

**ORDINANCE NO. 07.18.23.01**

**AN ORDINANCE OF THE FLORIN RESOURCE  
CONSERVATION DISTRICT BOARD OF DIRECTORS  
APPROVING THE 2024-2028 WATER RATE STUDY REPORT AND  
ADOPTING NEW WATER SERVICE RATES AND PRIVATE  
FIRE PROTECTION SERVICE RATES PRESCRIBED IN THE STUDY**

**WHEREAS**, the Florin Resource Conservation District (District) is a Resource Conservation District organized pursuant to Division 9 of the California Public Resources Code, Sections 9001, et seq. (Resource Conservation Law); and

**WHEREAS**, the District is formed for the purposes delineated in the Public Resources Code Section 9001 and all things necessary to carry out the provisions of the Resource Conservation Law and adopted District Bylaws; and

**WHEREAS**, Public Resource Code Section 9403.5 authorizes the District to adopt a resolution or ordinance to establish and impose water service rates and private fire protection service rates; and

**WHEREAS**, Article XIII D Section 6 of the California Constitution authorizes the District to establish and impose property-related fees and charges including water rates; and

**WHEREAS**, the District Board of Directors (Board) caused to have prepared the Elk Grove Water District 2024-2028 Water Rate Study Report, dated May 02, 2023, which recommends changes to the existing water service rates and private fire protection service rates; and

**WHEREAS**, pursuant to Article XIII D Section 6 of the California Constitution, the District held a public hearing on July 18, 2023, as part of a regularly scheduled meeting of its Board, during which the District gave members of the public the opportunity to make oral or written presentations to the Board on the proposed changes to the water service rates and private fire protection service rates; and

**WHEREAS**, the District published notice of the time and place of the July 18, 2023 public hearing, including a general explanation of the matter to be considered, at least ten days before the hearing as provided by Government Code section 6062a; and

**WHEREAS**, at least ten days before the public hearing, the District made data publicly available that indicates (1) the estimated cost required to provide the services for which the District proposes to levy the water service rates and private fire protection service rates and (2) the revenue sources anticipated to provide such services, all in compliance with Public Resource Code Section 9403.5; and

**WHEREAS**, the above-described data sets forth reasonable cost estimates for the District's provision of the water service rates and private fire protection service rates and establishes that the proceeds generated by the rates do not exceed the total of the estimated costs.

**NOW, THEREFORE, THE FLORIN RESOURCE CONSERVATION DISTRICT BOARD OF DIRECTORS HEREBY DETERMINES AND ORDAINS AS FOLLOWS:**

SECTION 1. Recitals. The Board hereby adopts the foregoing recitals as true and correct and incorporates them herein by reference.

SECTION 2. Final Approval of Water Rate Study. The Elk Grove Water District 2024-2028 Water Rate Study Report dated May 02, 2023, is hereby approved.

SECTION 3. Water Service Rates. Beginning on January 01, 2024, and continuing annually thereafter on that same month and day through and including January 1, 2028, water service rates will be automatically increased according to the water service rates recommended in the “Elk Grove Water District 2024-2028 Water Rate Study Report” dated May 02, 2023 and attached as Exhibit A. The Board of Directors has the discretion to defer all or partial annual rate increases to future years when it is determined that none or not all of the recommended rate increase is required to balance the annual operating budget.

SECTION 4. Private Fire Protection Service Rates. Beginning on January 01, 2024 and continuing annually thereafter on that same month and day through and including January 01, 2028, private fire protection service rates will be automatically increased according to the private fire protection service rates recommended in the “Elk Grove Water District 2024-2028 Water Rate Study Report” dated May 02, 2023 and attached as Exhibit A. The Board has the discretion to defer all or partial annual rate increases to future years when it is determined that none or not all of the recommended rate increase is required to balance the annual operating budget.

SECTION 5. California Environmental Quality Act Compliance.

(a) Pursuant to California Public Resources Code section 21080(b)(8), the District’s adjustments to the water rates and miscellaneous water service fees and charges are not subject to the requirements of the California Environmental Quality Act. In accordance with Section 21080(b)(8), the District finds and determines that these adjustments constitute the modification of charges to meet operating expenses and for obtaining funds for capital projects necessary to provide and maintain water services within the District’s service area.

(b) District staff is hereby directed to file a Notice of Exemption with the Sacramento County Clerk within three (3) business days after adoption of this Ordinance.

SECTION 6. Certification. The Board Secretary shall certify the adoption of this Ordinance.

SECTION 7. Ordinance Effective Date. This ordinance shall take effect upon its adoption.

**PASSED, APPROVED AND ADOPTED** by the Florin Resource Conservation District Board of Directors on this 18<sup>th</sup> day of July 2023 by the following vote:

**AYES:** Lindsay, Medina, Mulberg, Nelson, and Scherman

**NOES:**

**ABSENT:**

**ABSTAIN:**

DocuSigned by:

*Tom Nelson*

521D541515E84E6...

Tom Nelson

Chair

ATTEST:

DocuSigned by:

*Stefani Phillips*

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Stefani Phillips

Board Secretary

APPROVED AS TO FORM:

DocuSigned by:

*Andrew Ramos*

7E215884CE074BF...

Andrew Ramos

General Counsel

**EXHIBIT “A”**

**FLORIN RESOURCE CONSERVATION DISTRICT**

**“2024-2028 WATER RATE STUDY REPORT”**

[Attached behind this cover page]

**FLORIN RESOURCE CONSERVATION  
DISTRICT / ELK GROVE WATER DISTRICT**

# **Water Rate Study**

**FINAL REPORT / MAY 2, 2023**





May 2, 2023

Mr. Bruce Kamilos, PE  
General Manager  
Florin Resource Conservation District / Elk Grove Water District  
9829 Waterman Rd.  
Elk Grove, CA 95624

**Subject: Water Rate Study - Draft**

Dear Mr. Kamilos:

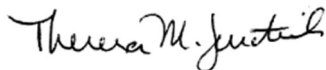
Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Water Rate Study report for the Florin Resource Conservation District / Elk Grove Water District (District). This report explains the methodologies and rationale used to develop the financial plan and rates for water service within the District's service areas that align with the requirements of Proposition 218.

The major study objectives include the following:

- Develop a financial plan for the water enterprise to ensure financial sufficiency, meet operational and maintenance (O&M) costs, maintain sufficient funding for capital refurbishment and replacement (R&R) needs, and meeting debt service requirements and bond covenant ratio;
- Conduct a cost-of-service analysis for water services;
- Develop fair and equitable water rates over a five-year period; and
- Conduct a customer impact analysis for the proposed water rates.

It has been a pleasure working with you, and we thank you and District staff for the support provided during the course of this study.

Sincerely,



**Theresa Jurotich, PE (KS, WA), PMP**  
*Manager*



**Charles Diamond**  
*Analyst*

# Contents

<b>1. Executive Summary .....</b>	<b>1</b>
<b>1.1. Background .....</b>	<b>1</b>
<b>1.2. Process and Approach .....</b>	<b>1</b>
1.2.1. Step 1: Financial Plan and Revenue Requirement Calculation .....	1
1.2.2. Step 2: Cost-of-Service Analysis .....	1
1.2.3. Step 3: Rate Design and Calculation .....	2
1.2.4. Step 4: Report Preparation and Rate Adoption.....	2
<b>1.3. Water Summary .....</b>	<b>2</b>
1.3.1. Financial Plan.....	2
1.3.2. Proposed Water Rates .....	4
<b>2. Legal Requirements and Rate Setting Methodology.....</b>	<b>6</b>
<b>2.1. Legal Requirements .....</b>	<b>6</b>
2.1.1. California Constitution – Article XIII D, Section 6 (Proposition 218) .....	6
2.1.2. California Constitution Article X, Section 2 .....	6
<b>2.2. Rate Setting Methodology .....</b>	<b>7</b>
<b>3. Financial Plan Assumptions.....</b>	<b>9</b>
<b>3.1. Key Financial Information .....</b>	<b>9</b>
<b>3.2. Inflation .....</b>	<b>9</b>
<b>3.3. Projected Growth .....</b>	<b>9</b>
<b>3.4. Water Enterprise Reserve Policy .....</b>	<b>10</b>
<b>3.5. Required Debt Coverage Ratio .....</b>	<b>11</b>
<b>4. Water Financial Plan .....</b>	<b>12</b>
<b>4.1. Revenue Requirements .....</b>	<b>12</b>
4.1.1. Revenues.....	12
4.1.2. Operating Expenses.....	13
4.1.3. Non-Operating Expenses .....	14
4.1.4. Projected Capital Improvement Projects.....	14
<b>4.2. Water Financial Plan .....</b>	<b>15</b>
4.2.1. Status Quo Financial Plan .....	15
4.2.2. Proposed Financial Plan .....	16



**5. Water Cost-of-Service and Proposed Water Rates ..... 20**

**5.1. Process and Approach .....20**

5.1.1. Calculate Revenue Requirement..... 20

5.1.2. Cost-of-Service Analysis ..... 20

5.1.3. Rate Design and Calculations ..... 21

5.1.4. Rate Adoption ..... 21

**5.2. Cost-of-Service Calculations .....22**

5.2.1. Revenue Requirement Determination ..... 22

5.2.2. Peaking Factors ..... 22

5.2.3. Operating and Capital Allocation ..... 23

5.2.4. Equivalent Meters ..... 26

5.2.5. Allocation of Public and Private Fire Protection Costs ..... 26

5.2.6. Unit Costs of Service..... 27

**5.3. Proposed Water Rates and Charges .....30**

**6. Customer Impact Analysis ..... 33**

# Tables

Table 1-1: Proposed Retail Water Revenue Adjustments.....	2
Table 1-2: Current and Proposed Water Rates and Charges .....	5
Table 3-1: Assumed Cost Escalation Factors.....	9
Table 3-2: Number of Water Connections .....	10
Table 3-3: Number of Private Fire Connections .....	10
Table 3-4: Projected Water Use (ccf) .....	10
Table 4-1: Current Water Rates .....	12
Table 4-2: Projected Revenue from Current Charges .....	13
Table 4-3: Projected Other Revenue.....	13
Table 4-4: Budgeted and Projected Operating Expenses.....	14
Table 4-5: Budgeted and Projected Non-Operating Expenses .....	14
Table 4-6: Proposed Retail Zone Revenue Adjustments.....	16
Table 4-7: Proposed Financial Plan .....	17
Table 5-1: Annualized Revenue Requirements for FYE 2024 .....	22
Table 5-2: Water System Peaking Factors.....	23
Table 5-3: Max Day Capacity Factor .....	23
Table 5-4: Allocation of Functions to Cost Components.....	24
Table 5-5: Allocation of Operating Expenses to Cost Components .....	24
Table 5-6: Allocation of Water Assets to Cost Components .....	25
Table 5-7: Equivalent Meters .....	26
Table 5-8: Equivalent Fire Meters .....	27
Table 5-9: Units-of-Service .....	28
Table 5-10: Fire Service Share of Max Day Requirements.....	28
Table 5-11: Revenue Requirement Allocation and Unit Cost Derivation.....	29
Table 5-12: Unit Costs-of-Service .....	29
Table 5-13: Peaking Unit Rate Calculation.....	30
Table 5-14: Monthly Service Charge Derivation .....	30
Table 5-15: Private Fire Protection Service Charge Derivation.....	31
Table 5-16: Proposed Water Commodity Rate.....	31
Table 5-17: Proposed 5-Year Water Rates and Charges .....	32

# Figures

Figure 1-1: Water Operating Financial Plan ..... 3

Figure 1-2: Estimated Water Ending Fund Balances ..... 3

Figure 1-3: Water Capital Improvement Program Funding ..... 4

Figure 1-4: Debt Service Coverage Ratio..... 4

Figure 4-1: Projected Capital Expenditures ..... 15

Figure 4-2: Status Quo Water Enterprise Ending Balances (No Revenue Adjustments) ..... 15

Figure 4-3: Water Operating Financial Plan ..... 18

Figure 4-4: Projected Water Reserve Ending Balances ..... 18

Figure 4-5: Debt Service Coverage Ratio..... 19

Figure 6-1: Sample Single Family Residential Monthly Water Bill Comparison, FYE 2024..... 33

Figure 6-2: Sample Non- Residential Bill Comparison, FYE 2024 ..... 34

Figure 6-3: Sample Irrigation Bill Comparison, FYE 2024 ..... 34

# Appendices

- Appendix A: Water System Capital Projects
- Appendix B: O&M Line-Item Allocations

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# 1. Executive Summary

## 1.1. Background

In 2022, the Florin Resource Conservation District / Elk Grove Water District (District) engaged Raftelis to conduct a water rate study to update rates and charges for water for the fiscal years ending (FYE) 2024 – FYE 2028 that align with Proposition 218. While the District's fiscal year is July 1 through June 30, District rates are typically effective January 1 of each fiscal year.

The major study objectives include the following:

- Develop a financial plan for the water enterprise to ensure financial sufficiency, meet operational and maintenance (O&M) costs, maintain sufficient funding for capital refurbishment and replacement (R&R) needs, and meet debt service and bond covenant ratio requirements;
- Conduct a cost-of-service analysis for water services;
- Develop fair and equitable water rates over a five-year period; and
- Conduct a customer impact analysis for the proposed water rates.

## 1.2. Process and Approach

The study is informed by the District's policy objectives, the current water system rates, and the legal requirements in California (namely, Proposition 218). The resulting cost-of-service analysis and rate design process considers all these factors and follows four key steps, outlined below, to derive proposed rates that fulfill the District's policy objectives, meet industry standards, and align with Proposition 218.

### 1.2.1. Step 1: Financial Plan and Revenue Requirement Calculation

The rate-making process begins by developing a multi-year financial plan, which is used to determine the revenue adjustment and for determining the revenue requirement for the base year, also known as the test year or rate-setting year. The base year for this study is FYE 2024 (July 1, 2023 to June 30, 2024). The revenue requirement should sufficiently fund the utility's O&M costs, annual debt service, capital project expenses, and reserve funding as projected in the District's budgets.

### 1.2.2. Step 2: Cost-of-Service Analysis

The annual cost of providing the utility service, or the revenue requirement, is then distributed among customer classes commensurate with their use and burden on the system. A cost-of-service analysis involves the following steps:

- Functionalize costs – the O&M expense budget is categorized into functions such as supply, treatment, pumping, transmission and distribution (T&D), etc.
- Allocate to cost components – the functionalized costs are then allocated to system cost components such as supply, delivery, peaking, conservation, etc.
- Develop unit costs – unit costs for each cost component are determined using appropriate units-of-service for each.
- Distribute cost components – the cost components are allocated to each customer class using the unit costs in proportion to their demand and burden on the system.

A cost-of-service analysis considers both the average water demand and peak demand. Peaking costs are incurred during maximum consumption periods, most often coinciding with summertime irrigation use. Additional capacity-related costs are associated with designing, constructing, operating, maintaining, replacing, and refurbishing facilities to meet peak demand. These peaking costs must be allocated to the customer classes whose water demand patterns generate additional costs for the utility, proportionate to their burden on the peaking-related facilities.

### 1.2.3. Step 3: Rate Design and Calculation

After allocating the revenue requirement for each cost component to its corresponding customer classes, the rate design and calculation process can begin. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support the District's policy objectives while adhering to cost-of-service principles. Rates are not only a financial instrument but act as a public information tool in communicating policy objectives to customers. The rate design process also includes a rate impact analysis for all customer classes and a sample customer bill impact analysis.

### 1.2.4. Step 4: Report Preparation and Rate Adoption

The final step in a cost-of-service and rate study is to develop the report in preparation for the rate adoption process. The report documents the rate study results and presents the methodologies, rationale, justifications, and calculations utilized to derive the proposed rates. A thorough and methodical report serves three important functions: fully deriving the rates, showing the nexus to costs, and communicating the rate adoption process to customers and other important stakeholders.

## 1.3. Water Summary

### 1.3.1. Financial Plan

Table 1-1 displays the proposed water revenue adjustments over the study period (FYE 2024 to FYE 2028). The current financial plan shows that revenue adjustments are required to adequately fund all operating expenses, debt coverage requirements, and achieve reserve policy targets.

**Table 1-1: Proposed Retail Water Revenue Adjustments**

Fiscal Year	Effective Month	Proposed Revenue Adjustment
2024	January	4.5%
2025	January	4.5%
2026	January	4.5%
2027	January	4.5%
2028	January	4.5%

Figure 1-1 illustrates the water operating financial plan for FYE 2023 – FYE 2028. Revenues from proposed rates are sufficient to recover O&M costs (including water supply), capital improvements, and debt service while maintaining reserves that will be drawn by the District to fund future capital improvement needs.

Figure 1-1: Water Operating Financial Plan

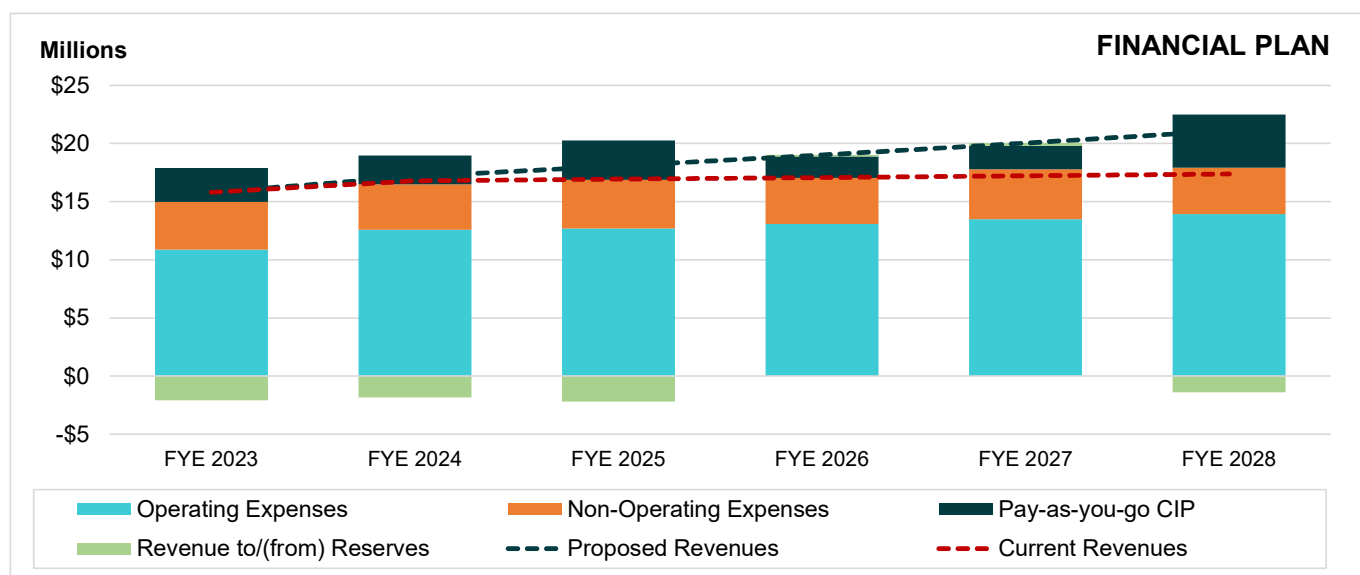


Figure 1-2 illustrates the ending reserve balances and targeted balances for FYE 2023 – FYE 2028. Ending reserve balances show a planned draw upon reserves to accomplish planned capital improvements.

Figure 1-2: Estimated Water Ending Fund Balances

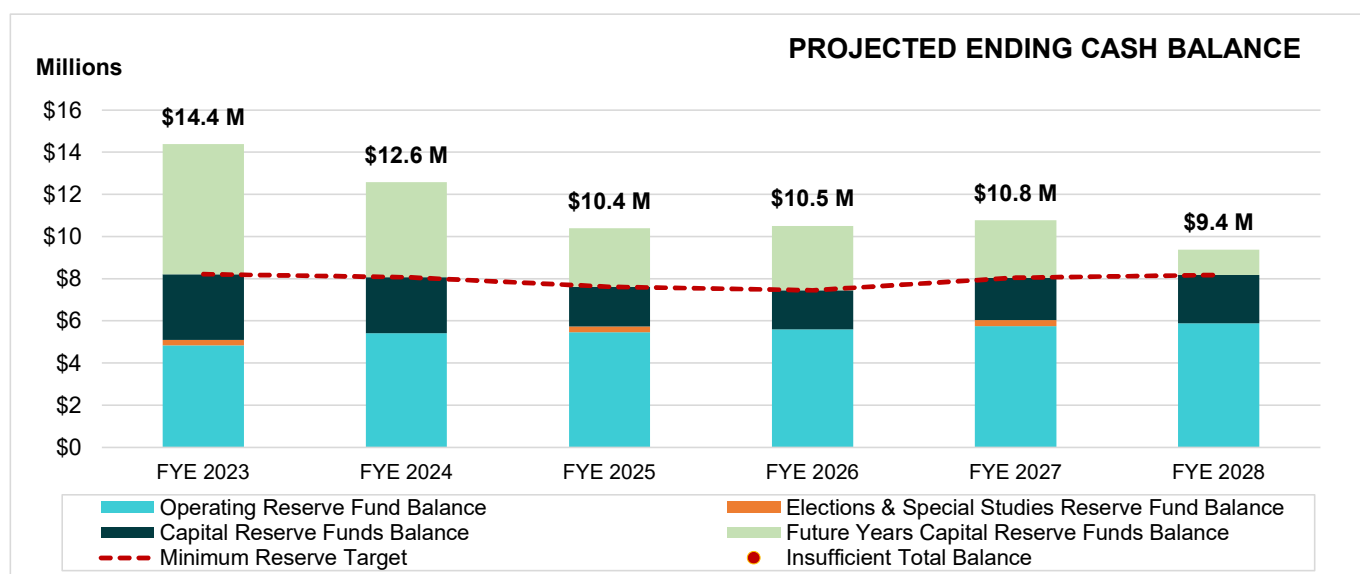


Figure 1-3 illustrates the Water Enterprise's scheduled capital improvement project expenses and funding sources. The District anticipates funding capital projects in the study period with a combination of grant proceeds and rate-based revenues (i.e., pay-as-you-go).

Figure 1-3: Water Capital Improvement Program Funding

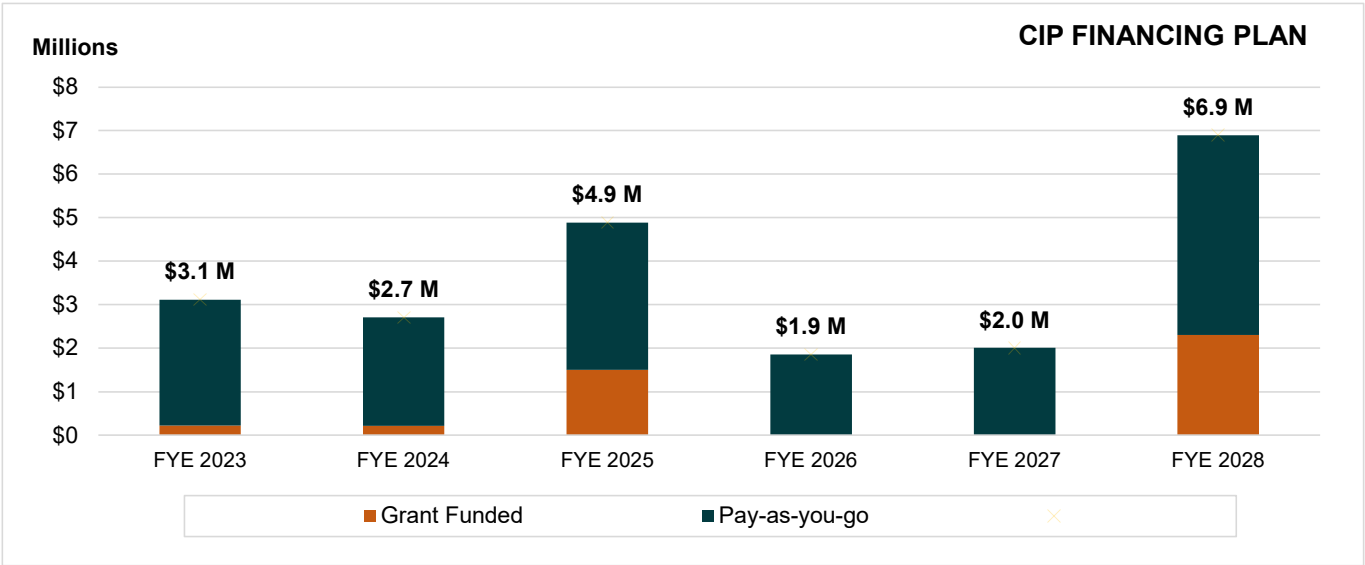
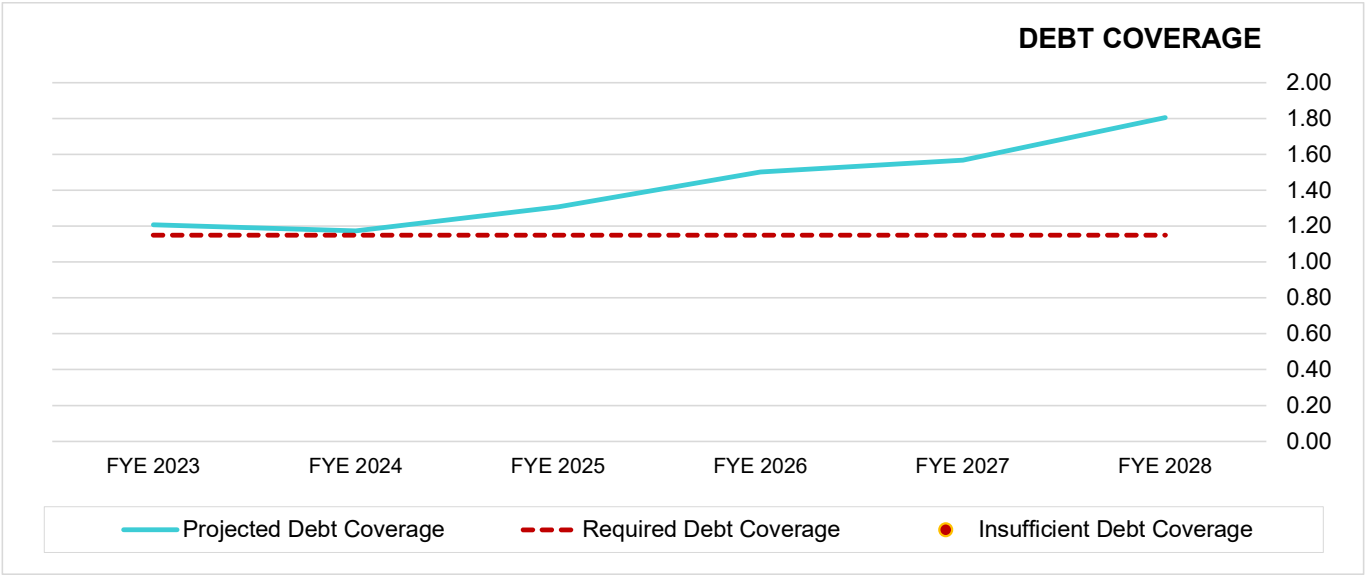


Figure 1-4 shows the projected debt service coverage ratio versus the required ratio. The proposed financial plan is projected to keep the ratio above the required level.

Figure 1-4: Debt Service Coverage Ratio



1.3.2. Proposed Water Rates

Table 1-2 shows the current and proposed monthly service charge, commodity rate, and monthly capital charge. The rates shown in FYE 2024 are set using a cost-of-service analysis and overall, recover 4.5% more revenue than the prior year. Future years are escalated by the revenue adjustments shown.



**Table 1-2: Current and Proposed Water Rates and Charges**

<b>Proposed Rates</b>	<b>Current</b>	<b>Proposed</b>	<b>Proposed</b>	<b>Proposed</b>	<b>Proposed</b>	<b>Proposed</b>
<b>Proposed Water Rate Schedule</b>	2023	2024	2025	2026	2027	2028
<b>Proposed Revenue Adjustment</b>	N/A	cost-of-service	4.5%	4.5%	4.5%	4.5%
<b>Monthly Fixed Charges (by Meter Size)</b>						
1"	\$62.37	\$61.49	\$64.26	\$67.16	\$70.19	\$73.35
1.5"	\$87.79	\$111.92	\$116.96	\$122.23	\$127.74	\$133.49
2"	\$118.29	\$172.44	\$180.20	\$188.31	\$196.79	\$205.65
3"	\$189.48	\$364.08	\$380.47	\$397.60	\$415.50	\$434.20
4"	\$291.14	\$616.23	\$643.97	\$672.95	\$703.24	\$734.89
6"	\$545.33	\$1,372.69	\$1,434.47	\$1,499.03	\$1,566.49	\$1,636.99
8"	\$850.36	\$1,624.85	\$1,697.97	\$1,774.38	\$1,854.23	\$1,937.68
10"	\$1,206.22	\$4,247.24	\$4,438.37	\$4,638.10	\$4,846.82	\$5,064.93
<b>Commodity Charges (per CCF)</b>						
<b>Residential</b>						
Tier 1 (0-30 ccf/mo)	\$1.96	\$2.15	\$2.25	\$2.36	\$2.47	\$2.59
Tier 2 (30.01+ ccf/mo)	\$4.12	\$3.19	\$3.34	\$3.50	\$3.66	\$3.83
<b>Non-Residential</b>	\$1.83	\$2.14	\$2.24	\$2.35	\$2.46	\$2.58
<b>Irrigation</b>	\$2.32	\$2.97	\$3.11	\$3.25	\$3.40	\$3.56
<b>Private Fire Protection Service Monthly Fixed Charges (by Connection Size)</b>						
2"	\$3.08	\$3.72	\$3.89	\$4.07	\$4.26	\$4.46
3"	\$8.96	\$10.79	\$11.28	\$11.79	\$12.33	\$12.89
4"	\$19.08	\$22.99	\$24.03	\$25.12	\$26.26	\$27.45
6"	\$55.43	\$66.77	\$69.78	\$72.93	\$76.22	\$79.65
8"	\$118.12	\$142.29	\$148.70	\$155.40	\$162.40	\$169.71
10"	\$212.42	\$255.89	\$267.41	\$279.45	\$292.03	\$305.18
12"	\$343.10	\$413.32	\$431.92	\$451.36	\$471.68	\$492.91

## 2. Legal Requirements and Rate Setting Methodology

### 2.1. Legal Requirements<sup>1</sup>

#### 2.1.1. California Constitution – Article XIII D, Section 6 (Proposition 218)

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

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

As stated in the American Water Works Association's (AWWA) *Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices - M1 Seventh Edition* (Manual M1), "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." Raftelis follows industry-standard rate-setting methodologies set forth by the AWWA Manual M1 to ensure this study meets Proposition 218 requirements and establishes rates that do not exceed the proportionate cost of providing water services on a parcel basis. The methodology in the Manual M1 is a nationally recognized industry rate-making standard that courts have recognized as consistent with Proposition 218.

#### 2.1.2. California Constitution Article X, Section 2

California Constitution Article X, Section 2 mandates that water resources be put to beneficial use and that the waste or unreasonable use of water be prevented through conservation. Section 106 of the Water Code declares that the highest priority use of water is for domestic purposes, with irrigation secondary. Thus, the management of water resources is part of the property-related service provided by public water suppliers to ensure the resource is available over time.

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Raftelis does not practice law, nor does it provide legal advice. The above discussion means to provide a general review of apparent state institutional constraints and is labeled "legal framework" for literary convenience only. The District should consult with its counsel for clarification and/or specific review of any of the above or other matters.

Two Constitutional provisions govern and impact water rates — Article X, Section 2 (“Article X”) and Article XIII D, Section 6 (“Article XIII D”). Article X was added to the California Constitution in 1928 as former Article XIV, Section 3, and amended in 1976. Article X provides 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.”*

In November 1996, California voters approved Proposition 218, which amended the California Constitution by adding Article XIII C and Article XIII D. Article XIII D placed substantive limitations on the use of the revenue collected from property-related fees and on the amount of the fee that may be imposed on each parcel. Additionally, it established procedural requirements for imposing new, or increasing existing, property-related fees. Water service fees are property-related fees.

In accordance with these provisions, a property-related fee must meet all of the following requirements: (1) revenues derived from the fee must not exceed the funds required to provide the property-related service; (2) revenues from the fee must not be used for any purpose other than that for which the fee is imposed; (3) the amount of a fee imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel; (4) the fee may not be imposed for a service, unless the service is actually used by, or immediately available to, the owner of the property subject to the fee. A fee based on potential or future use of a service is not permitted, and stand-by charges must be classified as assessments subject to the ballot protest and proportionality requirements for assessments; (5) no fee may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners. The five substantive requirements in Article XIII D are structured to place limitations on (1) the use of the revenue collected from property-related fees and (2) the allocation of costs recovered by such fees to ensure that they are proportionate to the cost of providing the service attributable to each parcel.

## 2.2. Rate Setting Methodology

This study was conducted using industry-standard principles outlined by the AWWA Manual M1. The process and approach Raftelis utilized in the study to determine water rates is informed by the District’s policy objectives, the current water system and rates, and the legal requirements in California (namely, Proposition 218). The resulting financial plan, cost-of-service analyses, and rate design processes follow four key steps, outlined below, to determine proposed rates that fulfill the District’s objectives, meet industry standards, and align with relevant regulations.

1. **Financial Plan and Revenue Requirement Determination:** The first study step is to develop a multi-year financial plan that projects the District’s revenues, expenses, capital project financing, annual debt service, and reserve funding. The financial plan is used to determine 1) the revenue adjustment, which allows the District to recover adequate revenues to fund expenses and reserves, and 2) the revenue requirement for the test year, also known as the rate-setting year. The test year for this study is FYE 2024. The revenue requirement should sufficiently fund the District’s operating costs, annual debt service (including coverage requirements), capital expenditures, and reserve funding as projected based on the annual budget estimates.

2. **Cost-of-Service Analysis:** The annual cost of providing water service, or the revenue requirement, is then distributed to customer classes and tiers commensurate with their use of and burden on the water system. A cost-of-service analysis involves the following steps:
  - » Functionalize costs – the different components of the revenue requirement are categorized into functions such as supply, transmission, storage, customer service, etc.
  - » Allocate to cost components – the functionalized costs are then allocated to cost components such as supply, base delivery, peaking, etc.
  - » Develop unit costs – unit costs for each cost component are determined using units-of-service, such as total use, peaking units, equivalent meters, number of customers, etc., for each component.
  - » Distribute cost components – the cost components are allocated to each customer class and tier using the unit costs in proportion to their demand and burden on the system.

A water cost-of-service analysis considers both the average water demand and peak demand. Peaking costs are incurred during periods of peak consumption, most often coinciding with summer water use. Additional capacity-related costs are incurred associated with designing, constructing, operating, maintaining, and replacing facilities to meet peak demand. Patterns of use impose additional costs on a water utility and are used to determine the cost burden on peaking-related facilities.

3. **Rate Design:** After allocating the revenue requirement to each customer class, the project team designs and calculates rates. Rates do more than simply recover costs; within the legal framework and industry standards, properly designed rates should support and optimize the District's policy objectives. Rates also act as a public information tool in communicating these policy objectives to customers. This process also includes a rate impact analysis and sample customer bill impacts.
4. **Administrative Record Preparation and Rate Adoption:** The final step in a rate study is to develop the administrative record in conjunction with the rate adoption process. This report serves as the administrative record for this study. The administrative record documents the study results and presents the methodologies, rationale, justifications, and calculations used to determine the proposed rates. A thorough and methodological administrative record serves two important functions: maintaining defensibility in a stringent legal environment and communicating the rationale for revenue adjustments and proposed rates to customers and key stakeholders.

Values shown in report tables and figures are rounded to the digit shown. Therefore, any manual reproduction of the calculations shown may not match the precise results displayed in the report.

## 3. Financial Plan Assumptions

### 3.1. Key Financial Information

During the study, Raftelis and District staff completed a detailed review of projected revenues, operating expenses, and capital expenditures over the study period. The financial plan is a comprehensive spreadsheet model of the District's revenues, O&M expenses, capital expenditures, and reserves for the study period.

This study utilized the following financial documents:

- Operating Budget for Fiscal Year (FYE) 2023
- Reserve Policy provided by District Staff
- Capital Improvement Plan for the study period provided by the District
- Financial Information (e.g., outstanding debt, reserve levels, etc.) as of June 30, 2022 provided by the District

### 3.2. Inflation

Various types of assumptions and inputs are incorporated into this study based on discussions and direction from District staff. These include the projected number of accounts and annual growth rates in water consumption for different customer classes, inflation factors, and other assumptions that are incorporated into the financial plan. The inflation factor assumptions discussed with District staff and used for cost escalation are presented in Table 3-1.

**Table 3-1: Assumed Cost Escalation Factors**

Key Factors	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
General	5.0%	4.0%	3.0%	3.0%	3.0%
Salary	5.0%	4.0%	3.0%	3.0%	3.0%
Benefits	5.0%	4.0%	3.0%	3.0%	3.0%
Water Supply	5.0%	4.0%	3.0%	3.0%	3.0%
Utilities	5.0%	4.0%	3.0%	3.0%	3.0%
Chemicals	5.0%	4.0%	3.0%	3.0%	3.0%

Interest income is estimated to be 0.75 percent. A conservative interest rate is used in the study to project interest earnings on reserve funds.

### 3.3. Projected Growth

The District assumes that there is 1.5 percent per year growth in accounts for the study period, but that customers will continue to conserve water, resulting in a decrease in average demand per account. Table 3-2 shows the number of water connections used in the analysis. Table 3-3 shows the projected number of private fire connections over the study period. Table 3-4 show projected water use in hundred cubic feet (ccf) and acre-feet (AF).

**Table 3-2: Number of Water Connections**

Meter Size	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
1"	12,676	12,866	13,060	13,256	13,455
1.5"	102	104	106	108	110
2"	264	268	272	276	280
3"	22	22	22	22	22
4"	17	17	17	17	17
6"	5	5	5	5	5
8"	0	0	0	0	0
10"	0	0	0	0	0
<b>Total</b>	<b>13,086</b>	<b>13,282</b>	<b>13,482</b>	<b>13,684</b>	<b>13,889</b>

**Table 3-3: Number of Private Fire Connections**

Connection Size	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
2"	2	2	2	2	2
3"	2	2	2	2	2
4"	34	34	34	34	34
6"	156	156	156	156	156
8"	24	24	24	24	24
10"	12	12	12	12	12
12"	0	0	0	0	0
<b>Total</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>	<b>230</b>

**Table 3-4: Projected Water Use (ccf)**

Customer Class/Tier	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Residential Water Use						
Tier 1 (0-30 ccf/mo)	1,732,438	1,952,603	1,952,529	1,952,457	1,952,387	1,952,320
Tier 2 (30.01+ ccf/mo)	192,493	216,956	216,948	216,940	216,932	216,924
Subtotal Residential	1,924,931	2,169,559	2,169,476	2,169,397	2,169,319	2,169,245
Non-Residential Water Use	300,062	322,176	322,216	322,255	322,294	322,330
Irrigation Water Use	308,643	331,389	331,431	331,471	331,511	331,549
<b>Total (CCF)</b>	<b>2,533,635</b>	<b>2,823,124</b>	<b>2,823,124</b>	<b>2,823,124</b>	<b>2,823,124</b>	<b>2,823,124</b>
<b>Total (AF)</b>	<b>5,816</b>	<b>6,481</b>	<b>6,481</b>	<b>6,481</b>	<b>6,481</b>	<b>6,481</b>

### 3.4. Water Enterprise Reserve Policy

The District currently has an adopted reserve policy for its water enterprise. The operating reserve is currently set to a minimum of 120 days of budgeted operating expenses including debt service. Capital reserves are set at 100 percent of the annual capital improvement program. Additionally, an elections and special studies reserve is funded based on Board action in accordance with the annual budget. For the purposes of the financial plan, the elections and special studies reserve target is set equal to annual elections costs.

### 3.5. Required Debt Coverage Ratio

The District's current bonds have a debt coverage requirement of 115 percent of the net revenues (i.e., revenues less operating and maintenance costs). This means that net revenues must be at least 1.15 times the annual debt service.

## 4. Water Financial Plan

### 4.1. Revenue Requirements

This section discusses projected revenues, O&M expenses, and revenue adjustments to ensure the fiscal sustainability and solvency of the water enterprise.

#### 4.1.1. Revenues

The District's current water rates were last updated in January 2023. The rates consist of two distinct components: a Monthly Service Charge that varies by meter size and a Commodity Rate. The commodity rate for residential customers has two tiers while the commodity rates are uniform for non-residential and irrigation customers<sup>2</sup>. Table 4-1 shows the District's current water rates.

**Table 4-1: Current Water Rates**

Effective Date	Jan. 1, 2023
<b>Fixed Charge, \$/mo</b>	
1"	\$62.37
1.5"	\$87.79
2"	\$118.29
3"	\$189.48
4"	\$291.14
6"	\$545.33
8"	\$850.36
10"	\$1,206.22
<b>Commodity Charge, \$/ccf</b>	
Residential	
Tier 1, 0 - 30 ccf	1.96
Tier 2, > 30 ccf	4.12
Non-Residential	1.83
Irrigation	2.32
<b>Private Fire Protection Service</b>	
Connection Size	
2"	\$3.08
3"	\$8.96
4"	\$19.08
6"	\$55.43
8"	\$118.12
10"	\$212.42
12"	\$343.10

<sup>2</sup> The commodity rate is shown on a \$/ccf basis. 1 ccf = 100 cubic feet = 748 gallons of water.



The fixed charge revenue for each meter is calculated by multiplying the fixed charge for a meter size with the number of connections for that meter size and then multiplying by 12 monthly billing periods per year. The residential commodity rate revenue is calculated by multiplying total use, up to 30 ccf, by the Tier 1 commodity rate and any use over 30 ccf in a month by the Tier 2 commodity rate. The non-residential and irrigation commodity rate revenue is calculated by multiplying total usage by the respective commodity rate. The monthly private fire protection revenue for each connection size is calculated by multiplying the private fire protection charge for a connection size by the number of connections at that size and then multiplying by 12 monthly billing periods per year. The projected and calculated revenues are shown in Table 4-2.

**Table 4-2: Projected Revenue from Current Charges**

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Fixed	\$10,111,558	\$10,261,547	\$10,414,529	\$10,569,008	\$10,725,732
Commodity	\$6,079,364	\$6,079,356	\$6,079,348	\$6,079,341	\$6,079,334
Private Fire	\$176,446	\$176,446	\$176,446	\$176,446	\$176,446
<b>Total</b>	<b>\$16,367,368</b>	<b>\$16,517,349</b>	<b>\$16,670,323</b>	<b>\$16,824,795</b>	<b>\$16,981,512</b>

In addition to revenues produced by water rates, the enterprise receives other revenues from different sources such as interest income, miscellaneous fees, and other sources. Table 4-3 outlines the other miscellaneous revenues for District over the study period.

**Table 4-3: Projected Other Revenue**

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Misc. Fees	\$319,000	\$319,000	\$319,000	\$319,000	\$319,000
Other	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
Interest	\$100,771	\$85,813	\$78,097	\$79,513	\$75,279
<b>Total</b>	<b>\$428,771</b>	<b>\$413,813</b>	<b>\$406,097</b>	<b>\$407,513</b>	<b>\$403,279</b>

## 4.1.2. Operating Expenses

### 4.1.2.1. Water Supply Costs

The District has two sources of water supply – (1) local groundwater and (2) treated wholesale water from the Sacramento County Water Agency (SCWA). Groundwater meets about 60 percent of the District’s needs. Purchased water costs are estimated to range from \$4.0 million to \$4.6 million per year between FYE 2024 and FYE 2028.

### 4.1.2.2. Water Operating Expenses

The inflation factors from Table 3-1 were used to inflate the District’s FYE 2023 budget to project future operating costs. Raftelis worked closely with District staff to identify any non-recurring costs and other anticipated expenses for the study period. Table 4-4 summarizes the budgeted and projected operating expenses for the water enterprise during the study period.

**Table 4-4: Budgeted and Projected Operating Expenses**

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Salaries & Benefits	\$5,296,924	\$5,508,801	\$5,674,065	\$5,844,286	\$6,019,615
Seminars, Conventions and Travel	\$42,413	\$44,109	\$45,432	\$46,795	\$48,199
Office & Operational	\$1,979,034	\$1,642,196	\$1,691,462	\$1,742,205	\$1,794,472
Purchased Water	\$4,042,555	\$4,204,257	\$4,330,384	\$4,460,296	\$4,594,105
Outside Services	\$1,130,884	\$1,176,119	\$1,211,403	\$1,247,745	\$1,285,177
Equipment, Rent, Taxes and Utilities	\$567,570	\$590,273	\$607,981	\$626,220	\$645,007
Less Capitalized Labor	(\$459,089)	(\$459,089)	(\$459,089)	(\$459,089)	(\$459,089)
<b>Total</b>	<b>\$12,600,289</b>	<b>\$12,706,665</b>	<b>\$13,101,637</b>	<b>\$13,508,459</b>	<b>\$13,927,485</b>

### 4.1.3. Non-Operating Expenses

Table 4-5 summarizes the budgeted and projected non-operating expenses for the water enterprise during the study period. Non-operating expenses include existing debt service (principal and interest) associated with the District's outstanding 2014 Series A Bonds and 2016 Series A Bonds, as well as election costs incurred every other year during District elections.

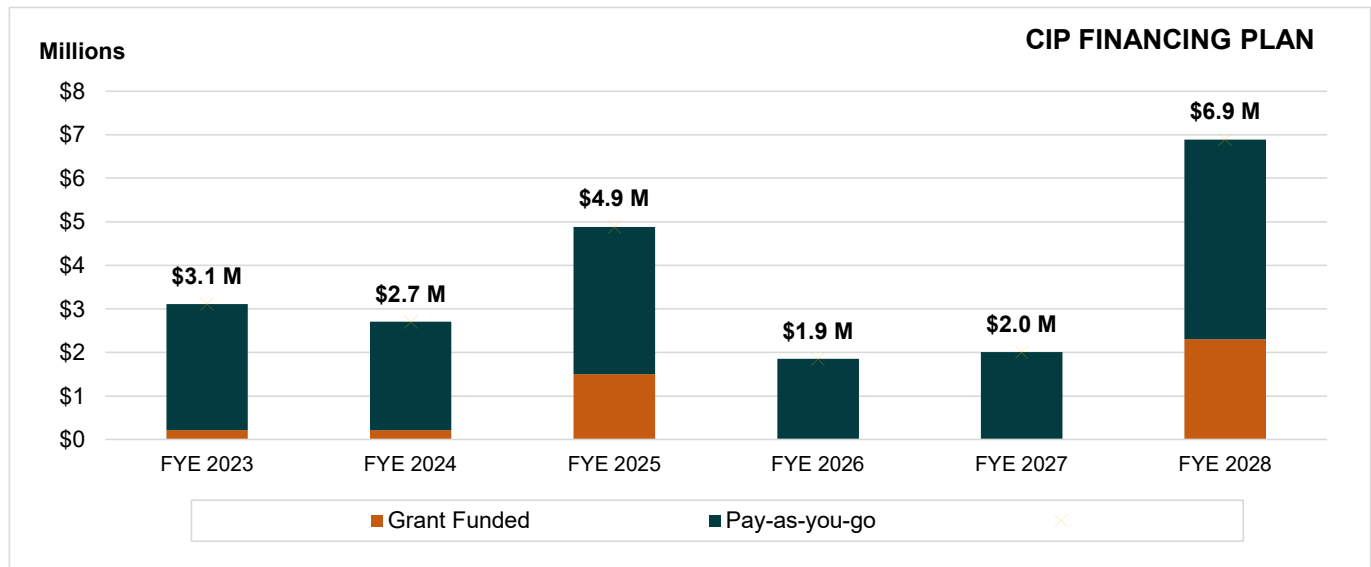
**Table 4-5: Budgeted and Projected Non-Operating Expenses**

	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Debt Service	\$3,886,994	\$3,888,029	\$3,941,503	\$3,981,047	\$3,977,210
Election Costs	\$0	\$273,000	\$0	\$289,626	\$0
<b>Total</b>	<b>\$3,886,994</b>	<b>\$4,161,029</b>	<b>\$3,941,503</b>	<b>\$4,270,673</b>	<b>\$3,977,210</b>

### 4.1.4. Projected Capital Improvement Projects

Figure 4-1 shows the District's water system capital projects (a full list of projects and costs can be found in Appendix A). The capital project costs for future years are determined by using the programmed/budgeted costs and inflating the value by the capital cost inflation factor shown in Table 3-1. The District plans to fund projects with a mix of grant funding and pay-as-you-go from rates and reserves. Capital project costs and available American Rescue Plan Act grant funding are based on the Districts' adopted Capital Improvement Program for FYE 2023 – FYE 2027. However, additional project costs for SCADA upgrades, advanced metering infrastructure (AMI), and well replacement were added per direction from District staff to account for anticipated capital needs in addition to the adopted Capital Improvement Program. It is assumed that 50 percent of AMI and well replacement costs will be grant funded.

Figure 4-1: Projected Capital Expenditures

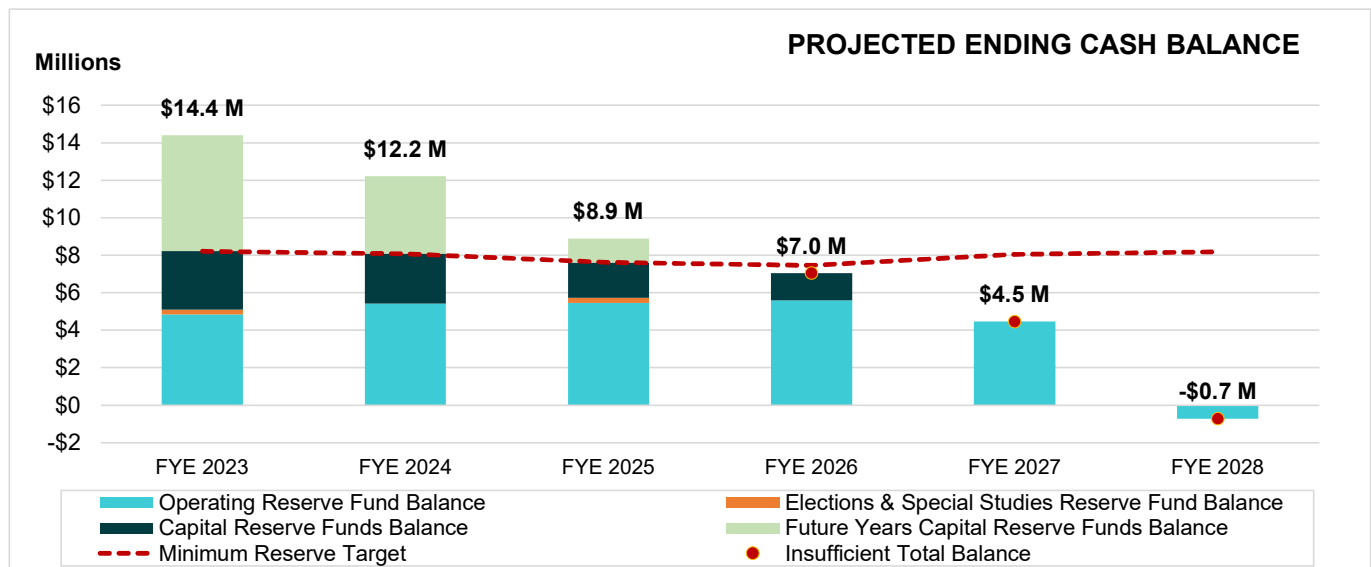


## 4.2. Water Financial Plan

### 4.2.1. Status Quo Financial Plan

Figure 4-2 displays the projected ending balances of the District's water enterprise's cash balance under current rates for FYE 2023 – FYE 2028. All projections are based upon the District's current rate structure and do not include rate adjustments. The figure incorporates the data shown in Table 4-2 through Table 4-6 and Figure 4-1. Under the "status-quo" scenario, revenues generated from current rates and other miscellaneous revenues are inadequate to sufficiently recover operating and capital expenses of the utility, as shown by decreasing fund balances. By the end of FYE 2028, the ending balance is projected to be negative. In short, the District is unable to maintain fiscal sustainability under the current rates.

Figure 4-2: Status Quo Water Enterprise Ending Balances (No Revenue Adjustments)



### 4.2.2. Proposed Financial Plan

Table 4-6 shows the proposed revenue adjustments to meet the target reserve requirement and maintain financial sufficiency. These revenue adjustments were based on discussions with District Staff, the Community Advisory Committee (consisting of ten District customers), and the Board.

**Table 4-6: Proposed Retail Zone Revenue Adjustments**

Fiscal Year	Effective Month	Proposed Revenue Adjustment
2024	January	4.5%
2025	January	4.5%
2026	January	4.5%
2027	January	4.5%
2028	January	4.5%

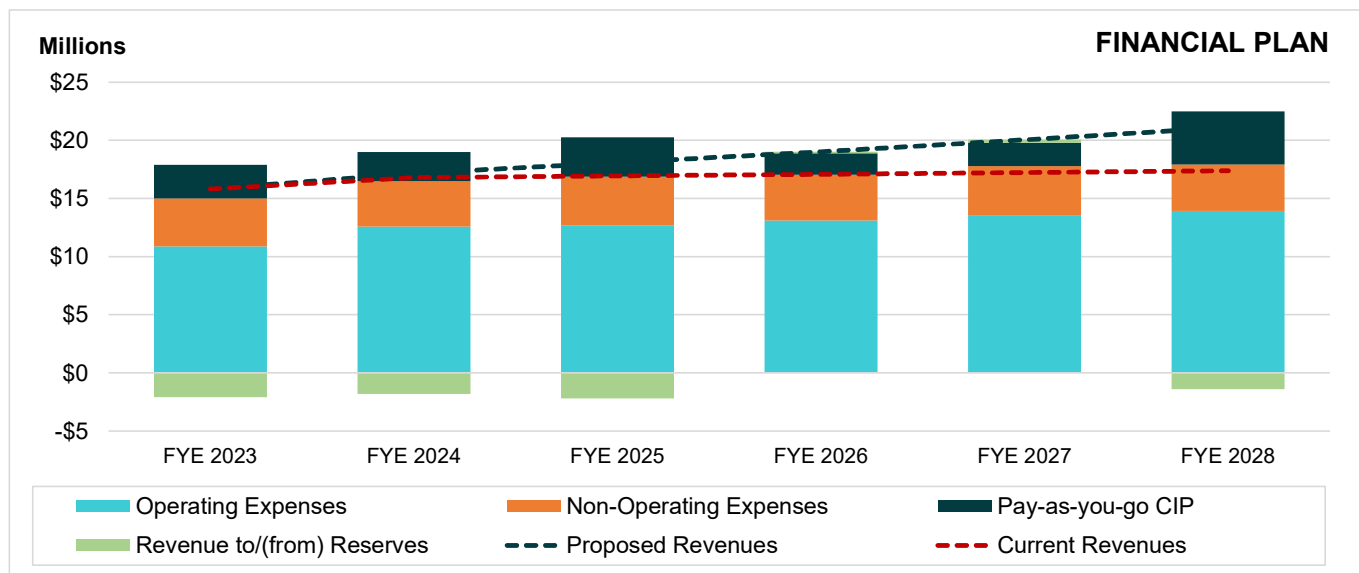
Table 4-7 shows the financial plan with the proposed revenue adjustments shown above. The District's reserves are projected to remain above the minimum operating reserve target.

Table 4-7: Proposed Financial Plan

Description	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
<b>REVENUE</b>						
<b>Operating Revenue</b>						
Rate Revenue from Current Rates	\$15,452,528	\$16,367,368	\$16,517,349	\$16,670,323	\$16,824,795	\$16,981,512
<b>Proposed Revenue Adjustments</b>						
	Revenue Adjustment	Month Effective	Months Effective			
Fiscal Year						
FYE 2024	4.50%	January	6			
FYE 2025	4.50%	January	6	\$368,266	\$743,281	\$757,116
FYE 2026	4.50%	January	6	\$388,364	\$783,922	\$791,186
FYE 2027	4.50%	January	6		\$409,599	\$826,789
FYE 2028	4.50%	January	6			\$431,997
						\$455,642
<b>Total Revenue Adjustments</b>	<b>\$0</b>	<b>\$368,266</b>	<b>\$1,131,645</b>	<b>\$1,943,686</b>	<b>\$2,807,088</b>	<b>\$3,724,899</b>
Rate Revenue (including Revenue Adjustments)	\$15,452,528	\$16,735,634	\$17,648,993	\$18,614,009	\$19,631,883	\$20,706,411
Miscellaneous Fees	\$319,000	\$319,000	\$319,000	\$319,000	\$319,000	\$319,000
Other	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000	\$9,000
<b>Total Operating Revenue</b>	<b>\$15,780,528</b>	<b>\$17,063,634</b>	<b>\$17,976,993</b>	<b>\$18,942,009</b>	<b>\$19,959,883</b>	<b>\$21,034,411</b>
<b>Non-Operating Revenue</b>						
Capital Grants	\$221,000	\$215,000	\$1,500,000	\$0	\$0	\$2,300,000
Interest Earned	\$25,000	\$100,771	\$85,813	\$78,097	\$79,513	\$75,279
<b>Total Non-Operating Revenue</b>	<b>\$246,000</b>	<b>\$315,771</b>	<b>\$1,585,813</b>	<b>\$78,097</b>	<b>\$79,513</b>	<b>\$2,375,279</b>
<b>TOTAL REVENUE</b>	<b>\$16,026,528</b>	<b>\$17,379,405</b>	<b>\$19,562,806</b>	<b>\$19,020,105</b>	<b>\$20,039,396</b>	<b>\$23,409,690</b>
<b>OPERATING &amp; NON-OPERATING EXPENSES</b>						
<b>Operating Expenses</b>						
Salaries & Benefits	\$4,847,546	\$5,296,924	\$5,508,801	\$5,674,065	\$5,844,286	\$6,019,615
Seminars, Conventions and Travel	\$40,393	\$42,413	\$44,109	\$45,432	\$46,795	\$48,199
Office & Operational	\$1,402,320	\$1,979,034	\$1,642,196	\$1,691,462	\$1,742,205	\$1,794,472
Purchased Water	\$3,455,261	\$4,042,555	\$4,204,257	\$4,330,384	\$4,460,296	\$4,594,105
Outside Services	\$1,077,032	\$1,130,884	\$1,176,119	\$1,211,403	\$1,247,745	\$1,285,177
Equipment, Rent, Taxes and Utilities	\$499,674	\$567,570	\$590,273	\$607,981	\$626,220	\$645,007
Less Capitalized Labor	(\$459,089)	(\$459,089)	(\$459,089)	(\$459,089)	(\$459,089)	(\$459,089)
<b>Total Operating Expenses</b>	<b>\$10,863,137</b>	<b>\$12,600,289</b>	<b>\$12,706,665</b>	<b>\$13,101,637</b>	<b>\$13,508,459</b>	<b>\$13,927,485</b>
<b>Non-Operating Expenses</b>						
Debt Service (Principal + Interest Payments)	\$3,883,204	\$3,886,994	\$3,888,029	\$3,941,503	\$3,981,047	\$3,977,210
Election Costs	\$250,000	\$0	\$273,000	\$0	\$289,626	\$0
<b>Total Non-Operating Expenses</b>	<b>\$4,133,204</b>	<b>\$3,886,994</b>	<b>\$4,161,029</b>	<b>\$3,941,503</b>	<b>\$4,270,673</b>	<b>\$3,977,210</b>
<b>TOTAL OPERATING &amp; NON-OPERATING EXPENSES</b>	<b>\$14,996,340</b>	<b>\$16,487,283</b>	<b>\$16,867,693</b>	<b>\$17,043,140</b>	<b>\$17,779,132</b>	<b>\$17,904,695</b>
<b>NET CASH FLOW (excl. CIP)</b>	<b>\$1,030,188</b>	<b>\$892,121</b>	<b>\$2,695,113</b>	<b>\$1,976,966</b>	<b>\$2,260,265</b>	<b>\$5,504,995</b>
<b>CIP EXPENDITURES</b>						
Grant Funded	\$221,000	\$215,000	\$1,500,000	\$0	\$0	\$2,300,000
Pay-as-you-go	\$2,893,000	\$2,490,450	\$3,385,481	\$1,852,000	\$2,006,000	\$4,592,557
<b>TOTAL CIP EXPENDITURES</b>	<b>\$3,114,000</b>	<b>\$2,705,450</b>	<b>\$4,885,481</b>	<b>\$1,852,000</b>	<b>\$2,006,000</b>	<b>\$6,892,557</b>
<b>NET CASH FLOW</b>	<b>(\$2,083,812)</b>	<b>(\$1,813,329)</b>	<b>(\$2,190,368)</b>	<b>\$124,966</b>	<b>\$254,265</b>	<b>(\$1,387,563)</b>
<b>DEBT COVERAGE</b>						
Projected Debt Coverage	1.21	1.17	1.31	1.50	1.57	1.81
Required Debt Coverage	1.15	1.15	1.15	1.15	1.15	1.15
<b>CASH BALANCE</b>						
Beginning Balance	\$16,476,954	\$14,393,142	\$12,579,813	\$10,389,445	\$10,514,410	\$10,768,675
Net Cash Change	(\$2,083,812)	(\$1,813,329)	(\$2,190,368)	\$124,966	\$254,265	(\$1,387,563)
<b>ENDING BALANCE</b>	<b>\$14,393,142</b>	<b>\$12,579,813</b>	<b>\$10,389,445</b>	<b>\$10,514,410</b>	<b>\$10,768,675</b>	<b>\$9,381,113</b>
<b>TARGET MINIMUM RESERVE</b>	<b>\$8,212,112</b>	<b>\$8,075,927</b>	<b>\$7,614,271</b>	<b>\$7,455,224</b>	<b>\$8,045,600</b>	<b>\$8,179,033</b>

Figure 4-3 and Figure 4-4 show the District's financial plan and reserve balances in graphical format. The proposed financial plan demonstrates a plan to maintain sufficient reserve levels to meet or exceed the minimum target in through FYE 2028.

**Figure 4-3: Water Operating Financial Plan**



**Figure 4-4: Projected Water Reserve Ending Balances**

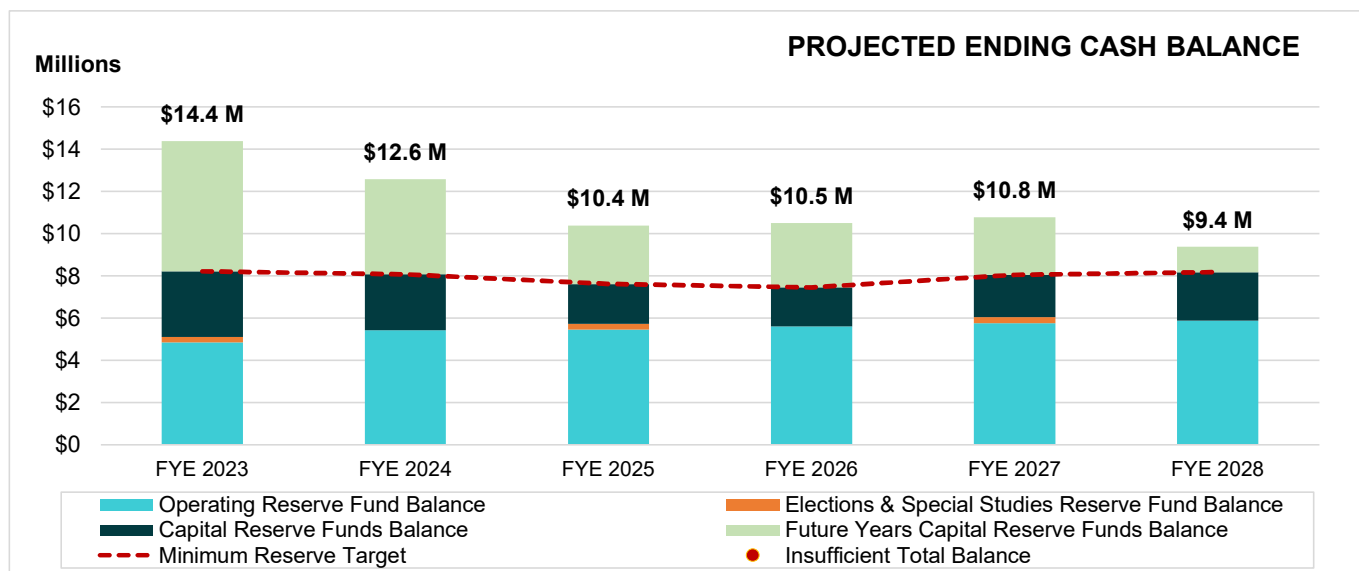
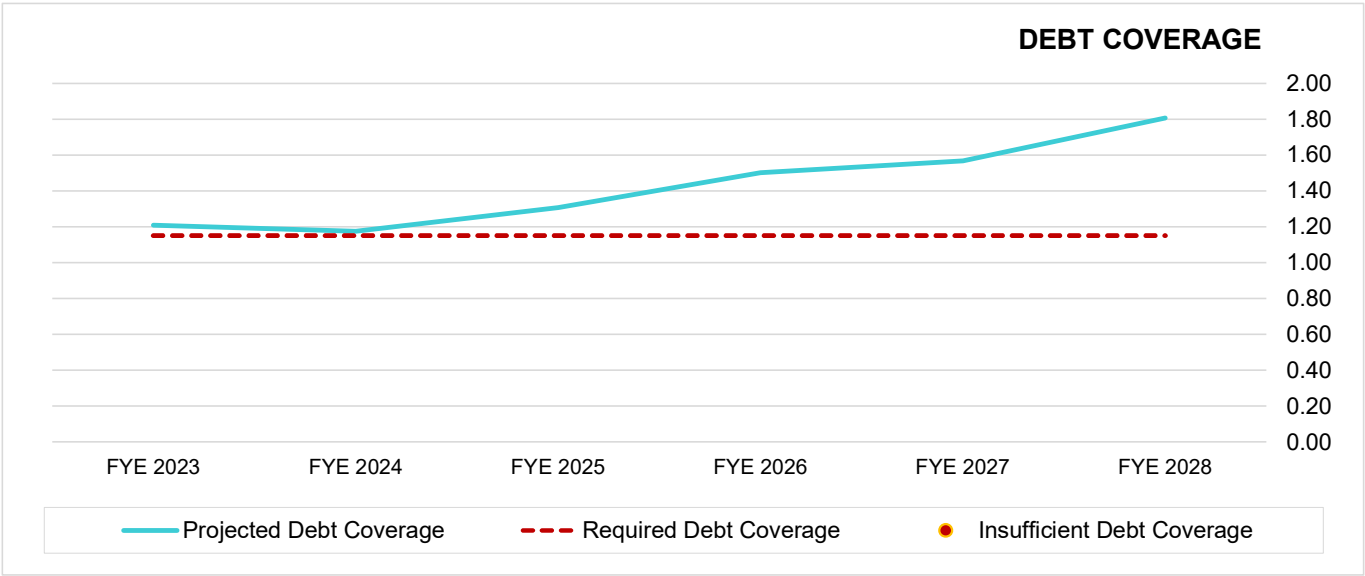


Figure 4-5 shows the projected debt service coverage ratio versus the required ratio. The proposed financial plan is projected to keep the ratio above the required level.

Figure 4-5: Debt Service Coverage Ratio



## 5. Water Cost-of-Service and Proposed Water Rates

### 5.1. Process and Approach

This section describes the methodology of allocating costs equitably to customers. This is intended to ensure that customers pay their fair share, proportional to the cost of serving them.

As stated in the AWWA Manual M1, “the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers.” To develop utility rates that align with Proposition 218 and industry standards while meeting other emerging goals and objectives of the District, we follow the cost-of-service methodology discussed below.

#### 5.1.1. Calculate Revenue Requirement

The rate-making process starts by determining the revenue requirement. In this study the “test year” is FYE 2024. The revenue requirement should sufficiently fund the District’s O&M, debt service, capital expenses, and reserve requirements.

#### 5.1.2. Cost-of-Service Analysis

After determining the District’s revenue requirements, the next step in a cost-of-service analysis is to distribute the annual cost of providing water service among customer classes commensurate with their service requirements. A cost-of-service analysis involves the following:

- **Cost functionalization** – O&M expenses and capital expenses are categorized by their function in the system. Functions include supply, storage, distribution, customer service, etc.
- **Cost component allocation** – the functionalized costs are then allocated to cost components based on their burden on the system. The cost components include supply and base delivery, extra-capacity, meter, billing & customer service, etc. The revenue requirement is allocated accordingly to the cost components and results in the total revenue requirement for each cost component.
- **Unit cost development** – the revenue requirement for each cost component is divided by the appropriate units of service such as total water demand, peak water demand, equivalent meters, number of customers, etc. for each customer class.
- **Revenue requirement distribution** – the unit costs are utilized to distribute the revenue requirement for each cost component to customer classes and tiers based on their individual service units.

The functions are:

- **Water Supply** – water supply costs associated with groundwater
- **Treatment** – the cost of treating water
- **Storage** – represents the cost associated with storing treated water
- **Transmission & Distribution** – the cost associated with pipes, pumps, mains, etc.
- **Conservation** – costs associated with water conservation and efficiency efforts
- **Billing & Customer Service** – represents the costs associated with meter reading, billing, and customer service
- **Meters** - represents the costs associated with meter maintenance and replacement



- **Fire Hydrants**– costs associated with public fire hydrants
- **Private Fire Protection**– costs associated with private fire protection connections associated with private fire hydrants, fire sprinklers, etc.
- **General**– general and administrative costs incurred by the District
- **Purchased Water** – the cost of wholesale water purchases from SCWA

The functionalization of costs allows us to better allocate the functionalized costs to the cost components. Some cost components correspond directly with one of the above functions. The cost components include:

- **Supply & Base Delivery**– variable costs associated with providing water supplies for all customers and fixed costs associated with providing service under average demand conditions
- **Max Day** (peaking) – costs associated with meeting demand in excess of average use
- **Conservation** - costs associated with water conservation and efficiency efforts
- **Billing & Customer Service**– the costs associated with meter reading, billing, and customer service
- **Meters**– costs associated with meter maintenance and replacement
- **Private Fire Protection**– costs associated with providing private fire protection capacity
- **Revenue Offsets** – non-rate revenues (i.e., other miscellaneous revenues) used to offset the total revenue required from water rates
- **General** – costs that cannot be allocated directly to any one cost component

Peaking costs are computed for a maximum day. The maximum day demand is the maximum amount of water used in a single day in a year. Different facilities, such as distribution and storage facilities (and the O&M costs associated with those facilities), are designed to meet the peaking demands of customers. Therefore, extra capacity<sup>3</sup> costs include the O&M and capital costs associated with meeting peak customer demand. This method is consistent with the AWWA Manual M1 and is widely used in the water industry to perform cost-of-service analyses.

### 5.1.3. Rate Design and Calculations

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

### 5.1.4. Rate Adoption

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

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<sup>3</sup> The terms extra capacity, peaking and capacity costs are used interchangeably.

## 5.2. Cost-of-Service Calculations

### 5.2.1. Revenue Requirement Determination

Table 5-1 shows the net revenue required from rates for FYE 2024. The total revenue requirement shown is equal to operating expenses, non-operating expenses, and capital expenses and come from Table 4-4, Table 4-5, and Figure 4-1. The revenue offsets come from Table 4-3 and Table 4-7 and reduce the total revenue required from rates. The adjustment for cash is subtracted to account for the withdrawal from reserves to help cover revenue requirements. The mid-year increase reflects that the District adjusts rates part-way through the fiscal year and adds to the revenue requirement. The revenue required from rates is equal to the total revenue requirements less revenue offsets and adjustments. The revenue requirement is divided into Operating and Capital components and is allocated to the cost components based on the functionalization of the O&M expenses and capital assets, respectively.

**Table 5-1: Annualized Revenue Requirements for FYE 2024**

Description	Operating	Capital	Revenue Offsets	Total
<b>Revenue Requirements</b>				
Operating Expenses	\$12,600,289	\$0	\$0	\$12,600,289
Debt Service	\$0	\$3,886,994	\$0	\$3,886,994
Other Non-Operating Expenses	\$0	\$0	\$0	\$0
CIP Expenditures	\$0	\$2,705,450	\$0	\$2,705,450
<b>Total Revenue Requirements</b>	<b>\$12,600,289</b>	<b>\$6,592,444</b>	<b>\$0</b>	<b>\$19,192,733</b>
<b>Revenue Offsets</b>				
Miscellaneous Fees	\$0	\$0	(\$319,000)	(\$319,000)
Other Operating Revenue	\$0	\$0	(\$9,000)	(\$9,000)
Capital Grants	\$0	(\$215,000)	\$0	(\$215,000)
Interest Earned	\$0	(\$100,771)	\$0	(\$100,771)
Other Non-Operating Revenue	\$0	\$0	\$0	\$0
<b>Total Revenue Offsets</b>	<b>\$0</b>	<b>(\$315,771)</b>	<b>(\$328,000)</b>	<b>(\$643,771)</b>
<b>Adjustments</b>				
Cash Balance	\$0	(\$1,813,329)	\$0	(\$1,813,329)
Mid-Year Increase	\$0	\$368,266	\$0	\$368,266
<b>Total Adjustments</b>	<b>\$0</b>	<b>(\$1,445,063)</b>	<b>\$0</b>	<b>(\$1,445,063)</b>
<b>Net Revenue to be Recovered from Rates</b>	<b>\$12,600,289</b>	<b>\$4,831,610</b>	<b>(\$328,000)</b>	<b>\$17,103,900</b>

### 5.2.2. Peaking Factors

Peaking factors are used to allocate peaking costs (max day costs) to customer classes. Table 5-2 shows the system-wide peaking factors used to derive the cost component allocation bases for Base Delivery and Max Day costs. Base costs represent average daily demand during the year, which is normalized to a factor of 1.00 (Column B, Line 1). The max month factor (Column B, Line 2) is the maximum month usage divided by the average monthly usage. The District provided daily well production data for FYE 2022 to determine the system max day factor. The system-wide max day peaking factor (Column B, Line 3) is 1.7 times greater than the average daily demand. The allocation bases (Columns C and D) are calculated using the equations

outlined in this section. Columns are represented in these equations as letters and rows are represented as numbers. For example, Column C, Line 2 is shown as C2.

**Table 5-2: Water System Peaking Factors**

Line No.	System Peaking Factors (A)	Factors (B)	Base (C)	Max Day (D)	Total (E)
1	Base	1.00	100%		100.0%
2	Max Month	1.59			
3	Max Day	1.70	59%	41%	100.0%

The Max Day allocations are calculated as follows:

- Base Delivery:  $B1 / B3 \times 100\% = C3$
- Max Day:  $(B3 - B1) / B3 \times 100\% = D3$

The system-wide max month peaking factor is used to translate monthly-to-average month peaking factors for each customer class into a max day factor for each customer class, as shown in Table 5-3. The monthly peaking factor (Column D) is multiplied by the ratio of the system-wide max day factor to the system-wide max month factor ( $1.70/1.59$ ) from Table 5-2 to determine the max day capacity factor (Column E). The peaking analysis was based on account-level billing data for FYE 2022.

**Table 5-3: Max Day Capacity Factor**

Line No.	Customer Class (A)	Average Monthly Usage (B)	Max Month Usage (C)	Max Month (D)	Max Day (E)
1	Single Family Tier 1	164,140	230,143	1.40	1.51
2	Single Family Tier 2	18,330	45,606	2.49	2.67
3	Non-Residential	27,318	38,049	1.39	1.50
4	Irrigation	28,099	63,408	2.26	2.42

### 5.2.3. Operating and Capital Allocation

The next step in the cost-of-service analysis is to allocate the functionalized costs to the cost components. Table 5-4 (on the following page) shows the system functions, the rationale for allocating each function to the various cost components, and the percentage allocation to each component. Most functions have a one-to-one relationship with a cost component.

Table 5-5 (on the following page) shows the operating costs by cost component based on the corresponding functional allocations by cost component (Table 5-4). O&M expenses were allocated to the functional categories based on staff input and are shown in Appendix B. O&M expenses are used in the cost-of-service analysis to allocate the operating revenue requirement (Table 5-1, Operating column) to the relative share of costs in each water system cost component.

Table 5-6 (on the following page) shows the District's water assets grouped by functional categories and then allocated to each cost component by the factors in Table 5-4. Asset values, on a replacement cost less depreciation basis, are used in the cost-of-service analysis to allocate the capital-related revenue requirement (Table 5-1, Capital column) to the relative share of costs in each water system cost component.

Table 5-4: Allocation of Functions to Cost Components

Functional Categories	Notes	Supply & Base Delivery	Max Day	Conservation	Billing & Customer Service	Meters	Private Fire Protection	General	Total
Water Supply	Max Day	58.7%	41.3%						100.0%
Treatment	Max Day	58.7%	41.3%						100.0%
Storage	Max Day	58.7%	41.3%						100.0%
Transmission & Distribution	Max Day	58.7%	41.3%						100.0%
Conservation	Conservation			100.0%					100.0%
Billing & Customer Service	Billing & Customer Service				100.0%				100.0%
Meters	Meters					100.0%			100.0%
Fire Hydrants	Fire Hydrants					100.0%			100.0%
Private Fire Protection	PFP						100.0%		100.0%
General	General							100.0%	100.0%
Purchased Water	Base	100.0%							100.0%

Table 5-5: Allocation of Operating Expenses to Cost Components

Functional Categories	Supply & Base Delivery	Max Day	Conservation	Billing & Customer Service	Meters	Private Fire Protection	General	Total O&M Expenses
Water Supply	\$525,196	\$368,950	\$0	\$0	\$0	\$0	\$0	\$894,147
Treatment	\$554,485	\$389,526	\$0	\$0	\$0	\$0	\$0	\$944,011
Storage	\$164,996	\$115,910	\$0	\$0	\$0	\$0	\$0	\$280,906
Transmission & Distribution	\$781,451	\$548,969	\$0	\$0	\$0	\$0	\$0	\$1,330,420
Conservation	\$0	\$0	\$70,437	\$0	\$0	\$0	\$0	\$70,437
Billing & Customer Service	\$0	\$0	\$0	\$1,470,520	\$0	\$0	\$0	\$1,470,520
Meters	\$0	\$0	\$0	\$0	\$636,301	\$0	\$0	\$636,301
Fire Hydrants	\$0	\$0	\$0	\$0	\$158,262	\$0	\$0	\$158,262
Private Fire Protection	\$0	\$0	\$0	\$0	\$0	\$139,343	\$0	\$139,343
General	\$0	\$0	\$0	\$0	\$0	\$0	\$2,633,388	\$2,633,388
Purchased Water	\$4,042,555	\$0	\$0	\$0	\$0	\$0	\$0	\$4,042,555
<b>Total Operating Expenses</b>	<b>\$6,068,683</b>	<b>\$1,423,355</b>	<b>\$70,437</b>	<b>\$1,470,520</b>	<b>\$794,563</b>	<b>\$139,343</b>	<b>\$2,633,388</b>	<b>\$12,600,289</b>
<b>O&amp;M Allocation</b>	<b>48.2%</b>	<b>11.3%</b>	<b>0.6%</b>	<b>11.7%</b>	<b>6.3%</b>	<b>1.1%</b>	<b>20.9%</b>	<b>100.0%</b>

Table 5-6: Allocation of Water Assets to Cost Components

Functional Categories	Supply & Base Delivery	Max Day	Conserva tion	Billing & Customer Service	Meters	Private Fire Protection	General	Total O&M Expenses
Water Supply	\$2,738,328	\$1,923,675	\$0	\$0	\$0	\$0	\$0	\$4,662,002
Treatment	\$6,324,600	\$4,443,031	\$0	\$0	\$0	\$0	\$0	\$10,767,631
Storage	\$548,892	\$385,596	\$0	\$0	\$0	\$0	\$0	\$934,488
Transmission & Distribution	\$77,568,478	\$54,491,841	\$0	\$0	\$0	\$0	\$0	\$132,060,319
Conservation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Billing & Customer Service	\$0	\$0	\$0	\$14,378	\$0	\$0	\$0	\$14,378
Meters	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fire Hydrants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Private Fire Protection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
General	\$0	\$0	\$0	\$0	\$0	\$0	\$978,267	\$978,267
Purchased Water	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Asset Value</b>	<b>\$87,180,298</b>	<b>\$61,244,143</b>	<b>\$0</b>	<b>\$14,378</b>	<b>\$0</b>	<b>\$0</b>	<b>\$978,267</b>	<b>\$149,417,085</b>
<b>Capital Allocation</b>	<b>58.3%</b>	<b>41.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.7%</b>	<b>100.0%</b>

### 5.2.4. Equivalent Meters

Equivalent meters (EMs) are used to allocate meter-related costs. Larger meters can impose greater demands on the system and are more expensive to install, maintain, and replace than smaller meters. This study uses a hydraulic capacity (capacity) ratio to calculate equivalent meters. The capacity ratio is based on meter hydraulic capacity and is calculated to represent the potential demand on the water system compared to the base meter size. A ratio of hydraulic capacity is calculated by dividing the capacity of a meter at a given size by the base meter capacity using the maximum safe operating flow rates in gallons per minute (gpm). The base meter used in the study is the 1" meter, which is the most common meter size in the District's water system.

Table 5-7 shows the meter capacity and capacity ratio for each meter size. The capacity in gpm is based on the safe operating flow rates provided in the AWWA Manual M1 for the most common meter types used by the District. These ratios reflect an update to the ratios used in prior studies. The capacity ratios (Column C) are calculated by dividing the capacity in gpm (Column B) for each meter size (Column A) by the capacity in gpm for the 1" meter (Column B, Line 1). Column E shows the estimated equivalent meters based on the capacity ratio. Meter counts (Column D) at each size are multiplied by the capacity ratio (Column C) to arrive at the total number of equivalent meters.

**Table 5-7: Equivalent Meters**

Line No	Meter Size (A)	Capacity (gpm) (B)	AWWA Ratio (C)	Number of Meters (D)	Equivalent Meters (E)
1	1"	50	1.00	12,676	12,676
2	1.5"	100	2.00	102	204
3	2"	160	3.20	264	845
4	3"	350	7.00	22	154
5	4"	600	12.00	17	204
6	6"	1350	27.00	5	135
7	8"	1600	32.00	0	0
8	10"	4200	84.00	0	0
9	<b>Total</b>			<b>13,086</b>	<b>14,218</b>

### 5.2.5. Allocation of Public and Private Fire Protection Costs

Water systems provide two types of fire protection: public fire protection for firefighting (i.e., fire hydrants) and private fire protection (i.e., fire lines for private structures with sprinkler systems for fire suppression and private fire hydrants). Raftelis performed a fire demand analysis to determine the share of fire protection costs allocated to public versus private fire protection. The District provided Raftelis with a count of fire hydrants. The number of private fire lines is shown in Table 3-3.

Table 5-8 shows the calculation of equivalent fire demand associated with public hydrants and private fire lines. Each connection size has a fire flow demand factor similar to the hydraulic capacity factor of a water meter. The diameter of the connection (in inches) is raised to the 2.63 power to determine the fire demand

factor (Column B).<sup>4</sup> The fire demand factor is multiplied by the number of connections or hydrants by size (Column A) to calculate equivalent fire demand (Column C). Total equivalent fire demand is shown for public hydrants in Line 8 and for private fire lines in Line 16. Column D shows the proportional share of equivalent fire demand between public (Line 8) and private (Line 16).

**Table 5-8: Equivalent Fire Meters**

Line No	Fire Protection Peaking Requirements	Number of Connections (A)	Fire Demand Factor (B)	Equivalent Fire Demand Units (C)	Equivalent Fire Demand (%) (D)
<b>Public Fire Hydrants</b>					
1	2"		6.19		0.0%
2	3"		17.98		0.0%
3	4"		38.32		0.0%
4	6"	1,680	111.31	187,002	86.4%
5	8"		237.21		0.0%
6	10"		426.58		0.0%
7	12"		689.04		0.0%
8	Subtotal	1,680		187,002	86.4%
<b>Private Fire Protection Service Connections</b>					
9	2"	2	6.19	12	0.0%
10	3"	2	17.98	36	0.0%
11	4"	34	38.32	1,303	0.6%
12	6"	156	111.31	17,365	8.0%
13	8"	24	237.21	5,693	2.6%
14	10"	12	426.58	5,119	2.4%
15	12"	0	689.04		0.0%
16	Subtotal	230		29,528	13.6%
17	<b>Total</b>	<b>1,910</b>		<b>216,530</b>	<b>100.0%</b>

### 5.2.6. Unit Costs of Service

The end goal of a cost-of-service analysis is to distribute the revenue requirement to each customer class. Raftelis calculated unit costs for each cost component by assessing the total water demand, meter count, or equivalent service units. Table 5-9 shows the units-of-service for each customer class. Average Daily Use (Column C) is the Annual Use (Column B) divided by 365 days per year. The Max Day Peaking Factor (Column D) is the capacity factors derived in Table 5-3. The Max Day Demand (Column E) is the Average Daily Use (Column C) multiplied by the Max Day Peaking Factor (Column D). The Max Day Extra Capacity (Column F) is the difference between the Max Day Demand (Column E) and the Average Daily Use (Column C).

<sup>4</sup> Hazen-Williams equation and AWWA Manual M1

Table 5-9: Units-of-Service

Line No	Customer Class/Tier (A)	Annual Water Use (CCF) (B)	Average Daily Usage (CCF) (C)	Max Day Peaking Factor (D)	Max Day Demand (CCF/Day) (E)	Max Day Extra Capacity (CCF/Day) (F)	Number of EMs (G)	Number of Meters (H)
1	Residential Tier 1 (0-30 ccf/mo)	1,952,603	5,346	1.51	8,048	2,702		
2	Residential Tier 2 (30.01+ ccf/mo)	216,956	594	2.67	1,587	993		
3	Non-Residential	322,176	882	1.50	1,319	437		
4	Irrigation	331,389	907	2.42	2,199	1,291		
5	<b>Total</b>	<b>2,823,124</b>	<b>7,729</b>		<b>13,153</b>	<b>5,423</b>	<b>14,218</b>	<b>13,086</b>

Table 5-10 shows the max day extra capacity requirements for fire service and for the residential, non-residential, and irrigation customers. The value shown for residential, non-residential, and irrigation comes from Table 5-9. This information is used to determine the percent of max day demand that comes from fire and from customer usage.

Table 5-10: Fire Service Share of Max Day Requirements

	Duration (Hours)	Demand (gpm)	Max Day (ccf/day)	Max Day %
Residential Fire	1	1,500	120	
Non-Residential Fire	2	2,500	401	
Total Fire			521	9%
Residential, Non-Res., Irrigation			5,423	91%

Table 5-11 shows the operating and capital revenue requirements allocated to the cost components. The operating expenses match the totals shown in Table 5-5. Capital-related expenses (Table 5-1, Capital column) are allocated based on the asset allocation (Table 5-6). Revenue offsets are allocated to the Revenue Offsets column. Line 5 reallocates general costs to the other cost components based on Line 4 excluding revenue offsets because general costs support all cost components. Line 6 reallocates public fire max day costs to meters because it is common to recover public fire protection costs through a fixed charge in proportion to meter size. This allocation is based on the percent of total fire service's max day impact (Table 5-10) split between public fire and private fire based on the split shown in Table 5-8. Line 7 does a similar reallocation as Line 6 for private fire service, moving those max day costs to the private fire component. To keep the percentage of rate-based revenue from fixed



charges similar to current levels, a portion of max day and base delivery costs are also allocated to the meter component, as shown in Lines 8 and 9. The total adjusted cost-of-service is shown in Line 11.

**Table 5-11: Revenue Requirement Allocation and Unit Cost Derivation**

Line No.	Preliminary Cost of Service	Supply & Base Delivery	Max Day	Conservation	Billing & Customer Service	Meters	Private Fire Protection	Revenue Offsets	General	Total
Revenue Requirements										
1	Operating Revenue Requirement	\$6,068,683	\$1,423,355	\$70,437	\$1,470,520	\$794,563	\$139,343	\$0	\$2,633,388	\$12,600,289
2	Capital Revenue Requirement	\$2,819,097	\$1,980,415	\$0	\$465	\$0	\$0	\$0	\$31,634	\$4,831,610
3	Revenue Offsets							(\$328,000)		(\$328,000)
4	Subtotal	\$8,887,780	\$3,403,770	\$70,437	\$1,470,985	\$794,563	\$139,343	(\$328,000)	\$2,665,021	\$17,103,900
Reallocations										
5	Reallocation of General Costs	\$1,604,003	\$614,288	\$12,712	\$265,473	\$143,397	\$25,148		(\$2,665,021)	\$0
6	Reallocation of Public Fire Costs		(\$304,326)			\$304,326				\$0
7	Reallocation of Private Fire Costs		(\$48,053)				\$48,053			\$0
8	Reallocation of Max Day		(\$1,906,153)			\$1,906,153				\$0
9	Reallocation of Base Delivery	(\$5,455,727)				\$5,455,727				\$0
10	Subtotal	(\$3,851,724)	(\$1,644,244)	\$12,712	\$265,473	\$7,809,603	\$73,201	\$0	(\$2,665,021)	\$0
11	Adjusted Cost-of-Service	\$5,036,056	\$1,759,526	\$83,149	\$1,736,458	\$8,604,167	\$212,543	(\$328,000)	\$0	\$17,103,900

Table 5-12 divides the adjusted cost-of-service (Table 5-11, Line 11) by the respective units-of-service for each cost component, to determine the unit cost for each component.

**Table 5-12: Unit Costs-of-Service**

	Supply & Base Delivery ccf	Max Day ccf/day	Conservation ccf	Billing & Customer Service meters	Meters EMs	Private Fire Protection Equivalent Fire	Revenue Offsets ccf
Adjusted Cost-of-Service	\$5,036,056	\$1,759,526	\$83,149	\$1,736,458	\$8,604,167	\$212,543	(\$328,000)
Units	2,823,124	5,423	2,823,124	13,086	14,218	29,528	2,823,124
Unit Cost, \$/unit	\$1.784	\$324.43	\$0.029	\$11.06	\$50.43	\$0.60	(\$0.116)

The max day unit cost from Table 5-12 is applied to the customer classes and tiers based on their respective max day peaking requirements to determine the peaking unit cost at the class/tier level. Table 5-13 shows the derivation of the peaking cost at the class/tier level. The Max Day costs from Table 5-11, Line 11 are allocated to the class/tiers based on the Max Day Requirements (Column B). These costs are divided by the water used by each class/tier (Column D) to derive the peaking unit rate (Column E).

**Table 5-13: Peaking Unit Rate Calculation**

Line No.	Customer Class/Tier (A)	Max Day Requirements (CCF/Day) (B)	Allocated Max Day Costs (C)	Water Use (CCF) (D)	Peaking Unit Rate (\$/CCF) (E)
1	Residential Tier 1 (0-30 ccf/mo)	2,702	\$876,642	1,952,603	\$0.449
2	Residential Tier 2 (30.01+ ccf/mo)	993	\$322,065	216,956	\$1.484
3	Non-Residential	437	\$141,864	322,176	\$0.440
4	Irrigation	1,291	\$418,955	331,389	\$1.264
5	<b>Total</b>	<b>5,423</b>	<b>\$1,759,526</b>	<b>2,823,124</b>	

### 5.3. Proposed Water Rates and Charges

From the calculations in Table 5-12, the proposed fixed charges are determined for each meter size. Table 5-14 shows the derivation of the Monthly Service Charge. The Billing & Customer Service component (Column D) is equal to the unit rate from Table 5-12. As the cost of issuing a bill does not vary by meter size, it remains constant for all meter sizes. The Meters component (Column E) is the Meters unit cost from Table 5-12 for the 1" meter. For meters larger than 1", this unit rate is multiplied by the meter ratio (Column C) to derive the meter capacity cost associated with those larger meter sizes. The Proposed Monthly Service Charge (Column F) is the sum of Columns D and E. The Current Charge is shown in Column G for comparison.

**Table 5-14: Monthly Service Charge Derivation**

Line No.	Meter Size (A)	Number of Meters (B)	Meter Ratio (C)	Billing & Customer Service (D)	Meters (E)	Proposed Monthly Charge (F)	Current Monthly Charge (G)
1	1"	12676	1.00	\$11.06	\$50.43	\$61.49	\$62.37
2	1.5"	102	2.00	\$11.06	\$100.86	\$111.92	\$87.79
3	2"	264	3.20	\$11.06	\$161.38	\$172.44	\$118.29
4	3"	22	7.00	\$11.06	\$353.02	\$364.08	\$189.48
5	4"	17	12.00	\$11.06	\$605.17	\$616.23	\$291.14
6	6"	5	27.00	\$11.06	\$1,361.63	\$1,372.69	\$545.33
7	8"	0	32.00	\$11.06	\$1,613.78	\$1,624.85	\$850.36
8	10"	0	84.00	\$11.06	\$4,236.18	\$4,247.24	\$1,206.22

Table 5-15 shows the derivation of the Private Fire Protection Service Charge. Since private fire charges are on the same water bill, no additional billing component is charged. The charge shown in Column C is the unit rate shown for Private Fire Protection in Table 5-12 multiplied by the Fire Demand Factor (Column B). The current monthly charge is shown in Column D for comparison.

**Table 5-15: Private Fire Protection Service Charge Derivation**

Connection Size	Number of Connections (A)	Fire Demand Factor (B)	Proposed Monthly Charge (C)	Current Monthly Charge (D)
2"	2	6.19	\$3.72	\$3.08
3"	2	17.98	\$10.79	\$8.96
4"	34	38.32	\$22.99	\$19.08
6"	156	111.31	\$66.77	\$55.43
8"	24	237.21	\$142.29	\$118.12
10"	12	426.58	\$255.89	\$212.42
12"	0	689.04	\$413.32	\$343.10

The Commodity Rate incorporates the balance of the Base Delivery and Max Day components not captured in the fixed charge plus Conservation and Revenue Offsets, as shown in Table 5-16. The Base Delivery, Conservation, and Revenue Offsets costs match those shown in Table 5-12. The Max Day cost (Column C) matches that shown in Table 5-13. The sum of Columns B, C, D, and E result in the proposed total unit rate in Column F. The proposed rate for Tier 2 is lower than the current commodity rate due to a dampening in the Tier 2 demand since the last rate study. This unit rate includes all water purchase costs.

**Table 5-16: Proposed Water Commodity Rate**

Customer Class/Tier	Water Use (CCF) (A)	Supply & Base Delivery (B)	Max Day (C)	Conservation (D)	Revenue Offsets (E)	Proposed Rate (\$/CCF) (F)	Current Rate (\$/CCF) (G)
Residential Tier 1 (0-30 ccf/mo)	1,952,603	\$1.784	\$0.449	\$0.029	(\$0.116)	\$2.15	\$1.96
Residential Tier 2 (30.01+ ccf/mo)	216,956	\$1.784	\$1.484	\$0.029	(\$0.116)	\$3.19	\$4.12
Non-Residential	322,176	\$1.784	\$0.440	\$0.029	(\$0.116)	\$2.14	\$1.83
Irrigation	331,389	\$1.784	\$1.264	\$0.029	(\$0.116)	\$2.97	\$2.32

The proposed five-year water rates are shown in Table 5-17. The rates for FYE 2024 are derived from the cost-of-service analysis and the proposed revenue adjustments from Table 4-6 are used to determine the proposed water rates and charges for FYE 2025 to FYE 2028 by escalating the rates shown in FYE 2024.

Table 5-17: Proposed 5-Year Water Rates and Charges

Proposed Rates	Current	Proposed	Proposed	Proposed	Proposed	Proposed
Proposed Water Rate Schedule	2023	2024	2025	2026	2027	2028
<b>Proposed Revenue Adjustment</b>	N/A	cost-of-service	4.5%	4.5%	4.5%	4.5%
<b>Monthly Fixed Charges (by Meter Size)</b>						
1"	\$62.37	\$61.49	\$64.26	\$67.16	\$70.19	\$73.35
1.5"	\$87.79	\$111.92	\$116.96	\$122.23	\$127.74	\$133.49
2"	\$118.29	\$172.44	\$180.20	\$188.31	\$196.79	\$205.65
3"	\$189.48	\$364.08	\$380.47	\$397.60	\$415.50	\$434.20
4"	\$291.14	\$616.23	\$643.97	\$672.95	\$703.24	\$734.89
6"	\$545.33	\$1,372.69	\$1,434.47	\$1,499.03	\$1,566.49	\$1,636.99
8"	\$850.36	\$1,624.85	\$1,697.97	\$1,774.38	\$1,854.23	\$1,937.68
10"	\$1,206.22	\$4,247.24	\$4,438.37	\$4,638.10	\$4,846.82	\$5,064.93
<b>Commodity Charges (per CCF)</b>						
Residential						
Tier 1 (0-30 ccf/mo)	\$1.96	\$2.15	\$2.25	\$2.36	\$2.47	\$2.59
Tier 2 (30.01+ ccf/mo)	\$4.12	\$3.19	\$3.34	\$3.50	\$3.66	\$3.83
Non-Residential	\$1.83	\$2.14	\$2.24	\$2.35	\$2.46	\$2.58
Irrigation	\$2.32	\$2.97	\$3.11	\$3.25	\$3.40	\$3.56
<b>Private Fire Protection Service Monthly Fixed Charges (by Connection Size)</b>						
2"	\$3.08	\$3.72	\$3.89	\$4.07	\$4.26	\$4.46
3"	\$8.96	\$10.79	\$11.28	\$11.79	\$12.33	\$12.89
4"	\$19.08	\$22.99	\$24.03	\$25.12	\$26.26	\$27.45
6"	\$55.43	\$66.77	\$69.78	\$72.93	\$76.22	\$79.65
8"	\$118.12	\$142.29	\$148.70	\$155.40	\$162.40	\$169.71
10"	\$212.42	\$255.89	\$267.41	\$279.45	\$292.03	\$305.18
12"	\$343.10	\$413.32	\$431.92	\$451.36	\$471.68	\$492.91

## 6. Customer Impact Analysis

The proposed revenue adjustments are different from customer bill impacts in FYE 2024 due to the distributional impacts of the cost-of-service analysis. Figure 6-1 shows the bill impacts for a single family residential customer on a 1" meter (most common size for this customer class) at different levels of usage in a month.

**Figure 6-1: Sample Single Family Residential Monthly Water Bill Comparison, FYE 2024**

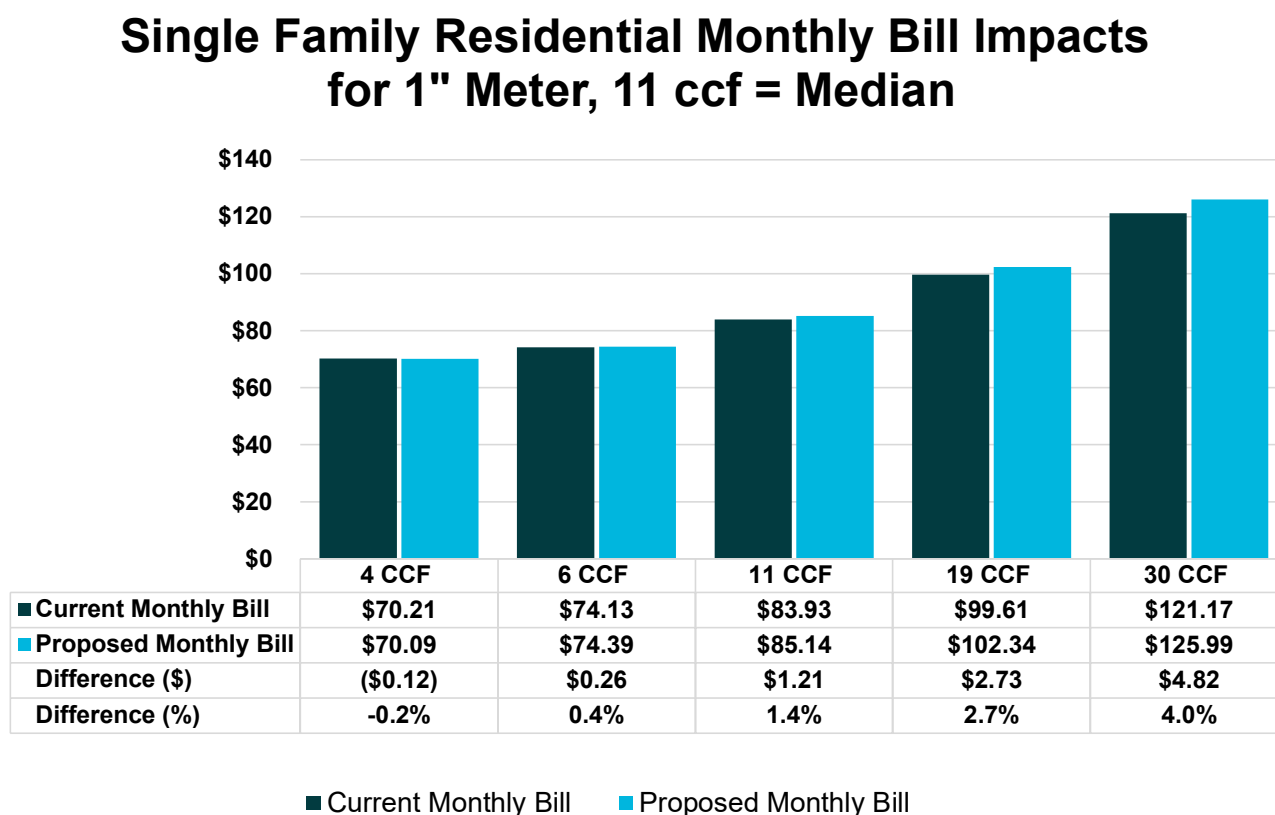


Figure 6-2 shows a comparison of FYE 2024 non-residential bills based on a 2" meter for different monthly usage. Figure 6-3 shows a comparison of FYE 2024 irrigation bills based on a 2" meter for different monthly usage. The 2" meter is the most common meter size for these two customer classes.

Figure 6-2: Sample Non-Residential Bill Comparison, FYE 2024

### Non-Residential Monthly Bill Impacts for 2" Meter, 26 ccf = Median

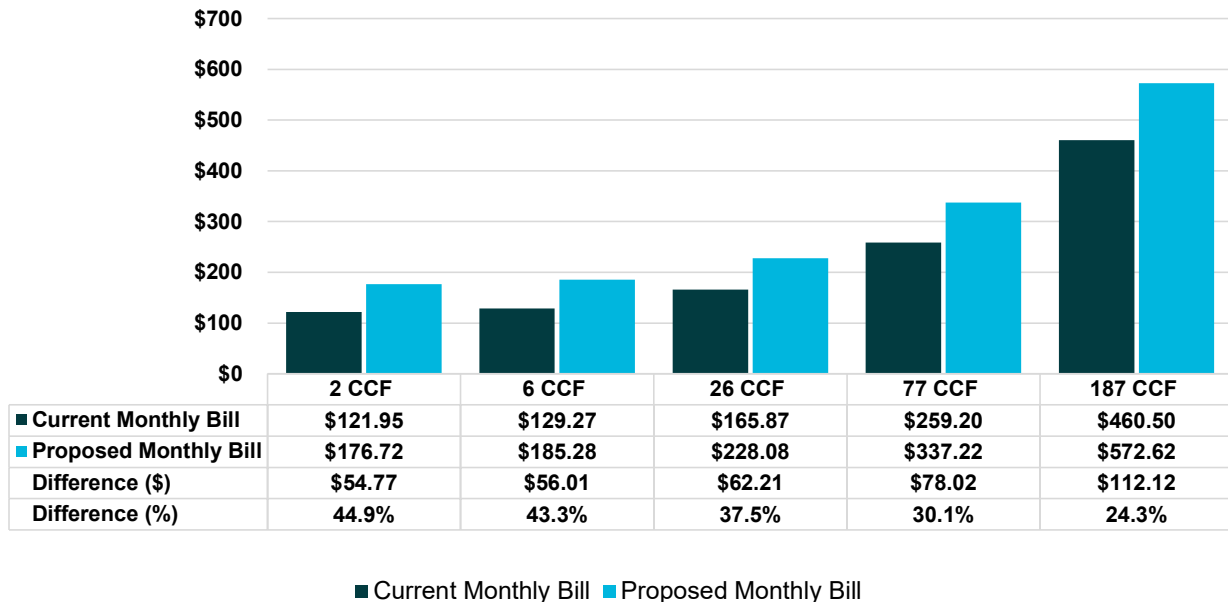
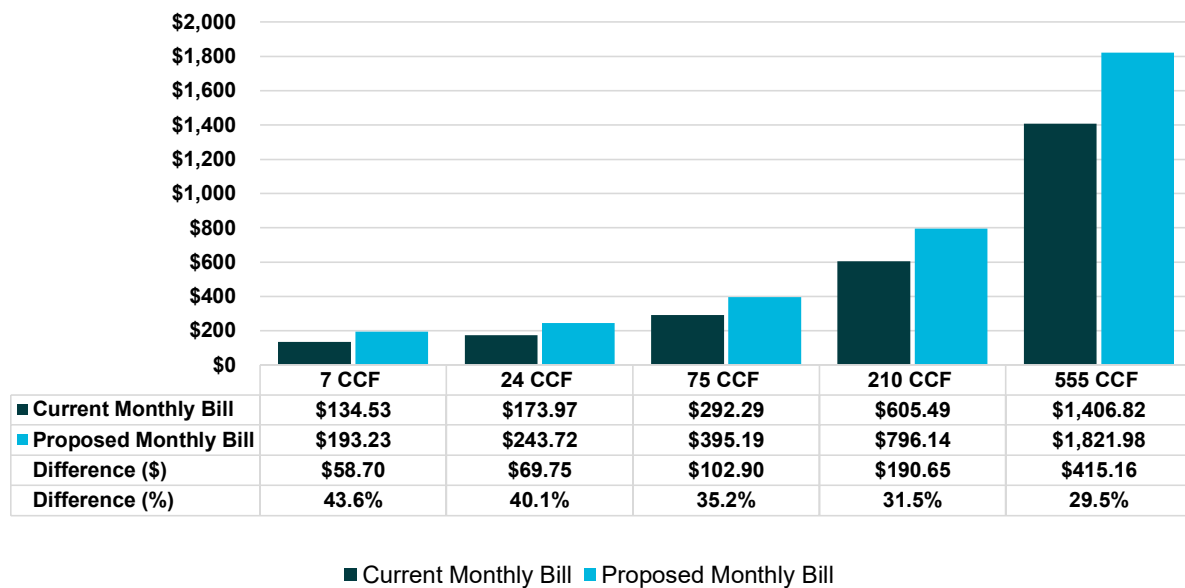


Figure 6-3: Sample Irrigation Bill Comparison, FYE 2024

### Irrigation Monthly Bill Impacts for 2" Meter, 75 ccf = Median



**APPENDIX A:**

# **Water Capital Projects**



Project	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
<b>Supply/ Distribution Improvements</b>						
Well Rehabilitation Program pg. 10	\$0	\$82,400	\$0	\$0	\$0	\$0
Derr St. Water Main Looping pg. 12	\$0	\$60,000	\$0	\$0	\$0	\$0
School St./Locust Water Main pg.14	\$0	\$298,000	\$0	\$0	\$0	\$0
Service Line Replacements Pavement Repairs pg. 16	\$85,000	\$0	\$0	\$0	\$0	\$0
Locust/Summit Alley Water Main pg. 18	\$635,000	\$0	\$0	\$0	\$0	\$0
Elk Grove Blvd./Grove St. Alley Water Main pg. 20*	\$376,000	\$0	\$0	\$0	\$0	\$0
Locust St. Elk Grove Blvd Alley/Derr St. Water Main pg. 22**	\$0	\$377,000	\$0	\$0	\$0	\$0
Locust St. Elk Grove Blvd. Main pg. 24	\$0	\$140,000	\$0	\$0	\$0	\$0
2nd Ave./Mazatlan Way Water Main pg. 26	\$0	\$0	\$0	\$441,000	\$0	\$0
Adams St. Water Main pg. 28	\$129,000	\$0	\$0	\$0	\$0	\$0
Grove St. Water Main pg. 30	\$0	\$431,000	\$0	\$0	\$0	\$0
Elk Grove Florin-Frontage Rd. Water Main pg. 32	\$0	\$669,500	\$0	\$0	\$0	\$0
Kilkenny Ct. Water Main pg. 34	\$0	\$0	\$0	\$223,000	\$0	\$0
Leo Virgo Ct. Water Main pg. 36	\$0	\$0	\$0	\$223,000	\$0	\$0
Plaza Park Dr. Water Main pg. 38	\$0	\$0	\$753,000	\$0	\$0	\$0
Durango Way Water Main pg. 40	\$0	\$0	\$363,000	\$0	\$0	\$0
Sierra St. Service Line Replacements pg. 42	\$0	\$87,550	\$0	\$0	\$0	\$0
Lark St. Water Main pg. 44	\$0	\$0	\$369,000	\$0	\$0	\$0
Mazatlan Way Water Main pg. 46	\$0	\$0	\$0	\$321,000	\$0	\$0
Webb St. Water Main pg. 48	\$0	\$0	\$0	\$0	\$428,000	\$0
2nd Ave. Water Main pg. 50	\$188,000	\$0	\$0	\$0	\$0	\$0
Grove St./Elk Grove Blvd Water Main pg. 52	\$0	\$0	\$0	\$0	\$446,000	\$0
Halverson Dr. Water Main pg. 54	\$0	\$0	\$0	\$0	\$654,000	\$0
Railroad Corridor Water Line pg. 56	\$0	\$0	\$0	\$145,000	\$0	\$0
Cadura Circle Water Main Looping pg. 58	\$0	\$0	\$0	\$0	\$60,000	\$0
Aizenberg Cir. Water Main Looping pg. 60	\$0	\$0	\$0	\$0	\$103,000	\$0
Transmission Main Brinkman Ct. (Cost Share) pg. 62	\$50,000	\$0	\$0	\$0	\$0	\$0
Elk Grove Shopping Center Water Main pg. 64	\$0	\$0	\$0	\$0	\$70,000	\$0
Glorieta Ct. Water Main pg. 66	\$0	\$0	\$0	\$53,000	\$0	\$0
La Diana Ct. Water Main pg. 68	\$0	\$0	\$0	\$56,000	\$0	\$0
Aquarius Ct. Water Main pg. 70	\$0	\$0	\$0	\$140,000	\$0	\$0
Five-Year Plan Annual Average (with inflationary adjustments)	\$0	\$0	\$0	\$0	\$0	\$1,691,290
Subtotal - Supply/ Distribution Improvements	\$1,463,000	\$2,145,450	\$1,485,000	\$1,602,000	\$1,761,000	\$1,691,290
<b>Treatment Improvements</b>						
Storage Tank Coating Repairs pg. 72	\$0	\$0	\$0	\$20,000	\$0	\$0
Storage Tank Interior Repairs pg. 74	\$0	\$30,000	\$0	\$0	\$0	\$0
Media Replacement - RRWTP Filter Vessels pg. 76	\$90,000	\$0	\$0	\$0	\$0	\$0
Media Replacement - HVWTP Filter Vessels pg. 78	\$0	\$0	\$95,481	\$0	\$0	\$0
PLC - RRWTP Main & Filter Panel pg. 80	\$0	\$0	\$60,000	\$0	\$0	\$0
ChlorTec System Replacements pg. 82	\$150,000	\$0	\$0	\$0	\$0	\$0
Chlorine Analyzers Shallow Wells pg. 84	\$0	\$70,000	\$0	\$0	\$0	\$0
Five-Year Plan Annual Average (with inflationary adjustments)	\$0	\$0	\$0	\$0	\$0	\$103,096
Subtotal - Treatment Improvements	\$240,000	\$100,000	\$155,481	\$20,000	\$0	\$103,096
<b>Building &amp; Site Improvements/ Vehicles</b>						
Administration Building Tentative Improvements pg. 86	\$1,281,000	\$0	\$0	\$0	\$0	\$0
Back-Up I.T. Server Replacement pg. 88	\$30,000	\$0	\$0	\$0	\$0	\$0
Backhoe Loader pg. 90	\$0	\$160,000	\$0	\$0	\$0	\$0
Truck Replacements pg. 92	\$0	\$150,000	\$120,000	\$130,000	\$145,000	\$109,000
Pavement Repair & Seal Coat - RRWTP pg.94	\$0	\$0	\$25,000	\$0	\$0	\$0
Estimated CIP beyond Five-Year Plan	\$0	\$0	\$0	\$0	\$0	\$100,000
Subtotal - Building & Site Improvements/ Vehicles	\$1,311,000	\$310,000	\$145,000	\$130,000	\$145,000	\$209,000
<b>Additional Capital Projects</b>						
Unforeseen Capital Projects	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
SCADA Software Upgrade	\$0	\$50,000	\$0	\$0	\$0	\$0
Well Replacement	\$0	\$0	\$0	\$0	\$0	\$4,600,000
Advanced Metering Infrastructure (AMI)	\$0	\$0	\$3,000,000	\$0	\$0	\$0
Subtotal - Additional Capital Projects	\$100,000	\$150,000	\$3,100,000	\$100,000	\$100,000	\$4,700,000
<b>Total CIP</b>	<b>\$3,114,000</b>	<b>\$2,705,450</b>	<b>\$4,885,481</b>	<b>\$1,852,000</b>	<b>\$2,006,000</b>	<b>\$6,703,386</b>



**APPENDIX B:**

**O&M Line-Item Allocations**





Description	Water Supply	Treatment	Storage	Transmission & Distribution	Conservation	Billing & Customer Service	Meters	Fire Hydrants	Private Fire Protection	General	Purchased Water	Total
<b>Outside Services</b>												
Administration Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Bank Charges	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Billing Services	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Contracted Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Water Conservation Services	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Accounting Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Engineering	3.1%	7.2%	0.6%	88.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	100.0%
Special Projects	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Legal Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Financial Consultants	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Community Relations	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Misc. Medical	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Pre-employment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Janitorial	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Bond Administration	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Security	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Sampling	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Board Secretary/Treasurer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
<b>Equipment, Rent, Taxes and Utilities</b>												
Occupancy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Equipment Rental	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Property Taxes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Electricity	65.0%	35.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Natural Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Sewer & Garbage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
<b>Less Capitalized Labor</b>												
Less Capitalized Labor	10.6%	11.5%	5.1%	18.7%	1.0%	11.6%	9.1%	2.9%	2.6%	26.9%	0.0%	100.0%