

Borrego Water District

Water and Wastewater Rate Study

Final Report / May 10, 2021





May 10, 2021

Geoff Poole
General Manager
Borrego Water District
806 Palm Canyon Drive
Borrego Springs, CA 92004-1807

Subject: Water and Wastewater Rate Study Report

Dear Mr. Poole,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this Water and Wastewater Rate Study Report (Report) for the Borrego Water District (District). The Study develops a long-term financial plan and designs water and wastewater rates with technically sound methodologies which meet the requirements of California Constitution Article XIII D, Section 6 (commonly referred to as Proposition 218) and industry standards.

The major objectives of the study include the following:

1. Development of a financial plan for each enterprise fund that meets the utilities' revenue requirements, including operations and maintenance (O&M) costs and the capital improvement plan (CIP) while adequately funding reserves in accordance with industry best practices and achieving debt coverage requirements.
2. Conducting cost of service analyses that ensures the nexus between the cost to serve customers and the responsibility of each class, per Proposition 218 and industry standards.
3. Review of the current rate structures and evaluation of alternative rate structures, customer classes, and fixed and variable cost recovery for the water and wastewater operations to achieve District objectives.
4. Design of water and wastewater rates, implemented over the next five-years, that are compliant with Proposition 218 and ensure financial sufficiency.

The Report details the key findings and recommendations related to the development of the financial plan, the updated cost of service allocations, and the proposed water and wastewater rates.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Sanjay Gaur'.

Sanjay Gaur
Vice President

A handwritten signature in black ink, appearing to read 'Kevin Kostiuk'.

Kevin Kostiuk
Manager

A handwritten signature in black ink, appearing to read 'Lauren Demine'.

Lauren Demine
Senior Consultant

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1. Executive Summary

1.1. Background of the Study

The Borrego Water District (District) is located approximately 50 miles northeast of the City of San Diego and serves the census designated place of Borrego Springs, as well as other adjacent unincorporated areas of San Diego County. The District provides potable water service to a seasonal and year-round population of approximately 3,500 through over 2,000 service connections. On an annual basis, the District delivers approximately 1,300 acre-feet of potable water, which is obtained from groundwater pumped from the Borrego Springs Subbasin (Subbasin) of the Borrego Valley Groundwater Basin.

The District's water utility, like other agencies in San Diego County, is faced with challenges related to the reduction in per capita water usage relative to historical levels, economic challenges induced by the pandemic, and increasing capital improvement costs related to infrastructure and facilities at the end of their useful lives. More specific to the District, future water production from the groundwater basin will be limited based on the Basin Pumping Allocation (BPA) determined through a Sustainable Groundwater Management Act (SGMA) compliant Stipulated Agreement approved by a California Superior Court on April 8, 2021. The District's operational costs continue to increase and the reinvestment of funds into its infrastructure is estimated to be substantial in the mid-term. This situation is not unique to the District, as many agencies throughout the state are faced with issues involving water availability, conservation, the need for capital reinvestment to continue providing reliable water services, adhering to new regulations and mandates, and meeting service demands with limited water supplies and groundwater overdraft.

The current water rate structure of the District consists of two main components: a monthly fixed service charge that varies based on meter size and a water usage, or "volumetric", rate. Single-Family Residential (SFR) customers are currently charged volumetric water rates based on a two-tier structure. All other customers pay a uniform volumetric rate.

The District provides sewer collection and treatment within its service areas to both residential and non-residential customers. The District provides wastewater service to three separate Service Areas (SAs). These areas are: SA1, SA2, and SA5. All sewer users pay a monthly fixed charge per Equivalent Dwelling Unit (EDU) that varies depending on the Service Area. The District assesses separate charges on sewer customers in SA2. SA2 customers consist of SA2 EDU "Holders" and SA2 EDU "Users". SA2 EDU Holders are customers that have bought in to the sewer system but are not yet connected and contributing flows to the sewer system. These SA2 EDU Holders have agreed to pay certain operating and maintenance costs of the sewer system. SA2 EDU Users, those connected to and using the sewer system, pay the sum of both the Holder and User charge. Borrego Springs Resort (BSR) in SA5 also pays a portion of its charges as a usage charge per unit of water delivered, in addition to a monthly fixed charge.

This Executive Summary compiles the proposed financial plans, proposed water and wastewater charges, and contains a description of the rate study process, legal requirements, and rate-setting methodology. In this Study, the District wishes to establish fair and equitable rates that:

- » Provide revenue stability and financial sufficiency.
- » Meet the District's fiscal needs in terms of operational expenses, reserve targets, and capital investment to maintain the water and wastewater systems.
- » Proportionately allocate the costs of providing service in accordance with Proposition 218.
- » Maintain affordable water and wastewater charges for customers, with a price signal for those whose higher water use creates greater demands and stress on the District's water system and limited source of supply.
- » Are easy for customers to understand.
- » Are easy for the District to administer.

1.2. Objectives of the Study

The major components of the Study include:

1. Development of a financial plan for each enterprise fund that meets the utilities' revenue requirements, including operations and maintenance (O&M) costs and the capital improvement plan (CIP) while adequately funding reserves in accordance with industry best practices and achieving debt coverage requirements.
2. Conducting cost-of-service (COS) analyses that ensures the nexus between the cost to serve customers and the responsibility of each class, per Proposition 218 and industry standards.
3. Review of the current rate structures and evaluation of alternative rate structures, customer classes, and fixed and variable cost recovery for the water and wastewater operations to achieve Board of Directors and District objectives.
4. Implementation of five-year rate schedules that are compliant with Proposition 218 while also ensuring financial sufficiency to fund operating and capital costs over the Study period.

The water COS analysis was prepared using the principles established by the American Water Works Association's (AWWA) "Principles of Water Rates, Fees, and Charges, 7th edition" (M1 Manual). The M1 Manual's general principles of rate structure design and the objectives of the Study are described below.

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

After determination of the revenue requirement, the next step is the cost-of-service analysis. Utilizing an agency's approved budget, financial reports, operating data, engineering data, and capital improvement plans, a rate study generally categorizes (i.e., functionalizes) the system costs (e.g., treatment, storage, pumping, etc.), including O&M and asset costs, among major operating functions to determine the cost of service.

After the assets and the costs of operating those assets are properly categorized by function, these "functionalized costs" are allocated first to cost causation components, and then to the various customer classes (e.g., single-family residential, multi-family residential, commercial, and irrigation) by determining the characteristics of those classes and the contribution of each to incurred costs such as supply costs, base delivery costs, and capacity costs.

Rate design is the final step of the M1 Manual's rate-making process and uses the revenue requirement and cost of service analyses to determine appropriate rates for each customer class. Rates utilize "rate components" that build-up to rates for commodity charges, and rates for fixed charges, for the various customer classes and meter sizes serving customers. In the case of inclining tier water rates, the rate components themselves allocate the cost of service *within* each class of customer, effectively treating each tier as a sub-class and determining the cost to serve each tier.

For the wastewater COS analysis, Raftelis followed the guidelines for allocating costs detailed in the Water Environment Federation (WEF) "Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 4th edition" (MOP 27).

A wastewater COS analysis follows a very similar approach to the water COS whereby the revenue requirements (costs) are distributed to each customer class in proportion to their cost responsibility on the system. After determining the revenue requirements, the next step is to functionalize the O&M costs based on the District's O&M classification. Functionalized costs are then allocated to the cost causation components. Unit costs are then calculated, and cost responsibility is distributed among all customer classes; rates are then designed to proportionately recover the costs in compliance with Proposition 218 requirements, which are described in more detail in Section 1.3.1 below.

1.3. Legal Requirements and Rate Setting Methodology

1.3.1. CALIFORNIA CONSTITUTION – ARTICLE XIII D, SECTION 6 (PROPOSITION 218)

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of a service to a property (property-related fees and charges) are proportional to, and do not exceed, the cost of providing service. Water and sewer service fees and charges are property-related fees and charges subject to the provisions of California Constitution Article XIII D, Section 6 (Proposition 218). The principal requirements, as they relate to public water and sewer service fees and charges are as follows:

1. Revenues derived from the fee or charge shall not exceed the costs required to provide the property-related service.
2. Revenues derived by 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 the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

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

1.3.2. CALIFORNIA CONSTITUTION – ARTICLE X, SECTION 2

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

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

Article X, Section 2 of the State Constitution establishes the need to preserve the State's water supplies and to discourage the waste or unreasonable use of water by encouraging conservation. By definition, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

In addition, Section 106 of the California Water Code declares that the highest priority use of water is for domestic purposes, with irrigation water secondary. To meet the objectives of Article X, Section 2 and the California Water Code, a water purveyor may utilize its water rate design to incentivize the efficient use of water. The District established tiered water rates (also known as “inclinings” or “inclinings block”) water rates to incentivize customers to use water in an efficient manner. The inclining tier rates (as well as rates for uniform rate classes) need to be based on the proportionate costs incurred to provide water to customer classes and within each customer class to achieve compliance with Proposition 218.

“Inclining” tier rate structures (which are synonymous with “increasing” tier rate structures and “tiered” rates), when properly designed and differentiated by customer class, allow a water utility to send conservation price signals to customers while proportionately allocating the costs of service. Due to a necessity in reducing water waste and increasing efficiency, tiered water rates are ubiquitous, especially in relatively water-scarce regions like California. Tiered rates meet the requirements of Proposition 218 if the tiered rates reasonably reflect the proportionate cost of providing service *within* each tier.

1.3.3. COST-BASED RATE-SETTING METHODOLOGY

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

1.3.3.1. Calculate the Revenue Requirement

The rate-making process starts by determining the base year (Test Year) revenue requirement, which for this Study is Fiscal Year End (FYE) 2022 which runs from July 1, 2021 through June 30, 2022. The revenue requirement should sufficiently fund the utility’s O&M expenses, debt service, capital expenses, and reserve funding. The District has not experienced any notable changes in new connection growth or annual water demand due to COVID-19.

1.3.3.2. Cost of Service Analysis

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

1. Functionalize costs. Examples of functions are water supply, pumping, treatment, transmission and distribution, groundwater management, meter servicing, and billing and customer service for water and collection, treatment, lift, and billing and customer service for wastewater.
2. Allocate functionalized costs to cost components. Cost components include variable supply, base delivery, maximum day, maximum hour¹, meter servicing, and customer service and billing costs for water and fixed, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), lift, and customer service for wastewater.
3. Distribute the cost components. Distribute cost components, using unit costs, to customer classes in proportion to their demands and burdens on the water system. This is described in the M1 Manual published by AWWA and the MOP 27 published by WEF.

A COS analysis for water considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands²).

¹ Collectively maximum day and maximum hour costs are known as peaking costs or extra-capacity costs.

² System capacity is the system’s ability to supply water to all delivery points at the time when demanded. Coincidental peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital asset related costs incurred to accommodate the peak flows are generally allocated to each customer class based upon the class’s relative demands during the peak month, day, and hour event.

Peaking costs are incurred during peak times of consumption. There are additional costs associated with designing, constructing, and operating and maintaining facilities to meet peak demands. These peak demand costs should be allocated to those customers whose water usage patterns generate additional costs for the utility. In other words, not all customer classes and not all customers share the same responsibility for peaking related costs.

1.3.3.3. 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 utility objectives, such as conservation, affordability for essential needs, and revenue stability, among other objectives. Rates act as a public information tool in communicating these objectives to customers.

1.3.3.4. Rate Adoption

Rate adoption is the last step of the rate-making process. Raftelis documents the rate study results in this Report which reflect the basis upon which the rates were calculated, the rationale and justifications behind the proposed charges, any changes to rate structures, and anticipated financial impacts to ratepayers.

1.4. Water - Results and Recommendations

Table 1-1 shows the proposed revenue adjustments selected by the District and used to calculate the proposed rates. Although this table shows anticipated revenue adjustments for FYE 2022 through 2026, the District will review and confirm the revenue adjustments on an annual basis³. The first revenue adjustment is proposed for implementation in October of calendar year (CY) 2021. All future revenue adjustments will take effect at the beginning of each fiscal year, beginning July 1, 2022. The assumptions used in calculating the revenue adjustments are described in more detail in Section 4.

Table 1-1: Proposed Water Revenue Adjustments

Effective Year	Revenue Adjustments				
	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Effective Month	October	July	July	July	July
Percentage Adjustment	5%	5%	5%	5%	5%

1.4.1. FACTORS AFFECTING REVENUE REQUIREMENTS

The following items affect the District's revenue requirement (i.e., costs) and thus its water rates. The District's expenses include O&M expenses and capital expenses, including debt service.

- » **Capital Funding:** The District has approximately \$6.7 million in replacement capital expenditures over the next five fiscal years and \$14.7 million over the financial planning horizon of this study (10 years). The capital replacement projects are anticipated to be funded through a combination of cash reserves from rates and new debt issuance. The District will pursue state and federal grants for the capital improvement program (CIP), where available. The District may elect to accelerate or postpone the CIP timeline based on available funds, favorable terms, or other conditions. A more detailed discussion of the projected capital improvement projects to be funded through the five-year financial plan is provided in Section 4.1.4 and Table 4-10.

³ The Board maintains the right to implement rates that are *lower* than adopted. If it is determined that a rate *higher* than has been adopted is required, the Board is required to re-notice customers in accordance with Proposition 218 in order to adopt new rates.

- » **Reserve Funding:** The District has reserve policies to meet cash flow needs, ensure adequate funding of repairs and replacements in the event of asset failure or other unforeseen circumstances or events, and to protect ratepayers from rate spikes. The District’s reserves are further discussed in Section 3 and total reserve balances for the selected Financial Plan are identified in Section 4.3.

The defined operating reserve policy is a minimum of 90 days of operating expenses to meet cash flow needs for the day-to-day operations of the utility, or roughly \$754,000 in FYE 2022. The District has a rate stabilization reserve with a defined policy of 30 percent of annual commodity revenues, or roughly \$749,000 in FYE 2022, to stabilize water and sewer revenues to maintain adequate debt coverage ratios. The District has a contingency reserve with a defined policy of 5 percent of operating expenses in cash to accommodate unexpected operation changes, or roughly \$153,000 in FYE 2022. The District has a capital replacement fund which currently has a target balance of a rolling average of five years of the District’s CIP, or roughly \$1.3 million, but which Raftelis and Fieldman Rolapp and Associates (FRA) recommend amending to the greater of \$860,000 or the cash funded capital projects on a pay-as-you-go (PAYGO) basis in the following fiscal year. The District has a water supply reserve with a target of \$1.5 million to purchase future Baseline Pumping Allocation (BPA) to meet supply requirements established under the Borrego Springs Subbasin California Superior Court Adjudicated Judgement (Stipulated Agreement). The District also has an emergency reserve with a defined policy of 2 percent of the replacement cost of the District’s capital assets to replace damaged assets in the case of a catastrophic event, or roughly \$1.06 million in FYE 2022. Lastly, the District has a debt reserve policy of one year of annual debt service, which for FYE 2022 is approximately \$718,000. The total minimum cash reserve target for the District’s water utility in FYE 2022 is \$5.8 million.

1.4.2. PROPOSED MONTHLY FIXED CHARGES

Table 1-2 shows the current and proposed rates for the monthly service charge, by meter size, over the Study period. The proposed rates are inclusive of metered connections. The rates for the current and proposed monthly fixed charges are based on the size of the meter serving a property. Proposed October 2021 rates reflect the updated cost of service rates and the revenue adjustment percentage shown in Table 1-1. The proposed rates beginning July 2022 are adjusted by the revenue adjustment percentage found in Table 1-1. All rates are rounded up to the nearest whole penny.

Table 1-2: Current and Proposed Water Monthly Fixed Charges (\$/Month)

Meter Size	Current	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
5/8"	\$44.07	\$42.65	\$44.79	\$47.03	\$49.39	\$51.86
3/4"	\$44.07	\$42.65	\$44.79	\$47.03	\$49.39	\$51.86
1"	\$57.17	\$57.35	\$60.22	\$63.24	\$66.41	\$69.74
1.5"	\$89.91	\$94.09	\$98.80	\$103.74	\$108.93	\$114.38
2"	\$129.19	\$138.19	\$145.10	\$152.36	\$159.98	\$167.98
3"	\$233.97	\$277.82	\$291.72	\$306.31	\$321.63	\$337.72
4"	\$351.85	\$483.60	\$507.78	\$533.17	\$559.83	\$587.83
6"	\$679.27	\$976.00	\$1,024.80	\$1,076.04	\$1,129.85	\$1,186.35

1.4.3. PROPOSED COMMODITY RATES

Table 1-3 shows the current and proposed tier definitions for each customer class. Revisions are proposed to the tiered rate structure in the Single-Family Residential (SFR) customer class and the water allotment (tier definition) for each tier. The rationale for modifications is found in Section 8.2.

Table 1-3: Tier Revisions

Proposed Customer Classes	Current Definition (hcf ⁴)	Proposed Definition (hcf)
Single Family Residential (SFR)		
Tier 1	0-7	0-7
Tier 2	>7	>7-22
Tier 3	N/A	>22

Table 1-4 shows the proposed rates for the commodity charge by customer class, which are adjusted by the revenue adjustment percentage shown in Table 1-1. Proposed October 2021 rates reflect the updated cost of service rates and the revenue adjustment. The rates for the current and proposed commodity charge are based on the amount of water delivered in one hundred cubic feet (hcf). All rates are rounded up to the nearest whole penny.

Table 1-4: Current and Proposed Water Commodity Rates (\$/hcf)

Customer Class	Current	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Single Family Residential						
Tier 1	\$4.01	\$3.59	\$3.77	\$3.96	\$4.16	\$4.37
Tier 2	\$4.41	\$4.51	\$4.74	\$4.98	\$5.23	\$5.50
Tier 3	N/A	\$5.20	\$5.46	\$5.74	\$6.03	\$6.34
Multiple Units	\$4.24	\$4.49	\$4.72	\$4.96	\$5.21	\$5.48
Commercial/Public Agency	\$4.24	\$4.49	\$4.72	\$4.96	\$5.21	\$5.48
Irrigation	\$4.24	\$4.70	\$4.94	\$5.19	\$5.45	\$5.73

1.5. Wastewater - Results and Recommendations

Table 1-5 shows the proposed revenue adjustments selected by the District and used to calculate the proposed rates. Although this table shows anticipated revenue adjustments for FYE 2022 through 2026, the District will review and confirm the revenue adjustments on an annual basis. No revenue adjustment is proposed for the first year. All future revenue adjustments will take effect at the start of each fiscal year, beginning July 1, 2022. The assumptions used in calculating the revenue adjustments are described in more detail in Section 5.

Table 1-5: Proposed Wastewater Revenue Adjustments

Effective Year	Revenue Adjustments				
	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Effective Month	October	July	July	July	July
Percentage Adjustment	0%	4%	4%	4%	4%

1.5.1. FACTORS AFFECTING REVENUE REQUIREMENTS

The following items affect the District's revenue requirement (i.e., costs) and thus its wastewater rates. The District's expenses include O&M expenses and capital expenses, including debt service.

- » **Capital Funding:** The District has approximately \$521,000 in replacement capital expenditures over the next five fiscal years and \$2.2 million over the financial planning period. The capital replacement projects will be funded through a combination of cash reserves from rates and new debt issuance. The District will pursue state and federal grants for the capital improvement program (CIP), where available. The District may elect to accelerate or postpone the CIP timeline based on system requirements, available funds, favorable terms,

⁴ hcf = hundred cubic feet. One hcf is equal to 748 gallons or about 15 full bathtubs.

and other conditions. A more detailed discussion of the projected capital improvement projects to be funded through the five-year CIP is provided in Section 5.1.3 and Table 5-7.

- » **Reserve Funding:** The District has reserve policies to meet cash flow needs, ensure adequate funding of repairs and replacements in the event of asset failure or other unforeseen circumstances or events, and to protect ratepayers from rate spikes. The District’s reserves are further discussed in Section 3 and total reserve balances for the selected Financial Plan are identified in Section 5.3. The defined operating reserve policy is a minimum of 90 days of operating expenses to meet cash flow needs for the day-to-day operations of the utility, or roughly \$110,000 in FYE 2022. The District has a rate stabilization reserve with a defined policy of 30 percent of annual commodity revenues to stabilize water and sewer revenues to maintain adequate debt coverage ratios, or roughly \$175,000 in FYE 2022. The District has a contingency reserve with a defined policy of 5 percent of operating expenses in cash to accommodate unexpected operation changes, or roughly \$22,000 in FYE 2022. The District has a capital replacement fund which currently has a target balance of a rolling average of five years of the District’s CIP, or roughly \$521,000, but which Raftelis and Fieldman Rolapp and Associates (FRA) recommend amending to the greater of \$140,000 or the budgeted cash funded capital projects in the following fiscal year. The District also has an emergency reserve with a defined policy of two percent of the replacement cost of the District’s capital assets to replace damaged assets in the case of a catastrophic event, or roughly \$187,500 in FYE 2022. Lastly, the District has a debt reserve policy of one year of annual debt service, which for FYE 2022 is approximately \$25,000. The total minimum cash reserve target for the District’s wastewater utility in FYE 2022 is \$660,000.

1.5.2. PROPOSED WASTEWATER CHARGES

Table 1-6 shows the current and proposed wastewater rates for the Study period. Raftelis recommends revisions to the Borrego Springs Resort (BSR) rate structure to align with all other system users. The rationale for the modification is found in Section 10. The proposed rates are adjusted by the revenue adjustment percentage found in Table 1-5. Proposed October 2021 rates reflect the updated cost of service rates and do not include a revenue adjustment. The proposed rates beginning July 2022 are adjusted by the revenue adjustment percentage found in Table 1-5. All rates are rounded up to the nearest whole penny.

Table 1-6: Current and Proposed Wastewater Charges (\$/Month/EDU)

Customer Class	Current	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
SA1	\$45.37	\$47.91	\$49.83	\$51.83	\$53.91	\$56.07
SA2 EDU Holder	\$28.97	\$22.97	\$23.89	\$24.85	\$25.85	\$26.89
SA2 EDU User	\$23.79	\$28.55	\$29.69	\$30.88	\$32.12	\$33.41
SA5	\$52.76	\$51.51	\$53.58	\$55.73	\$57.96	\$60.28
BSR Fixed Charge	\$28.97	\$51.51	\$53.58	\$55.73	\$57.96	\$60.28
BSR Variable Charge (\$/hcf)	\$2.13	N/A	N/A	N/A	N/A	N/A

2. General Assumptions

2.1. Inflation

The Rate Study period is FYE 2022 to 2026, with proposed revenue adjustments and rates presented for the same period. FYE 2022 begins on July 1, 2021 and ends on June 30, 2022. Raftelis developed a ten-year financial plan and cash flow model to inform the next five years of revenue needs. This section, and subsequent sections of this Report show assumptions, variables, and results over a five-year horizon to corresponding with the five-year rate setting period. Appendix B of the Report provides ten-year cash flow projections and financial plan results for the District's water and wastewater utilities.

Various types of assumptions and inputs are incorporated into the Study based on discussions with and/or direction from District staff. These include the projected number of service connections, water demand over time, and inflationary factors, among others. Cost escalations are based on the District's analysis of historical trends and data, as well as projections from external sources like San Diego Gas & Electric (SDGE).

The inflation factors show projected increases in various cost categories across the Study period. The factors are applied to all years beginning in FYE 2022. FYE 2021 relies on the District's adopted budget. Raftelis worked with District staff to escalate individual budget line items according to appropriate escalation factors. Inflationary factors are presented in Table 2-1 and Table 2-2.

A general inflation rate of 2.5 percent is based on the long-term change in the Consumer Price Index (CPI). Salaries and benefits tend to outpace general inflation, and District staff have estimated annual increases of 5 percent based on the District's analysis of historical trends and data. Power costs reflect the price trends of electricity from SDGE for water production, system pumping, sewer lift station pumping, and other District uses of energy. Groundwater Management reflects the anticipated increase in the cost of watermaster expenses.

Table 2-1: Water Inflationary Assumptions

Escalation Factors	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
General	2.5%	2.5%	2.5%	2.5%	2.5%
Salary	5.0%	5.0%	5.0%	5.0%	5.0%
Benefits	5.0%	5.0%	5.0%	5.0%	5.0%
Power	5.0%	5.0%	5.0%	5.0%	5.0%
Groundwater Management	3.0%	3.0%	3.0%	3.0%	3.0%

Table 2-2: Wastewater Inflationary Assumptions

Escalation Factors	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
General	2.5%	2.5%	2.5%	2.5%	2.5%
Salary	5.0%	5.0%	5.0%	5.0%	5.0%
Benefits	5.0%	5.0%	5.0%	5.0%	5.0%
Power	5.0%	5.0%	5.0%	5.0%	5.0%

2.2. Projected Water Demand and Account Growth

To estimate future water demand, two primary factors are used – account growth from new connections and water demand relative to the most recent complete year of water use, which is FYE 2020 (July 1, 2019 to June 30, 2020). As shown in Table 2-3, the financial plan projects no growth in new water service connections for the Study period. The demand factor for water represents the change in water consumption per account. The assumption for the Study period is that there will be no change in the consumption per account (per capita demand). Water demand

estimates are based on best estimates on per capita demand in future years. Growth and water demand projections are based on the District’s analysis of historical trends and data. The District has not experienced any notable changes in new connection growth or in annual water demand due to COVID-19.

To predict non-operating revenues, the Study assumes that all recurring non-rate water revenues (miscellaneous revenues) will not increase in future years and reserve interest earnings will increase at 1 percent per year through FYE 2026. Interest rates earned on reserves are based on conservative estimates in a low interest financial environment. These revenue growth assumptions are presented below in Table 2-3.

Table 2-3: Account, Demand, and Revenue Growth Assumptions for Water

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Account Growth					
Single Family Residential	0.0%	0.0%	0.0%	0.0%	0.0%
Multiple Units	0.0%	0.0%	0.0%	0.0%	0.0%
Commercial/Public Agency	0.0%	0.0%	0.0%	0.0%	0.0%
Irrigation	0.0%	0.0%	0.0%	0.0%	0.0%
Demand Factor	100.0%	100.0%	100.0%	100.0%	100.0%
Revenue Escalation Factors					
Non-Inflated	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Rate Revenues	0.0%	0.0%	0.0%	0.0%	0.0%
Interest Income	1.0%	1.0%	1.0%	1.0%	1.0%

2.3. Projected Wastewater Demand and Account Growth

To estimate future wastewater flows, two primary factors are used – change in the number of accounts and water demand relative to the prior year. The estimated change in the number of accounts by service area as provided by the District is shown below in Table 2-4. Currently, the District anticipates the number of sewer accounts to decrease over the Study period. As shown in Table 2-3, the District assumes that there will be no change in water demand for the Study period. Growth projections are based on the District’s analysis of historical trends and data. The District has not experienced any notable changes in new connection growth due to COVID-19.

To predict non-operating revenues, the Study assumes that all recurring non-rate wastewater revenues (miscellaneous revenues) will not increase in future years and reserve interest earnings will increase at 1 percent per year through FYE 2026, the same as previously stated water interest earnings assumptions. These revenue growth assumptions are presented below in Table 2-4.

Table 2-4: Account, Demand, and Miscellaneous Revenue Growth Assumptions for Wastewater

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Account Growth					
SA1	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
SA2	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
SA 5	-1.5%	-1.5%	-1.5%	-1.5%	-1.5%
Revenue Escalation Factors					
Non-Inflated	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Rate Revenues	0.0%	0.0%	0.0%	0.0%	0.0%
Interest Income	1.0%	1.0%	1.0%	1.0%	1.0%

3. Financial Reserve Policies

Reserve policies provide guidelines for sound financial management with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. These risks include fiscal emergencies, water shortages, asset failure, and natural disasters, among others. The District has adopted reserve policies for the utilities to meet cash flow needs (operating), avoid rate spikes during periods of depressed demand (rate stabilization), protect against revenue shortfalls (contingency), purchase future water (water supply), replace damaged assets (emergency), ensure adequate funding of capital repairs and replacements (capital), and fund certain liabilities as part of bond covenants (debt).

3.1. Water Utility Financial Reserves Policy

After review of the District's existing reserve policies, Raftelis, along with the District's other financial consulting firm FRA, has recommended a modest change to the District's adopted policies. The overall water reserve policy consists of seven component policies. The targeted minimum reserve policy for the water operating reserve is 90 days of annual water operating expenses to meet cash flow needs for the day-to-day operations of the water utility. The water operating reserve target for FYE 2022 is approximately \$754,000.

The target reserve policy for the water rate stabilization reserve is 30 percent of annual commodity revenues to stabilize water revenues in times of reduced water demand to maintain adequate debt coverage ratios and avoid abrupt increases in rates. The water rate stabilization reserve target for FYE 2022 is approximately \$749,000.

The target minimum reserve policy for the water contingency reserve is 5 percent of operating expenses in cash to accommodate unexpected operational changes and costs. The water contingency reserve target for FYE 2022 is approximately \$153,000.

The target reserve policy for the water supply reserve is \$1.5M to purchase additional future Baseline Pumping Allocation (BPA) to supply long-term customer demand. The supply requirements established under the Borrego Springs Subbasin California Superior Court Adjudicated Judgement will reduce the District's BPA over time. Additional supply for water production will be required by purchased land to acquire additional BPA.

The target reserve policy for the water emergency reserve is 2 percent of the replacement costs of the District's capital assets to replace damaged assets in the case of a catastrophic event. Approximately 85 percent of the District's asset value belongs to the water utility which translates into a water emergency reserve target for FYE 2022 is \$1.06M.

The District's water capital replacement reserve allows the utility to award contracts and provides flexibility in the timing of projects. The recommended target reserve policy for the water capital replacement reserve is the greater of \$860,000 or the rate funded capital projects on a pay-as-you-go (PAYGO) basis in the following fiscal year. The proposed water capital replacement reserve target for FYE 2022 is \$860,000. This policy will replace the current policy of a rolling average of five years of the District's water CIP.

The District has a debt service reserve for repaying previously issued bonds. The debt service reserve policy is one year of debt service which is \$718,000 attributable to the water utility in FYE 2022.

Table 3-1 shows the total target for all water reserves is approximately \$5.8 million in FYE 2022. The District's beginning FYE 2021 reserve balance was approximately \$5.3M. As existing funds are spent on the replacement CIP,

additions in annual reserve funding will allow the District to achieve the adopted reserve targets over the study period.

Table 3-1: Water Financial Reserves Policy

Reserve	Policy	FYE 2022 Target Level
Operating Reserve	Minimum 90 days of O&M Expenses	\$754,000
Rate Stabilization Reserve	30% of Commodity Revenues	\$749,000
Contingency Reserve	Minimum of 5% of O&M Expenses	\$153,000
Water Supply Reserve	\$1,500,000	\$1,500,000
Emergency Reserve	2% of District Assets (Water)	\$1,062,500
Capital Replacement Reserve	Greater of \$860k or next year PAYGO CIP	\$860,000
Debt Reserve	One Year of Debt Service	\$718,000
Total Reserves		\$5,796,500

3.2. Wastewater Utility Financial Reserves Policy

After review of the District's existing reserve policies Raftelis has recommended a modest change to the District's adopted policies. The overall wastewater reserve policy consists of six component policies. The targeted minimum reserve policy for the wastewater operating reserve is 90 days of annual wastewater operating expenses to meet cash flow needs for the day-to-day operations of the wastewater utility. The wastewater operating reserve target for FYE 2022 is approximately \$110,000.

The target reserve policy for the wastewater rate stabilization reserve is 30 percent of annual rate revenues for short term stabilization of reduced wastewater rate revenues and to maintain adequate debt coverage ratios. The wastewater rate stabilization reserve target for FYE 2022 is approximately \$175,000.

The target minimum reserve policy for the wastewater contingency reserve is 5 percent of operating expenses in cash to accommodate unexpected operational changes and costs. The wastewater contingency reserve target for FYE 2022 is approximately \$22,000.

The target reserve policy for the wastewater emergency reserve is 2 percent of the replacement costs of the District's capital assets to replace damaged assets in the case of a catastrophic event. Approximately 15 percent of the District's asset value belongs to the wastewater utility which translates into a wastewater emergency reserve target for FYE 2022 is \$187,500.

The District's wastewater capital replacement reserve allows the utility to award contracts and provides flexibility in the timing of projects. The recommended target reserve policy for the water capital replacement reserve is the greater of \$140,000 or the rate funded capital projects on a pay-as-you-go (PAYGO) basis in the following fiscal year. The proposed wastewater capital replacement reserve target for FYE 2022 is \$140,000. This policy will replace the current policy of a rolling average of five years of the District's wastewater CIP.

The District has a debt service reserve for repaying previously issued bonds. The debt service reserve policy is one year of debt service which is approximately \$25,000 attributable to the wastewater utility in FYE 2022.

Table 3-2 shows the total target for all wastewater reserves is approximately \$660,000 in FYE 2022. The District's beginning FYE 2021 reserve balance was approximately \$597,000. As existing funds are spent on the replacement CIP, modest additions in annual reserve funding will allow the District to achieve the adopted reserve targets over the study period.

Table 3-2: Wastewater Financial Reserves Policy

Reserve	Policy	FYE 2022 Target Level
Operating Reserve	Minimum 90 days of O&M Expenses	\$110,000
Rate Stabilization Reserve	30% of Rate Revenues	\$175,000
Contingency Reserve	Minimum of 5% of O&M Expenses	\$22,000
Emergency Reserve	2% of District Assets (Wastewater)	\$187,500
Capital Replacement Reserve	Greater of \$860k or next year PAYGO CIP	\$140,000
Debt Reserve	One Year of Debt Service	\$25,000
Total Reserves		\$659,500

4. Water Utility Financial Plan

This section describes the District’s customer account and water use data and the corresponding financial plan. To develop the financial plan, Raftelis projects annual revenues and expenses; models reserve balances; incorporates capital expenditures, debt service, and inflationary pressures; and calculates debt service coverage ratios to estimate any additional rate revenue required in each year of the Study. This section includes a discussion of O&M expenses, the CIP, reserve funding, projected revenue under existing rates, and the revenue adjustments required to ensure the fiscal sustainability and solvency of the utility.

4.1. Water Revenue Requirements

A review of a utility’s revenue requirements is a key first step in the rate study process. The review involves an analysis of annual rate revenues from existing rates, O&M expenses, capital expenditures, and reserve requirements.

4.1.1. REVENUES FROM CURRENT WATER RATES

The District’s rate structure has two main components: a fixed charge component (monthly service charge) and a variable volumetric charge component (commodity charge). The monthly fixed service charge is determined based on the size of the water meter serving a property and increases with meter size. As described in more detail in Section 8.3, as larger meters generally consume more water on average, have the capacity to consume more water instantaneously, and tend to have higher rates of peaking, the costs to provide service to these customers are higher. A typical Single-Family Residential (SFR) home is served by a 3/4” meter with a monthly fixed service charge of \$44.07. Most of the District water connections are 3/4”. The rates for the current fixed service charges are shown in Table 4-1.

Table 4-1: Current Water Monthly Fixed Charges (\$/Month)

Meter Size	Current Charge
5/8"	\$44.07
3/4"	\$44.07
1"	\$57.17
1 1/2"	\$89.91
2"	\$129.19
3"	\$233.97
4"	\$351.85
6"	\$679.27

The volumetric component of a customer’s water bill is calculated based on the number of units of water delivered to a property, measured in hcf, multiplied by the rates that vary by customer class and tier. The current tier widths and rates are shown in Table 4-2. The rates in Table 4-2, multiplied by the amount of use in each respective tier, determine the volumetric component of a customer’s bill. Tiers are discussed in detail in Section 8.

Table 4-2: Current Water Commodity Tiers and Rates (\$/hcf)

Class	Current Tier Definition	Current Rate (\$/hcf)
Single-Family Residential (SFR)		
Tier 1	0-7	\$4.01
Tier 2	>7	\$4.41
Multiple Units	Uniform	\$4.24
Commercial / Public Agency	Uniform	\$4.24
Irrigation	Uniform	\$4.24
Construction	Uniform	\$9.81

Table 4-3 shows the projected number of water connections by meter size, by fiscal year. The number of connections remains the same in each year based on the account growth assumptions identified in Section 2.2 and Table 2-3.

Table 4-3: Projected Water Meters by Meter Size

Meter Size	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
5/8"	3	3	3	3	3	3
3/4"	1,421	1,421	1,421	1,421	1,421	1,421
1"	464	464	464	464	464	464
1 1/2"	72	72	72	72	72	72
2"	31	31	31	31	31	31
3"	3	3	3	3	3	3
4"	8	8	8	8	8	8
6"	7	7	7	7	7	7
Total	2,009	2,009	2,009	2,009	2,009	2,009

Water demand projections through FYE 2026 are shown in Table 4-4. The water demand and revenue growth assumptions are identified in Table 2-3. The projected water usage is shown in Table 4-4 for current tiers widths to calculate projected revenues most accurately under “status quo” conditions. The “status quo” financial plan does not include revenue adjustments and assesses whether the District’s current rates, at the projected level of usage, is sufficient to support operations, capital projects, debt servicing, and reserve funding.

Table 4-4: Projected Water Usage by Class and Tiers

Class	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Single-Family Residential						
Tier 1	112,486	112,486	112,486	112,486	112,486	112,486
Tier 2	215,496	215,496	215,496	215,496	215,496	215,496
Multiple Units	71,888	71,888	71,888	71,888	71,888	71,888
Commercial / Public Agency	102,256	102,256	102,256	102,256	102,256	102,256
Irrigation	75,493	75,493	75,493	75,493	75,493	75,493
Construction	270	270	270	270	270	270
Total Water Sales (hcf)	577,889	577,889	577,889	577,889	577,889	577,889
Total Water Sales (AF)	1,327	1,327	1,327	1,327	1,327	1,327

Table 4-5 shows the rate revenue generated in each Study year with projected demand and the current rates. Note that revenues for FYE 2022 and beyond use existing rates from Table 4-1 and Table 4-2. The overall adequacy of water revenues is measured by comparing the projected annual revenue required from rates with projected revenues from the existing rates.

Table 4-5: Projected Water Rate Revenue with Current Rates

Revenue Source	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Fixed Service Charges	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391
Commodity Charges	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518
Total Rate Revenues	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909

The utility also derives revenues from other non-rate sources. These revenues consist of fees, taxes, interest income, and other operating revenues and are summarized in Table 4-6.

Table 4-6: Projected Water Non-Rate Revenues

Revenue Source	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Interest	\$38,890	\$37,615	\$41,745	\$44,649	\$47,561
Fees	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744
Taxes	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000
Other	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495
Miscellaneous	\$113,333	\$113,333	\$0	\$0	\$0
Total Non-Operating Revenues	\$342,461	\$341,187	\$231,983	\$234,887	\$237,799

4.1.2. WATER SUPPLY COSTS

The District's only source of water supply is local groundwater from the Borrego Valley Groundwater Basin. The water supply detail considers the District's groundwater allocation, basin pump charges, water demand, and potential new sources.

Table 4-7 shows the water production calculation for each year of the study in acre feet (AF). The total water sales are equal to the total usage shown in Table 4-4. System water loss is calculated by the District using the following formulas:

$$\text{Water Loss (AF)} = \text{Total Water Pumped (AF)} - \text{Water Sales (AF)} - \text{System Flushing (AF)} - \text{Emergency Leak Estimates (AF)}$$

$$\% \text{ Water Loss} = \text{Total Water Loss (AF)} / \text{Total Water Pumped (AF)}$$

The District conducts internal audits on its system flushing amounts and leak estimates to determine these values. Total water production (Line 3) accounts for system water loss using the water loss percentage provided by the District (Line 2). The following equation is used to calculate water production (Line 3):

$$\text{Total Water Sales (Line 1)} / [1 - \text{Water Loss (Line 2)}] = \text{Total Water Production (Line 2)}$$

Table 4-7: Calculated Water Production (AF)

Line	Water Production	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
1	Total Water Sales (AF)	1,327	1,327	1,327	1,327	1,327
2	Water Loss	7.8%	7.8%	7.8%	7.8%	7.8%
3	Total Water Production (AF)	1,440	1,440	1,440	1,440	1,440

Table 4-8 shows the District's groundwater allocation under the Sustainable Groundwater Management Act (SGMA) and the associated basin pumping charges per acre foot. The unit costs for basin pump charges in FY 2022 and beyond are escalated based on the power cost inflationary assumption (Table 2-1) and are rounded in the table to the nearest whole dollar. The total SGMA pumping charges shown in Line 3 are calculated by multiplying the groundwater allocation in Line 1 by the pumping unit cost in Line 2. The District pays pumping charges on the BPA in each year.

Table 4-8: SGMA Pump Charges

Line	SGMA	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
1	Groundwater Allocation (AF)	2,581	2,399	2,231	2,074	1,928
2	Basin Pump Charges (\$/AF)	\$50	\$53	\$56	\$58	\$61
3	Total SGMA Pump Charges (Line 1 x Line 2)	\$130,082	\$126,976	\$123,943	\$120,983	\$118,094

4.1.3. OPERATING AND MAINTENANCE (O&M) EXPENSES

Total projected O&M expenses are shown in Table 4-9 and are summarized by department. SGMA pumping charges are derived in Table 4-8. Other expenses are projected from the District's adopted FYE 2021 budget. Expenses

beyond FYE 2021 use District estimated costs, where known, or rely on FYE 2021 budgeted values inflated by the assumptions from Table 2-1. In addition to O&M expenses, the District must fund its Water Supply Reserve to purchase future Baseline Pumping Allocation (BPA) to meet supply requirements established under the Borrego Springs Subbasin California Superior Court Adjudicated Judgement.

Table 4-9: Projected Water O&M Expenses

O&M Expense Summary	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Repairs & Maintenance	\$316,520	\$324,433	\$332,543	\$340,857	\$349,378
Professional Services	\$304,144	\$311,748	\$319,541	\$327,530	\$335,718
Insurance	\$67,958	\$69,656	\$71,398	\$73,183	\$75,012
Personnel Expense	\$1,201,180	\$1,259,829	\$1,321,376	\$1,385,965	\$1,453,745
Office Expense	\$132,377	\$135,687	\$139,079	\$142,556	\$146,120
Utilities	\$344,400	\$361,620	\$379,701	\$398,686	\$418,620
Groundwater Management	\$262,650	\$167,530	\$172,555	\$177,732	\$183,064
SGMA Pump Charges	\$130,082	\$126,976	\$123,943	\$120,983	\$118,094
Water Supply Reserve Funding	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Total O&M	\$3,059,311	\$3,057,478	\$3,160,137	\$3,267,491	\$3,379,752

4.1.4. PROJECTED CAPITAL IMPROVEMENT PLAN

The District has proposed approximately \$6.7 million in capital replacement expenditures over the next five fiscal years. A summary of these capital expenditures is shown in Table 4-10 by anticipated funding source. A detailed version of the capital improvement plan is provided in Appendix A. Inflated project costs in all years of the Study period were provided by District Staff.

Table 4-10: Projected Water Capital Improvement Plan

Project Description	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Future Bond Projects	\$0	\$0	\$0	\$862,000	\$1,711,500
Grant Funded Projects	\$1,679,040	\$0	\$0	\$0	\$0
Cash Reserve Funded Projects	\$883,560	\$238,700	\$252,436	\$203,709	\$245,020
Short Lived Assets	\$426,250	\$0	\$37,000	\$38,250	\$165,000
Total Capital Projects	\$2,988,850	\$238,700	\$289,436	\$1,103,959	\$2,121,520

4.1.5. DEBT SERVICE

The District has three existing debt instruments:

- » PacWest
- » Compass Bank Note 2018A
- » Compass Bank Note 2018B

Debt service schedules for each obligation were provided by the District. Table 4-11 shows the annual debt service payment obligation of each debt instrument for each year of the Study period. While the Compass Bank Notes wholly benefit the water utility, a small portion of PacWest (7 percent) benefits the wastewater utility as provided by the District⁵. The amount shown in the table is the 93 percent benefiting the water utility.

⁵ \$34,958 of an annual debt service payment of \$499,406 as shown in the District's FYE 2020 budget document. This ratio is used to internally allocate the future debt obligation between the water and wastewater utilities.

Table 4-11: Existing Water Annual Debt Service

Existing Debt	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
PacWest	\$330,119	\$330,030	\$329,693	\$330,018	\$330,059
Compass Bank Note 2018A	\$247,555	\$244,039	\$250,255	\$246,203	\$246,967
Compass Bank Note 2018B	\$140,755	\$140,755	\$140,755	\$140,755	\$0
Total Existing Debt Service	\$718,429	\$714,824	\$720,703	\$716,976	\$577,026

To fund future water capital improvements, the District plans to issue additional debt in FYE 2022 and FYE 2026. The terms for these debt issuances are shown in Table 4-12. Terms and amounts were provided to Raftelis by the District and FRA. Debt proceeds will predominantly fund water CIP with a modest portion for wastewater CIP (see Table 5-10 for additional detail).

Table 4-12: Proposed Debt Terms

	FYE 2022	FYE 2022
Debt Assumptions		
Interest	3.85%	4.00%
Term (# of Years)	15	20
Issuance Cost	6.98%	2.52%
Debt Reserve Requirement (Years of P&I Payments)	1	1

The proposed debt proceeds will be used to fund a total of \$7.5 million in capital expenditures. Utilizing debt over cash reserves will mitigate rate increases to customers over the Study horizon. For each debt issuance, this study assumes that repayment will begin in the following fiscal year. The proposed annual debt service for each new debt issue is shown in Table 4-13. The annual debt service shown is the water utility's portion only.

Table 4-13: Proposed Water Debt Service

Proposed Debt Service	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Proposed District Debt Issuance	\$2,150,000				\$6,155,000
Debt Proceeds for Water CIP	\$1,694,477				\$5,775,868
Annual Debt Service					
Debt Issuance #1		\$162,120	\$162,120	\$162,120	\$162,120
Debt Issuance #2 ⁶					
Total Proposed Debt Service	\$0	\$1,035,924	\$2,415,907	\$2,415,907	\$2,852,192

The proposed debt issuances balance rate adjustments and moderate debt obligations. Issuing debt not only allows the District to provide a more immediate response to infrastructure needs, but also mitigates the financial impact of such expenses. Rather than requiring larger rate increases in the short term to cash fund capital (PAYGO), loan repayments are spread over a longer time horizon, thereby recovering costs from future users, promoting inter-generational equity. This supports the District's ability to provide a more stable rate schedule with generally lower rate increases.

4.2. Existing Water Financial Plan – No Revenue Adjustments

Table 4-14 displays the operating cash flow detail from current rates for the District's water utility over the Study period. The cash flow incorporates revenues and expenses to show the overall position of the utility. All projections shown in the table are based upon the District's current rate structure and do not include revenue adjustments or

⁶ Repayment of this debt issuance is assumed to begin in FYE 2027 in the amount of \$435,978 annually. See Appendix B for the District's ten-year combined cash flow projections.

proposed new debt issuances. Table 4-14 incorporates data shown in the preceding tables of this section. Under the “status-quo” no revenue adjustment-scenario, revenues generated from rates and other miscellaneous revenues are inadequate to maintain reserves, achieve reserve targets, and fund planned capital improvement projects over the Study period. With current rates and existing expenses, the water utility’s net operating cash flow is projected to be negative in FYE 2025 and reserves will fall \$3.4 million short of reserve targets in FYE 2025. Additionally, debt coverage is projected to fail minimum requirements beginning in FYE 2024.

Table 4-14: Existing Water Financial Plan with Current Rates

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Rates	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909
Total Revenue Adjustments	\$0	\$0	\$0	\$0	\$0
Interest	\$38,890	\$37,615	\$41,745	\$44,649	\$47,561
Fees	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744
Taxes	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000
Other	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495
Miscellaneous	\$113,333	\$113,333	\$0	\$0	\$0
Total Revenues	\$4,061,371	\$4,060,096	\$3,950,893	\$3,953,797	\$3,956,708
Total O&M Expenses	\$3,059,311	\$3,057,478	\$3,160,137	\$3,267,491	\$3,379,752
Total Debt Service	\$718,429	\$714,824	\$720,703	\$716,976	\$577,026
Total Expenses	\$3,777,739	\$3,772,302	\$3,880,840	\$3,984,468	\$3,956,778
Revenues Less Expenses	\$283,631	\$287,794	\$70,061	(\$30,726)	\$4
Beginning Balance	\$4,842,188	\$4,116,010	\$4,465,103	\$4,545,728	\$3,711,043
Net Cashflow	\$283,631	\$287,794	\$70,061	(\$30,726)	\$4
New Debt Proceeds	\$0	\$0	\$0	\$0	\$0
Grant Funding	\$1,679,040	\$0	\$0	\$0	\$0
CIP	(\$2,988,850)	(\$238,700)	(\$289,436)	(\$1,103,959)	(\$2,121,520)
Water Supply Reserve Funding	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Ending Balance	\$4,116,010	\$4,465,103	\$4,545,728	\$3,711,043	\$1,889,527
<i>Minimum Target</i>	<i>\$5,775,000</i>	<i>\$5,770,852</i>	<i>\$6,051,136</i>	<i>\$7,096,810</i>	<i>\$7,338,004</i>
Calculated Debt Coverage Ratio	151%	152%	121%	107%	114%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

4.3. Proposed Water Financial Plan

The proposed financial plan calls for adoption of 5 percent revenue adjustments in each year from FYE 2022 through FYE 2026. The revenue adjustment beginning in FYE 2022 is proposed to be implemented in October 2021. The revenue adjustments beginning in FYE 2023 are proposed to be implemented in July of each year through FYE 2026.

Table 4-15 shows the proposed revenue adjustment plan. Although Table 4-15 shows anticipated revenue adjustments for FYE 2022 through FYE 2026, the District will review and confirm the required revenue adjustments on an annual basis. The rates presented in Section 8 are based on the proposed financial plan below.

The proposed revenue adjustments help to ensure adequate revenue to fund operating expenses, achieve reserve policy targets, fund the long-term capital program, and comply with existing debt covenants. Revenue adjustments represent the average increase in rates for the utility. Actual percentage increases (or decreases) in rates are dependent upon the cost-of-service analysis and are unique to each customer class and meter size. The first revenue adjustment

is proposed to be implemented during the fiscal year with the amount of revenue generated equal to 75 percent (nine months) of the annualized amount.

Table 4-15: Proposed Water Revenue Adjustments

Effective Year	Revenue Adjustments				
	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Effective Month	October	July	July	July	July
Percentage Adjustment	5%	5%	5%	5%	5%

Table 4-16 shows the five-year cash flow detail for the water utility, including additional revenues from the proposed financial plan and new debt proceeds. The proposed financial plan estimates rate revenues and expenses on a cash flow basis. The cost-of-service analysis in Section 6.2 utilizes the annualized FYE 2022 rate revenue requirement to determine unit costs of service and the rate components for fixed and variable charges. The FYE 2022 Test Year revenue requirement is discussed in detail in Section 7.

Table 4-16: Proposed Water Financial Plan⁷

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Rates	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909
Total Revenue Adjustments	\$139,459	\$381,188	\$586,193	\$801,448	\$1,027,466
Interest	\$41,139	\$43,449	\$53,103	\$59,307	\$60,981
Fees	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744
Taxes	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000
Other	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495
Miscellaneous	\$113,333	\$113,333	\$0	\$0	\$0
Total Revenues	\$4,203,079	\$4,447,117	\$4,548,443	\$4,769,903	\$4,997,594
Total O&M Expenses	\$3,059,311	\$3,057,478	\$3,160,137	\$3,267,491	\$3,379,752
Total Debt Service	\$718,429	\$876,944	\$882,822	\$879,096	\$739,146
Total Expenses	\$3,777,739	\$3,934,422	\$4,042,960	\$4,146,587	\$4,118,898
Revenues Less Expenses	\$425,340	\$512,695	\$505,531	\$623,509	\$879,136
Beginning Balance	\$4,842,188	\$5,952,195	\$6,526,191	\$7,042,286	\$6,861,836
Net Cashflow	\$425,340	\$512,695	\$505,531	\$623,509	\$879,136
New Debt Proceeds	\$1,694,477	\$0	\$0	\$0	\$5,775,868
Grant Funding	\$1,679,040	\$0	\$0	\$0	\$0
CIP	(\$2,988,850)	(\$238,700)	(\$289,436)	(\$1,103,959)	(\$2,121,520)
Water Supply Reserve Funding	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Ending Balance	\$5,952,195	\$6,526,191	\$7,042,286	\$6,861,836	\$11,695,320
<i>Minimum Target</i>	\$5,802,254	\$6,007,464	\$6,327,811	\$6,154,029	\$6,091,542
Calculated Debt Coverage Ratio	171%	168%	166%	180%	230%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

Figure 4-1 through Figure 4-3 display the proposed five-year financial plan in a graphical format.

Figure 4-1 illustrates the Operating Financial Plan. It compares existing and proposed revenues with projected expenses. The expenses, represented by stacked bars, represent O&M expenses, annual debt service costs, and reserve funding (net cashflow). Total revenues at existing and proposed rates are shown by the horizontal solid and dashed

⁷ The ending balance shown in FYE 2026 includes remaining debt proceeds that will be spent on future capital projects in FYE 2027 and FYE 2028 as shown in the detailed proposed financial plan in Appendix B.

gray lines, respectively. Figure 4-1 shows that current revenue from existing rates will not meet future total expenses, including reserve funding for future capital projects and risk mitigation.

Figure 4-1: Proposed Water Operating Financial Plan

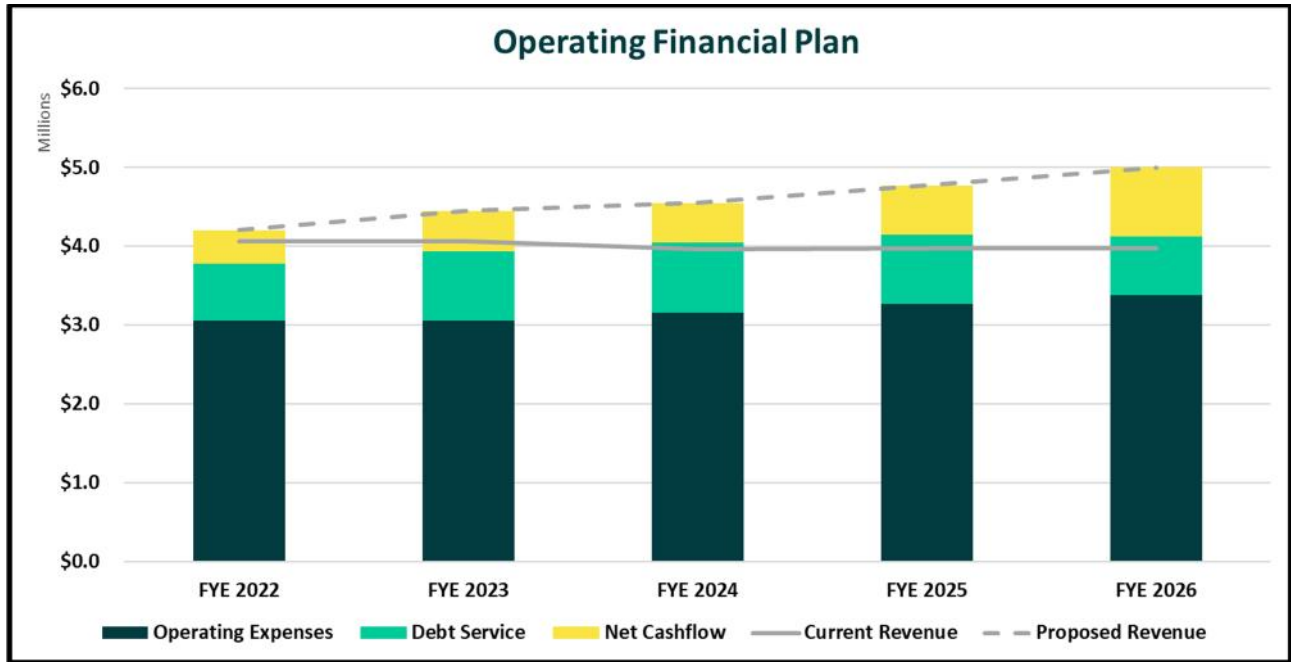


Figure 4-2 shows the District’s ending reserve balance by fiscal year. The blue bars indicate the total ending balance, while the dashed and solid gray lines indicate the total minimum target reserve balances and target reserves balances, respectively. With the proposed financial plan, the District achieves minimum reserve target balances through FYE 2026. Note that the FYE 2026 balance includes new debt proceeds received, but not entirely spent, in that year.

Figure 4-2: Proposed Water Ending Fund Balances⁸

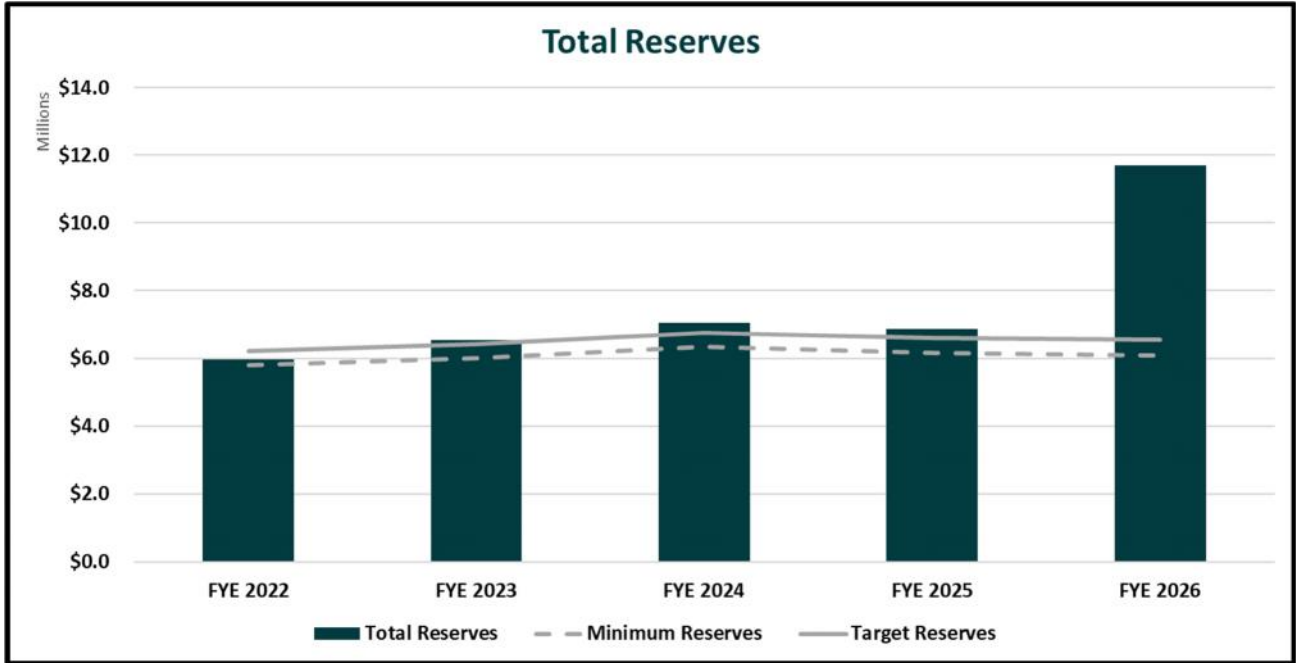
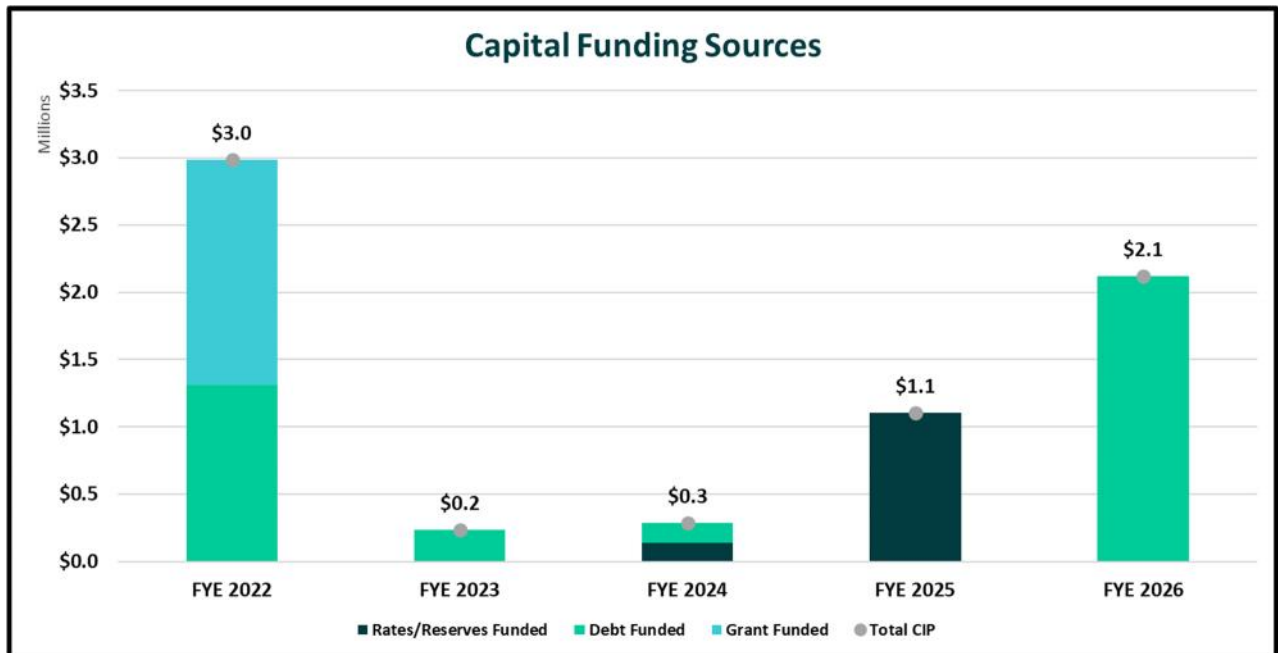


Figure 4-3 shows the total CIP of the water utility over the Study period, by funding source. The light blue bars represent grant funded capital, the green bars represent debt funded capital, and the dark blue bars represent rate funded capital on a pay-as-you-go (PAYGO) basis. The gray dots indicate the total value of CIP in each year.

Figure 4-3: Proposed Water CIP Funding



⁸ The ending balance shown in FYE 2026 includes remaining debt proceeds that will be spent on future capital projects in FYE 2027 and FYE 2028 as shown in the detailed proposed financial plan in Appendix B.

5. Wastewater Utility Financial Plan

This section describes the District’s customer account data and the corresponding financial plan. To develop the financial plan, Raftelis projects annual revenues and expenses; models reserve balances; incorporates capital expenditures, debt service, and inflationary pressures; and calculates debt service coverage ratios to estimate any additional rate revenue required in each year of the Study. This section includes a discussion of O&M expenses, the CIP, reserve funding, projected revenue under existing rates, and the revenue adjustments required to ensure the fiscal sustainability and solvency of the utility.

5.1. Wastewater Revenue Requirements

A review of a utility’s revenue requirements is a key first step in the rate study process. The review involves an analysis of annual rate revenues from existing rates, O&M expenses, capital expenditures, and reserve requirements.

5.1.1. REVENUES FROM CURRENT WASTEWATER RATES

The District provides sewer collection and treatment within its service area for both residential and non-residential customers. The District provides wastewater service to three separate Service Areas (SAs). These areas are: SA1 (also known as Ram’s Hill), SA2 (also known as Town Center), and SA5 (also known as Club Circle/Borrego Springs Resort). All sewer users pay a monthly fixed charge per Equivalent Dwelling Unit (EDU) that varies depending on the service area. One EDU is equivalent to the discharge of a typical single-family home.

The District differentiates charges on sewer customers in SA2. SA2 customers consist of SA2 EDU Holders and SA2 EDU Users. SA2 EDU Holders are customers that have bought into the system but are not physically connected or generating wastewater flows to the sewer system. SA2 EDU Holders are required to pay a Holder charge by contract. SA2 EDU Users, those connected to and using the sewer system, pay the sum of both the Holder and User charge. Borrego Springs Resort (BSR) in SA5 pays a variable volumetric charge per unit of water used in addition to a monthly fixed charge. The existing rate structure for wastewater customers are shown below in Table 5-1.

Table 5-1: Current Wastewater Charges (\$/Month/EDU)

Customer Class	Current Charge
SA1	\$45.37
SA2 EDU Holder	\$28.97
SA2 EDU User	\$23.79
SA5	\$52.76
BSR Fixed Charge	\$28.97
BSR Variable Charge (\$/hcf)	\$2.13

Table 5-2 shows the projected number of wastewater EDUs by fiscal year. The number of EDUs each year changes based on the account change assumptions identified in Section 2.3 and Table 2-4. Per District staff, the number of sewer connections is anticipated to decline over the Study period.

Table 5-2: Projected Wastewater EDUs

Customer Class	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
SA1	265	261	257	253	249	265
SA2 EDU Holder	558	550	541	533	525	517
SA2 EDU User	358	352	347	342	337	332
SA5	159	156	154	152	149	147
Borrego Springs Resort	105	105	105	105	105	105
Total EDUs	916	902	888	875	862	849

Projected water use for Borrego Springs Resort through FYE 2026 are shown in Table 5-3. The wastewater generation and revenue growth assumptions are identified in Table 2-4.

Table 5-3: Projected Water Use (hcf)

Customer Class	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Borrego Springs Resort	7,944	7,944	7,944	7,944	7,944	7,944

The projected EDUs in Table 5-2 and water use shown in Table 5-3 are used to calculate projected revenues under “status quo” conditions. The “status quo” financial plan does not include revenue adjustments and assesses whether the District’s current rates, at the projected level of wastewater connections and flow, will be sufficient to support operations, capital, and reserve funding requirements.

Table 5-4 shows the rate revenue generated in each Study year with projected accounts, wastewater flow, and the current rates. Note that service charge and variable charge revenues for FYE 2022 and beyond are based on existing rates from Table 5-1. The overall adequacy of wastewater revenues is measured by comparing the projected annual revenue required from all wastewater rates with projected revenues from the existing rates.

Table 5-4: Projected Wastewater Rate Revenue with Current Rates

Revenue Source	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
SA1	\$141,637	\$139,962	\$137,863	\$135,795	\$133,758
SA2 EDU Holder	\$190,458	\$188,207	\$185,384	\$182,603	\$179,864
SA2 EDU User	\$100,223	\$99,036	\$97,550	\$96,087	\$94,645
SA5	\$98,580	\$97,414	\$95,953	\$94,513	\$93,096
BSR Fixed Charge	\$36,669	\$36,788	\$36,788	\$36,788	\$36,788
BSR Variable Charge	\$16,002	\$16,103	\$16,103	\$16,103	\$16,103
Total Rate Revenues	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254

The utility derives some revenues from non-rate sources. These revenues consist of interest income and are summarized in Table 5-5.

Table 5-5: Projected Wastewater Non-Rate Revenues

Revenue Source	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Interest Income	\$6,184	\$6,133	\$5,887	\$5,908	\$5,777

5.1.2. OPERATING AND MAINTENANCE (O&M) EXPENSES

Total projected O&M expenses are shown in Table 5-6 and are summarized by department. Expenses are projected from the District’s adopted FYE 2021 budget. Expenses in FYE 2022 and beyond use District estimated costs, where known, or rely on FYE 2021 budgeted values inflated by the assumptions from Table 2-2.

Table 5-6: Projected Wastewater O&M Expenses

O&M Expense Summary	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Repairs & Maintenance	\$134,002	\$137,352	\$140,786	\$144,306	\$147,914
Professional Services	\$64,396	\$66,006	\$67,656	\$69,347	\$71,081
Insurance	\$11,993	\$12,292	\$12,600	\$12,915	\$13,237
Personnel Expense	\$212,059	\$222,502	\$233,463	\$244,967	\$257,043
Office Expense	\$21,680	\$22,222	\$22,778	\$23,347	\$23,931
Utilities	\$3,150	\$3,308	\$3,473	\$3,647	\$3,829
Total O&M	\$447,280	\$463,682	\$480,755	\$498,529	\$517,035

5.1.3. PROJECTED CAPITAL IMPROVEMENT PLAN

The District has proposed approximately \$521,000 in capital replacement expenditures over the next five years (FYE 2022 to 2026). A summary of these capital expenditures is shown in Table 5-7 by anticipated funding source. A detailed version of the capital improvement plan is in Appendix A. Inflated project costs in all years of the Study period were provided by District Staff.

Table 5-7: Projected Wastewater Capital Improvement Plan

Project Description	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Future Bond Projects	\$0	\$0	\$0	\$0	\$0
Grant Funded Projects	\$0	\$0	\$0	\$0	\$0
Cash Reserve Funded Projects	\$66,690	\$66,504	\$69,447	\$72,526	\$75,747
Short Lived Assets	\$103,750	\$25,000	\$0	\$16,750	\$25,000
Total Capital Projects	\$170,440	\$91,504	\$69,447	\$89,276	\$100,747

5.1.4. DEBT SERVICE

The wastewater utility is partially responsible for one of the District's three existing debt instruments, PacWest. The debt service schedule for the obligation was provided by the District and is shown in Table 4-11. Table 5-8 shows the annual debt service payment obligation of the wastewater utility for each year of the Study period.

Table 5-8: Existing Wastewater Annual Debt Service

Existing Debt	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
PacWest	\$24,847	\$24,841	\$24,815	\$24,840	\$24,843

To fund the wastewater CIP, the District plans on issuing additional debt in FYE 2022 and FYE 2026. The terms for these debt issuances are shown in Table 5-9.

Table 5-9: Proposed Debt Terms

	FYE 2022	FYE 2026
Debt Assumptions		
Interest	3.85%	4.00%
Term (# of Years)	15	20
Issuance Cost	6.98%	2.52%
Debt Reserve Requirement (Years of P&I Payments)	1	1

The proposed debt proceeds will be used to fund a total of approximately \$406,000 in capital expenditures to mitigate rate increases to customers over the Study horizon. For each debt issuance, this study assumes that repayment will begin in the following fiscal year. The annual debt service for each new proposed debt issue is shown in Table 5-10. The annual debt service shown is the wastewater utility's portion only.

Table 5-10: Proposed Wastewater Debt Service

Proposed Debt Service	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Proposed District Debt Issuance	\$2,150,000				\$6,155,000
Debt Proceeds for Wastewater CIP	\$305,523				\$224,132
Annual Debt Service					
Debt Issuance #1	\$0	\$29,231	\$29,231	\$29,231	\$29,231
Debt Issuance #2 ⁹					
Total Proposed Debt Service	\$0	\$29,231	\$29,231	\$29,231	\$29,231

The proposed debt issuances balance rate adjustments and moderate debt obligations. Issuing debt not only allows the District to provide a more immediate response to infrastructure needs, but also stabilizes the financial impact of such expenses. Rather than requiring larger rate increases in the short term to cash fund capital (PAYGO), loan repayments are spread over a longer time horizon, thereby recovering costs from future users, promoting intergenerational equity. This supports the District's ability to provide a more stable rate schedule with generally lower rate increases.

5.2. Existing Wastewater Financial Plan – No Revenue Adjustments

Table 5-11 displays the operating cash flow detail for the District's wastewater utility from current rates over the Study period. The cash flow incorporates revenues and expenses to show the overall position of the utility. All projections shown in the table are based upon the District's current rate structure and do not include rate adjustments or proposed new debt issuances. Table 5-11 incorporates data shown in the preceding tables of this section. Under the "status-quo" no revenue adjustment-scenario, revenues generated from rates and other miscellaneous revenues are inadequate to maintain adequate reserves, achieve reserve targets, and fund planned capital improvement projects over the Study period. With current rates and existing expenses, the wastewater utility's reserves will fall below target in FYE 2022 and will end approximately \$208,000 short of reserve targets in FYE 2026.

⁹ Repayment of this debt issuance is assumed to begin in FYE 2027 in the amount of \$16,918 annually.

Table 5-11: Existing Wastewater Financial Plan with Current Rates

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Rates	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254
Total Revenue Adjustments	\$0	\$0	\$0	\$0	\$0
Interest	\$6,184	\$6,133	\$5,887	\$5,908	\$5,777
Total Revenues	\$589,753	\$583,643	\$575,528	\$567,797	\$560,030
Total O&M Expenses	\$447,280	\$463,682	\$480,755	\$498,529	\$517,035
Total Debt Service	\$24,847	\$24,841	\$24,815	\$24,840	\$24,843
Total Expenses	\$472,127	\$488,523	\$505,570	\$523,369	\$541,878
Revenues Less Expenses	\$117,626	\$95,120	\$69,957	\$44,428	\$18,153
Beginning Balance	\$639,751	\$586,937	\$590,553	\$591,064	\$546,216
Net Cashflow	\$117,626	\$95,120	\$69,957	\$44,428	\$18,153
New Debt Proceeds	\$0	\$0	\$0	\$0	\$0
Grant Funding	\$0	\$0	\$0	\$0	\$0
CIP	(\$170,440)	(\$91,504)	(\$69,447)	(\$89,276)	(\$100,747)
Ending Balance	\$586,937	\$590,553	\$591,064	\$546,216	\$463,622
<i>Minimum Target</i>	<i>\$660,070</i>	<i>\$663,110</i>	<i>\$665,787</i>	<i>\$668,758</i>	<i>\$671,959</i>
Calculated Debt Coverage Ratio	604%	513%	412%	309%	203%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

5.3. Proposed Wastewater Financial Plan

The proposed financial plan calls for adoption of 4 percent revenue adjustments in each year from FYE 2023 through FYE 2026. No revenue adjustment is proposed for FYE 2022, however, a change of rates based on the cost-of-service results is proposed in Section 9. The revenue adjustments beginning in FYE 2023 are proposed to be implemented in July of each year through FYE 2026.

Table 5-12 shows the proposed revenue adjustment plan. Although Table 5-12 shows anticipated revenue adjustments for FYE 2022 through 2026, the District will review and confirm the required revenue adjustments on an annual basis. The rates presented in Section 10 are based on the proposed financial plan below.

The proposed revenue adjustments help to ensure adequate revenue to fund operating expenses, achieve reserve policy targets, fund the long-term capital program, and comply with existing debt covenants. Revenue adjustments represent the average increase in rates for the utility. Actual percentage increases (or decreases) in rates are dependent upon the cost-of-service analysis and are unique to each customer class.

Table 5-12: Proposed Wastewater Revenue Adjustments

	Revenue Adjustments				
Effective Year	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Effective Month	October	July	July	July	July
Percentage Adjustment	0%	4%	4%	4%	4%

Table 5-13 shows the five-year cash flow detail for the wastewater utility, including additional revenues from the proposed financial plan and new debt proceeds. The proposed financial plan estimates rate revenues and expenses on a cash flow basis. The cost-of-service analysis in Section 9 utilizes the annualized FYE 2022 rate revenue

requirement to determine unit costs of service and the rate components. The FYE 2022 Test Year revenue requirement is discussed in detail in Section 9.

Table 5-13: Proposed Wastewater Financial Plan¹⁰

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Rates	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254
Total Revenue Adjustments	\$0	\$23,100	\$46,483	\$70,160	\$94,145
Interest	\$6,184	\$7,661	\$8,920	\$9,019	\$9,119
Total Revenues	\$589,753	\$608,271	\$625,042	\$641,067	\$657,517
Total O&M Expenses	\$447,280	\$463,682	\$480,755	\$498,529	\$517,035
Total Debt Service	\$24,847	\$54,072	\$54,046	\$54,071	\$54,074
Total Expenses	\$472,127	\$517,754	\$534,801	\$552,600	\$571,109
Revenues Less Expenses	\$117,626	\$90,517	\$90,241	\$88,468	\$86,409
Beginning Balance	\$639,751	\$892,459	\$891,473	\$912,267	\$911,459
Net Cashflow	\$117,626	\$90,517	\$90,241	\$88,468	\$86,409
New Debt Proceeds	\$305,523	\$0	\$0	\$0	\$224,132
Grant Funding	\$0	\$0	\$0	\$0	\$0
CIP	(\$170,440)	(\$91,504)	(\$69,447)	(\$89,276)	(\$100,747)
Ending Balance	\$892,459	\$891,473	\$912,267	\$911,459	\$1,121,253
<i>Minimum Target</i>	<i>\$660,070</i>	<i>\$692,341</i>	<i>\$695,018</i>	<i>\$697,989</i>	<i>\$701,190</i>
Calculated Debt Coverage Ratio	604%	281%	281%	277%	274%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

Figure 5-1 through Figure 5-3 display the proposed financial plan in a graphical format.

Figure 5-1 illustrates the Operating Financial Plan. It compares existing and proposed revenues with projected expenses. The expenses, represented by stacked bars, represent O&M expenses, annual debt service costs, and reserve funding (net cashflow). Total revenues at existing and proposed rates are shown by the horizontal solid and dashed gray lines, respectively. Figure 5-1 shows that current revenue from existing rates will not meet future total expenses, including reserve funding for future capital projects and risk mitigation.

¹⁰ The ending balance shown in FYE 2026 includes remaining debt proceeds that will be spent on future capital projects in FYE 2027 and FYE 2028 as shown in the detailed proposed financial plan in Appendix B.

Figure 5-1: Proposed Wastewater Operating Financial Plan

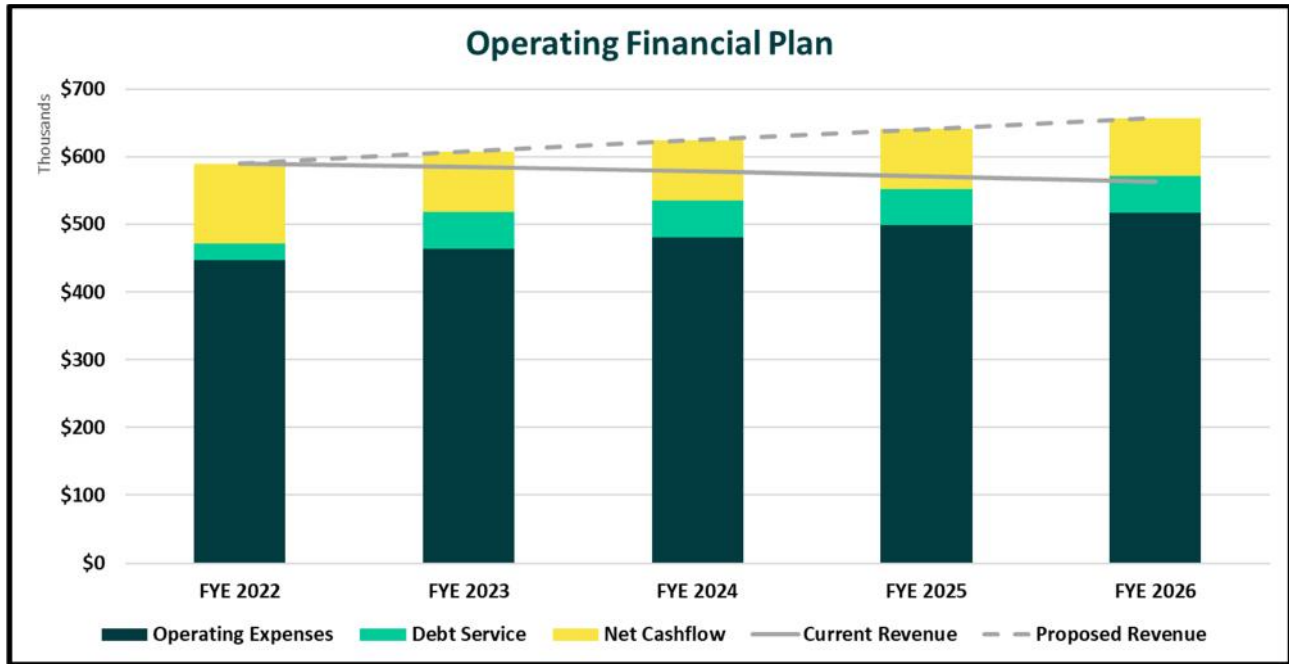
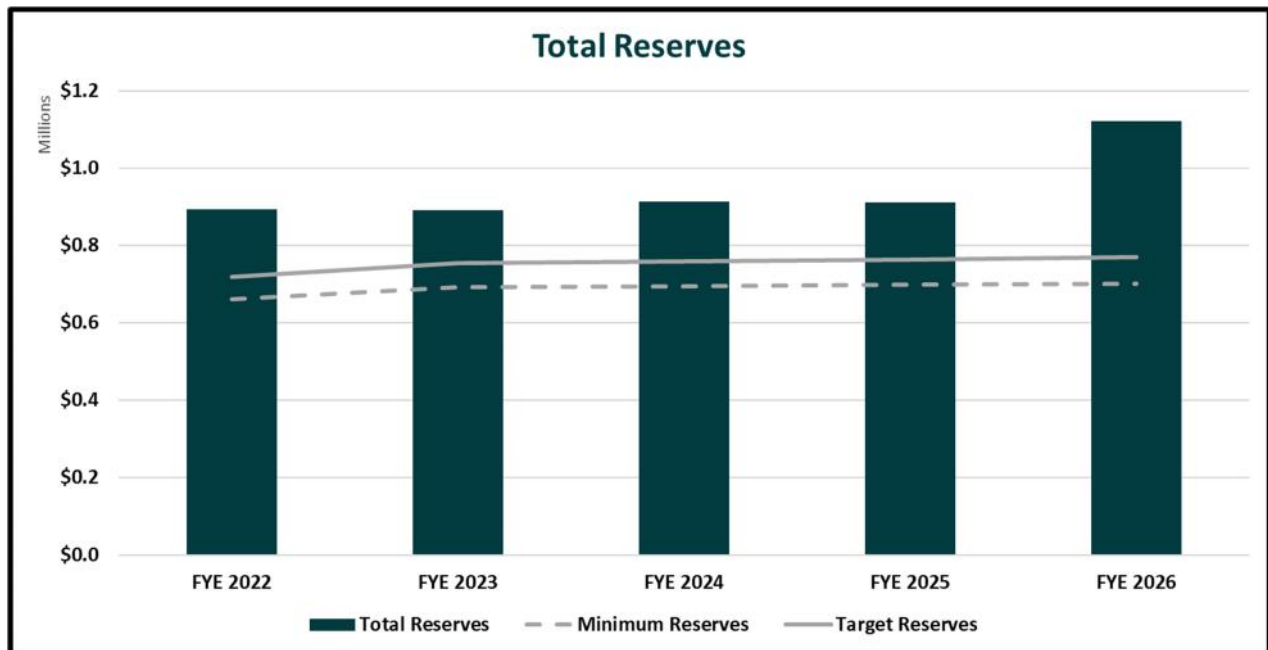


Figure 5-2 shows the District’s ending reserve balance by fiscal year. The blue bars indicate the total ending balance, while the dashed and solid gray lines indicate the total minimum target reserve balances and target reserves balances, respectively. With the proposed financial plan, the District achieves reserve target balances through FYE 2026. Note that the FYE 2026 balance includes new debt proceeds received, but not entirely spent, in that year.

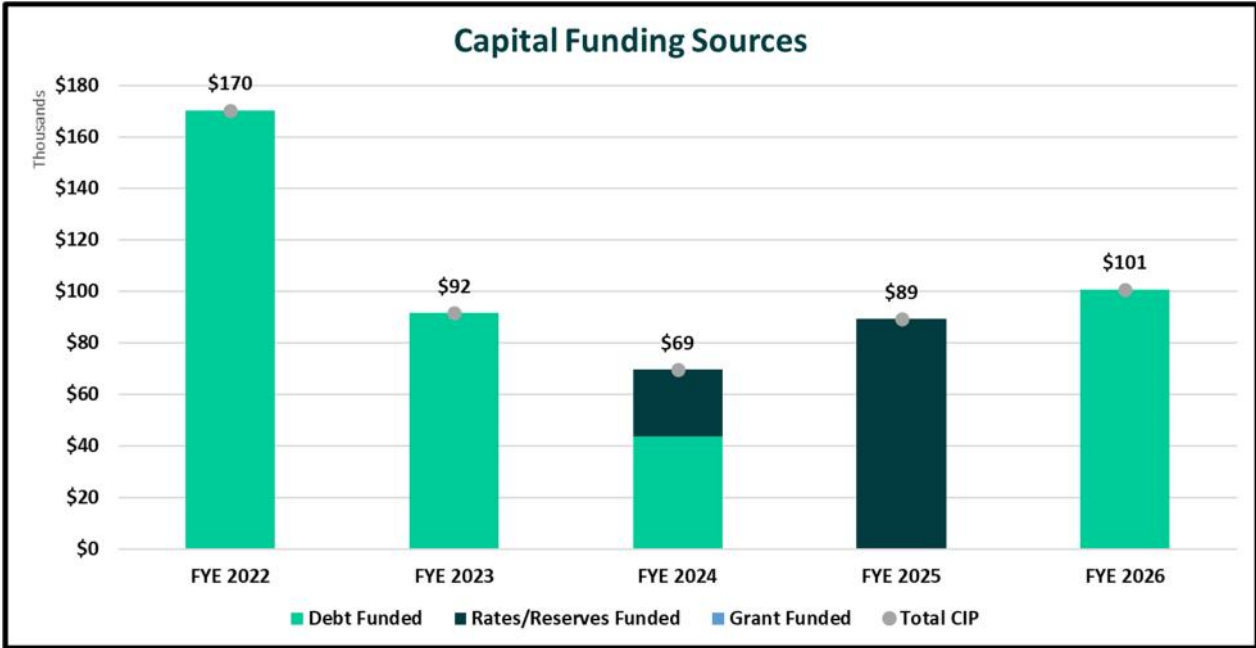
Figure 5-2: Proposed Wastewater Ending Fund Balances¹¹



¹¹ The ending balance shown in FYE 2026 includes remaining debt proceeds that will be spent on future capital projects in FYE 2027 and FYE 2028 as shown in the detailed proposed financial plan in Appendix B.

Figure 5-3 shows the total CIP of the wastewater utility over the Study period, by funding source. The green bars represent debt funded capital and the dark blue bars represent rate funded capital on a pay-as-you-go (PAYGO) basis. The gray dots indicate the total value of the replacement CIP each year. No wastewater CIP is anticipated to be grant funded.

Figure 5-3: Proposed Wastewater CIP Funding



6. Combined District Financial Plan

This section provides the combined operating cash flow detail for the District as a whole.

6.1. Existing District Financial Plan – No Revenue Adjustments

Table 6-1 displays a summary of the operating cash flow detail for the District from current water and wastewater rates over the Study period. The cash flow incorporates revenues and expenses to show the overall position of the District. All projections shown in the table are based upon the District’s current water and wastewater rate structure and do not include revenue adjustments or proposed new debt issuances. Table 6-1 incorporates data shown in the tables of Sections 4 and 5 of this report and includes assessments received by the District for water, sewer, and flood control which are dedicated for specific purposes. Under the “status-quo” no revenue adjustment-scenario, revenues generated from rates and other miscellaneous revenues are inadequate to achieve reserve targets, meet debt coverage requirements, and fund planned capital improvement projects. With current rates and existing expenses, the District’s reserves will fall \$4.3 million short of reserve targets in FYE 2025, and the debt coverage ratio will fall below the required level of 125%. A detailed version of the District’s combined cashflow is in Appendix B.

Table 6-1: Existing District Financial Plan under Current Rates

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Water Rates	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909
Revenue from Existing Wastewater Rates	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254
Total Revenue Adjustments	\$0	\$0	\$0	\$0	\$0
Water Other Revenue	\$342,461	\$341,187	\$231,983	\$234,887	\$237,799
Wastewater Other Revenue	\$6,184	\$6,133	\$5,887	\$5,908	\$5,777
Water/Sewer/Flood Assessment	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Total Revenues	\$4,740,124	\$4,732,738	\$4,615,420	\$4,610,594	\$4,605,739
Expenses					
Water O&M Expenses	\$3,059,311	\$3,057,478	\$3,160,137	\$3,267,491	\$3,379,752
Wastewater O&M Expenses	\$447,280	\$463,682	\$480,755	\$498,529	\$517,035
Existing Debt Service	\$743,276	\$739,665	\$745,518	\$741,816	\$601,869
Proposed Debt Service	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$4,249,867	\$4,260,825	\$4,386,410	\$4,507,836	\$4,498,656
Revenues Less Expenses	\$490,257	\$471,914	\$229,018	\$102,702	\$107,157
Beginning Balance	\$5,570,939	\$4,580,947	\$4,722,657	\$4,592,792	\$3,502,259
Net Cashflow	\$490,257	\$471,914	\$229,018	\$102,702	\$107,157
New Debt Proceeds	\$0	\$0	\$0	\$0	\$0
Grant Funding	\$1,679,040	\$0	\$0	\$0	\$0
CIP	(\$3,159,290)	(\$330,204)	(\$358,883)	(\$1,193,235)	(\$2,222,267)
Ending Balance	\$4,580,947	\$4,722,657	\$4,592,792	\$3,502,259	\$1,387,148
<i>Minimum Target</i>	\$6,435,071	\$6,433,962	\$6,716,923	\$7,765,567	\$8,009,963
Calculated Debt Coverage Ratio	166%	164%	131%	114%	118%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

6.2. Proposed District Financial Plan

The proposed water financial plan calls for the adoption of five (5) percent revenue adjustments in each year from FYE 2022 through FYE 2026. The revenue adjustment beginning in FYE 2022 is proposed to be implemented in October. The revenue adjustments beginning in FYE 2023 are proposed to be implemented in July of each year through FYE 2026.

The proposed wastewater financial plan calls for adoption of four (4) percent revenue adjustments in each year from FYE 2023 through FYE 2026. No revenue adjustment is proposed for the current fiscal year. The revenue adjustments beginning in FYE 2023 are proposed to be implemented in July of each year through 2025.

Table 6-2 shows the proposed revenue adjustment plan. Although Table 6-2 shows anticipated revenue adjustments for FYE 2022 through FYE 2026, the District will review and confirm the required revenue adjustments on an annual basis. The rates presented in Section 8 and Section 10 are based on the proposed financial plan below.

The proposed revenue adjustments help to ensure adequate revenue to fund operating expenses, achieve reserve policy targets, fund the long-term capital program, and comply with existing debt covenants. Revenue adjustments represent the average increase in rates for each utility. Actual percentage increases (or decreases) in rates are dependent upon the cost-of-service analysis and are unique to each customer class, meter size, and service area. The first revenue adjustment is proposed to be implemented in the middle of the fiscal year with the amount of revenue generated equal to 75 percent of the annualized amount.

Table 6-2: Proposed District Revenue Adjustments

Effective Year	Revenue Adjustments				
	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Effective Month	October	July	July	July	July
Water % Adjustment	5%	5%	5%	5%	5%
Wastewater % Adjustment	0%	4%	4%	4%	4%

Table 6-3 shows the operating cash flow detail for the District with additional revenues from the revenue adjustments from the proposed financial plan and new debt proceeds. The proposed financial plan estimates rate revenues and expenses on a cash flow basis. A detailed version of the District's combined cashflow is in Appendix B.

Table 6-3: Proposed District Financial Plan¹²

	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026
Revenues					
Revenue from Existing Water Rates	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909	\$3,718,909
Revenue from Existing Wastewater Rates	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254
Total Revenue Adjustments	\$139,459	\$404,289	\$632,676	\$871,608	\$1,121,611
Water Other Revenue	\$344,710	\$347,020	\$243,341	\$249,545	\$251,219
Wastewater Other Revenue	\$6,184	\$7,661	\$8,920	\$9,019	\$9,119
Water/Sewer/Flood Assessment	\$89,000	\$89,000	\$89,000	\$89,000	\$89,000
Total Revenues	\$4,881,832	\$5,144,388	\$5,262,486	\$5,499,970	\$5,744,111
Water O&M Expenses	\$3,059,311	\$3,057,478	\$3,160,137	\$3,267,491	\$3,379,752
Wastewater O&M Expenses	\$447,280	\$463,682	\$480,755	\$498,529	\$517,035
Existing Debt Service	\$743,276	\$739,665	\$745,518	\$741,816	\$601,869
Proposed Debt Service	\$0	\$191,351	\$191,351	\$191,351	\$191,351
Total Expenses	\$4,249,867	\$4,452,175	\$4,577,761	\$4,699,187	\$4,690,007
Revenues Less Expenses	\$631,965	\$692,213	\$684,773	\$800,977	\$1,054,545
Beginning Balance	\$5,570,939	\$6,722,655	\$7,084,664	\$7,410,553	\$7,018,295
Net Cashflow	\$631,965	\$692,213	\$684,773	\$800,977	\$1,054,545
New Debt Proceeds	\$2,000,000	\$0	\$0	\$0	\$6,000,000
Grant Funding	\$1,679,040	\$0	\$0	\$0	\$0
CIP	(\$3,159,290)	(\$330,204)	(\$358,883)	(\$1,193,235)	(\$2,222,267)
Ending Balance	\$6,722,655	\$7,084,664	\$7,410,553	\$7,018,295	\$11,850,573
<i>Minimum Target</i>	\$6,462,324	\$6,699,805	\$7,022,829	\$6,852,018	\$6,792,732
Calculated Debt Coverage Ratio	185%	174%	173%	186%	233%
Required Debt Coverage Ratio	125%	125%	125%	125%	125%

¹² The ending balance shown in FYE 2026 includes remaining debt proceeds that will be spent on future capital projects in FYE 2027 and FYE 2028 as shown in the detailed proposed financial plan in Appendix B.

7. Water Cost of Service Analysis

7.1. Methodology

The principles and methodology of a COS analysis were described in Section 1.3.3 and are detailed in this subsection. The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalize costs. Examples of functions are supply, pumping, treatment, transmission and distribution, groundwater management, meter service, and customer service.
2. Allocate functionalized costs to cost components. Cost components include supply, base delivery, maximum day, maximum hour¹³, groundwater management, meter service, and customer servicing and billing costs.
3. Develop unit costs for each cost component using appropriate units of service for each component.
4. Distribute the cost components. Distribute using unit costs to customer classes in proportion to their demands and burdens on the water system. This is described in the M1 Manual published by AWWA.

A COS analysis considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands). Peaking costs are costs that are incurred during peak times of consumption. There are additional costs associated with designing, constructing, operating, and maintaining facilities to meet peak demands. These peak demand costs should be allocated to those customers whose water usage patterns generate additional costs for the utility. In other words, not all customer classes and not all customers share the same responsibility for peaking related costs.

The functionalization of costs allows us to better allocate to the **cost causation components** (i.e., cost components). Organizing the costs in terms of end function allows direct correlation between the cost component and the rate, coupling the cost incurred by the utility to the demand and burden that the customer places on the utility's system and water resources. The costs incurred are generally responsive to the specific service requirements or cost drivers imposed on the system and its water resources by its customers. The O&M **functions** (i.e., cost categories) for the cost-of-service analysis include:

1. **Water Supply**, or costs associated with producing groundwater from the Borrego Valley basin.
2. **Pumping**, or electrical costs associated with producing groundwater and moving water through treatment and distribution facilities.
3. **Treatment**, or costs associated with treating groundwater to drinking water standards.
4. **Transmission and Distribution**, or costs associated with operating, maintaining, and eventual replacement of transmission and distribution pipelines.
5. **Groundwater Management**, or costs associated with water master expenses and SGMA pumping charges.
6. **Meters**, or costs associated with meter servicing and maintenance.
7. **Billing and Customer Service**, or costs associated with customer service, billing, and collections.
8. **General**, or costs associated with administration of the water system.

¹³ Collectively maximum day and maximum hour costs are known as peaking costs or extra-capacity costs.

In addition to the O&M functions listed above, there are three additional capital functions derived from the District's asset and infrastructure database. The three are:

1. **Wells**, or assets associated with producing groundwater from District infrastructure into the Borrego Valley basin.
2. **Fire Protection**, or assets associated with the water system's ability to provide firefighting capacity and protect improvements connected to the District's water system.
3. **Storage**, or the assets associated with tanks and reservoirs for providing water during peak day and peak hour demands (including fire flows).

The functionalized costs are then allocated to the cost components¹⁴. The cost components include:

1. **Supply** costs are related to the future purchase of groundwater pumping allocation to provide enough water to meet baseline customer demands. The production of water from the groundwater basin includes energy costs for pumping and certain groundwater management costs.
2. **Base**, also known as delivery costs, vary with the total quantity of water used within the water system under average daily conditions. These costs may include a portion of treatment, transmission and distribution facilities, storage costs, groundwater pumping costs, and capital costs associated with serving customers at a constant, or average, rate of use. Base costs recovered through the commodity rates are, therefore, spread over all units of water uniformly.
3. **Peaking** costs are divided into maximum day and maximum hour demand. The maximum day demand is the maximum amount of water used in a single day in a year. The maximum hour demand is the maximum usage in an hour on the maximum usage day. Different infrastructure, such as distribution lines and storage facilities, and the capital and O&M costs associated with those facilities, are designed to meet the peak demands placed on the system by customers, plus fire protection. Therefore, extra capacity costs include the O&M and capital costs associated with meeting customer demand more than the average rate of use, or base use, requirements.
4. **Groundwater Management** costs include costs associated with water master expenses, SGMA pumping charges, and a modest portion of other District O&M.
5. **Meter** costs include maintenance and capital costs related to servicing and replacing meters and associated assets.
6. **Customer** costs are those directly associated with serving customers, irrespective of the amount of water used, and generally include meter reading, bill generation, accounting, customer service, and collection expenses.
7. **General** and administrative costs are incurred in operating and maintaining the water system not otherwise recovered in the other functionalized cost components. These indirect costs are distributed to the other cost components in proportion to the cost responsibility of the other components.

This method of functionalizing costs is consistent with the AWWA M1 Manual and is widely used in the water industry to perform cost of service analyses.

7.2. Revenue Requirement

Table 7-1 shows the FYE 2022 revenue requirement. The revenue requirement represents all O&M and capital and is equal to the cost-of-service to be recovered through rates. The O&M revenue requirement includes costs directly related to the supply, treatment, and distribution of water, as well as routine maintenance of system facilities. The

¹⁴ This Study uses the Base-Extra Capacity methodology set forth in the M1 Manual for functionalizing and allocating costs.

Capital revenue requirement includes costs directly related to funding the capital program and debt service obligations associated with capital re-investment.

The rate revenue offsets are miscellaneous, non-rate revenues, that are accounted for to determine the net amount required to be recovered from rates. The annual reserve funding adjustment is equal to the net cash change for FYE 2022 in Table 4-16, which represents the amount by which the reserves are increasing during the test year. The annualized rate increase adjustment represents the remaining required revenue adjustment in the test year (cash balances to fund the capital program and reserves based on adopted policies). As discussed previously in Section 4.3, there is a 5 percent revenue adjustment for FYE 2022. To arrive at the Operating, Capital, and total revenue requirements, we subtract revenue offsets (non-rate revenues) and add back adjustments from the sub-total revenue requirement for each category (represented here as columns); the resulting calculation is the total revenue required from rates. This total is the amount that monthly meter service charges and commodity charges are designed to collect.

Table 7-1: FYE 2022 Revenue Required from Water Rates

Revenue Requirements	Operating	Capital	Total
Operating Expenditures	\$3,059,311	\$0	\$3,059,311
Debt Service	\$0	\$718,429	\$718,429
Subtotal Revenue Requirements	\$3,059,311	\$718,429	\$3,777,739
Revenue Offsets			
Interest	\$0	\$41,139	\$41,139
Fees	\$0	\$41,744	\$41,744
Taxes	\$0	\$146,000	\$146,000
Other	\$0	\$2,495	\$2,495
Miscellaneous	\$0	\$113,333	\$113,333
Total Revenue Offsets	\$0	\$344,710	\$344,710
Adjustments			
Adjustments to Annual Cash Balance	\$0	(\$425,340)	(\$425,340)
Adjustments to Annualize Rate Increase	\$0	(\$46,486)	(\$46,486)
Total Adjustments	\$0	(\$471,826)	(\$471,826)
COS to be Recovered from Water Rates	\$3,059,311	\$845,544	\$3,904,855

7.3. O&M Expense Functionalization

The next step in the cost-of-service analysis is to determine the operating cost allocations by function and cost component. The O&M expenses shown in Table 4-9 were allocated to the respective cost function by District Staff based on the distribution of operating costs shown in Table 5-6. Functions include water supply, pumping, treatment, transmission and distribution, billing and customer service, meter service, groundwater management, and general. Table 7-2 shows a summary of the functionalization of District O&M expenses for the test year FYE 2022. A detailed version of the functionalized water expenses as provided by the District is provided in Appendix C. Functionalizing O&M expenses follows the principles of rate setting set forth in the M1 Manual and allows for the allocation of individual costs to system cost causation components, based on the function that each respective cost serves. Note that the total functionalized O&M expenses are equal to the O&M expenses shown in Table 7-1 and Table 4-16.

Table 7-2: Functionalization of O&M Expenses

Cost Function	O&M Expenses by Function (\$)
Water Supply	\$300,000
Pumping	\$430,395
Treatment	\$159,582
Transmission & Distribution	\$420,267
Billing & Customer Service	\$387,822
Meter Service	\$362,431
Groundwater Management	\$498,842
General	\$499,972
Total	\$3,059,311

7.4. Allocation of Functionalized Expenses to Cost Components

After functionalizing expenses, the next step is to allocate the functionalized expenses to system cost components. To do so, we start with identifying system-wide peaking factors. Water systems are designed to serve connections during maximum day (Max Day) and maximum hour (Max Hour) demands. Different facilities, such as distribution and storage facilities, are designed to meet the peaking demands of customers. Therefore, peaking costs, also known as extra capacity costs, are associated with meeting peak customer demand. Peaking costs are therefore based on Max Day and Max Hour demands. The system-wide factor for maximum day demand was calculated based on the system peak using historical well production log data and the maximum hour demand was derived by multiplying the maximum day factor by 1.5. Maximum day and maximum hour factors are shown in Table 7-3 relative to the base factor. Base, or average daily demand, is represented by the factor 1.00.

Table 7-3: System Peaking

Cost Components	Ratio (relative to Base)
Base	1.00
Maximum Day	1.40
Maximum Hour	2.10

Calculated water system peaking factors from Table 7-3 are shown in column B of Table 7-4. The system-wide peaking factors are used to derive the cost causation component allocation bases (i.e., percentages) shown in columns C, D, and E of Table 7-4. The numbers and calculations outlined in the following sections are rounded and may not equal to the exact amounts shown.

Line 1 “Base” represents the average day demand throughout the year and is, therefore, a factor of 1.00.

- » $\text{Base} = 1.00 / 1.00 = 100\%$

Line 2 “Max Day” is the ratio of maximum day demand relative to base demand, or 1.40. The percentage allocated to Max Day is the incremental responsibility above base demand.

- » $\text{Base} = 1.00 / 1.40 = 71\%$
- » $\text{Max Day} = (1.40 - 1.00) / 1.40 = 29\%$

Similarly, Line 3, “Max Hour” is the ratio of maximum hour demand, on the maximum day, relative to base demand. The Max Hour factor is 2.10.

- » $\text{Base} = 1.00 / 2.10 = 48\%$
- » $\text{Max Day} = (1.40 - 1.00) / 2.10 = 19\%$
- » $\text{Max Hour} = (2.10 - 1.40) / 2.10 = 33\%$

These factors indicate how much additional capacity is required to meet demand above average daily use. As demand, and therefore capacity, increases, so must the sizing of facilities and pipelines, which incur greater costs to construct, maintain, repair, and ultimately replace. To understand the interpretation of the percentages shown in columns C through E, “Base” is established as the average daily demand during the year. These allocation bases are used to assign certain functionalized costs to the cost causation components including storage, transmission and distribution, and treatment functions.

Table 7-4: System-Wide Peaking Factors

	Allocation Factor	System Wide Factors	Base	Max Day	Max Hour
	A	B	C	D	E
1	Base	1.00	100%	0%	0%
2	Max Day	1.40	71%	29%	0%
3	Max Hour	2.10	48%	19%	33%
4	Average Max Day/Max Hour		60%	24%	17%

Table 7-5 shows the derivation of the peaking factors by customer class and tier, determined by dividing the total maximum monthly usage (Column C) by the average monthly usage (Column D) for each customer class and tier. For this analysis, the classes and tiers in the proposed rate schedule are employed and applied to the District’s FYE 2020 water consumption data. These peaking factors are used to allocate the peaking costs to each customer class and tier. The maximum month peaking factor is used as a proxy for the class and tier-specific Max Day peaking factors. The peaking factors for Single Family Residential customers are based on the proposed tiers. The peaking factors for Multiple Units and Commercial/Public Agency customers are based on the combined water usage for the proposed revision to these customer classes. Irrigation peaking factors are based on their existing Base/Peak structure. See the Rate Derivation section of this report for a detailed discussion of proposed rate structure changes, tier widths, and the use of peaking factors in developing rates.

Table 7-5: Customer Class Peaking Factors

Customer Class	Selected Tier Widths (hcf)	Max Month	Average Month	Max Day Peaking Factor
A	B	C	D	E
Single Family Residential				
Tier 1	7	9,683	9,190	1.05
Tier 2	22	11,123	8,594	1.29
Tier 3	>22	14,479	9,012	1.61
Multiple Units	Uniform	19,545	14,227	1.37
Commercial/Public Agency	Uniform	19,545	14,227	1.37
Irrigation	Uniform	9,509	6,168	1.54

Table 7-6 and Table 7-7 show the allocation basis for O&M expenses in percentages and dollars, respectively. The top row of Table 7-6 shows the cost causation components and the left-most column shows the cost functions, equal to that shown in Table 7-2. The numbers shown in this section of the report are rounded to the nearest dollar and tenth of a percent; therefore, the calculations shown in the tables of this section may not equal to the precise numbers shown due to within the tables.

Pumping and treatment costs are proportionally allocated between Base and Max Day based on the maximum day allocation shown in Table 7-4. These costs are allocated based on maximum day because they are constructed to meet maximum day demands.

Transmission and distribution costs are proportionally allocated between Base, Max Day, and Max Hour based on the Average Max Day/Max Hour costs from Table 7-4. These costs are allocated based on the average maximum day and maximum hour because transmission infrastructure is constructed to meet maximum day demand and distribution pipelines are constructed to meet maximum hour demand plus fire flow.

Table 7-6: Allocation of Functionalized O&M Expenses to Cost Causation Components (%)

Function	FYE 2022	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	General
Water Supply	\$300,000	100%							
Pumping	\$430,395			71%	29%				
Treatment	\$159,582			71%	29%				
Transmission & Distribution	\$420,267			60%	24%	17%			
Billing & Customer Service	\$387,822							100%	
Meter Service	\$362,431						100%		
Ground Water Management	\$498,842		100%						
General	\$499,972								100%
Total (\$)	\$3,059,311	\$300,000	\$498,842	\$671,571	\$268,628	\$70,044	\$362,431	\$387,822	\$499,972
Total (%)		9.8%	16.3%	22.0%	8.8%	2.3%	11.8%	12.7%	16.3%

Table 7-7: Allocation of Functionalized O&M Expenses to Cost Causation Components (Values)

Function	FYE 2022	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	General
Water Supply	\$300,000	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pumping	\$430,395	\$0	\$0	\$307,425	\$122,970	\$0	\$0	\$0	\$0
Treatment	\$159,582	\$0	\$0	\$113,987	\$45,595	\$0	\$0	\$0	\$0
Transmission & Distribution	\$420,267	\$0	\$0	\$250,159	\$100,064	\$70,044	\$0	\$0	\$0
Billing & Customer Service	\$387,822	\$0	\$0	\$0	\$0	\$0	\$0	\$387,822	\$0
Meter Service	\$362,431	\$0	\$0	\$0	\$0	\$0	\$362,431	\$0	\$0
Ground Water Management	\$498,842	\$0	\$498,842	\$0	\$0	\$0	\$0	\$0	\$0
General	\$499,972	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$499,972
Total (\$)	\$3,059,311	\$300,000	\$498,842	\$671,571	\$268,628	\$70,044	\$362,431	\$387,822	\$499,972
Total (%)		9.8%	16.3%	22.0%	8.8%	2.3%	11.8%	12.7%	16.3%

7.5. Asset Functionalization

Table 7-8 presents the functionalization of the District’s water system asset base. Each asset category from the master asset schedule is assigned to one of the cost functions. The column furthest right in Table 7-8 shows the total asset valuation by category. Assets are shown valued at replacement cost less depreciation (RCLD) to account for aging of the assets.

Table 7-8: Functionalization of System Assets

Asset Category	Cost Function	Assets by Function (\$)
Wells	Base	\$1,433,381
Pumping	Max Day	\$184,555
Transmission & Distribution	Max Hour	\$3,268,916
Fire Protection	Meters	\$434,152
Customer Service & Billing	Customer	\$16,697
General & Admin	General	\$3,115,674
Storage	Max Day	\$1,004,970
Total		\$9,458,345

7.6. Allocation of Functionalized Assets to Cost Components

Like the O&M cost allocation, the District’s functionalized capitalized assets are allocated to the same cost components, which is representative of future project costs. Capital costs are allocated by the asset base of the water system in recognition that assets need to be refurbished and replaced over time. Correspondingly, capital expenses over time should correlate to the asset base and mix of infrastructure. This ensures that the allocations to the cost causation components, and ultimately the rates, remain relatively stable over time. Table 7-9 and Table 7-10 shows the functionalized assets allocated to the cost components in both dollar and percentage terms. The numbers shown in this section of the report are rounded to the nearest dollar and tenth of a percent; therefore, the calculations shown in the tables of this section may not equal to the precise numbers shown.

Table 7-9: Allocation of Functionalized Asset Valuation to Cost Causation Components (%)

Description	Value (\$)	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	General
Wells	\$1,433,381			100%					
Pumping	\$184,555			71%	29%				
Transmission & Distribution	\$3,268,916			60%	24%	17%			
Fire Protection	\$434,152						100%		
Customer Service & Billing	\$16,697							100%	
General & Admin	\$3,115,674								100%
Storage	\$1,004,970			71%	29%				
Total (\$)	\$9,458,345	\$0	\$0	\$4,228,825	\$1,118,178	\$544,819	\$434,152	\$16,697	\$3,115,674
Total (%)		0.0%	0.0%	44.7%	11.8%	5.8%	4.6%	0.2%	32.9%

Table 7-10: Allocation of Functionalized Asset Valuation to Cost Causation Components (Values)

Description	Value (\$)	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	General
Wells	\$1,433,381			\$1,433,381	\$0	\$0	\$0	\$0	\$0
Pumping	\$184,555			\$131,825	\$52,730	\$0	\$0	\$0	\$0
Transmission & Distribution	\$3,268,916			\$1,945,783	\$778,313	\$544,819	\$0	\$0	\$0
Fire Protection	\$434,152			\$0	\$0	\$0	\$434,152	\$0	\$0
Customer Service & Billing	\$16,697			\$0	\$0	\$0	\$0	\$16,697	\$0
General & Admin	\$3,115,674			\$0	\$0	\$0	\$0	\$0	\$3,115,674
Storage	\$1,004,970			\$717,836	\$287,134	\$0	\$0	\$0	\$0
Total (\$)	\$9,458,345	\$0	\$0	\$4,228,825	\$1,118,178	\$544,819	\$434,152	\$16,697	\$3,115,674
Total (%)		0.0%	0.0%	44.7%	11.8%	5.8%	4.6%	0.2%	32.9%

7.7. Cost Allocation of Revenue Requirement

Table 7-11 shows the revenue requirement by cost component. The operating expenses shown on Line 1 are from the allocations in Table 7-6. The capital expense allocation shown on Line 2 is calculated by multiplying the capital revenue requirement from Table 7-1 and the percentage allocations at the bottom of Table 7-9.

General costs are distributed to all cost causation components, other than supply, on a pro rata basis as shown in Line 4. Supply costs only include direct cost allocations to maintain the actual cost of producing one unit of water and do not include any distributed General (indirect) cost allocations.

Utilities invest in, and continuously maintain, facilities to provide capacity to meet all levels of water consumption, including average and peak demand. These costs must be recovered regardless of the amount of water used during a given period. Peaking costs and water system costs to meet average demand (base delivery costs), are considered fixed water system costs, but the peak system costs are incurred due to customers that place peak demands on the system. To balance between affordability and revenue stability, and to recover costs of facilities necessary to accommodate peak demand of customers that cause the District to incur those costs, it is a common practice that a portion of the peaking costs are recovered in the monthly service charge, along with customer-related costs and meter-related costs. As a result, a portion of Max Hour and Max Day (peaking) costs are redistributed to the Meter component in Line 5 of Table 7-11. Fifty (50) percent of extra-capacity (maximum day and maximum hour) costs are recovered through the fixed charge component (meter column) and the remaining extra-capacity costs are recovered through the variable charge component (Max Day and Max Hour columns). This cost recovery approach allows the District to maintain the existing level of revenues from fixed charges at approximately 34 percent with the remaining 66 percent from water commodity charges.

The numbers shown in this section of the report are rounded to the nearest dollar and tenth of a percent; therefore, the calculations shown in the tables of this section may not equal to the precise numbers shown.

Table 7-11: Revenue Requirement by Cost Component (Cost of Service)

	Cost of Service	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	General	Total
1	Operating Expenses	\$300,000	\$498,842	\$671,571	\$268,628	\$70,044	\$362,431	\$387,822	\$499,972	\$3,059,311
2	Capital Expenses	\$0	\$0	\$378,043	\$99,961	\$48,705	\$38,812	\$1,493	\$278,531	\$845,544
3	Sub-total Cost of Service	\$300,000	\$498,842	\$1,049,614	\$368,590	\$118,749	\$401,243	\$389,314	\$778,503	\$3,904,855
4	Allocation of General Costs		\$137,403	\$289,110	\$101,526	\$32,709	\$110,520	\$107,234	(\$778,503)	\$0
5	Allocation of Peaking to Meter				(\$235,058)	(\$75,729)	\$310,787			\$0
6	Total Cost of Service	\$300,000	\$636,245	\$636,245	\$1,338,724	\$235,058	\$75,729	\$822,550	\$0	\$3,904,855

7.8. Unit Costs Derivation

The end goal of a cost-of-service analysis is to proportionately distribute the cost components to each user class and tier. To do so, unit costs for each component must be calculated which starts by assessing the total water demanded (or equivalent service units) for each cost component. Table 7-12 shows the calculation of additional capacity required to meet Max Day and Max Hour demands of each customer class and tier. Annual usage (Column A) is derived from water usage projections for FYE 2022. Daily usage (Column B) is calculated as annual use divided by 365 days. The capacity or peaking factor (Column C) are the customer specific peaking factors derived in Table 7-5. The total Max Day units of capacity are calculated by multiplying the average daily use (Column B) by the Max Day peaking factor (Column C) for each class and tier. The extra capacity required to meet Max Day demand (Column E) is calculated by subtracting the average daily use (Column B) from the total capacity for Max Day (Column D).

For Max Hour demands, the customer-specific peaking factors (Column C) reflect the ratio between the system-wide Max Day and Max Hour peaking factors to determine the Max Hour peaking factors (Column F) for all classes and tiers. This is calculated using the following equation:

Max Day peaking factor (Column C) x [System-wide Max Hour peaking factor (Table 7-4) / System-wide Max Day peaking factor (Table 7-4)]

The total units of capacity for Max Hour demands (Column G) are calculated by multiplying the average daily use (Column B) by the Max Hour peaking factors (Column F). The extra capacity required for Max Hour demands (Column H) is equal to the Max Hour total capacity (Column G) less the Max Day total capacity (Column D) (the incremental units of capacity additional to max day). Demand requirements are detailed by proposed rate class. Values are rounded to the nearest hcf and may not equal the exact values shown in the table.

Table 7-12: FY 2021-2022 Projected Water Usage by Class

Customer Class	FYE 2022 Annual Usage (hcf)	Daily Usage (hcf)	Max Day			Max Hour		
			Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)
	A	B	C	D	E	F	G	H
Single Family Residential								
Tier 1	112,486	308	1.05	325	17	1.58	487	162
Tier 2	105,185	288	1.29	373	85	1.94	560	187
Tier 3	110,311	302	1.61	486	183	2.41	728	243
Multiple Units	71,888	197	1.37	271	74	2.06	406	135
Commercial /Public Agency	102,256	280	1.37	319	112	2.06	478	159
Irrigation	75,493	207	1.54	385	105	2.31	577	192
Total	577,619	1,583		2,158	575		3,236	1,079

Table 7-13 shows the total equivalent meters (discussed in detail in Section 8.3.1) and annual number of bills issued (discussed in Section 8.3.2). These totals are used as the denominator in developing unit costs for the rate components of the monthly fixed service charges.

Table 7-13: Derivation of Equivalent Meters

Meter Size	FYE 2022 Meter Count	Hydraulic Capacity Factor	Equivalent Meters	Annual Bills
5/8"	3	1.00	3	36
3/4"	1,421	1.00	1,421	17,052
1"	464	1.67	773	5568
1.5"	72	3.33	240	864
2"	31	5.33	165	372
3"	3	11.67	35	36
4"	8	21.00	168	96
6"	7	43.33	303	84
Total	2,009		3,109	24,108

Utilizing the final cost of service from Table 7-11 as the numerator and Table 7-12 and Table 7-13 as the denominators allows us to derive unit costs of service in

Table 7-14. The total cost is divided by the respective units of service to calculate the unit cost of each cost component. For example, the unit cost for the supply component is determined by dividing the total Base cost (\$636,245) by total water use (577,619 hcf) to derive a Base unit cost of \$2.32.

Meter costs are divided by total meter equivalencies from Table 7-13 multiplied by 12 monthly bills to determine a cost per equivalent meter per month; and annual customer costs are divided by the estimated number of annual monthly bills, also from Table 7-13. The unit costs are used to distribute the cost components to the meter classes, commodity classes, and Residential commodity tiers.

Table 7-14: Cost Causation Component Unit Cost Calculation

Cost of Service	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	Total
Final Cost of Service	\$300,000	\$636,245	\$636,245	\$1,338,724	\$235,058	\$75,729	\$822,550	\$3,904,855
Units of Service	577,619	577,619	577,619	575	1,079	3,109	24,108	
Unit of Measure	hcf	hcf	hcf	hcf/day	hcf/day	Annual Equivalent Meters	Annual Bills	
Unit Cost	\$0.52	\$1.10	\$2.32	\$408.77	\$70.20	\$22.05	\$20.60	

7.9. Distribution of Cost Components to Customer Classes

The final step in a cost-of-service analysis is to distribute the cost components to the customer classes using the unit costs derived in

Table 7-14. This is the end goal of a cost-of-service analysis and yields the cost to serve each customer class and subclass. Table 7-15 shows the derivation of the cost to serve each customer class. The Supply, Groundwater Management, Base, and peaking (Max Day and Max Hour) cost components are collected through the commodity (volumetric) charges (\$/hcf). Meters, Customer, and 50 percent of Max Day and Max Hour cost components are collected through the District's monthly fixed service charge (\$/meter/month).

To derive the cost to serve each class, the unit costs from

Table 7-14 are multiplied by the respective units of service for each class (Table 7-12 and Table 7-13). For example, the base costs for the Multiple Units class are calculated by multiplying the Base unit cost of \$2.32 (rounded to the

nearest penny) by the annual Multiple Units use (71,888 hcf) to arrive at a total of \$166,611. Similar calculations for each of the remaining user classes and cost components yield the total cost to serve each user class shown in the furthest right column of Table 7-15. Note that the total cost of service is equal to the revenue requirement in Table 7-1 as intended. With the cost to serve each user class calculated we can proceed to derive rates to collect the cost to serve each commodity class, tier, and meter size.

Table 7-15: Derivation of Cost to Serve Each Class

Customer Class	Supply	Groundwater Management	Base	Max Day	Max Hour	Meters	Customer	Total
All Customers						\$822,550	\$496,549	\$1,319,099
Single Family Residential								
Tier 1	\$58,422	\$123,902	\$260,703	\$6,758	\$11,397			\$461,183
Tier 2	\$54,631	\$115,861	\$243,784	\$34,672	\$13,092			\$462,041
Tier 3	\$57,293	\$121,507	\$255,663	\$74,935	\$17,042			\$526,440
Multiple Units	\$37,337	\$79,184	\$166,611	\$30,090	\$9,497			\$322,718
Commercial / Public Agency	\$53,109	\$112,635	\$236,995	\$42,802	\$13,508			\$354,326
Irrigation	\$39,209	\$83,156	\$174,968	\$45,801	\$11,192			\$459,048
Total	\$300,000	\$636,245	\$1,338,724	\$235,058	\$75,729	\$822,550	\$496,549	\$3,904,855

8. Water Rate Design and Derivation

8.1. Existing Rate Structure and Rates

The District's rate structure has two components: a fixed charge component (monthly service charge) and a variable volumetric charge component (commodity charge). The monthly fixed service charge is determined based on the size of the water meter serving a property and increases with meter size. The rates for the current fixed service charge are shown in Table 8-1.

Table 8-1: Current Monthly Fixed Charges (\$/Month)

Meter Size	Current Charge
5/8"	\$44.07
3/4"	\$44.07
1"	\$57.17
1 1/2"	\$89.91
2"	\$129.19
3"	\$233.97
4"	\$351.85
6"	\$679.27

The volumetric component of a customer's water bill is calculated based on the number of units of water delivered to a property, measured in hcf, multiplied by the rates that vary by customer class and tier. The current tier widths and rates are shown in Table 8-2.

Table 8-2: Current Commodity Tiers and Rates (\$/hcf)

Class	Current Tier Definition	Current Rate (\$/hcf)
Single-Family Residential (SFR)		
Tier 1	0-7	\$4.01
Tier 2	>7	\$4.41
Multiple Units	Uniform	\$4.24
Commercial / Public Agency	Uniform	\$4.24
Irrigation	Uniform	\$4.24

8.2. Proposed Rate Structure Changes

Raftelis identified recommended changes over the course of the Study and worked with District staff and with the District Board of Directors to refine proposed modifications to the rate structures.

Raftelis recommends changes to the rate structures and tier definitions for the commodity charges. The proposal modifies the two-tiered rate structure for Single Family Residential (SFR) customers to a three-tiered rate structure. Additionally, Raftelis recommends the same uniform rate for all Multiple Unit, Commercial, and Public Agency customers and a separate uniform rate for all Irrigation customers. The proposed changes and rationale are detailed in the following subsections.

8.2.1. SINGLE FAMILY RESIDENTIAL

The only customer class subject to a tiered rate structure is the SFR customer class. However, most of the water use for SFR customers currently falls into Tier 2. Raftelis recommends retaining the tiered rate structure for SFR customers with a revised number of tiers and tier definitions to reflect current actual customer demand patterns.

Tier 1 usage is intended to provide enough water for essential indoor water use needs and to be provided at the most affordable rate that reflects actual cost of service.¹⁵ Tier 2 usage is intended to provide for reasonable outdoor usage and represents the peak summer use characteristics, on average, of the District’s SFR customers. Tier 3 usage is designed to capture all large volume, inefficient, and/or excessive usage and is defined as all water use greater than Tier 2. Note that all water usage projections by customer class and tier utilized in Section 7.8 to develop units of service are based on the proposed tier definitions.

Table 8-3: Revised Single-Family Residential Tiers

Proposed SFR Tiers	Current Definition (hcf)	Proposed Definition (hcf)
Single Family Residential (SFR)		
Tier 1	0-7	0-7
Tier 2	>7	7-22
Tier 3	NA	>22

8.2.2. UNIFORM CUSTOMER CLASSES (NON-RESIDENTIAL AND IRRIGATION)

The existing structure charges the same uniform rate to all Multiple Unit (Multi-Family Residential or MFR), Commercial, Public Agency, and Irrigation customers. Due to similar peaking factors between the MFR and Commercial/Public Agency customer classes, Raftelis recommends the same uniform rate for these customers. However, Irrigation customers place higher peak demands on the water system, as shown in Table 7-5, and therefore, Raftelis recommends developing a separate uniform commodity rate for Irrigation customers. This is a modest change that reflects current customer usage patterns and ensures ongoing equity between the MFR, Commercial, and Public Agency customers and dedicated Irrigation customers.

8.3. Proposed Monthly Fixed Charges

Utilities invest in and continuously maintain facilities to provide capacity to meet all levels of water consumption, including peak demand. These costs must be recovered regardless of the amount of water used during a given period. Peaking costs are generally considered fixed water system costs, although the costs are incurred to accommodate water users that place peak demands on the system. To balance between affordability and revenue stability, it is a common practice that some or all peaking costs are recovered in the monthly service charge, along with customer-related costs and direct meter-related costs. For the District, 50 percent of peaking costs are recovered from the fixed charge. The remaining 50 percent of peaking costs are recovered by the variable commodity charges, to reflect the cause of the District incurring those costs, as shown in Table 7-11.

There are two components that comprise the meter based fixed charges: meter servicing costs and customer service costs. The fixed charge recognizes that even when a customer does not use water in a billing period, the District incurs fixed costs to operate and maintain the system for each connection.

8.3.1. METER SERVICES COMPONENT

The meter services component collects servicing-related costs and a portion of peaking costs. Larger meters are more expensive to maintain and replace and have the potential to demand more capacity; in other words, they exert greater peaking characteristics compared to smaller meters. The potential capacity demanded (peaking) is proportional to the potential flow through each meter size as established by the safe operating flow rate in gallons per minute (gpm)

¹⁵ The 7 hcf Tier 1 allotment is based on an assumed 55 gallons per capita per day (GPCD) for essential water use needs and an average of 3 people per household, rounded up to the nearest whole hcf.

described in the AWWA Manual M22 – *Sizing Water Service Lines and Meters*. The capacity in gpm is based on the types of meters utilized by the District and the corresponding capacity ratings from the AWWA.

To create parity across the various meter sizes, each meter size is assigned a factor relative to a 5/8" or 3/4" meter¹⁶, which both have a value of 1.00. This establishes the "base" meter size. A given meter size's capacity ratio relative to the base (that of a 5/8" or 3/4" meter) determines the *meter equivalency*. Summation of all meter equivalencies for a given size yields total equivalent meters. Table 8-4 shows total meter count for each class as well as the corresponding meter ratio and total meter equivalencies. The total number of equivalent meters is calculated by multiplying the number of meters of a specific size by their respective capacity ratio.

Table 8-4: Meter Equivalencies Calculation

Meter Size	Total Meters	Meter Type	Capacity (gpm)	Capacity Ratio	Equivalent Meters (Capacity)
5/8"	3	Multi-Jet	20	1.00	3
3/4"	1,421	Multi-Jet	30	1.00	1,421
1"	464	Multi-Jet	50	1.67	773
1.5"	72	Multi-Jet	100	3.33	240
2"	31	Multi-Jet	160	5.33	165
3"	3	Turbine Class 1	350	11.67	35
4"	8	Turbine Class 1	630	21.00	168
6"	7	Turbine Class 1	1,300	43.33	303
Total	2,009				3,109

Table 8-5 shows the calculation steps in allocating the meter service costs from the cost of service (Table 7-14) to the larger meters. The Meter capacity component for larger meters is determined using the AWWA capacity ratios shown in the "Capacity Ratio" column. Allocating these costs by meter size equitably recovers the fixed cost of operating the utility across water users.

Table 8-5: Meter Service Charge

Meter Size	Capacity Ratio	Meter Charge
5/8"	1.00	\$22.05
3/4"	1.00	\$22.05
1"	1.67	\$36.75
1.5"	3.33	\$73.49
2"	5.33	\$117.59
3"	11.67	\$257.22
4"	21.00	\$463.00
6"	43.33	\$955.39

8.3.2. CUSTOMER SERVICE COMPONENT

The customer service component recovers costs associated with meter reading, customer billing and collection, as well as answering customer service calls. These costs are uniform for all meter sizes and classes as it costs the same to bill a small meter as it does a large meter and the same for a SFR customer as it does an irrigation customer.

Table 8-6 shows the customer service component calculation. To calculate the customer component Raftelis divides the total billing and customer service costs from Table 7-14 by the total estimated annual bills (unique

¹⁶ Based on discussion with District staff, 5/8" and 3/4" meters are considered equivalents. Any existing 5/8" meters are legacy meters which will be replaced with 3/4" meters in the future.

accounts multiplied by 12 billing periods) generated by the District to determine the monthly customer service charge component.

Table 8-6: Customer Component Calculation

Customer	FYE 2022
Customer Service Costs	\$496,549
Annual Bills	24,108
Customer Component (per month)	\$20.60

Table 8-7 shows the calculation of the proposed FYE 2022 rates for the fixed charges. The meter services component is the cost per equivalent meter calculated in Table 8-5. The customer component is uniform for all meter sizes. The meter services component and customer component are added together for each meter size yielding the proposed charge. All rates are rounded up to the nearest whole penny.

Table 8-7 also includes the current charges to each class and meter size and a comparison of the proposed charges and current charges in both dollar and percentage terms.

Table 8-7: Calculation of FYE 2022 Cost of Service Meter Charges

Meter Size	Capacity Ratio	Meter Service Component	Customer Component	Proposed Charge	Current Charge	Difference (\$)	Difference (%)
5/8"	1.00	\$22.05	\$20.60	\$42.65	\$44.07	-\$1.42	-3%
3/4"	1.00	\$22.05	\$20.60	\$42.65	\$44.07	-\$1.42	-3%
1"	1.67	\$36.75	\$20.60	\$57.35	\$57.17	\$0.18	0%
1.5"	3.33	\$73.49	\$20.60	\$94.09	\$89.91	\$4.18	5%
2"	5.33	\$117.59	\$20.60	\$138.19	\$129.19	\$9.00	7%
3"	11.67	\$257.22	\$20.60	\$277.82	\$233.97	\$43.85	19%
4"	21.00	\$463.00	\$20.60	\$483.60	\$351.85	\$131.75	37%
6"	43.33	\$955.39	\$20.60	\$976.00	\$679.27	\$296.73	44%

Table 8-8 shows proposed rates for the next five years based on the financial plan developed in Section 4.3. The rates for the fixed monthly service charges are increased uniformly by a percentage increase in subsequent years – that is, relative to existing rates – by the selected financial plan of 5 percent per year. All rates are rounded up to the nearest whole penny.

Table 8-8: Proposed FYE 2022 – FYE 2026 Monthly Service Charges

Meter Size	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
5/8"	\$42.65	\$44.79	\$47.03	\$49.39	\$51.86
3/4"	\$42.65	\$44.79	\$47.03	\$49.39	\$51.86
1"	\$57.35	\$60.22	\$63.24	\$66.41	\$69.74
1.5"	\$94.09	\$98.80	\$103.74	\$108.93	\$114.38
2"	\$138.19	\$145.10	\$152.36	\$159.98	\$167.98
3"	\$277.82	\$291.72	\$306.31	\$321.63	\$337.72
4"	\$483.60	\$507.78	\$533.17	\$559.83	\$587.83
6"	\$976.00	\$1,024.80	\$1,076.04	\$1,129.85	\$1,186.35

8.4. Proposed Commodity Rates

8.4.1. UNIT COST COMPONENT DEFINITIONS

The rates for the commodity charges for each customer class and tier are derived by summation of the unit rates (\$/hcf) for:

1. Supply Costs (Variable Supply Cost Component)

2. Delivery Costs (Base Cost Component)
3. Peaking Costs (Max Day & Max Hour Cost Component not recovered on the meter)

Variable Supply are costs related to the pumping and production of water to meet customer demand. The variable supply cost forms the foundation of the commodity rates. This component includes costs of groundwater resource management costs as well as future purchased water costs, described in more detail in the next sub-section.

Delivery are the costs associated with obtaining and treating water to ready it for transmission and distribution, as well as the operating and capital costs associated with delivering water to all customers at a constant average rate of use – also known as serving customers under average daily demand conditions. Therefore, base costs recovered through commodity charges are spread over all units of water uniformly, irrespective of customer class or tier.

Peaking are the costs associated with providing Max Day and Max Hour capacity to each customer class and tier.

8.4.1.1. Variable Supply Rate Component

The variable supply cost is the cost to produce water from the Borrego Valley basin that is delivered to District customers. Groundwater from the basin is the only source of water supply to meet demand. As part of the Stipulated Agreement and groundwater allocation to basin water users, the District will be required to acquire additional permanent water production allocation to serve existing customers in the future. The initial water rights, or Baseline Pumping Allocation (BPA), remain constant and the amount of water production allowable to a pumper in any given year is referred to as the Pumping Allowance. The District's BPA will decrease in each year from 2,581 acre feet per year (AFY) to an annual allowance of approximately 645 AFY in 2040. To serve production demand of approximately 1,440 AFY the District will acquire BPA through land acquisitions when transactions become available and when terms and conditions are favorable to the District. For this purpose, the District has created the Water Supply Reserve (previously mentioned in Section 3.1). The District is targeting \$300,000 per year of Water Supply Reserve funding to acquire approximately \$2 million in additional BPA on or around FYE 2028.

In identifying the District's sustainable yield volume (long term BPA) and additional BPA to serve demand, the groundwater supply is divided into two sources of supply with distinct costs. Table 8-9 shows the unit cost calculations for the sustainable yield volume (SGMA Allocation) and the future purchased volume (Additional BPA). The water supply components (Line 2) are based on FYE 2022 projected water supply costs and volume in acre feet (AF). The percent of total demand served from each source is determined (Line 3) based on the supply available from each source (Line 2). This percentage is then applied to the total water demand calculated in Table 7-12. Groundwater management costs for each source are determined by multiplying the percentage in Line 4 by the costs provided by the District (Line 6). Groundwater management costs are spread across all units of water produced.

The annual amount required to fund the Water Supply Reserve is shown in Line 7. This amount is a part of the District's total operating costs (Table 4-9) and is added to the cost to supply water units beyond the SGMA allocation (Line 8). The proportion of water supply costs from each source is determined in Line 9 based on the total water supply costs. General costs allocated to the groundwater management cost component in Table 7-11 are reallocated to each source in Line 10 based on the percent of water supply in Line 3. The total water supply revenue requirement by source (Line 11) is then calculated by adding the water supply costs in Line 8 and the general costs in Line 10 and is equal to the sum of the supply and groundwater management costs components shown in Table 7-11. The unit costs per hcf are calculated by dividing the water supply revenue requirement (Line 11) by the annual water use by source (Line 4). Water supply costs and availability are used in the water supply unit cost calculation for the Commodity Charge and reflect the best estimate of long-term annual water supply mix.

Table 8-9: Water Supply Costs (\$/hcf)

	Water Supply Cost	SGMA Allocation	Additional BPA	Total
1	Water Supplies			
2	Supply (AF)	645	795	1,440
3	Percent of Supply	45%	55%	100%
4	Annual Water Use by Source (hcf)	258,813	318,806	577,619
5	Water Supply Costs			
6	Groundwater Management Costs	\$223,515	\$275,326	\$498,842
7	Water Supply Funding		\$300,000	\$300,000
8	Total Water Supply Costs	\$223,515	\$575,326	\$798,842
9	Proportion of Water Supply Cost	28%	72%	100%
10	Allocated General Costs	\$61,566	\$75,837	\$137,403
11	Water Supply Revenue Requirement	\$285,081	\$651,164	\$936,245
12	Unit Cost	\$1.10	\$2.04	\$1.62

Given the water available from each source (Table 8-9) and the estimated demand from each class (Table 7-12), the estimated water available to meet demand from each source is shown in Table 8-10. The supply is allocated in proportion to the overall demand. The unit rates for variable supply for the inclining tier rate structure are also derived in Table 8-10. Total costs are determined as the sum-products of the unit costs from Table 8-9 and the water required in each tier. Note that Tier 2 SFR unit cost represents a blended rate from each source. Also note that the unit cost is consistent for all user classes with a uniform commodity rate at \$1.62/hcf as intended. Unit costs are rounded up to the nearest whole penny.

Table 8-10: Customer Class Water Supply Allocations

Customer Class	Annual Use (hcf)	% of Use	SGMA Allocation	Over Allocation	Total Cost	Supply Unit Cost (\$/hcf)
Unit Cost of Supply			\$1.10	\$2.04		
Single Family Residential	327,982	57%	146,958	181,024	\$531,616	\$1.62
Tier 1	112,486	34%	112,486	0	\$123,902	\$1.10
Tier 2	105,185	32%	34,473	70,713	\$182,403	\$1.73
Tier 3	110,311	34%	0	110,311	\$225,311	\$2.04
Multiple Units	71,888	12%	32,211	39,677	\$116,520	\$1.62
Commercial/Public Agency	102,256	18%	45,818	56,438	\$165,744	\$1.62
Irrigation	75,493	13%	33,826	41,667	\$122,365	\$1.62
Total	577,619	100%	258,813	318,806	\$936,245	

8.4.1.2. Delivery (Base) Rate Component

The delivery rate component recovers the costs to supply and deliver water under average daily demand conditions. Dividing estimated annual usage by total delivery costs from Table 7-15 yields the cost to deliver water during average conditions. The calculated delivery unit cost is presented in Table 8-11. The delivery rate is uniform for all classes and tiers since costs are recovered for average use.

Table 8-11: Water Delivery Unit Cost Calculation

Base Delivery	Unit Cost
Variable Supply Costs	\$1,338,724
Unit of Measure	hcf
Units of Service	577,619
Unit Cost	\$2.32

8.4.1.3. Peaking Rate Component

Peaking costs represent the cost of providing Max Day and Max Hour capacity to each customer class based on the demand characteristics of each (shown in Table 7-5 and Table 7-12). Table 8-12 combines the Max Day and Max Hour costs in Table 7-15 into Peaking Costs. These costs are divided by total annual use by class and tier (from Table 7-12) to arrive at the Peaking unit cost for each.

Table 8-12: Peaking Unit Cost by Class and Tier

Customer Class	Annual Use (hcf)	Peaking Costs	Peaking Unit Cost (\$/hcf)
Single Family Residential			
Tier 1	112,486	\$18,155	\$0.16
Tier 2	105,185	\$47,765	\$0.45
Tier 3	110,311	\$91,977	\$0.83
Multiple Units	71,888	\$39,587	\$0.55
Commercial/Public Agency	75,493	\$56,993	\$0.75
Irrigation	102,256	\$56,310	\$0.55

8.4.1.4. Final Commodity Rate Derivation

To determine the rates for the commodity charge, the three rate components described above are added together. The resulting summation constitutes the final rates. The cost-of-service rates, inclusive of the first-year revenue adjustment of 5 percent, are shown in bold in Table 8-13. Rates are rounded up to the nearest whole penny.

Table 8-13: Proposed FYE 2022 Commodity Rates

Class	Tier Definition (hcf)	Supply	Base Delivery	Peaking	Proposed Rate (\$/hcf)	Current Rate (\$/hcf)	Difference (\$/hcf)
Single Family Residential							
Tier 1	7	\$1.10	\$2.32	\$0.16	\$3.59	\$4.01	(\$0.42)
Tier 2	22	\$1.73	\$2.32	\$0.45	\$4.51	\$4.41	\$0.10
Tier 3	>22	\$2.04	\$2.32	\$0.83	\$5.20	\$4.41	\$0.79
Multiple Units	Uniform	\$1.62	\$2.32	\$0.55	\$4.49	\$4.24	\$0.25
Commercial/Public Agency	Uniform	\$1.62	\$2.32	\$0.55	\$4.49	\$4.24	\$0.25
Irrigation	Uniform	\$1.62	\$2.32	\$0.75	\$4.70	\$4.24	\$0.46

Table 8-14 shows proposed commodity rates for the Study period. The commodity rates are increased in each future year by the annual revenue adjustment of 5 percent. All rates in each year are rounded up to the nearest whole penny.

Table 8-14: Proposed FYE 2022 – FYE 2026 Commodity Rates (\$/hcf)

Class	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
Single Family Residential					
Tier 1	\$3.59	\$3.77	\$3.96	\$4.16	\$4.37
Tier 2	\$4.51	\$4.74	\$4.98	\$5.23	\$5.50
Tier 3	\$5.20	\$5.46	\$5.74	\$6.03	\$6.34
Multiple Units	\$4.49	\$4.72	\$4.96	\$5.21	\$5.48
Commercial/Public Agency	\$4.49	\$4.72	\$4.96	\$5.21	\$5.48
Irrigation	\$4.70	\$4.94	\$5.19	\$5.45	\$5.73

8.5. Customer Impacts

The rate model calculates water customer impacts for all classes and meter sizes. Customer impacts from the proposed FYE 2022 rates are presented below for each class.

Figure 8-1 shows bills for SFR customers with a 3/4" meter at different levels of use. A 3/4" meter is the most common SFR meter size. Bills are calculated at current rates and tiers and compared to proposed rates and tiers. The figure shows the percentage and dollar change between current and proposed rates and tiers. The levels of use shown represent bills from low water use to above average water use. 12 hcf, 15 hcf, and 22 hcf represent average winter, annual average, and peak summer consumption, respectively.

Figure 8-1: Bill Impacts – SFR

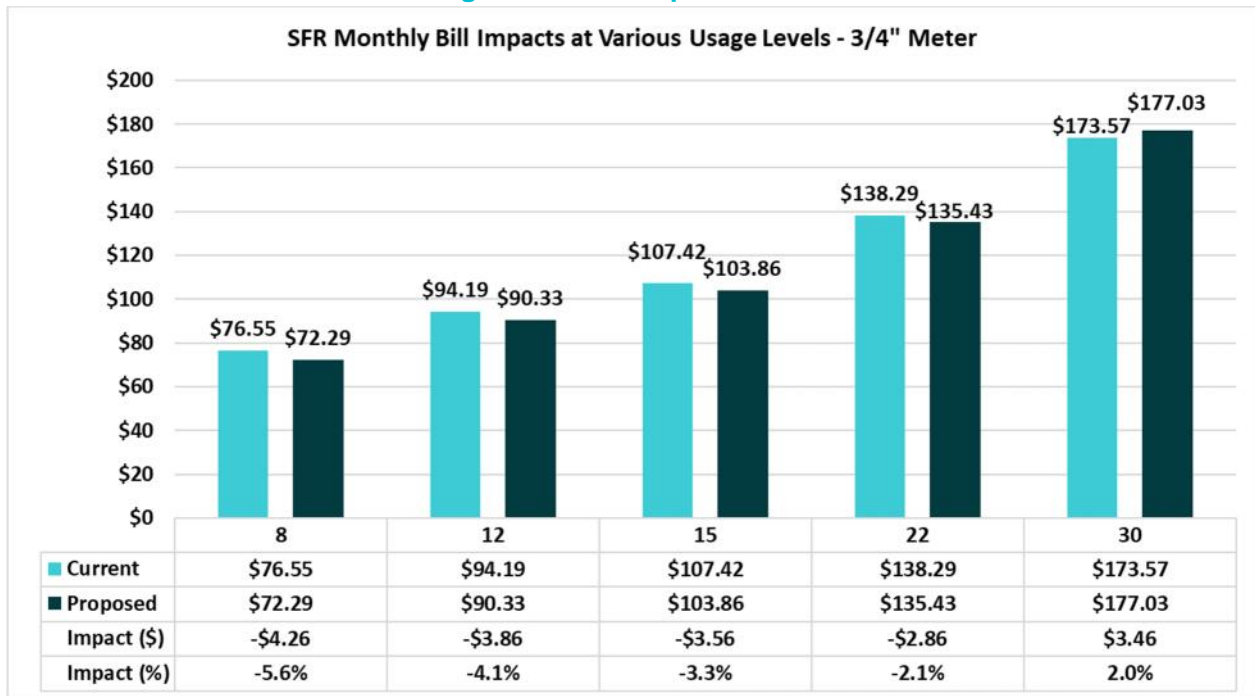


Figure 8-2 shows bills for multiple unit customers with a 1 1/2" meter at different levels of use. A 1 1/2" meter is the most common meter size for this customer class. Bills are calculated at current rates and compared to proposed rates. The levels of use shown represent bills from average winter, annual average, and peak summer consumption, respectively. The figure shows the percentage and dollar change between current and proposed rates.

Figure 8-2: Bill Impacts – Multiple Units

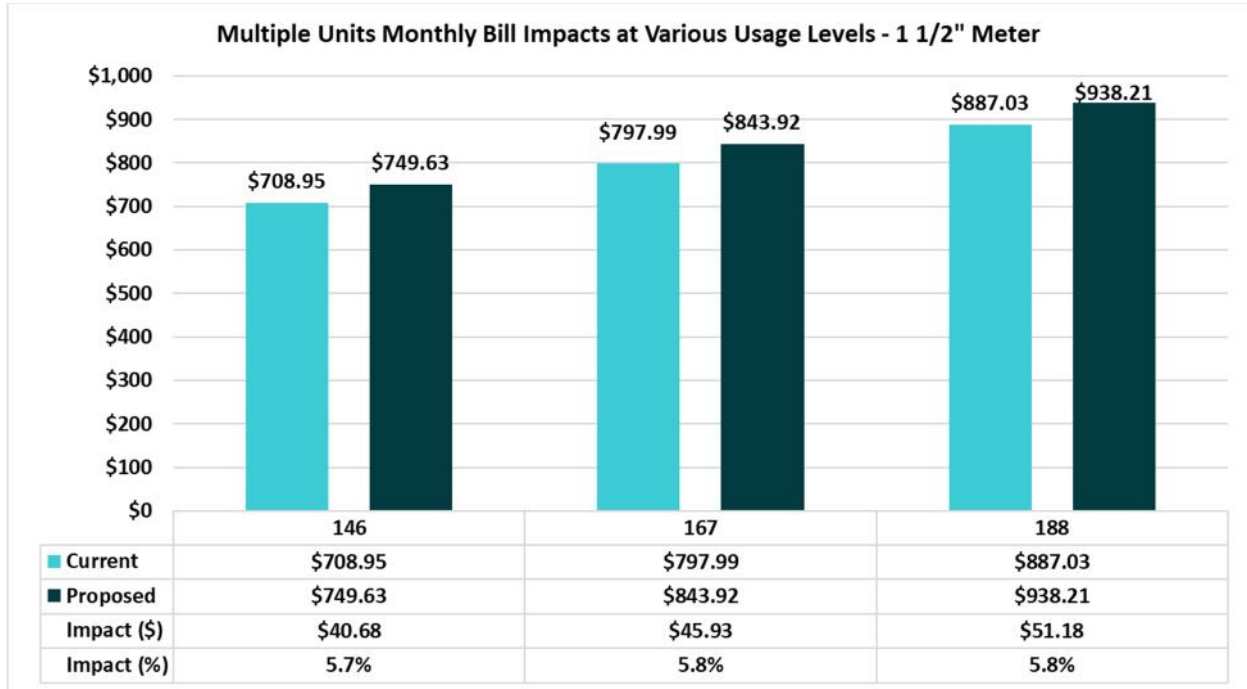


Figure 8-3 shows bills for commercial or public agency customer with a 3/4" meter at different levels of use. A 3/4" meter is the most common size for the commercial/public agency customer class. Bills are calculated at current rates and compared to proposed rates. The levels of use shown represent bills from average winter, annual average, and peak summer consumption, respectively. The figure shows the percentage and dollar change between current and proposed rates.

Figure 8-3: Bill Impacts – Commercial / Public Agency

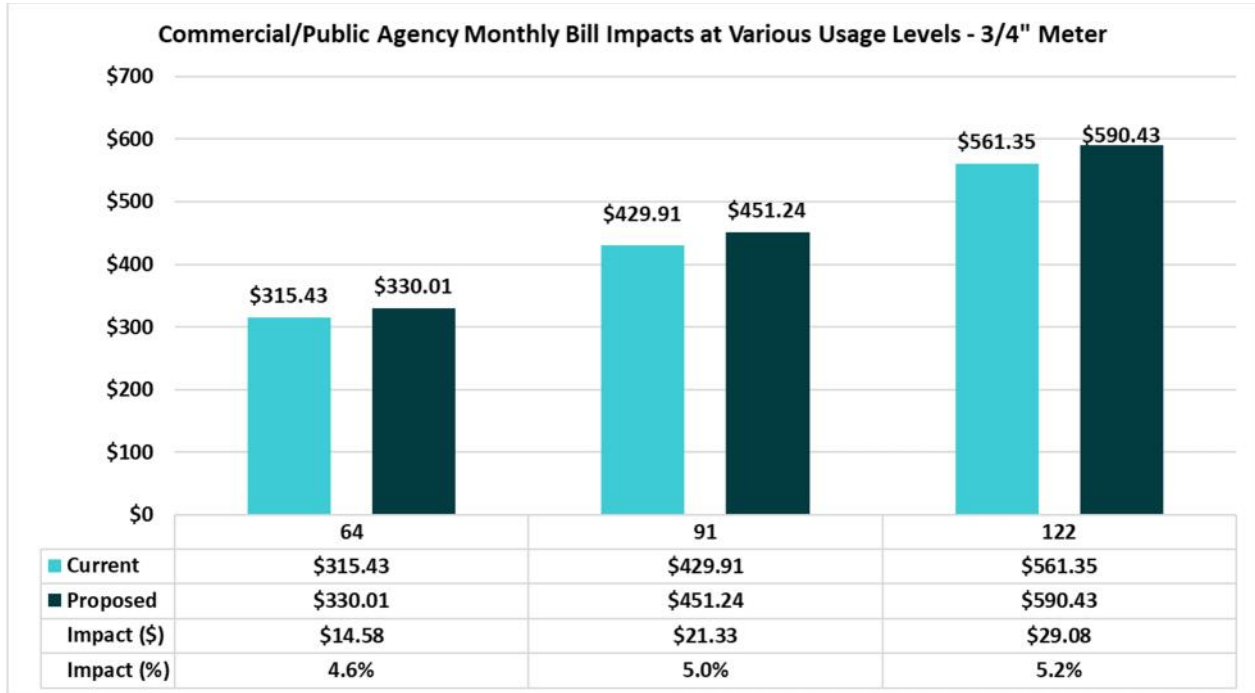
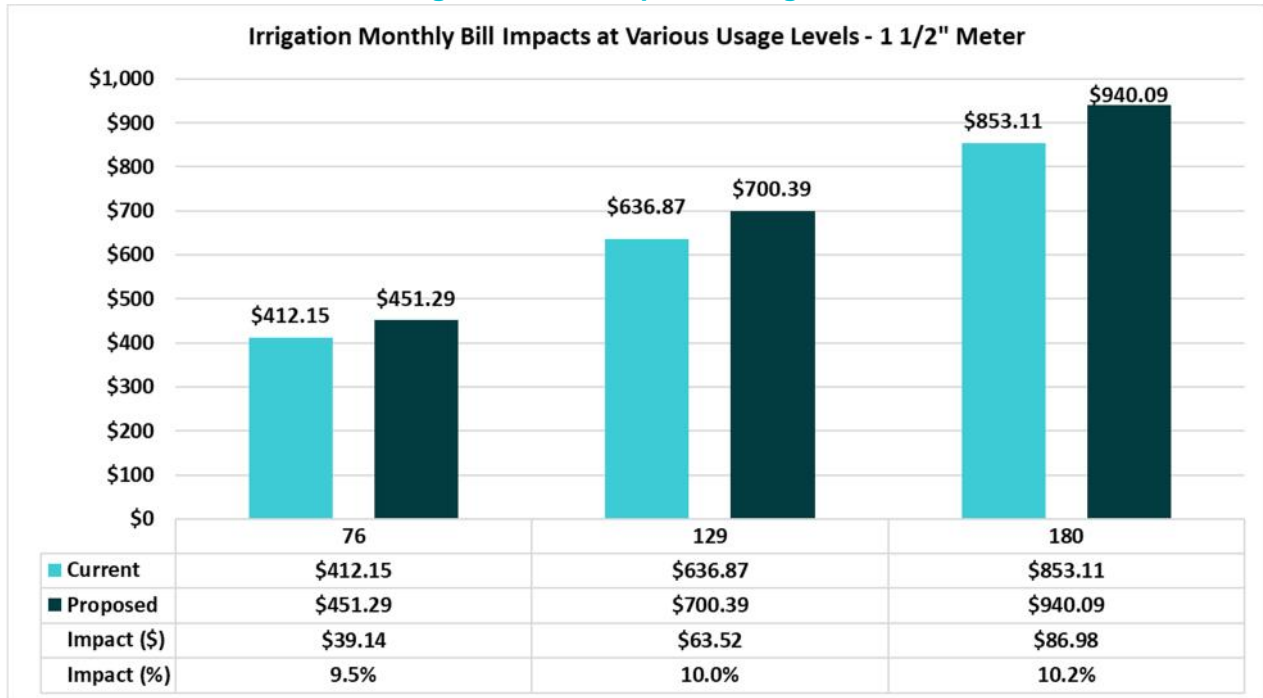


Figure 8-4 shows bills for Irrigation customers with a 1 1/2" meter at different levels of use. A 1 1/2" meter is the most common meter size for this customer class. Bills are calculated at current rates and compared to proposed rates. The levels of use shown represent bills from average winter, annual average, and peak summer consumption, respectively. The figure shows the percentage and dollar change between current and proposed rates.

Figure 8-4: Bill Impacts – Irrigation



9. Wastewater Cost of Service Analysis

9.1. Methodology

This section of the report details the cost-of-service analysis and rate calculation process to determine the proposed wastewater rates. The goal of this process is to determine the cost of providing wastewater service to each of the District's wastewater customer classes and to ensure equity and fairness among the various classes.

The cost-of-service analysis utilized to develop the wastewater rates follows the guidelines for allocating costs outlined in the WEF Manual No. 27. The cost-of-service analysis and rate design process consists of the following major steps:

1. Determine the revenue requirement, equal to the revenue to be recovered from rates.
2. Conduct a treatment plant mass balance analysis to estimate the flows and strength characteristics of wastewater generated.
3. Functionalize O&M expenses and capital assets into functional categories such as collection, treatment, lift, and customer service.
4. Allocate each functional category into cost components such as wastewater flow and strength, which includes biochemical oxygen demand (BOD) and total suspended solids (TSS).
5. Develop customer class characteristics and units of service by cost component.
6. Calculate the cost component unit rates by dividing the total cost in each cost component by the total units of service for that component. For example, wastewater flow is measured in hcf and BOD and TSS are measured in pounds (lbs) per year.
7. Calculate the cost for each customer class by multiplying the unit cost by the units of service for each customer class.

9.2. Revenue Requirement

Table 9-1 shows the FYE 2022 revenue requirement. The revenue requirement represents all O&M and capital and is equal to the cost-of-service to be recovered through rates. The O&M revenue requirement includes costs directly related to the collection and treatment of wastewater, as well as routine maintenance of system facilities. The Capital revenue requirement includes costs directly related to funding the capital program and debt service obligations associated with capital re-investment.

The rate revenue offsets are miscellaneous, non-rate revenues, that are accounted for to determine the net amount required to be recovered from rates. The annual reserve funding adjustment is equal to the net cash change for FYE 2022 in Table 5-13, which represents the amount by which the reserves are increasing during the test year. The annualized rate increase adjustment represents the remaining required revenue adjustment in the test year (cash balances to fund the capital program and reserves based on adopted policies). As discussed previously in Section 5.3, there is no revenue adjustment proposed for FYE 2022. To arrive at the Operating, Capital, and total revenue requirements, revenue offsets (non-rate revenues) are subtracted from, and adjustments are added back to, the sub-total revenue requirement for each category (represented here as columns). The resulting calculation is the total revenue required from rates. This total is the annual amount that monthly wastewater charges are designed to collect.

Table 9-1: FYE 2022 Revenue Required from Wastewater Rates

Revenue Requirements	Operating	Capital	Total
Operating Expenditures	\$447,280	\$0	\$447,280
Debt Service	\$0	\$24,847	\$24,847
Subtotal Revenue Requirements	\$447,280	\$24,847	\$472,127
Revenue Offsets			
Interest	\$0	\$6,184	\$6,184
Total Revenue Offsets	\$0	\$6,184	\$6,184
Adjustments			
Adjustments to Annual Cash Balance	\$0	(\$117,626)	(\$117,626)
Adjustments to Annualize Rate Increase	\$0	\$0	\$0
Total Adjustments	\$0	(\$117,626)	(\$117,626)
COS to be Recovered from Wastewater Rates	\$447,280	\$136,289	\$583,569

9.3. Plant Mass Balance

The second step of the cost-of-service analysis is to conduct a plant mass balance analysis. The plant mass balance analysis is used to estimate and validate the wastewater loadings (flow and strength) generated by each customer class. While wastewater discharged into the District's sewers is not metered when it enters the wastewater system, the total amount of flow and strength entering the treatment plant is a known quantity. The quantity entering the wastewater system is called total plant influent. District staff provided the total plant influent and wastewater strength assumptions for FYE 2019 as shown in Table 9-2. Customer strengths are estimated according to industry accepted standards. Flow is measured in gallons per year and converted to hcf per year. BOD and TSS are measured in milligrams per liter (mg/L) and converted to pounds per year (lbs/year).

Table 9-2: FYE 2019 Total Plant Influent

	Flow (gallons)	BOD (mg/L)	TSS (mg/L)	Flow (hcf)	BOD (lbs/year)	TSS (lbs/year)
Total Plant Influent	28,268,320	338	272	37,789	79,738	64,168

A cost-of-service analysis requires that costs be assigned to customers in proportion to their loadings. As discussed in Section 5.1.1, the District's wastewater customers are divided into different service areas (SA1, SA2, and SA5) and are charged per Equivalent Dwelling Unit (EDU). One EDU is equivalent to the discharge of a typical single-family home and, therefore, each EDU connected to the wastewater system is assumed to contribute the same volume of wastewater flow with similar strength. Wastewater flows per EDU can be estimated as shown in Table 9-3 by dividing the total plant influent (Table 9-2) by the total number of EDUs connected to the wastewater system, and then dividing by 365 days per year. The result is the average gallons per day (gpd) of wastewater generated per EDU. No changes or updates to the EDU definition is proposed in this study.

Table 9-3: Wastewater Flow per EDU

FYE 2019	Flow per EDU
Total Plant Influent (gallons)	28,268,320
÷ EDUs Connected to Wastewater System	895
÷ Days per Year	365
Estimated Wastewater Flow (gpd) per EDU	86.5

Using the estimated wastewater flow per EDU in Table 9-3 and the strength assumptions provided by the District in Table 9-2, the total annual units of flow and strength for each service area can be determined for the test year FYE 2022 using the projected number of EDUs connected to the system (as shown in Table 5-2). The total flow is calculated by multiplying the number of EDUs by the flow per EDU (in gpd) times 365 days. Total flow is measured in gallons per year and converted to hcf per year. BOD and TSS are measured in milligrams per liter and converted to pounds per year. Note that because they are not yet connected to the wastewater system, SA2 EDU Holders do not contribute to wastewater system flows or strength.

Table 9-4: FYE 2022 Plant Balance Analysis

Service Area	EDUs	Flow/EDU (gpd)	Flow (gallons)	BOD (mg/L)	TSS (mg/L)	Flow (hcf)	BOD (lbs/year)	TSS (lbs/year)
SA1	261	86.5	8,243,311	338	272	11,020	23,252	18,712
SA2 EDU Holder	550							
SA2 EDU User	352	86.5	11,123,874	338	272	14,870	31,378	25,251
SA5	156	86.5	4,933,729	338	272	6,595	13,917	11,199
Borrego Springs Resort (SA5)	105	86.5	3,316,395	338	272	4,433	9,355	7,528
Total	1,424		27,617,309			36,919	77,901	62,690

9.4. O&M Expense Functionalization

District staff provided the allocation of budgeted O&M expenses shown in Table 5-6 by function. Table 9-5 shows a summary of the functionalization of District O&M expenses for the test year FYE 2022. A detailed version of the functionalized wastewater expenses is provided in Appendix C. Functionalizing O&M expenses follows the principles of rate setting set forth in the WEF MOP No. 27 and allows for allocation of O&M to cost causation components. Note that the total functionalized O&M expenses are equal to the O&M expenses shown in Table 9-1 and Table 5-6.

Table 9-5: Functionalization of O&M Expenses

Cost Function	O&M Expenses by Function (\$)
Collection	\$88,779
Treatment	\$219,563
Lift	\$2,602
Billing & Customer Service	\$59,326
Admin. & General	\$77,010
Total	\$447,280

9.5. Allocation of Functionalized Expenses to Cost Components

After functionalizing expenses, the next step is to allocate the functionalized expenses to cost causation components. The functionalization of costs allows us to better allocate the functionalized costs to the **cost causation components**. The cost causation components include:

1. **BOD** costs are the costs associated with treating the organic compounds in wastewater. Higher strength wastewater is more costly to treat.
2. **TSS** costs are costs associated with treating the suspended solids in wastewater. Higher levels of suspended solids are also more costly to treat.
3. **Lift** costs are costs associated with wastewater lift stations, as District customers in specific service areas require elevation pumping to move wastewater through the collection system to the treatment facilities.
4. **Customer** costs are associated with customer service and billing.

5. **Fixed** costs are those costs that do not change with respect to the amount of wastewater flow generated (in hcf) or the strength of the wastewater. An example of fixed costs would be costs associated with the wastewater collection system and general administrative costs.

Table 9-6 and Table 9-7 show the allocation basis for O&M expenses in percentages and dollars, respectively. The top row of Table 9-6 shows the cost causation components and the left-most column shows the cost functions, equal to that shown in Table 9-5. The numbers shown in this section of the report are rounded to the nearest dollar and tenth of a percent; therefore, the calculations shown in the tables of this section may not equal to the precise numbers shown due to within the tables.

Collection system costs are allocated between the Lift and Fixed cost components based on the percentage of the wastewater system assets that are associated with lift stations. Treatment costs are allocated proportionally between the strength components, BOD and TSS.

Table 9-6: Allocation of Functionalized O&M Expenses to Cost Causation Components (%)

Function	FYE 2022	BOD	TSS	Lift	Customer	Fixed
Collection	\$88,779			14.2%		85.8%
Treatment	\$219,563	50.0%	50.0%			
Lift	\$2,602			100.0%		
Billing & Customer Service	\$59,326				100.0%	
General	\$77,010					100.0%
Total (\$)	\$447,280	\$109,782	\$109,782	\$15,173	\$59,326	\$153,217
Total (%)		25%	25%	3%	13%	34%

Table 9-7: Allocation of Functionalized O&M Expenses to Cost Causation Components (Values)

Function	FYE 2022	BOD	TSS	Lift	Customer	Fixed
Collection	\$88,779	\$0	\$0	\$12,572	\$0	\$76,208
Treatment	\$219,563	\$109,782	\$109,782	\$0	\$0	\$0
Lift	\$2,602	\$0	\$0	\$2,602	\$0	\$0
Billing & Customer Service	\$59,326	\$0	\$0	\$0	\$59,326	\$0
General	\$77,010	\$0	\$0	\$0	\$0	\$77,010
Total (\$)	\$447,280	\$109,782	\$109,782	\$15,173	\$59,326	\$153,217
Total (%)		25%	25%	3%	13%	34%

9.6. Asset Functionalization

Table 9-8 presents the functionalization of the District's wastewater system asset base. Each asset category from the master asset schedule is assigned to one of the cost functions. The column furthest right in Table 9-8 shows the total asset valuation by category. Assets are shown valued at replacement cost less depreciation (RCLD).

Table 9-8: Functionalization of System Assets

Asset Category	Cost Function	Assets by Function (\$)
Collection	Lift & Fixed	\$2,741,638
Treatment	BOD & TSS	\$1,440,585
Billing & Customer Service	Customer	\$474,102
General	Fixed	\$2,947
Total		\$4,659,271

9.7. Allocation of Functionalized Assets to Cost Components

Like the O&M cost allocation, the District's functionalized capitalized assets are allocated to the same cost components, which are representative of future project costs. Capital costs are allocated by the asset base of the wastewater system in recognition that assets need to be refurbished and replaced over time. Correspondingly, capital expenses over time should correlate to the asset base and mix of infrastructure. This ensures that the allocations to the cost causation components, and ultimately the rates, remain relatively stable over time. Table 9-9 and Table 9-10 show the functionalized assets allocated to the cost components in both dollar and percentage terms. The numbers shown in this section of the report are rounded to the nearest dollar and tenth of a percent; therefore, the calculations shown in the tables of this section may not equal to the precise numbers shown.

Table 9-9: Allocation of Functionalized Asset Valuation to Cost Causation Components (%)

Function	FYE 2022	BOD	TSS	Lift	Customer	Fixed
Collection	\$2,741,638			14.2%		85.8%
Treatment	\$1,440,585	50.0%	50.0%			
Billing & Customer Service	\$474,102				100.0%	
General	\$2,947					100.0%
Total (\$)	\$4,659,271	\$720,292	\$720,292	\$388,231	\$474,102	\$2,356,353
Total (%)		15%	15%	8%	10%	51%

Table 9-10: Allocation of Functionalized Asset Valuation to Cost Causation Components (Values)

Function	FYE 2022	BOD	TSS	Lift	Customer	Fixed
Collection	\$2,741,638	\$0	\$0	\$388,231	\$0	\$2,353,407
Treatment	\$1,440,585	\$720,292	\$720,292	\$0	\$0	\$0
Billing & Customer Service	\$474,102	\$0	\$0	\$0	\$474,102	\$0
General	\$2,947	\$0	\$0	\$0	\$0	\$2,947
Total (\$)	\$4,659,271	\$720,292	\$720,292	\$388,231	\$474,102	\$2,356,353
Total (%)		15%	15%	8%	10%	51%

9.8. Unit Cost Components

Table 9-11 shows the wastewater service units by cost component, which are from the plant mass balance analysis (Table 9-4). SA2 EDU Holders (Line 2) are not yet connected to the wastewater system, therefore, no units of service are shown for this customer class for BOD, TSS, and Lift. SA2 EDU Users (Line 3) and SA5 customers (Lines 4 and 5) contribute wastewater flows to the system that must be pumped up to a higher elevation (lifted) to the wastewater treatment plant; therefore, only these customer classes have units of service for the Lift cost component. Annual EDUs are calculated in the column on the far right by multiplying the number of EDUs for each service area by twelve months.

Table 9-11: Wastewater Service Units by Cost Components

	Service Area	BOD (lbs/year)	TSS (lbs/year)	Lift (hcf)	EDUs	Annual EDUs
1	SA1	23,252	18,712		261	3,132
2	SA2 EDU Holder Only				550	6,596
3	SA2 EDU User (Holder and User)	31,378	25,251	14,870		
4	SA5	13,917	11,199	6,595	156	1,874
5	Borrego Springs Resort (SA5)	9,355	7,528	4,433	105	1,260
6	Total	77,901	62,690	25,899	1,072	12,862

Table 9-12 shows the revenue requirement by cost component. The operating expenses shown on Line 1 are from the allocations in Table 9-6. The capital expense allocation shown on Line 2 is calculated by multiplying the capital

revenue requirement from Table 9-1 and the percentage allocations at the bottom of Table 9-9. The total cost of service for each cost component (Line 3) is divided by the units of service (Line 5) derived from Table 9-11, resulting in the unit cost per cost component (Line 7).

Table 9-12: Revenue Requirement by Cost Component

	Cost of Service	BOD	TSS	Lift	Customer	Fixed	Total
1	Operating Expenses	\$109,782	\$109,782	\$15,173	\$59,326	\$153,217	\$447,280
2	Capital Expenses	\$21,069	\$21,069	\$11,356	\$13,868	\$68,926	\$136,289
3	Total Cost of Service	\$130,851	\$130,851	\$26,530	\$73,194	\$222,144	\$583,569
4							
5	Units of Service	77,901	62,690	25,899	12,862	12,862	
6	Unit of Measure	BOD (lbs/year)	TSS (lbs/year)	Lift Flow (hcf)	Annual EDUs	Annual EDUs	
7	Unit Cost	\$1.68	\$2.09	\$1.02	\$5.69	\$17.27	

9.9. Distribution of Cost Components to Customer Classes

The final step in a cost-of-service analysis is to distribute the cost components to the customer classes using the unit costs derived in Table 9-12. This is the end goal of a cost-of-service analysis and yields the cost to serve each customer class. Table 9-13 shows the derivation of the cost to serve each customer class.

To derive the cost to serve each class, the unit costs from Table 9-12 are multiplied by the respective units of service for each class (Table 9-11). For example, the BOD costs for SA1 are calculated by multiplying the BOD unit cost of \$1.68 (rounded to the nearest penny) by the annual BOD strength (23,252 lbs/year) to arrive at a total of \$39,057. Similar calculations for each of the remaining user classes and cost components yield the total cost to serve each user class shown in the furthest right column of Table 9-13. Note that SA2 EDU Holders are allocated fixed wastewater collection system and customer billing costs, while SA2 EDU Users are allocated the costs to transport and treat wastewater at the treatment plant. The total cost of service is equal to the revenue requirement in Table 9-1 as intended. With the cost to serve each user class calculated we can proceed to derive rates to collect the cost to serve each customer class.

Table 9-13: Derivation of Cost to Serve Each Class

Service Area	BOD	TSS	Lift	Customer	Fixed	Total
SA1	\$39,057	\$39,057	\$0	\$17,823	\$54,092	\$150,029
SA2 EDU Holder	\$0	\$0	\$0	\$37,534	\$113,915	\$151,448
SA2 EDU User	\$52,705	\$52,705	\$15,232	\$0	\$0	\$120,642
SA5	\$23,376	\$23,376	\$6,756	\$10,667	\$32,375	\$96,550
Borrego Springs Resort (SA5)	\$15,713	\$15,713	\$4,541	\$7,170	\$21,762	\$64,900
Total	\$130,851	\$130,851	\$26,530	\$73,194	\$222,144	\$583,569

10. Wastewater Rate Design and Derivation

10.1. Existing Rate Structure and Rates

The District provides wastewater service to three separate Service Areas (SAs). These areas are: SA1, SA2, and SA5. All sewer users pay a monthly fixed charge per EDU that varies depending on the service area.

The District assesses two separate charges on sewer customers in SA2. SA2 customers consist of SA2 EDU Holders and SA2 EDU Users. SA2 EDU Holders are customers that have not yet connected to the sewer system. SA2 EDU Users, those connected to and using the sewer system, pay the sum of both the Holder and User charge. Borrego Springs Resort (BSR) in SA5 also pays a variable volumetric charge per unit of water used in addition to a monthly fixed charge. The existing rate structure for wastewater customers is shown in Table 5-1.

Table 10-1: Current Wastewater Charges (\$/Month/EDU)

Customer Class	Current Charge
SA1	\$45.37
SA2 EDU Holder	\$28.97
SA2 EDU User	\$23.79
SA5	\$52.76
BSR Fixed Charge	\$28.97
BSR Variable Charge (\$/hcf)	\$2.13

10.2. Proposed Rate Structure Changes

Raftelis identified recommended changes over the course of the Study and worked with District staff and with the District Board of Directors to refine proposed modifications to the rate structures.

Raftelis recommends revisions to the existing rate structure for BSR. It is recommended that the District recovers the cost to serve this customer class through a fixed monthly charge per EDU and eliminates the volumetric charge per hcf of water use.

10.3. Rate Calculation & Proposed Rates

Table 10-2 shows the rate calculation for the District's proposed wastewater rates for the FYE 2022 test year. The rate for each component was calculated by dividing the cost to serve each customer class (derived in Table 9-13) by the number of EDUs for each service area (from Table 9-4) divided by 12 billing periods. For example:

$$\text{Monthly SA1 BOD charge} = \text{SA1 BOD cost of service} / \text{SA1 EDUs} / 12 \text{ billing periods}$$

To determine the total proposed charge, the five rate components are added together. The resulting summation constitutes the final rates. The final rates are rounded up to the nearest whole penny. Note that the rate for BSR is the same as for other EDUs in SA5.

Table 10-2: Calculation of FYE 2022 Wastewater Charges

Customer Class	BOD	TSS	Lift	Customer	Fixed	Proposed Charge (\$ / EDU / Month)
SA1	\$12.47	\$12.47	\$0.00	\$5.69	\$17.27	\$47.91
SA2 EDU Holder	\$0.00	\$0.00	\$3.60	\$5.69	\$17.27	\$22.97
SA2 EDU User	\$12.47	\$12.47	\$0.00	\$0.00	\$0.00	\$28.55
SA5	\$12.47	\$12.47	\$3.60	\$5.69	\$17.27	\$51.51
BSR	\$12.47	\$12.47	\$3.60	\$5.69	\$17.27	\$51.51

Table 10-3 shows proposed rates for the next five years based on the financial plan developed in Section 5.3. The rates for the fixed monthly service charges are increased uniformly by a percentage increase in subsequent years – that is, relative to existing rates – by the selected financial plan of 4 percent per year. There is no revenue increase in the first year (October 2021). Changes to rates simply reflect the updated cost of service allocations and the modification of the BSR rate structure. All rates are rounded up to the nearest penny.

Table 10-3: Proposed Monthly Wastewater Charges (FYE 2022-2026)

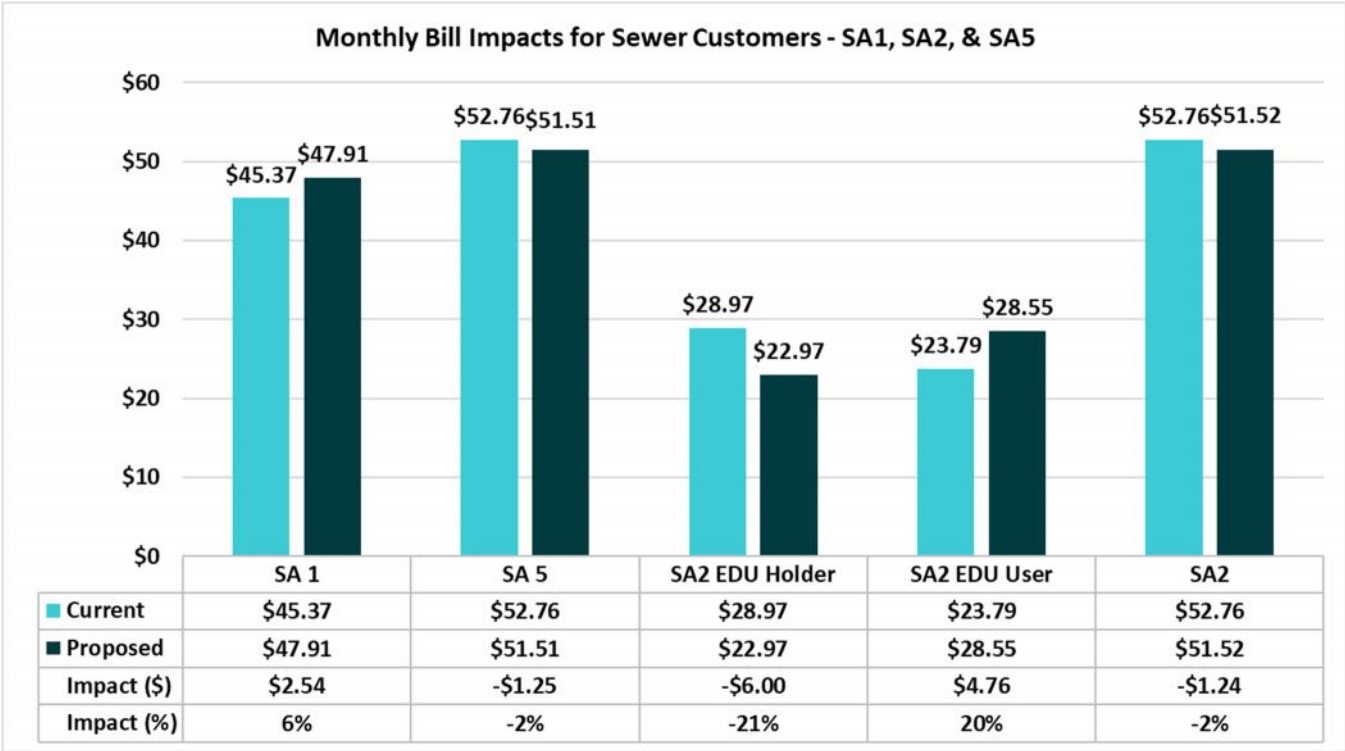
Customer Class	Proposed October 2021	Proposed July 2022	Proposed July 2023	Proposed July 2024	Proposed July 2025
SA1	\$47.91	\$49.83	\$51.83	\$53.91	\$56.07
SA2 EDU Holder	\$22.97	\$23.89	\$24.85	\$25.85	\$26.89
SA2 EDU User	\$28.55	\$29.70	\$30.89	\$32.13	\$33.42
SA5	\$51.51	\$53.58	\$55.73	\$57.96	\$60.28
BSR (SA5)	\$51.51	\$53.58	\$55.73	\$57.96	\$60.28

10.4. Customer Impacts

The rate model calculates wastewater customer impacts for each service area. Customer impacts from the proposed new rates are presented below.

Figure 10-1 shows bills for customers in each service area. Bills are calculated at current rates and compared to proposed rates. The figure shows the percentage and dollar change between current and proposed rates.

Figure 10-1: Bill Impacts – SA1, SA2, & SA5



APPENDIX A:

Capital Improvement Plans

Water Capital Projects	% Water	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Cash Reserve Funded Projects											
Bending Elbow Pipeline Project	100%	\$0	\$380,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
El Tejon Road Pipeline Project	100%	\$0	\$0	\$0	\$0	\$0	\$140,000	\$0	\$0	\$0	\$0
Flying H Road Pipeline Project	100%	\$0	\$0	\$137,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Walking H/Double O Road Pipeline Project	100%	\$0	\$200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ID-5 Well VFD	100%	\$0	\$0	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0
Replace and upgrade Booster Pump Station 5	100%	\$0	\$0	\$0	\$0	\$100,000	\$0	\$0	\$0	\$0	\$0
SCADA replacement	100%	\$100,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Facilities Maint - Office	85%	\$12,750	\$17,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Treatment Facility (phase 2)	100%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$250,000	\$0
Program Engineering/Construction Management Consulting	100%	\$25,000	\$40,000	\$41,200	\$42,436	\$43,709	\$45,020	\$46,371	\$47,762	\$49,195	\$50,671
Emergency System repairs	100%	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000
Replace Twin Tanks (90% Grant, 10% Cash)	100%	\$0	\$70,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Replace Wilcox Diesel Motor (90% Grant, 10% Cash)	100%	\$0	\$8,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Replace Indianhead Reservoir (90% Grant, 10% Cash)	100%	\$0	\$46,667	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Rams Hill #2, 1980 galv. 0.44 MG recoating (90% Grant, 10% Cash)	100%	\$0	\$61,560	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Cash Reserve Funded Projects		\$197,750	\$883,560	\$238,700	\$252,436	\$203,709	\$245,020	\$106,371	\$107,762	\$359,195	\$110,671
Short Lived Assets											
WELLS											
ID1-8, 125 Hp - Well out of service life	100%	\$0	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ID-1 Well 12 pump and casing/cleaning	100%	\$0	\$0	\$0	\$0	\$0	\$165,000	\$0	\$0	\$0	\$0
ID-1 16	100%	\$0	\$165,000	\$0	\$0	\$0	\$0	\$0	\$100,000	\$0	\$0
ID4-11, 200 Hp	100%	\$165,000	\$0	\$0	\$0	\$0	\$0	\$100,000	\$0	\$0	\$0
ID4-18 - make a monitoring well	100%	\$0	\$10,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Well Rehabilitation	100%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,000	\$0
TANKS											
Reservoir cleaning/video inspection	100%	\$35,000	\$0	\$0	\$37,000	\$0	\$0	\$38,000	\$0	\$0	\$0
EQUIPMENT											
Emergency Generator Mobile Trailer	100%	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mini Excavator	85%	\$0	\$85,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Valve Exercise Machine	100%	\$80,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Track skid steer	85%	\$0	\$106,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pickup	85%	\$34,000	\$0	\$0	\$0	\$38,250	\$0	\$0	\$63,750	\$0	\$0
Subtotal Short Lived Assets		\$339,000	\$426,250	\$0	\$37,000	\$38,250	\$165,000	\$138,000	\$163,750	\$100,000	\$0
Total Water Capital Projects		\$2,216,750	\$2,988,850	\$238,700	\$289,436	\$1,103,959	\$2,121,520	\$2,469,371	\$721,512	\$1,709,195	\$1,010,671

Detailed Wastewater Capital Improvement Plan

Wastewater Capital Projects	% Wastewater	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
Existing Bond Projects											
18-inch Gravity Sewer Main along Borrego Springs Road	100%	\$410,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Existing Bond Projects		\$410,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Future Bond Projects											
Borrego Springs Road Pipeline Replacement	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sun Gold Pipeline Replacement	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Deep Well Pipeline Replacement	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
West and East Star Road Pipeline Replacement	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Country Club Tank Recoating, 1999 1.0 MG	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Treatment Facility (phase 1)	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Water Treatment Facility (phase 2)	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
New production well	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Solar *Updated to convert approximately 85% of BWD Wells to Solar	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Well 5 Transmission Main Project	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Club Circle Water and Sewer Pipeline Replacement Project	56%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,286,000	\$0
Projected Water Supply Costs	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Future Bond Projects		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,286,000	\$0
Grant Funded Projects											
Plant-Grit removal at the headworks-(Prop 1 grant)	100%	\$214,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Clarifier Upgrade/Rehabilitation -(Prop 1 Grant)	100%	\$240,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Grant Funded Projects		\$454,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Cash Reserve Funded Projects											
Manhole Replacements/Refurbishment	100%	\$43,000	\$45,150	\$47,408	\$49,778	\$52,267	\$54,880	\$57,624	\$60,505	\$63,531	\$66,707
Install Oxygen Injection System	100%	\$20,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Engineering/Construction Management Consulting	100%	\$18,000	\$18,540	\$19,096	\$19,669	\$20,259	\$20,867	\$21,493	\$22,138	\$22,802	\$23,486
Facilities Maint - Office	15%	\$2,250	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Cash Reserve Funded Projects		\$83,250	\$66,690	\$66,504	\$69,447	\$72,526	\$75,747	\$79,117	\$82,643	\$86,332	\$90,193
Short Lived Assets											
WASTEWATER TREATMENT FACILITY											
Clarifier Maintenance	100%	\$0	\$0	\$25,000	\$0	\$0	\$25,000	\$0	\$0	\$25,000	\$0
RAS pumps	100%	\$0	\$60,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lift Station Pumps	100%	\$0	\$10,000	\$0	\$0	\$10,000	\$0	\$0	\$10,000	\$0	\$0
EQUIPMENT											
Emergency Generator Mobile Trailer	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Mini Excavator	15%	\$0	\$15,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Valve Exercise Machine	0%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Track skid steer	15%	\$0	\$18,750	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pickup	15%	\$6,000	\$0	\$0	\$0	\$6,750	\$0	\$0	\$11,250	\$0	\$0
Subtotal Short Lived Assets		\$6,000	\$103,750	\$25,000	\$0	\$16,750	\$25,000	\$0	\$21,250	\$25,000	\$0
Total Wastewater Capital Projects		\$953,250	\$170,440	\$91,504	\$69,447	\$89,276	\$100,747	\$79,117	\$103,893	\$1,397,332	\$90,193

APPENDIX B:
District Combined Cashflow

Detailed District Existing Financial Plan – No Revenue Adjustments

Water & Wastewater Combined Cashflow										
Line	Description	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
1	Revenues									
2	Water Volumetric Charge Revenue (Variable)	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518	\$2,422,518
3	Water Monthly Service Charge Revenues (Fixed)	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391	\$1,296,391
4	Water Fees	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744
5	Water Taxes	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000
6	Water Other	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495
7	Water Miscellaneous	\$113,333	\$113,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Water/Sewer/Flood Assessment (641502/3) - Water	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500
9	Water Interest	\$38,890	\$37,615	\$41,753	\$44,594	\$47,635	\$50,481	\$52,932	\$44,097	\$33,959
10	Wastewater Revenue from Rates	\$583,569	\$577,509	\$569,640	\$561,889	\$554,254	\$546,733	\$539,326	\$532,029	\$524,842
11	Wastewater Other Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Water/Sewer/Flood Assessment (641502/3) - Wastewater	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
13	Wastewater Interest	\$6,184	\$6,133	\$5,887	\$5,908	\$5,777	\$5,822	\$5,803	\$5,580	\$5,077
14	Total Revenues	\$4,740,124	\$4,732,738	\$4,615,428	\$4,610,538	\$4,605,813	\$4,601,184	\$4,596,208	\$4,579,854	\$4,562,026
15										
16	O&M Expenses									
17	Water O&M Expenses	\$2,022,178	\$2,101,353	\$2,183,938	\$2,270,090	\$2,359,974	\$2,453,761	\$2,551,633	\$2,653,778	\$2,760,394
18	Water Supply Funding	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
19	Water Utilities	\$344,400	\$361,620	\$379,701	\$398,686	\$418,620	\$439,551	\$461,529	\$484,605	\$508,836
20	Groundwater Management	\$262,650	\$167,530	\$172,555	\$177,732	\$183,064	\$188,556	\$194,213	\$200,039	\$206,040
21	SGMA Pump Charges	\$130,082	\$126,976	\$123,943	\$120,983	\$118,094	\$115,273	\$140,574	\$109,833	\$107,210
22	Wastewater O&M Expenses	\$444,130	\$460,374	\$477,282	\$494,882	\$513,206	\$532,285	\$552,154	\$572,848	\$594,403
23	Wastewater Utilities	\$3,150	\$3,308	\$3,473	\$3,647	\$3,829	\$4,020	\$4,221	\$4,432	\$4,654
24	Total O&M Expenses	\$3,506,591	\$3,521,160	\$3,640,892	\$3,766,020	\$3,896,787	\$4,033,447	\$4,204,324	\$4,325,535	\$4,481,536
25										
26	Debt Service									
27	Water Existing Debt Service	\$718,429	\$714,824	\$720,703	\$716,976	\$577,026	\$572,362	\$571,246	\$575,440	\$330,078
28	Water Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29	Wastewater Existing Debt Service	\$24,847	\$24,841	\$24,815	\$24,840	\$24,843	\$24,825	\$24,785	\$24,792	\$24,844
30	Wastewater Proposed Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31	Total Debt Service	\$743,276	\$739,665	\$745,518	\$741,816	\$601,869	\$597,187	\$596,031	\$600,232	\$354,922

Detailed District Proposed Financial Plan

Water & Wastewater Combined Cashflow										
Line	Description	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030
1	Revenues									
2	Water Volumetric Charge Revenue (Variable)	\$2,513,363	\$2,670,826	\$2,804,368	\$2,944,586	\$3,091,815	\$3,246,406	\$3,408,727	\$3,579,163	\$3,758,121
3	Water Monthly Service Charge Revenues (Fixed)	\$1,345,005	\$1,429,271	\$1,500,734	\$1,575,771	\$1,654,560	\$1,737,288	\$1,824,152	\$1,915,360	\$2,011,128
4	Water Fees	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744	\$41,744
5	Water Taxes	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000	\$146,000
6	Water Other	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495	\$2,495
7	Water Miscellaneous	\$113,333	\$113,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	Water/Sewer/Flood Assessment (641502/3) - Water	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500	\$81,500
9	Water Interest	\$41,139	\$43,449	\$53,151	\$59,501	\$61,421	\$74,943	\$80,306	\$75,553	\$81,869
10	Wastewater Revenue from Rates	\$583,569	\$600,610	\$616,123	\$632,049	\$648,399	\$658,789	\$669,359	\$680,112	\$691,052
11	Wastewater Other Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12	Water/Sewer/Flood Assessment (641502/3) - Wastewater	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
13	Wastewater Interest	\$6,184	\$7,661	\$8,920	\$9,019	\$9,119	\$10,164	\$11,125	\$10,784	\$12,596
14	Total Revenues	\$4,881,832	\$5,144,388	\$5,262,534	\$5,500,164	\$5,744,552	\$6,006,827	\$6,272,907	\$6,540,211	\$6,834,005
15		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
16	O&M Expenses									
17	Water O&M Expenses	\$2,022,178	\$2,101,353	\$2,183,938	\$2,270,090	\$2,359,974	\$2,453,761	\$2,551,633	\$2,653,778	\$2,760,394
18	Water Supply Funding	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
19	Water Utilities	\$344,400	\$361,620	\$379,701	\$398,686	\$418,620	\$439,551	\$461,529	\$484,605	\$508,836
20	Groundwater Management	\$262,650	\$167,530	\$172,555	\$177,732	\$183,064	\$188,556	\$194,213	\$200,039	\$206,040
21	SGMA Pump Charges	\$130,082	\$126,976	\$123,943	\$120,983	\$118,094	\$115,273	\$140,574	\$109,833	\$107,210
22	Wastewater O&M Expenses	\$444,130	\$460,374	\$477,282	\$494,882	\$513,206	\$532,285	\$552,154	\$572,848	\$594,403
23	Wastewater Utilities	\$3,150	\$3,308	\$3,473	\$3,647	\$3,829	\$4,020	\$4,221	\$4,432	\$4,654
24	Total O&M Expenses	\$3,506,591	\$3,521,160	\$3,640,892	\$3,766,020	\$3,896,787	\$4,033,447	\$4,204,324	\$4,325,535	\$4,481,536
25		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
26	Debt Service									
27	Water Existing Debt Service	\$718,429	\$714,824	\$720,703	\$716,976	\$577,026	\$572,362	\$571,246	\$575,440	\$330,078
28	Water Proposed Debt Service	\$0	\$162,120	\$162,120	\$162,120	\$162,120	\$598,097	\$598,097	\$598,097	\$865,501
29	Wastewater Existing Debt Service	\$24,847	\$24,841	\$24,815	\$24,840	\$24,843	\$24,825	\$24,785	\$24,792	\$24,844
30	Wastewater Proposed Debt Service	\$0	\$29,231	\$29,231	\$29,231	\$29,231	\$46,149	\$46,149	\$46,149	\$192,395
31	Total Debt Service	\$743,276	\$931,016	\$936,869	\$933,167	\$793,220	\$1,241,433	\$1,240,278	\$1,244,478	\$1,412,819

APPENDIX C:

Functionalized O&M Expenses

Detailed Water Functionalized O&M Expenses

Expense Description	Amount	Water Supply	Pumping	Treatment	Transmission & Distribution	Billing & Customer Service	Meter Service	Ground Water Management	Conservation	Admin. & General	Total
Repairs & Maintenance											
Trash Removal	\$5,381									100%	100%
Fuel & Oil	\$30,494		5%	15%	20%	30%	20%	10%			100%
Vehicle Expense	\$15,683		5%	15%	20%	30%	20%	10%			100%
Telemetry Services	\$8,713		75%		25%						100%
R&M Buildings and Equipment	\$256,250		10%	10%	40%		25%	15%			100%
Subtotal Repairs & Maintenance	\$316,520	\$0	\$34,468	\$32,551	\$113,913	\$13,853	\$73,298	\$43,055	\$0	\$5,381	\$316,520
Professional Services											
Accounting	\$2,614									100%	100%
Administrative Services	\$2,614									100%	100%
Audit Fees	\$14,811									100%	100%
Computer Billing	\$27,009					100%					100%
Consulting-Technical/Fianancial	\$69,700									100%	100%
Engineering	\$21,525			10%	80%			10%			100%
Legal Services	\$39,206									100%	100%
Air Quality Study	\$56,427									100%	100%
Grant Acquisitions	\$26,138									100%	100%
Testing/Lab	\$12,300			75%				25%			100%
Permit Fees	\$31,801									100%	100%
Subtotal Professional Services	\$304,144	\$0	\$0	\$11,378	\$17,220	\$27,009	\$0	\$5,228	\$0	\$243,310	\$304,144
Insurance											
Program Insurance	\$52,275									100%	100%
Workers Comp	\$15,683									100%	100%
Subtotal Insurance	\$67,958	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$67,958	\$67,958
Personnel Expense											
Employee Medical Benefits	\$189,835		5%	10%	25%	30%	25%	5%			100%
Employee Retirement Benefits	\$187,425		5%	10%	25%	30%	25%	5%			100%
Workers Compensation	\$0		5%	10%	25%	30%	25%	5%			100%
Accrued Sick/Vacation Expense	\$0		5%	10%	25%	30%	25%	5%			100%
Board Meeting Expense	\$20,039									100%	100%
Conference/Training	\$15,683									100%	100%
Contract labor/Consulting	\$8,925									100%	100%
Salaries & Wages	\$758,625		5%	10%	25%	30%	25%	5%			100%
Taxes on Payroll	\$20,649		5%	10%	25%	30%	25%	5%			100%
Salaries & Wages Contra Acct	\$0				100%						100%
Subtotal Personnel Expense	\$1,201,180	\$0	\$57,827	\$115,653	\$289,133	\$346,960	\$289,133	\$57,827	\$0	\$44,646	\$1,201,180

Expense Description	Amount	Water Supply	Pumping	Treatment	Transmission & Distribution	Billing & Customer Service	Meter Service	Ground Water Management	Conservation	Admin. & General	Total
Office Expense	\$132,377									100%	100%
Subtotal Office Expense	\$132,377	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$132,377	\$132,377
Utilities											
Pumping/Electricity	\$338,100		100%								100%
Office Utilities	\$6,300									100%	100%
Subtotal Utilities	\$344,400	\$0	\$338,100	\$0	\$0	\$0	\$0	\$0	\$0	\$6,300	\$344,400
Groundwater Management											
Groundwater Study	\$0							100%			100%
Water Master Expenses	\$262,650							100%			100%
Subtotal Groundwater Management	\$262,650	\$0	\$0	\$0	\$0	\$0	\$0	\$262,650	\$0	\$0	\$262,650
SGMA Pump Charges	\$130,082							100%			100%
Subtotal SGMA Pump Charges	\$130,082	\$0	\$0	\$0	\$0	\$0	\$0	\$130,082	\$0	\$0	\$130,082
Water Supply Funding	\$300,000	100%									
Subtotal Water Supply Funding	\$300,000	\$300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$300,000
Total Expenses	\$3,059,311	\$300,000	\$430,395	\$159,582	\$420,267	\$387,822	\$362,431	\$498,842	\$0	\$499,972	\$3,059,311

Detailed Wastewater Functionalized O&M Expenses

Expense Description	Amount	Collection	Treatment	Lift	Billing & Customer Service	Admin. & General	Total
Repairs & Maintenance							
Trash Removal	\$1,316					100%	100%
Fuel & Oil	\$5,381	40%			40%	20%	100%
Telemetry Services	\$1,538	50%	50%				100%
R&M WWTP	\$123,000	25%	75%				100%
Vehicle Expense	\$2,768	50%			50%		100%
Subtotal Repairs & Maintenance	\$134,002	\$35,055	\$93,019	\$0	\$3,536	\$2,392	\$134,002
Professional Services							
Accounting	\$461					100%	100%
Administrative Services	\$461					100%	100%
Audit Fees	\$2,614					100%	100%
Computer Billing	\$4,766				100%		100%
Consulting-Technical/Fianancial	\$12,300					100%	100%
Engineering	\$14,350	15%	85%				100%
Legal Services	\$6,919					100%	100%
Grant Acquisitions	\$4,613					100%	100%
Testing/Lab	\$12,300		100%				100%
Permit Fees	\$5,612					100%	100%
Subtotal Professional Services	\$64,396	\$2,153	\$24,498	\$0	\$4,766	\$32,979	\$64,396
Insurance							
Program Insurance	\$9,225					100%	100%
Workers Comp	\$2,768					100%	100%
Subtotal Insurance	\$11,993	\$0	\$0	\$0	\$0	\$11,993	\$11,993
Personnel Expense							
Board Meeting Expense	\$3,623					100%	100%
Contract labor/Consulting	\$1,575					100%	100%
Employee Medical Benefits	\$33,500	25%	50%		25%		100%
Employee Retirement Benefits	\$33,075	25%	50%		25%		100%
Workers Compensation	\$0	25%	50%		25%		100%
Taxes on Payroll	\$3,644	25%	50%		25%		100%
Conference/Training	\$2,768					100%	100%
Salaries & Wages	\$133,875	25%	50%		25%		100%
Subtotal Personnel Expense	\$212,059	\$51,024	\$102,047	\$0	\$51,024	\$7,965	\$212,059
Office Expense	\$21,680					100%	100%
Subtotal Office Expense	\$21,680	\$0	\$0	\$0	\$0	\$21,680	\$21,680
Utilities							
Pumping/Electricity	\$3,150	17%		82.6%			100%
Subtotal Utilities	\$3,150	\$548	\$0	\$2,602	\$0	\$0	\$3,150
Total Expenses	\$447,280	\$88,779	\$219,563	\$2,602	\$59,326	\$77,010	\$447,280