
CITY OF MODESTO



WATER RATE STUDY DRAFT REPORT

June 26, 2023



BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS



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June 26, 2023

Utilities Department, City of Modesto
1010 Tenth Street, 4th Floor, Suite 4600
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Attention: William Wong, Director of Utilities

Re: Water Rate Study

Bartle Wells Associates is pleased to submit to the City of Modesto the attached Draft Water Rate Study. The study presents BWA's analysis of the operating and non-operating expenses of the City's water system and provides a five-year cash flow projection. The primary purpose of this study was to analyze the City's water enterprise and make recommendations that would achieve financial sustainability. Another important purpose of this study was to review rates to ensure that they adhere to the State's legal requirements.

BWA finds that the rates and charges proposed in our report reflect the cost-of-service for each customer, follow generally accepted rate design criteria, and adhere to the substantive requirements of Proposition 218. BWA believes the proposed rates are fair and reasonable to the City's customers.

Please contact us with any future questions about this study and the recommended water rates.

Sincerely,

Douglas Dove, PE, CIPMA
Principal/ President

Erik Helgeson, MBA
Vice President

Contents

- 1 Executive summary 1**
 - 1.1 Introduction1
 - 1.2 Rate Study Objectives1
 - 1.3 Cash Flow Projection Scenarios2
 - 1.4 Water Rate Recommendations per Scenario2

- 2 Background, Objectives, and Legal Requirements 5**
 - 2.1 Rate Study Objectives5
 - 2.2 Rate-Study Process6
 - 2.3 Constitutional Requirements for Rates.....6
 - 2.3.1 Article 13D, Section 6.....6
 - 2.3.2 Article 10, Section 27
 - 2.4 Statute of Limitations.....7

- 3 Projected Water Demand and Customer Characteristics 8**
 - 3.1 Projected Water Demand.....8
 - 3.2 Water Services and Equivalent Capacity.....8

- 4 Water Financial Plan.....10**
 - 4.1 Water Financial Overview 10
 - 4.2 Key Drivers of Rate Increases 10
 - 4.3 Financial Plan Assumptions 11
 - 4.4 Cash Flow Projections 11
 - 4.5 Cash Flow Projection Scenarios 12
 - 4.6 Cash Flow Projection for Scenario 1 - Low Capital, No Debt..... 12
 - 4.7 Cash Flow Projection for Scenario 2 - Full Capital with New Debt 15
 - 4.8 Cash Flow Projection for Scenario 3 - Full Capital, No Debt..... 18
 - 4.9 Scenario Projected Cashflow Comparison 21

- 5 Cost-of-Service Rate Derivation22**
 - 5.1 Functional Allocation 23
 - 5.2 Rate Derivation 25
 - 5.3 Proposed Water Rates 27

- 6 Regional Residential Bill Comparison30**

7 Drought Rates31

8 Conclusion and Recommendations.....33

8.1 Conclusion33

8.2 Recommendations.....33

Appendix A - Scenario 1 Water Rate Study Tables

Appendix B - Scenario 2 Water Rate Study Tables

Appendix C - Scenario 3 Water Rate Study Tables

LIST OF TABLES

Table 1 – Proposed Scenario 1 Water Rates	2
Table 2 – Proposed Scenario 2 Water Rates	3
Table 3 – Proposed Scenario 3 Water Rates	4
Table 4 – Historic and Projected Potable Supply and Metered Demand	8
Table 5 – Water Services and Meter Equivalent Units	9
Table 6 – Scenario 1 Cash Flow Projection Summary	12
Table 7 – Scenario 1 Detailed Cash Flow Projections	14
Table 8 – Scenario 2 Cash Flow Projection Summary	15
Table 9 – Scenario 2 Detailed Cash Flow Projections	17
Table 10 – Scenario 3 Cash Flow Projection Summary	18
Table 11 – Scenario 3 Detailed Cash Flow Projections	20
Table 12 – Scenario Projected Cashflow Comparison	21
Table 13 – Scenario 1 Functional Allocation	24
Table 14 – Scenario 2 Functional Allocation	24
Table 15 – Scenario 3 Functional Allocation	24
Table 16 – Scenario 1 Rate Derivation	25
Table 17 – Scenario 2 Rate Derivation	26
Table 18 – Scenario 3 Rate Derivation	26
Table 19 – Proposed Scenario 1 Water Rates	27
Table 20 – Proposed Scenario 2 Water Rates	28
Table 21 – Proposed Scenario 3 Water Rates	29
Table 22 – Proposed Scenario 1 Drought Rates	31
Table 23 – Proposed Scenario 2 Drought Rates	32
Table 24 – Proposed Scenario 3 Drought Rates	32

LIST OF FIGURES

Figure 1 – Cost-of-Service Rate Study Process	6
Figure 2 – Scenario 1 Projected Cashflow Graph	13
Figure 3 – Scenario 2 Projected Cashflow Graph	16
Figure 4 – Scenario 3 Projected Cashflow Graph	19
Figure 5 – Residential Bill Comparison	30

1 EXECUTIVE SUMMARY

1.1 Introduction

The City of Modesto provides water service to over 74,000 accounts throughout the City of Modesto, Salida, Empire, Grayson, Del Rio, and portions of Ceres (Walnut Manor) and Turlock. The City of Modesto's water sources are groundwater and treated surface water purchased from the Modesto Irrigation District.

The revenues from the City's water utility are primarily derived from charges for services. The City must establish rates and charges adequate to fund the cost of providing water services, which includes costs for operations and maintenance, as well as capital improvements needed to keep the City's utility infrastructure in a safe and reliable operating condition.

The City has provided proactive financial stewardship by raising rates to keep revenues in line with the costs of providing water service. Those rate increases have enabled the City to maintain its financial health.

The City's water utility is a financially self-supporting enterprise, where revenues are derived primarily from water service charges. As such, the City's water rates must be set at adequate levels to fund the costs of providing service and:

- Fund ongoing operating and maintenance expenses
- Address regulatory requirements
- Fund the capital improvement projects, related debt service, and associated increased operating costs
- Provide funding for water system maintenance and upgrades

The prior water rate increases strengthened the financial condition of the water enterprise. However, current rates are not adequate to fund the needed improvements and meet regulatory water quality and supply requirements.

1.2 Rate Study Objectives

The City has historically adopted rate increases in order to keep revenues in line with the escalating costs of providing service. Therefore, in 2020, the City retained BWA to develop a cost-of-service based water rate study. Key goals and objectives of this study include developing water rates that:

- Recover the costs of providing service, including operating, capital, and debt funding needs;
- Are proportionate, fair, and equitable to all customers;
- Are easy to understand and implement;
- Comply with the substantive requirements of the California Constitution, Article 13D, Section 6 (which was adopted by the voters as Proposition 218 in 1996) and the general mandate of Article 10, Section 2 that prohibits the wasteful use of water;
- Support the long-term operational and financial stability of the City.

BWA worked closely with City staff to incorporate information and input, evaluate alternatives, and develop recommendations. This report summarizes key findings and recommendations for water rates over the next five years.

1.3 Cash Flow Projection Scenarios

This report explores the financial plan and rates for three different capital scenarios which are as follows:

- Scenario 1 - Low Capital, No Debt. This scenario projects inflation adjusted capital spending to total \$138 million over the next five years, of which all will be cash funded; resulting in an average cash expense of \$27.6 million per year.
- Scenario 2 - Full Capital with Debt. This scenario projects inflation adjusted capital spending to total \$185 million over the next five years, of which \$145 million will be cash funded; resulting in an average cash expense of \$29 million per year. The remaining \$40 million is projected to be debt financed.
- Scenario 3 - Full Capital, No Debt. This scenario projects inflation adjusted capital spending to total \$185 million over the next five years, of which all will be cash funded; resulting in an average cash expense of \$37 million per year.

1.4 Water Rate Recommendations per Scenario

The following tables show the recommended water rates for each scenario.

Table 1 – Proposed Scenario 1 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
3/4"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
1"	\$36.83	\$38.56	\$40.30	\$42.11	\$44.00	\$45.98
1.5"	\$65.32	\$68.74	\$71.83	\$75.06	\$78.44	\$81.97
2"	\$99.50	\$104.96	\$109.68	\$114.62	\$119.78	\$125.17
3"	\$207.73	\$219.66	\$229.54	\$239.87	\$250.66	\$261.94
4"	\$367.24	\$388.68	\$406.17	\$424.45	\$443.55	\$463.51
6"	\$748.90	\$793.14	\$828.83	\$866.13	\$905.11	\$945.84
8"	\$1,375.53	\$1,457.17	\$1,522.74	\$1,591.26	\$1,662.87	\$1,737.70
10"	\$2,173.05	\$2,302.31	\$2,405.91	\$2,514.18	\$2,627.32	\$2,745.55
12"	\$2,856.63	\$3,026.71	\$3,162.91	\$3,305.24	\$3,453.98	\$3,609.41

Table 2 – Proposed Scenario 2 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
3/4"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
1"	\$36.83	\$38.55	\$40.28	\$42.09	\$43.98	\$45.96
1.5"	\$65.32	\$68.85	\$71.95	\$75.19	\$78.57	\$82.11
2"	\$99.50	\$105.21	\$109.94	\$114.89	\$120.06	\$125.46
3"	\$207.73	\$220.35	\$230.27	\$240.63	\$251.46	\$262.78
4"	\$367.24	\$390.03	\$407.58	\$425.92	\$445.09	\$465.12
6"	\$748.90	\$796.05	\$831.87	\$869.30	\$908.42	\$949.30
8"	\$1,375.53	\$1,462.65	\$1,528.47	\$1,597.25	\$1,669.13	\$1,744.24
10"	\$2,173.05	\$2,311.05	\$2,415.05	\$2,523.73	\$2,637.30	\$2,755.98
12"	\$2,856.63	\$3,038.25	\$3,174.97	\$3,317.84	\$3,467.14	\$3,623.16

Table 3 – Proposed Scenario 3 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.14	\$2.28	\$2.43	\$2.59	\$2.76
Drought (\$/CCF)		\$2.49	\$2.65	\$2.82	\$3.00	\$3.20
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
3/4"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
1"	\$36.83	\$39.40	\$41.96	\$44.69	\$47.59	\$50.68
1.5"	\$65.32	\$70.98	\$75.59	\$80.50	\$85.73	\$91.30
2"	\$99.50	\$108.88	\$115.96	\$123.50	\$131.53	\$140.08
3"	\$207.73	\$228.90	\$243.78	\$259.63	\$276.51	\$294.48
4"	\$367.24	\$405.76	\$432.13	\$460.22	\$490.13	\$521.99
6"	\$748.90	\$828.98	\$882.86	\$940.25	\$1,001.37	\$1,066.46
8"	\$1,375.53	\$1,523.81	\$1,622.86	\$1,728.35	\$1,840.69	\$1,960.33
10"	\$2,173.05	\$2,408.15	\$2,564.68	\$2,731.38	\$2,908.92	\$3,098.00
12"	\$2,856.63	\$3,166.15	\$3,371.95	\$3,591.13	\$3,824.55	\$4,073.15

2 BACKGROUND, OBJECTIVES, AND LEGAL REQUIREMENTS

The City of Modesto provides water service to over 74,000 accounts throughout the City of Modesto, Salida, Empire, Grayson, Del Rio, and portions of Ceres (Walnut Manor) and Turlock. The City sold the water system serving Hickman and Waterford to the City of Waterford in 2015. The City of Modesto's water sources are groundwater and treated surface water purchased from the Modesto Irrigation District.

The revenues from the City's water utility are primarily derived from charges for services. The City must establish rates and charges adequate to fund the cost of providing water services, including costs for operations and capital improvements needed to keep the City's utility infrastructure in a safe and reliable operating condition.

The City has provided proactive financial stewardship by raising rates to keep revenues in line with the costs of providing water service. Those rate increases have enabled the City to maintain its financial health.

The City's water utility is a financially self-supporting enterprise. Revenues are derived primarily from water service charges. As such, the City's water rates must be set at adequate levels to fund the costs of providing service and:

- Fund ongoing operating and maintenance expenses
- Address regulatory requirements
- Fund the capital improvement projects, related debt service and associated increased operating costs
- Provide funding for water system maintenance and upgrades

The prior water rate increases strengthened the financial condition of the water enterprise. However, current rates are not adequate to fund the needed improvements and meet regulatory water quality and supply requirements.

2.1 Rate Study Objectives

In 2020, the City retained BWA to develop a cost-of-service based water rate study. The City has historically adopted rate increases in order to keep revenues in line with the escalating costs of providing service. Key goals and objectives of this study include developing water rates that:

- Recover the costs of providing service, including operating, capital, and debt funding needs;
- Are proportionate, fair and equitable to all customers;
- Are easy to understand and implement;
- Comply with the substantive requirements of the California Constitution, Article 13D, Section 6 (which was adopted by the voters as Proposition 218 in 1996) and the general mandate of Article 10, Section 2 that prohibits the wasteful use of water;
- Support the long-term operational and financial stability of the City both in normal and drought conditions.

2.2 Rate-Study Process

The general process used for this cost-of-service rate study is summarized in the following diagram.

Figure 1 – Cost-of-Service Rate Study Process



Key elements of the study include:

- 1) **Project Initiation and Data Collection** – Review financial policies; collect financial and other relevant data; and review rate structures;
- 2) **Demand Analysis** – Analyze past water demands and customer characteristics to forecast future demands;
- 3) **Long Range Financial Plans** – Develop financial projections to evaluate annual revenue requirements from rates and the overall level of rate increases needed to fund the costs of providing service and support long-term financial stability;
- 4) **Cost Allocation** – Group the City’s costs in terms of the function they serve as a basis to proportionally allocate the revenue requirement from rates;
- 5) **Cost-of-Service Rate Design** – Develop rates that proportionately recover costs; and
- 6) **Prop 218 Process** – Ensure compliance with the substantive and procedural requirements of Proposition 218.

2.3 Constitutional Requirements for Rates

The water rates proposed in this report are designed to comply with two key articles of the California Constitution: Article 13D and Article 10, as explained below.

2.3.1 Article 13D, Section 6

Proposition 218 was adopted by California voters in 1996 and added Articles 13C and 13D to the California Constitution. Article 13D, Section 6 governs property-related charges, which the California Supreme Court has ruled, includes rates imposed for water delivered through pipes connected to property. Article 13D, Section 6 establishes both a) procedural requirements for imposing or increasing property-related charges, and b)

substantive requirements for those charges. Article 13D requires voter approval for new or increased property-related charges but exempts rates for water, wastewater, and garbage service from this voting requirement if rates are adopted by the appropriate procedure and meet the substantive requirements. This report recommends water rates designed to comply with the substantive requirements of Proposition 218.

The substantive requirements of Article 13D, section 6 require property-related charges, such as the City's water rates, to meet the following conditions:

- 1) Revenues derived from the fee or charge shall not exceed the costs required to provide the property-related service.
- 2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- 4) No fee or charge may be imposed for a service unless that service is used by, or immediately available to the property in question.
- 5) No fee or charge may be imposed for general governmental services, such as police or fire services, where the service is available to the public at large in substantially the same manner as it is to property owners.

2.3.2 Article 10, Section 2

Article 10, Section 2 of the California Constitution states that:

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

2.4 Statute of Limitations

Pursuant to California Government Code 53759, there is a 120-day statute of limitations for challenging any new, increased, or extended fees. This statute of limitations applies to the water rates proposed in this rate study and is included in the Proposition 218 Notice.

3 PROJECTED WATER DEMAND AND CUSTOMER CHARACTERISTICS

3.1 Projected Water Demand

Projected FY 23/24 water demand is based on the average metered demand for the last five fully recorded years.

Table 4 – Historic and Projected Potable Supply and Metered Demand

Customer Data	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>
System Totals							
Total Accounts (#)	73,469	73,629	73,833	74,137	74,413	74,560	74,707
Growth (%)		0.22%	0.28%	0.41%	0.37%	0.20%	0.20%
Annual metered use (CCF) per meter	278	265	277	288	279	277	277
Annual production (CCF) per account Billed, Metered	298	285	303	309	298	299	299
Consumption (CCF) Total Estimated	18,639,728	18,222,157	19,509,688	20,697,851	20,568,355	20,562,541	20,693,839
Consumption (CCF) Total Water	20,710,040	19,789,661	20,643,245	21,464,258	20,796,593	20,676,660	20,693,839
Production (CCF)	21,919,447	20,965,305	22,397,473	22,916,498	22,203,522	22,277,633	22,328,428

Source: Actual water supply, water loss, and metered water sales provided by the City.

3.2 Water Services and Equivalent Capacity

Each connection to the City’s water system is considered one service. Some of the City’s fixed costs are reasonably recovered on a per-customer basis, while others should be recovered based on the capacity required to serve each customer. The size of a customer’s meter reflects the demand they require of the water system’s capacity. A significant percentage of the costs of any water system is related to its requirement to deliver water to any customer instantaneously at any time, up to the maximum safe flow capacity of a customer’s meter. Simply put, as the size of a customer’s water meter increases, the instantaneous demand it can place on the City’s water system increases.

Fixed charges for each meter size are based on the capacity of a meter, relative to the capacity of smallest meter size (e.g., a 3/4-inch meter), in the City’s system. In this study, the relative capacity of a meter size, referred to as a meter equivalent ratio (MEU), is calculated by dividing the capacity of a given meter size by the capacity of a 3/4" meter. The meter equivalent ratios used are proportional to the maximum safe flow of a 3/4" meter. The sum of all MEU’s reflects the total capacity of the City.

The following table contains the counts of water services and calculations of meter equivalent units. Total meter equivalent units for each meter size are derived by multiplying the meter equivalent ratio by the number of services at each meter size.

Table 5 – Water Services and Meter Equivalent Units

Meter Size*	Services	Meter Equivalent Ratio**	Meter Equivalent Units	Annual Meter Equivalent Units
5/8"	87	1.0	87.0	1,044.0
3/4"	13,459	1.0	13,459.0	161,508.0
1"	57,153	1.7	95,255.0	1,143,060.0
1.5"	1,168	3.3	3,893.3	46,720.0
2"	2,176	5.3	11,605.3	139,264.0
3"	158	11.7	1,843.3	22,120.0
4"	289	21.0	6,069.0	72,828.0
6"	141	43.3	6,110.0	73,320.0
8"	64	80.0	5,120.0	61,440.0
10"	11	126.7	1,393.3	16,720.0
12"	1	166.7	166.7	2,000.0
Total	74,707.0		145,002.0	1,740,024.0

* Customer data as of June 2022 provided by staff

** Capacity factors based on AWWA operating capacity standards by meter size

4 WATER FINANCIAL PLAN

4.1 Water Financial Overview

BWA conducted an independent evaluation of water enterprise finances and concluded the previous rate increases have put the water enterprise in a sound financial position. Continual, gradual increases are projected to maintain its strong financial position where operating reserves exceed six months of operating costs and the debt service coverage ratio exceeds the target of 2.0.

The City relies almost solely on revenues from water rates to fund the costs of providing service. As such, water rates must be set at levels adequate to fund the costs of operating and maintaining the water system, fund necessary capital improvements to keep the water system in good operating condition, and meet the City's financial policies.

4.2 Key Drivers of Rate Increases

The City is facing several manageable financial challenges that will drive the need for rate increases in upcoming years. Key drivers of future rate increases are summarized below.

Capital Improvement Funding Needs

The City takes a proactive approach to maintaining its water system, which requires ongoing repair and improvement projects. This report explores the financial plan and rates for three different capital scenarios which are described in Section 4.5.

Ongoing Operating Cost Inflation

The City faces annual cost inflation due to annual increases in a range of expenses including staffing, utilities, insurance, supplies, etc. On top of rate increases needed for capital improvements, annual rate increases are needed to keep revenues aligned with cost inflation and prevent rates from falling behind the cost of providing service. Water cost inflation has historically been higher than the Consumer Price Index (CPI) for consumer goods and services. Historically inflation has typically remained consistently around 3%, but recently inflation has reached forty-year highs with the CPI and ENR CCI exceeding 7% in 2022. It is not expected that inflation will remain at such high levels in the future and for the purposes of this rate study average annual inflation is projected to be 5%; in-line with the City's budget inflationary projections.

Water Reserve Funds

Maintaining a prudent minimal level of fund reserves provides a financial cushion for dealing with unanticipated expenses, revenue shortfalls, and non-catastrophic emergency capital repairs. The City's financial reserve policies include a minimum reserve target equal to 25% of its operating costs. BWA developed a financial plan designed to maintain prudent reserve levels that are in-line with water utility industry standards.

Debt Service Coverage

Most municipal debt requires that the issuer generate net operating revenues of 1.25 times the total annual debt service payment or greater. This is referred to as "debt service coverage". To support a strong credit rating and

good financial health, the current City policy requires a debt coverage ratio of 1.5 times the annual payment or greater, and the City’s financial advisors recommend a debt coverage ratio of 2.0.

4.3 Financial Plan Assumptions

The financial projections incorporate the latest information available and a number of reasonable and slightly conservative assumptions for planning purposes. Key assumptions include:

Revenue Assumptions

- Water rate revenues are based on estimated revenues for the current fiscal year.
- Rates proposed to be adopted in August 2023 will be effective on October 1, 2023, with rate adjustments planned to become effective on October 1 of each of the subsequent four years.
- Water sales revenues are based on the projected volume of water sales and projected water rates.
- The City is anticipating minimal growth. To be conservative and ensure revenues will be sufficient, BWA assumed 0.2% annual growth based on the lowest annual growth over the past five years.
- Interest earnings are projected based on the annual beginning fund balance multiplied by the projected interest rate. The interest rate projections are based on recent and anticipated interest rates.
- Discretionary “non-rate” revenues which support rate assistance programs, such as the low-income and medical disability waiver programs, were not included in projected revenues.

Expense Assumptions

- Operating and maintenance costs are primarily based on the 2022/23 budget.
- Operating costs are projected to escalate at 5% per year to account for cost inflation.
- Debt service projections are based on outstanding debt schedules and projected issuances of new debt.
- Capital improvement costs are based on the most recent engineering cost estimates. Capital costs include a 5% annual construction cost inflation factor for the next five years.

4.4 Cash Flow Projections

Long-term cash-flow projections were developed based on assumptions and key drivers of future rate increases described above. The projections were used to determine the water utility’s annual revenue requirements and project required water rate revenue increases. The long-term cash-flow projections incorporate the latest information available from the City’s budget, annual reports, capital spending projections, and metered water demand data, as well as a number of reasonable assumptions developed with input from the City. The overall rate revenue increases shown for each of the following scenarios are designed to fund the City’s cost of providing service, maintain roughly balanced budgets, maintain healthy debt service coverage, and maintain prudent reserves. The projections indicate the need for increases for water rate revenues for each of the next five fiscal years. Actual impacts to customers’ water bills will vary based on meter size and water use, due to the outcome of the updated cost-of-service analysis.

4.5 Cash Flow Projection Scenarios

This report explores the financial plan and rates for three different capital scenarios which are as follows:

- Scenario 1 - Low Capital, No Debt. This scenario projects inflation adjusted capital spending to total \$138 million over the next five years, of which all will be cash funded; resulting in an average cash expense of \$27.6 million per year.
- Scenario 2 - Full Capital with Debt. This scenario projects inflation adjusted capital spending to total \$185 million over the next five years, of which \$145 million will be cash funded; resulting in an average cash expense of \$29 million per year. The remaining \$40 million is projected to be debt financed.
- Scenario 3 - Full Capital, No Debt. This scenario projects inflation adjusted capital spending to total \$185 million over the next five years, of which all will be cash funded; resulting in an average cash expense of \$37 million per year.

4.6 Cash Flow Projection for Scenario 1 - Low Capital, No Debt

In future years, the City can re-evaluate its finances and revenue requirements and adjust rates as needed based on updated projections. However, while the City always has the flexibility to implement rate adjustments that are lower than adopted pursuant to Proposition 218, future rates cannot exceed adopted increases without going through the Proposition 218 process again. Rates adopted pursuant to Proposition 218 are essentially future rate caps.

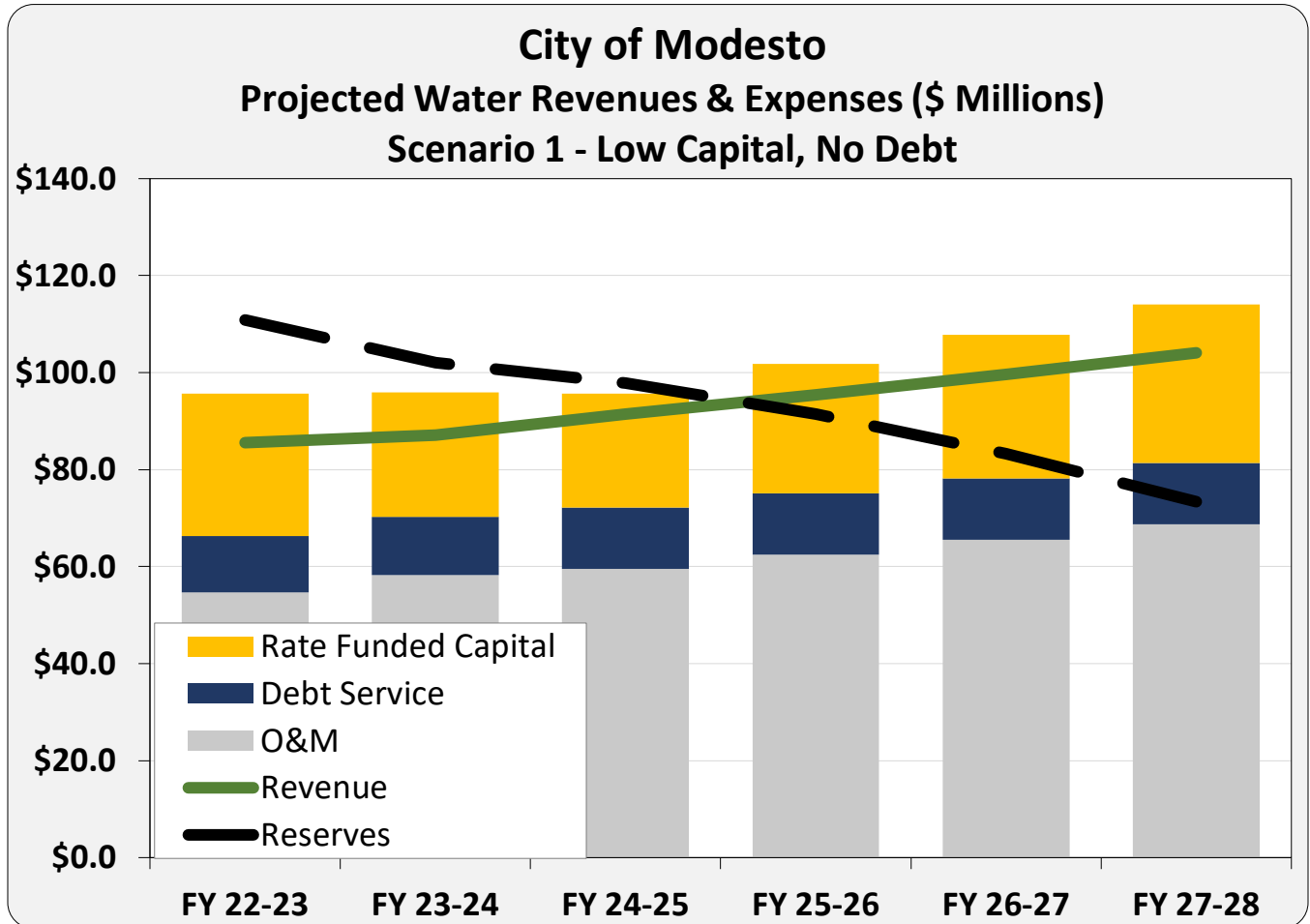
A summary of the key elements of the long-term cash-flow projections for this scenario is displayed in the following table.

Table 6 – Scenario 1 Cash Flow Projection Summary

Scenario 1 - Low Capital, No Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$0	\$0
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$23,489,550</u>	<u>\$26,719,088</u>	<u>\$29,617,836</u>	<u>\$32,593,800</u>
Total Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800
Ending Reserves	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765	\$73,390,177
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%

The following figure visually depicts the cash-flow projections with the proposed rate increases for the next five years. Projected expenses are summarized into key categories. The figure also shows the projected fund reserves at the end of each fiscal year.

Figure 2 – Scenario 1 Projected Cashflow Graph



Detailed, long-term, cash-flow projections for this scenario are shown in the following table.

Table 7 – Scenario 1 Detailed Cash Flow Projections

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%
Beginning Reserves	\$110,862,007	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765
Revenues					
Rate Revenue	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350
Rate Increase Revenue	3,555,990	3,723,442	3,898,778	4,082,372	4,274,611
Timing Adjustment*	-592,665	0	0	0	0
Other Revenue	4,650,665	4,559,418	4,543,198	4,518,473	4,486,676
Interest on Reserves	\$443,448	\$408,075	\$391,176	\$365,770	\$333,291
Total Revenue	\$87,079,437	\$91,434,079	\$95,472,672	\$99,685,989	\$104,085,928
Expenses					
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821
New Debt Service	0	0	0	0	0
Rate Funded Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800
Total Expenses	\$95,922,711	\$95,658,776	\$101,824,234	\$107,805,699	\$114,018,516
Net Revenues	-\$8,843,274	-\$4,224,697	-\$6,351,561	-\$8,119,709	-\$9,932,588
Ending Reserves	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765	\$73,390,177
<i>Debt Coverage (Target 2.0)</i>	<i>2.40</i>	<i>2.52</i>	<i>2.61</i>	<i>2.69</i>	<i>2.79</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Capital Revenues					
Use of Debt Proceeds	\$0	\$0	\$0	\$0	\$0
Rate Funded Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800
Total Capital Revenue	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800
Total Capital Expenditures	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800

4.7 Cash Flow Projection for Scenario 2 - Full Capital with New Debt

In future years, the City can re-evaluate its finances and revenue requirements and adjust rates as needed based on updated projections. However, while the City always has the flexibility to implement rate adjustments that are lower than adopted pursuant to Proposition 218, future rates cannot exceed adopted increases without going through the Proposition 218 process again. Rates adopted pursuant to Proposition 218 are essentially future rate caps.

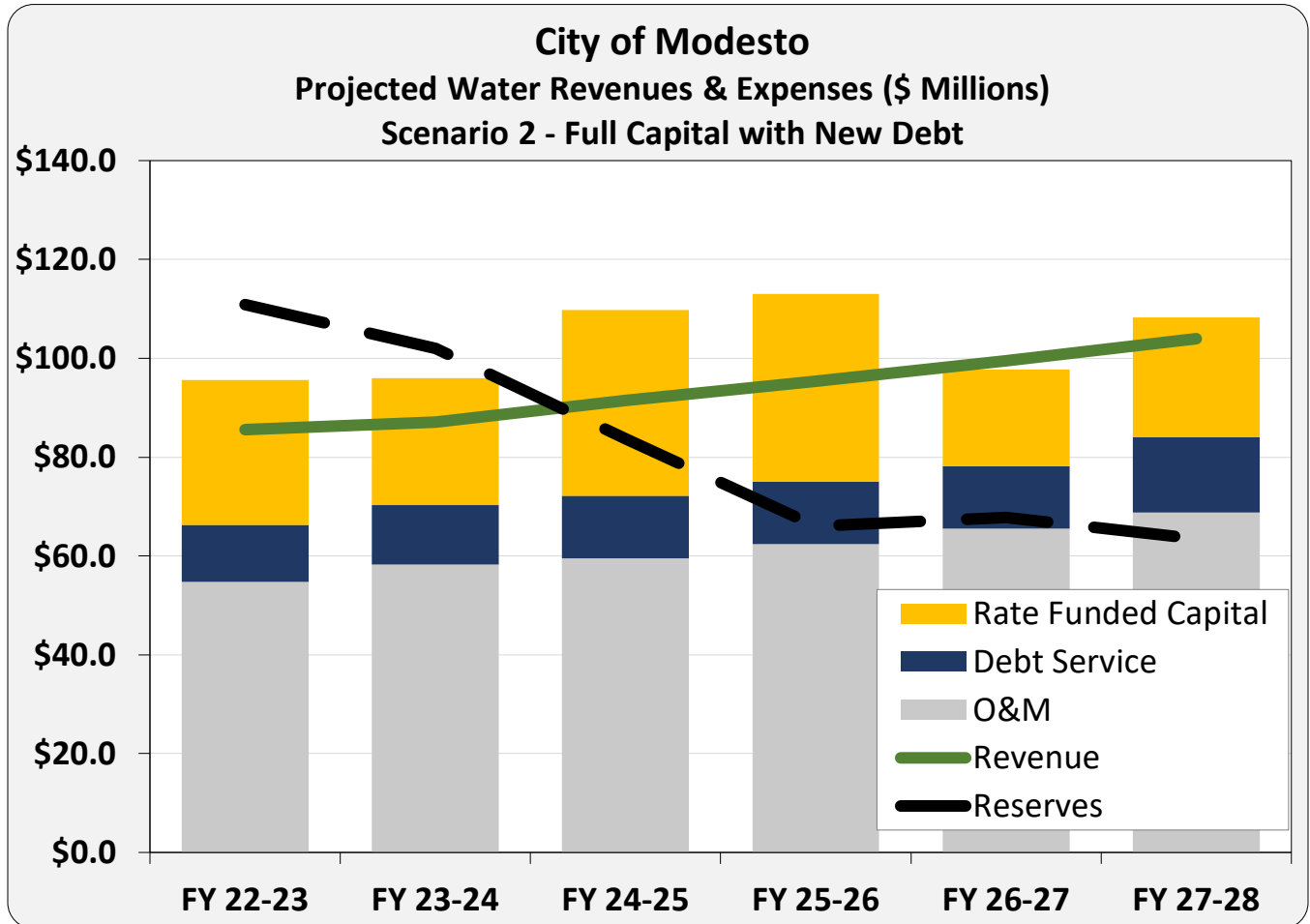
A summary of the key elements of the long-term cash-flow projections for this scenario is displayed in the following table. This scenario utilizes debt in FY 26-27 and FY 27-28 to stabilize reserves, which allows more capital to be funded in this scenario than Scenario 1 with the same rate increases. This scenario demonstrates that 4.5% increases are sufficient under low and full capital scenarios. The impact of utilizing debt is potentially needing average annual rate increases in years FY 28-29 through FY 32-33 of 6.4% rather than the projected average annual rate increases in Scenario 1 of 5.5%. It is important to keep in mind projections more than five years out are conservative and do not include grants and capital construction slowdowns.

Table 8 – Scenario 2 Cash Flow Projection Summary

Scenario 2 - Full Capital with New Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$20,000,000	\$20,000,000
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$37,591,025</u>	<u>\$37,937,002</u>	<u>\$19,547,379</u>	<u>\$24,194,205</u>
Total Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Ending Reserves	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563	\$63,478,048
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%

The following figure visually depicts the cash-flow projections with the proposed rate increases for the next five years. Projected expenses are summarized into key categories. The figure also shows the projected fund reserves at the end of each fiscal year.

Figure 3 – Scenario 2 Projected Cashflow Graph



Detailed, long-term, cash-flow projections for this scenario are shown in the following table.

Table 9 – Scenario 2 Detailed Cash Flow Projections

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%
Beginning Reserves	\$110,862,007	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563
Revenues					
Rate Revenue	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350
Rate Increase Revenue	3,555,990	3,723,442	3,898,778	4,082,372	4,274,611
Timing Adjustment*	-592,665	0	0	0	0
Other Revenue	4,650,665	4,559,418	4,486,792	4,416,744	4,424,415
Interest on Reserves	\$443,448	\$408,075	\$334,770	\$264,041	\$271,030
Total Revenue	\$87,079,437	\$91,434,079	\$95,359,861	\$99,482,532	\$103,961,406
Expenses					
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821
New Debt Service	0	0	0	0	2,622,000
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$19,547,379	\$24,194,205
Total Expenses	\$95,922,711	\$109,760,251	\$113,042,148	\$97,735,242	\$108,240,921
Net Revenues	-\$8,843,274	-\$18,326,172	-\$17,682,287	\$1,747,289	-\$4,279,515
Ending Reserves	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563	\$63,478,048
<i>Debt Coverage (Target 2.0)</i>	<i>2.40</i>	<i>2.52</i>	<i>2.60</i>	<i>2.68</i>	<i>2.30</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Capital Revenues					
Use of Debt Proceeds	\$0	\$0	\$0	\$20,000,000	\$20,000,000
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$19,547,379	\$24,194,205
Total Capital Revenue	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Total Capital Expenditures	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205

4.8 Cash Flow Projection for Scenario 3 - Full Capital, No Debt

In future years, the City can re-evaluate its finances and revenue requirements and adjust rates as needed based on updated projections. However, while the City always has the flexibility to implement rate adjustments that are lower than adopted pursuant to Proposition 218, future rates cannot exceed adopted increases without going through the Proposition 218 process again. Rates adopted pursuant to Proposition 218 are essentially future rate caps.

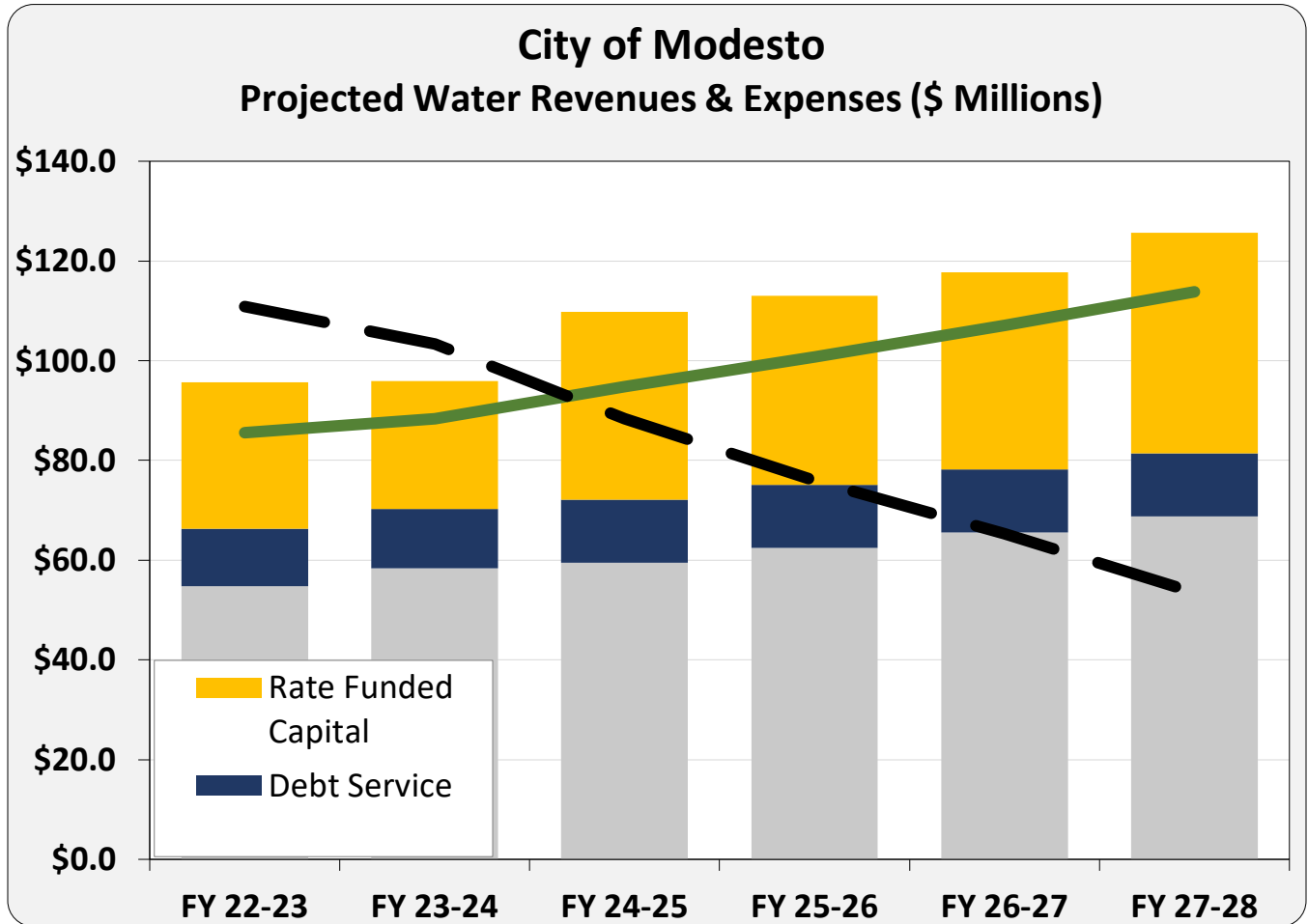
A summary of the key elements of the long-term cash-flow projections for this scenario is displayed in the following table.

Table 10 – Scenario 3 Cash Flow Projection Summary

Scenario 3 - Full Capital, No Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$0	\$0
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$37,591,025</u>	<u>\$37,937,002</u>	<u>\$39,547,379</u>	<u>\$44,194,205</u>
Total Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Ending Reserves	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989	\$53,503,665
Rate Revenue Increase	6.5%	6.5%	6.5%	6.5%	6.5%

The following figure visually depicts the cash-flow projections with the proposed rate increases for the next five years. Projected expenses are summarized into key categories. The figure also shows the projected fund reserves at the end of each fiscal year.

Figure 4 – Scenario 3 Projected Cashflow Graph



Detailed, long-term, cash-flow projections for this scenario are shown in the following table.

Table 11 – Scenario 3 Detailed Cash Flow Projections

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Rate Revenue Increase	6.5%	6.5%	6.5%	6.5%	6.5%
Beginning Reserves	\$110,862,007	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989
Revenues					
Rate Revenue	\$79,021,999	\$84,326,746	\$89,987,600	\$96,028,468	\$102,474,859
Rate Increase Revenue	5,136,430	5,481,238	5,849,194	6,241,850	6,660,866
Timing Adjustment*	-856,072	0	0	0	0
Other Revenue	4,650,665	4,564,686	4,505,468	4,456,763	4,414,629
Interest on Reserves	\$443,448	\$413,343	\$353,446	\$304,060	\$261,244
Total Revenue	\$88,396,470	\$94,786,013	\$100,695,709	\$107,031,142	\$113,811,598
Expenses					
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821
New Debt Service	0	0	0	0	0
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Total Expenses	\$95,922,711	\$109,760,251	\$113,042,148	\$117,735,242	\$125,618,921
Net Revenues	-\$7,526,241	-\$14,974,238	-\$12,346,439	-\$10,704,100	-\$11,807,324
Ending Reserves	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989	\$53,503,665
<i>Debt Coverage (Target 2.0)</i>	<i>2.51</i>	<i>2.78</i>	<i>3.02</i>	<i>3.27</i>	<i>3.55</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Capital Revenues					
Use of Debt Proceeds	\$0	\$0	\$0	\$0	\$0
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Total Capital Revenue	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Total Capital Expenditures	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205

4.9 Scenario Projected Cashflow Comparison

With lower capital spending, Scenario 1 preserves \$73 million of reserves while cash funding all expenses with 4.5% annual rate revenue increases. Scenario 1 leaves the City in a position where average annual rate revenue increases of 5.5% are conservatively projected for the following rate study (FY 28-29 through FY 32-33).

In Scenario 2, the full capital spending is augmented with a debt issuance of \$40 million. This allows the City to preserve \$63 million of reserves with 4.5% annual rate revenue increases. Scenario 2 leaves the City in a position where average annual rate revenue increases of 6.4% are conservatively projected for the following rate study (FY 28-29 through FY 32-33).

In Scenario 3, the full capital spending is cash funded. This allows the City to preserve \$54 million of reserves with 6.5% annual rate revenue increases. Scenario 3 leaves the City in a position where average annual rate revenue increases of 4.1% are conservatively projected for the following rate study (FY 28-29 through FY 32-33).

It is important to keep in mind projections more than five years out are conservative and do not include grants and capital construction slowdowns. The following table shows key financial information for all scenarios.

Table 12 – Scenario Projected Cashflow Comparison

Scenario 1 - Low Capital, No Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$0	\$0
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$23,489,550</u>	<u>\$26,719,088</u>	<u>\$29,617,836</u>	<u>\$32,593,800</u>
Total Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800
Ending Reserves	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765	\$73,390,177
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%
Scenario 2 – Full Capital with New Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$20,000,000	\$20,000,000
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$37,591,025</u>	<u>\$37,937,002</u>	<u>\$19,547,379</u>	<u>\$24,194,205</u>
Total Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Ending Reserves	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563	\$63,478,048
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%
Scenario 3 - Full Capital, No Debt	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28
Debt Funded Capital	\$0	\$0	\$0	\$0	\$0
Cash Funded Capital	<u>\$25,625,000</u>	<u>\$37,591,025</u>	<u>\$37,937,002</u>	<u>\$39,547,379</u>	<u>\$44,194,205</u>
Total Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205
Ending Reserves	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989	\$53,503,665
Rate Revenue Increase	6.5%	6.5%	6.5%	6.5%	6.5%

5 COST-OF-SERVICE RATE DERIVATION

Article XIII D, Section 6 of the California Constitution (which was adopted by the voters in 1996 as a part of Proposition 218) requires that the City adopt only rates that meet a number of substantive requirements.

Specifically:

- (1) Revenues derived from the water rates cannot exceed the funds required to provide water service.
- (2) Revenues derived from the water rates cannot be used for any purpose other than providing water service.
- (3) The amount of the water rates imposed upon any parcel or person as an incident of property ownership cannot exceed the proportional cost of the service attributable to the parcel.
- (4) Water rates may not be imposed unless the water service is used by, or immediately available to, the owner of the property in question.

In Modesto, each water customer is charged both a monthly fixed rate and a volumetric rate based on the quantity of water delivered by the City to the customer. This reflects that (i) some system costs are based entirely on the actual quantity of water consumed, (ii) other system costs are fixed from the point of view of the City, but are a result of design decisions that were made to accommodate all users, including high-demand users, and (iii) some costs, particularly the cost of administering the water system, would be largely the same regardless of the volume of water use.

Water utilities have employed a wide range of approaches or perspectives for allocating and recovering their costs for providing service, often through a combination of fixed and variable charges. The percentage of revenues derived from the fixed and variable charges should be proportional to each system's expenditures and must not exceed the cost of providing service.

Many of the City's costs are fixed costs that do not vary by the level of service provided, such as operational and staff costs, as well as costs for building and maintaining infrastructure. Some of these costs are related to the number of customers, but most of the fixed costs are related to the total capacity of the water system. Fixed costs related to system capacity can reasonably be apportioned by meter size or variable, usage-based rate recovery in recognition that both units of measure reasonably reflect customer usage driving the City to incur capacity-related costs. For example, a share of the fixed cost of salaries related to water production can reasonably be recovered from usage-based charges as these costs are incurred to provide water supply to meet customer demand or from a fixed charge based on a customer's meter size which reflects the magnitude of water a customer can pull from the water system. Likewise, debt service payments may be fixed annual costs, but it is reasonable to recover some of these costs from usage-based rates as the costs are incurred to fund infrastructure that will improve the water delivery system.

While there is no single correct approach, BWA believes that costs should be allocated within a reasonable range that reflects both a) underlying cost causation, to the extent such causation can reasonably be determined or estimated, and b) the policy preferences of the agency in cases where a range of reasonable approaches can be justified.

5.1 Functional Allocation

There must be a cost-based nexus between the revenue requirement from the cash flow and the proposed rates. The nexus is created by allocating the expenses and offsetting non-rate revenues to functional components and then dividing each functional component's revenue requirements by the allocations units most reasonably related to each function. A functional component reflects a grouping of the utility's expenses whose magnitude is driven by the quantity of a specific unit-of-measure. For example, costs allocated to the customer functional component are driven by the number of customers served by the water enterprise.

The functional components used in this study are as follows:

- **Customer-** Fixed costs are recovered per customer. Fixed costs or costs related to system capacity were allocated to this category.
- **Capacity-** Fixed costs are recovered per customer. Fixed costs or costs related to system capacity were allocated to this category.
- **All Volume-** Costs reasonably recovered volumetrically were allocated to this category. Volumetric costs are recovered per unit of volume (100 cubic feet (CCF)) based on all projected demand.

Related expenses and non-rate revenues were grouped into the following allocation categories before being allocated to each functional category:

- **Administration-** Expenses were allocated 30% to the customer and 70% to capacity functional components because some costs are driven by the number of customers, and some are driven by the overall capacity of the system. For example, a smaller system would require less staff, leading to reduced office supply costs.
- **Source of Supply-** expenses were allocated 10% to Capacity and 90% to All Volume to reflect that these costs are incurred to meet the volumetric needs of the City. These costs include the costs associated with wells and groundwater supply.
- **Water Demand** expenses consist of conservation, water quality and surface water costs. They are allocated 100% to All Volume to reflect that these costs are incurred to meet the volumetric needs of the City.
- **Customer Accounts** costs are allocated 100% to the Customer functional component because they are fixed expenditures that relate to operational support activities, including billing, customer service, and meter reading support. These expenditures are common to all customers, regardless of the meter size serving a property or actual water use.
- **Water System** expenses are related to maintaining and operating the water system. These costs are allocated 50% to Capacity and 50% to All Volume because these costs are related to the overall capacity of the system which is driven by the projected volume of water sold.
- **Debt Service** is allocated 100% to Capacity because they are related to system capacity and are fixed annual expenses.
- **Capital** expenses and non-rate revenues are allocated 50% to Capacity and 50% to All Volume because these costs are related to the overall capacity of the system which is driven by the projected volume of water sold.

The following tables show a breakdown of the water utility's expenses and offsetting revenues and how they are allocated by function. The proportional allocation is then applied to the rate revenue requirement so that the

rates are proportional to the cost of service provided. To recover the allocated revenue requirements proportionally to the service provided, a unit cost must be derived. Critical to this step is using the unit which relates to the function.

The allocation amounts are based on the last year of the proposed rates, FY 27-28, because it reflects the completed regionalization project in operation. The revenue requirements leading up to that year are increasing to fund the project.

Table 13 – Scenario 1 Functional Allocation

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$0	\$7,550,855	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$27,609,055	\$330,328	\$27,278,726	0%	50%	50%	100%
Functional Allocation \$	\$100,599,144	\$330,328	\$100,268,815	\$9,096,523	\$38,273,859	\$52,898,433	\$100,268,815
Functional Allocation %				9.07%	38.17%	52.76%	100%
Revenue Requirement				\$7,489,824	\$31,520,018	\$43,568,147	\$82,577,989

Table 14 – Scenario 2 Functional Allocation

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$52,060	\$7,498,795	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$28,978,922	\$330,328	\$28,648,594	0%	50%	50%	100%
Functional Allocation \$	\$101,969,011	\$382,388	\$101,586,623	\$9,080,905	\$38,922,351	\$53,583,367	\$101,586,623
Functional Allocation %				8.94%	38.31%	52.75%	100%
Revenue Requirement				\$7,382,472	\$31,635,628	\$43,559,889	\$82,577,989

Table 15 – Scenario 3 Functional Allocation

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$0	\$7,550,855	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$36,978,922	\$330,328	\$36,648,594	0%	50%	50%	100%
Functional Allocation \$	\$109,969,011	\$330,328	\$109,638,683	\$9,096,523	\$42,958,793	\$57,583,367	\$109,638,683
Functional Allocation %				8.30%	39.18%	52.52%	100%
Revenue Requirement				\$6,985,150	\$32,973,272	\$44,200,007	\$84,158,429

5.2 Rate Derivation

Monthly Fixed Service Charge

This charge applies to all active services. It recovers the Customer functional component revenue requirement on a per service basis and the Capacity functional component revenue requirement on a per MEU basis. The Customer unit cost is the same for all meter sizes and the unit costs per MEU varies by meter size. MEU ratios are based on the AWWA meter equivalent ratio for each meter size as described in Section 3.2.

Monthly Volumetric Service Charge

This charge applies to every unit of water sold. It recovers the All Volume functional component revenue requirement on a unit (CCF) basis.

The following tables show the rate derivation of the fixed and volumetric charges for each scenario.

Table 16 – Scenario 1 Rate Derivation

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	#	EDU	CCF
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$7,489,824</u>	<u>\$31,520,018</u>	<u>\$43,568,147</u>
Unit Cost (\$/Unit)	\$8.37	\$18.11	\$2.11

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$8.37	\$18.11	\$26.48
3/4"	1.00	\$8.37	\$18.11	\$26.48
1"	1.67	\$8.37	\$30.18	\$38.56
1.5"	3.33	\$8.37	\$60.37	\$68.74
2"	5.33	\$8.37	\$96.59	\$104.96
3"	11.67	\$8.37	\$211.28	\$219.66
4"	21.00	\$8.37	\$380.31	\$388.68
6"	43.33	\$8.37	\$784.77	\$793.14
8"	80.00	\$8.37	\$1,448.80	\$1,457.17
10"	126.67	\$8.37	\$2,293.93	\$2,302.31
12"	166.67	\$8.37	\$3,018.33	\$3,026.71

Table 17 – Scenario 2 Rate Derivation

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	#	EDU	CCF
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$7,382,472</u>	<u>\$31,635,628</u>	<u>\$43,559,889</u>
Unit Cost (\$/Unit)	\$8.25	\$18.18	\$2.11

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$8.25	\$18.18	\$26.43
3/4"	1.00	\$8.25	\$18.18	\$26.43
1"	1.67	\$8.25	\$30.30	\$38.55
1.5"	3.33	\$8.25	\$60.60	\$68.85
2"	5.33	\$8.25	\$96.96	\$105.21
3"	11.67	\$8.25	\$212.10	\$220.35
4"	21.00	\$8.25	\$381.78	\$390.03
6"	43.33	\$8.25	\$787.80	\$796.05
8"	80.00	\$8.25	\$1,454.40	\$1,462.65
10"	126.67	\$8.25	\$2,302.80	\$2,311.05
12"	166.67	\$8.25	\$3,030.00	\$3,038.25

Table 18 – Scenario 3 Rate Derivation

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	#	EDU	CCF
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$6,985,150</u>	<u>\$32,973,272</u>	<u>\$44,200,007</u>
Unit Cost (\$/Unit)	\$7.81	\$18.95	\$2.14

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$7.81	\$18.95	\$26.76
3/4"	1.00	\$7.81	\$18.95	\$26.76
1"	1.67	\$7.81	\$31.58	\$39.40
1.5"	3.33	\$7.81	\$63.17	\$70.98
2"	5.33	\$7.81	\$101.07	\$108.88
3"	11.67	\$7.81	\$221.08	\$228.90
4"	21.00	\$7.81	\$397.95	\$405.76
6"	43.33	\$7.81	\$821.17	\$828.98
8"	80.00	\$7.81	\$1,516.00	\$1,523.81
10"	126.67	\$7.81	\$2,400.33	\$2,408.15
12"	166.67	\$7.81	\$3,158.33	\$3,166.15

5.3 Proposed Water Rates

The following tables show a 5-year schedule of proposed water rates for each scenario.

Table 19 – Proposed Scenario 1 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
3/4"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
1"	\$36.83	\$38.56	\$40.30	\$42.11	\$44.00	\$45.98
1.5"	\$65.32	\$68.74	\$71.83	\$75.06	\$78.44	\$81.97
2"	\$99.50	\$104.96	\$109.68	\$114.62	\$119.78	\$125.17
3"	\$207.73	\$219.66	\$229.54	\$239.87	\$250.66	\$261.94
4"	\$367.24	\$388.68	\$406.17	\$424.45	\$443.55	\$463.51
6"	\$748.90	\$793.14	\$828.83	\$866.13	\$905.11	\$945.84
8"	\$1,375.53	\$1,457.17	\$1,522.74	\$1,591.26	\$1,662.87	\$1,737.70
10"	\$2,173.05	\$2,302.31	\$2,405.91	\$2,514.18	\$2,627.32	\$2,745.55
12"	\$2,856.63	\$3,026.71	\$3,162.91	\$3,305.24	\$3,453.98	\$3,609.41

Table 20 – Proposed Scenario 2 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
3/4"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
1"	\$36.83	\$38.55	\$40.28	\$42.09	\$43.98	\$45.96
1.5"	\$65.32	\$68.85	\$71.95	\$75.19	\$78.57	\$82.11
2"	\$99.50	\$105.21	\$109.94	\$114.89	\$120.06	\$125.46
3"	\$207.73	\$220.35	\$230.27	\$240.63	\$251.46	\$262.78
4"	\$367.24	\$390.03	\$407.58	\$425.92	\$445.09	\$465.12
6"	\$748.90	\$796.05	\$831.87	\$869.30	\$908.42	\$949.30
8"	\$1,375.53	\$1,462.65	\$1,528.47	\$1,597.25	\$1,669.13	\$1,744.24
10"	\$2,173.05	\$2,311.05	\$2,415.05	\$2,523.73	\$2,637.30	\$2,755.98
12"	\$2,856.63	\$3,038.25	\$3,174.97	\$3,317.84	\$3,467.14	\$3,623.16

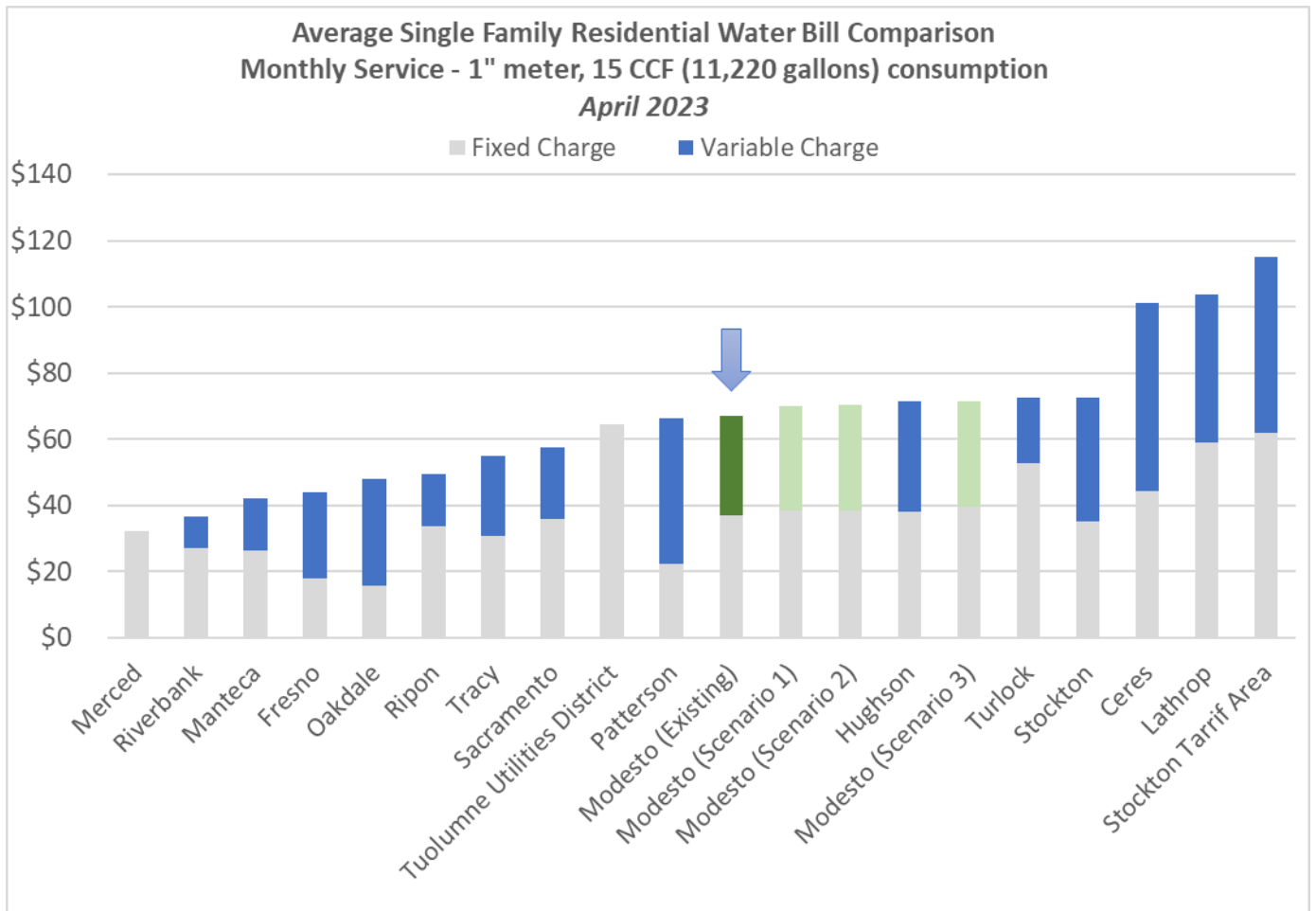
Table 21 – Proposed Scenario 3 Water Rates

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.14	\$2.28	\$2.43	\$2.59	\$2.76
Drought (\$/CCF)		\$2.49	\$2.65	\$2.82	\$3.00	\$3.20
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
3/4"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
1"	\$36.83	\$39.40	\$41.96	\$44.69	\$47.59	\$50.68
1.5"	\$65.32	\$70.98	\$75.59	\$80.50	\$85.73	\$91.30
2"	\$99.50	\$108.88	\$115.96	\$123.50	\$131.53	\$140.08
3"	\$207.73	\$228.90	\$243.78	\$259.63	\$276.51	\$294.48
4"	\$367.24	\$405.76	\$432.13	\$460.22	\$490.13	\$521.99
6"	\$748.90	\$828.98	\$882.86	\$940.25	\$1,001.37	\$1,066.46
8"	\$1,375.53	\$1,523.81	\$1,622.86	\$1,728.35	\$1,840.69	\$1,960.33
10"	\$2,173.05	\$2,408.15	\$2,564.68	\$2,731.38	\$2,908.92	\$3,098.00
12"	\$2,856.63	\$3,166.15	\$3,371.95	\$3,591.13	\$3,824.55	\$4,073.15

6 REGIONAL RESIDENTIAL BILL COMPARISON

Figure 5 provides a residential bill survey comparing the City of Modesto’s current and proposed water bills with the bills of other local agencies. The City of Modesto bills shown in Figure 5 are the non-drought water bills. Since each agency has an individualized conservation target, it is unknown how the City of Modesto typical water use would compare. Even with the proposed rate increases under each scenario, the City of Modesto’s typical bill would remain competitive.

Figure 5 – Residential Bill Comparison



7 DROUGHT RATES

The City is proposing to authorize a drought rate that could be implemented to support financial stability and help ensure adequate funding for water utility operations during periods of water shortages and reduced water sales. As proposed, these rates would be temporary, billed based on metered water use, that would replace the City's regular water rates during water shortage emergencies.

The drought rates are designed to enable the City to recover its costs of service and remain financially stable during periods of water shortages and reduced water sales.

Financial impacts during water shortages and periods of reduced water sales can include:

- A loss of volumetric water rate revenues due to a reduction in the volume of water sales.
- Reduced variable expenses due to reduced volumes of water production and supply, such as reduced costs for water treatment and pumping.
- Additional costs for achieving water demand cutback targets, such as costs for an enhanced conservation program and water demand mitigation efforts.
- Additional costs for supplemental sources of water supply when normal-year supply is curtailed during a drought.
- Potential costs of compliance for drought-related regulations and potential cost of fines or penalties for non-compliance with State water reduction mandates during periods of severe drought.

The surcharges account for a) lost revenues due to reduced water sales, less b) estimated reduced variable expenses due to reduced water supply, divided by c) the volume of projected water sales with reduced demand.

Table 22 – Proposed Scenario 1 Drought Rates

Row	Drought Rate Calculation	Units	Amount
A	Projected volume	CCF	20,693,839
B	Drought reduction	%	15%
C	Drought volume (A x (1-B))	CCF	<u>17,589,763</u>
D	Volume reduction (A x B)	CCF	3,104,076
E	Variable Cost	\$/CCF	<u>\$0.14</u>
F	Variable cost reduction (D x E)	\$	\$434,571
G	Projected revenue requirement	\$	\$43,568,147
H	Drought revenue requirement (G - F)	\$	\$43,133,576
I	Drought rate (H / C)	\$/CCF	\$2.45

Table 23 – Proposed Scenario 2 Drought Rates

Row	Drought Rate Calculation	Units	Amount
A	Projected volume	CCF	20,693,839
B	Drought reduction	%	15%
C	Drought volume (A x (1-B))	CCF	<u>17,589,763</u>
D	Volume reduction (A x B)	CCF	3,104,076
E	Variable Cost	\$/CCF	<u>\$0.13</u>
F	Variable cost reduction (D x E)	\$	\$403,530
G	Projected revenue requirement	\$	\$43,559,889
H	Drought revenue requirement (G - F)	\$	\$43,156,359
I	Drought rate (H / C)	\$/CCF	\$2.45

Table 24 – Proposed Scenario 3 Drought Rates

Row	Drought Rate Calculation	Units	Amount
A	Projected volume	CCF	20,693,839
B	Drought reduction	%	15%
C	Drought volume (A x (1-B))	CCF	<u>17,589,763</u>
D	Volume reduction (A x B)	CCF	3,104,076
E	Variable Cost	\$/CCF	<u>\$0.14</u>
F	Variable cost reduction (D x E)	\$	\$434,571
G	Projected revenue requirement	\$	\$44,200,007
H	Drought revenue requirement (G - F)	\$	\$43,765,436
I	Drought rate (H / C)	\$/CCF	\$2.49

8 CONCLUSION AND RECOMMENDATIONS

This water rate study report presents a comprehensive review of the City of Modesto’s water revenue requirements and rate structures. The City will need regular annual rate increases to keep up with cost inflation and be able to complete necessary capital projects while maintaining prudent reserves.

8.1 Conclusion

The City practices sound financial planning which has provided for the financial health of the water enterprise. Historically, the City has increased rate revenue to keep up with inflationary cost increases and fund system upgrades and maintenance. The adoption of these rates reflect the City’s commitment to stewarding financially sound utilities and providing reliable, high quality water service that will benefit the community many years into the future.

8.2 Recommendations

BWA recommends that the City adopt the rates shown in this report. Rates were developed as part of a collaborative process. At minimum, BWA recommends that the City review and update its water rate study every five years and/or concurrent with Master Plan Updates. Proposition 218 allows public agencies to adopt rates over a five-year planning period. Any further rate increases must be proposed as part of a new Proposition 218 process.

APPENDIX A

Scenario 1 Water Rate Study Tables

City of Modesto
Draft Water Rate Study Tables
Scenario 1 - Low Capital, No Debt
Draft

June 22, 2023



BARTLE WELLS ASSOCIATES
Independent Public Finance Advisors

Table A
City of Modesto
Water Rate Study
Rate Sheet
Scenario 1 - Low Capital, No Debt

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
3/4"	\$25.44	\$26.48	\$27.67	\$28.92	\$30.22	\$31.58
1"	\$36.83	\$38.56	\$40.30	\$42.11	\$44.00	\$45.98
1.5"	\$65.32	\$68.74	\$71.83	\$75.06	\$78.44	\$81.97
2"	\$99.50	\$104.96	\$109.68	\$114.62	\$119.78	\$125.17
3"	\$207.73	\$219.66	\$229.54	\$239.87	\$250.66	\$261.94
4"	\$367.24	\$388.68	\$406.17	\$424.45	\$443.55	\$463.51
6"	\$748.90	\$793.14	\$828.83	\$866.13	\$905.11	\$945.84
8"	\$1,375.53	\$1,457.17	\$1,522.74	\$1,591.26	\$1,662.87	\$1,737.70
10"	\$2,173.05	\$2,302.31	\$2,405.91	\$2,514.18	\$2,627.32	\$2,745.55
12"	\$2,856.63	\$3,026.71	\$3,162.91	\$3,305.24	\$3,453.98	\$3,609.41

Table 1
City of Modesto
Water Rate Study
Projected Operating Expenses
Scenario 1 - Low Capital, No Debt

Draft

Expenses ¹	Allocation	Inflation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			Budgeted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
General Inflation Factor		General		5.0%	5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%
12460 FIN Cashiering	Customer Accounts	General	\$845,352	\$835,287	\$877,051	\$920,904	\$966,949	\$1,015,297	\$1,060,985	\$1,108,729	\$1,158,622	\$1,210,760	\$1,265,244
12470 FIN Utilities & Collections	Customer Accounts	General	2,499,546	\$2,411,368	\$2,531,936	\$2,658,533	\$2,791,460	\$2,931,033	\$3,062,929	\$3,200,761	\$3,344,795	\$3,495,311	\$3,652,600
12475 FIN Utility Assistance Programs	Administration	General	1,119,827	\$2,286,900	\$2,401,245	\$2,521,307	\$2,647,373	\$2,779,741	\$2,904,830	\$3,035,547	\$3,172,147	\$3,314,893	\$3,464,063
41010 UPP Administration	Administration	General	1,167,848	\$1,154,259	\$1,211,972	\$1,272,571	\$1,336,199	\$1,403,009	\$1,466,144	\$1,532,121	\$1,601,066	\$1,673,114	\$1,748,405
41410 UPP Water General	Administration	General	410,902	\$425,795	\$447,085	\$469,439	\$492,911	\$517,556	\$540,847	\$565,185	\$590,618	\$617,196	\$644,970
41420 UPP Water Billing & Collections	Customer Accounts	General	176,311	\$223,954	\$235,152	\$246,909	\$259,255	\$272,217	\$284,467	\$297,268	\$310,645	\$324,624	\$339,233
42024 UTL Water Engineering Design	Capital	General	1,122,154	\$1,119,841	\$1,175,833	\$1,234,625	\$1,296,356	\$1,361,174	\$1,422,427	\$1,486,436	\$1,553,325	\$1,623,225	\$1,696,270
43010 UPP Ground Water Management Plan	Source of Supply	General	\$115,141	\$61,438	\$64,510	\$67,735	\$71,122	\$74,678	\$78,039	\$81,551	\$85,220	\$89,055	\$93,063
43020 UPP Water System Analysis	Water System	General	220,977	\$191,680	\$201,264	\$211,327	\$221,894	\$232,988	\$243,473	\$254,429	\$265,878	\$277,843	\$290,346
43030 UPP Urban Water Management Plan	Water Demand	General	46,705	\$32,502	\$34,127	\$35,833	\$37,625	\$39,506	\$41,284	\$43,142	\$45,083	\$47,112	\$49,232
43040 UPP Water Quality Study	Water Demand	General	86,457	\$81,917	\$86,013	\$90,313	\$94,829	\$99,571	\$104,051	\$108,734	\$113,627	\$118,740	\$124,083
43060 UPP Capital Planning	Capital	General	801,938	\$800,160	\$840,168	\$882,176	\$926,285	\$972,599	\$1,016,366	\$1,062,103	\$1,109,898	\$1,159,843	\$1,212,036
43070 UPP Water Rate Analysis	Administration	General	122,251	\$4,905	\$5,150	\$5,408	\$5,678	\$5,962	\$6,230	\$6,511	\$6,804	\$7,110	\$7,430
43080 UPP Sphere of Influence	Administration	General	35,962	\$34,933	\$36,680	\$38,514	\$40,439	\$42,461	\$44,372	\$46,369	\$48,455	\$50,636	\$52,914
45010 UPP Water Services Administration	Administration	General	2,192,418	\$2,233,552	\$2,345,230	\$2,462,491	\$2,585,616	\$2,714,896	\$2,837,067	\$2,964,735	\$3,098,148	\$3,237,564	\$3,383,255
45020 UPP Systems Maintenance	Water System	General	3,120,442	\$3,445,734	\$3,618,021	\$3,798,922	\$3,988,868	\$4,188,311	\$4,376,785	\$4,573,741	\$4,779,559	\$4,994,639	\$5,219,398
45040 UPP Construction	Water System	General	6,233,954	\$6,893,861	\$7,238,554	\$7,600,482	\$7,980,506	\$8,379,531	\$8,756,610	\$9,150,657	\$9,562,437	\$9,992,747	\$10,442,420
45050 UPP Wells & Tanks	Source of Supply	General	8,654,114	\$8,842,192	\$9,284,302	\$9,748,517	\$10,235,943	\$10,747,740	\$11,231,388	\$11,736,800	\$12,264,956	\$12,816,879	\$13,393,639
45055 UPP Water Quality	Water Demand	General	2,908,597	\$3,081,081	\$3,235,135	\$3,396,892	\$3,566,736	\$3,745,073	\$3,913,602	\$4,089,714	\$4,273,751	\$4,466,069	\$4,667,043
45060 UPP Service & Meters	Customer Accounts	General	2,489,378	\$2,710,826	\$2,846,367	\$2,988,686	\$3,138,120	\$3,295,026	\$3,443,302	\$3,598,251	\$3,760,172	\$3,929,380	\$4,106,202
45065 UPP Water Conservation	Water Demand	General	1,580,898	\$1,914,878	\$2,010,622	\$2,111,153	\$2,216,711	\$2,327,546	\$2,432,286	\$2,541,739	\$2,656,117	\$2,775,642	\$2,900,546
45070 UPP MID Surface Water T & DA	Water Demand	General	17,120,214	\$17,135,229	\$17,991,990	\$18,891,590	\$19,836,169	\$20,827,978	\$21,765,237	\$22,744,673	\$23,768,183	\$24,837,751	\$25,955,450
Non-capital projects (FY23/24 is Billing Software)	Administration	General	684,000	\$1,625,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Water - Grant Research & Writing - 101452	Capital	General	150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Groundwater Well Strategy Plan - 101456	Capital	General	126,125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Into Fund 4140 - Match Funding	Administration	General	46,723	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Drain Annual Transfer-out (rockwell rej)	Administration	General	700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$731,500	\$764,418	\$798,816	\$834,763
JPA Building svcs Annual Transfer-out	Administration	General	65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$67,925	\$70,982	\$74,176	\$77,514
Total Operating Expenses			\$54,714,074	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117

¹ Based on City's FY 22-23 budget

Table 2
City of Modesto
Water Rate Study
Projected Revenues
Scenario 1 - Low Capital, No Debt

Draft

Revenue	Allocation	Escalation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			<i>Budgeted</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<i>Revenue Escalation</i>		<i>Growth</i>		0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<i>Revenue Escalation</i>		<i>None</i>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Revenue Escalation</i>		<i>Interest</i>		0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Rate Revenue		Growth	\$79,318,075	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350	\$99,464,493	\$105,144,910	\$111,149,736	\$117,497,497	\$124,207,779
Revenue from Rate Increase^{1,2}				\$2,963,325	\$3,723,442	\$3,898,778	\$4,082,372	\$4,274,611	\$5,470,547	\$5,782,970	\$6,113,235	\$6,462,362	\$6,831,428
Other Revenue													
Refunds, Damages, and Cost Recovery/Other	As All Other	Growth	\$10,000	\$10,020	\$10,040	\$10,060	\$10,080	\$10,100	\$10,121	\$10,141	\$10,161	\$10,181	\$10,202
Water Fund Development Fees	Capital	Growth	\$1,220,500	\$329,010	\$329,668	\$330,327	\$330,988	\$331,650	\$332,313	\$332,978	\$333,643	\$334,311	\$334,979
Rental Income	As All Other	None	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000
Service Credits	As All Other	None	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214
Utility Assistance Fee	As All Other	None	\$200,902	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Repayment of Carpenter Road Landfill mitigation loan - Advance 16A/B/C	As All Other	None	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421
Interest	As All Other	None	\$500,000	\$500,000	\$408,075	\$391,176	\$365,770	\$333,291	\$293,561	\$259,614	\$226,879	\$218,425	\$217,761
Total Other Revenue			\$5,743,037	\$4,650,665	\$4,559,418	\$4,543,198	\$4,518,473	\$4,486,676	\$4,447,629	\$4,414,367	\$4,382,319	\$4,374,552	\$4,374,577
Total Revenue			\$85,061,112	\$86,635,989	\$91,026,004	\$95,081,496	\$99,320,219	\$103,752,637	\$109,382,669	\$115,342,247	\$121,645,290	\$128,334,412	\$135,413,784

¹Additional revenue based on recommended increase

²Adjusted if rates adopted in the middle of fiscal year

Table 3
City of Modesto
Water Rate Study
Capital Improvement Costs
Scenario 1 - Low Capital, No Debt

Draft

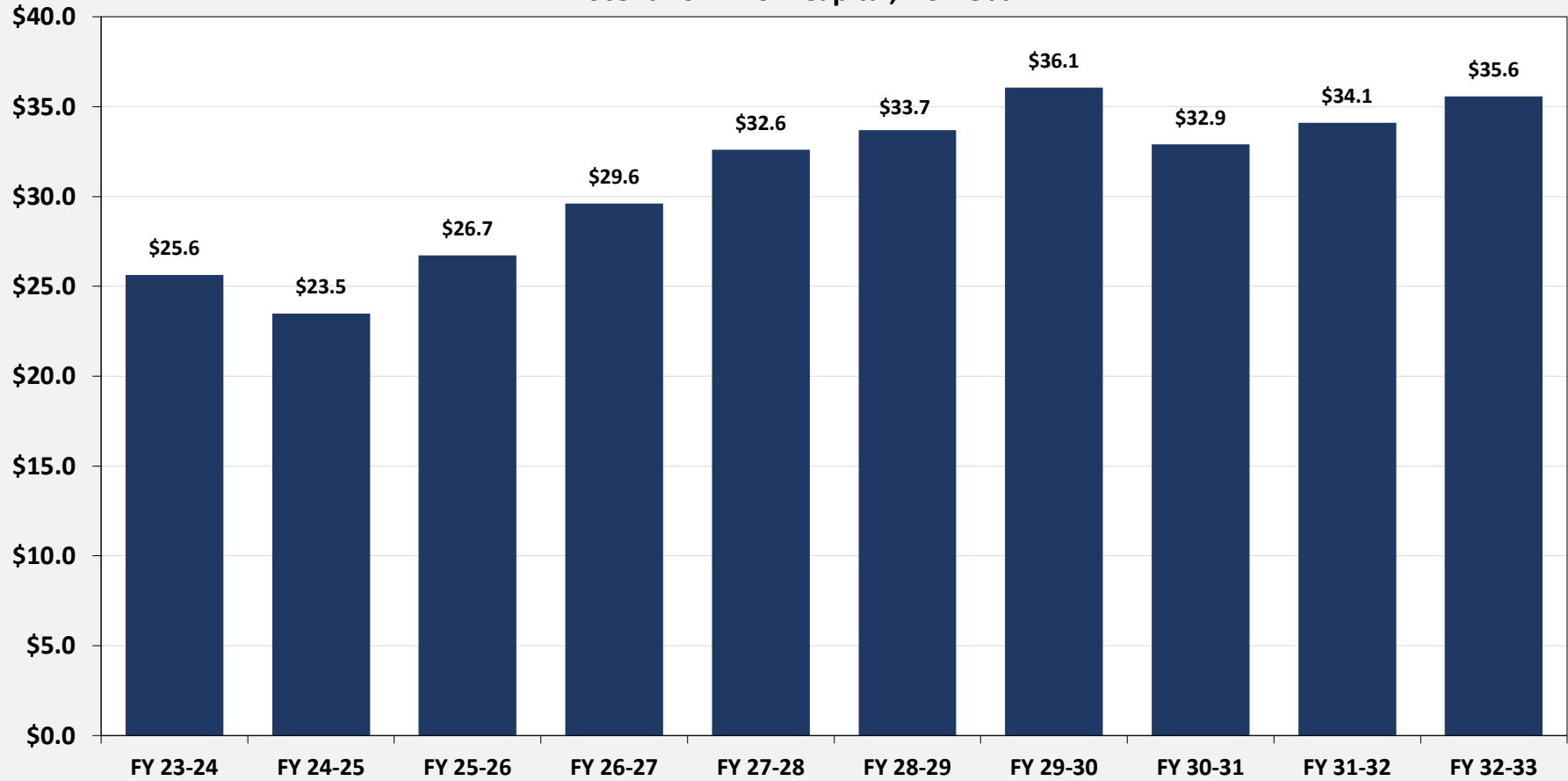
Capital Improvement Plan (CIP)	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
CIP (Current Dollars)											
Total CIP (Current Dollars)	\$29,321,500	\$25,625,000	\$22,371,000	\$24,235,000	\$25,585,000	\$26,815,000	\$26,515,000	\$27,175,000	\$23,715,000	\$23,525,000	\$23,480,000
Total CIP (Inflated Dollars)	\$29,321,500	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800	\$33,679,460	\$36,071,095	\$32,894,947	\$34,099,812	\$35,566,141
<i>Annual Inflation Rate</i>			5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%

City of Modesto

Water Capital Improvements (\$ millions)

Scenario 1 - Low Capital, No Debt

Future \$; includes annual construction cost inflation.



Source: City of Modesto 2023 CIP plus annual construction cost inflation.

Table 4
City of Modesto
Water Rate Study
Debt
Scenario 1 - Low Capital, No Debt

Draft

Debt	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Budgeted</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Existing Debt											
55140-54104 MID T & DA - 1998D (2013G)	\$5,155,541	\$4,367,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
55140-54103 MID T & DA - 2007F	\$4,257,700	\$4,032,800	\$8,409,205	\$8,409,205	\$8,409,206	\$8,409,207	\$8,409,208	\$8,409,209	\$8,409,210	\$8,409,211	\$8,409,212
4130 2008 Water Rev Lease Bond	\$2,164,623	\$3,546,482	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014
55060 CA DWR (Del Este)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4140-12183 ARRA funding CDPH	\$46,723	\$38,237	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600
Total Current Debt Service	\$11,624,587	\$11,985,419	\$12,685,819	\$12,685,819	\$12,685,820	\$12,685,821	\$12,685,822	\$12,685,823	\$12,685,824	\$12,685,825	\$12,685,826

Table 5
City of Modesto
Water Rate Study
Cash Flow Projections
Scenario 1 - Low Capital, No Debt

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Beginning Reserves	\$110,862,007	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765	\$73,390,177	\$64,903,403	\$56,719,728	\$54,606,219	\$54,440,290
Revenues										
Rate Revenue	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350	\$99,464,493	\$105,144,910	\$111,149,736	\$117,497,497	\$124,207,779
Rate Increase Revenue	3,555,990	3,723,442	3,898,778	4,082,372	4,274,611	5,470,547	5,782,970	6,113,235	6,462,362	6,831,428
Timing Adjustment*	-592,665	0	0	0	0	0	0	0	0	0
Other Revenue	4,650,665	4,559,418	4,543,198	4,518,473	4,486,676	4,447,629	4,414,367	4,382,319	4,374,552	4,374,577
Interest on Reserves	\$443,448	\$408,075	\$391,176	\$365,770	\$333,291	\$293,561	\$259,614	\$226,879	\$218,425	\$217,761
Total Revenue	\$87,079,437	\$91,434,079	\$95,472,672	\$99,685,989	\$104,085,928	\$109,676,230	\$115,601,861	\$121,872,169	\$128,552,836	\$135,631,546
Expenses										
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821	12,685,822	12,685,823	12,685,824	12,685,825	12,685,826
New Debt Service	0	0	0	0	0	0	0	0	0	0
Rate Funded Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800	\$33,679,460	\$36,071,095	\$32,894,947	\$34,099,812	\$35,566,141
Total Expenses	\$95,922,711	\$95,658,776	\$101,824,234	\$107,805,699	\$114,018,516	\$118,163,003	\$123,785,536	\$123,985,678	\$128,718,765	\$133,872,084
Net Revenues	-\$8,843,274	-\$4,224,697	-\$6,351,561	-\$8,119,709	-\$9,932,588	-\$8,486,773	-\$8,183,676	-\$2,113,509	-\$165,928	\$1,759,462
Ending Reserves	\$102,018,732	\$97,794,035	\$91,442,474	\$83,322,765	\$73,390,177	\$64,903,403	\$56,719,728	\$54,606,219	\$54,440,290	\$56,199,752
<i>Debt Coverage (Target 2.0)</i>	<i>2.40</i>	<i>2.52</i>	<i>2.61</i>	<i>2.69</i>	<i>2.79</i>	<i>2.99</i>	<i>3.20</i>	<i>3.43</i>	<i>3.67</i>	<i>3.94</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Capital Revenues										
Use of Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rate Funded Capital	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800	\$33,679,460	\$36,071,095	\$32,894,947	\$34,099,812	\$35,566,141
Total Capital Revenue	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800	\$33,679,460	\$36,071,095	\$32,894,947	\$34,099,812	\$35,566,141
Total Capital Expenditures	\$25,625,000	\$23,489,550	\$26,719,088	\$29,617,836	\$32,593,800	\$33,679,460	\$36,071,095	\$32,894,947	\$34,099,812	\$35,566,141

City of Modesto

Projected Water Revenues & Expenses (\$ Millions)

Scenario 1 - Low Capital, No Debt

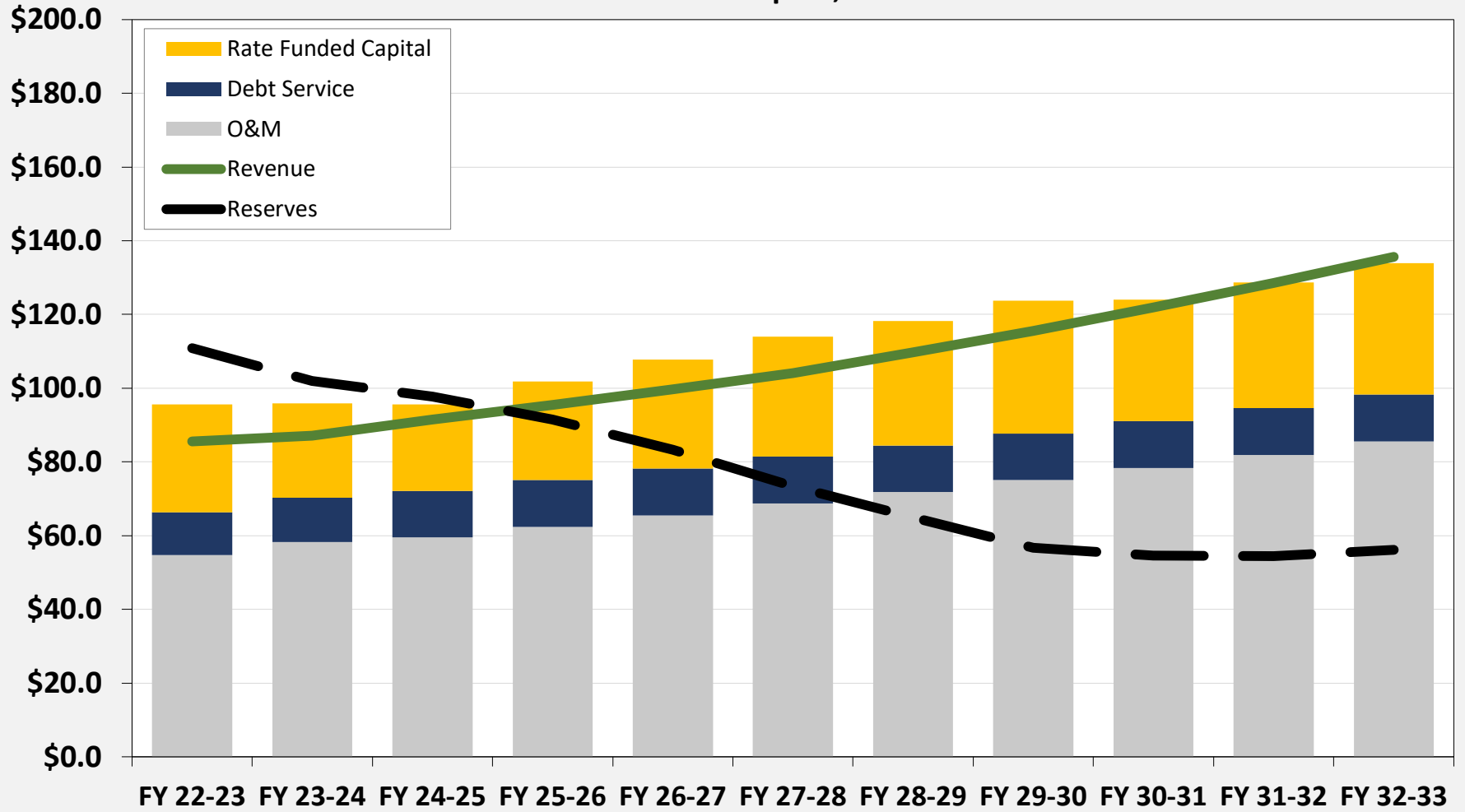


Table 6
City of Modesto
Water Rate Study
Customer Data
Scenario 1 - Low Capital, No Debt

Draft

Customer Data	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>
System Totals							
Total Accounts (#)	73,469	73,629	73,833	74,137	74,413	74,560	74,707
Growth (%)		0.22%	0.28%	0.41%	0.37%	0.20%	0.20%
Annual metered use (CCF) per meter	278	265	277	288	279	277	277
Annual production (CCF) per account	298	285	303	309	298	299	299
Billed, Metered Consumption (CCF)	18,639,728	18,222,157	19,509,688	20,697,851	20,568,355	20,562,541	20,693,839
Total Estimated Consumption (CCF)	20,710,040	19,789,661	20,643,245	21,464,258	20,796,593	20,676,660	20,693,839
Total Water Production (CCF)	21,919,447	20,965,305	22,397,473	22,916,498	22,203,522	22,277,633	22,328,428

Table 7**Draft****City of Modesto****Water Rate Study****Meter Equivalent Units****Scenario 1 - Low Capital, No Debt**

Meter Size*	Services	Meter Equivalent Ratio**	Meter Equivalent Units	Annual Meter Equivalent Units
5/8"	87	1.0	87.0	1,044.0
3/4"	13,459	1.0	13,459.0	161,508.0
1"	57,153	1.7	95,255.0	1,143,060.0
1.5"	1,168	3.3	3,893.3	46,720.0
2"	2,176	5.3	11,605.3	139,264.0
3"	158	11.7	1,843.3	22,120.0
4"	289	21.0	6,069.0	72,828.0
6"	141	43.3	6,110.0	73,320.0
8"	64	80.0	5,120.0	61,440.0
10"	11	126.7	1,393.3	16,720.0
12"	1	166.7	166.7	2,000.0
Total	74,707.0		145,002.0	1,740,024.0

* Customer data as of June 2022 provided by staff

** Capacity factors based on AWWA operating capacity standards by meter size

Table 8 Draft
City of Modesto
Water Rate Study
Functional Allocation
Scenario 1 - Low Capital, No Debt

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$0	\$7,550,855	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$27,609,055	\$330,328	\$27,278,726	0%	50%	50%	100%
Functional Allocation \$	\$100,599,144	\$330,328	\$100,268,815	\$9,096,523	\$38,273,859	\$52,898,433	\$100,268,815
Functional Allocation %				9.07%	38.17%	52.76%	100%
Revenue Requirement				\$7,489,824	\$31,520,018	\$43,568,147	\$82,577,989

Table 9
City of Modesto
Water Rate Study
Rate Derivation
Scenario 1 - Low Capital, No Debt

Draft

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	<i>#</i>	<i>EDU</i>	<i>CCF</i>
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$7,489,824</u>	<u>\$31,520,018</u>	<u>\$43,568,147</u>
Unit Cost (\$/Unit)	\$8.37	\$18.11	\$2.11

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$8.37	\$18.11	\$26.48
3/4"	1.00	\$8.37	\$18.11	\$26.48
1"	1.67	\$8.37	\$30.18	\$38.56
1.5"	3.33	\$8.37	\$60.37	\$68.74
2"	5.33	\$8.37	\$96.59	\$104.96
3"	11.67	\$8.37	\$211.28	\$219.66
4"	21.00	\$8.37	\$380.31	\$388.68
6"	43.33	\$8.37	\$784.77	\$793.14
8"	80.00	\$8.37	\$1,448.80	\$1,457.17
10"	126.67	\$8.37	\$2,293.93	\$2,302.31
12"	166.67	\$8.37	\$3,018.33	\$3,026.71

Table 10
City of Modesto
Water Rate Study
Drought Rate Derivation
Scenario 1 - Low Capital, No Debt

Row	Drought Rate Calculation	Units
A	Projected volume	CCF
B	Drought reduction	%
C	Drought volume (A x (1-B))	CCF
D	Volume reduction (A x B)	CCF
E	Variable Cost	\$/CCF
F	Variable cost reduction (D x E)	\$
G	Projected revenue requirement	\$
H	Drought revenue requirement (G - F)	\$
I	Drought rate (H / C)	\$/CCF

APPENDIX B

Scenario 2 Water Rate Study Tables

City of Modesto
Draft Water Rate Study Tables
Scenario 3 - Full Capital, No Debt
Draft

June 22, 2023



BARTLE WELLS ASSOCIATES
Independent Public Finance Advisors

Table A
City of Modesto
Water Rate Study
Rate Sheet
Scenario 3 - Full Capital, No Debt

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.14	\$2.28	\$2.43	\$2.59	\$2.76
Drought (\$/CCF)		\$2.49	\$2.65	\$2.82	\$3.00	\$3.20
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
3/4"	\$25.44	\$26.76	\$28.50	\$30.35	\$32.32	\$34.42
1"	\$36.83	\$39.40	\$41.96	\$44.69	\$47.59	\$50.68
1.5"	\$65.32	\$70.98	\$75.59	\$80.50	\$85.73	\$91.30
2"	\$99.50	\$108.88	\$115.96	\$123.50	\$131.53	\$140.08
3"	\$207.73	\$228.90	\$243.78	\$259.63	\$276.51	\$294.48
4"	\$367.24	\$405.76	\$432.13	\$460.22	\$490.13	\$521.99
6"	\$748.90	\$828.98	\$882.86	\$940.25	\$1,001.37	\$1,066.46
8"	\$1,375.53	\$1,523.81	\$1,622.86	\$1,728.35	\$1,840.69	\$1,960.33
10"	\$2,173.05	\$2,408.15	\$2,564.68	\$2,731.38	\$2,908.92	\$3,098.00
12"	\$2,856.63	\$3,166.15	\$3,371.95	\$3,591.13	\$3,824.55	\$4,073.15

Table 1
City of Modesto
Water Rate Study
Projected Operating Expenses
Scenario 3 - Full Capital, No Debt

Draft

Expenses ¹	Allocation	Inflation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			Budgeted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
General Inflation Factor	General			5.0%	5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%
12460 FIN Cashiering	Customer Accounts	General	\$845,352	\$835,287	\$877,051	\$920,904	\$966,949	\$1,015,297	\$1,060,985	\$1,108,729	\$1,158,622	\$1,210,760	\$1,265,244
12470 FIN Utilities & Collections	Customer Accounts	General	2,499,546	\$2,411,368	\$2,531,936	\$2,658,533	\$2,791,460	\$2,931,033	\$3,062,929	\$3,200,761	\$3,344,795	\$3,495,311	\$3,652,600
12475 FIN Utility Assistance Programs	Administration	General	1,119,827	\$2,286,900	\$2,401,245	\$2,521,307	\$2,647,373	\$2,779,741	\$2,904,830	\$3,035,547	\$3,172,147	\$3,314,893	\$3,464,063
41010 UPP Administration	Administration	General	1,167,848	\$1,154,259	\$1,211,972	\$1,272,571	\$1,336,199	\$1,403,009	\$1,466,144	\$1,532,121	\$1,601,066	\$1,673,114	\$1,748,405
41410 UPP Water General	Administration	General	410,902	\$425,795	\$447,085	\$469,439	\$492,911	\$517,556	\$540,847	\$565,185	\$590,618	\$617,196	\$644,970
41420 UPP Water Billing & Collections	Customer Accounts	General	176,311	\$223,954	\$235,152	\$246,909	\$259,255	\$272,217	\$284,467	\$297,268	\$310,645	\$324,624	\$339,233
42024 UTL Water Engineering Design	Capital	General	1,122,154	\$1,119,841	\$1,175,833	\$1,234,625	\$1,296,356	\$1,361,174	\$1,422,427	\$1,486,436	\$1,553,325	\$1,623,225	\$1,696,270
43010 UPP Ground Water Management Plan	Source of Supply	General	\$115,141	\$61,438	\$64,510	\$67,735	\$71,122	\$74,678	\$78,039	\$81,551	\$85,220	\$89,055	\$93,063
43020 UPP Water System Analysis	Water System	General	220,977	\$191,680	\$201,264	\$211,327	\$221,894	\$232,988	\$243,473	\$254,429	\$265,878	\$277,843	\$290,346
43030 UPP Urban Water Management Plan	Water Demand	General	46,705	\$32,502	\$34,127	\$35,833	\$37,625	\$39,506	\$41,284	\$43,142	\$45,083	\$47,112	\$49,232
43040 UPP Water Quality Study	Water Demand	General	86,457	\$81,917	\$86,013	\$90,313	\$94,829	\$99,571	\$104,051	\$108,734	\$113,627	\$118,740	\$124,083
43060 UPP Capital Planning	Capital	General	801,938	\$800,160	\$840,168	\$882,176	\$926,285	\$972,599	\$1,016,366	\$1,062,103	\$1,109,898	\$1,159,843	\$1,212,036
43070 UPP Water Rate Analysis	Administration	General	122,251	\$4,905	\$5,150	\$5,408	\$5,678	\$5,962	\$6,230	\$6,511	\$6,804	\$7,110	\$7,430
43080 UPP Sphere of Influence	Administration	General	35,962	\$34,933	\$36,680	\$38,514	\$40,439	\$42,461	\$44,372	\$46,369	\$48,455	\$50,636	\$52,914
45010 UPP Water Services Administration	Administration	General	2,192,418	\$2,233,552	\$2,345,230	\$2,462,491	\$2,585,616	\$2,714,896	\$2,837,067	\$2,964,735	\$3,098,148	\$3,237,564	\$3,383,255
45020 UPP Systems Maintenance	Water System	General	3,120,442	\$3,445,734	\$3,618,021	\$3,798,922	\$3,988,868	\$4,188,311	\$4,376,785	\$4,573,741	\$4,779,559	\$4,994,639	\$5,219,398
45040 UPP Construction	Water System	General	6,233,954	\$6,893,861	\$7,238,554	\$7,600,482	\$7,980,506	\$8,379,531	\$8,756,610	\$9,150,657	\$9,562,437	\$9,992,747	\$10,442,420
45050 UPP Wells & Tanks	Source of Supply	General	8,654,114	\$8,842,192	\$9,284,302	\$9,748,517	\$10,235,943	\$10,747,740	\$11,231,388	\$11,736,800	\$12,264,956	\$12,816,879	\$13,393,639
45055 UPP Water Quality	Water Demand	General	2,908,597	\$3,081,081	\$3,235,135	\$3,396,892	\$3,566,736	\$3,745,073	\$3,913,602	\$4,089,714	\$4,273,751	\$4,466,069	\$4,667,043
45060 UPP Service & Meters	Customer Accounts	General	2,489,378	\$2,710,826	\$2,846,367	\$2,988,686	\$3,138,120	\$3,295,026	\$3,443,302	\$3,598,251	\$3,760,172	\$3,929,380	\$4,106,202
45065 UPP Water Conservation	Water Demand	General	1,580,898	\$1,914,878	\$2,010,622	\$2,111,153	\$2,216,711	\$2,327,546	\$2,432,286	\$2,541,739	\$2,656,117	\$2,775,642	\$2,900,546
45070 UPP MID Surface Water T & DA	Water Demand	General	17,120,214	\$17,135,229	\$17,991,990	\$18,891,590	\$19,836,169	\$20,827,978	\$21,765,237	\$22,744,673	\$23,768,183	\$24,837,751	\$25,955,450
Non-capital projects (FY23/24 is Billing Software)	Administration	General	684,000	\$1,625,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Water - Grant Research & Writing - 101452	Capital	General	150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Groundwater Well Strategy Plan - 101456	Capital	General	126,125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Into Fund 4140 - Match Funding	Administration	General	46,723	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Drain Annual Transfer-out (rockwell rej)	Administration	General	700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$731,500	\$764,418	\$798,816	\$834,763
JPA Building svcs Annual Transfer-out	Administration	General	65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$67,925	\$70,982	\$74,176	\$77,514
Total Operating Expenses			\$54,714,074	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117

¹ Based on City's FY 22-23 budget

Table 2
City of Modesto
Water Rate Study
Projected Revenues
Scenario 3 - Full Capital, No Debt

Draft

Revenue	Allocation	Escalation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			<i>Budgeted</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
<i>Revenue Escalation</i>		<i>Growth</i>		0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
<i>Revenue Escalation</i>		<i>None</i>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Revenue Escalation</i>		<i>Interest</i>		0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Rate Revenue		Growth	\$79,318,075	\$79,021,999	\$84,326,746	\$89,987,600	\$96,028,468	\$102,474,859	\$109,353,996	\$116,694,930	\$121,605,453	\$126,722,610	\$130,785,337
Revenue from Rate Increase^{1,2}				\$4,280,358	\$5,481,238	\$5,849,194	\$6,241,850	\$6,660,866	\$7,108,010	\$4,667,797	\$4,864,218	\$3,801,678	\$3,923,560
Other Revenue													
Refunds, Damages, and Cost Recovery/Other	As All Other	Growth	\$10,000	\$10,020	\$10,040	\$10,060	\$10,080	\$10,100	\$10,121	\$10,141	\$10,161	\$10,181	\$10,202
Water Fund Development Fees	Capital	Growth	\$1,220,500	\$329,010	\$329,668	\$330,327	\$330,988	\$331,650	\$332,313	\$332,978	\$333,643	\$334,311	\$334,979
Rental Income	As All Other	None	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000
Service Credits	As All Other	None	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214
Utility Assistance Fee	As All Other	None	\$200,902	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Repayment of Carpenter Road Landfill mitigation loan - Advance													
16A/B/C	As All Other	None	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421
Interest	As All Other	None	\$500,000	\$500,000	\$413,343	\$353,446	\$304,060	\$261,244	\$214,015	\$171,795	\$199,297	\$233,186	\$249,877
Total Other Revenue			\$5,743,037	\$4,650,665	\$4,564,686	\$4,505,468	\$4,456,763	\$4,414,629	\$4,368,083	\$4,326,548	\$4,354,737	\$4,389,313	\$4,406,693
Total Revenue			\$85,061,112	\$87,953,022	\$94,372,670	\$100,342,263	\$106,727,082	\$113,550,354	\$120,830,089	\$125,689,275	\$130,824,408	\$134,913,602	\$139,115,590

¹Additional revenue based on recommended increase

²Adjusted if rates adopted in the middle of fiscal year

Table 3
City of Modesto
Water Rate Study
Capital Improvement Costs
Scenario 3 - Full Capital, No Debt

Draft

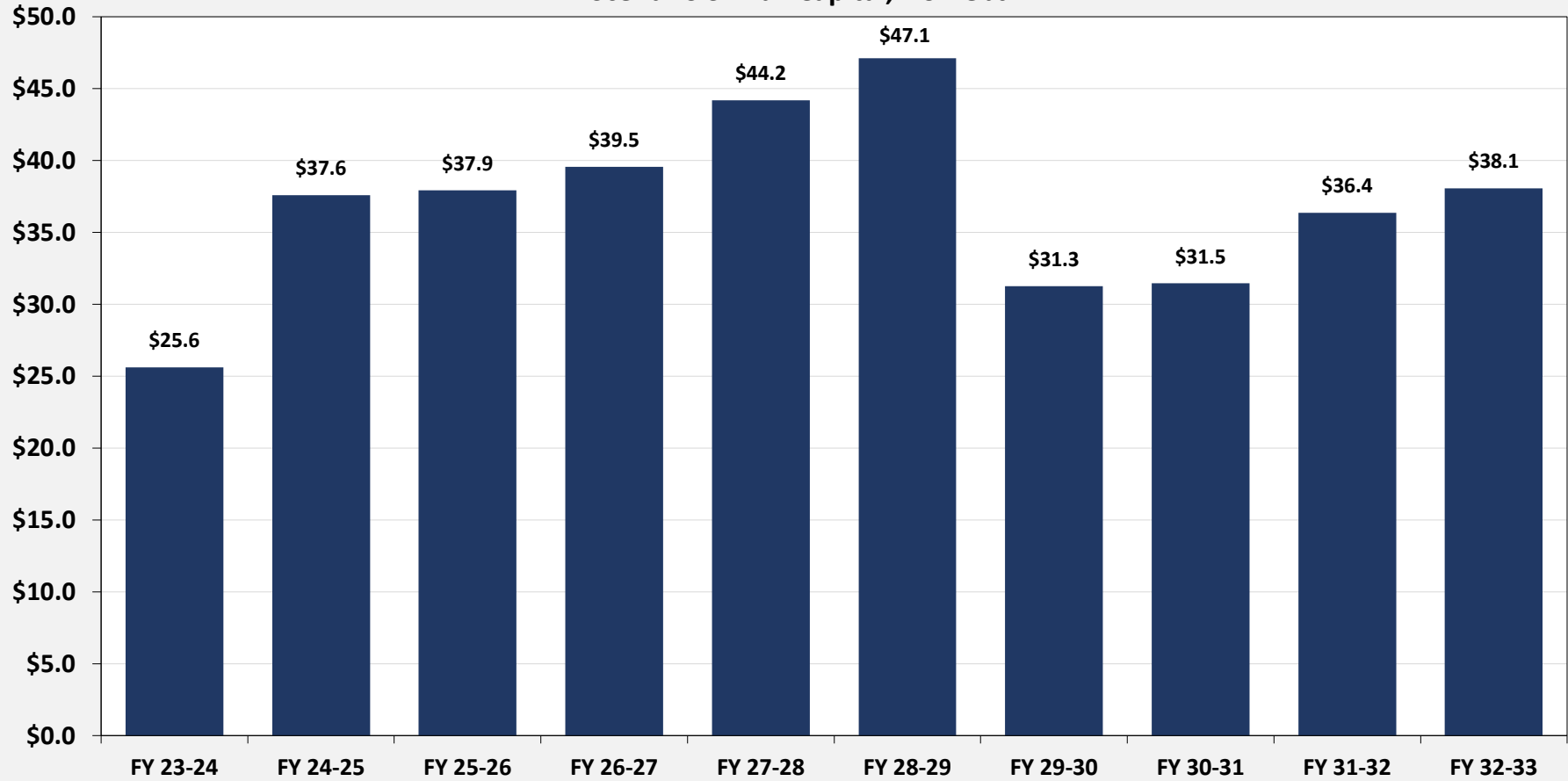
Capital Improvement Plan (CIP)	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
CIP (Current Dollars)											
Total CIP (Current Dollars)	\$29,321,500	\$25,625,000	\$35,800,976	\$34,409,979	\$34,162,513	\$36,358,682	\$37,092,938	\$23,558,714	\$22,681,004	\$25,081,003	\$25,138,184
Total CIP (Inflated Dollars)	\$29,321,500	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
<i>Annual Inflation Rate</i>			5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%

City of Modesto

Water Capital Improvements (\$ millions)

Scenario 3 - Full Capital, No Debt

Future \$; includes annual construction cost inflation.



Source: City of Modesto 2023 CIP plus annual construction cost inflation.

Table 4
City of Modesto
Water Rate Study
Debt
Scenario 3 - Full Capital, No Debt

Draft

Debt	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Budgeted</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Existing Debt											
55140-54104 MID T & DA - 1998D (2013G)	\$5,155,541	\$4,367,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
55140-54103 MID T & DA - 2007F	\$4,257,700	\$4,032,800	\$8,409,205	\$8,409,205	\$8,409,206	\$8,409,207	\$8,409,208	\$8,409,209	\$8,409,210	\$8,409,211	\$8,409,212
4130 2008 Water Rev Lease Bond	\$2,164,623	\$3,546,482	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014
55060 CA DWR (Del Este)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4140-12183 ARRA funding CDPH	\$46,723	\$38,237	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600
Total Current Debt Service	\$11,624,587	\$11,985,419	\$12,685,819	\$12,685,819	\$12,685,820	\$12,685,821	\$12,685,822	\$12,685,823	\$12,685,824	\$12,685,825	\$12,685,826

Table 5
City of Modesto
Water Rate Study
Cash Flow Projections
Scenario 3 - Full Capital, No Debt

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Rate Revenue Increase	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	4.0%	4.0%	3.0%	3.0%
Beginning Reserves	\$110,862,007	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989	\$53,503,665	\$42,948,626	\$49,824,285	\$58,296,562	\$62,469,138
Revenues										
Rate Revenue	\$79,021,999	\$84,326,746	\$89,987,600	\$96,028,468	\$102,474,859	\$109,353,996	\$116,694,930	\$121,605,453	\$126,722,610	\$130,785,337
Rate Increase Revenue	5,136,430	5,481,238	5,849,194	6,241,850	6,660,866	7,108,010	4,667,797	4,864,218	3,801,678	3,923,560
Timing Adjustment*	-856,072	0	0	0	0	0	0	0	0	0
Other Revenue	4,650,665	4,564,686	4,505,468	4,456,763	4,414,629	4,368,083	4,326,548	4,354,737	4,389,313	4,406,693
Interest on Reserves	\$443,448	\$413,343	\$353,446	\$304,060	\$261,244	\$214,015	\$171,795	\$199,297	\$233,186	\$249,877
Total Revenue	\$88,396,470	\$94,786,013	\$100,695,709	\$107,031,142	\$113,811,598	\$121,044,104	\$125,861,070	\$131,023,705	\$135,146,788	\$139,365,466
Expenses										
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821	12,685,822	12,685,823	12,685,824	12,685,825	12,685,826
New Debt Service	0	0	0	0	0	0	0	0	0	0
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Expenses	\$95,922,711	\$109,760,251	\$113,042,148	\$117,735,242	\$125,618,921	\$131,599,142	\$118,985,411	\$122,551,427	\$130,974,212	\$136,383,805
Net Revenues	-\$7,526,241	-\$14,974,238	-\$12,346,439	-\$10,704,100	-\$11,807,324	-\$10,555,039	\$6,875,658	\$8,472,277	\$4,172,576	\$2,981,662
Ending Reserves	\$103,335,766	\$88,361,528	\$76,015,089	\$65,310,989	\$53,503,665	\$42,948,626	\$49,824,285	\$58,296,562	\$62,469,138	\$65,450,800
<i>Debt Coverage (Target 2.0)</i>	<i>2.51</i>	<i>2.78</i>	<i>3.02</i>	<i>3.27</i>	<i>3.55</i>	<i>3.88</i>	<i>4.01</i>	<i>4.15</i>	<i>4.19</i>	<i>4.24</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Capital Revenues										
Use of Debt Proceeds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Capital Revenue	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Capital Expenditures	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861

City of Modesto

Projected Water Revenues & Expenses (\$ Millions)

Scenario 3 - Full Capital, No Debt

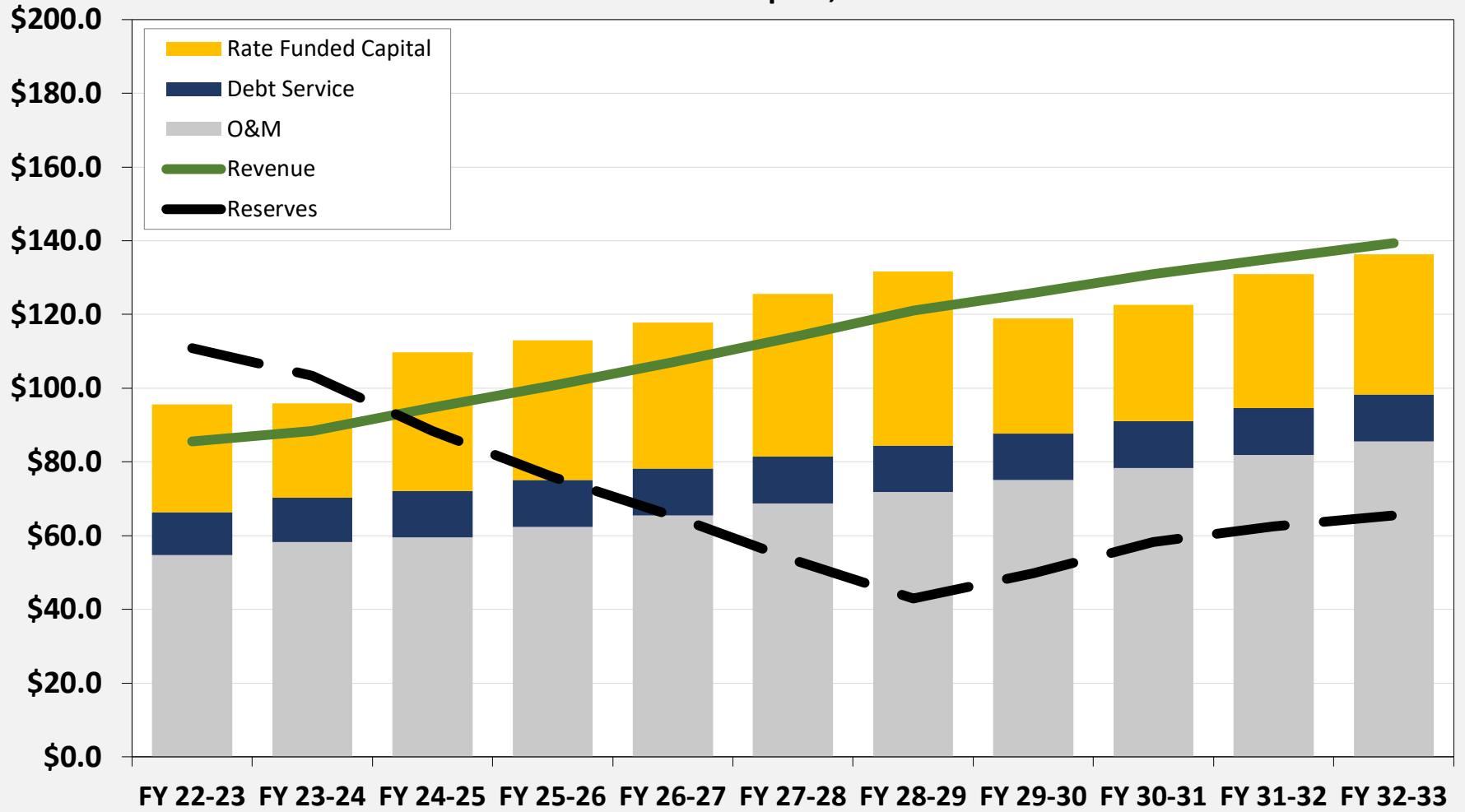


Table 6
City of Modesto
Water Rate Study
Customer Data
Scenario 3 - Full Capital, No Debt

Draft

Customer Data	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>
System Totals							
Total Accounts (#)	73,469	73,629	73,833	74,137	74,413	74,560	74,707
Growth (%)		0.22%	0.28%	0.41%	0.37%	0.20%	0.20%
Annual metered use (CCF) per meter	278	265	277	288	279	277	277
Annual production (CCF) per account	298	285	303	309	298	299	299
Billed, Metered Consumption (CCF)	18,639,728	18,222,157	19,509,688	20,697,851	20,568,355	20,562,541	20,693,839
Total Estimated Consumption (CCF)	20,710,040	19,789,661	20,643,245	21,464,258	20,796,593	20,676,660	20,693,839
Total Water Production (CCF)	21,919,447	20,965,305	22,397,473	22,916,498	22,203,522	22,277,633	22,328,428

Table 7**Draft****City of Modesto****Water Rate Study****Meter Equivalent Units****Scenario 3 - Full Capital, No Debt**

Meter Size*	Services	Meter Equivalent Ratio**	Meter Equivalent Units	Annual Meter Equivalent Units
5/8"	87	1.0	87.0	1,044.0
3/4"	13,459	1.0	13,459.0	161,508.0
1"	57,153	1.7	95,255.0	1,143,060.0
1.5"	1,168	3.3	3,893.3	46,720.0
2"	2,176	5.3	11,605.3	139,264.0
3"	158	11.7	1,843.3	22,120.0
4"	289	21.0	6,069.0	72,828.0
6"	141	43.3	6,110.0	73,320.0
8"	64	80.0	5,120.0	61,440.0
10"	11	126.7	1,393.3	16,720.0
12"	1	166.7	166.7	2,000.0
Total	74,707.0		145,002.0	1,740,024.0

* Customer data as of June 2022 provided by staff

** Capacity factors based on AWWA operating capacity standards by meter size

Table 8 Draft
City of Modesto
Water Rate Study
Functional Allocation
Scenario 3 - Full Capital, No Debt

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$0	\$7,550,855	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$36,978,922	\$330,328	\$36,648,594	0%	50%	50%	100%
Functional Allocation \$	\$109,969,011	\$330,328	\$109,638,683	\$9,096,523	\$42,958,793	\$57,583,367	\$109,638,683
Functional Allocation %				8.30%	39.18%	52.52%	100%
Revenue Requirement				\$6,985,150	\$32,973,272	\$44,200,007	\$84,158,429

Table 9

Draft

City of Modesto

Water Rate Study

Rate Derivation

Scenario 3 - Full Capital, No Debt

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	<i>#</i>	<i>EDU</i>	<i>CCF</i>
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$6,985,150</u>	<u>\$32,973,272</u>	<u>\$44,200,007</u>
Unit Cost (\$/Unit)	\$7.81	\$18.95	\$2.14

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$7.81	\$18.95	\$26.76
3/4"	1.00	\$7.81	\$18.95	\$26.76
1"	1.67	\$7.81	\$31.58	\$39.40
1.5"	3.33	\$7.81	\$63.17	\$70.98
2"	5.33	\$7.81	\$101.07	\$108.88
3"	11.67	\$7.81	\$221.08	\$228.90
4"	21.00	\$7.81	\$397.95	\$405.76
6"	43.33	\$7.81	\$821.17	\$828.98
8"	80.00	\$7.81	\$1,516.00	\$1,523.81
10"	126.67	\$7.81	\$2,400.33	\$2,408.15
12"	166.67	\$7.81	\$3,158.33	\$3,166.15

Table 10
City of Modesto
Water Rate Study
Drought Rate Derivation
Scenario 3 - Full Capital, No Debt

Row	Drought Rate Calculation	Units
A	Projected volume	CCF
B	Drought reduction	%
C	Drought volume (A x (1-B))	CCF
D	Volume reduction (A x B)	CCF
E	Variable Cost	\$/CCF
F	Variable cost reduction (D x E)	\$
G	Projected revenue requirement	\$
H	Drought revenue requirement (G - F)	\$
I	Drought rate (H / C)	\$/CCF

APPENDIX C

Scenario 3 Water Rate Study Tables

City of Modesto
Draft Water Rate Study Tables
Scenario 2 - Full Capital with New Debt
Draft

June 22, 2023



BARTLE WELLS ASSOCIATES
Independent Public Finance Advisors

Table A
City of Modesto
Water Rate Study
Rate Sheet
Scenario 2 - Full Capital with New Debt

Current and Proposed Water Rates	Current	Proposed Oct 1, 2023	Proposed Oct 1, 2024	Proposed Oct 1, 2025	Proposed Oct 1, 2026	Proposed Oct 1, 2027
Volumetric Rates						
Non-Drought (\$/CCF)	\$2.02	\$2.11	\$2.20	\$2.30	\$2.40	\$2.51
Drought (\$/CCF)		\$2.45	\$2.56	\$2.68	\$2.80	\$2.93
Monthly Fixed Charge						
<i>Meter Size</i>						
5/8"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
3/4"	\$25.44	\$26.43	\$27.62	\$28.86	\$30.16	\$31.52
1"	\$36.83	\$38.55	\$40.28	\$42.09	\$43.98	\$45.96
1.5"	\$65.32	\$68.85	\$71.95	\$75.19	\$78.57	\$82.11
2"	\$99.50	\$105.21	\$109.94	\$114.89	\$120.06	\$125.46
3"	\$207.73	\$220.35	\$230.27	\$240.63	\$251.46	\$262.78
4"	\$367.24	\$390.03	\$407.58	\$425.92	\$445.09	\$465.12
6"	\$748.90	\$796.05	\$831.87	\$869.30	\$908.42	\$949.30
8"	\$1,375.53	\$1,462.65	\$1,528.47	\$1,597.25	\$1,669.13	\$1,744.24
10"	\$2,173.05	\$2,311.05	\$2,415.05	\$2,523.73	\$2,637.30	\$2,755.98
12"	\$2,856.63	\$3,038.25	\$3,174.97	\$3,317.84	\$3,467.14	\$3,623.16

Table 1
City of Modesto
Water Rate Study
Projected Operating Expenses
Scenario 2 - Full Capital with New Debt

Draft

Expenses ¹	Allocation	Inflation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			Budgeted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
General Inflation Factor	General			5.0%	5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%
12460 FIN Cashiering	Customer Accounts	General	\$845,352	\$835,287	\$877,051	\$920,904	\$966,949	\$1,015,297	\$1,060,985	\$1,108,729	\$1,158,622	\$1,210,760	\$1,265,244
12470 FIN Utilities & Collections	Customer Accounts	General	2,499,546	\$2,411,368	\$2,531,936	\$2,658,533	\$2,791,460	\$2,931,033	\$3,062,929	\$3,200,761	\$3,344,795	\$3,495,311	\$3,652,600
12475 FIN Utility Assistance Programs	Administration	General	1,119,827	\$2,286,900	\$2,401,245	\$2,521,307	\$2,647,373	\$2,779,741	\$2,904,830	\$3,035,547	\$3,172,147	\$3,314,893	\$3,464,063
41010 UPP Administration	Administration	General	1,167,848	\$1,154,259	\$1,211,972	\$1,272,571	\$1,336,199	\$1,403,009	\$1,466,144	\$1,532,121	\$1,601,066	\$1,673,114	\$1,748,405
41410 UPP Water General	Administration	General	410,902	\$425,795	\$447,085	\$469,439	\$492,911	\$517,556	\$540,847	\$565,185	\$590,618	\$617,196	\$644,970
41420 UPP Water Billing & Collections	Customer Accounts	General	176,311	\$223,954	\$235,152	\$246,909	\$259,255	\$272,217	\$284,467	\$297,268	\$310,645	\$324,624	\$339,233
42024 UTL Water Engineering Design	Capital	General	1,122,154	\$1,119,841	\$1,175,833	\$1,234,625	\$1,296,356	\$1,361,174	\$1,422,427	\$1,486,436	\$1,553,325	\$1,623,225	\$1,696,270
43010 UPP Ground Water Management Plan	Source of Supply	General	\$115,141	\$61,438	\$64,510	\$67,735	\$71,122	\$74,678	\$78,039	\$81,551	\$85,220	\$89,055	\$93,063
43020 UPP Water System Analysis	Water System	General	220,977	\$191,680	\$201,264	\$211,327	\$221,894	\$232,988	\$243,473	\$254,429	\$265,878	\$277,843	\$290,346
43030 UPP Urban Water Management Plan	Water Demand	General	46,705	\$32,502	\$34,127	\$35,833	\$37,625	\$39,506	\$41,284	\$43,142	\$45,083	\$47,112	\$49,232
43040 UPP Water Quality Study	Water Demand	General	86,457	\$81,917	\$86,013	\$90,313	\$94,829	\$99,571	\$104,051	\$108,734	\$113,627	\$118,740	\$124,083
43060 UPP Capital Planning	Capital	General	801,938	\$800,160	\$840,168	\$882,176	\$926,285	\$972,599	\$1,016,366	\$1,062,103	\$1,109,898	\$1,159,843	\$1,212,036
43070 UPP Water Rate Analysis	Administration	General	122,251	\$4,905	\$5,150	\$5,408	\$5,678	\$5,962	\$6,230	\$6,511	\$6,804	\$7,110	\$7,430
43080 UPP Sphere of Influence	Administration	General	35,962	\$34,933	\$36,680	\$38,514	\$40,439	\$42,461	\$44,372	\$46,369	\$48,455	\$50,636	\$52,914
45010 UPP Water Services Administration	Administration	General	2,192,418	\$2,233,552	\$2,345,230	\$2,462,491	\$2,585,616	\$2,714,896	\$2,837,067	\$2,964,735	\$3,098,148	\$3,237,564	\$3,383,255
45020 UPP Systems Maintenance	Water System	General	3,120,442	\$3,445,734	\$3,618,021	\$3,798,922	\$3,988,868	\$4,188,311	\$4,376,785	\$4,573,741	\$4,779,559	\$4,994,639	\$5,219,398
45040 UPP Construction	Water System	General	6,233,954	\$6,893,861	\$7,238,554	\$7,600,482	\$7,980,506	\$8,379,531	\$8,756,610	\$9,150,657	\$9,562,437	\$9,992,747	\$10,442,420
45050 UPP Wells & Tanks	Source of Supply	General	8,654,114	\$8,842,192	\$9,284,302	\$9,748,517	\$10,235,943	\$10,747,740	\$11,231,388	\$11,736,800	\$12,264,956	\$12,816,879	\$13,393,639
45055 UPP Water Quality	Water Demand	General	2,908,597	\$3,081,081	\$3,235,135	\$3,396,892	\$3,566,736	\$3,745,073	\$3,913,602	\$4,089,714	\$4,273,751	\$4,466,069	\$4,667,043
45060 UPP Service & Meters	Customer Accounts	General	2,489,378	\$2,710,826	\$2,846,367	\$2,988,686	\$3,138,120	\$3,295,026	\$3,443,302	\$3,598,251	\$3,760,172	\$3,929,380	\$4,106,202
45065 UPP Water Conservation	Water Demand	General	1,580,898	\$1,914,878	\$2,010,622	\$2,111,153	\$2,216,711	\$2,327,546	\$2,432,286	\$2,541,739	\$2,656,117	\$2,775,642	\$2,900,546
45070 UPP MID Surface Water T & DA	Water Demand	General	17,120,214	\$17,135,229	\$17,991,990	\$18,891,590	\$19,836,169	\$20,827,978	\$21,765,237	\$22,744,673	\$23,768,183	\$24,837,751	\$25,955,450
Non-capital projects (FY23/24 is Billing Software)	Administration	General	684,000	\$1,625,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Water - Grant Research & Writing - 101452	Capital	General	150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
UTL - Groundwater Well Strategy Plan - 101456	Capital	General	126,125	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer Into Fund 4140 - Match Funding	Administration	General	46,723	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Storm Drain Annual Transfer-out (rockwell rej)	Administration	General	700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$731,500	\$764,418	\$798,816	\$834,763
JPA Building svcs Annual Transfer-out	Administration	General	65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$67,925	\$70,982	\$74,176	\$77,514
Total Operating Expenses			\$54,714,074	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117

¹ Based on City's FY 22-23 budget

Table 2
City of Modesto
Water Rate Study
Projected Revenues
Scenario 2 - Full Capital with New Debt

Draft

Revenue	Allocation	Escalation	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
			Budgeted	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
Revenue Escalation		Growth		0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Revenue Escalation		None		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revenue Escalation		Interest		0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Rate Revenue		Growth	\$79,318,075	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350	\$99,464,493	\$106,639,861	\$114,332,861	\$122,580,833	\$130,195,555
Revenue from Rate Increase^{1,2}				\$2,963,325	\$3,723,442	\$3,898,778	\$4,082,372	\$4,274,611	\$6,962,514	\$7,464,790	\$8,003,300	\$7,354,850	\$6,509,778
Other Revenue													
Refunds, Damages, and Cost Recovery/Other	Administration	Growth	\$10,000	\$10,020	\$10,040	\$10,060	\$10,080	\$10,100	\$10,121	\$10,141	\$10,161	\$10,181	\$10,202
Water Fund Development Fees	Capital	Growth	\$1,220,500	\$329,010	\$329,668	\$330,327	\$330,988	\$331,650	\$332,313	\$332,978	\$333,643	\$334,311	\$334,979
Rental Income	Administration	None	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000	\$42,000
Service Credits	As All Other	None	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214	\$3,062,214
Utility Assistance Fee	As All Other	None	\$200,902	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Repayment of Carpenter Road Landfill mitigation loan - Advance 16A/B/C	As All Other	None	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421	\$707,421
Interest	As All Other	None	\$500,000	\$500,000	\$408,075	\$334,770	\$264,041	\$271,030	\$253,912	\$241,383	\$243,338	\$243,974	\$241,324
Total Other Revenue			\$5,743,037	\$4,650,665	\$4,559,418	\$4,486,792	\$4,416,744	\$4,424,415	\$4,407,981	\$4,396,137	\$4,398,778	\$4,400,101	\$4,398,140
Total Revenue			\$85,061,112	\$86,635,989	\$91,026,004	\$95,025,090	\$99,218,491	\$103,690,376	\$110,834,988	\$118,500,788	\$126,734,939	\$134,335,784	\$141,103,473

¹Additional revenue based on recommended increase

²Adjusted if rates adopted in the middle of fiscal year

Table 3
City of Modesto
Water Rate Study
Capital Improvement Costs
Scenario 2 - Full Capital with New Debt

Draft

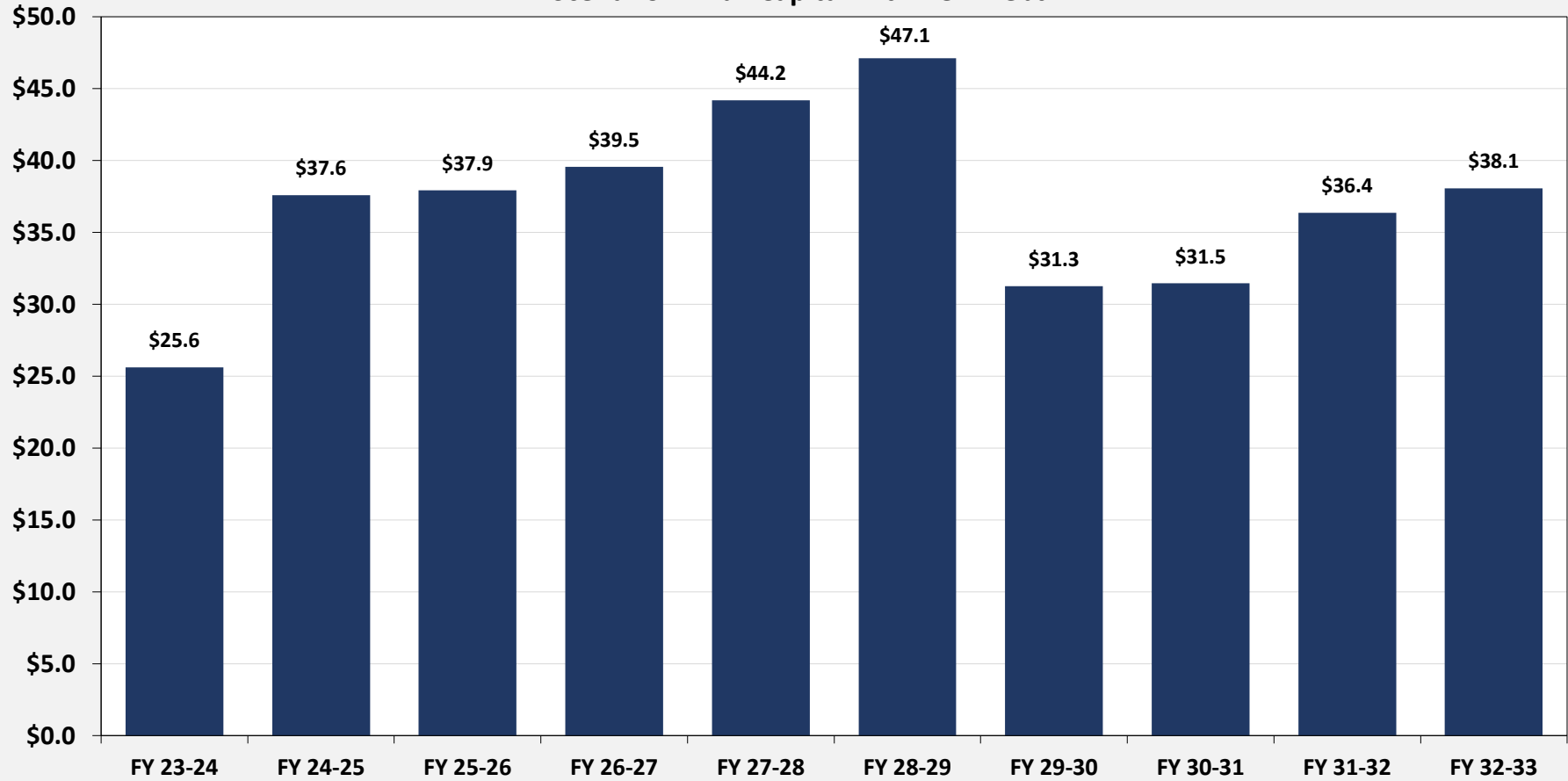
Capital Improvement Plan (CIP)	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Total CIP (Current Dollars)	\$29,321,500	\$25,625,000	\$35,800,976	\$34,409,979	\$34,162,513	\$36,358,682	\$37,092,938	\$23,558,714	\$22,681,004	\$25,081,003	\$25,138,184
Total CIP (Inflated Dollars)	\$29,321,500	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
<i>Annual Inflation Rate</i>			5.0%	5.0%	5.0%	5.0%	4.5%	4.5%	4.5%	4.5%	4.5%

City of Modesto

Water Capital Improvements (\$ millions)

Scenario 2 - Full Capital with New Debt

Future \$; includes annual construction cost inflation.



Source: City of Modesto 2023 CIP plus annual construction cost inflation.

Table 4
City of Modesto
Water Rate Study
Debt
Scenario 2 - Full Capital with New Debt

Draft

Debt	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
	<i>Budgeted</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
Existing Debt											
55140-54104 MID T & DA - 1998D (2013G)	\$5,155,541	\$4,367,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
55140-54103 MID T & DA - 2007F	\$4,257,700	\$4,032,800	\$8,409,205	\$8,409,205	\$8,409,206	\$8,409,207	\$8,409,208	\$8,409,209	\$8,409,210	\$8,409,211	\$8,409,212
4130 2008 Water Rev Lease Bond	\$2,164,623	\$3,546,482	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014	\$4,240,014
55060 CA DWR (Del Este)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4140-12183 ARRA funding CDPH	\$46,723	\$38,237	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600	\$36,600
Total Current Debt Service	\$11,624,587	\$11,985,419	\$12,685,819	\$12,685,819	\$12,685,820	\$12,685,821	\$12,685,822	\$12,685,823	\$12,685,824	\$12,685,825	\$12,685,826
Proposed Borrowing											
Net Proceeds Needed						\$40,000,000		\$25,000,000			
Repayment Term (yrs)							30		30		
Interest Rate							5.0%		5.0%		
Month of Issue							1		1		
Issuance Cost						\$300,000		\$300,000			
Total Debt Issue Size						\$40,300,000		\$25,300,000			
Prorated Debt Service - Current Yr. Only						\$2,622,000		\$1,646,000			
Annual Debt Service Payment (rounded)						\$2,622,000		\$1,646,000			
Total Proposed Annual Water Debt Service	\$0	\$0	\$0	\$0	\$0	\$2,622,000	\$2,622,000	\$4,268,000	\$4,268,000	\$4,268,000	\$4,268,000

**Table 5
City of Modesto
Water Rate Study
Cash Flow Projections
Scenario 2 - Full Capital with New Debt**

Projected Cashflow	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Rate Revenue Increase	4.5%	4.5%	4.5%	4.5%	4.5%	7.0%	7.0%	7.0%	6.0%	5.0%
Beginning Reserves	\$110,862,007	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563	\$63,478,048	\$60,345,805	\$60,834,565	\$60,993,415	\$60,330,961
Revenues										
Rate Revenue	\$79,021,999	\$82,743,145	\$86,639,520	\$90,719,375	\$94,991,350	\$99,464,493	\$106,639,861	\$114,332,861	\$122,580,833	\$130,195,555
Rate Increase Revenue	3,555,990	3,723,442	3,898,778	4,082,372	4,274,611	6,962,514	7,464,790	8,003,300	7,354,850	6,509,778
Timing Adjustment*	-592,665	0	0	0	0	0	0	0	0	0
Other Revenue	4,650,665	4,559,418	4,486,792	4,416,744	4,424,415	4,407,981	4,396,137	4,398,778	4,400,101	4,398,140
Interest on Reserves	\$443,448	\$408,075	\$334,770	\$264,041	\$271,030	\$253,912	\$241,383	\$243,338	\$243,974	\$241,324
Total Revenue	\$87,079,437	\$91,434,079	\$95,359,861	\$99,482,532	\$103,961,406	\$111,088,900	\$118,742,171	\$126,978,277	\$134,579,758	\$141,344,796
Expenses										
Operating Expenses	\$58,312,292	\$59,483,407	\$62,419,327	\$65,502,043	\$68,738,895	\$71,797,721	\$75,028,618	\$78,404,906	\$81,933,127	\$85,620,117
Existing Debt Service	11,985,419	12,685,819	12,685,819	12,685,820	12,685,821	12,685,822	12,685,823	12,685,824	12,685,825	12,685,826
New Debt Service	0	0	0	0	2,622,000	2,622,000	4,268,000	4,268,000	4,268,000	4,268,000
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$19,547,379	\$24,194,205	\$27,115,599	\$26,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Expenses	\$95,922,711	\$109,760,251	\$113,042,148	\$97,735,242	\$108,240,921	\$114,221,142	\$118,253,411	\$126,819,427	\$135,242,212	\$140,651,805
Net Revenues	-\$8,843,274	-\$18,326,172	-\$17,682,287	\$1,747,289	-\$4,279,515	-\$3,132,242	\$488,760	\$158,850	-\$662,454	\$692,992
Ending Reserves	\$102,018,732	\$83,692,561	\$66,010,273	\$67,757,563	\$63,478,048	\$60,345,805	\$60,834,565	\$60,993,415	\$60,330,961	\$61,023,953
<i>Debt Coverage (Target 2.0)</i>	<i>2.40</i>	<i>2.52</i>	<i>2.60</i>	<i>2.68</i>	<i>2.30</i>	<i>2.57</i>	<i>2.58</i>	<i>2.87</i>	<i>3.11</i>	<i>3.29</i>

*Reflects October rate implementation

Capital Funding	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29	FY 29-30	FY 30-31	FY 31-32	FY 32-33
Capital Revenues										
Use of Debt Proceeds	\$0	\$0	\$0	\$20,000,000	\$20,000,000	\$20,000,000	\$5,000,000	\$0	\$0	\$0
Rate Funded Capital	\$25,625,000	\$37,591,025	\$37,937,002	\$19,547,379	\$24,194,205	\$27,115,599	\$26,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Capital Revenue	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861
Total Capital Expenditures	\$25,625,000	\$37,591,025	\$37,937,002	\$39,547,379	\$44,194,205	\$47,115,599	\$31,270,970	\$31,460,697	\$36,355,260	\$38,077,861

City of Modesto

Projected Water Revenues & Expenses (\$ Millions)

Scenario 2 - Full Capital with New Debt

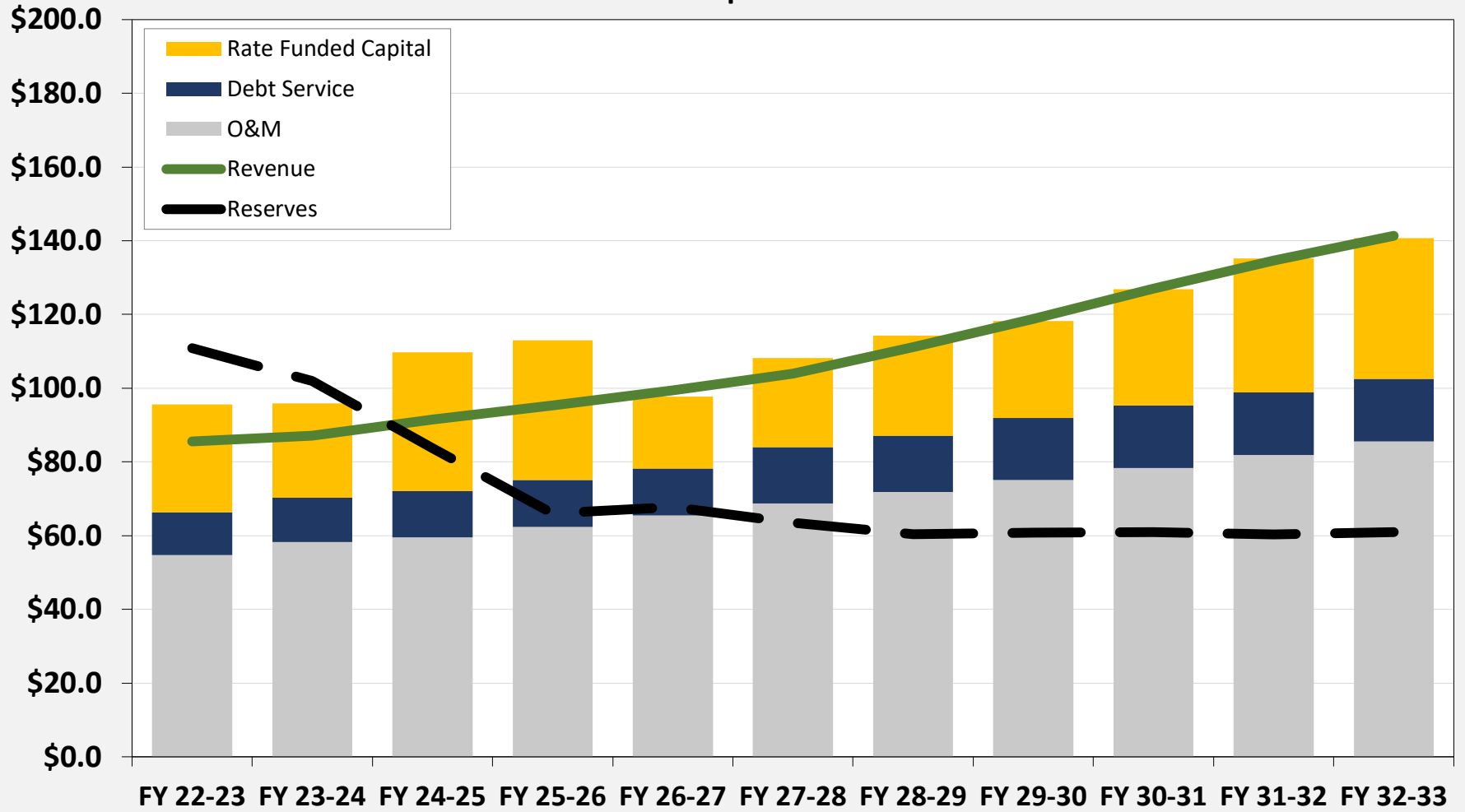


Table 6
City of Modesto
Water Rate Study
Customer Data
Scenario 2 - Full Capital with New Debt

Draft

Customer Data	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Actual</i>	<i>Projected</i>	<i>Projected</i>
System Totals							
Total Accounts (#)	73,469	73,629	73,833	74,137	74,413	74,560	74,707
Growth (%)		0.22%	0.28%	0.41%	0.37%	0.20%	0.20%
Annual metered use (CCF) per meter	278	265	277	288	279	277	277
Annual production (CCF) per account	298	285	303	309	298	299	299
Billed, Metered Consumption (CCF)	18,639,728	18,222,157	19,509,688	20,697,851	20,568,355	20,562,541	20,693,839
Total Estimated Consumption (CCF)	20,710,040	19,789,661	20,643,245	21,464,258	20,796,593	20,676,660	20,693,839
Total Water Production (CCF)	21,919,447	20,965,305	22,397,473	22,916,498	22,203,522	22,277,633	22,328,428

Table 7**Draft****City of Modesto****Water Rate Study****Meter Equivalent Units****Scenario 2 - Full Capital with New Debt**

Meter Size*	Services	Meter Equivalent Ratio**	Meter Equivalent Units	Annual Meter Equivalent Units
5/8"	87	1.0	87.0	1,044.0
3/4"	13,459	1.0	13,459.0	161,508.0
1"	57,153	1.7	95,255.0	1,143,060.0
1.5"	1,168	3.3	3,893.3	46,720.0
2"	2,176	5.3	11,605.3	139,264.0
3"	158	11.7	1,843.3	22,120.0
4"	289	21.0	6,069.0	72,828.0
6"	141	43.3	6,110.0	73,320.0
8"	64	80.0	5,120.0	61,440.0
10"	11	126.7	1,393.3	16,720.0
12"	1	166.7	166.7	2,000.0
Total	74,707.0		145,002.0	1,740,024.0

* Customer data as of June 2022 provided by staff

** Capacity factors based on AWWA operating capacity standards by meter size

Table 8 Draft
City of Modesto
Water Rate Study
Functional Allocation
Scenario 2 - Full Capital with New Debt

Functional Allocation	Amount	Offsetting Revenue	Allocation Amount	Customer	Capacity	All Volume	Total
Administration	\$7,550,855	\$52,060	\$7,498,795	30%	70%	0%	100%
Source of Supply	\$9,839,635	\$0	\$9,839,635	0%	10%	90%	100%
Water Demand	\$24,584,204	\$0	\$24,584,204	0%	0%	100%	100%
Customer Accounts	\$6,831,266	\$0	\$6,831,266	100%	0%	0%	100%
Water System	\$11,638,388	\$0	\$11,638,388	0%	50%	50%	100%
Debt Service	\$12,545,740	\$0	\$12,545,740	0%	100%	0%	100%
Capital	\$28,978,922	\$330,328	\$28,648,594	0%	50%	50%	100%
Functional Allocation \$	\$101,969,011	\$382,388	\$101,586,623	\$9,080,905	\$38,922,351	\$53,583,367	\$101,586,623
Functional Allocation %				8.94%	38.31%	52.75%	100%
Revenue Requirement				\$7,382,472	\$31,635,628	\$43,559,889	\$82,577,989

Table 9

Draft

**City of Modesto
Water Rate Study
Rate Derivation
Scenario 2 - Full Capital with New Debt**

Allocation Units	Customer	Capacity	All Volume
<i>Unit of Measure</i>	<i>#</i>	<i>EDU</i>	<i>CCF</i>
Allocation Units	894,714	1,740,024	20,693,839
Revenue Requirement	<u>\$7,382,472</u>	<u>\$31,635,628</u>	<u>\$43,559,889</u>
Unit Cost (\$/Unit)	\$8.25	\$18.18	\$2.11

Monthly Fixed Charge Calculation	Capacity Factor**	Monthly Customer Component	Monthly Capacity Component	Monthly Fixed Charge
5/8"	1.00	\$8.25	\$18.18	\$26.43
3/4"	1.00	\$8.25	\$18.18	\$26.43
1"	1.67	\$8.25	\$30.30	\$38.55
1.5"	3.33	\$8.25	\$60.60	\$68.85
2"	5.33	\$8.25	\$96.96	\$105.21
3"	11.67	\$8.25	\$212.10	\$220.35
4"	21.00	\$8.25	\$381.78	\$390.03
6"	43.33	\$8.25	\$787.80	\$796.05
8"	80.00	\$8.25	\$1,454.40	\$1,462.65
10"	126.67	\$8.25	\$2,302.80	\$2,311.05
12"	166.67	\$8.25	\$3,030.00	\$3,038.25

Table 10
City of Modesto
Water Rate Study
Drought Rate Derivation
Scenario 2 - Full Capital with New Debt

Row	Drought Rate Calculation	Units
A	Projected volume	CCF
B	Drought reduction	%
C	Drought volume (A x (1-B))	CCF
D	Volume reduction (A x B)	CCF
E	Variable Cost	\$/CCF
F	Variable cost reduction (D x E)	\$
G	Projected revenue requirement	\$
H	Drought revenue requirement (G - F)	\$
I	Drought rate (H / C)	\$/CCF