EL TORO WATER DISTRICT

FY 2026 Water, Recycled Water, and Wastewater Rate Study

Report / April 22, 2026

EL TORO WATER DISTRICT
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April 22, 2026

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

Subject: 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) 2027 and for the four following years (FY 2028 through FY 2031). The updated rates, scheduled to take effect on July 1, 2026, reflect projected changes in net revenue requirements for each enterprise and projected water sales for FY 2026-27.

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

Nicki Bartak
Senior 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) 2027 and the four following years (FY 2028 through FY 2031). 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 flow and estimated strength of discharge for non-residential customers by customer class)
- Capital Facility Charges 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 capital construction

1.2. Proposed Water Rates

1.2.1. MONTHLY SERVICE CHARGES

Table 1-1 shows the proposed monthly service charges for FY 2027, effective July 1, 2026. All rates and charges are rounded up to the nearest cent.

Table 1-1: FY 2027 Proposed Monthly Water Service Charges

Meter Size	Proposed FY 2027	Current FY 2026	$ Change	% Change
5/8"	**$23.21**	$21.18	$2.03	9.58%
3/4"	**$31.81**	$28.98	$2.83	9.77%
1"	**$49.01**	$44.58	$4.43	9.94%
1-1/2"	**$92.02**	$83.57	$8.45	10.11%
2"	**$178.04**	$161.55	$16.49	10.21%
10”	**$1,758.85**	$1,595.00	$163.85	10.27%

The monthly service charges for FY 2028 through FY 2031 are shown in Table 1-2 below.

Table 1-2: FY 2028 – FY 2031 Proposed Monthly Water Service Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$24.33	$26.58	$27.83	$29.18
3/4"	$33.36	$36.48	$38.20	$40.04
1"	$51.42	$56.28	$58.92	$61.76
1-1/2"	$96.58	$105.79	$110.73	$116.07
2"	$186.89	$204.80	$214.36	$224.68
10”	$1,846.69	$2,024.41	$2,118.75	$2,220.75

1.2.2. CAPITAL FACILITY CHARGES

The District proposes an overall 25% increase on its current Capital Facility Charges for potable water services for FY 2027 to carry out treatment plant improvements, replace and refurbish infrastructure, and debt service. [1] Table 1-3 shows the proposed monthly capital charges for FY 2027, effective July 1, 2026.

Table 1-3: FY 2027 Proposed Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2027	Current FY 2026	$ Change	% Change
5/8"	**$10.85**	$8.69	$2.16	24.86%
3/4"	**$16.28**	$13.02	$3.26	25.04%
1"	**$27.12**	$21.69	$5.43	25.03%
1-1/2"	**$54.24**	$43.38	$10.86	25.03%
2"	**$108.48**	$86.75	$21.73	25.05%
10”	**$1,105.26**	$1,000.00	$105.26	10.53%

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

Table 1-4 shows the proposed monthly capital charges for FY 2028 and FY 2031.

Table 1-4: FY 2028 – FY 2031 Proposed Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$12.48	$14.35	$16.50	$18.15
3/4"	$18.72	$21.52	$24.75	$27.23
1"	$31.19	$35.87	$41.25	$45.37
1-1/2"	$62.38	$71.73	$82.49	$90.74
2"	$124.75	$143.46	$164.98	$181.48
10”	$1,271.04	$1,461.70	$1,680.95	$1,849.05

1.2.3. COMMODITY RATES

The proposed water commodity rates for FY 2027, shown in Table 1-5, will be effective July 1, 2026. The proposed rates reflect the projected increases in purchased water supply costs from the Metropolitan Water District (MWD) of California through the Municipal Water District of Orange County (MWDOC) as well as O&M cost increases for water treated at the Baker Water Treatment Plant.

Table 1-5: FY 2027 Proposed Water Commodity Rates

Water Usage Rates	Proposed FY 2027	Current FY 2026	$ Impact	% Impact
Tier 1 - Essential Use	**$3.87**	$3.59	$0.28	7.80%
Tier 2 – Efficient Use	**$4.24**	$3.98	$0.26	6.53%
Tier 3 - Inefficient Use	**$8.09**	$7.26	$0.83	11.43%
Tier 4 - Excessive Use	**$10.22**	$9.14	$1.08	11.82%
Uniform - Commercial Use	**$4.44**	$4.09	$0.35	8.56%

Like the FY 2027 proposed rates shown in Table 1-5 above, the proposed rates for FY 2028 through FY 2031 include projected increases in purchased water supply costs from MWD, MWDOC, and O&M cost increases for water treated at the Baker Water Treatment Plant. To accommodate for the unknowns in increasing water purchase costs, Raftelis has calculated the commodity rates necessary to support the District’s costs including estimated water purchase costs. Increases in the purchased water component of the commodity rate (estimated to be between $0.25 - $0.40 cents[2]) are included in the rates shown in Table 1-6 below.

[2] Estimates only, subject to change.

Table 1-6: FY 2028 – FY 2031 Proposed Water Commodity Rates

Meter Size[3]	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Tier 1 - Essential Use	$4.12	$4.47	$4.86	$5.26
Tier 2 - Efficient Use	$4.50	$4.88	$5.28	$5.70
Tier 3 - Inefficient Use	$8.34	$8.71	$9.12	$9.53
Tier 4 - Excessive Use	$10.49	$10.87	$11.28	$11.71
Uniform - Commercial Use	$4.69	$5.05	$5.44	$5.84
Assumed Pass Through Amount	*$0.25*	*$0.35*	*$0.39*	*$0.40*

1.2.4. PRIVATE FIRE RATES

The private fire rates cover the costs associated with providing fire service capacity for private fire connections. The proposed private fire rates for FY 2027 are shown in Table 1-7 below.

Table 1-7: FY 2027 Proposed Monthly Private Fire Service Rates

Meter Size	Accounts	Proposed FY 2027	Current FY 2026 Rates	$ Change	% Change
4"	29	**$10.89**	$19.82	-$8.93	-45.06%
6"	93	**$20.18**	$27.84	-$7.66	-27.51%
8"	46	**$36.22**	$41.67	-$5.45	-13.08%
10"	4	**$60.34**	$62.48	-$2.14	-3.43%

The proposed rates for FY 2028 through FY 2031 are calculated in accordance with the revenue adjustments necessary to sustain the Water enterprise, as shown in Table 1-8 below.

Table 1-8: FY 2028 – FY 2031 Proposed Monthly Private Fire Facility Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
4"	$11.35	$12.27	$12.87	$13.50
6"	$21.04	$22.74	$23.85	$25.00
8"	$37.75	$40.80	$42.78	$44.85
10"	$62.89	$67.96	$71.25	$74.69

[3] Rates may be adjusted based on the actual water purchase costs in future years.

1.3. Proposed Wastewater Rates

1.3.1. WASTEWATER SERVICE CHARGES

The District classifies non-residential wastewater customers into four groups based on their estimated strength[4] of the wastewater discharged into the District's system. Residential customers are classified into four groups: Single Family Residential Unrestricted, Multi-Family Restricted, and Multi-Family Unrestricted. Table 1-9 shows the respective customer classes and their assumed strengths. Non-residential strength data is based on Los Angeles County Sanitation Districts (LACSD) for the different classes.

Table 1-9: Wastewater Customer Classes and Strengths

Customer Classes	BOD (mg/L)	TSS (mg/L)	Total Strengths
Single Family Residential Unrestricted	282	272	554
Multi-Family Restricted	282	272	554
Multi-Family Unrestricted	282	272	554
Low Strength Commercial	150	150	300
Medium Strength Commercial	300	300	600
High Strength Commercial	500	600	1,100
Restaurants[5]	282	272	554

The proposed wastewater rates are shown in Table 1-10 for FY 2027.

Table 1-10: FY 2027 Proposed Monthly Wastewater Service Charges

Wastewater Service Charges	FY 2026	FY 2027	Impact from Current Rates	
	Current	Proposed	$ Increase	% Increase
Residential ($/EDU)				
Residential Unrestricted	$40.80	**$42.07**	$1.27	3.11%
Multi-Family Restricted	$19.38	**$19.99**	$0.61	3.15%
Multi-Family Unrestricted	$29.82	**$30.75**	$0.93	3.12%
Commercial Use ($/ccf)				
Low Strength Commercial	$4.77	**$4.73**	-$0.04	(0.84%)
Medium Strength Commercial	$5.94	**$6.14**	$0.20	3.37%
High Strength Commercial	$11.36	**$8.49**	-$2.87	(25.26%)
Restaurants	$6.06	**$5.92**	-$0.14	(2.31%)

[4] Total strength = Total Suspended Solids (TSS) + Biochemical oxygen demand (BOD) (in mg/L)
[5] 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.

The wastewater rates for FY 2028 through FY 2031 are shown in Table 1-11 below.

Table 1-11: FY 2028 – FY 2031 Proposed Monthly Wastewater Service Charges

Wastewater Service Charges	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Residential Unrestricted	$44.73	$47.64	$49.98	$52.49
Multi-Family Restricted	$21.25	$22.64	$23.75	$24.95
Multi-Family Unrestricted	$32.69	$34.82	$36.53	$38.37
Commercial Use ($/ccf)				
Low St. Commercial	$5.03	$5.36	$5.63	$5.92
Medium St. Commercial	$6.53	$6.96	$7.31	$7.68
High St. Commercial	$9.03	$9.62	$10.10	$10.61
Restaurants	$6.30	$6.71	$7.04	$7.40

1.3.2. CAPITAL FACILITY CHARGES

Table 1-12 shows the current FY 2026 and proposed Wastewater Capital Facility charges for each customer class, effective July 1, 2026 (FY 2027). The FY 2027 charges show an approximate 25% increase from the FY 2026 rates. Proposed rates for FY 2028 – FY 2031 are required for replacement and refurbishment of infrastructure and debt service and are shown in Table 1-13.[6] Please refer to Section 6 for details of the analysis.

Table 1-12: FY 2027 Proposed Monthly Wastewater Capital Facility Charges

Wastewater Capital Charges	FY 2026	FY 2027	Impact from Current Rates	
	Current	Proposed	$ Increase	% Increase
Residential ($/EDU)				
Residential Unrestricted	$13.86	**$17.32**	$3.46	24.96%
Multi-Family Restricted	$6.59	**$8.23**	$1.64	24.89%
Multi-Family Unrestricted	$10.13	**$12.66**	$2.53	24.98%
Commercial Use ($/ccf WW)				
Low St. Commercial	$1.63	**$1.95**	$0.32	19.63%
Medium St. Commercial	$2.02	**$2.53**	$0.51	25.25%
High St. Commercial	$3.83	**$3.50**	-$0.33	-8.62%
Restaurants	$2.07	**$2.44**	$0.37	17.87%

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

Table 1-13: FY 2028 – FY 2031 Proposed Monthly Wastewater Capital Facility Charges

Wastewater Capital Charges	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Residential ($/EDU)				
Residential Unrestricted	$19.92	$22.91	$26.35	$28.99
Multi-Family Restricted	$9.47	$10.90	$12.54	$13.80
Multi-Family Unrestricted	$14.56	$16.75	$19.27	$21.20
Commercial Use ($/ccf WW)				
Low St. Commercial	$2.25	$2.59	$2.98	$3.28
Medium St. Commercial	$2.91	$3.35	$3.86	$4.25
High St. Commercial	$4.03	$4.64	$5.34	$5.88
Restaurants	$2.81	$3.24	$3.73	$4.11

1.4. Proposed Recycled Water Rates

The current variable rate for recycled water is $3.59/ccf. The proposed recycled water ("RW") rate for FY 2027 is **$3.82/ccf**. Table 1-14 shows the proposed RW variable rate for FY 2027 through FY 2031.

Table 1-14: FY 2027 – FY 2031 Proposed RW Variable Charge

Recycled Water Variable Charges	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
	$3.82	**$4.05**	**$4.40**	**$4.76**	**$5.13**

All RW customers connected to the recycled water distribution system will be assessed Monthly Service Charges (Table 1-15) and Capital Facility Charges (Table 1-16) which are the same as potable meters, to recover the customer service, meter service, a portion of capacity, 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 2027 through FY 2031 are equivalent to the Water enterprise service charges in the same period, shown in Table 1-15 below. Similarly, Capital Facility charges for FY 2027 – FY 2031 are equivalent to the Water enterprise Capital Charges, as shown in Table 1-16 below.

Table 1-15: FY 2027 – FY 2031 Proposed Recycled Water Monthly Service Charges

Meter Size	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$23.21	$24.33	$26.58	$27.83	$29.18
3/4"	$31.81	$33.36	$36.48	$38.20	$40.04
1"	$49.01	$51.42	$56.28	$58.92	$61.76
1-1/2"	$92.02	$96.58	$105.79	$110.73	$116.07
2"	$178.04	$186.89	$204.80	$214.36	$224.68
10"	$1,758.85	$1,846.69	$2,024.41	$2,118.75	$2,220.75

Table 1-16: FY 2027 – FY 2031 Proposed Recycled Water Capital Facility Charges

Meter Size	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$10.85	$12.48	$14.35	$16.50	$18.15
3/4"	$16.28	$18.72	$21.52	$24.75	$27.23
1"	$27.12	$31.19	$35.87	$41.25	$45.37
1-1/2"	$54.24	$62.38	$71.73	$82.49	$90.74
2"	$108.48	$124.75	$143.46	$164.98	$181.48
10"	$1,105.26	$1,271.04	$1,461.70	$1,680.95	$1,849.05

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 53,400 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 9,500 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 and increasing the reliability of the District's water supply.

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 2027, the District's recycled water budget was based on a total 277 metered accounts and an estimated average consumption of 1,300 AF of recycled water.

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 2027.
- Update water rates and capital charges to meet the District's goals and objectives, including defensibility, affordability for essential use, and promoting efficiency.
- 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.

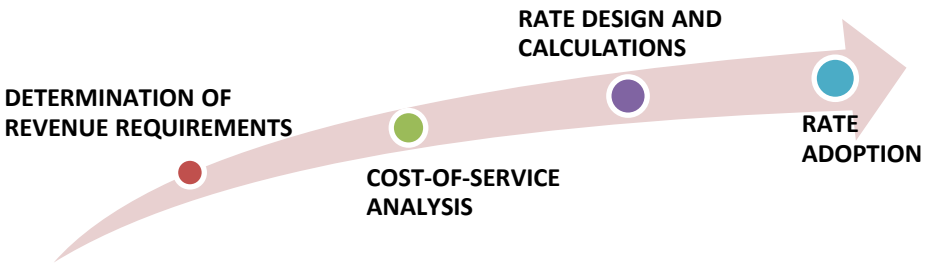
This was another significant clarification of Proposition 218 since cost proportionality for individual parcels is almost impossible to achieve in the strict sense.

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, as shown in Figure 2-1:

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 utility objectives, consistent with the costs-of-service principles, such as conservation, affordability for essential needs, and revenue stability. 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.

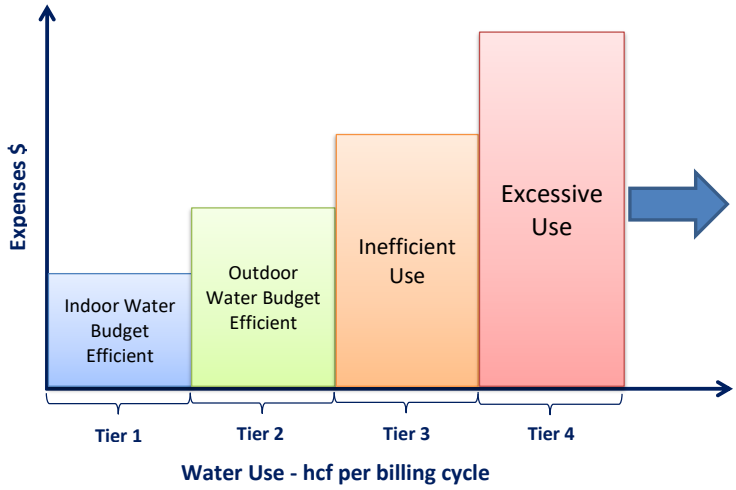
3. Water Budget and Tier Definitions

Since July 1, 2010, the District has implemented a tiered water budget rate structure to incentivize 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.

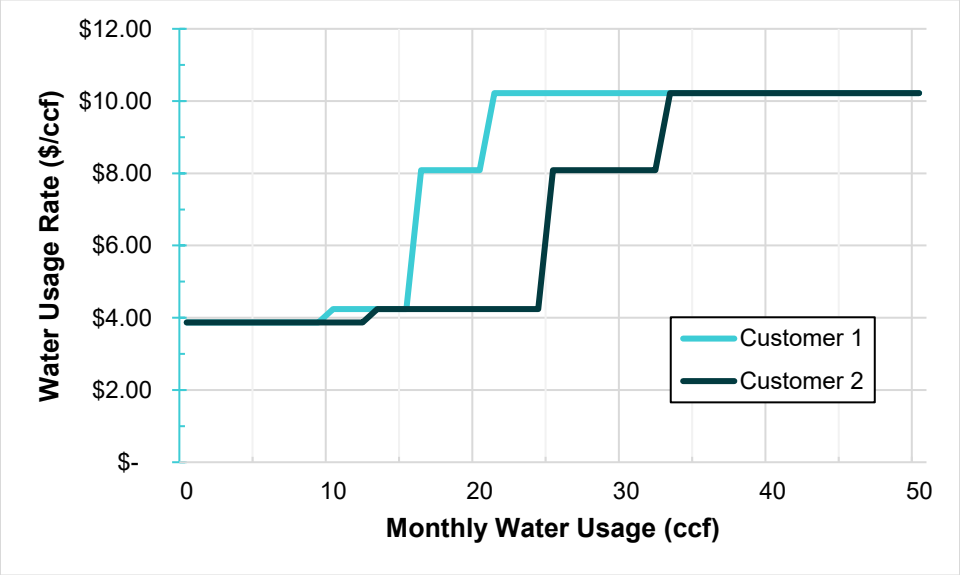
Figure 3-1: Water Budget Tiers



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, which examines the use of two hypothetical customers using the District's proposed FY 2027 commodity rates, the first 9 units consumed by Customer 1 are charged at the Tier 1 rate, whereas Customer 2 has 12 units at the Tier 1 rate ($3.87/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 ($4.24/ccf). Usage from 16-20 units is charged the Tier 3 rate ($8.09 per ccf), and any usage exceeding 20 units[7] will be deemed excessive and charged at the Tier 4 Rate ($10.22/ccf). Similarly, for Customer 2, Tier 2 spans from 13-24 units, Tier 3 spans 25-32 units, and use exceeding 32 units will be charged at the Tier 4 Rate. Customer 2, with a larger indoor and outdoor water budget (or allotment), represents a residential customer with a larger family and a larger irrigated landscape area than Customer 1.

[7] Tier 3 = 30% of Total Water Budget (TWB) whereas TWB = Indoor Water Budget + Outdoor Water Budget

Figure 3-2: Customized Water Budget Tiers



Like the Water Budget Rate Study in 2023, the District's water budget allocations and tiered rate structure are designed for residential and irrigation accounts only. Commercial accounts have a large variety of uses and applications that make developing budgets for tiered rates impractical. Commercial customers 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.
  - Section 10609 of the Water Code reduced the provisional standard for indoor residential water use from 55 gallons per capita per day (GPCD) to 47 GPCD as of January 1, 2025. The District is reviewing the current standard of 55 GPCD and has determined that it will meet the overall standards by retaining the 55 GPCD and will continue to monitor usage and modify the standard as necessary.
- 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:
      - Townhome or Condominium: Household Size = 3 persons
      - Apartment: Household Size = 2 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.
- 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[8] (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, installed before January 1, 2010 (Functional): $ETAF_{Pre\ 2010} = 80\%$
- New development / redevelopment landscape (Functional)[9]: $ETAF_{Post\ 2010} = 70\%$
- New or rehabilitated landscape construction installed after January 1, 2019: $ETAF_{Post\ 2019} = 55\%$
- Special landscape (Recreational): $ETAF_{Recreational}$[10] = 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.

[8] 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.

[9] Functional is essentially aesthetic landscape

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

- $\text{Landscape Area (sq ft)} = 70\% * \left(\text{Lot Size} - \frac{\text{Building Size}}{\text{Number of Floors}} \right)$
    - 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; $ETAF_{Post\ 2019}$ = 55%; $ETAF_{Post\ 2010}$ = 70%; $ETAF_{Pre\ 2010}$ = 80%; $DF_{outdoor}$ = 100%
Multi-Family – Restricted	IWB + OWB	Household Size = 2 persons; GPCD = 55; $ETAF_{Post\ 2019}$ = 55%; $ETAF_{Post\ 2010}$ = 70%; $ETAF_{Pre\ 2010}$ = 80%; $DF_{outdoor}$ = 100%
Multi- Family – Unrestricted (Townhome or Condominium)	IWB + OWB	Household Size = 3 persons; GPCD = 55; $ETAF_{Post\ 2019}$ = 55%; $ETAF_{Post}$ 2010 = 70%; $ETAF_{Pre\ 2010}$ = 80%; $DF_{outdoor}$ = 100%
Multi-Family – Unrestricted (Apartment)	IWB + OWB	Household Size = 2 persons; GPCD = 55; $ETAF_{Post\ 2019}$ = 55%; $ETAF_{Post\ 2010}$ = 70%; $ETAF_{Pre\ 2010}$ = 80%; $DF_{outdoor}$ = 100%
Irrigation – Non-Functional*	OWB	$ETAF_{Post\ 2019}$ = 55%; $ETAF_{Post\ 2010}$ = 70%; $ETAF_{Pre\ 2010}$ = 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 non-rate 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 2027. MWD rate increases will be included in the blended rates charged to the District. Dividing the total costs in Table 4-1 (Line 9) by the projected water sales (Line 10) results in the unit rate shown in Line 11. See Appendix 1 for a detailed breakdown of water supply costs. Increases to the purchased water component of the commodity rate are included in proposed FY 2028 – FY 2031, but any changes from the estimated rates will be passed through to consumers and included in the water supply component. Annual increases from MWD are estimated between $0.25 - $0.40 per ccf, but will be determined annually based on the increased water purchase costs the District experiences. MWD is adding a fixed charge component for Treatment Capacity, which begins in FY 2027, shown in Line 4 of Table 4-1. Table 4-2 shows the increase in the Water Supply unit rate of $0.29 per ccf. This $0.29 is an example of the pass-through component that will be used to determine the actual Water Supply component of the commodity rate in FY 2028 - FY 2031.

Table 4-1: Water Supply Revenue Requirements

Line #	Water Supply Unit Rates Development	FY 2027	Notes
1	MWD Fixed Charges		
2	Capacity Reservation Charge	$186,274	Appendix 1
3	Readiness To Serve Charge	$1,014,192	Appendix 1
4	Treatment Capacity Charge	$229,601	Appendix 1
5	Total Treated Full Service Annual Cost	$6,923,658	Sum Lines 2 - 4
6	Baker Raw Water Cost	$3,321,592	Appendix 1
7	Baker WTP O&M Annual Cost	$1,138,197	Appendix 1
8	Regional Pipeline O&M Annual Cost	$47,192	Appendix 1
9	**Total Water Supply Cost**	**$11,430,638**	**Sum Lines 5 – 8**
10	Projected Water Sales	2,896,740	Appendix 1
11	**Water Supply Unit Rate**	**$3.95 / ccf**	**[9] / [10]**

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

Fiscal Year (FY)	Water Supply Unit Rate $ / hundred cubic feet (ccf)
FY 2025-26	$3.66
FY 2026-27	$3.95
Increase / Change	**$0.29 / ccf**

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

Tiers	Descriptions	Current FY 2026	Proposed FY 2027
Tier 1 - Essential Use	MWDOC + Baker Blended	$3.66	$3.95
Tier 2 - Efficient Use	MWDOC + Baker Blended	$3.66	$3.95
Tier 3 - Inefficient Use	MWDOC + Baker Blended	$3.66	$3.95
Tier 4 - Excessive Use	MWDOC + Baker Blended	$3.66	$3.95
Uniform – CII Use	MWDOC + Baker Blended	$3.66	$3.95

5. Water Revenue Requirements and Proposed Rates

5.1. Revenue Requirements

Table 5-1 shows the derivation of the revenue requirement of the water enterprise. 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 2027 (Line 14). 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 2027 on the Financial Plan developed and budget data provided by District Staff.

Table 5-1: Water Operating Revenue Requirements from Rates

Line #	Water Operating Revenue Requirements [11]	FY 2027	Notes
1	**Revenue Requirements**		
2	Water Supply	$12,131,373	Appendix 1[12]
3	Other O&M Expenses	$6,860,237	Appendix 3
4	Debt Service	$0	
5	Capital Projects	$0	Appendix 3
6	Restricted Reserve Funding	$950,658	Appendix 3
7	**Total - Revenue Requirements**	**$19,942,269**	**Appendix 3**
8	**Revenue Offsets**		
9	Restricted Reserve Funding	$0	Appendix 3
10	Other Revenue	$1,282,590	
11	Interest Income	$200,000	Appendix 3
12	**Total - Revenue Offsets**	**$1,482,590**	**Appendix 3**
13	**Less Adjustments**		
14	Transfer from (to) Reserve	-$977	Appendix 3
15	Adjustment to Annualize Rate Increase	-$120,151	
16	**Total - Less Adjustments**	**-$121,128**	
17	**Total Revenue to be Recovered from Rates**	**$18,580,888**	**[7] – [12] – [16]**
18	**Revenue Requirement without Offsets**	**$20,063,396**	**[7] – [16]**

[11] May not total due to rounding.
[12] Sum of Water Supply, Water Pumping Operations, and MWDOC Service Charge

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 requirement from Capital Facility charges. The District will set aside a portion of its capital revenue requirements to fund Capital Reserves (Line 4).

Table 5-2: Annual Water Capital Revenue Requirements

Line #	Water Capital Facility Revenue Requirements	FY 2027	Notes
1	**Total Water Capital R&R Expenditures**	**$2,428,441**	**Sum of lines 2 - 3**
2	Capital Replacement & Refurbishment Program	$984,040	Appendix 3
3	Debt Service	$1,444,401	Appendix 3
4	**Plus Capital Reserve Funding**	**$909,051**	Appendix 3
5	**Water Capital R&R Rev Requirements**	**$3,337,492**	**Line 1 + 4 +6**
6	FY 2026 Capital R&R Revenues	$2,669,994	Appendix 3
7	**% Rate Increase**	**25.00%**	

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 Table 5-6 to Table 5-7 and section 5.2.2 of this report below). However, the costs to maintain public fire flows are included in the cost of service recovered from rates. This reflects the fact 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

Raftelis conducted peaking factor analysis for the District's water usage using usage from July 2019 through September 2025. The results are shown in Table 5-3.[13]

[13] Note the usage shown in column A does not match the usage shown in column C of Table 5-5. Table 5-3 shows historic average usage used to calculate peaking factors, while Table 5-5 shows the peaking factors from Table 5-3 applied to FY 27 use.

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

Line	Water Uses	Average Annual Usage[14]	Max Month Usage	Average Month Usage	Peaking factors (Max/Avg)
		A	B	C	D = [B] / [C]
1	Indoor Use	1,464,951	141,878	122,365	1.16
2	Outdoor Use	825,220	154,237	70,712	2.18
3	Inefficient Use	78,986	12,078	6,670	1.81
4	Excessive Use	73,206	15,552	6,122	2.54
5	Commercial Use	333,772	38,871	27,986	1.39
6	**Total Usage**	**2,776,133**	**362,616**	**233,855**	**1.55**

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	2.18
Inefficient Use	1.81
Excessive Use	2.54
Commercial Use	1.39

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

Table 5-5 shows the calculation of extra capacity units of service for non-fire related water service. Table 5-5 shows the calculations used to identify extra capacity costs to customer classes and tiers (intra-class) based on actual water use patterns. Raftelis estimates Max Day (Column E) and Max Hour (Column H) factors based on actual water use from July 2019 through September 2025 water use and systemwide peaking factors (from Table 5-4). Projected FY 2027 water use in Column C (provided by the District as average water use from FY 2020 through FY 2025) is divided by 365 days to determine average daily water use (Column D). Average daily use in Column D is then multiplied by the Max Day factor (Column E) to determine Max Day demand (Column F). Max Day requirements (Column G) are determined by subtracting average daily water use (Column D) from Max Day demand (Column F). Max Hour requirements (Column J) are similarly calculated. Max Hour demand (Column I) equals average daily water use (Column D) multiplied by the Max Hour factor (Column H). Max Hour requirements (Column J) equal Max Hour demand (Column I) less Max Day demand (Column F).

[14] Shown for years FY 2020 – FY 2025. Peaking factor analysis in columns B – C includes all data provided at the time of the study through September 2025.

Table 5-5: Peaking Units by Customer Class

Line	Customer Class	Annual Water Use (ccf)	Average Daily Water Use (ccf)	Max Day Factor	Max Day Demand (ccf/Day)	Max Day Requirements (ccf/Day)	Max Hour Factor	Max Hour Demand (ccf/Day)	Max Hour Requirements (ccf/Day)
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]
1	Tier 1	1,514,897	4,150	1.16	4,812	662	1.37	5,675	862
2	Tier 2	853,355	2,338	2.18	5,100	2,762	2.57	6,013	914
3	Tier 3	81,678	224	1.81	405	181	2.14	478	73
4	Tier 4	75,702	207	2.54	527	319	3.00	621	94
5	Commercial	371,107	1,017	1.39	1,412	395	1.64	1,665	253
6	Total	2,896,739	7,936		12,256	4,320		14,452	2,196

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: 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 four 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 and is shown in Table 5-7.

A part of the peaking demand is designed for fire protection, both public and private fire protection. The District has 1,899 public hydrants and 172 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 10.2 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 5-6: Fire Demand Units

Fire Services	# of Services	Fire Demand Factor	Fire Demand Units (FDU)	FDU / yr	Percentage Demand
	A	B = MeterSize^2.63[15]	C = A x B	D = C x 12 bills/yr	
Private Fire Services			**24,081**	**288,972**	**10.2%**
4"	29	38.32	1,111	13,335	
6"	93	111.31	10,352	124,223	
8"	46	237.21	10,912	130,938	
10"	4	426.58	1,706	20,476	
Public Hydrants			**211,379**	**2,536,553**	**89.8%**
6"	1,899	111.31	211,379	2,536,553	
8"	0	237.21	0	0	
10"	0	426.58	0	0	
Total	**2,071**		**235,460**	**2,825,525**	**100.0%**

Table 5-6 shows the fire demand imposed on peaking requirements and the relationship between fire and system peaking capacity.

[15] Hazen William equation

Table 5-7: Water System and Fire Demand Peaking Requirements

Line	Fire Capacity Estimate	Max Day	Max Hour	Notes [A]	Notes [B]
		A	B		
1	Hours for Fire	4.00	0.00		
2	kgals/min	3.00	3.00		
3					
4	Capacity Demanded for Fire (ccf/day)	963	4,813	[A1] x [A2], converted to ccf/day	[B2], converted to ccf/day – [A4]
5	Allocation to Public Fire	89.8%	89.8%	Col E of Table 5-6	
6					
7	System Capacity				
8	Public Fire Capacity	864	4,321	[4] x [5]	
9	Private Fire Capacity	98	492	[4] - [8]	
10	Customer Demand Capacity	4,320	2,196	[G6] of Table 5-5	[J6] of Table 5-5
11	**Total**	**5,282**	**7,009**	**[8] + [9] + [10]**	
12					
13	Proportion of System Capacity				
14	Public Fire Capacity	16.4%	61.6%	[8] / [11]	
15	Private Fire Capacity	1.9%	7.0%	[9] / [11]	
16	Customer Demand Capacity	81.8%	31.3%	[10] / [11]	
17	**Total**	**100%**	**100%**		

Table 5-8 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.

Table 5-8: 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:

$$Base\ Fixed\ Allocation = \frac{Base}{Max\ Hour} = \frac{1}{2.04} \approx 49.0\%$$
$$Max\ Day\ Allocation = \frac{Max\ Day - Base}{Max\ Hour} = \frac{1.73 - 1.00}{2.04} \approx 35.8\%$$
$$Max\ Hour\ Allocation = 1 - 49.0\% - 35.8\% \approx 15.2\%$$

Table 5-9 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 5-8) and 50% to max hour demand for distribution (row 2 of Table 5-8). Pumping is designed to meet max hour demand, thus allocated using the max hour demand allocation factors (row 2 in Table 5-8).

$$T\&D\ Base\ Fixed = 50\%\ x\ 57.8\% + 50\%\ x\ 49\% \approx 53.4\%$$
$$T\&D\ Max\ Day = 50\%\ x\ 42.2\% + 50\%\ x\ 35.8\% \approx 39.0\%$$
$$T\&D\ Max\ Hour = 50\%\ x\ 0\% + 50\%\ x\ 15.2\% \approx 7.6\%$$

Table 5-9: Allocation Factors for Different Water Functions

Water Functions	Base	Max Day	Max Hour	Supply	Conservation	Meters	Recycled Water	Billing	Revenue Offset	Notes
Administrative/Operations	87.5%							12.5%		Staffing levels
CS and Billing								100.0%		Billing
Water Supply				100.0%						Purchased water cost
Storage	57.8%	42.2%								Max Day
Pumping	57.8%	42.2%								Max Day
T&D	53.4%	39.0%	7.6%							50% MD, 50% MH
Labor	68.1%	20.3%	1.5%					10.0%		Proportional based on non-labor costs
Source of Supply	100.0%									Base
Conservation Program					100.0%					Conservation
RW Restricted Reserve Funding							100.0%			Recycled Water
Misc. Rev	100%									Base
Revenue Offset									100.0%	Revenue Offset
Capital R&R										Allocation to Capital

Table 5-10 shows the allocations of water O&M expenses using the allocation factors shown in Table 5-9 and O&M breakdown for FY 2027 provided by the District staff (Appendix 2). In addition, Restricted Reserve Funding requirements (from line 6 of Table 5-1) are added to the O&M budget to calculate the Operating Allocation used for the Water Revenue Requirement. Supply, Conservation, and Recycled Water are excluded from the Operating Allocation requirement, as those cost categories are determined by the District, and not distributed pro-rata like the other cost categories. The last line of Table 5-10 shows the Operating Allocation used to distribute the revenue requirement shown in Table 5-11.

Table 5-10: Allocations of Water O&M Expenses by Cost Categories

Water O&M Allocation	FY 2027 Budget	Base	Max Day	Max Hour	Supply	Conservation	Meters	Recycled Water	Billing
O&M Expenses									
Administration	$191,860	$167,878	$0	$0	$0	$0	$0	$0	$23,983
Finance	$235,060	$205,678	$0	$0	$0	$0	$0	$0	$29,383
Human Resources	$39,380	$34,458	$0	$0	$0	$0	$0	$0	$4,923
Technology	$281,380	$246,208	$0	$0	$0	$0	$0	$0	$35,173
Public Relations	$168,741	$147,649	$0	$0	$0	$0	$0	$0	$21,093
Customer Service	$79,920	$0	$0	$0	$0	$0	$0	$0	$79,920
Engineering	$9,170	$8,024	$0	$0	$0	$0	$0	$0	$1,146
Operations Support	$147,550	$129,106	$0	$0	$0	$0	$0	$0	$18,444
Fleet Services	$156,640	$137,060	$0	$0	$0	$0	$0	$0	$19,580
Water Supply	$11,430,638	$0	$0	$0	$11,430,638	$0	$0	$0	$0
Water Storage Operations	$360,300	$208,266	$152,034	$0	$0	$0	$0	$0	$0
Water Pumping Operations	$548,135	$316,841	$231,294	$0	$0	$0	$0	$0	$0
Water Transmission & Distribution	$613,120	$327,477	$239,058	$46,585	$0	$0	$0	$0	$0
Other Operating Expenses	$180,400	$157,850	$0	$0	$0	$0	$0	$0	$22,550
Labor	$4,396,716	$2,996,354	$893,791	$66,900	$0	$0	$0	$0	$439,672
MWDOC Service Charge	$152,600	$152,600	$0	$0	$0	$0	$0	$0	$0
Subtotal: O&M Allocation	**$18,991,611**	**$5,235,446**	**$1,516,177**	**$113,485**	**$11,430,638**	**$0**	**$0**	**$0**	**$695,864**
Restricted Reserve Funding									
Funding for Conservation Program	**$250,000**	$0	$0	$0	$0	$250,000	$0	$0	$0
Funding for RW Conversion Program	**$700,658**	$0	$0	$0	$0	$0	$0	$700,658	$0
Total Operating Expense	**$19,942,269**	**$5,235,446**	**$1,516,177**	**$113,485**	**$11,430,638**	**$250,000**	**$0**	**$700,658**	**$695,864**
Totals included in Operating Allocation	**$7,560,972**	**$5,235,446**	**$1,516,177**	**$113,485**					**$695,864**
Operating Allocation	**100.0%**	**69.2%**	**20.1%**	**1.5%**					**9.2%**

Table 5-11 shows the allocation of revenue requirements to cost categories. The total revenue requirement (less the water supply, conservation, and recycled water components) (from Line 17 of Table 5-1) is distributed by the operating allocation determined in the last line of Table 5-10. Designated cost components (water supply, conservation, and recycled water) are added back in, and revenue offsets are then allocated in Table 5-11. It should be noted that the total water revenue requirement determined in Table 5-11 equals the total revenue to be recovered from rates calculated in Line 17 of Table 5-1. Finally, public and private fire costs are reallocated to determine the total net revenue requirement. Table 5-12 details the allocations of Max Day and Max Hour revenue requirements to Private Fire services and Meters.

Table 5-11: Water Revenue Requirements by Cost Categories

Water O&M Allocation	FY 2027 Budget	Base	Max Day	Max Hour	Supply	Conservation	Meters	Recycled Water	Billing	Revenue Offset	Fire Protection
Operating Allocation Less Designated Cost Components	**$7,682,100**	$5,319,319	$1,540,467	$115,303	$0	$0	$0	$0	$707,012	$0	$0
Plus (+) Designated Cost Components	**$12,381,296**	$0	$0	$0	$11,430,638	$250,000	$0	$700,658	$0	$0	$0
Less (-) Revenue Offsets											
Restricted Reserves Funding of Conservation Program	**$250,000**	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous Revenue	**$39,000**	$39,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Flooding Meters	**$10,508**	$10,508	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other Income (R-6 Partners)	**$140,000**	$140,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Property Taxes	**$560,000**	$560,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cell Site Lease Revenue (T1 Offset)	**$217,860**	$0	$0	$0	$0	$0	$0	$0	$0	$217,860	$0
Cell Site Lease Revenue	**$65,140**	$56,998	$0	$0	$0	$0	$0	$0	$8,143	$0	$0
Interest - Operations	**$200,000**	$200,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Water Service Revenue Requirements	**$18,580,888**	**$4,062,813**	**$1,540,467**	**$115,303**	**$11,430,638**	**$250,000**	**$0**	**$700,658**	**$698,870**	**-$217,860**	**$0**
Allocation of Capacity for Public Fire	**$0**	$0	($251,998)	($71,077)	$0	$0	$323,075	$0	$0	$0	$0
Allocation of Capacity for Private Fire	**$0**	$0	($28,708)	($8,097)	$0	$0	$0	$0	$0	$0	$36,806
Total Net Revenue Requirements	**$18,580,888**	**4,062,813**	**1,259,760**	**36,129**	**11,430,638**	**250,000**	**323,075**	**700,658**	**698,870**	**(217,860)**	**36,806**

Table 5-12: Allocations of Peaking Costs to Private Fire Services and Meter

Line No.	Allocation of Peaking Costs to Fire Protection	Max Day	Max Hour	Total	Notes
	A	B	C	D = B + C	
1	Revenue Requirements (Table 5-11)	$1,540,467	$115,303	$1,655,770	
2	Public Fire Cost % (Table 5-7)	16.4%	61.6%	78.0%	
3	Public Fire Allocation to Meters	$251,998	$71,077	$323,075	[1] x [2]
4	Private Fire Cost % (Table 5-7)	1.9%	7.0%	8.9%	
5	Private Fire Allocation	$28,708	$8,097	$36,806	[1] x [4]
6	Remaining Max Day and Max Hour Costs for Customer Demand Capacity	$1,259,760	$36,129	$1,295,889	[1] - [3] - [5] Equal to Max Day and Max Hour allocations in last line of Table 5-11

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, the size of the facilities also increases operating and capital costs, therefore, 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 cost recovery between fixed and variable costs and provide 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 5-13:

- 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 5-13: 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	x	x	x	x
Water Supply		x	x	x	x	x
RW Program Funding				x	x	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 5-14 below.

Note: in prior studies, private fire accounts were included in EMUs per year as a 5/8-inch meter for the Meter component of the service charge. Raftelis proposes that Private Fire meters instead have a Fire component (rather than the Meter component) calculated for the Fire Service Charge. This component is scaled by Fire Demand Units (FDUs), calculated by raising the diameter of the line to the power of 2.63,[16] per AWWA M1 standards.

[16] Hazen Williams equation

Table 5-14: Units of Service for Monthly Service Charges

Meter / Line Size	Meter Counts	Meter Ratio	Bills / yr	EMUs / yr
	A	B	C = A x 12	D = C x B
Potable Water Meters				
5/8"	2,380	1.00	28,560	28,560
3/4"	4,853	1.50	58,236	87,354
1"	460	2.50	5,520	13,800
1-1/2"	714	5.00	8,568	42,840
2"	1,126	10.00	13,512	135,120
Subtotal Potable Water	**9,533**		**114,396**	**307,674**
Private Fire	**Meter Counts**	**Fire Ratio[17]**	**Bills / yr**	**FDUs / yr**
4"	29	38.32	348	13,335
6"	93	111.31	1,116	124,223
8"	46	237.21	552	130,938
10"	4	426.58	48	20,476
Subtotal Private Fire	**172**		**2,064**	**288,972**
Total	**9,705**		**116,460**	

[17] Calculated by the Hazen-Williams equation, equal to the size of the fire line raised to the power of 2.63.

Table 5-15 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 5-15: Water Units of Service Derivation

		Peaking		RW		Conservation		Revenue Offset		Meter & Capital	Billing & CS	Fire Service
Water Usage	Water Sales (ccf)	Max Day	Max Hour	RW Funding	RW Service Units	Conservation Funding	Conservation Service Units	Offset Factor	Rev Offset Service Units	EMUs	Bills	FDUs / yr
	[A] Table 5-5	[B] Table 5-5	[C] Table 5-5	[D]	[E] = [D] x [B]	[F]	[G] = [F] x [A]	[H]	[I] = [H] x [A]	Table 5-14	Table 5-14	Table 5-14
Tier 1	1,514,897	662	862	0.00	-	0.00	-	1.00	1,514,897			
Tier 2	853,355	2,762	914	0.00	-	0.00	-	0.00	-			
Tier 3	81,678	181	73	1.00	81,678	1.00	81,678	0.00	-			
Tier 4	75,702	319	94	1.74	131,721	1.00	75,702	0.00	-			
Commercial	371,107	395	253	0.14	51,955	0.10	37,111	0.81	300,597			
Total	**2,896,739**	**4,320**	**2,196**		**265,355**		**194,491**		**1,815,494**	**307,674**	**116,460**	**288,972**

Table 5-16 summarizes the water revenue requirements (Table 5-11)[18] for FY 2027 by rate components and shows the calculation of unit costs.

Table 5-16: Unit Cost Calculation

Water Rev Requirements	FY 2027	Fixed Monthly Service Charge			Commodity Rate						Capital
	Cost of Service	Meter	Private Fire	Customer	Max Day	Max Hour	Supply	Conservation	Recycled Water	Offset	
Base	**$4,062,813**	$4,062,813	$0	$0	$0	$0	$0	$0	$0	$0	$0
Max Day	**$1,259,760**	$881,832	$0	$0	$377,928	$0	$0	$0	$0	$0	$0
Max Hour	**$36,129**	$25,290	$0	$0	$0	$10,839	$0	$0	$0	$0	$0
Supply	**$11,430,638**	$0	$0	$0	$0	$0	$11,430,638	$0	$0	$0	$0
Conservation	**$250,000**	$0	$0	$0	$0	$0	$0	$250,000	$0	$0	$0
Meters	**$323,075**	$323,075	$0	$0	$0	$0	$0	$0	$0	$0	$0
Recycled Water	**$700,658**	$0	$0	$0	$0	$0	$0	$0	$700,658	$0	$0
Fire Protection	**$36,806**	$0	$36,806	$0	$0	$0	$0	$0	$0	$0	$0
Billing	**$698,870**	$0	$0	$698,870	$0	$0	$0	$0	$0	$0	$0
Revenue Offset	**-$217,860**	$0	$0	$0	$0	$0	$0	$0	$0	-$217,860	$0
Private Fire	**$0**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital R&R	**$3,337,492**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,337,492
Total	**$21,918,380**	**$5,293,010**	**$36,806**	**$698,870**	**$377,928**	**$10,839**	**$11,430,638**	**$250,000**	**$700,658**	**-$217,860**	**$3,337,492**
Units of Service		307,674	288,972	116,460	4,320	2,196	2,896,739	194,491	264,159	1,815,494	307,674
		annual potable equiv. meters	annual FDUs	annual bills	ccf	ccf	ccf	ccf	ccf	ccf	annual potable equiv. meters
Unit Rate		**$17.20**	**$0.13**	**$6.00**	**$87.49**	**$4.94**	**$3.95**	**$1.29**	**$2.65**	**-$0.12**	**$10.85**
		per equiv. meter	per. equiv. line	per bill	per ccf	per ccf/day	per ccf/day	per ccf	per ccf	per ccf	per equiv. meter

[18] Table 5-11 shows the operating revenue requirement only. The totals shown in Table 5-16 include the revenue to be recovered from Capital Charges as well in the last column of the table.

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[19]	Proposed Rates	Current Rates	$ Impact	% Impact
	A (Table 5-16)	B	C = A+ B	D	E = C - D	F = E / D
5/8"	$6.00	$17.20	**$23.21**	$21.18	$2.03	9.6%
3/4"	$6.00	$25.80	**$31.81**	$28.98	$2.83	9.8%
1"	$6.00	$43.01	**$49.01**	$44.58	$4.43	9.9%
1-1/2"	$6.00	$86.02	**$92.02**	$83.57	$8.45	10.1%
2"	$6.00	$172.03	**$178.04**	$161.55	$16.49	10.2%
10”	$6.00	$1,752.84	**$1,758.85**	$1,595.00	$163.85	10.3%

Capital Facility Charges Derivation

Capital costs provide capacity in the system and are therefore allocated to meters which provide system capacity. Table 5-2 shows the required revenue increases for FY 2027 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).

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"	4,853	1.50	87,354
1"	460	2.50	13,800
1 1/2"	714	5.00	42,840
2"	1,126	10.00	135,120
10”	0[20]	101.89[21]	0
Total	**9,533**		**307,674**

[19] Service and Capacity component can be calculated by using the unit cost (Table 5-16) multiplied by the appropriate meter ratio (Table 5-14)

[20] Although there are no 10-in meters for potable water, the calculation is shown for Recycled Water meters, which use equivalent fixed charges to potable water.

[21] Price ratio between existing fixed service charges for 10” meter relative to base 5/8-in meter size.

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

	Capital Facility Charges
Revenue Requirements (Table 5-2)	**$3,337,492**
Units of Service (Table 5-18)	307,674
Unit Cost of Service	**$10.85**

Table 5-20: FY 2027 Proposed Water Monthly Capital Facility Charges

Meter Size	Meter Ratio	Proposed FY 2027	Current FY 2026	$ Change	% Change
	A (Table 5-18)	**B = $10.85 x A**	C	D = B - C	E = D/C
5/8"	1.00	**$10.85**	$8.69	$2.16	24.9%
3/4"	1.50	**$16.28**	$13.02	$3.26	25.0%
1"	2.50	**$27.12**	$21.69	$5.43	25.0%
1 1/2"	5.00	**$54.24**	$43.38	$10.86	25.0%
2"	10.00	**$108.48**	$86.75	$21.73	25.0%
10”	101.89	**$1,105.26**	$1,000.00	$105.26	10.5%

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 have even higher peaking factors and are assigned the higher peak delivery costs.

Table 5-21: Peak Delivery Rate Calculations

Customer Class	Max Day			Max Hour			Extra Capacity Costs		FY 2027
	Extra Capacity (ccf/day)	Unit Rate ($/ccf/day)	Max Day Costs	Extra Capacity (ccf/day)	Unit Rate ($/ccf/day)	Max Hour Costs	Extra Capacity Costs	Total Use (ccf)	Unit Rate ($ per ccf)
	Table 5-5	Table 5-16		Table 5-5	Table 5-16			Table 5-5	Table 5-5
	[A]	[B]	[C] = [A] x [B]	[D]	[E]	[F] = [D] x [E]	[G] = [C] + [F]	[H]	[H] / [G]
Tier 1	662	$87.49	$57,904	862	$4.94	$4,256	$62,159	1,514,897	$0.041
Tier 2	2,762	$87.49	$241,604	914	$4.94	$4,510	$246,114	853,355	$0.288
Tier 3	181	$87.49	$15,874	73	$4.94	$358	$16,233	81,678	$0.199
Tier 4	319	$87.49	$27,951	94	$4.94	$466	$28,417	75,702	$0.375
Commercial	395	$87.49	$34,595	253	$4.94	$1,249	$35,844	371,107	$0.097
Total	**4,320**		**$377,928**	**2,196**		**$10,839**	**$388,767**	**2,896,739**	

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, 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 amount of revenue generated ($700,658) is derived from the Water enterprise cash flow (as shown in Appendix 3), and is equal to the recycled water component of the commodity rate times the projected use in ccf. 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	RW Costs	Unit Cost[22]
Tier 1 - Essential Use	1,514,897	0.00	-	$0	**$0.000**
Tier 2 - Efficient Use	853,355	0.00	-	$0	**$0.000**
Tier 3 - Inefficient Use	81,678	1.00	81,678	$216,644	**$2.65**
Tier 4 - Excessive Use	75,702	1.74	131,655	$349,204	**$4.61**
Uniform - Commercial Use	371,107	0.14[23]	50,826	$134,810	**$0.36**
Total	**2,896,739**	**$0**	**264,159**	**$700,658**	

Conservation programs are targeted at 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. The $250,000 to be recovered from the conservation commodity rate component is based on a District analysis of the costs of administering its conservation program, as shown in the cash flows of Appendix 3.

[22] Rounded to the nearest cent.
[23] Equivalent factor for commercial use = 10% x (1.00+1.74)/2 = 0.14

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

Water Usage	Budgeted Water Sales	Equivalent Factor	Equivalent Usage	Conservation Costs	Unit Rate ($/ccf)[24]
Tier 1 - Essential Use	1,514,897	0.00	0	$0	$0.00
Tier 2 - Efficient Use	853,355	0.00	0	$0	$0.00
Tier 3 - Inefficient Use	81,678	1.00	81,678	$104,990	$1.29
Tier 4 - Excessive Use	75,702	1.00	75,702	$97,308	$1.29
Uniform - Commercial Use	371,107	0.10	37,111	$47,702	$0.13
Total			**194,491**	**$250,000**	

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, non-rate 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, non-rate 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. Remaining non-rate 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.

Table 5-24: Revenue Offset Rate Calculations

Water Usage	Budgeted Water Sales	Equivalent Factor	Equivalent Usage	Offset	Unit Rate ($/ccf)[25]
Tier 1 - Essential Use	1,514,897	1.00	1,514,897	-$181,788	-$0.12
Tier 2 - Efficient Use	853,355	0.00	0	$0	$0.00
Tier 3 - Inefficient Use	81,678	0.00	0	$0	$0.00
Tier 4 - Excessive Use	75,702	0.00	0	$0	$0.00
Uniform - Commercial Use	371,107	0.81	300,597	-$36,072	-$0.10
Total			**1,815,494**	**-$217,860**	

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

[24] Rounded to the nearest cent.
[25] Rounded to the nearest cent.

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[26]
Tier 1 - Essential Use	$3.95	$0.04	$0.00	$0.00	-$0.12	**$3.87**
Tier 2 - Efficient Use	$3.95	$0.29	$0.00	$0.00	$0.00	**$4.24**
Tier 3 - Inefficient Use	$3.95	$0.20	$2.65	$1.29	$0.00	**$8.09**
Tier 4 - Excessive Use	$3.95	$0.38	$4.61	$1.29	$0.00	**$10.22**
Uniform - Commercial Use	$3.95	$0.10	$0.36	$0.13	-$0.10	**$4.44**

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 2027 are shown in Table 5-26 below. All rates and charges are rounded up to the nearest cent to ensure adequate cost recovery.

Table 5-26: FY 2027 Monthly Water Service Charges

Meter Size	Proposed FY 2027	Current FY 2026	$ Change	% Change
5/8”	**$23.21**	$21.18	$2.03	9.58%
3/4”	**$31.81**	$28.98	$2.83	9.77%
1”	**$49.01**	$44.58	$4.43	9.94%
1-1/2”	**$92.02**	$83.57	$8.45	10.11%
2”	**$178.04**	$161.55	$16.49	10.21%
10”	**$1,758.85**	$1,595.00	$163.85	10.27%

Table 5-27 shows the monthly service charges for FY 2028 through FY 2031 that are calculated by adjusting the test year for each of the years in the rate-setting period and running the cost-of-service analysis for each year. This ensures that the service charges and water supply costs are accurately calculated each year and ensures that pass-through costs of supply will be correctly passed through if needed. This is discussed further in Section 5.3.3 below.

[26] Rounded up to the nearest cent.

Table 5-27: FY 2028 – FY 2031 Proposed Monthly Water Service Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$24.33	$26.58	$27.83	$29.18
3/4"	$33.36	$36.48	$38.20	$40.04
1"	$51.42	$56.28	$58.92	$61.76
1-1/2"	$96.58	$105.79	$110.73	$116.07
2"	$186.89	$204.80	$214.36	$224.68
10”	$1,846.69	$2,024.41	$2,118.75	$2,220.75

5.3.2. CAPITAL FACILITY CHARGES

Table 5-28 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: FY 2027 Monthly Water Capital Facility Charges

Meter Size	Proposed FY 2027	Current FY 2026	$ Change	% Change
5/8"	**$10.85**	$8.69	$2.16	24.86%
3/4"	**$16.28**	$13.02	$3.26	25.04%
1"	**$27.12**	$21.69	$5.43	25.03%
1-1/2"	**$54.24**	$43.38	$10.86	25.03%
2"	**$108.48**	$86.75	$21.73	25.05%
10”	**$1,105.26**	$1,000.00	$105.26	10.53%

Table 5-29 shows the proposed Capital Facility Charges for FY 2028 through FY 2031. Increases to Capital Facility Charges for FY 2028 through FY 2031 are based on District projections of revenue necessary to meet required capital expenditures.[27]

Table 5-29: FY 2028 – FY 2031 Proposed Monthly Water Capital Facilities Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$12.48	$14.35	$16.50	$18.15
3/4"	$18.72	$21.52	$24.75	$27.23
1"	$31.19	$35.87	$41.25	$45.37
1-1/2"	$62.38	$71.73	$82.49	$90.74
2"	$124.75	$143.46	$164.98	$181.48
10”	$1,271.04	$1,461.70	$1,680.95	$1,849.05
Revenue Adjustment	*15.0%*	*15.0%*	*15.0%*	*10.0%*

[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 2027 are shown in Table 5-30 below.

Table 5-30: FY 2027 Proposed Water Commodity Rates

Water Usage Rates	Proposed FY 2027	Current FY 2026	$ Impact	% Impact
Tier 1 - Essential Use	**$3.87**	$3.59	$0.28	7.80%
Tier 2 - Efficient Use	**$4.24**	$3.98	$0.26	6.53%
Tier 3 - Inefficient Use	**$8.09**	$7.26	$0.83	11.43%
Tier 4 - Excessive Use	**$10.22**	$9.14	$1.08	11.82%
Uniform - Commercial Use	**$4.44**	$4.09	$0.35	8.56%

The proposed rates for FY 2028 through FY 2031 include projected increases in purchased water supply costs from MWD, MWDOC, O&M cost increases for water treated at the Baker Water Treatment Plant, and other O&M costs. Increases in the purchased water component of the commodity rate (estimated to be between $0.25 - $0.40 cents[28]) are included in the rates shown in Table 5-31 below. The District will review the actual purchased water costs in future years and pass through if the increases are higher than estimated in the study.

Table 5-31: FY 2028 – FY 2031 Proposed Water Commodity Rates[29]

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Tier 1 - Essential Use	$4.12	$4.47	$4.86	$5.26
Tier 2 - Efficient Use	$4.50	$4.88	$5.28	$5.70
Tier 3 - Inefficient Use	$8.34	$8.71	$9.12	$9.53
Tier 4 - Excessive Use	$10.49	$10.87	$11.28	$11.71
Uniform - Commercial Use	$4.69	$5.05	$5.44	$5.84
Assumed Pass Through Amount	*$0.25*	*$0.35*	*$0.39*	*$0.40*

5.3.4. PRIVATE FIRE RATES

The proposed Private Fire Rates are shown in Table 5-34 and reflect the changes to the fixed charges for the fire demand component at each fire line size. Table 5-32 shows the private fire demand revenue requirement from Table 5-12. In addition, all private fire services have a 5/8-in meter attached to each that also needs to be read and requires maintenance and replacement services.

Note: in prior studies, private fire accounts were included in EMUs per year as a 5/8-inch meter for the Meter component of the service charge. Raftelis proposes that Private Fire meters instead have a Fire component (rather

[28] Estimates only, subject to change.
[29] Estimates only, subject to change.

than the Meter component) calculated for the Fire Service Charge. This component is scaled by Fire Demand Units (FDUs), calculated by raising the diameter of the line to the power of 2.63,[30] per AWWA M1 standards.

Table 5-32: Fire Demand Unit Cost Calculation

Private Fire Service	FY 2027
Revenue Requirements for Peaking (Table 5-16)	$36,806
Units of Service (Table 5-6)	288,972 FDUs
Unit Cost of Service	**$0.127 / FDU**

Table 5-33: Fire Demand Rate Calculation

Meter Size	Accounts	Fire Demand Factor	Fire Demand Rate[31]
	A	B (Table 5-6)	C = $0.127 x B
4"	29	38.32	$4.88
6"	93	111.31	$14.18
8"	46	237.21	$30.21
10"	4	426.58	$54.33

Table 5-34: FY 2027 Proposed Private Fire Service Rates

Meter Size	Accounts	Fire Demand	Customer	Proposed Rates	Current Rates	$ Change	% Change
		A (Table 5-33)	B (Table 5-16)	C = A + B	D	E = C - D	F = E / D
4"	29	$4.88	$6.00	**$10.89**	$19.82	-$8.93	-45.06%
6"	93	$14.18	$6.00	**$20.18**	$27.84	-$7.66	-27.51%
8"	46	$30.21	$6.00	**$36.22**	$41.67	-$5.45	-13.08%
10"	4	$54.33	$6.00	**$60.34**	$62.48	-$2.14	-3.43%

Similar to service charges as discussed in Section 5.3.1, the monthly private fire service charges for FY 2028 through FY 2031 are cost-of-service rates calculated by adjusting the test year for each of the years in the rate-setting period Proposed monthly private fire service charges for FY 2028 through FY 2031 are shown in Table 5-35 below.

Table 5-35: FY 2028 – FY 2031 Proposed Monthly Private Fire Facility Charges

Meter Size	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
4"	$11.35	$12.27	$12.87	$13.50
6"	$21.04	$22.74	$23.85	$25.00
8"	$37.75	$40.80	$42.78	$44.85
10"	$62.89	$67.96	$71.25	$74.69

[30] Hazen Williams equation
[31] Rounded up 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 cost-of-service rates for FY 2027. Table 6-2 and Table 6-3 show the required revenue increases for Wastewater Service Charges and Wastewater Capital Facility Charges in FY 2027. Please refer to Appendix 2 and Appendix 5 for details of the figures shown.

Table 6-1: FY 2027 Wastewater Revenue Requirements

Wastewater Revenue Requirements	Operating	Capital	FY 2027
O&M Expenses (excl. Interest & Depreciation)	**$11,248,332**	**$0**	**$11,248,332**
Other Revenue Requirements			
Debt Service	$0	$497,762	$497,762
Capital Improvement Program	$0	$4,320,645	$4,320,645
Subtotal Other Revenue Requirements	**$0**	**$4,818,407**	**$4,818,407**
***Less* Other Revenues**			
Other Operating Revenue	$30,600	$0	$30,600
Non-Operating Revenue	$728,000	$0	$728,000
Interest Income	$200,000	$0	$200,000
Subtotal Other Revenues	**$958,600**	**$0**	**$958,600**
***Less* Adjustments**			
Transfer from (to) Reserve	$2,703	$645,035	$647,737
Adjustment to Annualize Rate Increase	($22,995)	($69,348)	($92,343)
Subtotal Adjustments	**($20,292)**	**$575,687**	**$555,395**
Total Revenue to be Recovered from Rates	**$10,310,025**	**$4,242,720**	**$14,552,745**

Table 6-2: FY 2027 WW Operating Revenue Requirements

WW Operating Rev Req	FY 2027	Notes
WW O&M Expenses	$11,248,332	Appendix 5
Less (-) Non-Operating Revenues	$958,600	Appendix 5
Less (-) Adjustments	($20,292)	Appendix 5
Total WW Operating Revenue Requirements	**$10,310,025**	
Current WW Revenues	$10,034,087	Appendix 5
Revenue Increase	**2.75%**	

Table 6-3: FY 2027 WW Capital Revenue Requirements

WW Capital Revenue Requirements	FY 2027	Notes
Capital Improvement Program	$4,320,645	Appendix 5
Plus Debt Service	$497,762	Appendix 5
Less Funding from Capital Reserve	$575,687	Appendix 5
Total WW Capital Revenue Requirements	**$4,242,720**	
Current WW Revenues	$3,410,547	Appendix 5
Revenue Increase	**24.40%**	

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[32] (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. Restricted units refer to households in age restricted communities that are assumed to 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
Single Family Residential	282	272	554 mg / L
Multi-Family Restricted	282	272	554 mg / L
Multi-Family Unrestricted	282	272	554 mg / L
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[33]	282	272	554 mg / L

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.

[32] LACSD Revenue Program Report Table 3

[33] 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	7,519 DU	3.01 PPH	See Appendix 6 (ETWD)
Multi-Family Restricted	15,197 DU	1.43 PPH	See Appendix 6 (Laguna Woods)
Multi-Family Unrestricted	2,908 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	7,519 DU	3.01 PPH	282 mg/L	272 mg/L
Multi-Family Restricted	15,197 DU	1.43 PPH	282 mg/L	272 mg/L
Multi-Family Unrestricted	2,908 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	607,408 ccf	3,302	3,184
Multi-Family Restricted	583,241 ccf	3,170	3,058
Multi-Family Unrestricted	171,700 ccf	933	900
Total	**1,362,349 ccf**	**7,405**	**7,142**

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
Low Strength	150 mg/L	150 mg/L	<300 mg/L
Medium Strength	300 mg/L	300 mg/L	<600 mg/L
High Strength	500 mg/L	600 mg/L	<1,100 mg/L
Restaurants[34]	282 mg/L	272 mg/L	554 mg/L

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	WW Flows (ccf)	BOD (lbs/day)	TSS (lbs/day)	# of Accts
Residential				
Residential Unrestricted	607,408 ccf	3,302	3,184	7,519
Multi-Family Restricted	583,241 ccf	3,170	3,058	15,197
Multi-Family Unrestricted	171,700 ccf	933	900	2,908
Total Residential	**1,362,349 ccf**	**7,405**	**7,142**	**25,624**
Non-Residential				
Low St. Commercial	4,244 ccf	11	11	18
Medium St. Commercial	244,819 ccf	1,256	1,256	683
High St. Commercial	8,181 ccf	70	84	8
Restaurants	34,747 ccf	168	162	95
Total Non-Residential	**291,991 ccf**	**1,505**	**1,513**	**804**
TOTAL WW SERVICES	**1,654,340**	**8,909**	**8,655**	**26,428**

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

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:

- Detailed breakdown of O&M costs
- Allocation of the functional costs to the wastewater parameters

Based on an analysis of the District's fixed assets done in the 2019 rate study, 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, which is then used to distribute the operating revenue requirement in Table 6-11.

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 2027	Flows	BOD	TSS	General
Administration	$249,418				100%
Finance	$305,578				100%
Human Resources	$51,194				100%
Technology	$365,794				100%
Public Relations	$84,684				100%
Customer Service	$54,496				100%
Engineering	$11,921	70%	15%	15%	
Operations Support	$137,866	70%	15%	15%	
Fleet Services	$214,482				100%
Sewer Pumping Operations	$515,650	100%			
Sewer Collections	$285,900	100%			
Wastewater Treatment	$3,007,027	40%	30%	30%	
Other Operating Expenses	$234,520				100%
Labor	$5,729,803	38%	17%	17%	28%
Total O&M	**$11,248,332**	**$4,299,173**	**$1,884,549**	**$1,884,549**	**$3,180,061**
Operating Allocation	*100.0%*	*38.2%*	*16.8%*	*16.8%*	*28.3%*

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. The Operating Revenue Requirement from Table 6-1 is distributed by the operating allocation determined in Table 6-10. General costs are reallocated on a proportional basis for cost categories relative to the total revenue requirement, shown in more detail in Table 6-12. Allocations of the FY 2027 Revenue Requirement are summarized in Table 6-10. Note the calculated total adjusted cost of service is equal to the revenue to be recovered from rates determined in Table 6-1.

Table 6-11: Allocations of FY 2027 Operating WW Revenue Requirements

Revenue Requirements	FY 2027	Flow	BOD	TSS	General	Allocation Basis
Operating Revenue Requirement	**$11,268,625**	$4,306,929	$1,887,949	$1,887,949	$3,185,798	Operating Allocation
Revenue Offsets						
Property Taxes	**$728,000**	$278,246	$121,969	$121,969	$205,816	Labor
Other Misc. Income	**$230,600**	$0	$0	$0	$230,600	General/Admin
Total - Cost of Service	**$10,310,025**	**$4,028,683**	**$1,765,980**	**$1,765,980**	**$2,749,382**	
Allocation of General Costs	**$0**	$1,465,007	$642,188	$642,188	-$2,749,382	proportional basis
Total - Adjusted Cost of Service	**$10,310,024**	**$5,493,690**	**$2,408,167**	**$2,408,167**	**$0**	

Table 6-12: Reallocation of General Costs

Cost Categories	FY 2027	Reallocation of General	Reallocated General Costs	FY 2027
Flows	$4,028,683	53.3%	$1,465,007	$5,493,690
BOD	$1,765,980	23.4%	$642,188	$2,408,167
TSS	$1,765,980	23.4%	$642,188	$2,408,167
General	$2,749,382	(100.0%)	($2,749,382)	$0
REV REQ FROM RATES	**$10,310,024**			**$10,310,024**

6.3. 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 2027 Operating WW Unit Cost of Service

Operating Rev Req	FY 2027	Units of Service		Unit Cost of Service
	A (Table 6-12)	B (Table 6-9)		C = A / B
WW Flows	$5,493,690	1,654,340	ccf / yr	$3.32
BOD	$2,408,167	8,909	lbs / day	$270.29
TSS	$2,408,167	8,655	lbs / day	$278.24
Total	**$10,310,025**			

6.3.1. ALLOCATION OF COSTS TO CUSTOMER CLASSES

$$Flows\ Cost = \$3.32/ccf\ x\ WW\ Flows\ (ccf)$$
$$BOD\ Cost = \$270/lbs\ x\ BOD\ (lbs)$$
$$TSS\ Cost = \$278.24/lbs\ x\ TSS\ (lbs)$$

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 6-13.

Table 6-14: Allocation of FY 2027 Cost of Service to Customer Classes

Customer Class	Flows (ccf)	BOD (lb/yr)	TSS (lb/yr)	Accounts	Bills	Flows	BOD	TSS	Total COS
Residential									
Single Family Residential	607,408	3,302	3,184	7,519	90,228	$2,017,065	$892,379	$886,048	**$3,795,492**
Multi-Family (Restricted)	583,241	3,170	3,058	15,197	182,364	$1,936,812	$856,873	$850,794	**$3,644,479**
Multi-Family (Unrestricted)	171,700	933	900	2,908	34,896	$570,177	$252,255	$250,465	**$1,072,897**
Total Residential	**1,362,349**	**7,405**	**7,142**	**25,624**	**307,488**	**$4,524,054**	**$2,001,507**	**$1,987,308**	**$8,512,868**
Non-Residential									
Low Strength Commercial	4,244	11	11	18	216	$14,093	$2,943	$3,029	**$20,065**
Medium Strength Commercial	244,819	1,256	1,256	683	8,196	$812,989	$339,513	$349,498	**$1,502,000**
High Strength Commercial	8,181	70	84	8	96	$27,167	$18,909	$23,358	**$69,434**
Restaurants Commercial	34,747	168	162	95	1,140	$115,387	$45,296	$44,974	**$205,657**
Total Non-Residential	**291,991**	**1,505**	**1,513**	**804**	**9,648**	**$969,636**	**$406,660**	**$420,860**	**$1,797,156**
Total	1,654,340	8,909	8,655	26,428	317,136	$5,493,690	$2,408,167	$2,408,167	$10,310,025

6.4. Wastewater COS Rate Design and Proposed Rates

6.4.1. 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.

Table 6-15: Development of FY 2027 Wastewater Service Charges

Customer Classes	Total Cost of Service	WW Flows (ccf)	Bills[35]	Proposed FY 2027[36]
Residential				
Residential Unrestricted	$3,795,492		90,228	**$42.07 / DU**
Multi-Family Restricted	$3,644,479		182,364	**$19.99 / DU**
Multi-Family Unrestricted	$1,072,897		34,896	**$30.75 / DU**
Total Residential	**$8,512,868**		**307,488**	
Non-Residential				
Low St. Commercial	$20,065	4,244 ccf		**$4.73 / ccf**
Medium St. Commercial	$1,502,000	244,819 ccf		**$6.14 / ccf**
High St. Commercial	$69,434	8,181 ccf		**$8.49 / ccf**
Restaurants	$205,657	34,747 ccf		**$5.92/ ccf**
Total Non-Residential	**$1,797,156**	**291,991 ccf**		

The wastewater rates in FY 2028 through FY 2031 will be increased based on the revenue adjustments necessary to maintain healthy reserves, meet debt service coverage requirements, and cover operations and maintenance expenses, as detailed in Appendix 5. The proposed rate adjustments for FY 2028 through FY 2031 and the corresponding proposed rates are shown in Table 6-16 below.

Table 6-16: FY 2028 – FY 2031 Proposed Wastewater Service Charges

Wastewater Service Charges	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Residential				
Residential Unrestricted	$44.73	$47.64	$49.98	$52.49
Multi-Family Restricted	$21.25	$22.64	$23.75	$24.95
Multi-Family Unrestricted	$32.69	$34.82	$36.53	$38.37
Commercial Use ($/ccf)				
Low St. Commercial	$5.03	$5.36	$5.63	$5.92
Medium St. Commercial	$6.53	$6.96	$7.31	$7.68
High St. Commercial	$9.03	$9.62	$10.10	$10.61
Restaurants	$6.30	$6.71	$7.04	$7.40

6.4.2. 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 2027 are shown in

[35] Accounts/DUs from Table 6-9 x 12
[36] Rounded up to the nearest cent.

Table 6-17 below and are required for replacement and refurbishment of existing infrastructure and debt service payments.

Table 6-17: Development of FY 2027 Capital Facility Charges

	FY 2027	O&M Rev Req	%	Capital Facility Rev Req	Units of Services	Unit Capital Facility Charges[37]	Current FY 2026	$ Increase	% Increase
		A (Table 6-15)	B = A / [A11]	C = [C11] x B	D (Table 6-9 x 12)	E = C / D			
1	**Residential**				**Bills**				
2	Residential Unrestricted	$3,795,492	36.81%	$1,561,898	90,228	**$17.32 / DU**	$13.86	$3.46	25.0%
3	Multi-Family Restricted	$3,644,479	35.35%	$1,499,755	182,364	**$8.23 / DU**	$6.59	$1.64	24.9%
4	Multi-Family Unrestricted	$1,072,897	10.41%	$441,512	34,896	**$12.66 / DU**	$10.13	$2.53	25.0%
5									
6	**Non-Residential**				**Billed sewer flows (ccf)**				
7	Low St. Commercial	$20,065	0.19%	$8,257	4,244 ccf	**$1.95/ ccf**	$1.63	$0.32	19.6%
8	Medium St. Commercial	$1,502,000	14.57%	$618,094	244,819 ccf	**$2.53 / ccf**	$2.02	$0.51	25.2%
9	High St. Commercial	$69,434	0.67%	$28,573	8,181 ccf	**$3.50 / ccf**	$3.83	-$0.33	(8.6%)
10	Restaurants	$205,657	1.99%	$84,631	34,747 ccf	**$2.44 / ccf**	$2.07	$0.37	17.9%
11	**Total**	**$10,310,025**	**100.00%**	**$4,242,720**[38]					

Increases to Capital Facility Charges for FY 2028 through FY 2031 are based on District projections of revenue necessary to meet required capital expenditures. [39] The proposed rate adjustments for FY 2028 through FY 2031 and the corresponding proposed rates are shown in Table 6-18.

Table 6-18: FY 2028 – FY 2031 Proposed Capital Facility Charges

Wastewater Capital Charges	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
Residential ($/EDU)				
Residential Unrestricted	$19.92	$22.91	$26.35	$28.99
Multi-Family Restricted	$9.47	$10.90	$12.54	$13.80
Multi-Family Unrestricted	$14.56	$16.75	$19.27	$21.20
Commercial Use ($/ccf)				
Low St. Commercial	$2.25	$2.59	$2.98	$3.28
Medium St. Commercial	$2.91	$3.35	$3.86	$4.25
High St. Commercial	$4.03	$4.64	$5.34	$5.88
Restaurants	$2.81	$3.24	$3.73	$4.11
Revenue Adjustment	*15.0%*	*15.0%*	*15.0%*	*10.0%*

[37] Rounded up to the nearest cent.
[38] Table 6-1
[39] See Appendix 7 for detailed Capital Projects Budget.

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 2027. The projected recycled water sales for FY 2027 are estimated at 1,300 AF.

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 2027. Recycled water O&M expenses and supply (Line 2) and Debt Service (Line 3) will be partially offset by restricted reserve funding (Line 11), MWD LRP Rebates (Line 7), and other sources of revenues (Lines 8, 9 and 10). The remaining revenue requirement to be recovered from recycled water rates is shown in Line 19. 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.

Table 7-1: Recycled Water Revenue Requirement from Rates

	Revenue Requirement - FY 2027	Operating	Capital	Total
1	**Revenue Requirements**			
2	O&M Expenses	$2,114,428		$2,114,428
3	Debt Service		$2,077,000	$2,077,000
4	Capital Projects		$0	$0
5	**Total - Revenue Requirements**	**$2,114,428**	**$2,077,000**	**$4,191,428**
6	**Revenue Offsets**			
7	MWD LRP Rebate	$297,000		$297,000
8	Miscellaneous Revenue	$0		$0
9	Property Taxes	$112,000		$112,000
10	MNWD Payment for RW Service to Golf Course	$11,000		$11,000
11	Restricted Reserve Funding of Debt Service		$700,658	$700,658
12	Interest Income	$0	$0	$0
13	**Total - Revenue Offsets**	**$420,000**	**$700,658**	**$1,120,658**
14	**Less Adjustments**			
15	Transfer from (to) Reserve	-$1,116,035	$1,026,984	-$89,051
16	Transfer from (to) Capital Reserve	$0	$0	$0
17	Adjustment to Annualize Rate Increase	-$18,292	-$5,921	-$24,213
18	**Total - Less Adjustments**	**-$1,134,327**	**$1,021,063**	**-$113,264**
19	**Total Revenue to be Recovered from Rates**	**$2,828,755**	**$355,279**	**$3,184,034**

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.

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 7-3) 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 the same as for potable water.

The monthly service charges in FY 2027 through FY 2031 are the same as the Water enterprise service charges in the same period, shown in Table 7-2 below. Similarly, Capital Facility charges for FY 2027 – FY 2031 are same as the Water enterprise capital charges, as shown in Table 7-3.

Table 7-2: FY 2027 – FY 2031 Proposed Recycled Water Monthly Service Charges

Meter Size	# of RW Accounts	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"		$23.21	$24.33	$26.58	$27.83	$29.18
3/4"		$31.81	$33.36	$36.48	$38.20	$40.04
1"		$49.01	$51.42	$56.28	$58.92	$61.76
1-1/2"	29	$92.02	$96.58	$105.79	$110.73	$116.07
2"	247	$178.04	$186.89	$204.80	$214.36	$224.68
10"	1	$1,758.85	$1,846.69	$2,024.41	$2,118.75	$2,220.75

Table 7-3: FY 2027 – FY 2031 Proposed Recycled Water Capital Facility Charges

Meter Size	Proposed FY 2027	Proposed FY 2028	Proposed FY 2029	Proposed FY 2030	Proposed FY 2031
5/8"	$10.85	$12.48	$14.35	$16.50	$18.15
3/4"	$16.28	$18.72	$21.52	$24.75	$27.23
1"	$27.12	$31.19	$35.87	$41.25	$45.37
1-1/2"	$54.24	$62.38	$71.73	$82.49	$90.74
2"	$108.48	$124.75	$143.46	$164.98	$181.48
10"	$1,105.26	$1,271.04	$1,461.70	$1,680.95	$1,849.05

The total revenue requirement in Table 7-4 comes from Table 7-1. The service charges from Table 7-2 generate revenues shown on Line 2 in Table 7-4. An additional transfer to the capital reserve is deducted from the revenue requirement to derive the total to be recovered from the recycled water commodity rate (Line 4). The unit recycled water commodity rate is calculated using the net revenue requirements from recycled water commodity rates (Line 4) divided by projected recycled water sales (Line 5). The recycled water commodity rate for FY 2027 is $3.82 / ccf or $1,664 / AF, which is 90% of the Tier 2 potable water commodity rate for FY 2027 and provides an economic incentive for irrigation customers to convert to recycled water.

Table 7-4: FY 2027 Recycled Water Commodity Rate Calculation

Line #	Description	FY 2027
1	Total Revenue Requirements from Recycled Water Rates	$2,828,755
2	Less (-) Monthly Service Charges[40]	$580,840
3	Plus: Transfer to Capital Reserve	($84,726)
4	**Total to be Recovered from Usage Rate**	**$2,163,190**
5	Projected RW Sales (ccf)	566,280
6	**Unit RW Usage Rate**	**$3.82**
7	*$ per AF*	*$1,664*

To project the Recycled Water commodity rate for FY 2028 – FY 2031, Raftelis projected the revenue needs of the enterprise, following a similar methodology as shown in Table 7-4. Table 7-5 shows the calculation of proposed recycled water commodity rates for FY 2028 through FY 2031.

Table 7-5: FY 2028 – FY 2031 Proposed Recycled Water Commodity Rate

Line #	Description	FY 2028	FY 2029	FY 2030	FY 2031
1	Total Rev Requirements from RW Rates	$2,905,561	$3,069,309	$3,160,239	$3,257,687
2	Less: Monthly Service Charges	$609,712	$668,135	$699,322	$732,993
3	Plus: Transfer to Capital Reserve	-$2,415	$90,458	$234,576	$380,323
4	**Total to be Recovered from Usage Rate**	**$2,293,434**	**$2,491,632**	**$2,695,493**	**$2,905,016**
5	Projected RW Sales (ccf)	566,280	566,280	566,280	566,280
6	**Unit RW Usage Rate**	**$4.05**	**$4.40**	**$4.76**	**$5.13**
7	*$ per AF*	*90.0%*	*90.2%*	*90.2%*	*90.0%*

[40] Projected revenue to be generated from FY 2027 service charges x RW Accounts

APPENDICES

APPENDIX 1: PASS-THROUGH WATER SUPPLY COST

Source: Purchased Water_5 Year Projection_MWD Budget Update.xlsx

		2026/27 Budget		2027/28 Budget		2028/29 Budget		2029/30 Budget		2030/31 Budget	
		Jul 2026	Jan 2027	Jul 2027	Jan 2028	Jul 2028	Jan 2029	Jul 2029	Jan 2030	Jul 2030	Jan 2031
1	Total Period Demand (AF)	3,870	3,130	3,870	3,130	3,870	3,130	3,870	3,130	3,870	3,130
2	Total Annual Demand (AF)		7,000		7,000		7,000		7,000		7,000
3	MWD Period Demand (AF)	2,207	1,494	2,261	1,547	2,171	1,459	2,171	1,459	2,171	1,459
4	MWD Annual Demand (AF)		3,701		3,807		3,630		3,630		3,630
5	**MWD Untreated Commodity Rates**										
6	System Access Rate	492.00	472.00	472.00	525.00	525.00	561.00	561.00	606.00	606.00	658.00
7	System Power Rate	179.00	145.00	145.00	141.00	141.00	144.00	144.00	144.00	144.00	156.00
8	MWD Tier 1 Rate	313.00	413.00	413.00	440.00	440.00	525.00	525.00	591.00	591.00	652.00
9	**Subtotal Untreated Full Service**	**984.00**	**1,030.00**	**1,030.00**	**1,106.00**	**1,106.00**	**1,230.00**	**1,230.00**	**1,341.00**	**1,341.00**	**1,466.00**
10	Treatment Surcharge	544.00	390.00	390.00	408.00	408.00	433.00	433.00	466.00	466.00	485.00
11	**Total Treated Full Service Rate**	**1,528.00**	**1,420.00**	**1,420.00**	**1,514.00**	**1,514.00**	**1,663.00**	**1,663.00**	**1,807.00**	**1,807.00**	**1,951.00**
12	**Total Treated Full Service Annual Cost**	**3,372,114**	**2,121,476**	**3,209,953**	**2,341,812**	**3,287,068**	**2,426,008**	**3,610,564**	**2,636,077**	**3,923,205**	**2,846,147**
13	**MWD Fixed Charges**										
14	Capacity Reservation Charge	90,926	95,349	95,349	106,791	106,791	128,585	128,585	154,737	154,737	187,973
15	Readiness To Serve Charge	425,677	588,514	567,189	601,565	612,316	612,316	613,316	677,128	652,848	751,351
	Treatment Peaking Capacity Charge	-	79,497	79,497	50,953	50,953	54,256	54,256	58,266	58,266	60,389
	Treatment Used Standby Capacity Charge		25,880	25,880	207,060	207,060	226,041	226,041	227,766	227,766	224,315
	Treatment Remaining Standby Capacity Charge		124,225	124,225	110,432	110,432	119,060	119,060	125,962	125,962	125,962
16	**Total MWD Fixed Charges**		**1,430,068**		**1,968,941**		**2,227,808**		**2,385,115**		**2,569,568**
17	**Total MWD Cost**		**6,923,658**		**7,520,706**		**7,940,884**		**8,631,756**		**9,338,920**
18	**Total MWD Unit Cost ($/AF)**		**1,871**		**1,975**		**2,188**		**2,378**		**2,573**
19	**Baker Water Treatment Plant**										
20	Period Demand MWDOC (AF)	1,663	1,636	1,609	1,583	1,699	1,671	1,699	1,671	1,699	1,671
21	Period Demand Irvine Lake (AF)										
22	Annual Demand (AF)		3,299		3,193		3,370		3,370		3,370
23	**Baker Raw Water Cost**	**1,636,509**	**1,685,083**	**1,657,754**	**1,751,051**	**1,878,967**	**2,055,559**	**2,089,629**	**2,241,060**	**2,278,205**	**2,449,958**
24	Baker O&M Unit Cost (per AF)	345	345	366	366	368	368	383	383	398	398
25	**Baker O&M Annual Cost**	**573,776**	**564,421**	**588,503**	**578,908**	**625,190**	**614,996**	**650,673**	**640,064**	**676,156**	**665,132**
26	**Total Period Baker Water Treatment Plant Cost**	**2,210,285**	**2,249,504**	**2,246,257**	**2,329,958**	**2,504,156**	**2,670,555**	**2,740,302**	**2,881,124**	**2,954,361**	**3,115,090**
27	**Total Annual Baker Water Treatment Plant Cost**		**4,459,789**		**4,576,215**		**5,174,711**		**5,621,426**		**6,069,451**
28	**Baker Water Treatment Plant Unit Cost($/AF)**		**1,352**		**1,433**		**1,535**		**1,668**		**1,801**
29	**Regional Pipeline Operations & Maintenance**										
30	SCP Surcharge	8.38	8.38	8.63	8.63	8.89	8.89	9.16	9.16	9.43	9.43
31	SAC Surcharge	1.22	1.22	1.26	1.26	1.30	1.30	1.34	1.34	1.38	1.38
32	SCWD/JRWSS Operations & Maintenance		5,520		5,686		5,857		6,033		6,214
33	EOCF #2 O&M Charge		10,000		10,300		10,609		10,927		11,255
34	**Total Regional Pipeline Operations & Maintenance**	**15,966**	**31,226**	**15,918**	**31,644**	**17,312**	**33,495**	**17,838**	**34,507**	**18,365**	**35,535**
35	**Total Purchased Water Cost**										
36	MWD Treated Water Cost		6,923,658		7,520,706		7,940,884		8,631,756		9,338,920
37	Baker Raw Water Cost		3,321,592		3,408,805		3,934,525		4,330,689		4,728,163
38	Baker O&M Cost		1,138,197		1,167,410		1,240,186		1,290,737		1,341,288
39	Regional Pipeline O&M Cost		47,192		47,562		50,807		52,346		53,899
40	**Total Purchased Water Cost**		**11,430,638**		**12,144,483**		**13,166,403**		**14,305,528**		**15,462,271**
41	Percent Increase Budget to Budget per Unit		7.86%		6.25%		8.41%		8.65%		8.09%
42	**Overall Imported Water Effective Rate**										
43	Fiscal Year Cost per Acre Foot Purchased		**1,633**		**1,735**		**1,881**		**2,044**		**2,209**
44	Fiscal Year Cost per CCF Purchased		**3.75**		**3.98**		**4.32**		**4.69**		**5.07**
45	Fiscal Year Rate per CCF Sold		**3.95**		**4.20**		**4.55**		**4.94**		**5.34**

APPENDIX 2: O&M EXPENSES ALLOCATIONS TO WATER, RECYCLED WATER AND WASTEWATER FUNDS FOR FY 2027

Source: Purchased Water_5 Year Projection_MWD Budget Update.xlsx, OM Data_Raftelis 02102026.xlsx

Operations	FY 2027	Water	Sewer	Recycled Water
Administration	$479,650	$191,860	$249,418	$38,372
Finance	$587,650	$235,060	$305,578	$47,012
Human Resources	$98,450	$39,380	$51,194	$7,876
Technology	$703,450	$281,380	$365,794	$56,276
Public Relations	$266,453	$168,741	$84,684	$13,028
Customer Service	$142,800	$79,920	$54,496	$8,384
Engineering	$22,925	$9,170	$11,921	$1,834
Operations Support	$306,626	$147,550	$137,866	$21,210
Fleet Services	$401,350	$156,640	$214,482	$30,228
Water Supply	$11,430,638	$11,430,638	$0	$0
Water Storage Operations	$360,300	$360,300	$0	$0
Water Pumping Operations	$548,135	$548,135	$0	$0
Water Transmission & Distribution	$613,120	$613,120	$0	$0
Sewer Pumping Operations	$515,650	$0	$515,650	$0
Sewer Collections	$285,900	$0	$285,900	$0
Wastewater Treatment	$3,007,027	$0	$3,007,027	$0
Recycled Transmission & Distribution	$31,100	$0	$0	$31,100
Tertiary Treatment	$585,128	$0	$0	$585,128
Other Operating Expenses	$451,000	$180,400	$234,520	$36,080
Labor	$11,364,419	$4,396,716	$5,729,803	$1,237,900
MWDOC Service Charge	$152,600	$152,600	$0	$0
Total	**$32,354,371**	**$18,991,611**	**$11,248,332**	**$2,114,428**

APPENDIX 3: CASH FLOW ANALYSIS FOR WATER FUND

Financial Plan - Water	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Operations Fund						
Beginning Balance	**$4,680,000**	**$4,700,000**	**$4,700,977**	**$4,771,228**	**$5,091,831**	**$5,416,125**
Revenues						
Water Sales and Service Charges	**$16,184,285**	**$17,139,081**	**$17,139,081**	**$17,139,081**	**$17,139,081**	**$17,139,081**
Fire Service Charges	$58,204	$63,968	$63,968	$63,968	$63,968	$63,968
Water Service Charges	$5,391,248	$5,437,553	$5,437,553	$5,437,553	$5,437,553	$5,437,553
Commodity Rate Revenue	$10,734,833	$11,637,560	$11,637,560	$11,637,560	$11,637,560	$11,637,560
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$1,321,656	$1,441,807	$1,441,807	$1,441,807	$1,441,807
FY 2028			$295,630	$295,630	$295,630	$295,630
FY 2029				$631,794	$631,794	$631,794
FY 2030					$348,292	$348,292
FY 2031						$362,703
Revenue Adjustments	$0	$1,321,656	$1,737,437	$2,369,231	$2,717,523	$3,080,227
MWD Pass-through Rev Projections						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$0	$0	$0	$0	$0
FY 2028			$724,185	$724,185	$724,185	$724,185
FY 2029				$1,013,859	$1,013,859	$1,013,859
FY 2030					$1,129,728	$1,129,728
FY 2031						$1,158,696
Rebates and Reserves	$200,000	$250,000	$250,000	$250,000	$250,000	$250,000
Other Operating Revenue	$173,693	$189,508	$193,876	$198,559	$203,212	$208,006
Non-Operating Revenue	$800,000	$843,000	$873,890	$905,931	$939,166	$973,640
Interest Income	$350,000	$200,000	$182,000	$165,000	$205,000	$237,000
Total - Revenues	**$17,707,978**	**$19,943,246**	**$21,100,469**	**$22,765,846**	**$24,321,753**	**$25,914,421**
O&M Expenses						
General Administration	$814,094	$956,961	$995,240	$1,035,049	$1,076,451	$1,119,509
Personnel	$4,187,348	$4,436,096	$4,685,206	$4,948,316	$5,226,212	$5,519,725
Operations	$1,214,713	$1,286,780	$1,338,251	$1,391,781	$1,447,453	$1,505,351
Water Supply	$11,253,811	$12,131,373	$12,873,247	$13,924,318	$15,093,759	$16,282,031
Other Expenditures	$162,800	$180,400	$187,616	$195,121	$202,925	$211,042
Total - O&M Expenses	**$17,632,766**	**$18,991,611**	**$20,079,560**	**$21,494,585**	**$23,046,801**	**$24,637,659**
Other Revenue Requirements						
Restricted Reserve Funding of Conservation Program	$200,000	$250,000	$250,000	$250,000	$250,000	$250,000
Restricted Reserve Funding of RW Conversion Program	$715,658	$700,658	$700,658	$700,658	$700,658	$700,658
Reserve Replenishment Requirement	$0		$65,000	$325,000	$325,000	$341,250
Total - Restricted Reserve Transfer	$915,658	$950,658	$1,015,658	$1,275,658	$1,275,658	$1,291,908
Net Cash Flow - Operations	**-$840,445**	**$977**	**$5,250**	**-$4,397**	**-$705**	**-$15,146**
Ending Balance	**$3,839,555**	**$4,700,977**	**$4,706,228**	**$4,766,831**	**$5,091,125**	**$5,400,979**
Reserve Transfer	**$0**	**$0**	**$65,000**	**$325,000**	**$325,000**	**$341,250**
Ending Balance after Transfer	**$3,839,555**	**$4,700,977**	**$4,771,228**	**$5,091,831**	**$5,416,125**	**$5,742,229**
Net Impact to Reserves	*-$840,445*	*$977*	*$70,250*	*$320,603*	*$324,295*	*$326,104*

Financial Plan - Water	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Capital Fund						
Beginning Balance	**$6,314,724**	**$1,500,000**	**$2,409,051**	**$2,329,630**	**$3,215,608**	**$5,334,701**
Revenues						
Revenue from Existing Capital Charge	$2,669,994	$2,669,994	$2,669,994	$2,669,994	$2,669,994	$2,669,994
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$667,498	$667,498	$667,498	$667,498	$667,498
FY 2028			$500,624	$500,624	$500,624	$500,624
FY 2029				$575,717	$575,717	$575,717
FY 2030					$662,075	$662,075
FY 2031						$507,591
Revenue Adjustments	$0	$667,498	$1,168,122	$1,743,840	$2,405,915	$2,913,506
Bond Proceeds	$ -	$ -	$ -	$ -	$ -	$ -
Interest Income	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenues	**$2,669,994**	**$3,337,492**	**$3,838,116**	**$4,413,833**	**$5,075,908**	**$5,583,499**
Capital Expenditures						
Capital R&R Program	-	984,040	2,473,137	2,083,455	1,512,415	3,057,175
Existing Debt Service	1,444,401	1,444,401	1,444,401	1,444,401	1,444,401	1,444,401
Proposed Debt Service	-	-	-	-	-	-
Total Capital Expenditures	**1,444,401**	**2,428,441**	**3,917,537**	**3,527,855**	**2,956,816**	**4,501,576**
Net Cash Flow / (Deficit)	$1,225,593	$909,051	($79,421)	$885,978	$2,119,093	$1,081,923
Ending Balance	**$7,540,317**	**$2,409,051**	**$2,329,630**	**$3,215,608**	**$5,334,701**	**$6,416,624**

APPENDIX 4: CASH FLOW ANALYSIS FOR RECYCLED WATER FUND

Financial Plan - Recycled Water	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Operations Fund						
Beginning Balance	-	$475,000	$1,675,762	$2,809,213	$3,930,238	$4,911,442
Revenues						
Water Sales and Service Charges	**$2,303,400**	**$2,609,255**	**$2,638,127**	**$2,696,550**	**$2,727,737**	**$2,761,408**
Water Service Charges	521,055	580,840	609,712	668,135	699,322	732,993
Commodity Rates ($/ccf)	1,782,345	2,028,415	2,028,415	2,028,415	2,028,415	2,028,415
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$201,209	$221,930	$226,844	$229,468	$232,300
FY 2028			$45,505	$46,513	$47,050	$47,631
FY 2029				$99,402	$100,552	$101,793
FY 2030					$55,432	$56,116
FY 2031						$58,438
Revenue Adjustments	$0	$201,209	$267,434	$372,759	$432,502	$496,279
Rebates and Reserves	$264,825	$297,000	$297,000	$297,000	$297,000	$200,000
Other Operating Revenue	-	-	-	-	-	-
Non-Operating Revenue	115,000	123,000	127,480	132,139	136,985	142,024
Restricted Reserve Funding						
Interest Income	-	-	-	-	-	-
Total - Revenues	**$2,683,225**	**$3,230,464**	**$3,330,041**	**$3,498,448**	**$3,594,224**	**$3,599,711**
O&M Expenses						
General Administration	$416,917	$163,072	$169,595	$176,379	$183,434	$190,771
Personnel	44,268	7,876	8,191	8,519	8,859	9,214
Operations	1,631,373	669,500	696,280	724,131	753,096	783,220
Water Supply	-	-	-	-	-	-
Other Expenditures	32,560	36,080	37,523	39,024	40,585	42,208
Labor	-	1,237,900	1,287,416	1,338,913	1,392,469	1,448,168
Total - O&M Expenses	**$2,125,118**	**$2,114,428**	**$2,199,005**	**$2,286,966**	**$2,378,444**	**$2,473,582**
Net Cash Flow - Operations	**$558,107**	**$1,116,035**	**$1,131,036**	**$1,211,483**	**$1,215,780**	**$1,126,129**
Ending Balance before Transfers	$558,107	$1,591,035	$2,806,798	$4,020,696	$5,146,018	$6,037,571
Transfer to Capital Reserve	-	84,726	2,415	(90,458)	(234,576)	(380,323)
Ending Balance	**$558,107**	**$1,675,762**	**$2,809,213**	**$3,930,238**	**$4,911,442**	**$5,657,248**

Financial Plan - Recycled Water	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Capital Fund						
Beginning Balance	-	-	**($1,196,437)**	**($2,165,873)**	**($2,976,901)**	**($3,575,583)**
Revenues						
Revenue from Existing Capital Charge	$278,974	$284,223	$284,223	$284,223	$284,223	$284,223
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$65,134	$71,056	$71,056	$71,056	$71,056
FY 2028			$53,292	$53,292	$53,292	$53,292
FY 2029				$61,286	$61,286	$61,286
FY 2030					$70,478	$70,478
FY 2031						$54,034
Revenue Adjustments	$0	$65,134	$124,348	$185,633	$256,112	$310,145
Restricted Reserve Funding of Debt Service	715,658	700,658	700,658	700,658	700,658	700,658
Transfer from Capital Reserve	$0	$0	$0	$0	$0	$0
Bond Proceeds	$ -	$ -	$ -	$ -	$ -	$ -
Interest Income	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenues	**$994,632**	**$1,050,016**	**$1,109,229**	**$1,170,514**	**$1,240,993**	**$1,295,026**
Capital Expenditures						
Capital R&R Program	-	-	-	-	-	-
Existing Debt Service	2,079,500	2,077,000	2,076,250	2,072,000	2,074,250	1,662,500
Proposed Debt Service	-	-	-	-	-	-
Total Capital Expenditures	**2,079,500**	**2,077,000**	**2,076,250**	**2,072,000**	**2,074,250**	**1,662,500**
Net Cash Flow / (Deficit)	($1,084,868)	($1,026,984)	($967,021)	($901,486)	($833,257)	($367,474)
Ending Balance before Transfers	($1,084,868)	($1,026,984)	($2,163,458)	($3,067,359)	($3,810,158)	($3,943,056)
Transfer from RW Operations	$ -	($84,726)	$ -	$ -	$ -	$ -
Transfer from RW Operating Reserve	-	(84,726)	(2,415)	90,458	234,576	380,323
Ending Balance	**($1,084,868)**	**($1,196,437)**	**($2,165,873)**	**($2,976,901)**	**($3,575,583)**	**($3,562,734)**

APPENDIX 5: CASH FLOW ANALYSIS FOR WW FUND

Financial Plan	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Operations Fund						
Beginning Balance	**$2,520,000**	**$2,500,000**	**$2,497,297**	**$2,567,200**	**$2,911,033**	**$3,251,424**
Revenues						
Wastewater Service Charges	$10,013,671	$10,034,087	$10,034,087	$10,034,087	$10,034,087	$10,034,087
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$252,943	$275,937	$275,937	$275,937	$275,937
FY 2028			$649,532	$649,532	$649,532	$649,532
FY 2029				$712,371	$712,371	$712,371
FY 2030					$571,924	$571,924
FY 2031						$614,641
FY 2032						
FY 2033						
FY 2034						
FY 2035						
Revenue Adjustments	$0	$252,943	$925,469	$1,637,840	$2,209,765	$2,824,406
Other Operating Revenue	$30,600	$30,600	$30,600	$30,600	$30,600	$30,600
Non-Operating Revenue	$676,000	$728,000	$757,120	$787,405	$818,901	$851,657
Interest Income	$350,000	$200,000	$104,000	$92,000	$112,000	$127,000
Total - Revenues	**$11,070,271**	**$11,245,630**	**$11,851,276**	**$12,581,932**	**$13,205,353**	**$13,867,750**
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
O&M Expenses						
Operations	$10,961,355	$11,248,332	$11,816,373	$12,413,100	$13,039,961	$13,698,480
Restricted Reserve Transfers	$0	$0	$0	$0	$0	$0
Total - O&M Expenses	**$10,961,355**	**$11,248,332**	**$11,816,373**	**$12,413,100**	**$13,039,961**	**$13,698,480**
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Other Revenue Requirements						
Reserve Replenishment Requirement	$0	$0	$35,000	$175,000	$175,000	$183,750
Total - Other Revenue Requirements	**$0**	**$0**	**$35,000**	**$175,000**	**$175,000**	**$183,750**
Net Cash Flow - Operations	**$108,917**	**-$2,703**	**-$97**	**-$6,168**	**-$9,609**	**-$14,479**
Ending Balance	**$2,628,917**	**$2,497,297**	**$2,532,200**	**$2,736,033**	**$3,076,424**	**$3,420,694**
Reserve Transfer	**$0**	**$0**	**$35,000**	**$175,000**	**$175,000**	**$183,750**
Ending Balance after Transfer	**$2,628,917**	**$2,497,297**	**$2,567,200**	**$2,911,033**	**$3,251,424**	**$3,604,444**
Net Impact to Reserves	*$108,917*	*-$2,703*	*$34,903*	*$168,832*	*$165,391*	*$169,271*

Financial Plan	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Capital Fund						
Beginning Balance	**$8,474,724**	**$1,500,000**	**$854,965**	**$1,245,590**	**$694,900**	**-$1,062,132**
Revenues						
Sewer Capital Charge	$3,355,455	$3,410,547	$3,410,547	$3,410,547	$3,410,547	$3,410,547
Revenue Adjustments						
FY 2026	$0	$0	$0	$0	$0	$0
FY 2027		$762,826	$832,173	$832,173	$832,173	$832,173
FY 2028			$636,408	$636,408	$636,408	$636,408
FY 2029				$731,869	$731,869	$731,869
FY 2030					$841,650	$841,650
FY 2031						$645,265
Revenue Adjustments	$0	$762,826	$1,468,582	$2,200,451	$3,042,100	$3,687,365
Bond Proceeds	$0	$0	$0	$0	$0	$0
Interest Income	$0	$0	$0	$0	$0	$0
Total - Revenues	**$3,355,455**	**$4,173,373**	**$4,879,128**	**$5,610,998**	**$6,452,647**	**$7,097,912**
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Capital Expenditures						
Capital R&R Program	$0	$4,320,645	$3,989,992	$5,657,926	$7,711,417	$7,343,161
Existing Debt Service	$496,512	$497,762	$498,512	$503,762	$498,262	$492,512
Proposed Debt Service	$0	$0	$0	$0	$0	$0
Total - Capital Expenditures	**$496,512**	**$4,818,407**	**$4,488,504**	**$6,161,688**	**$8,209,679**	**$7,835,673**
Net Cash Flow - Capital	**$2,858,943**	**-$645,035**	**$390,625**	**-$550,690**	**-$1,757,032**	**-$737,761**
Ending Balance	**$11,333,667**	**$854,965**	**$1,245,590**	**$694,900**	**-$1,062,132**	**-$1,799,893**

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

NO.	DESCRIPTION	2026/27	2027/28	2028/29	2029/30	2030/31
	Source of Supply / Storage Projects					
1	JRWSS Capital Budget	5,255	25,171	4,842	334	9,937
2	Baker WTP Replacement Fund	56,200	56,200	56,200	56,200	56,200
3	Potable Reuse Implementation Plan		263,500			
4	South Orange County Turnout Project			200,000	1,125,000	1,125,000
	Total Source of Supply / Storage Projects	61,185	344,871	261,042	1,181,534	1,191,137
	Pumping (Water) Projects					
1	Water Stations PLC Upgrade to Control Logix		32,000	33,000	34,000	35,000
2	R-6 Seepage Recovery Control Panel Rehabilitation					
3	R-6 Reservoir SCE Meter Box Replacement at Inlet/Outlet Structure	14,000				
4	R-5 Reservoir Rehabilitation					
5	R-4 Reservoir Interior Recoating			1,406,000		
6	R-2 Reservoir Exterior Recoating					
7	P-3 Pump Station Generator Project			0	0	
8	R-6 Reservoir Floating Cover and Liner Replacement					
9	SMWD Intertie Restoration					
10	PRV-4 Rehabilitation	19,000				
11	Water Distribution System Main Line Replacements					
12	Fire Flow Improvements at San Amadeo and Via Carrizo			89,000		
13	Fire Flow Improvements at Avenida Sevilla		511,000			
14	Fire Flow Improvements at Ronda Mendoza	130,000				
15	Fire Flow Improvements at Calle Sonora and Via Campo Verde				132,600	1,326,000
	Total Pumping (Water) Projects	163,000	543,000	1,528,000	166,600	1,361,000
	Pumping (Water) Equipment					
1	R-6 Chlorine and Ammonia Injection System Replacement	14,100	72,750			
2	R-5 Reservoir Mixing System Replacement			107,000		
3	R-1/R-2 Reservoir Mixing System Replacement					
4	JTM PRV Inlet Isolation Valve Replacement			14,000		
5	Alscot Booster Station Electrical Equipment Replacement		290,000			
6	Spartan Booster Station Main Switchboard Retrofit	63,000				
7	Spartan Pump & Motor Replacement			58,000		
8	P-1 Pump Replacement					
9	Cherry Spare Motor	18,000				
10	Shenandoah Spare Motor					
11	OC-77 Isolation Valve					
12	P-1 Battery Project	442,304	(211,500)	(211,500)		
	Total Pumping (Water) Equipment	537,404	151,250	(32,500)	0	0

NO.	DESCRIPTION	2026/27	2027/28	2028/29	2029/30	2030/31
	Pumping (Sanitation) Projects					
1	Sewer Stations PLC Upgrade to Control Logix		0	0	11,705	35,000
2	Aliso Creek Pump Station Rehabilitation Project			1,377,863	3,421,600	1,710,800
3	4920 Lift Station Coating Rehabilitation			13,000		
4	Delta Lift Station Main Switchboard Replacement			194,000		
5	Delta Lift Station Coating Rehabilitation			14,000		
6	Delta Lift Station Wall Repair			55,000		
7	Freeway Lift Station Coating Rehabilitation	42,000				
8	Westline Lift Station Coating Rehabilitation	37,000				
9	Mathis Lift Station Coating Rehabilitation	79,000				
10	Veeh Lift Station Rehabilitation	134,000				
11	Westline Forcemain Replacement	127,140	1,271,400	873,200		
12	Northline Forcemain Replacement					
13	Veeh 1 Forcemain Replacment					
14	Aliso Creek Forcemain Replacement					
15	Northline Odor Control Project					
16	Westline Access Site Improvements		106,000			
	Total Pumping (Sanitation) Projects	419,140	1,377,400	2,527,063	3,433,305	1,745,800
	Pumping (Sanitation) Equipment					
1	Westline Generator Replacement	101,000				
2	Veeh Electrical Equipment Replacement	315,000				
3	Veeh Pump Replacement				36,000	
4	Veeh Generator Unit 209 Replacement					
5	Freeway Pump Replacement	35,000		38,000		40,000
6	Mathis Generator Unit 211 Replacement					
7	La Paz Stabilization and Rehabilitation					34,800
8	4920 Electrical Equipment Replacement		47,000	147,000		
	Total Pumping (Sanitation) Equipment	451,000	47,000	185,000	36,000	74,800
	Treatment (Sanitation) Projects					
1	Headworks and Secondary Clarifier No. 1 Rehabilitation	1,868,674	1,411,101			1,000,000
2	Secondary Clarifier No. 3 and 4 Rehabilitation					
3	RAS Pump Station Rehabilitation					136,000
4	RAS Pump and Motor Replacement					56,200
5	Holding Pond Asphalt Repair	37,000				
6	Holding Pond West Side Drainage			10,750	397,000	
7	WRP Site Seal Coat					
8	Fine Screen Rehabilitation Project				719,000	2,961,000
9	OOPS Battery Project	266,050	(133,025)	(133,025)		
10	WRP Network Segmentation	50,000				
11	Lab Office Improvements				103,400	
12	Lab Fume Hoods	187,600				
13	WRP Generator Replacement					
	Total Treatment (Sanitation) Projects	2,409,324	1,278,076	(122,275)	1,219,400	4,153,200
	Treatment (Sanitation) Equipment					
1	Aeration Basin Diffusers	320,000			349,000	
2	Aeration Basin Valve Replacement	499,000				
3	New Turbo Blower					
4	MCC-GB1 Replacement					129,000
5	MCC-GB2 Replacement					
6	MCC-RA Replacement					93,200
	Total Treatment (Sanitation) Projects	819,000	0	0	349,000	222,200
	Outside Treatment (SOCWA and MNWD)					
1	SOCWA Capital Budget	0	0	2,429,200	1,603,406	417,098
2	MNWD Regional WRP Capital Budget	0	666,500	471,025	51,025	51,025
	Total Outside Treatment (SOCWA and MNWD)	0	666,500	2,900,225	1,654,431	468,123

NO.	DESCRIPTION	2026/27	2027/28	2028/29	2029/30	2030/31
	Vehicles/Vehicle Equipment					
1	Vehicle Replacement	37,736	86,946	89,554	95,008	
2	Hydro Excavator		813,000			
3	Valve Insertion Vehicle			159,000		
4	Vactor Truck				855,000	
5	Backhoe					174,000
6	New 275 kW Portable Generator					
	Total Vehicles/Vehicle Equipment	37,736	899,946	248,554	950,008	174,000
	General Building Projects					
1	Warehouse Backup Generator Unit 216 Replacement					
2	Main Office Seal Coat					70,000
3	Main Office MTS Installation	10,000				
4	Administration Building Rehabilitation	60,700	607,000			
	Total General Building Projects	70,700	607,000	0	0	70,000
	IT and EI&C					
1	Radio System for Emergency Communications		124,000			
2	Data Center Hardware Replacement		275,000			
3	Radio Communications Conversion from Cellular					696,000
4	Geolocator	15,000				
5	Satellite Routers				11,000	
6	Firewall Replacement	60,000				
7	System-Wide Security Camera Implementation					
	Total IT and EI&C	75,000	399,000	0	11,000	696,000
	Other Studies					
1	General Studies Fund	31,000	32,000	33,000	34,000	35,000
2	GIS Data Updates	15,000				
3	Distribution System Condition Assessments	3,700	3,900	4,000	4,100	4,200
4	Arc Flash Analysis Update	40,000	15,000	27,000	11,000	23,000
	Total Other Studies	89,700	50,900	64,000	49,100	62,200
	Contingency					
1	Contingency	171,226	98,185	182,271	173,454	181,876
	Contingency	171,226	98,185	182,271	173,454	181,876