EL TORO WATER DISTRICT

2023-24 Water, Recycled Water, and Wastewater Rate Study

Report / June 8, 2023

EL TORO WATER DISTRICT
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June 8, 2023

Dennis P. Cafferty, P.E.
General Manager
El Toro Water District
24251 Los Alisos Blvd.
Lake Forest, CA 92630

Subject: 2023-24 Water, Recycled Water, and Wastewater Rate Study Report

Dear Mr. Cafferty:

El Toro Water District (ETWD or District) engaged Raftelis Consultants, Inc. (Raftelis) to conduct a cost-of-service study to develop its water, wastewater, and recycled water rates that comply with Proposition 218 and other legal requirements. As part of the Study, we reviewed the latest operating budget (including purchased water costs), referenced previously conducted cost of service analyses, and calculated the water, wastewater, and recycled water rates for the District in fiscal year (FY) 2023-24 and for the two following years (FY 2025 and FY 2026). The updated rates, scheduled to take effect on August 1, 2023, reflect projected changes in net revenue requirements for each enterprise and projected water sales for FY 2023-24.

This Water, Recycled Water, and Wastewater Rate Update Study Report summarizes the key findings and recommendations related to developing the respective rates.

It has been a pleasure working with the District. We want to thank you for your assistance during the Study.

Sincerely,

Sudhir Pardiwala
Executive Vice President – Project Manager

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Consultant – Analyst

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1.Executive Summary

1.1. Background of the Study

The District engaged Raftelis Consultants, Inc. (Raftelis) to conduct the Water, Recycled Water (RW), and Wastewater Rate Update Study (Study) to develop rates for all three enterprises that are equitable and in compliance with Proposition 218. Raftelis prepared rate proposals for this upcoming Fiscal Year (FY) 2023-24 and the two following years (FY 2025 and FY 2026). The Water, Recycled Water, and Wastewater Rate Update Study Executive Summary ("Summary") summarizes the key findings and recommendations for developing the respective rates.

The District's current water and wastewater rate structure consists of the following components:

Water

- Monthly Service Charges by meter size to recover a portion of operating costs
- Variable Rates: Tiered Residential Rates and Uniform Commercial Rates, comprised of the following rate components:
  - Water Supply Rate to pay for purchased water supply costs
  - Delivery Rate to recover the remaining operating costs
  - Revenue Offset to provide a rate incentive and affordability for essential water use in Tier 1
  - Conservation and Recycled Water Program costs applied to inefficient and excessive water use to fund the District's conservation and supplemental water supply programs (e.g., Recycled Water expansion)
- Capital Facility Charges by meter size to pay for capital replacement and refurbishment (R&R) of the existing water system

Wastewater (WW)

- Operations and Maintenance ("O&M") Rates (by dwelling units for residential customers and by estimated strength of discharge for non-residential customers by customer class)
- Capital Facility Charges by meter size to pay for capital (R&R) of the existing wastewater system

Recycled Water

- Monthly service charge to cover a portion of the fixed costs of O&M
- Variable rate: Uniform commodity rate
- Capital Facility Charge to pay for R&R and debt service associated with the capital construction

1.2. Proposed Water Rates

1.2.1. MONTHLY SERVICE CHARGES

Table 1-1 shows the proposed monthly service charges for FY 2024, effective August 1, 2023. All rates and charges are rounded up to the nearest cent.

Table 1-1: FY 2024 Proposed Monthly Water Service Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change
5/8"	**$18.07**	$17.46	$0.61	3.5%
3/4"	**$24.72**	$23.62	$1.10	4.7%
1"	**$38.02**	$35.93	$2.09	5.8%
1-1/2"	**$71.27**	$66.70	$4.57	6.9%
2"	**$137.76**	$128.25	$9.51	7.4%

The monthly service charges in FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the service charge increase will be used to calculate the rates.

1.2.2. CAPITAL FACILITY CHARGES

The District proposes an overall 25% annual increase on its current Capital Facility Charges for potable water services for FY 2024 through FY 2026 to carry out treatment plant improvements, replace and refurbish infrastructure and debt service. [1] Table 1-2 shows the proposed monthly capital charges for FY 2024, effective August 1, 2023.

Table 1-2: FY 2024 Proposed Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change
5/8"	**$5.56**	$5.09	$0.47	9.2%
3/4"	**$8.33**	$5.09	$3.24	63.7%
1"	**$13.88**	$8.50	$5.38	63.3%
1-1/2"	**$27.76**	$20.65	$7.11	34.4%
2"	**$55.52**	$51.84	$3.68	7.1%

Table 1-3 shows the proposed monthly capital charges for FY 2025 and FY 2026.

Table 1-3: FY 2025 and FY 2026 Proposed Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2025	Proposed FY 2026
5/8"	$6.95	$8.69
3/4"	$10.42	$13.02
1"	$17.35	$21.69
1-1/2"	$34.70	$43.38
2"	$69.40	$86.75

[1] See Appendix 7 for detailed Capital Projects Budget.

1.2.3. COMMODITY RATES

The proposed water commodity rates for FY 2024, shown in Table 1-4, will be effective August 1, 2023. The proposed rates reflect the projected increases in purchased water supply costs from the Metropolitan Water District of California through the Municipal Water District of Orange County (MWDOC) as well as O&M cost increases for water supplied from the Baker Water Treatment Plant. Table 1-5 shows the proposed commodity rates for FY 2025 and FY 2026. The FY 2025 and FY 2026 rates reflect the pass through of the projected Metropolitan Water District rates as well as inflationary impacts on O&M costs at the Baker Water Treatment Plant.

Table 1-4: FY 2024 Proposed Water Commodity Rates

Water Usage Rates	Proposed FY 2024	Current FY 2023	$ Impact	% Impact
Tier 1 - Essential Use	**$3.00**	$2.82	$0.18	6.4%
Tier 2 - Efficient Use	**$3.37**	$3.18	$0.19	6.0%
Tier 3 - Inefficient Use	**$6.70**	$6.50	$0.20	3.1%
Tier 4 - Excessive Use	**$8.67**	$8.35	$0.32	3.8%
Uniform - Commercial Use	**$3.49**	$3.31	$0.18	5.4%

Table 1-5: FY 2025 and FY 2026 Proposed Water Commodity Rates

Meter Size	Proposed FY 2025	Proposed FY 2026
Tier 1 - Essential Use	$3.18	$3.39
Tier 2 - Efficient Use	$3.55	$3.76
Tier 3 - Inefficient Use	$6.88	$7.09
Tier 4 - Excessive Use	$8.85	$9.06
Uniform - Commercial Use	$3.67	$3.88

1.2.4. PRIVATE FIRE RATES

The private fire rates account for the extra capacity demand to fight an average fire in the District. The proposed private fire rates for FY 2024 are shown in Table 1-6. The proposed rates for FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the private fire rate increase will be used to calculate the rates.

Table 1-6: FY 2024 Proposed Monthly Private Fire Service Rates

Meter Size	Accounts	Proposed FY 2024	Current Rates	$ Change	% Change
4"	27	**$17.26**	$16.15	$1.11	6.9%
6"	90	**$24.79**	$23.45	$1.34	5.7%
8"	53	**$37.78**	$36.04	$1.74	4.8%
10"	4	**$57.31**	$54.97	$2.34	4.3%

1.3. Proposed Wastewater Rates

1.3.1. WASTEWATER SERVICE CHARGES

The District classifies non-residential wastewater customers into four groups based on the estimated strength[2] of the wastewater discharged into the District's system. Residential customers are classified into three groups: Single Family Residential Unrestricted, Multi-Family Restricted, and Multi-Family Unrestricted. Table 1-7 shows the respective customer classes and their assumed strengths.

Table 1-7: Wastewater Customer Classes and Strengths

Customer Classes	BOD (mg/L)	TSS (mg/L)	Total Strengths	Notes
Single Family Residential Unrestricted	282	272	554 mg / L	LACSD data[3]
Multi-Family Restricted	282	272	554 mg / L	LACSD data
Multi-Family Unrestricted	282	272	554 mg / L	LACSD data
Low Strength Commercial	0-150	0-150	≤ 300 mg / L	
Medium Strength Commercial	150-300	150-300	301- 600 mg / L	
High Strength Commercial	> 300	> 300	> 600 mg / L	
Restaurants	282	272	554 mg / L	Same as Single Family Residential[4]

The proposed wastewater rates are shown in Table 1-8 for FY 2024. The wastewater rates in FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the wastewater rate increase will be used to calculate the rates.

Table 1-8: FY 2024 Proposed Monthly Wastewater Service Charges

Wastewater Service Charges	FY 2023	FY 2024	Impact from Current Rates	
	Current	Proposed	$ Increase	% Increase
Residential ($/EDU)				
Residential Unrestricted	$34.67	**$37.98**	$3.31	9.5%
Multi-Family Restricted	$16.47	**$18.05**	$1.58	9.6%
Multi-Family Unrestricted	$25.34	**$27.76**	$2.42	9.6%
Commercial Use ($/ccf)				
Low St. Commercial	$4.10	**$4.45**	$0.35	8.5%
Medium St. Commercial	$5.07	**$5.54**	$0.47	9.3%
High St. Commercial	$9.49	**$10.58**	$1.09	11.5%
Restaurants	$5.15	**$5.65**	$0.50	9.7%

[2] Total strength = Total Suspended Solids (TSS) + Biochemical oxygen demand (BOD) (in mg/L)
[3] LACSD Revenue Program Report Table 3
[4] Restaurant strengths are assumed to be the same as residential given the strict regulations of Fats, Oils, Grease ("FOG") for restaurants within the District service areas

1.3.2. CAPITAL FACILITY CHARGES

Table 1-9 shows the current FY 2023 and proposed Wastewater Capital Facility charges for each customer class, effective August 1, 2023 (FY 2024). The FY 2024 charges show an approximate 25% increase from the FY 2023 Revised COS Rates. Increases of 25% each year for FY 2025 and FY 2026 are required for replacement and refurbishment of infrastructure and debt service.[5] Please refer to Section 6 for details of the analysis.

Table 1-9: FY 2024 Proposed Monthly Wastewater Capital Facility Charges

Wastewater Service Charges	FY 2023	FY 2024	Impact from Current Rates	
	Current	Proposed	$ Increase	% Increase
Residential ($/EDU)				
Residential Unrestricted	$7.09	**$8.87**	$1.78	25.1%
Multi-Family Restricted	$3.37	**$4.21**	$0.84	25.0%
Multi-Family Unrestricted	$5.18	**$6.48**	$1.30	25.1%
Commercial Use ($/ccf)				
Low St. Commercial	$0.84	**$1.04**	$0.20	23.8%
Medium St. Commercial	$1.04	**$1.29**	$0.25	24.0%
High St. Commercial	$1.93	**$2.47**	$0.54	28.0%
Restaurants	$1.05	**$1.32**	$0.27	25.7%

Table 1-10: FY 2025 and FY 2026 Proposed Monthly Wastewater Capital Facility Charges

Wastewater Capital Facilities Charges	Proposed FY 2025	Proposed FY 2026
Residential ($/EDU)		
Residential Unrestricted	$11.09	$13.86
Multi-Family Restricted	$5.27	$6.59
Multi-Family Unrestricted	$8.11	$10.13
Commercial Use ($/ccf)		
Low St. Commercial	$1.30	$1.63
Medium St. Commercial	$1.62	$2.02
High St. Commercial	$3.09	$3.86
Restaurants	$1.65	$2.07

1.4. Proposed Recycled Water Rates

The current variable rate for recycled water is $2.86/ccf. The proposed recycled water ("RW") rate for FY 2024 is **$3.03/ccf**. Table 1-11 shows the proposed RW variable rate for FY 2025 and FY 2026.

Table 1-11: FY 2025 and FY 2026 Proposed RW Variable Charge

Recycled Water Variable Charges	Proposed FY 2025	Proposed FY 2026
	$3.20	$3.38

[5] See Appendix 7 for detailed Capital Projects Budget.

All RW customers connected to the recycled water distribution system will be assessed Monthly Service Charges (Table 1-12) and Capital Facility Charges (Table 1-13) which are the same as potable meters, to recover the customer service, meter service, a portion of capacity and other RW related fixed costs and pay for the capital debt service and replacement and refurbishment of the expanded RW system.

The monthly service charges in FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the service charge increase will be used to calculate the rates. Table 1-14 shows the proposed Capital Facility Charges for recycled water for FY 2025 and FY 2026.

Table 1-12: FY 2024 Proposed Recycled Water Monthly Service Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change[6]
5/8"	**$18.07**	$17.46	$0.61	3.5%
3/4"	**$24.72**	$23.62	$1.10	4.7%
1"	**$38.02**	$35.93	$2.09	5.8%
1-1/2"	**$71.27**	$66.70	$4.57	6.9%
2"	**$137.76**	$128.25	$9.51	7.4%
10"	**$1,360.00**	N/A		

Table 1-13: FY 2024 Proposed Recycled Water Capital Facility Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change[7]
5/8"	**$5.56**	$5.09	$0.47	9.2%
3/4"	**$8.33**	$5.09	$3.24	63.7%
1"	**$13.88**	$8.50	$5.38	63.3%
1-1/2"	**$27.76**	$20.65	$7.11	34.4%
2"	**$55.52**	$51.84	$3.68	7.1%
10"	**$640.00**	N/A		

Table 1-14: FY 2025 and FY 2026 Proposed Recycled Water Capital Facility Charges

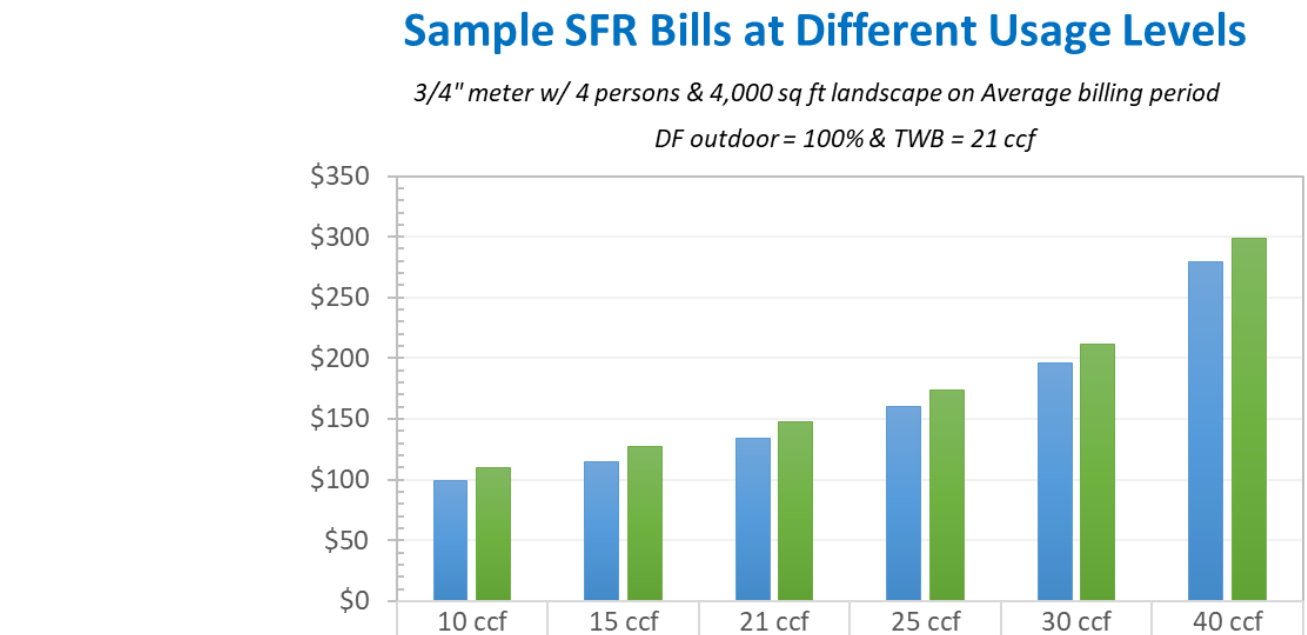
Meter Size	Proposed FY 2025	Proposed FY 2026
5/8"	$6.95	$8.69
3/4"	$10.42	$13.02
1"	$17.35	$21.69
1-1/2"	$34.70	$43.38
2"	$69.40	$86.75
10"	$800.00	$1,000.00

[6] There is no prior year comparison for the 10" recycled meter size, as this is a new meter size addition for FY 2024.
[7] There is no prior year comparison for the 10" recycled meter size, as this is a new meter size addition for FY 2024.

1.5. Customer Impact Analysis

Figure 1-1 shows a breakdown of water and wastewater bill impacts at various water usage levels for a single-family residential user with four occupants and a 4,000 sq. ft. landscape area serviced by a ¾-in meter at current water and wastewater rates and proposed FY 2024 rates. The combined water and wastewater bill increase would range from $11.24 to $18.57 per month, depending on the monthly billed water usage. The bill impacts resulted from the combination of changes to water and wastewater service and capital charges, cost of service rates, and increased revenue requirements for FY 2024. Recycled water rate impacts are not shown, as residential users do not purchase recycled water.

Figure 1-1: SFR Total Monthly Bills at Different Usage Levels at Current and Proposed Rates



	10 ccf	15 ccf	21 ccf	25 ccf	30 ccf	40 ccf
Current Water + Sewer Bills	$99.03	$114.93	$134.01	$160.01	$196.21	$279.71
Proposed Water + Sewer Bills	$110.27	$127.12	$147.34	$174.14	$211.58	$298.28
Combined Bill Impacts	$11.24	$12.19	$13.33	$14.13	$15.37	$18.57
% Bill Impacts	11.3%	10.6%	9.9%	8.8%	7.8%	6.6%

2. Introduction

2.1. District Background

The El Toro Water District (District), located in the southern portion of Orange County, was formed in 1960 under provisions of California Water District Law, Division 13 of the Water Code of the State of California, commencing with Section 34,000, to provide water and wastewater services to the service area. A publicly elected Board of Directors governs the District. The District is nearly built-out and encompasses the City of Laguna Woods and portions of four other cities: Lake Forest, Aliso Viejo, Laguna Hills, and Mission Viejo.

The District provides water, wastewater, and recycled water services to a population of approximately 48,500 in a service area of approximately 8.5 square miles. The District's water system comprises six reservoirs with a combined capacity of 287 million gallons, in which the District owns 136 million gallons (the remaining capacity is owned by other local water districts), over 170 miles of water lines, and eight booster pump stations with 12 pressure zones to deliver water to approximately 10,000 metered water accounts. The District also participated in a five-agency collaboration to fund and construct a local water treatment plant (the Baker Water Treatment Plant) located in the City of Lake Forest to improve water treatment and water supply reliability for ETWD's customers and South Orange County. The Baker Water Treatment Plant (Baker WTP) allows the participating agencies to purchase untreated water from MWDOC at a lower cost than the treated water, reducing the financial burden on the District's customers.

The District's wastewater system is comprised of 142 miles of collection system pipeline, 3,400 manholes, and 11 pump stations which pump wastewater to the District's treatment plant with a rated capacity of 6 million gallons per day. Much of the District's effluent is reused through recycled water sales. The District completed its Water Recycling Plant (WRP) upgrades to produce higher quality tertiary recycled water in FY 2015. The District also increased its recycled water distribution capacity by adding 19 miles of recycled water distribution pipeline to make recycled water available to more customers. In FY 2019, the District completed further expansion of the recycled distribution system, increasing the total amount of recycled water distribution pipelines to nearly 25 miles. In FY 2024, the District's recycled water budget was based on a total 277 accounts and an estimated average consumption of 1,485 AF of recycled water, the same as in FY 2023.

2.2. Study Background and Objectives

The District engaged Raftelis to conduct a Cost of Service Study (Study) and develop rates for the Water, Recycled Water, and Wastewater enterprises of the District that are equitable and in compliance with California legal requirements, including Proposition 218 requirements.

The major objectives of the Study include the following:

- Determine revenue requirements from water, wastewater, and recycled water rates for FY 2024.
- Update water rates and capital charges to meet the District's goals and objectives, including defensibility, affordability for essential use, and promoting efficiency and conservation.
- Update private fire service charges.
- Update recycled water rates and capital charges.
- Conduct cost of service analysis for water and wastewater services.
- Update wastewater service and capital charges.
- Conduct customer impact analyses for the proposed water and wastewater rates.

This *Water, Recycled Water, and Wastewater Rate Study Report* (Report) summarizes the key findings and recommendations related to developing the respective rates.

2.3. Legal Framework and Rate Setting Methodology

This section of the report describes the legal framework that was considered in developing the rates to ensure that the calculated cost of service rates provide a fair and equitable allocation of costs to the different customer classes.

2.3.1. CONSTITUTIONAL MANDATES AND STATUTORY AUTHORITY

Article XIII D, Section 6 (Proposition 218), and Article X, Section 2 of the California Constitution govern the principles applicable to this Rate Study. This Rate Study equitably implements and harmonizes these constitutional mandates in concert with the authority and principles outlined in Water Code Section 370 et seq., which govern Allocation-Based Conservation Water Pricing (commonly referred to as "Water Budget Rate Structure"). This Rate Study provides for a water budget based four-tier rate structure designed to implement, in a reasonable manner, the constitutional mandates, statutory authority, and principles referenced above.

2.3.2. CALIFORNIA CONSTITUTION – ARTICLE X, SECTION 2

Article X, Section 2 of the California Constitution (established in 1976) provides as follows:

> *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.*

As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation, which this Rate Study achieves.

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

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

1. Water and wastewater rates shall not exceed the funds required to provide the service.
2. Revenues derived from the charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of the property.

The rates developed in this Rate Study use a methodology to establish an equitable system of fixed and variable charges that recovers the cost of providing service and fairly apportions costs to each customer as required by Proposition 218.

2.3.4. STATUTORY AUTHORITY – GOVERNMENT CODE SECTION 370 ET SEQ. (ALLOCATION-BASED CONSERVATION WATER PRICING)

In 2000, the California Legislature (AB 2882), consistent with the above-referenced constitutional provisions, adopted a body of law entitled "Allocation-Based Conservation Water Pricing" (Water Code Section 370 et seq.)

Water Code Section 370 provides in part as follows:

> *The Legislature hereby finds and declares all of the following:*
>
> *(a) The use of allocation-based conservation water pricing by public entities that sell and distribute water is one effective means by which waste or unreasonable use of water can be prevented and water can be saved in the interest of the people and for the public welfare, within the contemplation of Section 2 of Article X of the California Constitution.*
>
> *(b) It is in the best interest of the people of California to encourage public entities to voluntarily use allocation-based conservation water pricing, tailored to local needs and conditions, as a means of increasing efficient uses of water, and further discouraging wasteful or unreasonable use of water under both normal and dry-year hydrologic conditions.*

Water Code Section 372 provides as follows:

> *(a) A public entity may employ allocation-based conservation water pricing that meets all of the following criteria.*
>
> *(1) Billing is based on metered water use.*
>
> *(2) A basic use allocation is established for each customer account that provides a reasonable amount of water for the customer's needs and property characteristics. Factors used to determine the basic use allocation may include, but are not limited to the number of occupants, the type or classification of use, the size of lot or irrigated area, and the local climate data for the billing period. Nothing in this chapter prohibits a customer of the public entity from challenging whether the basic use allocation established for that customer's account is reasonable under the circumstances. Nothing in this chapter is intended to permit public entities to limit the use of property through the establishment of a basic use allocation.*
>
> *(3) A basic charge is imposed for all water used within the customer's basic use allocation, except that at the option of the public entity, a lower rate may be applied to any portion of the basic use allocation that the public entity has determined to represent superior or more than reasonable conservation efforts*
>
> *(4) A conservation charge shall be imposed on all increments of water use in excess of the basic use allocation. The increments may be fixed or may be determined on a percentage or any other basis, without limitation on the number of increments, or any requirement that the increments or conservation charges be sized, or ascend uniformly, or in a specified relationship. The volumetric prices for the lowest through the highest priced increments shall be established in an ascending relationship that is economically structured to encourage conservation and reduce the inefficient use of water, consistent with Section 2 of Article X of the California Constitution.*
>
> *(b) ---*
>
> *(1) Except as specified in subdivision (a), the design of an allocation-based conservation pricing rate structure shall be determined at the discretion of the public entity.*
>
> *(2) The public entity may impose meter charges or other fixed charges to recover fixed costs of water service in addition to the allocation-based conservation pricing rate structure.*

(c) A public entity may use one or more allocation-based conservation water pricing structures for any class of municipal or other service that the public entity provides.

As noted in the referenced statutes, "Allocation-Based Conservation Water Pricing Rate Structure" is a form of increasing block rates in which the amount of water within the first block or blocks is based on the estimated efficient water needs of the individual customer. Water-budget rates differ from other metered water rate designs in two key ways. First, the blocks are established based on water budgets representing varying levels of each customer's efficient water use. Second, water-budget rates require the public agency to set specific standards for what is and is not considered efficient water use for an individual customer.

This Rate Study, in conjunction with ETWD's landscape data for individual customers, establishes a standard for efficient usage and then establishes a budget for each individual customer. This determines how much water is considered efficient for each customer. Customers with usage above this efficient usage budget pay a higher rate for their "inefficient" or "wasteful" usage (in accordance with Section 372 of the Water Code).

This Rate Study conforms to the principles set forth in the enabling statutes for Water Budget Rate Structures.

2.3.5. TIERED RATES

"Inclining" Block-Rate Structures (which are synonymous with "Increasing Block-Rate Structures"), when properly designed and differentiated by customer class (as this Rate Study does), allow a water agency to send consistent price incentives for conservation to customers. For this reason, the heightened interest in water conservation, "Increasing Block-Rates," has been increasingly favored, especially in relatively water-scarce regions such as Southern California.

2.3.6. PROPORTIONALITY – PROPOSITION 218'S REQUIREMENT THAT FEES BE PROPORTIONATE TO THE COST OF SERVICE FOR EACH PARCEL

There is a fair amount of ambiguity in how Proposition 218 was drafted – none more so than the issue of "proportionality." It has taken a succession of court rulings over several years to clarify the substantive requirements of Proposition 218.

In *Griffith v. Pajaro Valley Water Management Agency* (2013) 220 Cal.App.4th 586, the Sixth Appellate District has provided guidance on several important Proposition 218 issues, including the issue of proportionality. The *Pajaro* Court held:

1. *That Pajaro's costs of using supplemental water along the coast to prevent saltwater intrusion benefited all of Pajaro's customers, including inland customers using the groundwater basins.*
2. *That proportionality is not measured on an individual parcel basis but instead is measured collectively, considering all customer classes. As such, the Appellate Court in Pajaro confirmed the common practice of grouping customers into classes with comparable service costs and setting rates by class rather than parcel by parcel met the Prop 218 requirement that fees be proportionate to the cost of providing service to each parcel.*

Under Item 1 noted above, water utilities can reasonably justify that the addition of recycled water to the water resource mix frees up water for potable uses and therefore, potable water customers should share in the costs of recycled water so that recycled water can be put to beneficial use as required by Article X, Section 2. This clarification by the appellate court allows agencies to harmonize the mandates of Proposition 218 and Article X, Section 2.

Under Item 2 noted above, utilities can develop rates by customer class and meet the requirements of Proposition 218, as opposed to the strict interpretation, which would require cost proportionality for each parcel receiving service.

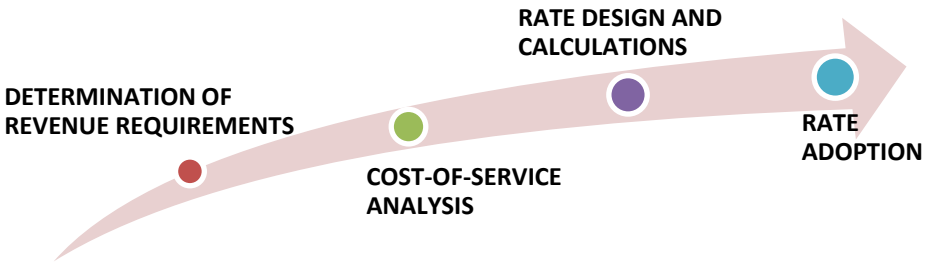
This was another significant clarification of Proposition 218 since cost proportionality for individual parcels is almost impossible to achieve in the strict sense.

The Pajaro case rulings provided for the harmonizing of the proportionality requirements of Proposition 218 with the efficient use and conservation requirements of Article X, Section 2 by accepting that the supplemental costs of water used by one group of customers should be shared by all users, based on the concept that all users receive benefit from an increase in the overall water resources. In the District's case, recycled water adds a water resource that provides benefit to all users by freeing up potable water, and therefore, the costs of recycled water can be shared by all inefficient potable water users. Due to non-essential usage's demand on the system, the District allocates the cost of funding the recycled water system development to Tiers 3 and 4 residential/irrigation usage as well as to commercial use at a lower rate based on the assumption that 10 percent of Commercial and Public Authority (CII) water use is inefficient.

2.4. Cost-Based Rate Setting Methodology

As stated in the Manual M1, the methodology put forth by the AWWA Rates and Charges Subcommittee is consistent with the Proposition 218 requirement that "the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." There are four major steps to develop utility rates that comply with Proposition 218 and industry standards while meeting other emerging goals and objectives of the utility:

Figure 2-1: Cost-Based Rate Setting Methodology



1. **Determination of Revenue Requirement:** The rate-making process starts with the determination of future revenue requirements to sufficiently fund the utility's operation and maintenance (O&M), capital replacement and refurbishment (R&R), capital improvement and perpetuation of the system, and ensure the preservation of the utility's financial integrity. The basic revenue requirements of a utility include O&M expenses, debt service payments, contributions to specified reserves, and the cost of capital expenditures that are not debt-financed.
2. **Cost-of-Service Analysis:** The annual cost of providing services (cost of service), determined in the development of the financial plan, should be allocated among the customers commensurate with their service requirements. In this step, costs are identified and allocated to cost causation components and distributed to the respective customer classes consistent with industry standards provided in Manual M1 (published by AWWA).
3. **Rate Design and Calculations:** Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as conservation, affordability for essential needs, revenue stability, etc. They should work as a public information tool in communicating these objectives to customers.
4. **Rate Adoption:** In the last step of the rate-making process, to comply with the Proposition 218 requirements, the results of the analyses are documented in a Study Report that identifies the nexus between costs and rates to help educate the public about the proposed changes, the rationale, and justifications behind the changes

and their anticipated financial impacts in layperson's terms. At least 45 days after sending out the public notices, the agency shall consider all written protests against the proposed rates at a public hearing. The Board can approve and adopt the new rates if there is no majority protest.

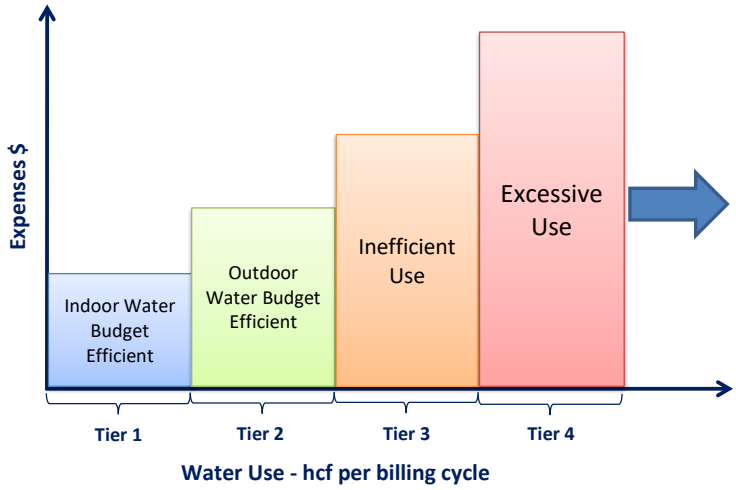
3. Water Budget and Tier Definitions

Since July 1, 2010, the District has implemented a tiered water budget rate structure to incentivize conservation and efficient water use. The description of the allocations to individual customers and the development of water budgets are described here for this report's completeness.

3.1. Water Budget Definitions

The American Water Works Association Journal defines water budget as "the quantity of water required for an efficient level of water use by that customer" *(Source: American Water Works Association Journal, May 2008, Volume 100, Number 5).* Therefore, each customer has their own allocation or water budget, as shown in the following figures. Figure 3-1 illustrates how the tier breaks are set for water budget customers. Tier 1 is defined by the allotment for indoor use, and Tier 2 is defined by the allotment for outdoor use. Tier 3 is set to a percentage of the total water budget (or Tiers 1 and 2) combined. Any use beyond Tier 3 is considered excessive and falls into Tier 4.

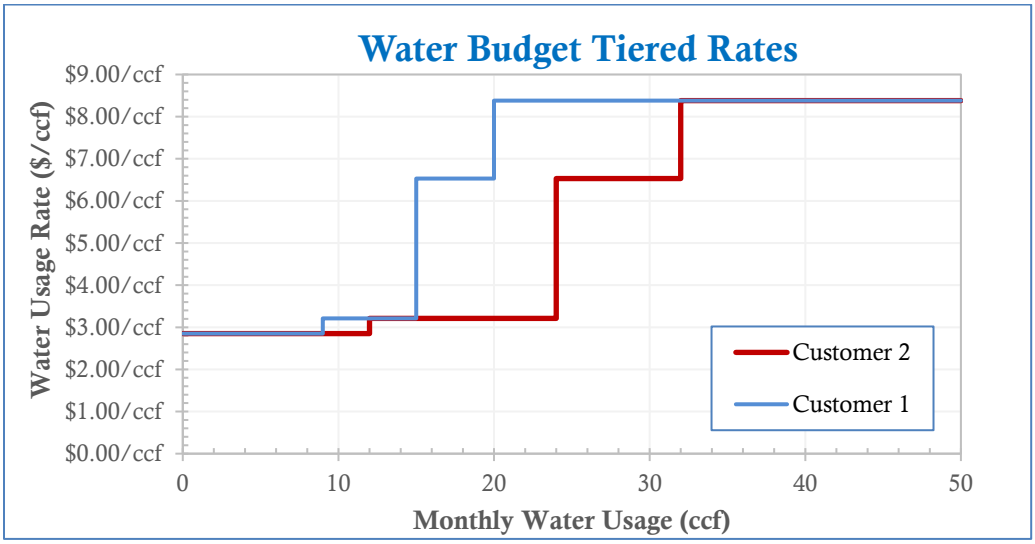
Figure 3-1: Water Budget Tiers



It is worth noting that water budget rate structures are customized for each customer, which results in different tier breaks for different customers. For example, as illustrated by Figure 3-2,[8] which examines the use of two customers of a *hypothetical* water utility. The first 9 units consumed by Customer 1 are charged at Tier 1 rate, whereas Customer 2 has 12 units at Tier 1 rate ($2.85/ccf) for indoor use. The following 6 units (10 – 15 units) consumed by Customer 1 are reserved for outdoor use, which is charged at the Tier 2 rate ($3.21/ccf), and any usage exceeding 20 units[9] will be deemed excessive and charged at the Tier 4 Rate ($8.38/ccf). Similarly, for Customer 2, Tier 2 spans from 13-24 units, and use exceeding 32 units will be charged at the Tier 4 Rate ($8.38/ccf). Customer 2, with a larger indoor and outdoor water budget (or allotment), represents a residential customer with a larger family and a bigger irrigated landscape area than that of Customer 1.

[8] This is for illustrative purposes only and is not based on actual rates of the District.
[9] Tier 3 = 30% of Total Water Budget (TWB) whereas TWB = Indoor WB + Outdoor WB

Figure 3-2: Customized Water Budget Tiers



Like the Water Budget Rate Study in 2010, the District's water budget allocations and tiered rate structure are designed for residential and irrigation accounts only; all other customer types will retain the current uniform rate structure.

3.2. Indoor Water Budget

The indoor water budget (IWB) is determined by a customer's household size and standard consumption per person. The proposed IWB formula is as follows:

$$IWB = \frac{GPCD * Household\ \ Size * Dwelling\ Units * Days\ \ of\ Service * DF_{indoor}}{748} + V_{indoor}$$

Where:

- GPCD = Gallons per capita per day.
  - SB x7-7,3F[10] Section 10608 of the Water Code established the provisional standard for indoor residential water use at 55 gallons per capita per day.
- Household Size = Number of residents per dwelling unit. The 2020 census lists the average household size at 3.01 persons, which includes single and multi-family housing. Typically, single-family household size is greater than three persons, and multi-family household size is less than 3.0 persons. The District policy is to provide adequate water for health and sanitation needs and minimize customer complaints and requests for variances. The default values for household size are set based on customer characteristics as follows:
  - Single-Family: Household Size = 4 persons
  - Multi-Family:
    - Restricted: Household Size = 2 persons (senior citizen housing typically 1 to 2 residents per dwelling unit)
    - Unrestricted: Household Size = 3 persons
- Dwelling units – Number of dwelling units served by the meter/account
- Days of Service = The number of days of service varies with each billing cycle for each customer. The actual number of days of service will be applied to calculate each billing cycle's indoor water budget.

[10] The language from SB x7-7 setting the 55 GPCD performance standard: (2) The per capita daily water use that is estimated using the sum of the following performance standards: (A) For indoor residential water use, 55 gallons per capita daily water use as a provisional standard.

- DF_{indoor} = Indoor drought factor. The percentage of indoor water budget allotted during drought conditions. The drought factor is subject to the approval of the District's Board of Directors. The indoor drought factor is currently set at 100 percent.
- V_{indoor} = Indoor variance. The additional water allotment to be granted for extenuating circumstances is subject to District's approval or the verification as outlined in the District's variance program. Variances can be requested by submitting a "Variance/Adjustment Request Form" found on the District's website.
- 748 is the conversion unit from gallons to the billing unit of hundred cubic feet (ccf).

3.3. Outdoor Water Budget

The outdoor water budget (OWB) is determined by three main variables: irrigable landscape area, weather data, and the evapotranspiration (ET) Adjustment Factor. The irrigable landscape area, measured as square footage of landscape surface on a customer's property, is in some cases established through on-site direct physical measurement and in others estimated using the Orange County Assessors' parcel data for lot size, building size, and number of floors where the actual irrigable landscape area data is not available. The weather data is based on the reference Evapotranspiration[11] (ET_0), which is the amount of water loss to the atmosphere over a given time period under local atmospheric conditions. ET_0 is the amount of water (in inches of water) needed for a hypothetical reference crop to maintain its health and appearance. The ET Adjustment Factor (ETAF) is a coefficient that adjusts ET_0 values based on plant factor and irrigation system efficiency. The updated California Department of Water Resources' Model Water Efficient Landscape Ordinance (Landscape Ordinance) provides the following ETAF for different landscapes:

- Existing landscape (Functional): $ETAF_{Existing}$ = 80%
- New development / redevelopment landscape (Functional)[12]: $ETAF_{New}$ = 70%
- Special landscape (Recreational): $ETAF_{Recreational}$[13] = 100%

The formula to calculate the outdoor water budget is as follows:

$$OWB = \left(\frac{\text{Landscape Area} * ET_0 * \text{ETAF}}{1200} + V_{outdoor} \right) * DF_{outdoor}$$

where

- ET_0 is measured in inches of water during the billing period based on daily data acquired from the California Irrigation Management Information System (CIMIS) Station 75, which is the closest station to the District's service area.
- ETAF (% of ET_0) is defined using the updated Landscape Ordinance as shown above.
- Landscape Area (or Irrigable Landscape Area) (in square feet) is the measured irrigable landscape area served by a customer's meter.
    - Where the measured irrigable landscape area is not available, the landscape area will be estimated by the following formula using the Orange County Assessors' parcel data.
        - $$\text{Landscape Area (sq ft)} = 70\% * \left(\text{Lot Size} - \frac{\text{Building Size}}{\text{Number of Floors}} \right)$$

[11] Reference evapotranspiration (ETo) is derived by measuring weather conditions and estimating the ET of a reference plant. In California this is a standardized planted surface of well-maintained cool season turf. ETo data is available online from over 100 weather stations throughout the state of California from the California Irrigation Management Information System (CIMIS). Minute-by-minute weather data is collected and used to calculate hourly, daily, weekly, or monthly ETo.

[12] Functional is essentially aesthetic landscape

[13] Recreational includes golf courses, parks, etc.

    - For accounts dedicated for domestic use only, such as multi-family units, 25 square feet of irrigable landscape area is provided for each dwelling unit for patio plants.
- $DF_{outdoor}$ = Outdoor drought factor. The percentage of outdoor water budget allotted during drought conditions. The drought factor is subject to the approval of the District's Board of Directors. The outdoor drought factor is currently set at 100 percent.
- $V_{outdoor}$ = Outdoor variance. The additional water allotment to be granted for extenuating circumstances is subject to District's approval or verification as outlined in the variance program. Outdoor variance is subject to the outdoor drought factor.
- 1,200 is the conversion unit from inch*ft^2 to billing unit of hundred cubic feet (ccf).

3.4. Water Budget Allocations by Customer Type

Table 3-1 summarizes the water budget allocation by customer type. Both Single Family and Multi-Family (restricted and unrestricted) customers will receive an indoor and outdoor water budget. Irrigation accounts will only receive an outdoor budget. Commercial and Public Authority (CII) customers will continue with the current uniform water rate structure.

Table 3-1: Water Budget Allocations by Customer Type

Customer Type	Water Budget Allocations	Default Values
Single Family	IWB + OWB	Household Size = 4 persons; GPCD = 55 $ETAF_{New}$ = 70%; $ETAF_{Existing}$ = 80%; $DF_{outdoor}$ = 100%
Multi-Family – Restricted	IWB + OWB	Household Size = 2 persons; GPCD = 55 $ETAF_{New}$ = 70%; $ETAF_{Existing}$ = 80%; $DF_{outdoor}$ = 100%
Multi- Family – Unrestricted	IWB + OWB	Household Size = 3 persons; GPCD = 55 $ETAF_{New}$ = 70%; $ETAF_{Existing}$ = 80%; $DF_{outdoor}$ = 100%
Irrigation – Non-Functional*	OWB	$ETAF_{New}$ = 70%; $ETAF_{Existing}$ = 80%; $DF_{outdoor}$ = 100%
Irrigation – Recreational**	OWB	$ETAF_{Recreational}$ = 100%; $DF_{outdoor}$ = 100%

**Irrigation – Non-Functional: landscape that is ornamental in nature*
***Irrigation – Recreational: landscape that is used mostly for recreational purposes (schools, parks, golf courses, etc…)*

3.5. Tier Definitions

Based on the information in Table 3-1, the tier definitions are developed as shown in Table 3-2. The main difference between Single-Family/Multi-Family and Irrigation accounts is that Irrigation accounts do not have a Tier 1 allotment that is reserved for indoor use. All three customer types have their Tier 3 allotment defined as 30 percent of their respective total water budget (TWB) and usage exceeding 130% TWB falls in Tier 4.

Table 3-2: Tier Definitions by Customer Types

Tiers	Single Family	Multi-Family	Irrigation
Tier 1 – Indoor Use	100% IWB	100% IWB	N/A
Tier 2 – Outdoor Use	100% OWB	100% OWB	100% OWB
Tier 3 – Inefficient Use	100% to 130% TWB	100% to 130% TWB	100% to 130% OWB
Tier 4 – Excessive Use	Above Tier 3	Above Tier 3	Above Tier 3
TWB = Total Water Budget = IWB + OWB			

The tier definitions are tailored to the unique consumption patterns of the District's customers and are subject to the District's policy decisions. The tier definitions are based on Raftelis' water use and impact analyses, as well as numerous policy discussions with the Board. The priority for water use is essential indoor water use for health, safety, and sanitary purposes. Based on the Board's direction, indoor water use is eligible for revenue offsets from miscellaneous and property tax revenues. Maintaining a healthy landscape at efficient water use is non-essential, yet important; thus, efficient outdoor water use is required to pay the Tier 2 rate. The total water budget is the sum of the indoor and outdoor water budgets.

Tier 3 was designed to account for inefficient use and/or customers with non-climate appropriate landscapes. Tier 3 is set to thirty percent (30%) of the total water budget and was determined based on the 2009 analysis, which indicated that a customer with high water use plants would require 30% more water than an identical customer with climate-appropriate plants. Any use beyond Tier 3 is considered excessive and falls into Tier 4. Tiers 3 and 4 allow individuals to use additional water above their total water budget while providing a signal to each customer on their inefficient and excessive water usage. Tier 3 provides use up to 30 percent of the total water budget and use over 130% TWB is considered to be excessive.

Any usage above an efficient level is subject to higher charges to fund conservation programs and any other supplemental water supply program. The current water supply is reserved for efficient water use within the District for indoor, outdoor, and commercial use. The higher Tier 3 rate serves as a signal for conservation and efficient use, whereas excessive use in Tier 4 incurs the highest marginal costs of providing service.

The Commercial class will continue to be billed at a uniform rate; however, this rate will encompass domestic use and inefficient use. Based on SB X7-7 (i.e., Water Conservation Act of 2009), which requires commercial users to reduce their water use by 10 percent, indoor and efficient outdoor (or process) use is defined as 90 percent of total use, and the remaining 10 percent use as inefficient. Additionally, indoor use is defined as 90 percent of the efficient use (90% x 90% = 81%) and the remainder is defined as efficient outdoor use (10% x 90% = 9%). The uniform rate charged to commercial customers will then be a blend of the use defined here.

4. Pass-through Water Supply Cost

The District purchases water from the Municipal Water District of Orange County (MWDOC), a member agency of the Metropolitan Water District of Southern California (MWD). MWD rates are scheduled to increase in January 2024. The MWD rate increases will be included in the blended rates charged to the District. Dividing the total costs in Table 4-1 (Line 7) by the projected water sales (Line 8) results in the unit rate shown in Line 9. See Appendix 1 for detailed breakdown of water supply costs. Table 4-2 and Table 4-3 show that projected water supply rates will increase by an average of $0.19 per ccf.

Table 4-1: Water Supply Revenue Requirements

Line #	Water Supply Unit Rates Development	FY 2024	Notes
1	MWD Fixed Charges		
2	Capacity Reservation Charge	$146,755	Appendix 1
3	Readiness To Serve Charge	$637,457	Appendix 1
4	Total Treated Full Service Annual Cost	$4,228,625	Appendix 1
5	Baker Raw Water Cost	$3,120,450	Appendix 1
6	Baker WTP O&M Annual Cost	$830,501	Appendix 1
7	**Total Water Supply Cost**	**$8,963,788**	
8	Projected Water Sales	2,918,520 ccf	
9	**Water Supply Unit Rate**	**$3.07 /ccf**	**[7] / [8]**

Table 4-2: Current and Projected Water Supply Unit Rate

Fiscal Year (FY)	Water Supply Unit Rate $ / hundred cubic feet (ccf)
FY 2022-23	$2.88
FY 2023-24	$3.07
Increase / Change	**$0.19 / ccf**

Table 4-3: Water Supply Cost Component of the Water Rates ($/ccf)

Tiers	Descriptions	Current FY 2023	Proposed FY 2024
Tier 1 - Essential Use	MWDOC + Baker Blended	$2.88	$3.07
Tier 2 - Efficient Use	MWDOC + Baker Blended	$2.88	$3.07
Tier 3 - Inefficient Use	MWDOC + Baker Blended	$2.88	$3.07
Tier 4 - Excessive Use	MWDOC + Baker Blended	$2.88	$3.07
Uniform – CII Use	MWDOC + Baker Blended	$2.88	$3.07

5. Water Revenue Requirements and Proposed Rates

5.1. Revenue Requirements

Table 5-1 shows the derivation of the revenue requirement of the water rates. Total expenses for the water enterprise are shown in Line 1. Next, other supplementary revenues are subtracted from the expenses, serving as an offset of these costs. For the District, this is encompassed in the Non-Operating Revenues totaled in Line 4. These revenues include cell-site leases, property taxes, investment revenues, and other revenues. The District will use reserves to offset some of the operating expenses and reduce the revenue required from rates for FY 2024 (Line 15). The total revenue required from water service rates is shown in Line 16, excluding capital R&R requirements.

Details of the figures presented in Table 5-1 can be found in Appendix 3, in the Cash Flow Analysis for the Water Funds. The Cash Flow Analysis is part of the Financial Plan developed by District staff to determine the District's long-term financial needs. Raftelis based its determination of the revenue requirements and cost of service for FY 2024 on the Financial Plan developed and budget data provided by District Staff.

Table 5-1: Water Operating Revenue Requirements from Rates

	Water Operating Revenue Requirements [14]	FY 2024	Notes
1	**Water O&M Expenses**	**15,028,000**	**Appendix 3**
2	Purchased Water	8,963,788	Appendix 1
3	Other O&M Expenses	6,064,212	[1] – [2]
4	**Less (-) Non-Operating Revenues**	**-1,154,000**	
5	Funding from Restricted Reserve for Conservation Program	-200,000	Appendix 3
6	Property Taxes - General Fund Revenue	-279,522	Appendix 3
7	Property Taxes (Funds Tier 1 Offset)	-180,478	Appendix 3
8	Miscellaneous Revenue	-39,000	Appendix 3
9	Cellular Site Lease Revenue (Funds Tier 1 Offset)	-230,000	Appendix 3
10	Other Income (R-6 Partners)	-125,000	Appendix 3
11	Investment Income	-100,000	Appendix 3
12	**Plus (+) Other Fundings**	**829,670**	
13	Plus Reserve Funding	200,000	Appendix 3
14	Plus Restricted Reserve Funding	627,301	Appendix 3
15	Plus Operating Reserve Funding	2,369	Appendix 3
16	**Water Operating Service Rev Requirements**	**14,703,670**	Sum of lines 1, 4 & 12

The District separately charges customers for the cost of capital repair and replacement (R&R) for the water and recycled water systems via a fixed charge. Table 5-2 provides the calculation of the Capital Facility revenue

[14] May include some rounding errors

requirement from Capital Facility charges. The District will fund a portion of its capital revenue requirements using restricted reserves for Baker Debt Service (Line 5) and Capital Reserve (Line 6).

Table 5-2: Water Capital Revenue Requirements

Line #	Water Capital Facility Revenue Requirements	FY 2024	Notes
1	**Total Water Capital R&R Expenditures**	**$2,277,562**	**Sum of lines 2 - 4**
2	Capital Replacement & Refurbishment Program	$874,000	Appendix 3
3	Baker WTP Debt Service	$684,262	Appendix 3
4	2022 Rev Bonds Debt Service	$719,300	Appendix 3
5	**Less (-) Restricted Reserve Funding of Baker Debt Service**	**-$184,400**	Appendix 3
6	**Less (-) Capital Reserve Funding**	**-$390,194**	Appendix 3
7	**Water Capital R&R Rev Requirements**	**$1,702,968**	**Line 1 + 5 +6**
8	Current Capital R&R Revenues	$1,362,374	Appendix 3
9	**% Rate Increase**	**25.0%**	

5.2. Cost of Service

Water systems are designed to accommodate peak use of any class or type of customer. Different parts of a water system are designed to handle different peaks, and there are significant costs associated with meeting peak requirements. For example, the District's maximum day usage is estimated to be 1.73 times the average usage, and facilities such as reservoirs are designed 1.73 times as large to ensure that maximum day requirements are met (reservoirs also are designed to meet fire flows). To allocate costs appropriately amongst the different types of usage, an analysis of the peaking costs is provided in Section 5.2.1.

A portion of the costs of fire service are recovered from Private Fire Rates (charged to customers which have separate fire line service as discussed in Tables 5-5 to 5-6 and section 5.3.4 of this report below). However, the costs to maintain public fire flows are included in the cost of service recovered from rates. This reflects that providing water in the volumes and at the pressures required to operate fire hydrants and fire sprinklers in structures is a statutory mandate of public water systems in California, and that such cost recovery is authorized by California Government Code sections 53069.9 and 53750.5. Moreover, charging water users for the portion of the cost of water service associated with fire flows appropriately assigns those costs to those who benefit from them. Sprinklers are within (and serve) structures served by water meters. The California Fire Code requires hydrants near structures, not elsewhere and hydrants serve parcels improved with structures. Thus, those who pay water fees which recover fire flow costs also own or occupy structures protected by fire sprinklers and fire hydrants and therefore benefit from that service. Finally, fire hydrants are used to flush water mains periodically and serve a water system function in addition to the fire suppression function noted here.

5.2.1. PEAKING FACTOR ANALYSIS

In last year's Rate Study, Raftelis conducted peaking factor analysis for the District's water usage. The analysis utilized the usage from July 2019 to June 2022 for 7,455 accounts (6,107 residential, 563 irrigation and 785 commercial) out of a total 9,528 accounts for the District, which represents approximately 78 percent of the District customers. A sample of this size approximates the characteristics of the District as a whole. The results are shown in Table 5-3.

Table 5-3: Peaking Factor Analysis for Different Usage Types

Usage	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	FY 2020
Tier 1 - Essential Use	49,411	52,209	52,391	47,651	55,054	40,616	45,240	44,606	39,187	43,246	50,786	50,647	**571,044**
Tier 2 - Efficient Use	81,609	111,923	105,845	72,360	76,117	23,325	17,109	29,387	30,975	17,208	57,674	84,267	**707,799**
Tier 3 - Inefficient Use	4,500	5,969	8,158	7,230	8,601	3,837	2,989	3,416	2,539	1,542	1,843	4,219	**54,843**
Tier 4 - Excessive Use	3,496	4,435	6,025	7,491	11,847	5,478	2,688	4,166	2,876	1,073	1,114	2,726	**53,415**
Uniform - Commercial Use	34,464	38,771	38,047	33,696	39,039	25,389	27,959	28,294	26,862	18,146	22,845	27,632	**361,144**
Total	**173,480**	**213,307**	**210,466**	**168,428**	**190,658**	**98,645**	**95,985**	**109,869**	**102,439**	**81,215**	**134,262**	**169,491**	**1,748,245**

Line	Water Uses	FY 2020 Usage	Max Month Usage	Average Month Usage	Peaking factors (Max/Avg)
		A	B	C	D = [B] / [C]
1	Indoor Use	571,044	55,054	47,587	1.16
2	Outdoor Use	707,799	111,923	58,983	1.90
3	Inefficient Use	54,843	8,601	4,570	1.90
4	Excessive Use	53,415	11,847	4,451	2.66
5	Commercial Use	361,144	39,039	30,095	1.30
6	**Total Usage**	**1,748,245**	**213,307**	**145,687**	**1.46**

The proposed peaking factors for each usage type are shown in Table 5-4.

Table 5-4: Peaking Factors by Usage Class

Tiers	Relative Peaking Factors
Indoor Use	1.16
Outdoor Use	1.90
Inefficient Use	1.90
Excessive Use	2.66
Commercial Use	1.30

The different peaking factors, increasing in the arrow's direction, may be conceptually represented on the scale shown below.

5.2.2. COST OF SERVICE ANALYSIS

Revenue requirements are allocated to the following cost causation categories to allocate costs appropriately to the different usage classes and determine the cost-of-service rates. This methodology is consistent with the Base Extra Capacity methodology of the American Water Works Association (AWWA) *M1 Manual*, *Principles of Water Rates, Fees, and Charges* (M1 Manual):

1. Water supply costs: Imported water supply costs, allocated to all users in proportion to their usage.
2. Fixed costs: fixed costs associated with operating and maintaining water systems to deliver water to meet average demand, including customer service, meter service, administration, and other base fixed costs.
3. Peaking costs: fixed costs associated with operating and maintaining the water system to deliver water to meet peak demand.
4. Recycled Water Funding: The use of recycled water for non-potable needs releases potable supply for inefficient and excessive use. Recycled water is the least expensive supplemental source of water available to the District and offsets supply for potable needs. The revenues collected under this category will be collected in restricted reserves to assist the RW fund to pay debt service costs that finance the RW expansion project completed in FY 2015 and expanded in FY 2019.
5. Conservation: Conservation program cost, allocated to inefficient and excessive use to help conserve water.
6. Revenue Offsets: Property taxes revenue used partially to provide incentive for indoor/domestic use.

The cost causation categories described above are then assigned to each rate component:

Fixed Rate Components (i.e., Monthly Service Charges)

- To recover customer service, meter service, administration and other base fixed costs and a portion of the peaking costs.
- To recover the costs of providing water to fire service to the private fire customers.

Commodity Rate Components

- Water supply: to recover imported water supply costs.
- Delivery/Peaking: to recover remaining peaking costs associated with operating and maintaining water systems to deliver water to meet peak demand. These costs are allocated based on the peaking characteristics of each class of use.
- Recycled Water (RW): to generate supplemental funding sources to pay for RW expansion projects.
- Conservation: to recover the conservation program cost, allocated to inefficient and excessive users, to encourage water conservation.
- Revenue offsets: A portion of the property tax revenues to provide an incentive for indoor/domestic use.

Capital Facility Charges:

- Funds for the capital replacement and refurbishment of the existing water and RW system and debt service payments.

Fire Service Charges:

Fire demands are based on the water system design. Typical fire demands are based on the maximum demand needed for fire service which is 3,000 gpm for two hours. The maximum day and maximum hour demands are determined on this basis and when the potable demands are added to these to determine total maximum day and maximum hour demands. The proportion of the fire demand to total demand is used to prorate the costs that are allocated to be recovered from fire service charges as shown in Table 5-11.

A part of the peaking demand is designed for fire protection, both public and private fire protection. The District has approximately 1,899 public hydrants and 174 private fire services. The fire demand factor for each fire service size is calculated using the line size. Based on the total Fire Demand Units (FDU, calculated by fire demand factor and respective number of services), about 10.7 percent of the District's fire protection is to service private fire protection. Table 5-5 shows the estimated fire demand between public and private fire services.

Table 5-5: Fire Demand Units

Fire Services	# of Services	Fire Demand Factor	Fire Demand Units (FDU)	FDU / yr	Percentage Demand
	A	B = MeterSize^2.63	C = A x B	D = C x 12 bills/yr	
Private Fire Services			**25,331**	**303,970**	**10.7%**
4"	27	38.32	1,035	12,415	
6"	90	111.31	10,018	120,216	
8"	53	237.21	12,572	150,863	
10"	4	426.58	1,706	20,476	
Public Hydrants			**211,379**	**2,536,553**	**89.3%**
6"	1,899	111.31	211,379	2,536,553	
8"		237.21	0	0	
10"		426.58	0	0	
12"		689.04	0	0	
Total	**2,073**		**236,710**	**2,840,524**	**100%**

Table 5-6 shows the fire demand imposed on peaking requirements.

Table 5-6: Water System and Fire Demand Peaking Requirements

Line	Description		Peak Demand	Extra Capacity
		A	B	C
1	Flow	3,000 GPM		
2	Duration	2 hrs		
3	Fire Max Day Demand	360 kgal	481 ccf	
4	Fire Max Hour Demand	3,960 kgal	5,294 ccf	
5	Annual System Demand	2,918,520 ccf		
6	Daily System Demand	7,996 ccf / day		
7	System Max Day	1.73x of Average Demand	13,833 ccf / day	5,837 ccf /day[15]
8	System Max Hour	2.04 of Max Day	16,312 ccf / day	2,479 ccf /day[16]

Table 5-7 shows the peaking factors for the water system provided by the District's Water Master Plan and the allocation of Max Day and Max Hour costs using the Base Extra Capacity approach as outlined in the AWWA Manual M1.

[15] Extra Capacity demand for Max Day = Peak Max Day Demand – Daily Demand
[16] Extra Capacity demand for Max Hour = Peak Max Hour Demand – Peak Max Day Demand

Table 5-7: Peaking Factors for Water System

		Peaking Factors	Base Fixed	Max Day	Max Hour
1	Max Day	1.73	57.8%	42.2%	
2	Max Hour	2.04	49.0%	35.8%	15.2%

The Max Day factor of the District's system is 1.73, which means that Max Day demand is expected to be 173 percent of the average day capacity. Calculating the Max Day allocation of functional costs to the cost causation components results in the following:

$$Base\ Fixed\ Allocation\ for\ Max\ Day = \frac{Base\ Fixed}{Max\ Day} = \frac{1}{1.73} \approx 57.8\%$$

$$Max\ Day\ Allocation = 1 - \frac{Base}{Max\ Day} = 1 - 57.8\% \approx 42.2\%$$

Facilities designed for Max Hour peaks, such as distribution system facilities, are allocated similarly. The Max Hour factor is 2.04, so Max Hour facilities are designed to provide 204 percent of the average day capacity. The allocation of Max Hour facilities is shown below:

$$Base\ Fixed\ Alloction = \frac{Base}{Max\ Hour} = \frac{1}{2.04} \approx 49.0\%$$

$$Max\ Day\ Allocation = \frac{Max\ Day - Base}{Max\ Hour} = \frac{1.73 - 1.00}{2.04} \approx 35.8\%$$

$$Max\ Hour\ Allocation = 1 - 49.0\% - 35.8\% \approx 15.2\%$$

Table 5-8 shows the allocation factors for different water functions to the various cost categories. Source of supply costs will be allocated to water supply based on budgeted purchased water costs (Table 4-1) and the remaining costs will be allocated to base fixed costs. Operations and Administrative cost functions will be allocated between base fixed and billing & customer service (CS) based on staffing levels for the field office and main office. Labor costs are allocated 10% to billing and customer service, as estimated by the District, including management, customer service, and billing field personnel. The remaining 90% of the labor costs are allocated proportionately based on the non-labor and non-supply costs. Transmission facilities are designed for max day requirements and distribution facilities are designed to meet max hour requirements. Transmission and Distribution (T&D) are estimated 50% to transmission and 50% to distribution. Therefore, T&D is allocated 50% to max day demand for transmission (row 1 of Table 5-7) and 50% to max hour demand for distribution (row 2 of Table 5-7). Pumping is designed to meet max hour demand, thus allocated using the max hour demand allocation factors (row 2 in Table 5-7).

$$T\&D\ Base\ Fixed = 50\%\ x\ 57.8\% + 50\%\ x\ 49\% \approx 53.4\%$$

$$T\&D\ Max\ Day = 50\%\ x\ 42.2\% + 50\%\ x\ 35.8\% \approx 39.0\%$$

$$T\&D\ Max\ Hour = 50\%\ x\ 0\% + 50\%\ x\ 15.2\% \approx 7.6\%$$

Table 5-8: Allocation Factors for Different Water Functions

Water Functions	Water Supply	Base Fixed	Max Day	Max Hour	Billing & CS	Notes
Source of Supply	Purchased water cost	remaining				
T&D		53.4%	39.0%	7.6%		50% MD, 50% MH
Pumping		49.0%	35.8%	15.2%		Max hr
Operations		82.5%			17.5%	Staffing levels for field office
Administrative		77.5%			22.5%	Staffing levels for main office
Labor		68.6%	18.3%	5.5%	10%	Proportional based on non-labor costs

Table 5-9 shows the allocations of water O&M expenses using the allocation factors shown in Table 5-8 and O&M breakdown for FY 2024 provided by the District staff (Appendix 2).

Table 5-9: Allocations of Water O&M Expenses by Cost Categories

Water O&M Allocation	FY 2024	Water Supply	Base Fixed	Max Day	Max Hour	Billing & CS
O&M Expenses						
Source of Supply	$9,292,500	$8,963,788	$328,712	$0	$0	$0
Pumping - Water	$502,500	$0	$246,324	$179,816	$76,360	$0
T&D - Water	$540,200	$0	$288,529	$210,626	$41,045	$0
Operations Support	$69,500	$0	$57,338	$0	$0	$12,163
Fleet	$131,600	$0	$108,570	$0	$0	$23,030
Indirect Operating Costs	$71,200	$0	$58,740	$0	$0	$12,460
Information Technology	$210,500	$0	$163,138	$0	$0	$47,363
Indirect Administration Costs	$637,000	$0	$493,675	$0	$0	$143,325
Labor Costs	$3,573,000	$0	$2,366,974	$652,516	$196,210	$357,300
Subtotal O&M Expenses (Excl. Dep & Int)	**$15,028,000**	**$8,963,788**	**$4,111,999**	**$1,042,959**	**$313,615**	**$595,640**

Table 5-10 shows the allocation of revenue requirements to cost categories and Table 5-11 details the allocations of Max Day and Max Hour revenue requirements to Private Fire services.

Table 5-10: Water Revenue Requirements by Cost Categories

Other Rev Requirement Allocations	FY 2024	Water Supply	Base Fixed	Max Day	Max Hour	Billing & CS	RW	Conservation	Rev Offset	Private Fire
O&M Expenses(Excl. Dep & Int)	**$15,028,000**	**$8,963,788**	**$4,111,999**	**$1,042,959**	**$313,615**	**$595,640**				
Less (-) Non-Operating Revenues										
Funding from Restricted Reserve for Conservation Program	-$200,000		-$200,000							
Property Taxes - General Fund Revenue	-$279,522		-$279,522							
Property Taxes (Funds Tier 1 Offset)	-$180,478								-$180,478	
Miscellaneous Revenue	-$39,000								-$39,000	
Cellular Site Lease Revenue	-$230,000		-$178,250			-$51,750				
Other Income (R-6 Partners)	-$125,000		-$125,000							
Investment Income	-$100,000		-$100,000							
Plus (+) Other Fundings										
Plus Funding from Reserves	$200,000							$200,000		
Plus Restricted Reserve Funding	$627,301						$627,301			
Plus Operating Reserve Funding	$2,369		$2,369							
Total Water Service Rev Requirements	**$14,703,670**	**$8,963,788**	**$3,231,596**	**$1,042,959**	**$313,615**	**$543,890**	**$627,301**	**$200,000**	**-$219,478**	**$0**
Reallocation of Private Fire Peaking				-$8,502	-$22,858					$31,360
Total Net Revenue Requirements	**$14,703,670**	**$8,963,788**	**$3,231,596**	**$1,034,457**	**$290,756**	**$543,890**	**$627,301**	**$200,000**	**-$219,478**	**$31,360**

Table 5-11: Allocations of Peaking Costs to Private Fire Services

Allocation of Peaking Costs to Fire Protection		Max Day	Max Hour	Total
Revenue Requirements (Table 5-10)		**$1,042,959**	**$313,615**	
Fire Demand (Table 5-6, rows 3-4)	ccf	481	5,294	
Extra Capacity Demand (Table 5-6, rows 7-8)	ccf	5,837	2,479	
Total Extra Capacity Demand plus Fire	**ccf**	**6,318**	**7,773**	
Unit Cost of Service	$ / ccf	$165.07	$40.35	
	$/ kgal	$220.68	$53.94	
Fire Demand	kgal	360	3,960	
Fire Protection Costs		**$79,445**	**$213,604**	**$293,049**
Private Fire	10.7%	$8,502	$22,858	$31,360
Public Fire	89.3%	$70,943	$190,746	$261,689

The AWWA M1 Manual describes a cost-of-service approach to setting water rates that results in the distribution of costs to each customer or customer class based on the costs that each incurs. A dual set of fees—fixed and variable—is an extension of this cost causation theory. For example, a utility incurs some of the costs with serving customers irrespective of the amount or rate of water they use, such as, billing and customer service costs. These costs are referred to as customer-related costs and are typical costs that would be recovered through a fixed monthly service charge. These costs are usually recovered on each meter. Regardless of the level of a customer's consumption, a customer will be charged this minimum amount on each bill.

Utilities invest in and continue to maintain facilities to provide capacity to meet all levels of desired consumption, including the peak demand plus fire protection. These costs must be recovered regardless of the amount of water used during a given period. Thus, capacity or peaking costs, along with base costs, are generally considered fixed water system costs. Ideally, an agency could recover 100% of the fixed costs in the fixed charges, therefore providing revenue stability; however, this approach foregoes affordability for essential use and heavily impacts small users. A portion of the base costs and peaking costs are recovered in the fixed charges, along with the customer-related costs and meter-related costs to balance between affordability and revenue stability. Revenue requirements for the District's

fixed monthly service charges include 100 percent of base fixed costs, inclusive of billing and customer service costs and other fixed costs to meet average demand, as well as a portion of the peaking costs. The remaining peaking costs are recovered in the delivery rate component of the commodity rates.

The rate structure remains unchanged and consists of the monthly fixed service and the volumetric commodity rates, which are allocated as follows in Table 5-12:

- The monthly service charge includes customer service, fixed base costs, and a portion of the peaking costs.
- The volumetric water commodity rates include water supply (to recover total purchased water costs from MWDOC and Baker Water Treatment Plant water costs), delivery/peaking (to recover the District's remaining peaking costs), RW funding, conservation, and revenue offsets components.

Table 5-12: Cost Categories and Water Rate Structure

Cost Components	Service Charges	Tier 1 Essential Use	Tier 2 Efficient Use	Tier 3 Inefficient Use	Tier 4 Excessive Use	Commercial Use
Billing & Cust. Service	x					
Meters	x					
Fixed Base Costs	x					
Delivery Peaking Costs	x	x	xx	xxx	xxx	x
Water Supply		x	x	x	x	x
RW Program Funding				xx	xxx	x
Conservation				x	x	x
Rev Offset		x				x

Unit Component Cost Derivation

Our end goal is to proportionately distribute the cost causation components to each user class. To do so we must calculate the cost causation component unit costs, which starts by assessing the total service units demanded by each class for each cost causation component. Extra capacity costs representing the demand placed on the system are related to the capacity of the meters. The capacity of the meters is determined by comparing the hydraulic capacity of the meters to the smallest meter in the system, which is assigned a capacity of one. Thus, a 1-inch meter that can continuously deliver 50 gallons per minute (gpm) is considered to have a capacity of 2.5 when compared to the 5/8-inch meter which can deliver 20 gpm. Because of the unique characteristics of the District's service area, the maximum of the hydraulic capacity or the actual usage characteristics was used to determine the capacity of the meters. For example, a 2-inch meter, on average, uses 10 times the water of the 5/8-inch meter. The meter capacity ratios representing the maximum of the hydraulic ratio or the actual usage are used to calculate the equivalent meter units to recover the meter service & capacity costs (based on ETWD *Cost of Service Study Report for Water, Wastewater and Recycled Water prepared in April 2009*). The calculation of the bills per year and the equivalent meter units (EMU) is shown in Table 5-13 below.

Table 5-13: Units of Service for Monthly Service Charges

Potable Water Meters	Meter Counts	Meter Ratio	Bills / yr	EMUs / yr
	A	B	C = A x 12	D = C x B
5/8"	2,380	1.00	28,560	28,560
3/4"	4,854	1.50	58,248	87,372
1"	452	2.50	5,424	13,560
1-1/2"	702	5.00	8,424	42,120
2"	1,126	10.00	13,512	135,120
Private Fire[17]	174	1.00	2,088	2,088
Total	**9,514**		**114,168**	**308,820**

Table 5-14 below shows the calculation for the remaining units of service. The capacity or peaking factor for each customer class is taken from Table 5-4.

Table 5-14: Water Units of Service Derivation

		Peaking		RW		Conservation		Revenue Offset		Service & Capacity	Billing & CS	Fire Service
Water Usage	Water Sales (ccf)	Peaking Factors	Extra Capacity	RW Funding	RW Service Units	Conservation Funding	Conservation Service Units	Offset Factor	Rev Offset Service Units	No. of Meters (Equiv.)	No. of Bills	FDU/yr
		Table 5-4								Table 5-13	Table 5-13	Table 5-5
[A]	[B]	[C]	[D] = [B] x [C]	[E]	[F] = [B] x [E]	[G]	[H] = [G] x [A]	[I]	[J] = [I] x [A]			
Tier 1 - Essential Use	1,459,129	1.16	228,956	0.00	-	0.00	0	1.00	1,459,129			
Tier 2 - Efficient Use	913,013	1.90	819,465	0.00	-	0.00	0	0.00	0			
Tier 3 - Inefficient Use	90,201	1.90	80,959	1.00	90,201	1.00	90,201	0.00	0			
Tier 4 - Excessive Use	72,696	2.66	120,784	1.74	126,428	1.00	72,696	0.00	0			
Uniform - Commercial Use	383,481	1.30	113,962	0.14	52,520	0.10	38,348	0.81	310,620			
Total	**2,918,520**		**1,364,126**		**269,149**		**201,245**		**1,769,749**	**308,820**	**114,168**	**303,970**

Table 5-15 allocates the water revenue requirement cost categories (Table 5-10) to rate components for FY 2024.

Table 5-15: Water Rate Components

Water Service Revenue Requirements	FY 2024	Monthly Service Charges			Water Commodity Rates				
		Billing & CS	Meters & Capacity	Private Fire	Water Supply	Delivery	RW	Conservation	Revenue Offset
Water Supply	$8,963,788				$8,963,788				
Base Fixed	$3,231,596		$3,231,596						
Peaking (Max Day + Max Hour)	$1,325,214		$875,214			$450,000			
Billing & CS	$543,890	$543,890							
RW	$627,301						$627,301		
Conservation	$200,000							$200,000	
Rev Offset	-$219,478								-$219,478
Private Fire	$31,360			$31,360					
Total Water Service Charges	**$14,703,670**	**$543,890**	**$4,106,810**	**$31,360**	**$8,963,788**	**$450,000**	**$627,301**	**$200,000**	**-$219,478**

Table 5-16 summarizes the water revenue requirements (Table 5-10) for FY 2024 by rate components and shows the calculation of unit costs.

[17] Private Fire bills are combined with the account customer bill for potable services

Table 5-16: Unit Cost Calculation

Water Rev Requirements	FY 2024	Monthly Service Charge			Water Commodity Rates				
		Billing & CS	Service & Capacity	Fire Service	Water Supply	Peak Delivery	RW	Conservation	Rev Offset
Water Supply	$8,963,788				$8,963,788				
Base Fixed	$3,231,596		$3,231,596						
Peaking	$1,325,214		$875,214			$450,000			
RW	$627,301						$627,301		
Conservation	$200,000							$200,000	
Rev Offset	-$219,478								-$219,478
Billing & CS	$543,890	$543,890							
Private Fire	$31,360			$31,360					
Total	**$14,703,670**	**$543,890**	**$4,106,810**	**$31,360**	**$8,963,788**	**$450,000**	**$627,301**	**$200,000**	**-$219,478**
Units of Service		114,168	308,820	303,970	2,918,520	1,364,126	269,149	201,245	1,769,749
		bills / yr	EMUs / yr	FDU/yr	ccf / yr	ccf / yr	ccf / yr	ccf / yr	ccf / yr
Unit Rate		**$4.76**	**$13.30**	**$0.10**	**$3.07**	**$0.33**	**$2.33**	**$0.99**	**-$0.12**

Monthly Service Charge Derivation

The monthly service charge calculations are shown in Table 5-17 below based on the unit costs shown in Table 5-16.

Table 5-17: Proposed Monthly Service Charges Calculations

Meter Size	Billing & Customer Service	Meter Service & Capacity[18]	Proposed Rates	Current Rates	$ Impact	% Impact
	A (Table 5-15)	B	C = A+ B	D	E = C - D	F = E / D
5/8"	$4.76	$13.30	**$18.07**	$17.46	$0.61	3.5%
3/4"	$4.76	$19.95	**$24.72**	$23.62	$1.10	4.7%
1"	$4.76	$33.25	**$38.02**	$35.93	$2.09	5.8%
1-1/2"	$4.76	$66.50	**$71.27**	$66.70	$4.57	6.9%
2"	$4.76	$132.99	**$137.76**	$128.25	$9.51	7.4%

Capital Facility Charges Derivation

Table 5-2 shows the required revenue increases for FY 2024 at an overall 25%. Table 5-20 shows the unit calculation of Capital Facility charges for water service from Table 5-18 (units of service) and Table 5-19 (unit cost of service).

[18] Service and Capacity component can be calculated by using the unit cost (Table 5-16) multiplied by the appropriate meter ratio (Table 5-13)

Table 5-18: Units of Service for Water Capital Facility Charges

Potable Water Meters	Meter Counts	Meter Ratio	EMUs / yr
5/8"	2,380	1.00	28,560
3/4"	4,854	1.50	87,372
1"	452	2.50	13,560
1 1/2"	702	5.00	42,120
2"	1,126	10.00	135,120
Total	**9,514**		**306,732**

Table 5-19: Calculated Unit Cost of Service for Water Capital Facility Charges

	Capital Facility Charges
Revenue Requirements (Table 5-2)	**$1,702,968**
Units of Service (Table 5-18)	306,732
Unit Cost of Service	**$5.55**

Table 5-20: FY 2024 Proposed Water Monthly Capital Facility Charges

Meter Size	Meter Ratio	Proposed FY 2024	Current FY 2023	$ Change	% Change
	A (Table 5-18)	**B = 6.37 x A**	C	D = B - C	E = D/C
5/8"	1.00	**$5.56**	$5.09	$0.47	9.2%
3/4"	1.50	**$8.33**	$5.09	$3.24	63.7%
1"	2.50	**$13.88**	$8.50	$5.38	63.3%
1 1/2"	5.00	**$27.76**	$20.65	$7.11	34.4%
2"	10.00	**$55.52**	$51.84	$3.68	7.1%

Commodity Rate Derivation

Peak Delivery rates (Table 5-21) are applied to all rates based on peaking characteristics for each usage class (shown in Table 5-4). Indoor or domestic use has the lowest peaking factor; consequently, all indoor use (residential and commercial) is assigned a lower peak delivery cost. Outdoor irrigation is associated with higher peaking factors, so outdoor use comprising residential irrigation and the current dedicated irrigation classes (both functional and recreational) will have higher peak delivery costs. Inefficient and excessive use has even higher peaking factors and is assigned the highest peak delivery costs.

Table 5-21: Peak Delivery Rate Calculations

Line	Water Usage3 and	Budgeted Water Sales	Peaking Factor	Peak Usage	Peak Rate ($/ccf)
		A	B (Table 5-4)	C = A x (B-1)	D = [A7] x C/A
1	Tier 1 - Essential Use	1,459,129	1.16	228,956	$0.05
2	Tier 2 - Efficient Use	913,013	1.90	819,465	$0.30
3	Tier 3 - Inefficient Use	90,201	1.90	80,959	$0.30
4	Tier 4 - Excessive Use	72,696	2.66	120,784	$0.55
5	Uniform - Commercial Use	383,481	1.30	113,962	$0.10
6	**Total**	**2,918,520**		**1,364,126**	
7	Unit Rate, $/ccf [19]	$0.33			

The RW program is associated with offsetting the demands of inefficient and excessive use and RW program costs are therefore allocated to inefficient and excessive use only (usage in Tiers 3 and 4 and 10 percent of commercial use, which is considered inefficient and is allocated at the same rate as average of residential inefficient and excessive usage). The RW program provides recycled water and offsets potable water use which is then available for Tiers 3 and 4. To determine the recycled water costs to be assigned to Tiers 3 and 4, Raftelis obtained the recycled water system's costs from the District based on Updated RW Expansion Capital Cost provided in March 2022. Phase 1 cost is $1,150/AF and Phase 2 RW expansion cost is $2,000/AF in today's dollars, which gives a ratio of 1:1.74. Phase 2 was developed to offset the excessive use in Tier 4. Therefore, this ratio is utilized for the RW Program funding ratio between Tier 3 and Tier 4 to reflect that Tier 4, excessive usage, should carry the burden of the higher costs to fund the more extensive RW program. Tier 4 therefore pays more to fund this alternative source of water required to offset Tier 4 demands. Revenues from this cost component are collected in a restricted reserve used to meet the debt service requirements associated with the recycled water system, which provides supplemental water and frees up valuable potable water resources to offset the demand imposed by inefficient and excessive use. The rates for the recycled water program to Tiers 3 and 4 are shown in Table 5-22.

Table 5-22: RW Program Funding for Potable Water Rate Calculations

Water Usage	Budgeted Water Sales	Equivalent Factor	Equivalent Usage	Unit Rate ($/ccf) [20]
Tier 1 - Essential Use	1,459,129	0.00	0	$0.00
Tier 2 - Efficient Use	913,013	0.00	0	$0.00
Tier 3 - Inefficient Use	90,201	1.00	90,201	$2.33
Tier 4 - Excessive Use	72,696	1.74	126,428	$4.05
Uniform - Commercial Use	383,481	0.14[21]	52,520	$0.32
Total	**2,918,520**	**$0**	**269,149**	
Unit RW Program Rate [22]	$2.33 / ccf			

[19] Rounded to the nearest cent. Calculation of Unit Costs shown in Table 5-16.
[20] Rounded to the nearest cent.
[21] Equivalent factor for commercial use = 10% x (1.00+1.74)/2 = 0.14
[22] Rounded to the nearest cent. Calculation of Unit Costs shown in Table 5-16.

Conservation programs are targeted to meet the demands of inefficient and excessive use and therefore conservation costs are applied only to inefficient and excessive use, as shown in Table 5-23. There is no good rationale to differentiate the costs and therefore the unit conservation cost per unit of water in Tiers 3 and 4 is the same.

Table 5-23: Conservation Program Funding (aka Conservation) Rate Calculations

Water Usage	Budgeted Water Sales	Equivalent Factor	Equivalent Usage	Unit Rate ($/ccf)[23]
Tier 1 - Essential Use	1,459,129	0.00	0	$0.00
Tier 2 - Efficient Use	913,013	0.00	0	$0.00
Tier 3 - Inefficient Use	90,201	1.00	90,201	$0.99
Tier 4 - Excessive Use	72,696	1.00	72,696	$0.99
Uniform - Commercial Use	383,481	0.10	38,348	$0.10
Total	**2,918,520**	**$0**	**201,245**	
Unit Conservation Rate[24]	$0.99 / ccf			

Finally, Table 5-24 shows the offset applied per the District's current policy objective to provide rate incentives for essential and efficient indoor use, miscellaneous revenues and a portion of the property taxes received by the District are used to offset the essential and efficient usage rate. The offset applies to indoor/domestic use in Tier 1 and commercial indoor use.

- To minimize customer impacts and provide incentives for essential and efficient use, miscellaneous revenues and a portion of property tax revenues are used to provide a revenue offset for efficient indoor and efficient commercial indoor use.
- Note that it is assumed that efficient usage for commercial is 90 percent of total use, and of that 90 percent, the indoor usage is 90 percent. Therefore, indoor usage is 81 percent (90 percent x 90 percent) of the total commercial use. The revenue offset is applied to 81 percent of total commercial use to determine the revenue offset for the commercial class.
- Note that $0.12 /ccf is applied to the efficient indoor use in Tier 1; and, since commercial rates are uniform, the incentive becomes $0.10 /ccf when applied to the full commercial use. Cell site leasing revenue and the remaining property tax revenue is used to offset revenue requirements for fixed service charges. Note that all user classes benefit from this offset. Most irrigation customers have associated domestic usage which also benefits from the revenue offset.

[23] Rounded to the nearest cent.
[24] Rounded to the nearest cent. Calculation of Unit Costs shown in Table 5-16.

Table 5-24: Revenue Offset Rate Calculations

Water Usage	Budgeted Water Sales	Equivalent Factor	Equivalent Usage	Unit Rate ($/ccf)[25]
Tier 1 - Essential Use	1,459,129	1.00	1,459,129	-$0.12
Tier 2 - Efficient Use	913,013	0.00	0	$0.00
Tier 3 - Inefficient Use	90,201	0.00	0	$0.00
Tier 4 - Excessive Use	72,696	0.00	0	$0.00
Uniform - Commercial Use	383,481	0.81	310,620	-$0.10
Total	**2,918,520**	**$0**	**1,769,749**	
Unit Rev Offset Rate[26]	-$0.12 / ccf			

In summary, the cost allocation methodology developed herein allocates the costs to customers, meters, and usage. Customer costs are the same for each account and other base fixed costs and a portion of peaking costs are allocated proportionally to the capacity of each meter. The remaining costs are allocated to each usage class in accordance with the demand they place on the system. The usage of each customer class is defined and the costs associated with the usage of each customer type provides the revenue to be recovered from that customer class. The rationale for allocating conservation costs and supplemental water costs allows the development of inclining tiered rates to provide incentives for conservation in the inefficient and excessive water usage tiers identified within each customer class. This methodology meets the requirements of Proposition 218 and Article X of the California Constitution.

Table 5-25 shows the total rates derived from the individual rate components shown in Table 4-3, and Table 5-21 to Table 5-24.

Table 5-25: Proposed Commodity Rate Calculation

Water Usage Rates	Water Supply	Peak Delivery	RW	Conservation	Rev Offset	Proposed Rates
Tier 1 - Essential Use	$3.07	$0.05	$0.00	$0.00	-$0.12	**$3.00**
Tier 2 - Efficient Use	$3.07	$0.30	$0.00	$0.00	$0.00	**$3.37**
Tier 3 - Inefficient Use	$3.07	$0.30	$2.33	$0.99	$0.00	**$6.70**
Tier 4 - Excessive Use	$3.07	$0.55	$4.05	$0.99	$0.00	**$8.67**
Uniform - Commercial Use	$3.07	$0.10	$0.32	$0.10	-$0.10	**$3.49**

5.3. Proposed Rates

5.3.1. MONTHLY SERVICE CHARGES

Based on the revenue requirements shown in Table 5-1 and the Monthly Service Charge calculations in Table 5-17, the proposed Monthly Service Charges for FY 2024 are shown in Table 5-26 below. All rates and charges are rounded up to the nearest cent to ensure adequate cost recovery.

[25] Rounded to the nearest cent.
[26] Rounded to the nearest cent. Calculation of Unit Costs shown in Table 5-16.

Table 5-26: FY 2024 Monthly Water Service Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change
5/8”	**$18.07**	$17.46	$0.61	3.5%
3/4”	**$24.72**	$23.62	$1.10	4.7%
1”	**$38.02**	$35.93	$2.09	5.8%
1-1/2”	**$71.27**	$66.70	$4.57	6.9%
2”	**$137.76**	$128.25	$9.51	7.4%

The monthly service charges in FY 2025 and FY 2026 will be increased based on the “CPI for Urban Wage and Clerical Workers (CPI-W)” for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the service charge increase will be used to calculate the rates.

5.3.2. CAPITAL FACILITY CHARGES

Table 5-27 shows the proposed Capital Facility Charges as derived in Table 5-20 to recover costs of treatment plant improvements, debt service and replacement and refurbishment of the system. Table 5-28 shows the proposed Capital Facility Charges for FY 2025 and FY 2026. Increases to Capital Facility Charges for FY 2025 and FY 2026 are based on District projections of revenue necessary to meet required capital expenditures and represent annual increases of 25%.[27]

Table 5-27: FY 2024 Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2024	Current FY 2023	$ Change	% Change
5/8"	**$5.56**	$5.09	$0.47	9.2%
3/4"	**$8.33**	$5.09	$3.24	63.7%
1"	**$13.88**	$8.50	$5.38	63.3%
1-1/2"	**$27.76**	$20.65	$7.11	34.4%
2"	**$55.52**	$51.84	$3.68	7.1%

Table 5-28: FY 2025 and FY 2026 Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2025	Proposed FY 2026
5/8"	$6.95	$8.69
3/4"	$10.42	$13.02
1"	$17.35	$21.69
1-1/2"	$34.70	$43.38
2"	$69.40	$86.75

[27] See Appendix 7 for detailed Capital Projects Budget.

5.3.3. COMMODITY RATES

Based on the revenue requirements shown in Table 5-1 and the calculated Commodity Rate components summarized in Table 5-25, a comparison of the current and proposed commodity rates for FY 2024 are shown in Table 5-29 below. Table 5-30 shows the proposed Commodity Rate for FY 2025 and FY 2026. The FY 2025 and FY 2026 rates reflect only the pass through of the projected Metropolitan Water District rates as well as inflationary impacts on O&M costs at the Baker Water Treatment Plant.

Table 5-29: FY 2024 Proposed Water Commodity Rates

Water Usage Rates	Proposed FY 2024	Current FY 2023	$ Impact	% Impact
Tier 1 - Essential Use	**$3.00**	$2.82	$0.18	6.4%
Tier 2 - Efficient Use	**$3.37**	$3.18	$0.19	6.0%
Tier 3 - Inefficient Use	**$6.70**	$6.50	$0.20	3.1%
Tier 4 - Excessive Use	**$8.67**	$8.35	$0.32	3.8%
Uniform - Commercial Use	**$3.49**	$3.31	$0.18	5.4%

Table 5-30: FY 2025 and FY 2026 Proposed Water Commodity Rates

Meter Size	Proposed FY 2025	Proposed FY 2026
Tier 1 - Essential Use	$3.18	$3.39
Tier 2 - Efficient Use	$3.55	$3.76
Tier 3 - Inefficient Use	$6.88	$7.09
Tier 4 - Excessive Use	$8.85	$9.06
Uniform - Commercial Use	$3.67	$3.88

5.3.4. PRIVATE FIRE RATES

The proposed Private Fire Rates are shown in Table 5-32 and reflect the changes to the fixed charges for the fire demand component at each fire line size. Table 5-31 shows the private fire demand revenue requirement from Table 5-11. In addition, all private fire services have a 5/8-in meter attached to each that also requires maintenance and replacement services. In addition to the fire demand component, private fire services also share the service and capacity component equivalent for the 5/8-in meter as shown in Table 5-32. The proposed rates for FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the private fire rate increase will be used to calculate the rates.

Table 5-31: Fire Demand Rate Calculation

Private Fire Service	FY 2024
Revenue Requirements for Peaking (Table 5-16)	$31,360
Units of Service (Table 5-5)	303,970 FDUs
Unit Cost of Service	**$0.103 / FDU**

Meter Size	Accounts	Fire Demand Factor	Fire Demand Rate[28]
	A	B (Table 5-5)	C = $0.103 x B
4"	27	38.32	$3.96
6"	90	111.31	$11.49
8"	53	237.21	$24.48
10"	4	426.58	$44.01

Table 5-32: FY 2024 Proposed Private Fire Service Rates

Meter Size	Accounts	Fire Demand	Service & Capacity	Proposed Rates	Current Rates	$ Change	% Change
	A	B (Table 5-31)	B (Table 5-16)	C = A + B	D	E = C - D	F = E / D
4"	27	$3.96	$13.30	$17.26	$16.15	$1.11	6.9%
6"	90	$11.49	$13.30	$24.79	$23.45	$1.34	5.7%
8"	53	$24.48	$13.30	$37.78	$36.04	$1.74	4.8%
10"	4	$44.01	$13.30	$57.31	$54.97	$2.34	4.3%
Total	**174**	**$31,374**	**$27,767**	**$59,144**	**$56,119**	**$3,025.80**	**5.4%**

[28] Rounded to the nearest cent

6. Wastewater Revenue Requirements and Proposed Rates

6.1. Wastewater (WW) Revenue Requirements

The total revenue requirement (net of miscellaneous revenue credits) is, by definition, the net cost of providing service. This cost of service is then used as the basis to develop unit rates for the wastewater parameters and to allocate costs to the various user classes. The concept of proportionate allocation to user classes implies that allocations should take into consideration the quantity of wastewater a user contributes as well as the strength (i.e., treatment requirements) of the wastewater.

The cost of service analysis and rate calculations consist of the following steps:

- Determination of the total costs to be recovered from rates (cost of service);
- Determination of the wastewater loadings for each customer class, to ensure costs are allocated to each class proportionately;
- Allocation of the cost of service to the loading parameters – Flow, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS);
- Calculation of unit costs for the three parameters, and the costs to serve the various user classes based on their loadings;
- Calculation of rates for each user class.

This section of the report discusses the allocation of operating and capital costs to the Flow, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) parameters, the determination of unit rates, and the calculation of user class cost responsibility.

Table 6-1 shows the Operating and Capital Wastewater Revenue Requirements which will be the basis to calculate the COS rates for FY 2024. Table 6-2 and Table 6-3 show the required revenue increases for Wastewater Service Charges and Wastewater Capital Facility Charges in FY 2024. Please refer to Appendix 2 and Appendix 5 for details of the figures shown.

Table 6-1: FY 2024 Wastewater Revenue Requirements

Wastewater Revenue Requirements	FY 2024	Operating	Capital
O&M Expenses (excl. Interest & Depreciation)			
Pumping – Sewer	$489,500	$489,500	$0
Treatment Plant	$2,492,600	$2,492,600	$0
T&D – Sewer	$214,000	$214,000	$0
Operations Support	$90,600	$90,600	$0
Fleet	$178,800	$178,800	$0
Indirect Operating Costs	$35,400	$35,400	$0
Administration	$0	$0	$0
Information Technology	$273,800	$273,800	$0
Indirect Administration Costs	$814,020	$814,020	$0
Labor Costs	$5,505,860	$5,505,860	$0
Subtotal O&M Expenses (excl. Interest & Depreciation)	**$10,094,580**	**$10,094,580**	**$0**
Other Revenue Requirements			
Debt Service	$525,001	$0	$525,001
Capital Improvement Program	$1,856,100	$0	$1,856,100
Subtotal Other Revenue Requirements	$2,381,101	**$0**	$2,381,101
***Less* Other Revenues**			
Property Taxes – General Fund Revenue	-$600,000	-$600,000	$0
Investment Income	-$160,600	-$160,600	$0
Subtotal Other Revenues	**-$760,600**	**-$760,600**	**$0**
***Plus* Funding Operating Reserve**	$12,724	$12,724	$0
***Less* Funding from Capital Reserve**	-$198,199	$0	-$198,199
NET REV REQUIREMENTS FROM FY 2024 RATES	**$11,529,606**	**$9,346,704**	**$2,182,902**

Table 6-2: FY 2024 WW Operating Revenue Requirements

WW Operating Rev Req	FY 2024	Notes
WW O&M Expenses	$10,094,580	Appendix 5
Less (-) Non-Operating Revenues	-$760,600	Appendix 5
Plus (+) Operating Reserve Funding	$12,724	Appendix 5
Total WW Operating Revenue Requirements	$9,346,704	
Current WW Revenues	$8,535,803	Appendix 5
Revenue Increase	**9.50%**	

Table 6-3: FY 2024 WW Capital Revenue Requirements

WW Capital Revenue Requirements	FY 2024	Notes
Capital Improvement Program	$1,856,100	Appendix 5
Plus Debt Service	$525,001	Appendix 5
Less Funding from Capital Reserve	-$198,199	Appendix 5
Total WW Capital Revenue Requirements	**$2,182,902**	
Current WW Revenues	$1,746,321	Appendix 5
Revenue Increase	**25.0%**	

6.2. Wastewater Cost of Service

6.2.1. CUSTOMER CLASSIFICATION

Non-residential customers are classified into 4 groups: low strength, medium strength, high strength, and Restaurants. The strength data for each current customer class is based primarily on Los Angeles County Sanitation District (LACSD) data reported in its Revenue Program (with a few exceptions based on the District's understanding of its customer characteristics). For example, restaurants are assumed to have the same strength as residential given the strict regulations of Fats, Oils and Grease (FOG) program for restaurants within the District's service area. Table 6-4 summarizes the proposed customer classification groupings. There are 3 groups of residential customers: single family residential, multi-family unrestricted and multi-family restricted. Laguna Woods Village accounts have restricted and unrestricted units. Restricted units refer to households that have a size restriction of a maximum of two occupants per unit.

Table 6-4: Customer Classifications

Customer Classes	BOD (mg/L)	TSS (mg/L)	Total Strength	Notes
Single Family Residential	282	272	554 mg / L	LACSD data[29]
Multi-Family Restricted	282	272	554 mg / L	LACSD data
Multi-Family Unrestricted	282	272	554 mg / L	LACSD data
Low Strength Commercial	0-150	0-150	≤ 300 mg / L	LACSD data
Medium Strength Commercial	150-300	150-300	301- 600 mg / L	LACSD data
High Strength Commercial	> 300	> 300	> 600 mg / L	LACSD data
Restaurants	282	272	554 mg / L	Same as Residential[30]

Raftelis also reviewed the residential household density, persons per household (PPH), within the District's service area using Census data. Refer to Appendix 6 for details. Table 6-5 shows the estimated residential household size to be used to estimate wastewater flows for residential customers.

[29] LACSD Revenue Program Report Table 3

[30] Restaurant strengths are assumed to be the same as residential, given the strict regulations of FOG program for restaurants within the District service area.

Table 6-5: District's Residential Household Density

	Dwelling Units	Average Household Size	Notes
Single Family Residential	7,059 DU	3.01 PPH	See Appendix 6 (ETWD)
Multi-Family Restricted	12,736 DU	1.43 PPH	See Appendix 6 (Laguna Woods)
Multi-Family Unrestricted	5,152 DU	2.20 PPH	See Appendix 6 (ETWD)

6.2.2. WASTEWATER LOADINGS

Residential Wastewater Flows

Combining the strengths and household density in Table 6-4 and Table 6-5, Table 6-6 summarizes the residential wastewater flow characteristics. Using the conversion formulas (shown below), Table 6-7 summarizes the estimated residential wastewater flows. The water use inside the dwelling unit is estimated at 55 gal per day per capita (gpcd) based on the State standard.

Table 6-6: Residential Wastewater Flow Characteristics

	Dwelling Units	Average Household Size	BOD (mg/L)	TSS (mg/L)
	A	B	C	D
Residential Unrestricted	7,059 DU	3.01 PPH	282 mg/L	272 mg/L
Multi-Family Restricted	12,736 DU	1.43 PPH	282 mg/L	272 mg/L
Multi-Family Unrestricted	5,152 DU	2.20 PPH	282 mg/L	272 mg/L

$$Est.WW\ Flow = \frac{Dwelling\ Units\ x\ Household\ Size\ x\ 55\ GPCD\ x\ 365\ days}{748\ gallons/ccf}$$

$$BOD(lbs/day) = \frac{Flows\ (ccf) x\ BOD(mg/L) x\ 8.345404374\ (lbs/gallon) x 748\ gallons/ccf}{365\ days\ x\ 10^6(mg/L)}$$

$$TSS(lbs/day) = \frac{Flows\ (ccf) x\ TSS(mg/L) x\ 8.345404374\ (lbs/gallon) x 748\ gallons/ccf}{365\ days\ x\ 10\text{^}6\ (mg/L)}$$

Table 6-7: Estimated Residential Wastewater (WW) Flows

	Est. WW Flow (ccf)	BOD (lbs/day)	TSS (lbs/day)
	A	B	C
Residential Unrestricted	570,248 ccf	2,750	2,653
Multi-Family Restricted	488,791 ccf	2,357	2,274
Multi-Family Unrestricted	304,195 ccf	1,467	1,415
Total	**1,363,234 ccf**	**6,575**	**6,342**

Non-Residential Strengths & Flows

Table 6-8 summarizes the current customer classes with estimated wastewater strength characteristics and its corresponding class grouping.

Table 6-8: Non-Residential Wastewater Flow Characteristics

Non-Residential Classes	BOD (mg/L)	TSS (mg/L)	Combined Strengths	Notes
Low Strength	150 mg/L	150 mg/L	<300 mg/L	LACSD data
Medium Strength	258 mg/L	280 mg/L	<600 mg/L	LACSD data
High Strength	800 mg/L	800 mg/L	<1,600 mg/L	LACSD data
Restaurants	282 mg/L	272 mg/L	554 mg/L	Same as residential[31]

Table 6-9 summarizes the estimated wastewater flows and loadings contributed by both residential and non-residential customer classes.

Table 6-9: Estimated Wastewater System Flows and Loadings

Customer Classes	Flows (ccf)	BOD (lbs/day)	TSS (lbs/day)	Dwelling Units	# of Accts
Residential					
Residential Unrestricted	570,248 ccf	2,750	2,653	7,059 DU	6,681
Multi-Family Restricted	488,791 ccf	2,357	2,274	12,736 DU	1,020
Multi-Family Unrestricted	304,195 ccf	1,467	1,415	5,152 DU	562
Total Residential	1,363,234 ccf	6,575	6,342	24,947 DU	8,263
Non-Residential					
Low St. Commercial	4,244 ccf	11	11	17 DU	17
Medium St. Commercial	244,819 ccf	1,079	1,146	703 DU	605
High St. Commercial	8,181 ccf	112	112	7 DU	7
Restaurants	34,747 ccf	168	162	88 DU	88
Total Non-Residential	291,991 ccf	1,369	1,430	815 DU	717
TOTAL WW SERVICES	**1,655,225 ccf**	**7,944**	**7,772**	**25,762 DU**	**8,980**

6.2.3. ALLOCATIONS OF COST OF SERVICE

The cost of providing service is primarily based on the flow and strength of wastewater. The three main cost allocation parameters are Flow, BOD, and TSS. BOD and TSS constitute the strength components of the wastewater discharge. Costs are assigned based on the parameters that dictate the design of each process. The allocation of costs to the three parameters involves:

[31] Restaurants strengths are assumed to be the same as residential, given the strict regulations of FOG program for restaurants within the District service area.

- Detailed breakdown of O&M costs
- Itemization of the capital costs by functions such as collection, treatment, outfall, etc.
- Allocation of the functional costs to the wastewater parameters

Based on a detailed breakdown of fixed assets by process, the treatment plant costs are allocated to flow, BOD, and TSS at 40 percent, 30 percent, and 30 percent, respectively. This allocation is representative of other secondary treatment plants. Pipelines, outfall, and pumping stations costs are all allocated to flow. Labor costs are allocated based on the combined non-labor operating cost, at 38 percent, 17 percent, 17 percent, and 28 percent to Flow, BOD, TSS, and General, respectively. Costs that could not be specifically identified were classified as general costs. General costs are ultimately reallocated based on the proportions of other costs—in this study, general costs are allocated to flow, BOD, and TSS at 54 percent, 23 percent, and 23 percent, respectively (see Table 6-12 below). The allocation of operating costs is shown in Table 6-10.

The cost of service allocations in this study are based on Raftelis' experience with secondary treatment plants and are consistent with the revenue program guidelines of the State Water Resources Control Board (SWRCB) and the Water Environment Federation (WEF).

Table 6-10: Allocation of WW O&M Expenses

O&M Expenses	FY 2024	Flows	BOD	TSS	General
Pumping - Sewer	**$489,500**	100%			
Treatment Plant	**$2,492,600**	40%	30%	30%	
T&D - Sewer	**$214,000**	100%			
Operations Support	**$90,600**	70%	15%	15%	
Fleet	**$178,800**	0%			100%
Indirect Operating Costs	**$35,400**	0%			100%
Information Technology	**$273,800**				100%
Indirect Administration Costs	**$814,020**				100%
Labor Costs	**$5,505,860**	38%	17%	17%	28%
Total O&M	**$10,094,580**	**$3,880,480**	**$1,674,914**	**$1,674,914**	**$2,864,273**

Table 6-11 summarizes the allocations of wastewater revenue requirements to cost components, such as flow, BOD, TSS, and General using the allocation of O&M expenses in Table 6-10. In FY 2024, debt service is allocated to capital. The revenue requirements are offset by property tax (which is allocated using the same as non-labor O&M allocations).

Table 6-11: Allocations of FY 2024 WW Revenue Requirements

Revenue Requirements	FY 2024	Flow	BOD	TSS	General	Capital
WW O&M Expenses	**$10,094,580**	$3,880,480	$1,674,914	$1,674,914	$2,864,273	$0
Other Rev Requirements						
Debt Service	**$525,001**	$0	$0	$0	$0	$525,001
Capital R&R Program	**$1,856,100**	$0	$0	$0	$0	$1,856,100
Subtotal Other Rev Requirements	**$2,381,101**	**$0**	**$0**	**$0**	**$0**	**$2,381,101**
Less Other Revenues						
Property Taxes	**-$600,000**	-$230,647	-$99,553	-$99,553	-$170,246	$0
Other Misc. Income	**-$160,600**	$0	$0	$0	-$160,600	$0
Subtotal Other Revenues	**-$760,600**	**-$230,647**	**-$99,553**	**-$99,553**	**-$330,846**	**$0**
+ Operating Reserve Funding	**$12,724**	$4,891	$2,111	$2,111	$3,610	$0
+ Capital Reserve Funding	**($198,199)**	$0	$0	$0	$0	($198,199)
REV REQ FROM RATES	**$11,529,606**	**$3,654,724**	**$1,577,472**	**$1,577,472**	**$2,537,037**	**$2,182,902**

Table 6-12: Reallocation of General Costs

Cost Categories	FY 2024	Reallocation of General	Reallocated General Costs	FY 2024
Flows	$3,654,724	54%	$1,361,619	$5,016,342
BOD	$1,577,472	23%	$587,709	$2,165,181
TSS	$1,577,472	23%	$587,709	$2,165,181
General	$2,537,037	-100%	-$2,537,037	$0
Capital	$2,182,902			$2,182,902
REV REQ FROM RATES	**$11,529,606**			**$11,529,606**

6.2.4. DEVELOPMENT OF UNIT COST

Combining the resulting cost allocations in Table 6-12 and the units of service from Table 6-9, the unit cost of service Flows, BOD, and TSS are calculated in Table 6-13.

Table 6-13: Development of FY 2024 Operating WW Unit Cost of Service

Operating Rev Req	FY 2024	Units of service		Unit Cost of Service
	A (Table 6-12)	B (Table 6-9)		C = A / B
Flows	$5,016,342	1,655,225	ccf / yr	$3.03
BOD	$2,165,181	7,944	lbs / day	$272.56
TSS	$2,165,181	7,772	lbs / day	$278.60
Total	**$9,346,704**			

6.2.5. ALLOCATION OF COSTS TO CUSTOMER CLASSES

$$Flows\ Cost = \$3.03/ccf\ x\ Flows\ (ccf)$$
$$BOD\ Cost = \$272.56/lbs\ x\ BOD\ (lbs)$$
$$TSS\ Cost = \$278.60/lbs\ x\ TSS\ (lbs)$$

Using the flows and strengths in Table 6-9 with the unit cost of service calculated in Table 6-13, Table 6-14 shows the allocated cost of service responsibility of each customer class.

Table 6-14: Allocation of FY 2024 Cost of Service to Customer Classes

Customer Classes	Flows (CCF)	BOD (lbs/day)	TSS (lbs/day)	Dwelling Units	# of Accts	Flows $3.03 $ / CCF	BOD $272.56 $ / lbs	TSS $278.60 $ / lbs	Total COS
Residential									
Residential Unrestricted	570,248 ccf	2,750	2,653	7,059 DU	6,681	$1,728,200	$749,606	$739,033	**$3,216,839**
Multi-Family Restricted	488,791 ccf	2,357	2,274	12,736 DU	1,020	$1,481,336	$642,529	$633,466	**$2,757,330**
Multi-Family Unrestricted	304,195 ccf	1,467	1,415	5,152 DU	562	$921,897	$399,872	$394,232	**$1,716,002**
Total Residential	**1,363,234 ccf**	**6,575**	**6,342**	**24,947 DU**	**8,263**	**$4,131,432**	**$1,792,007**	**$1,766,732**	**$7,690,171**
Non-Residential									
Low St. Commercial	4,244 ccf	11	11	17 DU	17	$12,862	$2,967	$3,033	**$18,863**
Medium St. Commercial	244,819 ccf	1,079	1,146	703 DU	605	$741,951	$294,024	$319,202	**$1,355,177**
High St. Commercial	8,181 ccf	112	112	7 DU	7	$24,792	$30,507	$31,182	**$86,481**
Restaurants	34,747 ccf	168	162	88 DU	88	$105,305	$45,676	$45,032	**$196,012**
Total Non-Residential	**291,991 ccf**	**1,369**	**1,430**	**815 DU**	**717**	**$884,910**	**$373,174**	**$398,449**	**$1,656,533**
TOTAL WW SERVICES	1,655,225 ccf	7,944	7,772	25,762 DU	8,980	$5,016,342	$2,165,181	$2,165,181	$9,346,704

6.3. Wastewater COS Rate Design and Proposed Rates

6.3.1. WASTEWATER SERVICE CHARGES

Residential customers will be assessed a monthly wastewater service charge based on the number of dwelling units. Total cost of service allocated to each customer class from Table 6-14 will be divided by the units to get the COS rate in Table 6-15. The wastewater rates in FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the wastewater rate increase will be used to calculate the rates.

Table 6-15: Development of FY 2024 Wastewater Service Charges

Customer Classes	Total Cost of Service	Flows (CCF)	Dwelling Units	Proposed FY 2024
Residential				
Residential Unrestricted	$3,216,839		7,059 DU	**$37.98 / DU**
Multi-Family Restricted	$2,757,330		12,736 DU	**$18.05 / DU**
Multi-Family Unrestricted	$1,716,002		5,152 DU	**$27.76 / DU**
Total Residential	**$7,690,171**		**24,947 DU**	
Non-Residential				
Low St. Commercial	$18,863	4,244 ccf		**$4.45 / ccf**
Medium St. Commercial	$1,355,177	244,819 ccf		**$5.54 / ccf**
High St. Commercial	$86,481	8,181 ccf		**$10.58 /ccf**
Restaurants	$196,012	34,747 ccf		**$5.65 / ccf**
Total Non-Residential	**$1,656,533**	**291,991 ccf**		

6.3.2. CAPITAL FACILITY CHARGES

The Capital Improvement Program Revenue Requirements (in Table 6-3) are allocated to each customer class based on the allocation of O&M revenue requirement. The proposed Capital Facility Charges for FY 2024 are shown in Table 6-16 below and are required for replacement and refurbishment of existing infrastructure and debt service payments. Increases to Capital Facility Charges for FY 2025 and FY 2026 are based on District projections of revenue necessary to meet required capital expenditures. [32] Table 6-17 shows the proposed Capital Facility Charges for FY 2025 and FY 2026.

Table 6-16: Development of FY 2024 Capital Facility Charges

	FY 2024	O&M Rev Req	%	Capital Facility Rev Req	Units of Services	Unit Capital Facility charges
		A (Table 6-15)	B = A / [A11]	C = [C11] x B	D (Table 6-9)	E = C / D
1	**Residential**				**EDUs**	
2	Residential Unrestricted	$3,216,839	34.42%	$751,286	7,059 EDU	**$8.87 / DU**
3	Multi-Family Restricted	$2,757,330	29.50%	$643,968	12,736 EDU	**$4.21 / DU**
4	Multi-Family Unrestricted	$1,716,002	18.36%	$400,768	5,152 EDU	**$6.48 / DU**
5						
6	**Non-Residential**				**Billed sewer flows (ccf)**	
7	Low St. Commercial	$18,863	0.20%	$4,405	4,244 ccf	**$1.04 / ccf**
8	Medium St. Commercial	$1,355,177	14.51%	$316,499	244,819 ccf	**$1.29 / ccf**
9	High St. Commercial	$86,481	0.91%	$20,197	8,181 ccf	**$2.47 / ccf**
10	Restaurants	$196,012	2.10%	$45,778	34,747 ccf	**$1.32 / ccf**
11	**Total**	**$9,346,704**	**100.00%**	**$2,182,902**		

[32] See Appendix 7 for detailed Capital Projects Budget.

Table 6-17: FY 2025 and FY 2026 Proposed Capital Facility Charges

Wastewater Capital Facilities Charges	Proposed FY 2025	Proposed FY 2026
Residential ($/EDU)		
Residential Unrestricted	$11.09	$13.86
Multi-Family Restricted	$5.27	$6.59
Multi-Family Unrestricted	$8.11	$10.13
Commercial Use ($/ccf)		
Low St. Commercial	$1.30	$1.63
Medium St. Commercial	$1.62	$2.02
High St. Commercial	$3.09	$3.86
Restaurants	$1.65	$2.07

6.4. Wastewater Customer Impacts

To understand the impacts on customers due to the COS revision, Raftelis calculated a series of customer impacts as shown in Table 6-18. Table 6-18 shows the impacts of FY 2024 from current rates (including the required revenue increases for FY 2024).

Table 6-18: Customer Impacts of Revenue Increases in FY 2024

Wastewater Service Charges	FY 2023	FY 2024	Impact from Current Rates	
	Current	Proposed	$ Increase	% Increase
Residential ($/EDU)				
Residential Unrestricted	$34.67	**$37.98**	$3.31	9.5%
Multi-Family Restricted	$16.47	**$18.05**	$1.58	9.6%
Multi-Family Unrestricted	$25.34	**$27.76**	$2.42	9.6%
Commercial Use ($/ccf)				
Low St. Commercial	$4.10	**$4.45**	$0.35	8.5%
Medium St. Commercial	$5.07	**$5.54**	$0.47	9.3%
High St. Commercial	$9.49	**$10.58**	$1.09	11.5%
Restaurants	$5.15	**$5.65**	$0.50	9.7%

7. Recycled Water Revenue Requirements and Proposed Rates

7.1. Recycled Water System

In FY 2015, the District completed the expansion of its recycled water system, including water recycling plant (WRP) upgrades to tertiary treatment processes and recycled water distribution system pipeline expansion. In FY 2019, the District completed the Phase II expansion of the Recycled Water Distribution System. With the Recycled Water Expansion Project's completion, all recycled water customers (existing and converted customers) are now supplied with high quality tertiary recycled water. The following sources financed the recycled water expansion capital cost for both phases: State Revolving Fund (SRF) Loan, grants, and the restricted reserve (revenues from Tier 3 and Tier 4 potable usage dedicated to recycled water expansion) and recycled water charges from recycled water customers.

7.2. Projected Recycled Water Sales

The District has completed the Phase II Recycled Water Retrofit Project and anticipates serving 277 Recycled Water accounts in FY 2024. The projected recycled water sales for FY 2024 are estimated at 1,485 AF, which is consistent with FY 2023 sales.

7.3. Revenue Requirement and Proposed Rates

In FY 2015, the District began separating recycled water costs into an independent Recycled Water Enterprise Fund.

Table 7-1 summarizes the recycled water revenue requirements from rates for FY 2024. Recycled water O&M expenses and supply (Line 1) and Debt Service (Line 2) will be partially offset by restricted reserve funding (Line 5), capital charges (Line 6), MWD LRP Rebates (Line 7), and several other sources of revenues (Lines 8, 9, 10). The remaining revenue requirement to be recovered from recycled water rates is shown in Line 14. The line items shown below are further detailed in Appendix 4 – Cash Flow Analysis for Recycled Water Funds, developed by District Staff and provided to Raftelis as the basis for the cost of service analysis.

Recycled water is supplemented with potable water when adequate recycled water is insufficient to meet demand. Therefore, the meter service charges and capital facility charges for potable and recycled water are the same.

Table 7-1: Recycled Water Revenue Requirement from Rates

Line No	Recycled Water Rev Requirements	FY 2024	Note
1	Recycled Water O&M Expenses	$1,901,380	Appendix 4
2	Debt Service	$2,087,450	Appendix 4
3			
4	**Less (-) Other Revenues**		
5	Restricted Reserves Funding of Debt Service	-$882,880	Appendix 4
6	Recycled Water Meter Capital Charge Funding of Debt	-$210,468	Appendix 4
7	MWD Rebates	-$360,000	Appendix 4
8	MNWD Payment for RW Service to Golf Course	-$11,000	Appendix 4
9	Misc. Revenue	-$22,000	Appendix 4
10	Property Taxes	-$95,000	Appendix 4
11	**Subtotal Less (-) Other Revenues**	**-$1,581,348**	
12			
13	**Less (-) Operating Reserve Funding**	**-$2,068**	
14	**Total Revenue Requirements from Recycled Water Rates**	**$2,405,415**	

All recycled water customers connected to the recycled water distribution system will be assessed the same Monthly Service Charges (Table 7-2) and Capital Facility Charges (Table 7-4) as potable customers to recover the customer service, meter service, a portion of capacity, and other recycled water related fixed costs and to pay for capital improvements to the expanded recycled water system. Recycled water customers benefit from supplemental potable water, and therefore the meter service and capital facility charges are equivalent to potable water. The monthly service charges in FY 2025 and FY 2026 will be increased based on the "CPI for Urban Wage and Clerical Workers (CPI-W)" for the Los Angeles-Long Beach-Anaheim area published by the Bureau of Labor Statistics. The most recent CPI figure available prior to the implementation of the service charge increase will be used to calculate the rates. Table 7-4 shows the proposed Monthly Service Charges and Capital Facility Charges for FY 2025 and FY 2026. Increases to Capital Facility Charges for FY 2025 and FY 2026 are based on District projections of revenue necessary to meet required capital expenditures and debt service payments.[33]

[33] See Appendix 7 for detailed Capital Projects Budget.

Table 7-2: FY 2024 Proposed Monthly Service Charges

Meter Size	# of RW accounts	FY 2024 Proposed	FY 2023 Current	$ Change	% Change[34]
5/8"		**$18.07**	$17.46	$0.61	3.5%
3/4"		**$24.72**	$23.62	$1.10	4.7%
1"	1	**$38.02**	$35.93	$2.09	5.8%
1-1/2"	28	**$71.27**	$66.70	$4.57	6.9%
2"	247	**$137.76**	$128.25	$9.51	7.4%
10”	1	**$1,360.00**	N/A		

Table 7-3: FY 2024 Proposed RW Capital Facility Charges

Meter Size	# of RW accounts	FY 2024 Rates	FY 2023 Rates	$ Change	% Change[35]
5/8”		**$5.56**	$5.09	$0.47	9.2%
3/4”		**$8.33**	$5.09	$3.24	63.7%
1”	1	**$13.88**	$8.50	$5.38	63.3%
1-1/2”	28	**$27.76**	$20.65	$7.11	34.4%
2”	247	**$55.52**	$51.84	$3.68	7.1%
10”	1	**$640.00**	N/A		

Table 7-4: FY 2025 and FY 2026 Proposed Recycled Water Capital Facility Charges

Meter Size	Proposed FY 2025	Proposed FY 2026
5/8"	$6.95	$8.69
3/4"	$10.42	$13.02
1"	$17.35	$21.69
1-1/2"	$34.70	$43.38
2"	$69.40	$86.75
10”	$800.00	$1,000.00

Table 7-5 derives the revenue required from the recycled water commodity rate (Line 3) by subtracting the Monthly Service Charge Revenue (Line 2) shown in Table 7-2 from the Total Revenue Requirements (Line 1). The unit recycled water commodity rate is calculated using the net revenue requirements from recycled water commodity rates (Line 3) divided by projected recycled water sales (Line 4). The recycled water commodity rate for FY 2024 is $3.03 / ccf or $1,320 / AF, which is 90% of the Tier 2 potable water commodity rate for FY 2024 and provides an economic incentive for irrigation customers to convert to recycled water. Table 7-6 shows the proposed recycled water commodity rates for FY 2025 and FY 2026.

[34] There is no prior year comparison for the 10” recycled meter size, as this is a new meter size addition for FY 2024.
[35] There is no prior year comparison for the 10” recycled meter size, as this is a new meter size addition for FY 2024.

Table 7-5: FY 2024 Recycled Water Commodity Rate Calculation

Line #	Description	FY 2024
1	Total Revenue Requirements from Recycled Water Rates	$2,405,415
2	Less (-) Monthly Service Charges (Table 7-2)	-$449,044
3	**Net Revenue Requirements from Recycled Water Usage Rate**	**$1,956,371**
4	Projected Recycled Water Sales (ccf)	646,865
5	**Unit Recycled Water Usage Rate ($/ccf)**	**$3.03**
6	Unit Recycled Water Usage Rate ($/AF)	$1,320
7	% of Tier 2 Potable Rate	89.9%

Table 7-6: FY 2025 and FY 2026 Proposed Recycled Water Commodity Rate

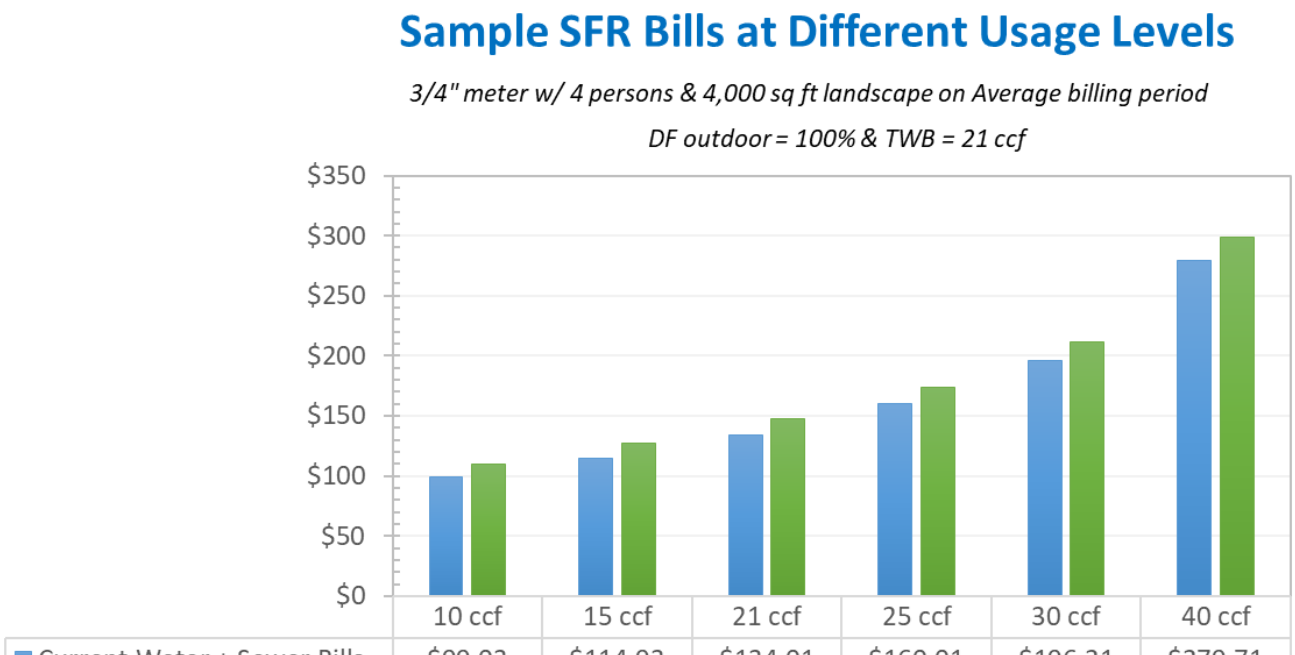
Recycled Water Variable Charges		Proposed FY 2025	Proposed FY 2026
		$3.20	$3.38

8. Customer Impact Analysis

8.1.1. FY 2023 CURRENT RATES TO FY 2024 RATES

Figure 8-1 shows a breakdown of water and wastewater bills at various water usage levels for a single-family residential user with four occupants and a 4,000 sq. ft. landscape area serviced by a ¾-in meter at current water and wastewater rates compared to proposed FY 2024 rates. The combined water and wastewater bill increase would range from $11.24 to $18.57 per month, depending on the monthly billed water usage. The bill impacts shown are from changes in water and wastewater service and capital charges. Recycled water rate impacts are not shown, as residential users do not purchase recycled water.

Figure 8-1: SFR Total Monthly Bills at Different Usage Levels at Current and Proposed FY 2024 Rates



	10 ccf	15 ccf	21 ccf	25 ccf	30 ccf	40 ccf
Current Water + Sewer Bills	$99.03	$114.93	$134.01	$160.01	$196.21	$279.71
Proposed Water + Sewer Bills	$110.27	$127.12	$147.34	$174.14	$211.58	$298.28
Combined Bill Impacts	$11.24	$12.19	$13.33	$14.13	$15.37	$18.57
% Bill Impacts	11.3%	10.6%	9.9%	8.8%	7.8%	6.6%

APPENDICES

APPENDIX 1: PASS-THROUGH WATER SUPPLY COST

Source: Purchased Water.2324.xlsx sent by Dennis Cafferty 4/27/23

		2022/23 Budget		2023/24 Budget		2024/25 Budget		2025/26 Budget	
		Jul 2022	Jan 2023	Jul 2023	Jan 2024	Jul 2024	Jan 2025	Jul 2025	Jan 2026
1	Total Period Demand (AF)	4,000	3,000	4,000	3,000	4,000	3,000	4,000	3,000
2	Total Annual Demand (AF)		7,000		7,000		7,000		7,000
3	MWD Period Demand (AF)	2,225	1,225	2,225	1,225	2,225	1,225	2,225	1,225
4	MWD Annual Demand (AF)		3,450		3,450		3,450		3,450
5	**MWD Untreated Commodity Rates**								
6	System Access Rate	389.00	368.00	368.00	389.00	389.00	410.00	410.00	432.00
7	System Power Rate	167.00	166.00	166.00	182.00	182.00	198.00	198.00	208.00
8	MWD Tier 1 Rate	243.00	321.00	321.00	332.00	332.00	364.00	364.00	397.00
9	**Subtotal Untreated Full Service**	**799.00**	**855.00**	**855.00**	**903.00**	**903.00**	**972.00**	**972.00**	**1,037.00**
10	Treatment Surcharge	344.00	354.00	354.00	353.00	353.00	380.00	380.00	407.00
11	**Total Treated Full Service Rate**	**1,143.00**	**1,209.00**	**1,209.00**	**1,256.00**	**1,256.00**	**1,352.00**	**1,352.00**	**1,444.00**
12	**Total Treated Full Service Annual Cost**	**2,543,175**	**1,481,025**	**2,690,025**	**1,538,600**	**2,794,600**	**1,656,200**	**3,008,200**	**1,768,900**
13	**MWD Fixed Charges**								
14	Capacity Reservation Charge	83,391	68,328	71,358	75,397	75,397	87,514	87,514	93,573
15	Readiness To Serve Charge	242,420	272,837	299,564	337,893	337,893	337,893	337,893	337,893
16	**Total MWD Fixed Charges**		**666,976**		**784,212**		**838,697**		**856,873**
17	**Total MWD Cost**		**4,691,176**		**5,012,837**		**5,289,497**		**5,633,973**
18	**Total MWD Unit Cost ($/AF)**		**1,360**		**1,453**		**1,533**		**1,633**
19	**Baker Water Treatment Plant**								
20	Period Demand (AF)	1,775	1,775	1,775	1,775	1,775	1,775	1,775	1,775
21	Annual Demand (AF)		3,550		3,550		3,550		3,550
22	**Baker Raw Water Cost**	**1,418,225**	**1,517,625**	**1,517,625**	**1,602,825**	**1,602,825**	**1,725,300**	**1,725,300**	**1,840,675**
23	Baker O&M Unit Cost (per AF)	210	210	225	225	231	231	238	238
24	SCP Surcharge	8.38	8.38	8.38	8.38	8.64	8.64	8.90	8.90
25	SAC Surcharge	1.00	1.00	1.02	1.02	1.05	1.05	1.08	1.08
26	**Baker O&M Annual Cost**	**389,407**	**389,407**	**415,250**	**415,250**	**427,225**	**427,225**	**440,165**	**440,165**
27	Baker Capital Cost (Debt Service)								
28	**Total Period Baker Water Treatment Plant Cost**	**1,807,632**	**1,907,032**	**1,932,875**	**2,018,075**	**2,030,050**	**2,152,525**	**2,165,465**	**2,280,840**
29	**Total Annual Baker Water Treatment Plant Cost**		**3,714,664**		**3,950,951**		**4,182,575**		**4,446,304**
30	**Baker Water Treatment Plant Unit Cost($/AF)**		**1,046**		**1,113**		**1,178**		**1,252**
31	**Capital Charge Revenue Funding**								
32	**Total Baker Water Treatment Plant Cost**		**3,714,664**		**3,950,951**		**4,182,575**		**4,446,304**
33	**Total Purchased Water Cost**								
34	MWD		4,691,176		5,012,837		5,289,497		5,633,973
35	MWDOC								
36	Baker		3,714,664		3,950,951		4,182,575		4,446,304
37	**Total Purchased Water Cost**		**8,405,840**		**8,963,788**		**9,472,072**		**10,080,277**
38	Percent Increase Budget to Budget per Unit				6.64%		5.67%		6.42%
39	**Overall Imported Water Effective Rate**								
40	Fiscal Year Cost per Acre Foot Purchased		**1,201**		**1,281**		**1,353**		**1,440**
41	Fiscal Year Cost per CCF Purchased		**2.76**		**2.94**		**3.11**		**3.31**
42	Fiscal Year Rate per CCF Sold		**2.88**		**3.07**		**3.25**		**3.46**

APPENDIX 2: O&M EXPENSES ALLOCATIONS TO WATER, RECYCLED WATER AND WASTEWATER FUNDS FOR FY 2024

Source: 2023-24 Budget Worksheets.xlsx sent by Jason Hayden 4/5/2023

	FY 2024	Water	Sewer	Recycled Water	Total
Source of Supply	9,292,500	9,292,500	-	-	9,292,500
Treatment – Water	-	-	-	-	-
Pumping – Water	502,500	502,500	-	-	502,500
T&D – Water	540,200	540,200	-	-	540,200
Customer Accounts	-	-	-	-	-
Pumping – Sewer	489,500	-	489,500	-	489,500
Treatment Plant	2,492,600	-	2,492,600	-	2,492,600
Outside Treatment	-	-	-	-	-
T&D – Sewer	214,000	-	214,000	-	214,000
Tertiary Plant	492,200	-	-	492,200	492,200
T&D – Recycled	15,200	-	-	15,200	15,200
Operations Support	173,800	69,500	90,600	13,700	173,800
Fleet	336,800	131,600	178,800	26,400	336,800
Indirect Operating Costs	110,300	71,200	35,400	3,700	110,300
Administration	-	-	-	-	-
Information Technology	528,300	210,500	273,800	44,000	528,300
Indirect Administration Costs	1,577,000	637,000	814,020	125,980	1,577,000
Depreciation & Amortization	4,163,100	814,100	1,805,000	1,544,000	4,163,100
Interest Costs	2,184,000	950,400	361,600	872,000	2,184,000
Labor Costs	10,259,060	3,573,000	5,505,860	1,180,200	10,259,060
Total	33,371,060	16,792,500	12,261,180	4,317,380	33,371,060
Total Expenses (Less Depreciation & Interest)	**27,023,960**	**15,028,000**	**10,094,580**	**1,901,380**	**27,023,960**

APPENDIX 3: CASH FLOW ANALYSIS FOR WATER FUND

Source: 23-24 Budget Cash Flow.xlsx sent by Jason Hayden 4-7-2023

Water Cash Flow			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
BEGINNING RESERVE BALANCES			**$7,152,400**	**$6,168,113**	**$5,780,287**	**$5,795,918**	**$6,266,240**	**$7,258,011**
OPERATIONS & MAINTENANCE CASH FLOW								
O&M REVENUES				$9,208,367				
Revenues under current rates			**$13,081,821**	**$13,081,821**	**$13,081,821**	**$13,081,821**	**$13,081,821**	**$13,081,821**
Fixed Service Charges			$4,364,154	$4,364,154	$4,364,154	$4,364,154	$4,364,154	$4,364,154
Fire Service Charges / Flood Meters			$63,819	$63,819	$63,819	$63,819	$63,819	$63,819
Unrestricted Commodity Rates			$8,653,848	$8,653,848	$8,653,848	$8,653,848	$8,653,848	$8,653,848
Additional Fixed Revenue Required			**$0**	**$240,028**	**$470,238**	**$711,957**	**$965,763**	**$1,258,908**
Fiscal Year	**Adjustments**	**Effective Months**						
FY 2024	5.50%	12		$240,028	$240,028	$240,028	$240,028	$240,028
FY 2025	5.00%	12			$230,209	$230,209	$230,209	$230,209
FY 2026	5.00%	12				$241,720	$241,720	$241,720
FY 2027	5.00%	12					$253,806	$253,806
FY 2028	5.50%	12						$293,145
MWD Pass-through Rev Projections			**$0**	**$554,519**	**$1,079,852**	**$1,692,742**	**$2,276,446**	**$2,918,520**
FY 2024				$554,519	$554,519	$554,519	$554,519	$554,519
FY 2025					$525,334	$525,334	$525,334	$525,334
FY 2026		6.408%				$612,889	$612,889	$612,889
FY 2027							$583,704	$583,704
FY 2028								$642,074
Total Unrestricted Water Service Rate Revenue			**$13,081,821**	**$13,876,369**	**$14,631,911**	**$15,486,520**	**$16,324,030**	**$17,259,250**
Other Sources of Cash								
Funding from Restricted Reserve for Conservation Program			$200,000	$200,000	$200,000	$200,000	$200,000	$200,000
Property Taxes - General Fund Revenue			$272,522	$279,522	$279,522	$291,522	$303,522	$315,522
Property Taxes (Funds Tier 1 Offset)			$175,478	$180,478	$180,478	$180,478	$180,478	$180,478
Operating Grants & Reimbursements			$400	$0	$400	$400	$400	$400
Miscellaneous Revenue			$31,000	$31,000	$31,000	$31,000	$31,000	$31,000
Cellular Site Lease Revenue (Funds Tier 1 Offset)			$235,000	$230,000	$230,000	$230,000	$230,000	$230,000
Other Non-operating Revenue			$8,000	$8,000	$8,000	$8,000	$8,000	$8,000
Other Income (R-6 Partners)			$123,000	$125,000	$125,000	$125,000	$125,000	$125,000
Investment Income			$40,000	$100,000	$100,000	$100,000	$100,000	$100,000
Subtotal Other Sources of Cash			**$1,085,400**	**$1,154,000**	**$1,154,400**	**$1,166,400**	**$1,178,400**	**$1,190,400**
TOTAL O&M REVENUES (Unrestricted)			**$14,167,221**	**$15,030,369**	**$15,786,311**	**$16,652,920**	**$17,502,430**	**$18,449,650**
O&M REVENUE REQUIREMENTS								
Water Purchased Costs			$8,405,840	$8,963,788	$9,472,072	$10,080,277	$10,678,883	$11,308,911
Other Operating Expenses			$5,852,880	$6,064,212	$6,334,056	$6,594,946	$6,907,122	$7,203,497
Subtotal Other Sources of Cash			**$14,258,720**	**$15,028,000**	**$15,806,128**	**$16,675,223**	**$17,586,005**	**$18,512,407**
OPEB (115 Trust)								
TOTAL O&M REVENUE REQUIREMENTS			**$14,258,720**	**$15,028,000**	**$15,806,128**	**$16,675,223**	**$17,586,005**	**$18,512,407**
OTHER REV REQUIREMENTS								
Restricted Reserves Funding of Conservation Program			$200,000	$200,000	$200,000	$200,000	$200,000	$200,000
Restricted Reserves Funding of RW Conversion Program			$627,301	$627,301	$627,301	$627,301	$627,301	$627,301
Total Transfer to Restricted Reserves			-$827,301	-$827,301	-$827,301	-$827,301	-$827,301	-$827,301
ANNUAL O&M SURPLUS (DEFICIT)			**-$91,499**	**$2,369**	**-$19,817**	**-$22,303**	**-$83,575**	**-$62,757**

Water Cash Flow			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
CAPITAL REPLACEMENT & REFURBISHMENT PROGRAM								
CAPITAL PROGRAM REVENUE								
Revenue from Existing Capital Charge			$1,362,374	$1,362,374	$1,362,374	$1,362,374	$1,362,374	$1,362,374
Capital Charge Revenue Increase			$0	$340,594	$766,336	$1,298,513	$1,963,735	$2,296,346
Fiscal Year	**Adjustments**	**Effective Months**						
FY 2024	25.00%	12		$340,594	$340,594	$340,594	$340,594	$340,594
FY 2025	25.00%	12			$425,742	$425,742	$425,742	$425,742
FY 2026	25.00%	12				$532,178	$532,178	$532,178
FY 2027	25.00%	12					$665,222	$665,222
FY 2028	10.00%	12						$332,611
Subtotal Capital Charge Revenue			**$1,362,374**	**$1,702,968**	**$2,128,710**	**$2,660,888**	**$3,326,109**	**$3,658,720**
Restricted Reserve Funding of Baker Debt Service			$184,200	$184,400	$184,300	$109,300	$26,800	$507
TOTAL CAPITAL REVENUE			**$1,546,574**	**$1,887,368**	**$2,313,010**	**$2,770,188**	**$3,352,909**	**$3,659,227**
CAPITAL EXPENDITURES								
Capital Replacem	15%		$874,000	$874,000	$874,000	$874,000	$874,000	$874,000
Baker WTP Debt Service			$684,263	$684,262	$684,263	$684,262	$684,263	$684,263
2022 Rev Bonds Debt Service			$881,100	$719,300	$719,300	$719,300	$719,300	$719,300
TOTAL CAPITAL EXPENDITURES			**$2,439,363**	**$2,277,562**	**$2,277,563**	**$2,277,562**	**$2,277,563**	**$2,277,563**
ANNUAL CAPITAL SURPLUS (DEFICIT)			**-$892,788**	**-$390,194**	**$35,447**	**$492,625**	**$1,075,346**	**$1,381,665**
TOTAL ANNUAL RESERVE IMPACT			**-$984,287**	**-$387,826**	**$15,630**	**$470,322**	**$991,771**	**$1,318,907**
ENDING RESERVE BALANCES			**$6,168,113**	**$5,780,287**	**$5,795,918**	**$6,266,240**	**$7,258,011**	**$8,576,918**

APPENDIX 4: CASH FLOW ANALYSIS FOR RECYCLED WATER FUND

Source: 23-24 Budget Cash Flow.xlsx sent by Jason Hayden 4-7-2023

BEGINNING RESERVE BALANCES			**$1,430,480**	**$1,170,969**	**$1,173,037**	**$3,159,387**	**$5,258,437**	**$7,491,322**
OPERATIONS & MAINTENANCE CASH FLOW								
O&M REVENUES								
Revenues under current rates			**$2,254,303**	**$2,270,623**	**$2,270,623**	**$2,270,623**	**$2,270,623**	**$2,270,623**
Fixed Service Charges			$402,975	$419,295	$419,295	$419,295	$419,295	$419,295
Commodity Rates			$1,851,328	$1,851,328	$1,851,328	$1,851,328	$1,851,328	$1,851,328
Additional Fixed Service Revenue Required			**$0**	**$23,061**	**$45,179**	**$68,403**	**$92,788**	**$120,952**
Fiscal Year	**Adjustments**	**Effective Months**						
FY 2024	5.50%	12		$23,061	$23,061	$23,061	$23,061	$23,061
FY 2025	5.00%	12			$22,118	$22,118	$22,118	$22,118
FY 2026	5.00%	12				$23,224	$23,224	$23,224
FY 2027	5.00%	12					$24,385	$24,385
FY 2028	5.50%	12						$28,165
RW Commodity Increase Required			**$0**	**$115,866**	**$219,364**	**$342,268**	**$458,704**	**$588,077**
Year	**Rate Action**							
FY 2024	RW Commodity Increase			$115,866	$115,866	$115,866	$115,866	$115,866
FY 2025	RW Commodity Increase				$103,498	$103,498	$103,498	$103,498
FY 2026	RW Commodity Increase					$122,904	$122,904	$122,904
FY 2027	RW Commodity Increase						$116,436	$116,436
FY 2028	RW Commodity Increase							$129,373
Total Unrestricted RW Service Rate Revenue			**$2,254,303**	**$2,409,550**	**$2,535,166**	**$2,681,294**	**$2,822,115**	**$2,979,652**
Other Sources of Cash								
Restricted Reserves Funding of Debt Service			$712,996	$882,880	$825,050	$760,600	$702,900	$642,650
Recycled Water Meter Capital Charge Funding of Debt			$160,694	$210,468	$263,085	$328,856	$411,070	$452,177
MWD LRP Rebate			$345,300	$360,000	$326,000	$287,000	$248,000	$209,000
MNWD Payment for RW Service to Golf Course			$11,000	$11,000	$11,000	$11,000	$11,000	$11,000
JPIA Refund			$10,600	$22,000	$22,000	$22,000	$22,000	$22,000
Property Taxes			$89,600	$95,000	$100,000	$105,000	$110,000	$115,000
Subtotal Other Sources of Cash			**$1,330,190**	**$1,581,348**	**$1,547,135**	**$1,514,456**	**$1,504,970**	**$1,451,827**
TOTAL O&M REVENUES (Unrestricted)			**$3,584,493**	**$3,990,898**	**$4,082,301**	**$4,195,750**	**$4,327,084**	**$4,431,479**
O&M REVENUE REQUIREMENTS								
General & Administrative			$407,030	$422,080	$439,936	$456,148	$480,892	$500,743
Operations & Maintenance			$1,308,820	$1,455,300	$1,527,990	$1,604,292	$1,676,852	$1,760,203
Other Operating Expenses (Cash Outlays)			$25,000	$24,000	$25,400	$26,900	$28,500	$30,200
Subtotal O&M			**$1,740,850**	**$1,901,380**	**$1,993,326**	**$2,087,340**	**$2,186,244**	**$2,291,146**
OPEB (115 Trust)								
DEBT SERVICE								
Recycled Phase I			$1,602,958					
Recycled Phase II - SRF			$409,046					
2022 Refunded SRF Bonds			$1,814,800	$2,074,750	$2,078,750	$2,079,500	$2,077,000	$2,076,250
2022 Project Financing Bonds			$17,200	$12,700	$17,200	$17,200	$17,200	$17,200
Subtotal Debt Service			**$3,844,004**	**$2,087,450**	**$2,095,950**	**$2,096,700**	**$2,094,200**	**$2,093,450**
TOTAL O&M REVENUE REQUIREMENTS			**$3,844,004**	**$3,988,830**	**$2,095,950**	**$2,096,700**	**$2,094,200**	**$2,093,450**
ANNUAL O&M SURPLUS (DEFICIT)			**-$259,511**	**$2,068**	**$1,986,351**	**$2,099,050**	**$2,232,884**	**$2,338,029**
TOTAL ANNUAL RESERVE IMPACT			**-$259,511**	**$2,068**	**$1,986,351**	**$2,099,050**	**$2,232,884**	**$2,338,029**
ENDING RESERVE BALANCES			**$1,170,969**	**$1,173,037**	**$3,159,387**	**$5,258,437**	**$7,491,322**	**$9,829,351**

APPENDIX 5: CASH FLOW ANALYSIS FOR WW FUND

Source: 23-24 Budget Cash Flow.xlsx sent by Jason Hayden 4-7-2023

Sewer Cash Flow			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
BEGINNING RESERVE BALANCES			**$9,298,120**	**$8,548,095**	**$8,362,620**	**$8,745,176**	**$9,783,231**	**$11,692,566**
OPERATIONS & MAINTENANCE CASH FLOW								
O&M REVENUES								
Revenues under current rates			**$8,535,803**	**$8,535,803**	**$8,535,803**	**$8,535,803**	**$8,535,803**	**$8,535,803**
Fixed Service Charges			$8,535,803	$8,535,803	$8,535,803	$8,535,803	$8,535,803	$8,535,803
Additional Service Revenue Required			**$0**	**$810,901**	**$1,278,237**	**$1,719,868**	**$2,283,930**	**$2,824,917**
Year	**Adjustments**	**Effective Months**						
FY 2024	9.50%	12		$810,901	$810,901	$810,901	$810,901	$810,901
FY 2025	5.00%	12			$467,335	$467,335	$467,335	$467,335
FY 2026	4.50%	12				$441,632	$441,632	$441,632
FY 2027	5.50%	12					$564,062	$564,062
FY 2028	5.00%	12						$540,987
Total Sewer Service Rate Revenue			**$8,535,803**	**$9,346,704**	**$9,814,040**	**$10,255,671**	**$10,819,733**	**$11,360,720**
Other Sources of Cash								
Property Taxes - General Fund Revenue			$582,400	$600,000	$612,000	$624,200	$636,700	$649,400
Grants, Rebates, Reimbursements			$0	$0	$0	$0	$0	$0
Mis. Operating Income			$20,800	$20,200	$20,600	$21,000	$21,400	$21,800
Other Non-Operating Revenue			$10,400	$10,400	$10,400	$10,400	$10,400	$10,400
Investment Income			$52,000	$130,000	$130,000	$130,000	$130,000	$130,000
Subtotal Other Sources of Cash			**$665,600**	**$760,600**	**$773,000**	**$785,600**	**$798,500**	**$811,600**
TOTAL O&M REVENUES (Unrestricted)			**$9,201,403**	**$10,107,304**	**$10,587,040**	**$11,041,271**	**$11,618,233**	**$12,172,320**
O&M USES OF CASH REQUIREMENTS								
Wastewater System Operations & Maintenance Expenses								
General & Administrative			$2,645,090	$2,729,480	$2,838,797	$2,944,351	$3,103,664	$3,231,885
Operations & Maintenance			$6,516,760	$7,209,100	$7,554,313	$7,917,998	$8,305,314	$8,711,848
Other Operating Expenses			$167,000	$156,000	$165,400	$175,300	$185,800	$196,900
Utilization of O&M Cash for Debt Service Activities			$0	$0	$0			
O&M Expenses			**$9,328,850**	**$10,094,580**	**$10,558,510**	**$11,037,649**	**$11,594,778**	**$12,140,633**
OPEB (115 Trust)								
TOTAL O&M REVENUE REQUIREMENTS			**$9,328,850**	**$10,094,580**	**$10,558,510**	**$11,037,649**	**$11,594,778**	**$12,140,633**
NET OPERATING CASH CHANGES			**-$127,447**	**$12,724**	**$28,530**	**$3,622**	**$23,455**	**$31,687**
Replenishment/(Utilization) of Reserve Balances								
Replenish/(Utilize) Working Capital Reserve			-$127,447				$23,455	$31,687
Replenish/(Utilize) Rate Stabilization Reserve				$12,724	$28,530	$3,622		
Replenish/(Utilize) Operations Reserve								
NET IMPACT ON RESERVES BALANCES FROM O&M			**-$127,447**	**$12,724**	**$28,530**	**$3,622**	**$23,455**	**$31,687**

Sewer Cash Flow			FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
CAPITAL REPLACEMENT & REFURBISHMENT PROGRAM								
CAPITAL PROGRAM REVENUE								
Utilization of O&M Cash for Debt Service Activities			$0	$0	$0	$0	$0	$0
Revenue from Existing Capital Charge			$1,746,321	$1,746,321	$1,746,321	$1,746,321	$1,746,321	$1,746,321
Capital Charge Revenue Increase			$0	$436,580	$982,306	$1,664,463	$2,517,159	$2,943,507
Fiscal Year	**Adjustments**	**Effective Months**						
FY 2024	25.00%	12		$436,580	$436,580	$436,580	$436,580	$436,580
FY 2025	25.00%	12			$545,725	$545,725	$545,725	$545,725
FY 2026	25.00%	12				$682,157	$682,157	$682,157
FY 2027	25.00%	12					$852,696	$852,696
FY 2028	10.00%	12						$426,348
Subtotal Capital Char	*Source: 2023-24 Budget Cash Flow 3-23-20*		**$1,746,321**	**$2,182,902**	**$2,728,627**	**$3,410,784**	**$4,263,480**	**$4,689,828**
TOTAL CAPITAL REVENUE			**$1,746,321**	**$2,182,902**	**$2,728,627**	**$3,410,784**	**$4,263,480**	**$4,689,828**
CAPITAL EXPENDITURES								
Annual Projected Cash Outlays		15%	$1,856,100	$1,856,100	$1,856,100	$1,856,100	$1,856,100	$1,856,100
TOTAL CAPITAL EXPENDITURES			**$1,856,100**	**$1,856,100**	**$1,856,100**	**$1,856,100**	**$1,856,100**	**$1,856,100**
DEBT SERVICE PAYMENTS								
2010 SRF Loan Payments			$0	$0	$0	$0	$0	$0
Principal Payments								
Interest Expense								
2022 Revenue Bonds (SRF Refunded)			$239,000	$251,250	$244,750	$246,500	$247,750	$248,500
Principal Payments			*$145,000*	*$160,000*	*$165,000*	*$175,000*	*$185,000*	*$195,000*
Interest Expense			*$94,000*	*$91,250*	*$79,750*	*$71,500*	*$62,750*	*$53,500*
2022 Revenue Bonds (New Money)			$273,800	$273,751	$273,751	$273,751	$273,751	$273,751
Principal Payments			*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
Interest Expense			*$273,800*	*$273,751*	*$273,751*	*$273,751*	*$273,751*	*$273,751*
TOTAL DEBT SERVICE PAYMENTS			**$512,800**	**$525,001**	**$518,501**	**$520,251**	**$521,501**	**$522,251**
ANNUAL CAPITAL SURPLUS (DEFICIT)			**-$622,579**	**-$198,199**	**$354,026**	**$1,034,433**	**$1,885,879**	**$2,311,477**
Replenishment/(Utilization) of Reserve Balances								
Replenish/(Utilize) Capital Construction Reserve								
TOTAL ANNUAL RESERVE IMPACT			**-$750,025**	**-$185,475**	**$382,556**	**$1,038,056**	**$1,909,335**	**$2,343,164**
ENDING RESERVE BALANCES			**$8,548,095**	**$8,362,620**	**$8,745,176**	**$9,783,231**	**$11,692,566**	**$14,035,730**

APPENDIX 6: RESIDENTIAL HOUSEHOLD DATA

Source: Census data B25124: TENURE BY HOUSEHOLD SIZE BY UNITS IN STRUCTURE
https://data.census.gov/cedsci/table?q=B25124%3A%20TENURE%20BY%20HOUSEHOLD%20SIZE%20BY%20UNITS%20IN%20STRUCTURE&g=1600000US0648256&y=2019&d=ACS%205-Year%20Estimates%20Detailed%20Tables
2019 ACS 5 Year Estimates Detailed Tables

Aliso Viejo		
Density Analysis	**SFR**	**MFR**
Number of people	38,285	12,239
Number of households	12,506	6,009
Household density	3.06	2.04

Laguna Hills		
Density Analysis	**SFR**	**MFR**
Number of people	24,935	6,683
Number of households	8,213	2,824
Household density	3.04	2.37

Lake Forest		
Density Analysis	**SFR**	**MFR**
Number of people	65,338	18,389
Number of households	21,072	8,266
Household density	3.10	2.22

Mission Viejo		
Density Analysis	**SFR**	**MFR**
Number of people	83,861	10,919
Number of households	28,702	4,865
Household density	2.92	2.24

ETWD (excl. Laguna Woods)		
Density Analysis	**SFR**	**MFR**
Number of people	212,419	48,230
Number of households	70,493	21,964
Household density	**3.01**	**2.20**

Density Analysis	Total Laguna Woods
Number of people	15,720
Number of households	11,003
Household density	**1.43**

APPENDIX 7: CAPITAL PROJECTS BUDGET

Seven Year Capital Replacement & Refurbishment Program
F.Y. 2023/24 - 2027/28

ITEM #	DESCRIPTION	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	TOTAL	WATER	SEWER
	Source of Supply / Storage Projects										
1	JRWSS Capital Budget	13,114	17,070	4,822	1,248	1,248	5,000	5,000	47,502	47,502	
2	Baker WTP Replacement Fund	56,200	56,200	56,200	56,200	56,200	56,200	56,200	393,400	393,400	
3	Direct Potable Reuse Feasibility Study		417,000						417,000	417,000	
3	Direct Potable Reuse Feasibility Study (Assumed Grant Funding)		(417,000)						(417,000)	(417,000)	
	Total Source of Supply / Storage Projects	69,314	73,270	61,022	57,448	57,448	61,200	61,200	440,902	440,902	0
	Pumping (Water) Projects										
1	Water Stations PLC Upgrade to Control Logix	25,000	25,000	25,000	25,000	25,000	25,000	25,000	175,000	175,000	
1	Water Stations PLC Upgrade to Control Logix (Carryover)	(25,000)	(25,000)	(1,533)					(51,533)	(51,533)	
2	R-6 Seepage Recovery Control Panel Rehabilitation			53,000					53,000	53,000	

Seven Year Capital Replacement & Refurbishment Program
F.Y. 2023/24 - 2027/28

ITEM #	DESCRIPTION	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	TOTAL	WATER	SEWER
	Pumping (Sanitation) Projects										
1	Sewer Stations PLC Upgrade to Control Logix	25,000	25,000	25,000	25,000	25,000	25,000	25,000	175,000		175,000
1	Sewer Stations PLC Upgrade to Control Logix (Carryover)	(25,000)	(25,000)	(25,000)	(18,294)				(93,294)		(93,294)
2	Delta Lift Station Coating Rehabilitation				106,000				106,000		106,000
3	Freeway Lift Station Coating Rehabilitation							128,000	128,000		128,000
4	Surcharge Capacity Repair on Gowdy Avenue	52,000							52,000		52,000
5	Surcharge Capacity Repair on Swan Drive/Gowdy Avenue						66,000		66,000		66,000
6	Surcharge Capacity Repair on Swan Street						66,000		66,000		66,000
7	Surcharge Capacity Repair on McCoy Road						195,000		195,000		195,000
8	Northline Coating Improvement Project	91,000							91,000		91,000
9	Northline Overflow Hatch Replacement			112,000					112,000		112,000
10	Northline Pipeline Repair Project		91,000						91,000		91,000
11	Northline Odor Control Project				122,000				122,000		122,000
	Total Pumping (Sanitation) Projects	143,000	91,000	112,000	234,706	25,000	352,000	153,000	1,110,706	0	1,110,706
	Pumping (Sanitation) Equipment										
1	Aliso Creek Pump Station Rehabilitation Project	826,000							826,000		826,000
1	Aliso Creek Pump Station Rehabilitation Project (Carryover)	(357,099)							(357,099)		(357,099)
2	Westline Main Switchboard Replacement		97,000						97,000		97,000
3	Freeway Electrical Equipment Replacement	110,000							110,000		110,000
4	Sewer Station HMI Replacement	14,000	14,000	14,000	14,000	14,000	14,000	14,000	98,000		98,000
	Total Pumping (Sanitation) Equipment	592,901	111,000	14,000	14,000	14,000	14,000	14,000	773,901	0	773,901
	Treatment (Sanitation) Projects										
1	Secondary Clarifier and WAC Rehabilitation	649,000	4,430,000	2,003,000					7,082,000		7,082,000
1	Secondary Clarifier Rehabilitation (Carryover)		(162,922)						(162,922)		(162,922)
1	Secondary Clarifier Rehabilitation (Revenue Bond)	(649,000)	(3,788,230)						(4,437,230)		(4,437,230)
2	DAF Unit #2 Rehabilitation	94,000							94,000		94,000
2	DAF Unit #2 (Carryover)	(75,359)							(75,359)		(75,359)
3	Holding Pond West Side Drainage					151,000	417,000		568,000		568,000
3	Holding Pond West Side Drainage (Carryover)					(68,250)			(68,250)		(68,250)
4	Coarse Screen Rehabilitation	2,277,000							2,277,000		2,277,000
4	Coarse Screen Rehabilitation (Carryover)	(575,000)							(575,000)		(575,000)
4	Coarse Screen Rehabilitation (Revenue Bond)	(1,702,000)							(1,702,000)		(1,702,000)
5	Grit Chamber Rehabilitation Project	861,861							861,861		861,861
5	Grit Chamber Rehabilitation Project (Carryover)	(340,120)							(340,120)		(340,120)
5	Grit Chamber Rehabilitation Project (Revenue Bond)	(521,741)							(521,741)		(521,741)
6	Fine Screen Rehabilitation Project			574,000	3,980,400	2,653,600			7,208,000		7,208,000
6	Fine Screen Rehabilitation Project (Carryover)			(67,152)					(67,152)		(67,152)
7	Standby Blower Replacement						964,000		964,000		964,000
	Total Treatment (Sanitation) Projects	18,641	478,848	2,509,848	3,980,400	2,736,350	1,381,000	0	11,105,087	0	11,105,087

Seven Year Capital Replacement & Refurbishment Program
F.Y. 2023/24 - 2027/28

ITEM #	DESCRIPTION	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	TOTAL	WATER	SEWER
	Treatment (Sanitation) Equipment										
1	Aeration Basin Diffusers		292,000				316,000		608,000		608,000
2	DAF Unit 1 MCC Replacement					135,000			135,000		135,000
3	WRP Security Cameras				90,000				90,000		90,000
4	Additional Tertiary Filter Disks			94,000					94,000		94,000
4	Additional Tertiary Filter Disks (Recycled Water Reserves)			(94,000)					(94,000)		(94,000)
5	PRV for WRP Recycled Water Use		34,000						34,000		34,000
5	PRV for WRP Recycled Water Use (Recycled Water Reserves)		(34,000)						(34,000)		(34,000)
6	WRP SCADA Upgrade				290,000				290,000		290,000
6	WRP SCADA Upgrade (Carryover)				(32,500)				(32,500)		(32,500)
	Total Treatment (Sanitation) Equipment	0	292,000	0	347,500	135,000	316,000	0	1,090,500	0	1,090,500
	Laboratory Equipment										
1	Benchtop Deionized Water Generator				23,000				23,000	11,500	11,500
	Total Laboratory Equipment	0	0	0	23,000	0	0	0	23,000	11,500	11,500
	Outside Treatment (SOCWA)										
1	SOCWA Capital Budget	414,836	826,089	1,241,796	1,765,740	1,931,222	2,355,290	1,631,920	10,166,893		10,166,893
	Reserve Funding			(1,241,796)	(1,765,740)	(153,482)	(383,763)		(3,544,781)		(3,544,781)
1	Bond Funding		(545,000)						(545,000)		(545,000)
	Total Treatment (SOCWA)	414,836	281,089	0	0	1,777,740	1,971,527	1,631,920	6,077,112	0	6,077,112
	Collection Equipment										
1											
	Total Collection Equipment	0	0	0	0	0	0	0	0	0	0
	Vehicles/Vehicle Equipment										
1	Vehicle Replacement	125,000	86,704	125,000	125,000	150,000	150,000	150,000	911,704	455,852	455,852
1	Vehicle Replacement (Carryover)		(25,000)						(25,000)	(12,500)	(12,500)
2	Hydro Excavator			644,000					644,000	644,000	
3	F-550 w/ Valve Maintenance Skid		192,000						192,000	192,000	
5	Electrical Vehicle Charger		15,000						15,000	7,500	7,500
	Total Vehicles/Vehicle Equipment	125,000	268,704	769,000	125,000	150,000	150,000	150,000	1,737,704	1,286,852	450,852
	General Building Projects										
1	Additional Diesel Storage Facility						727,000		727,000	363,500	363,500
2	Administration Building Rehabilitation		441,000						441,000	220,500	220,500
	Total General Building Projects	0	441,000	0	0	0	727,000	0	1,168,000	584,000	584,000

Seven Year Capital Replacement & Refurbishment Program
F.Y. 2023/24 - 2027/28

ITEM #	DESCRIPTION	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	TOTAL	WATER	SEWER
	IT and EI&C										
1	Core Switch Replacement	63,000							63,000	31,500	31,500
2	EOC Technology Upgrades	16,000							16,000	8,000	8,000
3	System-Wide Security Camera Implementation	50,000							50,000	25,000	25,000
4	System-Wide Security Access Panel Replacement						138,000		138,000	69,000	69,000
5	Office Phone System Replacement				50,000				50,000	25,000	25,000
6	Data Center Hardware Replacement					202,000			202,000	101,000	101,000
7	Water Distribution and Sewer Collection System SCADA Upgrade			290,000					290,000	145,000	145,000
7	Water Distribution and Sewer Collection System SCADA Upgrade (Carryover)			(39,000)					(39,000)	(19,500)	(19,500)
8	P-1, Warehouse, P-4, Freeway, and Main Yard ATS Replacement	42,000							42,000	21,000	21,000
8	P-1 and Warehouse ATS Replacement (Carryover)	(10,000)							(10,000)	(5,000)	(5,000)
	Total IT and EI&C	161,000	0	251,000	50,000	202,000	138,000	0	802,000	401,000	401,000
	Other Studies										
1	Asset Management	120,000	90,000						210,000	105,000	105,000
2	System-Wide Arc Flash and Coordination Study	180,000							180,000	90,000	90,000
	Total Other Studies	300,000	90,000	0	0	0	0	0	390,000	195,000	195,000
	Contingency										
1	Contingency					929,205	735,387	2,652,105	4,316,697	2,158,349	2,158,349
	Total Contingency	0	0	0	0	929,205	735,387	2,652,105	4,316,697	2,158,349	2,158,349
	Total Capital Budget	1,990,792	3,293,911	3,894,337	4,992,054	6,073,743	6,469,114	6,895,225	33,609,175	9,651,169	23,958,006
	Total Capital Projects	1,013,891	2,366,207	2,759,337	4,297,554	5,550,743	5,354,114	6,153,225	27,495,071	6,264,818	21,230,253
	WATER	287,414	1,249,770	137,489	82,448	547,051	918,394	3,042,253	6,264,818	6,264,818	
	SEWER	726,477	1,116,437	2,621,848	4,215,106	5,003,693	4,435,721	3,110,973	21,230,253		21,230,253
	Total Capital Equipment	976,901	927,704	1,135,000	694,500	523,000	1,115,000	742,000	6,114,104	3,386,352	2,727,753
	WATER	241,000	486,352	933,000	234,000	198,000	641,000	653,000	3,386,352	3,386,352	
	SEWER	735,901	441,352	202,000	460,500	325,000	474,000	89,000	2,727,753		2,727,753
	Total Capital Budget	1,990,792	3,293,911	3,894,337	4,992,054	6,073,743	6,469,114	6,895,225	33,609,175	9,651,169	23,958,006
	WATER	528,414	1,736,122	1,070,489	316,448	745,051	1,559,394	3,695,253	9,651,169	9,651,169	
	SEWER	1,462,378	1,557,789	2,823,848	4,675,606	5,328,693	4,909,721	3,199,973	23,958,006		23,958,006