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Subtotal	\$ 17,700	\$ 5,310	\$ 11,505	\$ -	\$ -	\$ 885	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Functional Expenses</b>													
Water Conservation Program	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Subtotal	\$ 100,000	\$ -	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Special Payments</b>													
OPEB Obligation Expense	\$ (2,400)	\$ (720)	\$ (1,560)	\$ -	\$ -	\$ (120)	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Pension Expense-GASB 68	\$ 29,100	\$ 8,730	\$ 18,915	\$ -	\$ -	\$ 1,455	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Subtotal	\$ 26,700	\$ 8,010	\$ 17,355	\$ -	\$ -	\$ 1,335	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Transfer Out</b>													
Transfer Out - Insurance Rese.	\$ 3,700	\$ 1,110	\$ 2,405	\$ -	\$ -	\$ 185	30.0%	65.0%	0.0%	65.0%	0.0%	5.0%	
Subtotal	\$ 3,700	\$ 1,110	\$ 2,405	\$ -	\$ -	\$ 185	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Sub-Total: Water Conservation Program</b>	<b>\$ 372,900</b>	<b>\$ 81,870</b>	<b>\$ 277,385</b>	<b>\$ -</b>	<b>\$ 13,645</b>	<b>\$ 22.0%</b>	<b>74.4%</b>	<b>0.0%</b>	<b>3.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.0%</b>	

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

Function & Classification

TABLE 29 : CLASSIFICATION OF EXPENSES

Classification of Expenses, continued		Total Revenue Requirements	Commodity	Conservation	Capacity	Customer	Basis of Classification		
Budget Categories	FY 2021/22	(COM)	(CON)	(CAP)	(CA)	(COM)	(CON)	(CAP)	(CA)
<b>WATER DEBT SERVICE &amp; REVENUE BONDS</b>									
<b>Materials &amp; Services</b>									
Contracted Services	\$ 4,500	\$ 2,250	\$ -	\$ 2,250	\$ -	\$ 2,250	\$ -	50.0%	50.0%
Subtotal	\$ 4,500	\$ 2,250	\$ -	\$ 2,250	\$ -	\$ 2,250	\$ -	50.0%	50.0%
<b>Sub-Total: Water Capital Outlay</b>	<b>\$ 4,500</b>	<b>\$ 2,250</b>	<b>\$ -</b>	<b>\$ 2,250</b>	<b>\$ -</b>	<b>\$ 2,250</b>	<b>\$ -</b>	<b>50.0%</b>	<b>50.0%</b>
<b>Total Operating Expense</b>	<b>\$ 7,258,284</b>	<b>\$ 4,534,895</b>	<b>\$ 532,985</b>	<b>\$ 960,725</b>	<b>\$ 1,229,679</b>	<b>62.5%</b>	<b>7.3%</b>	<b>13.2%</b>	<b>16.9%</b>

CITY OF MADERA  
WATER RATE STUDY  
Cost of Service Analysis

Function & Classification

TABLE 30 . CLASSIFICATION OF EXPENSES

Classification of Expenses, continued		Total Revenue Requirements	Commodity (COM)	Conservation (CON)	Capacity (CAP)	Customer (CA)	Basis of Classification		
Budget Categories		FY 2021/22	(COM)	(CON)	(CAP)	(CA)	(CON)	(CAP)	(CA)
<b>Debt Service Payments</b>									
Existing Debt Service	\$ 778,791	\$ 389,395	\$ -	\$ 389,395	\$ -	\$ 389,395	\$ -	\$ 50.0%	0.0%
<b>Total Debt Service Payments</b>	<b>\$ 778,791</b>	<b>\$ 389,395</b>							
<b>Capital Expenditures</b>									
Rate Funded Capital Expenses	\$ 1,948,133	\$ 974,066	\$ -	\$ 974,066	\$ -	\$ 974,066	\$ -	\$ 50.0%	0.0%
<b>TOTAL REVENUE REQUIREMENTS</b>	<b>\$ 9,985,208</b>	<b>\$ 5,898,357</b>		<b>\$ 532,385</b>	<b>\$ 2,324,187</b>	<b>\$ 1,229,679</b>	<b>\$ 59.1%</b>	<b>5.3%</b>	<b>23.3%</b>
<i>Less: Non-Rate Revenues</i>									
<b>WATER UTILITY</b>									
<b>Licenses &amp; Permits</b>									
State SB1186 Fees/Business License	\$ (3,561)	\$ (2,104)	\$ (190)	\$ (829)	\$ (439)	\$ 59.1%	5.3%	23.3%	12.3%
Infrastructure Cost Payback	\$ (5,937)	\$ (3,507)	\$ (317)	\$ (1,382)	\$ (731)	\$ 59.1%	5.3%	23.3%	12.3%
Meter Amortization	\$ (10,000)	\$ (5,907)	\$ (534)	\$ (2,328)	\$ (1,232)	\$ 59.1%	5.3%	23.3%	12.3%
<b>Fines &amp; Forfeiture</b>									
Late Payment/Other Penalty	\$ (196,650)	\$ (116,163)	\$ (10,497)	\$ (45,773)	\$ (24,217)	\$ 59.1%	5.3%	23.3%	12.3%
Revenue/Water Patrol Fines	\$ (45,983)	\$ (27,163)	\$ (2,454)	\$ (10,703)	\$ (5,663)	\$ 59.1%	5.3%	23.3%	12.3%
<b>Charges for Services</b>									
Application Fee	\$ (34,547)	\$ (20,407)	\$ (1,844)	\$ (8,041)	\$ (4,254)	\$ 59.1%	5.3%	23.3%	12.3%
Construction Usage Fee	\$ (7,860)	\$ (4,643)	\$ (420)	\$ (1,830)	\$ (968)	\$ 59.1%	5.3%	23.3%	12.3%
Meter Setup/Relocation Fee	\$ (3,169)	\$ (1,872)	\$ (169)	\$ (738)	\$ (390)	\$ 59.1%	5.3%	23.3%	12.3%
User Charges	\$ (1,647)	\$ (973)	\$ (88)	\$ (383)	\$ (203)	\$ 59.1%	5.3%	23.3%	12.3%
Water Permits and Fees	\$ (415,410)	\$ (245,386)	\$ (22,174)	\$ (96,692)	\$ (51,158)	\$ 59.1%	5.3%	23.3%	12.3%
<b>Interest</b>									
Interest Income	\$ (4,326)	\$ (2,555)	\$ (231)	\$ (1,007)	\$ (533)	\$ 59.1%	5.3%	23.3%	12.3%
<b>Interfund Charges</b>									
Interfund Charges Revenue - Co	\$ (2,246)	\$ (1,327)	\$ (120)	\$ (523)	\$ (277)	\$ 59.1%	5.3%	23.3%	12.3%
Refunds & Reimbursements	\$ (1,938)	\$ (1,145)	\$ (103)	\$ (451)	\$ (239)	\$ 59.1%	5.3%	23.3%	12.3%
<b>UTILITY BILLING AND WATER</b>									
<b>Refunds</b>									
Refunds and Reimbursements	\$ (841)	\$ (497)	\$ (45)	\$ (196)	\$ (104)	\$ 59.1%	5.3%	23.3%	12.3%
Collection Recovery	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59.1%	5.3%	23.3%	12.3%
<b>NET REVENUE REQUIREMENTS FOR FY 2021/22</b>	<b>\$ 9,251,093</b>	<b>\$ 5,464,708</b>		<b>\$ 493,800</b>	<b>\$ 2,153,312</b>	<b>\$ 1,139,273</b>	<b>5.3%</b>	<b>23.3%</b>	<b>12.3%</b>
<i>Allocation of Revenue Requirements</i>									
Net Revenue Req't. Check from Financial Plan	\$ -								

TABLE 31: ADJUSTMENT OF COST OF SERVICE ALLOCATION

Average adjusted current revenue with rate increases		Total Revenue Requirements	Commodity	Conservation	Capacity	Customer
\$ 11,852,440	100.0%	\$ 7,001,348	\$ 632,653	\$ 2,758,809	\$ 1,459,629	5.3% 59.1% 23.3% 12.3%

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Water Cost of Service Analysis**

**Allocation Factors**

**TABLE 32**

Development of the COMMODITY & CONSERVATION Allocation Factor					
Customer Class	Volume (hcf) <sup>1</sup>	Percent of Total Volume	Average Monthly Statistics		
			Winter	Annual	Summer
Single-Family	2,253,906	63.4%	8	15	22
Multi-Family	467,097	13.1%	9	12	17
Commercial	679,591	19.1%	42	70	103
Industrial	37,010	1.0%	101	134	168
Irrigation	115,456	3.2%	44	141	261
<b>Total</b>	<b>3,553,060</b>	<b>100%</b>			

1. Consumption is from January through December 2020.

*Source files: September 2019 through August 2020: MAIS Meter Usage 12 Months\_Manipulated.xlsx  
September-December 2020: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx*

**Commodity Related Costs:** These costs are associated with the total consumption (flow) of water over a specified period of time (e.g. annual).

**TABLE 33**

Development of the CAPACITY Allocation Factor					
Customer Class	Average Monthly Use (hcf)	Peak Monthly Use (hcf) <sup>2</sup>	Peaking Factor	Max Monthly Capacity Factor	
Single-Family	187,825	286,177	1.52	63.9%	
Multi-Family	38,925	54,661	1.40	12.2%	
Commercial	56,633	84,950	1.50	19.0%	
Industrial	3,084	4,013	1.30	0.9%	
Irrigation	9,621	18,378	1.91	4.1%	
<b>Total</b>	<b>296,088</b>	<b>448,180</b>			<b>100%</b>

2. Based on peak monthly data (peak day data not available).

**Capacity Related Costs:** Costs associated with the maximum demand required at one point in time or the maximum size of facilities required to meet this demand.

**CITY OF MADERA**  
**WATER RATE STUDY**  
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**Allocation Factors**

**TABLE 34**

Development of the CUSTOMER Allocation Factor					
Customer Class	Meters <sup>1</sup>	Number of Accounts	Percent of Total	Number of Units <sup>1</sup>	Percent of Total Units
Single-Family	12,663	89.8%		12,663	75.6%
Multi-Family	528	3.7%		3,183	19.0%
Commercial	813	5.8%		813	4.9%
Industrial	23	0.2%		23	0.1%
Irrigation	68	0.5%		68	0.4%
<b>Total</b>	<b>14,095</b>	<b>100.0%</b>		<b>16,750</b>	<b>100.0%</b>

1. Meter Count is from December 2020.

**Customer Related Costs:** Costs associated with having a customer on the water system. These costs vary with the addition or deletion of customers on the system. Examples: Meter-reading, Postage and billing.

**TABLE 35 : SUMMARY OF COST OF SERVICE ALLOCATION OF WATER REVENUE REQUIREMENTS**

Functional Category	Adjusted Net Revenue Requirements 36% Fixed / 64% Variable
Commodity - Related Costs	\$ 7,001,348
Conservation - Related Costs	\$ 632,653
Capacity - Related Costs	\$ 2,758,809
Customer - Related Costs	\$ 1,459,629
<b>Total</b>	<b>\$ 11,852,440</b>

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis

**Allocation Factors**

**TABLE 36 : ALLOCATION OF ADJUSTED NET REVENUE REQUIREMENTS**

<b>Net Revenue Requirements</b>		<b>Classification Components</b>				<b>Cost of Service Net Rev. Req'ts</b>	<b>% of COS Net Revenue Req'ts</b>
<b>Customer Classes</b>	<b>Commodity - Related Costs</b>	<b>Conservation - Related Costs</b>	<b>Capacity - Related Costs</b>	<b>Customer - Related Costs</b>	<b>Customer - Related Costs</b>		
Single-Family	\$ 4,441,349	\$ 401,327	\$ 1,761,585	\$ 1,103,479	\$ 7,707,740	65.0%	
Multi-Family	920,421	83,171	336,472	277,373	1,617,437	13.6%	
Commercial	1,339,142	121,007	522,920	70,846	2,053,916	17.3%	
Industrial	72,929	6,590	24,704	2,004	106,227	0.9%	
Irrigation	227,507	20,558	113,129	5,926	367,120	3.1%	
<b>Total Net Revenue Requirement</b>	<b>\$ 7,001,348</b>	<b>\$ 632,653</b>	<b>\$ 2,758,809</b>	<b>\$ 1,459,629</b>	<b>\$ 11,852,440</b>	<b>100%</b>	

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis/Rate Design

**TABLE 37**

Meter Size	Standard Meters <sup>1</sup>	
	Meter Capacity (gpm)	Equivalency to 1 inch
<i>Displacement Meters</i>		
5/8 inch	20	0.40
3/4 inch	30	0.60
1 inch	50	1.00
1.5 inch	100	2.00
2 inch	160	3.20
<i>Compound Class I Meters</i>		
3 inch	320	6.40
4 inch	500	10.00
6 inch	1,000	20.00
8 inch	1,600	32.00

1. Meter flow rates are from AWWA M-1 Table B-1.

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis/Rate Design

**Proposed Fixed Charges**

**TABLE 38 : CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES**

<b>Proposed Fixed Meter Charges</b>											
<b>Number of Meters by Class and Size<sup>1</sup></b>	<b>5/8 inch</b>	<b>3/4 inch</b>	<b>1 inch</b>	<b>1 1/2 inch</b>	<b>2 inch</b>	<b>3 inch</b>	<b>4 inch</b>	<b>6 inch</b>	<b>8 inch</b>	<b>Total</b>	
Single-Family	1	2	12,369	34	229	12	16	-	-	12,663	
Multi-Family	-	1	416	11	91	2	1	4	2	528	
Commercial	1	4	597	29	146	14	17	4	1	813	
Industrial	-	-	13	3	4	2	1	-	-	23	
Irrigation	-	-	46	3	14	3	2	-	-	68	
<b>Total Meters/Accounts</b>	<b>2</b>	<b>7</b>	<b>13,441</b>	<b>80</b>	<b>484</b>	<b>33</b>	<b>37</b>	<b>8</b>	<b>3</b>	<b>14,095</b>	
<i>Hydraulic Capacity Factor<sup>2</sup></i>	<i>0.40</i>	<i>0.60</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>32.00</i>		
<b>Total Equivalent Meters</b>	<b>0.8</b>	<b>4.2</b>	<b>13,441</b>	<b>160</b>	<b>1,548</b>	<b>8</b>	<b>211.2</b>	<b>370</b>	<b>160</b>	<b>96</b>	<b>15,992</b>
<b>Monthly Fixed Service Charges</b>											
Customer Costs (\$/Acct/month) <sup>3</sup>	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63	\$8.63		
Capacity Costs (\$/Acct/month) <sup>4</sup>	\$5.75	\$8.63	\$14.38	\$28.75	\$46.00	\$92.01	\$143.76	\$287.52	\$460.03		
<b>Total Monthly Meter Charge</b>	<b>\$14.38</b>	<b>\$17.26</b>	<b>\$23.01</b>	<b>\$37.38</b>	<b>\$54.63</b>	<b>\$100.64</b>	<b>\$152.39</b>	<b>\$296.15</b>	<b>\$468.66</b>		

1. Number of meters by size and customer class for December 2020.

Source file: 2020 SEP-DEC Muni's Water Usage\_Manipulated.xlsx

2. Source file: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table B-1.

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.

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis/Rate Design

**Proposed Volume Charges**

**TABLE 39: UNIFORM VARIABLE WATER RATES**

<b>Proposed Volumetric Charges</b>		Customer Classes	Water Consumption (hcf/yr.) <sup>1</sup>	Commodity - Related Costs b	Conservation-Related Costs c	Target Rev. Req't from Vol. Charges d = b+c	Cost Per Unit of Water (\$/hcf)	Base Volumetric Rates (\$/hcf)	Estimated Revenue
a									
Single-Family	2,253,906	\$ 4,441,349	\$ 401,327	\$ 4,842,676	\$2.15	\$2.15	\$5,850,156		
Multi-Family	467,097	920,421	83,171	1,003,592	\$2.15				
Commercial	679,591	1,339,142	121,007	1,460,150	\$2.15				
Industrial	37,010	72,929	6,590	79,519	\$2.15				
Irrigation	115,456	227,507	20,558	248,065	\$2.15				
<b>Total</b>	<b>3,553,060</b>	<b>\$ 7,001,348</b>	<b>\$ 632,653</b>	<b>\$ 7,634,002</b>					

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: *MAS Meter Usage 12 Months\_Manipulated.xlsx*  
 September-December 2020: 2020 SEP-DEC Muni's Water Usage\_Manipulated.xlsx

CITY OF MADERA  
WATER RATE STUDY  
Water Drought Rates

TABLE 40 : EXPENSES DIRECTLY IMPACTED BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Expense Description	Commodity Costs <sup>1</sup>
	FY 2022/23
Total Commodity Costs Allocated in Function & Classification	\$ 6,904,274
<b>Adjusted Commodity Assigned Costs</b>	<b>\$ 6,904,274</b>

1. Costs change due to expected inflation.

TABLE 41 : YEAR 1 POTABLE NET REVENUE REQUIREMENTS BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

a	Percentage of Conservation	Total Consumption (hcf)	Base Commodity Cost	Impacted Commodity Cost	Savings	Adjusted Commodity Cost	e = b + d
			b	c	d = (-a) * c		
0%	3,553,060	\$ 7,634,002	\$ 6,904,274	\$ -	\$ 7,634,002		
10%	3,197,754	\$ 7,634,002	\$ 6,904,274	\$ (690,427)	\$ 6,943,574		
20%	2,842,448	\$ 7,634,002	\$ 6,904,274	\$ (1,380,855)	\$ 6,253,147		
30%	2,487,142	\$ 7,634,002	\$ 6,904,274	\$ (2,071,282)	\$ 5,562,719		
40%	2,131,836	\$ 7,634,002	\$ 6,904,274	\$ (2,761,710)	\$ 4,872,292		
50%	1,776,530	\$ 7,634,002	\$ 6,904,274	\$ (3,452,137)	\$ 4,181,864		
60%	1,421,224	\$ 7,634,002	\$ 6,904,274	\$ (4,142,565)	\$ 3,491,437		

TABLE 42 : YEAR 1 POTABLE NET REVENUE REQUIREMENTS BY FUTURE MANDATED WATER USE REDUCTION, IF DIRECTED BY COUNCIL

Drought Level	Level of Conservation	Uniform	Tier 1 Rate	Tier 2 Rate
No Level	Baseline <sup>1</sup>	\$2.15	\$1.97	\$2.37
Level 1	10%	\$2.37	\$2.17	\$2.62
Level 2	20%	\$2.42	\$2.20	\$2.70
Level 3	30%	\$2.49	\$2.24	\$2.81
Level 4	40%	\$2.58	\$2.29	\$2.96
Level 5	50%	\$2.71	\$2.35	\$3.16
Level 6	60%	\$2.90	\$2.46	\$3.47

1. Baseline level of consumption assumes 2020 consumption.

**CITY OF MADERA**  
**WATER RATE STUDY**  
**Water Drought Rates**

**TABLE 43 : LEVEL 1 - 10% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 10% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	2,028,515	63.5%	\$ 6,943,574	\$ 4,409,170	\$ 401,327	\$2.37
Multi-Family	420,388	13.1%	\$ 6,943,574	\$ 909,608	\$ 83,171	\$2.37
All Other Customers - Uniform	748,851	23.4%	\$ 6,943,574	\$ 1,624,796	\$ 148,155	\$2.37
<b>TOTAL</b>	<b>3,197,754</b>	<b>100%</b>		<b>\$ 6,943,574</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MARS Meter Usage 12 Months\_Manipulated.xlsx  
 September-December 2020: 2020 SEP-DEC Muni's Water Usage\_Manipulated.xlsx

**TABLE 44 : LEVEL 2 - 20% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 20% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	1,803,124	63.5%	\$ 6,253,147	\$ 3,972,976	\$ 401,327	\$2.42
Multi-Family	373,678	13.1%	\$ 6,253,147	\$ 822,060	\$ 83,171	\$2.42
All Other Customers - Uniform	665,645	23.4%	\$ 6,253,147	\$ 1,464,364	\$ 148,155	\$2.42
<b>TOTAL</b>	<b>2,842,448</b>	<b>100%</b>		<b>\$ 6,259,400</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MARS Meter Usage 12 Months\_Manipulated.xlsx  
 September-December 2020: 2020 SEP-DEC Muni's Water Usage\_Manipulated.xlsx

**CITY OF MADERA**  
**WATER RATE STUDY**  
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**TABLE 45 : LEVEL 3 - 30% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 30% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	1,577,734	63.5%	\$ 5,562,719	\$ 3,534,308	\$ 401,327	\$2.49
Multi-Family	326,968	13.1%	\$ 5,562,719	\$ 731,294	\$ 83,171	\$2.49
All Other Customers - Uniform	582,440	23.4%	\$ 5,562,719	\$ 1,302,680	\$ 148,155	\$2.50
	<b>2,487,142</b>	<b>100%</b>		<b>\$ 5,568,282</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MALS Meter Usage 12 Months\_Manipulated.xlsx  
 September-December 2020: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx

**TABLE 46 : LEVEL 4 - 40% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 40% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	1,352,343	63.5%	\$ 4,872,292	\$ 3,095,641	\$ 401,327	\$2.59
Multi-Family	280,258	13.1%	\$ 4,872,292	\$ 640,528	\$ 83,171	\$2.59
All Other Customers - Uniform	499,234	23.4%	\$ 4,872,292	\$ 1,140,995	\$ 148,155	\$2.58
	<b>2,131,836</b>	<b>100%</b>		<b>\$ 4,877,164</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MALS Meter Usage 12 Months\_Manipulated.xlsx  
 September-December 2020: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx

**CITY OF MADERA**  
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**TABLE 47 : LEVEL 5 - 50% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 50% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	1,126,953	63.5%	\$ 4,181,864	\$ 2,656,974	\$ 401,327	\$2.71
Multi-Family	233,549	13.1%	\$ 4,181,864	\$ 549,762	\$ 83,171	\$2.71
All Other Customers - Uniform	416,028	23.4%	\$ 4,181,864	\$ 979,310	\$ 148,155	\$2.71
	<b>1,776,530</b>	<b>100%</b>		<b>\$ 4,186,046</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MALS Meter Usage 12 Months\_Manipulated.xlsx  
September-December 2020: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx

**TABLE 48 : LEVEL 6 - 60% CONSERVATION**

Rate Structure Type	Water Consumption (hcf/yr.) <sup>1</sup> a	Percentage of Water Consumption b	Adjusted Commodity Cost c	Commodity Cost at 60% Conservation d = b x c	Conservation Related Costs e	Drought Rates (d+e)/a
<b>Residential Uniform</b>						
Single-Family	901,562	63.5%	\$ 3,491,437	\$ 2,218,306	\$ 401,327	\$2.90
Multi-Family	186,839	13.1%	\$ 3,491,437	\$ 458,996	\$ 83,171	\$2.90
All Other Customers - Uniform	332,823	23.4%	\$ 3,491,437	\$ 817,626	\$ 148,155	\$2.90
	<b>1,421,224</b>	<b>100%</b>		<b>\$ 3,494,928</b>	<b>\$ 632,653</b>	

1. Consumption by customer class from January-December 2020.

Source files: September 2019 through August 2020: MALS Meter Usage 12 Months\_Manipulated.xlsx  
September-December 2020: 2020 SEP-DEC Munis Water Usage\_Manipulated.xlsx

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis/Rate Design

**Current & Proposed Rates**

**TABLE 49 : PROPOSED WATER RATES**

Water Rate Schedule		Current Rates	Proposed Rates			
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b><i>Fixed Meter Charges</i></b>						
<u>Monthly Fixed Service Charges:</u>						
5/8 inch	\$16.88	\$14.38	\$14.52	\$14.67	\$14.67	\$14.67
3/4 inch	\$19.09	\$17.26	\$17.43	\$17.60	\$17.60	\$17.60
1 inch	\$23.51	\$23.01	\$23.24	\$23.47	\$23.47	\$23.47
1.5 inch	\$34.56	\$37.38	\$37.75	\$38.13	\$38.13	\$38.13
2 inch	\$47.82	\$54.63	\$55.18	\$55.73	\$55.73	\$55.73
3 inch	\$89.81	\$100.64	\$101.65	\$102.67	\$102.67	\$102.67
4 inch	\$151.69	\$152.39	\$153.91	\$155.45	\$155.45	\$155.45
6 inch	\$299.76	\$296.15	\$299.11	\$302.10	\$302.10	\$302.10
8 inch	\$542.86	\$468.66	\$473.35	\$478.08	\$478.08	\$478.08
<b><i>Commodity Charges</i></b>						
<u>Rate per hcf of Water Consumed:</u>						
Non-Residential Residential Uniform Rates	\$2.41 N/A	\$2.15 \$2.15	\$2.17 \$2.17	\$2.19 \$2.19	\$2.19 \$2.19	\$2.19 \$2.19

**CITY OF MADERA**  
**WATER RATE STUDY**  
 Water Cost of Service Analysis/Rate Design

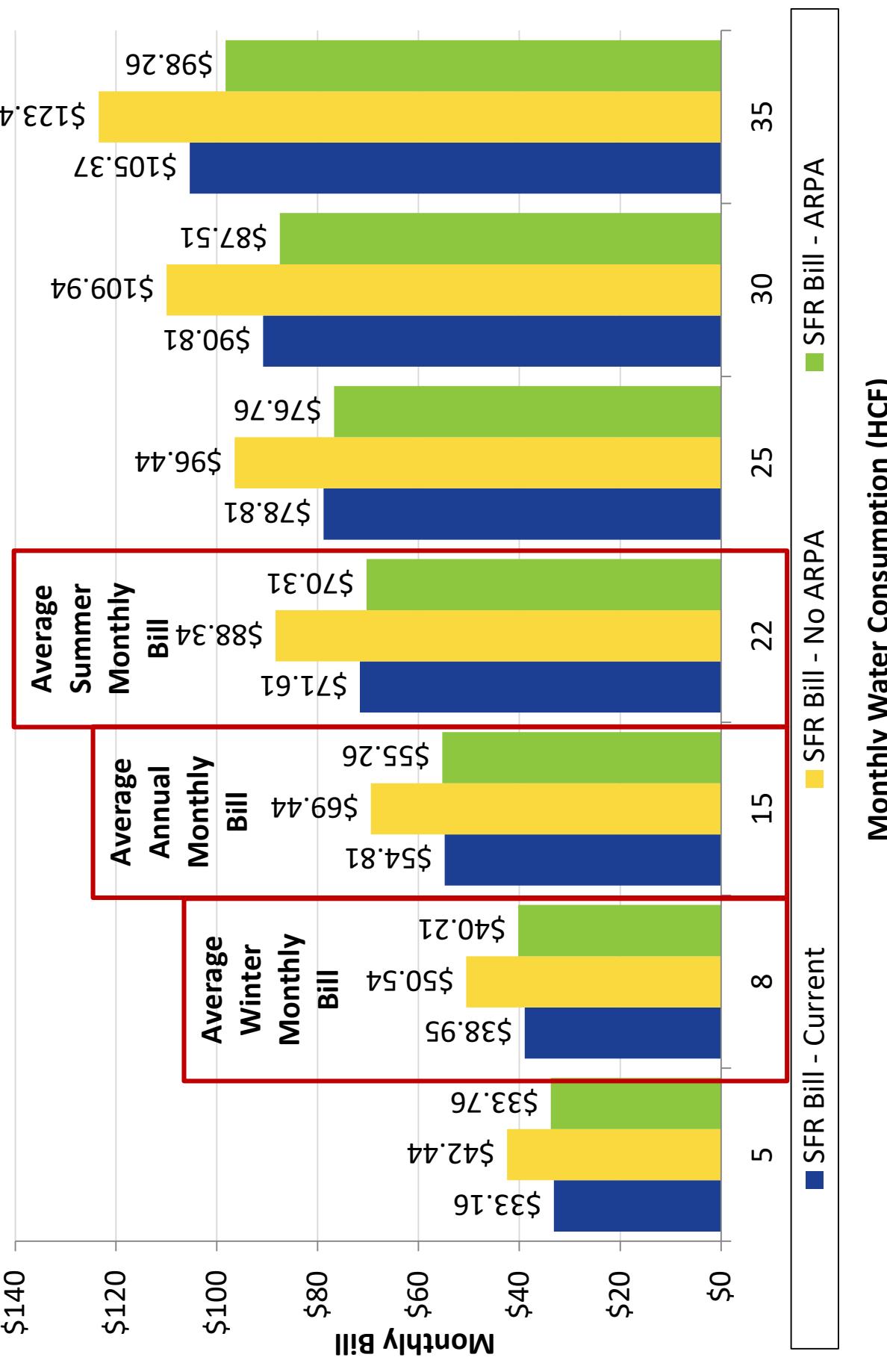
**Current & Proposed Rates**

**TABLE 50 : PROPOSED WATER DROUGHT RATES**

Water Rate Schedule	Current Rates	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Drought Rate Charges</b>						
Rate per hcf of Water Consumed:						
Non-Residential	N/A	\$2.37	\$2.39	\$2.41	\$2.41	\$2.41
10% Conservation	N/A	\$2.42	\$2.44	\$2.46	\$2.46	\$2.46
20% Conservation	N/A	\$2.49	\$2.51	\$2.54	\$2.54	\$2.54
30% Conservation	N/A	\$2.58	\$2.61	\$2.64	\$2.64	\$2.64
40% Conservation	N/A	\$2.71	\$2.74	\$2.77	\$2.77	\$2.77
50% Conservation	N/A	\$2.90	\$2.93	\$2.96	\$2.96	\$2.96
60% Conservation	N/A	\$2.37	\$2.39	\$2.41	\$2.41	\$2.41
Residential Uniform Rates						
10% Conservation	N/A	\$2.42	\$2.44	\$2.46	\$2.46	\$2.46
20% Conservation	N/A	\$2.49	\$2.51	\$2.54	\$2.54	\$2.54
30% Conservation	N/A	\$2.58	\$2.61	\$2.64	\$2.64	\$2.64
40% Conservation	N/A	\$2.71	\$2.74	\$2.77	\$2.77	\$2.77
50% Conservation	N/A	\$2.90	\$2.93	\$2.96	\$2.96	\$2.96
60% Conservation	N/A					

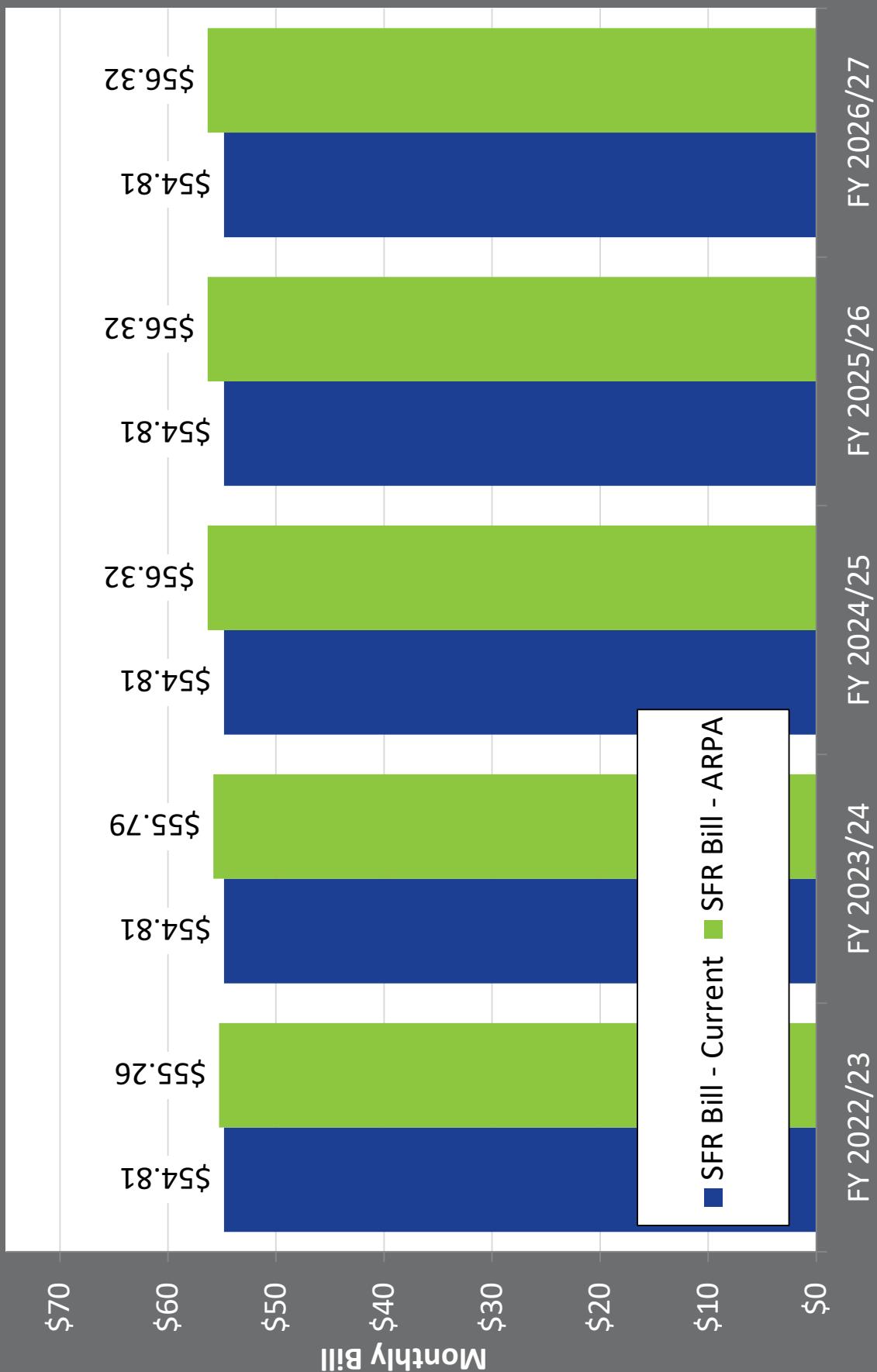
## Residential Water Bill Comparison

### Current vs. Proposed Rates (1-inch meter)

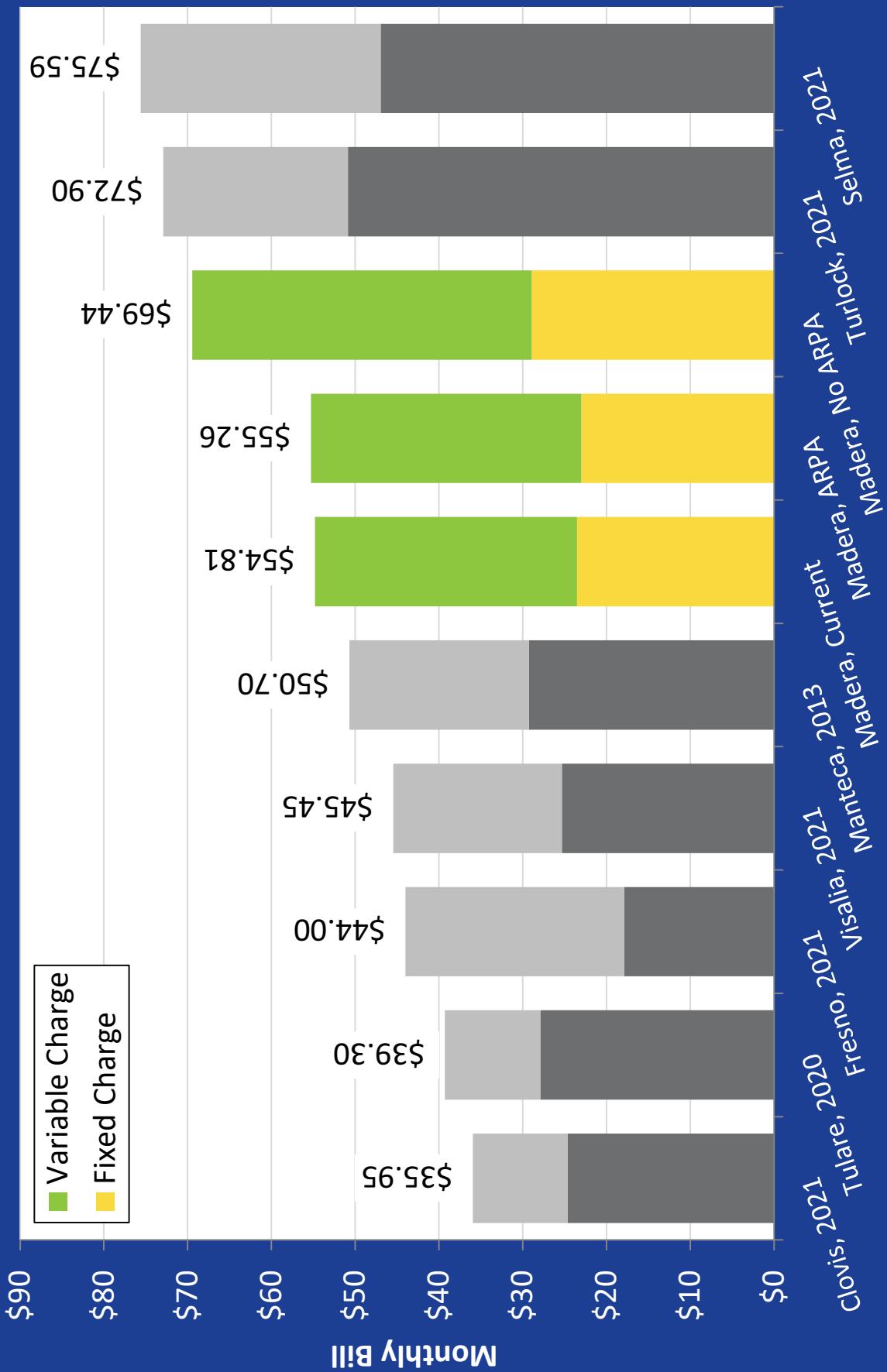


## Residential Water Bill Comparison

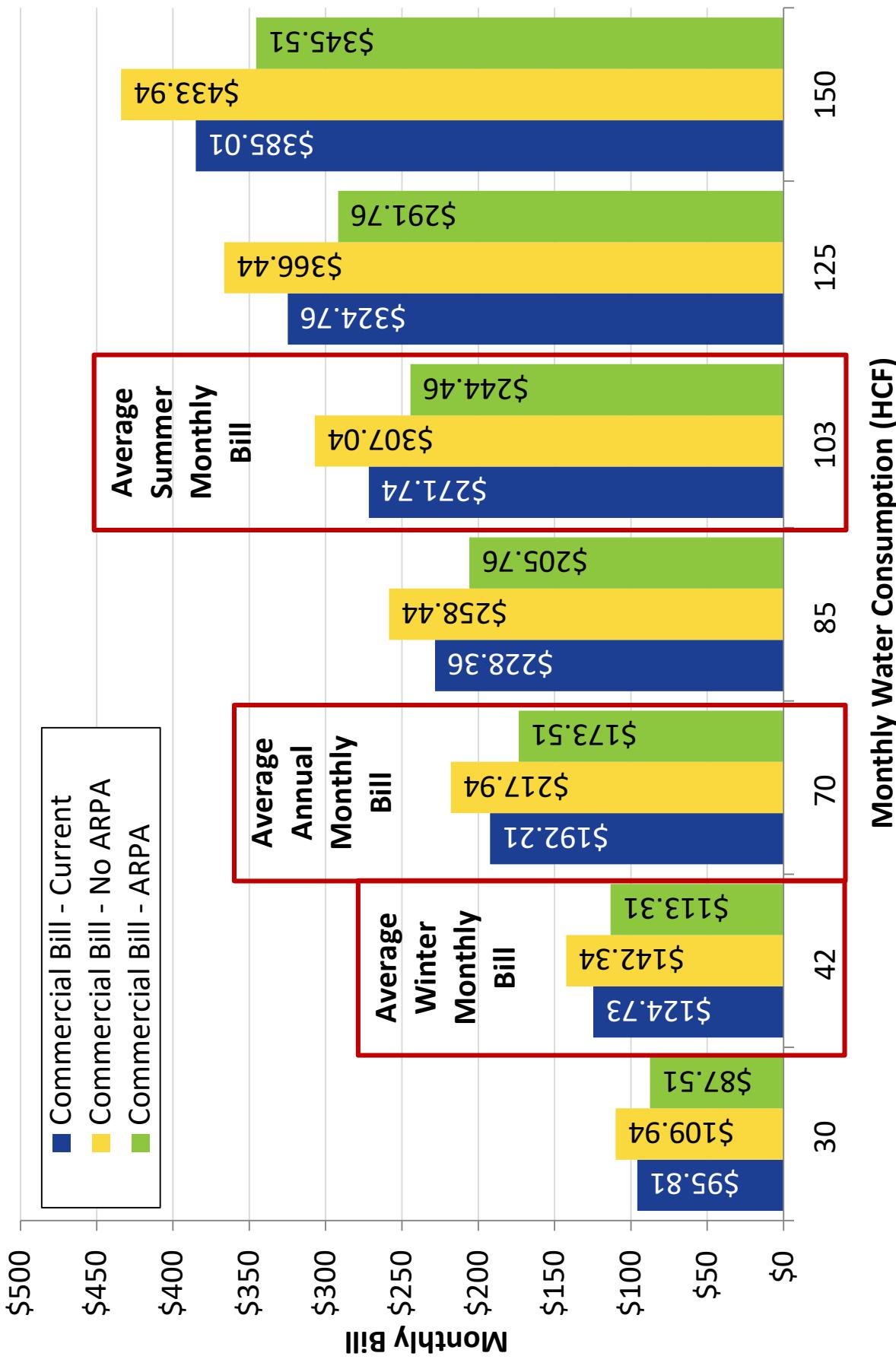
### Current vs. Proposed Rates (1-inch meter with 15 hcf)



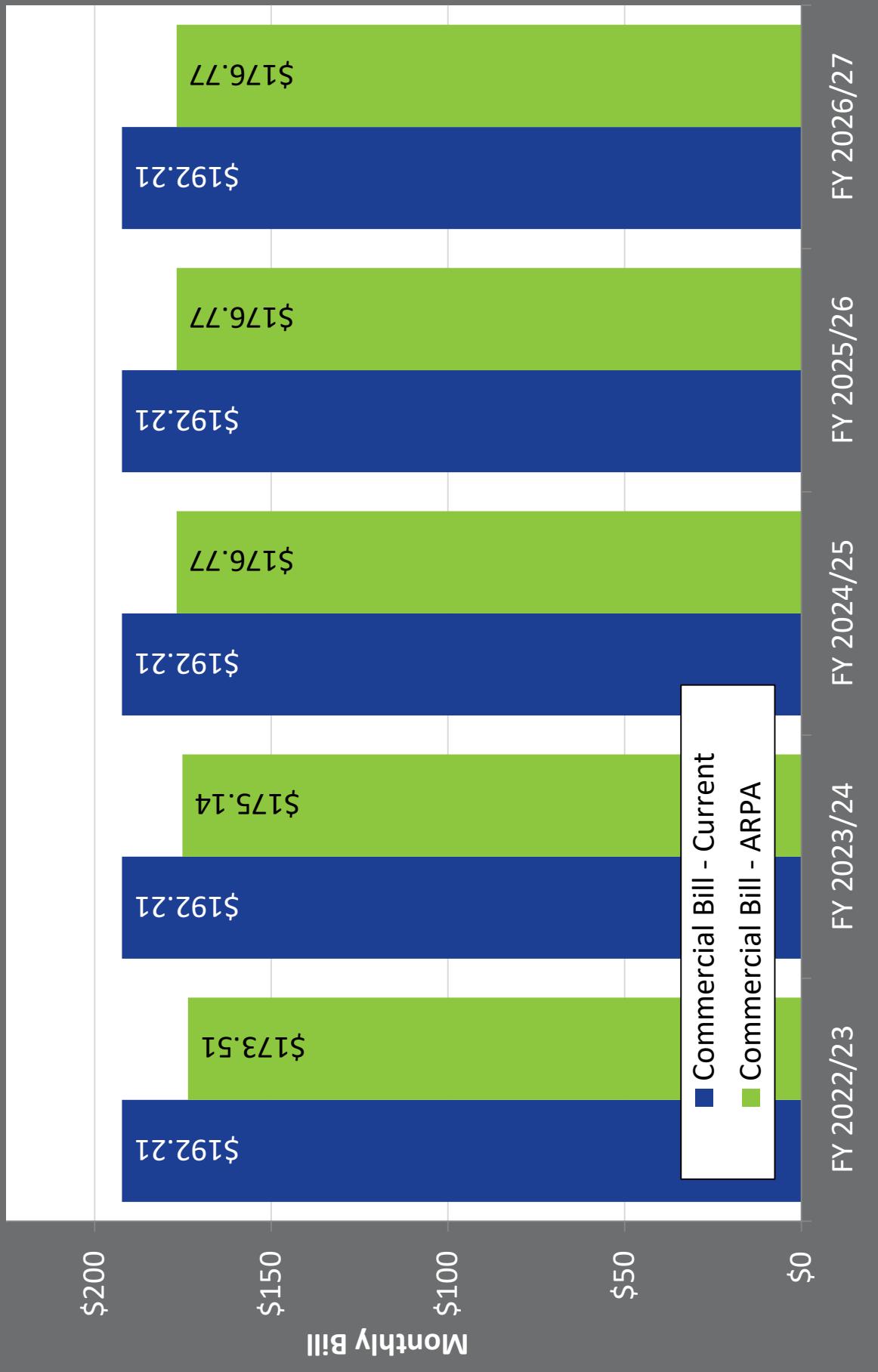
## Single-Family Residential Regional Water Bill Comparison (1-inch meter with 15 hcf)



## Commercial Water Bill Comparison Current vs. Proposed Rates (1-inch meter)



## Commercial Water Bill Comparison Current vs. Proposed Rates (1-inch meter with 70 hcf)



## Commercial Regional Water Bill Comparison (1-inch meter with 55 hcf)

