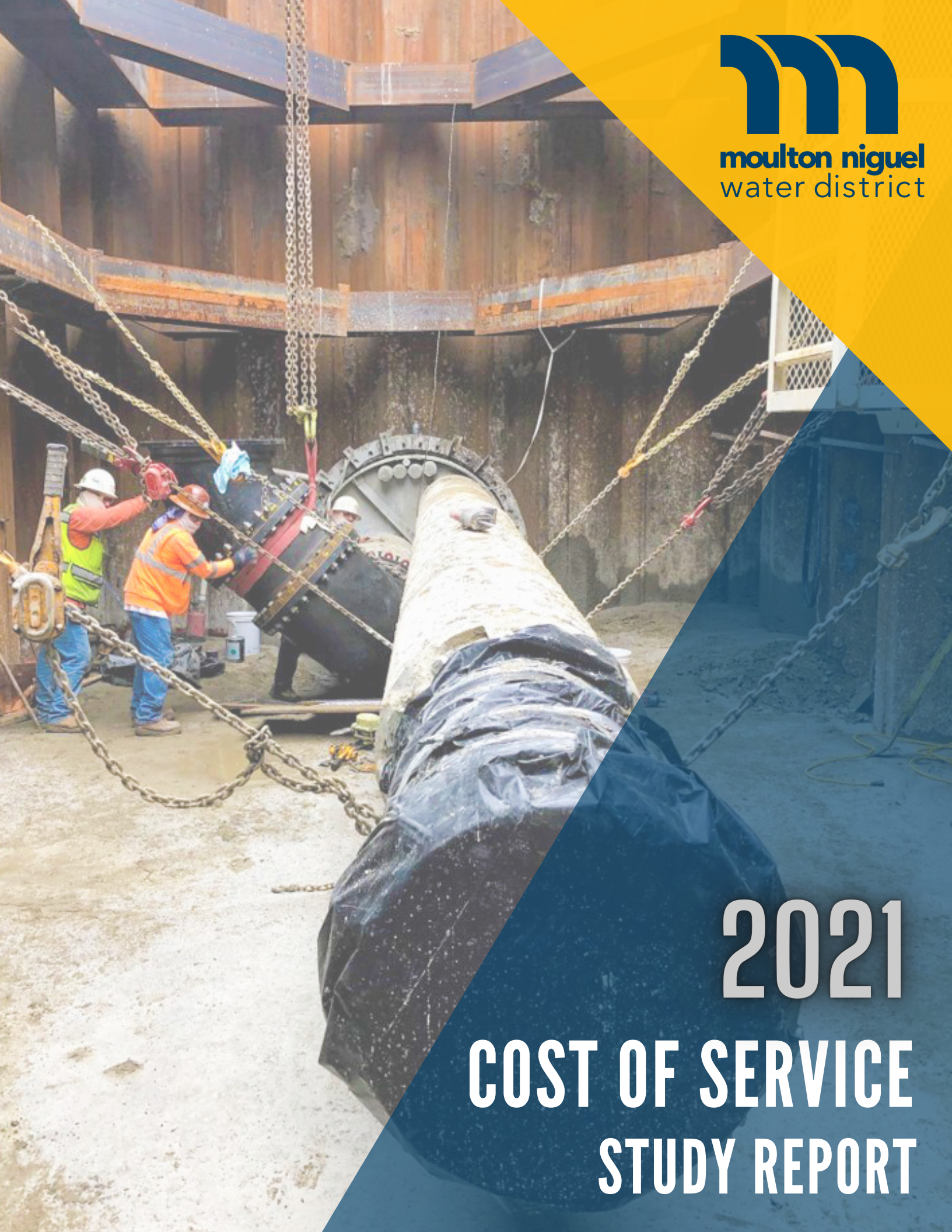

moulton niguel
water district

2021
COST OF SERVICE
STUDY REPORT

MOULTON NIGUEL WATER DISTRICT

LONG RANGE FINANCIAL PLAN, POTABLE WATER, RECYCLED WATER, AND WASTEWATER COST OF SERVICE, AND RATE DESIGN REPORT

FINAL REPORT

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RDN Project Number 309

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EXECUTIVE SUMMARY

Moulton Niguel Water District (MNWD or District) engaged Robert D. Niehaus, Inc. (RDN) to perform a peer review of the District's Long Range Financial Plan (LRFP) and Cost-of-Service (COS) analysis for its Potable Water, Recycled Water, and Wastewater Systems and assist the District in preparing a detailed report on the support for adjusting rates to reflect the cost of providing service to each of the District's customer classes. This Potable Water, Recycled Water, and Wastewater Cost of Service, and Rate Design Report (Report) presents the findings of each of these analyses, culminating in a recommendation for a four-year rate schedule for each customer class of the District's three systems.

The District calculated and RDN reviewed the proposed rates in a manner consistent with industry practice for water and wastewater ratemaking, as described by the American Water Works Association (AWWA) and the Water Environment Federation (WEF). In addition to establishing rates consistent with industry best practices, the District and RDN reviewed the proposed water and wastewater rates to ensure compliance with COS principals and all State of California legal requirements including Article XIII D Section 6, Article X Section 2, and the California Water Code. The proposed rates are designed to fully recover current and future revenue requirements of the District.

General Overview of Methodology

This project followed three major phases:

1. **Long Range Financial Plan (LRFP):** The LRFP developed detailed projections of revenue requirements through FY 2030-31 for each of the District's individual systems (potable water, recycled water, and wastewater). Based on the revenue requirements method for allocating costs, this analysis incorporates the latest forecasts of water demands, operations and maintenance costs, capital expenditures, debt service, recycled water conversions, and conservation trends available into the District's financial planning model in order to determine the adequacy of the District's existing rates to continue recovering the cost of providing service. A key outcome of this analysis is recommendations for rate revenue adjustments and capital financing for both the General Fund and the Water Efficiency (WE) Fund. The District's General Fund accounts for the programs and activities related to providing service for the efficient use of its potable and recycled water systems and the management of its wastewater collection and treatment systems. The separately maintained WE Fund was established to separately account for costs associated with reducing or offsetting the water supply reliability impacts attributable to inefficient water use. This Report relies on results and assumptions developed in detail in the District's Long Range Financial Plan report, attached as APPENDIX A.

2. **Cost of Service (COS)**: The system-specific revenue requirements identified in the LRFP are allocated among each system's customer classes in a multi-step process. For the selected ***test year[1] (FY 2021-22)***, General Fund revenue requirements were broken down into functions such as pumping, supply, storage, transmission, fire protection, collections, customer service, billing, and general administration, among others. The District also allocates costs attributable to inefficient usage to functions within the WE fund, which includes rebate program administration, customer service, water reliability investments, efficiency device rebates, and turf removal rebates. The functionalized revenue requirements of the Potable Water and Recycled Water Systems were classified according to their peak and base characteristics as well as their relationship to general administration of the District, customer service, and fire protection requirements. RDN performed a detailed review of Potable and Recycled Water System operations and customer usage data, peak demand relative to average demand, customer growth, customer service and accounting requirements, and equivalent meter size for fire protection requirements that rely on the District for water service. For the Wastewater System, costs were allocated to functional cost categories, including: collection system, advanced treatment, customer service and billing, and fats, oils, and grease (FOG). The functionalized costs for the system were then allocated to various cost components such as flow, biological oxygen demand (BOD), and total suspended solids (TSS) and discharge strength to recognize the different levels of demand that each customer class places on the wastewater system based on their respective flow and waste characteristics. For all of the District's systems, the final step of the COS analysis is to allocate the functionalized and classified costs to each customer class commensurate with their relative system demands to ensure that the subsequently developed rates reflect the actual cost of service.

3. **Rate Design:** After the revenue requirements identified in the LRFP were functionalized and proportionally allocated across each of the customer classes as part of the COS analysis, the existing rate structure was evaluated to determine its ability to continue equitably recovering revenue requirements and mitigate potential financial or other operating risks. The goal of the Rate Design step is to determine the rate structure most appropriate for recovering rate revenues from each of the customer classes in a manner consistent with the COS analysis. Rates are also designed to achieve the District's financial and strategic goals and objectives while mitigating impacts to customers. It is in this step that the District's non-rate revenues (in particular, income from property leases and property tax receipts) are utilized to create a cost incentive for customers to use water efficiently as well as maintain rates for recycled water below potable water rates.

For the purposes of this study, the computed numbers are rounded to the nearest decimal points, and sums of these numbers may therefore not add up to totals.

[1] AWWA M1 Manual: ***test year*** may represent a specific 12-month period or an annualization of a rate-design period. For this report, it is Fiscal Year (FY) 2021-2022.

Financial Plan – General Fund

This Report evaluate revenue requirements for two primary cost types: the General Fund and the Water Efficiency Fund. The General Fund accounts for operation and maintenance of the Potable and Recycled Water Systems, management of the Wastewater System, and planning and executing capital improvement projects for the three Systems. The Water Efficiency Fund is used for purposes related to water efficiency, conservation goals and policies, and water reliability projects. Prior to performing the COS analysis, District staff created an updated LRFP Report, attached to this Report as APPENDIX A, which forecasts the District's operating budget and capital improvement program in order to determine the financial impact of future operating and capital needs and develop appropriate strategies to address those needs. For the required analysis, the District developed a long-range financial planning model which integrates financial and operational data such as revenue from rates, non-operating revenues such as property tax and investment income, water purchases, utility costs, salaries and benefits, other miscellaneous operating revenues and expenses, rate-funded capital expenditures (PAYGO), long-term investments, and debt service payments. All revenues and expenses are projected over a 10-year planning horizon: FY 2021-22 through FY 2030-31. This detailed information is linked to a summarized pro-forma income statement and balance sheet to enable the District to review the impact of ongoing and future changes to operating cash, assets, liabilities, and fund balances. The long-range financial planning model also monitors potential impacts to any of the District's key financial ratios whenever major policy decisions are considered. Finally, the proposed financial plan is aligned with the District's financial policies through the 10-year horizon with respect to its debt service coverage ratio (DSCR)[2] and reserve policies.

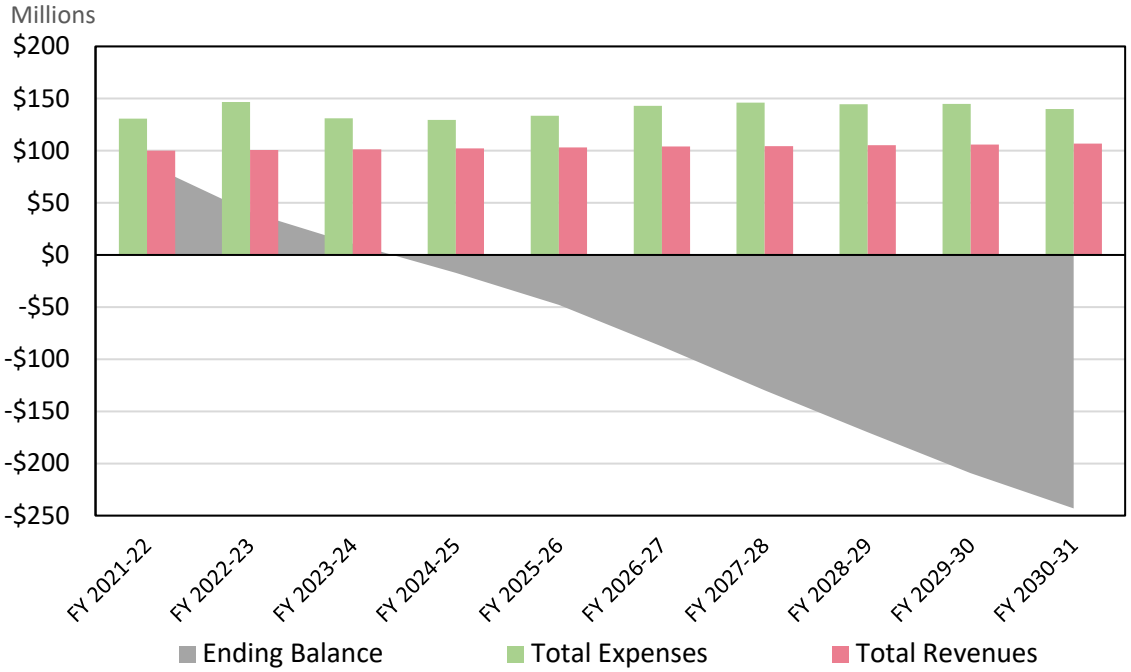
The model uses the most recent audited financial information, Board-adopted FY 2021-22 operating and capital budgets and financial policies for the study period. Cost inflation assumptions were applied to specific expenditure categories, including assumptions related to the future cost of water supply. The District's revenue requirements were organized into four components: O&M costs, capital costs (cash and debt service), reserve targets, and DSCR target. After reviewing the long-term forecasts of the District's revenue requirements, three particular factors were identified as the primary drivers for future cost increases to the District: reinvestment in infrastructure to maintain or enhance existing levels of service and system reliability, investments in wastewater treatment and collections facilities to increase reliability and maintain compliance with environmental and regulatory standards, and forecasted cost increases for wholesale water purchases and wastewater treatment.

Without the proposed rate revenue adjustments and bond issuances, General Fund ending cash balance will fall below required reserves by FY 2022-23 and become negative by FY 2024-25. The District's DSCR is similarly affected: without the proposed rate revenue adjustments and bond issuances the DSCR falls below the adopted 1.75 target by FY 2026-27 and below bond covenant requirements of 1.25 by FY 2028-29. Though not considered as part of this analysis, the District could elect to avoid negative fund balances by significantly reducing capital expenditures and maintain its DSCR by significantly reducing operating expenditures. Likely negative impacts to existing service levels should be carefully evaluated prior to considering such a cost-cutting driven plan.

[2] Debt Service Coverage Ratio (DSCR) is a measure of the cash flow available to pay current debt obligations.

Figure ES-1 provides a forecast of the District's General Fund total expenditure and revenue projections and respective ending cash balances without any rate revenue adjustments or supplemental financing over the next 10 years.

Figure ES-1. General Fund Total Expenditure, Revenue Projections, and Change in Ending Balance without Rate Revenue Adjustment or Supplemental Financing for FY 2021-22 – FY 2030-31



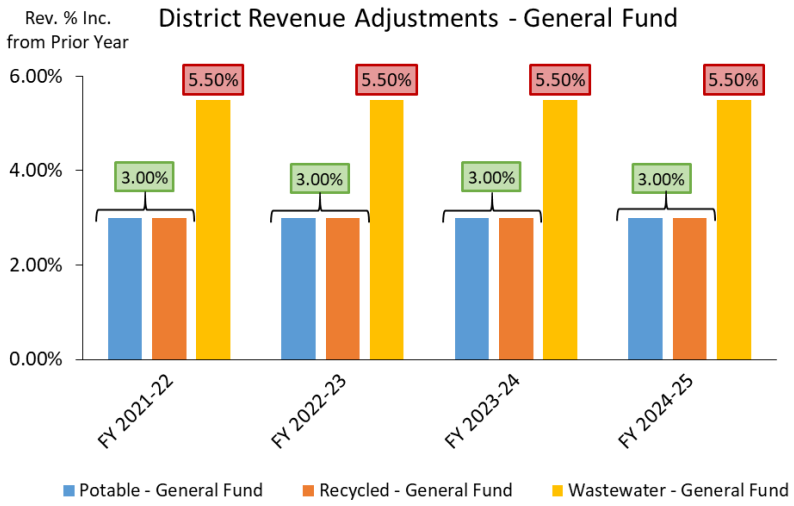
Note: the expense bar includes all CIPs scheduled for the planning period under the assumption in which no financing is available.

This Report confirms the recommendations detailed in the LRFP Report which identified a financial strategy that minimizes annual rate impacts by utilizing a combination of planned spenddown of available unrestricted cash balances and leveraging its strong credit ratings and available debt capacity to smooth out the immediate costs of long-lasting capital improvement projects.

This Report also confirms the recommended 4-year schedule of rate revenue adjustments for each of the District's systems. In order to meet current and projected General Fund revenue requirements, the proposed financial plan recommends rate revenue adjustments of 3.0 percent annually for the Potable and Recycled Water Systems and 5.5 percent annually for the Wastewater System, which in the aggregate represent an overall rate revenue increase of 4.0 percent annual increase.

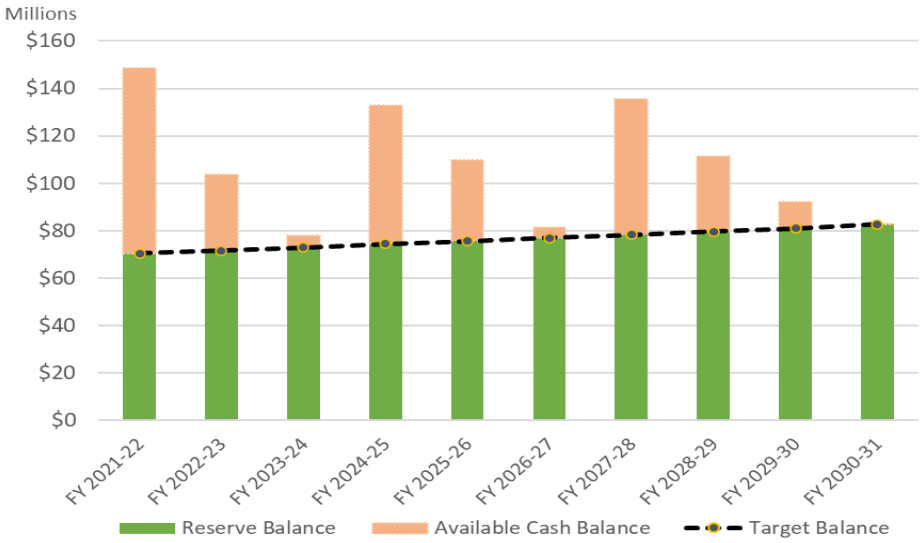
The recommended General Fund rate revenue adjustments are consistent with levels first forecast during the District's 2015 COS Study and reaffirmed as part of the rate plan that was developed during the 2017 LRFP Report and COS Study, as summarized in Figure ES-2.

Figure ES-2. General Fund Recommended Rate Revenue Adjustments for FY 2021-22 – FY 2024-25



As noted above, the recommended financial plan funds both near-term and future capital expenditures by continuing the planned spenddown of available unrestricted cash balances and leveraging the District's strong credit rating and debt capacity to facilitate capital market financings. The District plans to spend down available cash balances as appropriate while maintaining reserve levels consistent with targets identified in the District's adopted Reserve Policy. Figure ES-3 provides a 10-year forecast of the District's General Fund reserve balance and available unrestricted cash balance under the recommended financial strategy.

Figure ES-3. General Fund Reserve Balance and Available Cash Balance, FY 2021-22 – FY 2030-31



Financial Plan – Water Efficiency (WE) Fund

As was done for the General Fund, an updated LRFP was developed for the WE Fund in which a 10-year forecast of operating and capital costs was created in order to understand the financial implications of the District's water efficiency programs and objectives. A detailed discussion of the WE Fund's financial plan can be found in APPENDIX A. Though similar methods were used to develop both plans, the underlying rationale for the WE Fund plan differs from that of the General Fund plan in that the WE Fund plan separately accounts for both the immediate costs and potential long-term supply and reliability impacts attributable specifically to inefficient water use.

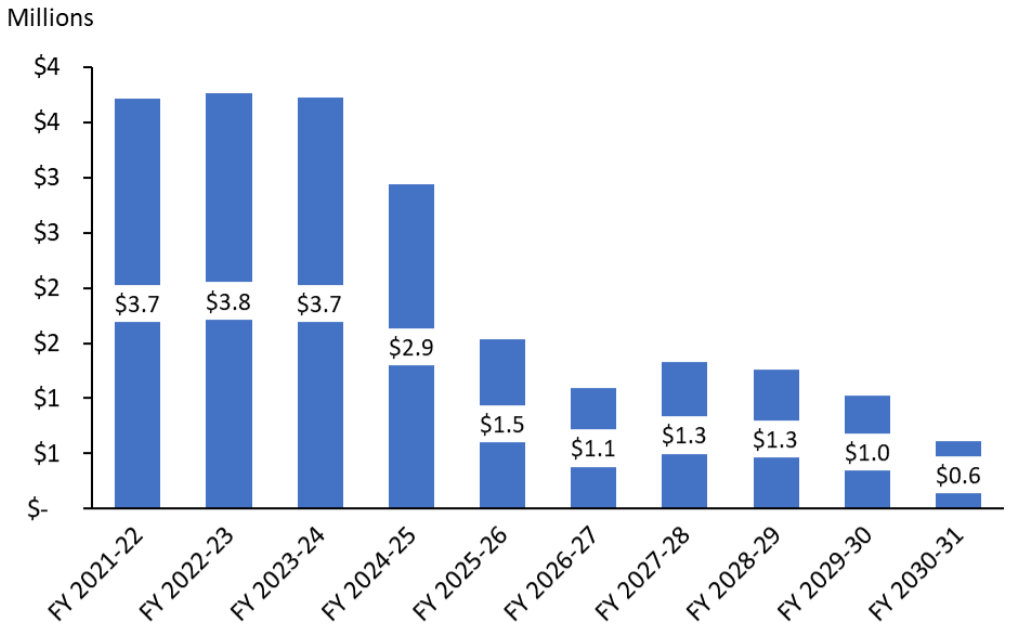
Each month, District customers receive a calculated water budget sufficient to efficiently meet the water needs of their property. Customers who use water in excess of their calculated water budgets place greater demands on the District's Potable Water and Recycled Water Systems and supplies. Those customers who use more than their allocated water budgets are therefore subject to higher water rates to offset the costs they create. The District ensures increased rates within each tier correspond to increasing marginal supply costs, and incremental revenues collected from higher tiers are used to fund alternative water supply planning and development, rebates, water conservation, and demand management, which leads to an increase in the efficient use of water and offsets the impacts of inefficient water use.

In 2018, the State of California enacted Senate Bill (SB) 606 and Assembly Bill (AB) 1668 to improve long-term water efficiency. These two bills require urban water suppliers to report their water use monthly and set an agency-wide water use target based on efficient indoor and outdoor water use standards. The District is well prepared to meet the target as its Water Budget Based Rate Structure (WBBRS) aligns with the methodology used to calculate the targets. However, the parameters used in the budget calculation may be tightened in the future by the State as an additional measure to conserve water. The District must maintain the existing level of water use or it may need to find additional water savings. The WE Fund reflects the active role the District takes in administering its water efficiency and rebate programs to proactively prepare for these future changes.

In addition to the costs associated with the ongoing management of the District's WE and conservation programs, capital costs associated with recycled water optimization projects have been allocated to the WE Fund to reflect the increased supply reliability that recycled water provides by offsetting outdoor water demands that would otherwise be met with potable water. This approach also captures the overall collective benefit provided by the efficient use of water from any source: efficient potable water use reduces demand on potable supplies while efficient recycled water use further extends existing recycled supplies. To support the rationale that all water supplies should be used efficiently, the efficiency and rebate program costs allocated to each tier are spread over the total volume of water associated with that tier.

Based on the revenue requirements and anticipated spenddown rate of WE Fund balances, District staff is proposing a one-time adjustment to its WE charges as part of the recommended four-year rate revenue adjustments, specifically, an increase of $0.83 per average billing unit in additional rate revenues. This strategy is sufficient to avoid a negative fund balance in any one year of the financial planning period and will draw the fund down over the 10-year planning horizon as shown in Figure ES-4.

Figure ES-4. WE Fund Available Cash Balance for FY 2021-22 – FY 2030-31



Cost-of-Service (COS) Analysis

The District's Potable Water System provides service to several customer classes, specifically: **Single-family Residential** (individually metered residential households), **Multi-family Residential** (master-metered residential housing), **Commercial** (local businesses of varying size that may be either individually or master-metered, of which a small minority receives potable water for outdoor irrigation), **Potable Irrigation** (accounts associated with one or more meters dedicated exclusively for providing potable water to meet irrigation demands), and **Fire Protection** (accounts associated with a private property for which dedicated fire suppression infrastructure has been installed and included in both prior and future fire-flow capacity design considerations). The Recycled Water System serves, almost exclusively, **Recycled Irrigation** (accounts associated with one or more meters dedicated exclusively for providing recycled water to meet irrigation demands).

Though not subject to the provisions of California, Article XIII D, Section 6 (Proposition 218) because they are not imposed for a service related to the ownership of property due to their transitive nature, **Construction meters,** which temporarily connect to hydrants, are subject to California Constitution Article XIII C, Section 1(e)

(Proposition 26) and are accounted for in the COS analysis to ensure a comprehensive cost nexus. These meters provide recycled and potable water to contractors, developers, or other construction-oriented customers who require a relatively large volume of water over a relatively short period of time and on an infrequent basis. To meet their needs, these customers acquire a temporary service connection from the District and are then charged the General Fund volumetric rate of their respective supply source based on the total volume delivered, as well as a monthly service meter fee, prorated over the period the temporary meter was in use.

The total rate revenue requirements shown in Table ES-1 below are determined by combining the O&M and capital costs, then subtracting the credits for non-rate revenues for each respective class. The values in the last column of the table are the rate revenue requirements by customer class. Note that the revenue requirements shown in Table ES-1 include both General Fund and WE Fund costs. Detailed discussion of the rate revenue requirements for the General and Water Efficiency Funds shown in Table ES-1 can be found in Sections 3.1, 3.2, and 3.4.

Table ES-1. FY 2021-22 Potable Water and Recycled Water Rate Revenue Requirement by Customer Class

	a	b	C	d	e=a+b+c+d	f	g=e+f
	Total O&M Revenue Requirements	Total Capital Revenue Requirements	Non-Rate Revenue Credit	Ad Valorem Property Tax	Total Rate Revenue Requirements	Reallocation of Public Fire Protection	Rate Revenue Requirements
Single-family Residential	$33,266,073	$13,278,359	($2,240,191)	($20,861,115)	$23,443,127	$31,369	**$23,474,496**
Multi-family Residential	$4,806,194	$1,727,665	($325,559)	($2,893,683)	$3,314,616	$7,331	**$3,321,947**
Commercial	$4,480,361	$1,739,761	($383,132)	($2,975,632)	$2,861,358	$5,388	**$2,866,746**
Potable Irrigation	$7,180,590	$3,138,633	($478,058)	($3,955,875)	$5,885,290	$3,976	**$5,889,266**
Construction Meter	$7,501,450	$755,405	($720,584)	($935,939)	$6,600,332	$0	**$6,600,332**
Recycled Irrigation	$34,516	$16,355	$0	($19,646)	$70,518	$82	**$70,600**
Private Fire Protection	$921,558	$170,958	$0	$0	$1,092,516	$951,752	**$2,044,268**
Public Fire Protection	$429,092	$570,806	$0	$0	$999,898	($999,898)	**$0**
Total	**$58,619,835**	**$21,397,942**	**($4,147,525)**	**($31,641,890)**	**$44,267,654**	**($0)**	**$44,267,654**

The differences in relative cost allocations between the current and proposed rate structures range from a 0.5 percent increase in Private Fire Protection share of total costs to a 0.2 percent decrease in Single-family Residential and Recycled Irrigation share of total costs based on the updated analysis of customer consumption patterns and demands placed on the systems.

Table ES-2 summarizes the adjustment of cost responsibilities among potable and recycled water customer classes recommended by the COS analysis.

Table ES-2. FY 2021 Potable and Recycled Water System Current vs. Proposed Cost Allocations by Customer Class

	a	b	c	d	e=c-a	f=d-b
Customer Class	**Revenues under Current Rate Structure**	**Cost Distribution (%)**	**Revenues under Proposed Rate Structure***	**Cost Distribution (%)**	**Cost Difference**	**% Difference**
Single-family Residential	$22,381,261	53.3%	$23,493,346	53.1%	$1,112,085	-0.2%
Multi-family Residential	$3,208,494	7.6%	$3,324,152	7.5%	$115,658	-0.1%
Commercial	$2,773,108	6.6%	$2,869,887	6.5%	$96,779	-0.1%
Potable Irrigation	$5,577,652	13.3%	$5,894,134	13.3%	$316,482	0.0%
Recycled Irrigation	$6,293,323	15.0%	$6,615,424	15.0%	$308,902	-0.1%
Fire Protection	$1,735,663	4.1%	$2,044,268	4.6%	$308,604	0.5%
Total	**$41,969,501**	**100.0%**	**$44,228,012**	**100.0%**	**$2,258,511**	

*Note: The proposed revenues shown in Table ES-2 differ slightly from those shown in Table ES-1 as a result of rounding in the cost of service process.

The methodology for allocating wastewater service costs is different from the COS methodology for water and recycled water due to the fundamental difference in cost drivers. Customer characteristics for the Wastewater System are measured in terms of estimated wastewater flows and sewage loadings. Sewage loadings are a measure of strength or concentration of the wastewater being discharged to the system. In addition to flow and strength, other cost drivers include bill processing, customer service, and other administrative services which are primarily driven by the number of customers connected to the collection system. The District's Wastewater System provides service to several customer classes, specifically: **Single-family Residential** (individually metered residential households), **Multi-family Residential** (master-metered residential housing), and **Commercial** (local businesses of varying size that may be either individually or master metered). Within the commercial customer class there are four subclasses of customers, based on the type of commercial activity and the strength of the wastewater that they discharge into the wastewater system.

The total rate revenue requirements are determined by combining O&M and capital costs, then subtracting the credits for non-rate revenues for each respective class. The total rate revenue requirements in the table below were used when calculating the wastewater rates (Table ES-3).

Table ES-3. Wastewater Rate Revenue Requirements by Customer Class

	a	b	c	d	e=a+b+c+d	f
	Total O&M Revenue Requirements	Total Capital Revenue Requirements	Non-rate Revenue Credit	Property Tax	Total Rate Revenue Requirements	Cost Allocation (%)
Single-family Residential	$15,578,440	$4,379,043	$(649,181)	$0	$19,308,303	69.6%
Multi-family Residential	$3,516,061	$1,075,154	$(214,783)	$0	$4,376,432	15.8%
Commercial 1	$1,110,126	$353,593	$(72,489)	$0	$1,391,230	5.0%
Commercial 2	$993,126	$299,634	$(92,357)	$0	$1,200,403	4.3%
Commercial 3	$823,446	$184,998	$(32,217)	$0	$976,228	3.5%
Commercial 4	$416,933	$86,048	$(12,887)	$0	$490,095	1.8%
Total	**$22,438,132**	**$6,378,471**	**($1,073,914)**	**$0**	**$27,742,689**	**100.0%**

As seen below in Table ES-4, the results of the COS analysis indicate that the differences in cost allocations between the current and proposed rate structures for the Wastewater System are minor ranging from a 1.0 percent increase in the Single-family Residential customers' cost allocation to a -0.3 percent decrease for the Commercial 1, Commercial 2, and Commercial 3 customers' allocation reflecting the relative changes in demands placed on the Wastewater System since the 2017 cost of service study.

Table ES-4. Wastewater System Current vs. Proposed Cost Allocation by Customer Class

	a	b	c	d	e=c-a	f=d-b
Customer Class	Revenues under Current Rate Structure	Cost Distribution (%)	Revenues under Proposed Rate Structure	Cost Distribution (%)	Cost Difference	% Difference
Single-family Residential	$18,030,168	68.6%	$19,308,303	69.6%	$1,278,135	1.0%
Multi-family Residential	$4,174,554	15.9%	$4,376,432	15.8%	$201,878	-0.1%
Commercial 1	$1,390,371	5.3%	$1,391,230	5.0%	$859	-0.3%
Commercial 2	$1,228,542	4.7%	$1,200,403	4.3%	($28,139)	-0.3%
Commercial 3	$992,164	3.8%	$976,227	3.5%	($15,937)	-0.3%
Commercial 4	$480,590	1.8%	$490,095	1.8%	$9,505	-0.1%
Total	**$26,296,389**	**100.0%**	**$27,742,690**	**100.0%**	**$1,446,301**	

Rate Recommendations

The District's rate schedule was designed to fully and proportionately recover rate revenue requirements consistent with the results of the COS analyses. The District's recommended rate schedule should support and optimize its objectives: compliance with all legal and regulatory standards, encourage efficient water use, minimize adverse impacts to customers, and employ a reasonable and prudent means to assure revenue stability for the District. The recommended rate schedule should serve as an information tool in communicating these objectives to customers. This Report recommends retaining the same basic rate structure for water, recycled water, and wastewater rates and charges with the following modifications:

1) Annual General Fund rate revenue increases of 3.0 percent, 3.0 percent, and 5.5 percent for the Potable Water, Recycled Water, and Wastewater Systems, respectively. These adjustments are necessary to ensure the amount of revenue collected maintains the District's DSCR and reserve balance target while meeting the District's operational requirements, provide appropriate investments in infrastructure, and address rising inflation.
2) Use of unrestricted non-rate revenues to continue providing a cost incentive for recycled water use by maintaining recycled water volumetric rates below rates for potable water. This Report endorses the District's plan to allocate 97.0 percent of property tax revenue to potable water rates and the remaining 3.0 percent will be applied to offset recycled water rates. This allocation acknowledges the continued District-wide benefit provided by an affordable recycled water supply and the costs incurred by customers who have converted to recycled water, as well as incentivizing further adoption of recycled water. When combined with other non-rate revenues, the allocated property tax revenues offset more than 20 percent of the recycled water system's rate revenue requirements.
3) One-time increase of $0.83 per average billing unit in FY 2021-22 to the WE Fund share of the rates for out-of-budget usage. This rate increase is required for the District to recover planned increases in rebate funding and water conservations program participation and fund recycled water system expansions that increase water supply and reliability, which are particularly important in light of the current drought, while maintaining a positive WE Fund balance during the study horizon.

Recommended Water & Recycled Water Rates

The District's fiscal year starts on July 1st and ends on June 30th; however, implementation of new rates will be scheduled on February 1, 2022 and January 1st of each subsequent calendar year (CY) through the CY commencing January 1, 2025. The proposed potable water and recycled water rate schedules for CY 2022 – CY 2025 are summarized in Section 4.0. The recommended CY 2022 rate schedules for Water and Recycled Water are summarized in the table below in comparison with the current rates. The recommended rate schedules were designed to meet the COS results by customer class of each system. The rates were designed such that anticipated revenues were calculated to meet each customer class's revenue requirement based on current and projected water use patterns.

Table ES-5 and Table ES-6 present a comparison of the existing and recommended water service charges by meter sizes and customer classes, and water usage rates by tier and customer classes respectively.

Table ES-5. Recommended Monthly Water Service Charges for Potable and Recycled Water Customers ($/Meter Size in Inches)

Meter Size	Single-family Residential		Multi-family Residential		Commercial		Potable Irrigation		Recycled Irrigation	
	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
5/8”	$9.77	$9.64	$10.26	$10.04	$3.71	$3.64	$15.72	$15.58	$15.72	$15.58
3/4"	$9.77	$9.64	$10.26	$10.04	$3.71	$3.64	$15.72	$15.58	$15.72	$15.58
1”	$9.77	$9.64	$10.26	$10.04	$3.71	$3.64	$15.72	$15.58	$15.72	$15.58
1 ½”	$32.56	$32.13	$22.45	$21.51	$12.36	$12.15	$52.41	$51.93	$52.41	$51.93
2”	$52.10	$51.42	$32.90	$31.34	$19.77	$19.44	$83.86	$83.09	$83.86	$83.09
3”	$113.98	$112.49	$66.00	$62.47	$43.25	$42.52	$183.45	$181.79	$183.45	$181.79
4”	$195.39	$192.83	$109.55	$103.42	$74.14	$72.89	$314.48	$311.62	$314.48	$311.62
6”	$407.06	$401.72	$222.78	$209.91	$154.46	$151.86	$655.16	$649.22	$655.16	$649.22
8”	$586.16	$578.48	$318.59	$300.01	$222.42	$218.68	$943.43	$934.87	$943.43	$934.87
10”	$944.36	$932.00	$510.22	$480.22	$358.35	$352.32	$1,519.98	$1,506.19	$1,519.98	$1,506.19

Table ES-6. Recommended Water Usage Rates for Potable and Recycled Water Customers ($/hcf)

Tiers	Single-family Residential		Multi-family Residential		Commercial		Potable Irrigation		Recycled Irrigation	
	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
Tier 1	$2.08	$2.18	$2.08	$2.18	$2.42	$2.47	$2.42	$2.47	$1.63	$1.73
Tier 2	$2.42	$2.47	$2.42	$2.47	$3.59	$4.09	$3.59	$4.09	$3.05	$3.19
Tier 3	$3.59	$4.09	$3.59	$4.09	$5.39	$6.88	$5.39	$6.88	$4.85	$5.98
Tier 4	$5.39	$6.88	$5.39	$6.88	$9.86	$10.77	$9.86	$10.77	$9.32	$9.87
Tier 5	$9.86	$10.77	$9.86	$10.77						

The District also has a monthly service charge for Private Fire Protection based on connection size. These charges are reflected below in Table ES-7.

Table ES-7. Current vs. Proposed Monthly Charges for Private Fire Protection

Meter Size	$/connection		Meter Size	$/connection	
	Current	Proposed		Current	Proposed
5/8”	$4.69	$5.44	**3”**	$54.75	$63.48
3/4"	$4.69	$5.44	**4”**	$93.85	$108.81
1”	$4.69	$5.44	**6”**	$195.51	$226.69
1 ½”	$15.64	$18.13	**8”**	$281.54	$326.44
2”	$25.02	$29.01	**10”**	$453.59	$525.93
2 ½”	$39.88	$46.24			

Recommended Wastewater Rates

The Wastewater System is comprised of Single-family Residential, Multi-family Residential, and Commercial customers. Commercial customers are assigned to one of the four classes described below based on business activity, and the rates for each of the Commercial customer classes are based on strength assumptions for their type of business. Using the results of the COS analysis, the District recommends the following wastewater rate schedule based on meter and household size (Table ES-8).

Table ES-8. Wastewater Variable Charges and Meter Charges ($/Meter Size in Inches) - Current vs. Proposed by Customer Class

	Single-family Residential		Multi-family Residential	
	Current	Proposed	Current	Proposed
Variable Rates ($/Person in Household)	$5.06	$5.08	$5.06	$5.08

Meter Size	Single-family Residential		Multi-family Residential	
	Current	Proposed	Current	Proposed
5/8”	$16.86	$19.05	$19.89	$21.82
3/4"	$16.86	$19.05	$19.89	$21.82
1”	$16.86	$19.05	$19.89	$21.82
1 ½”	$16.86	$19.05	$60.33	$65.84
2”	$16.86	$19.05	$95.00	$103.58
3”	$16.86	$19.05	$204.81	$223.11
4”	$16.86	$19.05	$349.27	$380.35
6”	$16.86	$19.05	$724.88	$789.20
8”	$16.86	$19.05	$1,042.70	$1,135.15
10”	$16.86	$19.05	$1,678.35	$1,827.05

Meter Size	Commercial 1		Commercial 2		Commercial 3		Commercial 4	
	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
5/8”	$24.47	$24.79	$58.62	$57.64	$126.64	$124.93	$138.53	$141.52
3/4"	$24.47	$24.79	$58.62	$57.64	$126.64	$124.93	$138.53	$141.52
1”	$24.47	$24.79	$58.62	$57.64	$126.64	$124.93	$138.53	$141.52
1 ½”	$75.62	$75.75	$189.42	$185.22	$416.15	$409.51	$455.78	$464.81
2”	$119.46	$119.43	$301.55	$294.60	$664.33	$653.47	$727.74	$741.96
3”	$258.31	$257.77	$656.68	$640.98	$1,450.33	$1,426.09	$1,589.06	$1,619.68
4”	$440.98	$439.77	$1,123.88	$1,096.69	$2,484.39	$2,442.54	$2,722.20	$2,774.41
6”	$915.96	$912.99	$2,338.67	$2,281.58	$5,173.08	$5,085.47	$5,668.52	$5,776.86
8”	$1,317.85	$1,313.40	$3,366.53	$3,284.15	$7,448.06	$7,321.72	$8,161.49	$8,317.32
10”	$2,121.66	$2,114.24	$5,422.32	$5,289.35	$11,998.13	$11,794.34	$13,147.55	$13,398.37

Conclusion

This Report confirms the COS analysis and proposed rate structures were developed by the District using methodologies aligned with industry-standard practices for rate setting as summarized by the AWWA and WEF and all applicable laws, including California Water Code Section 372 et seq., Article XIII D Section 6 and Article X, Section 2 of the California Constitution.

The District's WBBRS has proven to be an effective demand management tool, allowing the District to equitably achieve reliability objectives while promoting efficient water use. The tiered rate structure creates a strong price signal to customers who have exceeded their budgets, and the share of rate revenues collected for out-of-budget usage are reinvested in programs and rebates to help those same customers stay within budget and develop additional water resources. Rates within each tier are established to recover marginal costs associated with increased water use and do not exceed the proportional cost of service within each tier.

The recent State regulations AB 1668 and SB 606, guidelines for efficient water use, closely mirror WBBRS. The District has over 10 years of experience with the rate structure and has proved that WBBRS is superior to watering restrictions for reducing water demand. The District was one of two agencies in the State to receive approval of an Alternate Plan for Demand Reductions during the last drought. This approach permits the District to achieve the stated goals of the LRFP while maintaining customers' ability to decide how best to use water in their household. Additionally, the District's WBBRS was recognized by the State Water Resources Control Board as a best practice for California water agencies. The District's WBBRS and accompanying conservation and rebate programs have helped the District reduce its potable water purchases by over 30 percent since its peak use in 2007. We believe that WBBRS will continue to be an important demand management tool for the District as it continues to monitor water use behaviors and manage the State's limited water resources while still complying with the mandates of the California Constitution governing property-related fees.

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1. INTRODUCTION

Moulton Niguel Water District (District or MNWD), with technical support from Robert D. Niehaus, Inc. (RDN), has prepared this Long Range Financial Plan, Cost of Service, and Rate Design Report (Report) for the District's Potable Water, Recycled Water, and Wastewater Systems. MNWD planning staff developed recommendations for rates and charges while RDN conducted an extensive review to ensure that recommended rates and charges reflect the proportional costs of providing service to specific classes of customers. If approved at the January 2022 public hearing, the recommended rates would take effect on February 1, 2022.

The District operates three utility services: (1) potable water distribution (Potable Water System), (2) recycled water distribution (Recycled Water System), and (3) wastewater collection and treatment (Wastewater System), collectively the "Systems." This Report presents the three components of an effective financial and service-pricing plan—the long-range financial plan, the cost of service analysis, and the rate design—culminating in a recommendation for four-year rate schedules for each of the District's three systems.

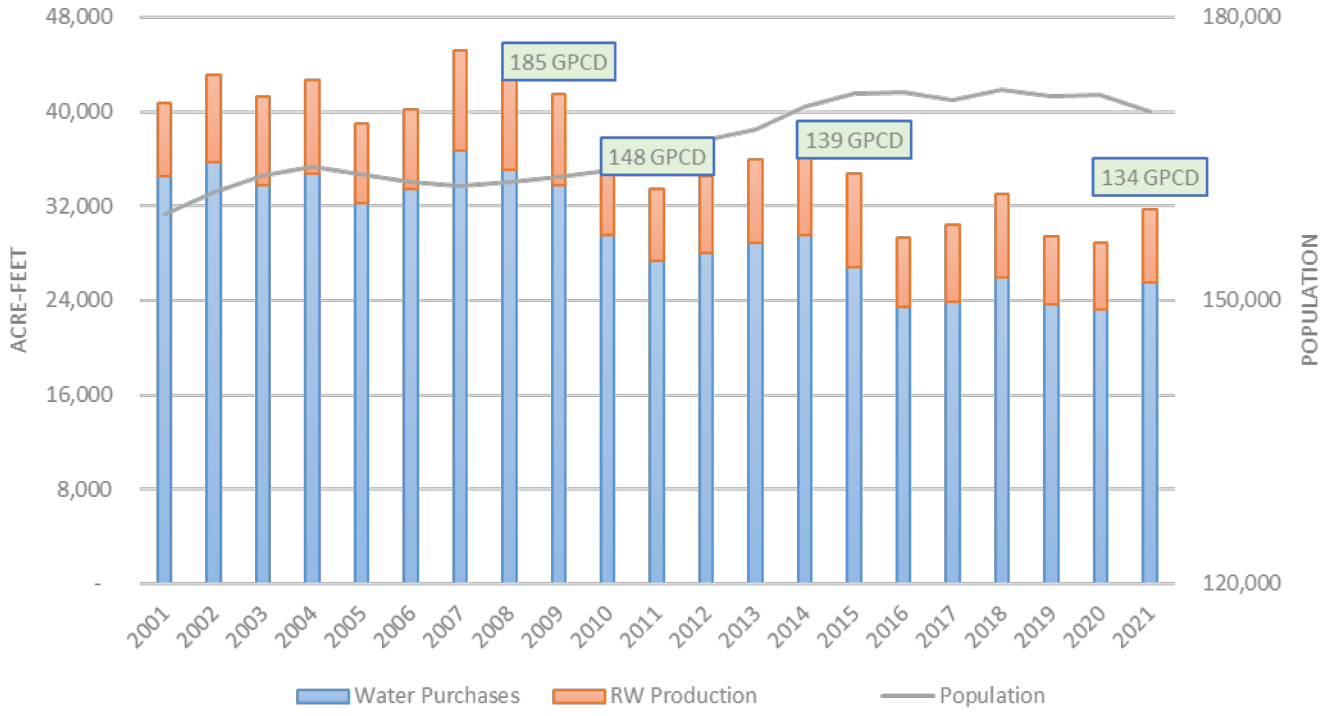
1.1. System Overview

MNWD was formed in 1960 under the provisions of the California Water District Law, Division 13, of the Water Code of the State of California, commencing with Section 34000. In 1964, the District began operation and management of wastewater services previously provided by the County of Orange. MNWD expanded to provide recycled water for irrigation in 1974. Today, MNWD provides water, recycled water, and wastewater service to over 170,000 people within a 37-square-mile service area in South Orange County. Cities within the service area are Aliso Viejo, Laguna Niguel, Laguna Hills, and Mission Viejo, as well as portions of the Cities of Dana Point and San Juan Capistrano. The District's potable water supply is provided by Metropolitan Water District of Southern California (MWDSC) from two principal sources – the Colorado River via the Colorado Aqueduct and the Feather River Watershed/Lake Oroville in Northern California through the State Water Project (SWP) and delivered to the District by the Municipal Water District of Orange County (MWDOC). Through MWDOC the District purchases both treated water from the Diemer Water Treatment Plant (Diemer WTP) and untreated water which is then treated at the Baker Water Treatment Plant (Baker WTP).

The District has decreased its potable water purchases in the last fifteen years from 36,679 acre-feet per year (AFY) in 2007 to 25,143 AFY in 2021, a reduction of over 31 percent. This has been accomplished by the District's portfolio of water-use efficiency programs, most notably its Water Budget Rate Structure (WBBRS), recycled water system expansion, and extensive rebate programs.

This dramatic decrease occurred concurrently with a population increase of 9.1 percent since 2007 (Figure 1-1). In FY 2020-21 the District supplied 22,965 AF of treated drinking water and 6,221 AF of recycled water to its customers. The long-term impacts of the COVID-19 Virus and recent low rainfall years remain to be seen; however, the District continues to review various alternative local water supply sources to identify additional opportunities to increase local water reliability as well as implement demand management strategies and outreach programs to reduce water usage.

Figure 1-1. Historical Potable Water Purchases, Recycled Water Production, and Service Area Population, FY 2000-01 – FY 2020-21



1.1.1. Potable Water System

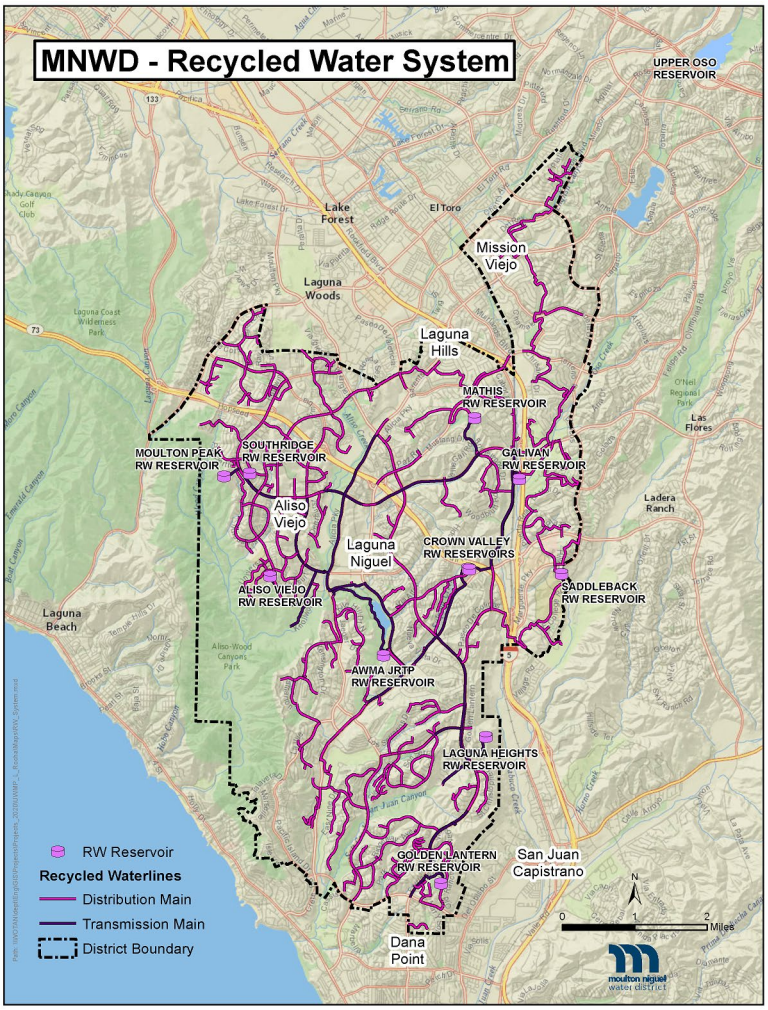
The District operates and maintains over 650 miles of potable water distribution pipelines and has 28 reservoirs on 18 sites located at the top of 7 pressure zones, for a total storage capacity of approximately 70.0 million gallons (mg). The District also owns capacity rights in several adjoining water agencies' reservoirs and pipelines, such as El Toro Water District R-6 Reservoir, the Santa Margarita Water District Upper Chiquita Reservoir, the Joint Transmission Main (a joint powers agreement between the District and other water agencies), Eastern Transmission Main (jointly owned by the District and the City of San Juan Capistrano), and the Irvine Ranch Water District Interconnection. Elevation within the District ranges from 230 to 904 feet above sea level. The District has 24 pump stations to lift water from the lower pressure zones to the higher-pressure zones. The Potable Water System currently distributes water to 53,676 customer meters, 50,919 of which also receive wastewater service. Average daily potable water demand during calendar year 2020 was 20.2 million gallons per day (mgd). The District maintains approximately 7,300 public hydrants along with 16 pressure reducing stations and flow control facilities. Figure 1-2 maps the service area, main takeout structures, pump stations, and reservoirs for the Potable Water System.

Figure 1-2. MNWD Potable Water System

1.1.2. Recycled Water System

It is the policy of the District to promote the use of recycled water to provide for the conservation and reuse of all water resources, and to utilize this resource for any approved purpose to the maximum extent possible under the laws of the State of California. This practice reduces the demand for potable water and thereby enables the District to minimize the need to import water from other regions. In 1974, the District became one of the first water purveyors in Orange County to deliver recycled water for irrigation use. In 2020, MNWD supplied an average of 19.1 AF per day (AFD) of recycled water to 1,394 meters, and currently has a tertiary recycled water treatment capacity of 35 AFD. The District has two Advanced Wastewater Treatment (AWT) facilities providing expansive recycled water service for landscaping. The District has constructed approximately 150 miles of recycled water distribution pipelines with five pre-stressed concrete and six steel storage reservoirs to service the recycled water system. In addition, the District owns 1,000 AF of capacity rights in the Upper Oso recycled water reservoir, which is operated by Santa Margarita Water District. The District operates 10 recycled-water pump stations. MNWD completed a Recycled Water Master Plan to evaluate additional recycled water supply sources and available opportunities to expand its system. Figure 1-3 maps the Recycled Water System's service area, recycled water reservoirs, and recycled waterlines including distribution and transmission mains.

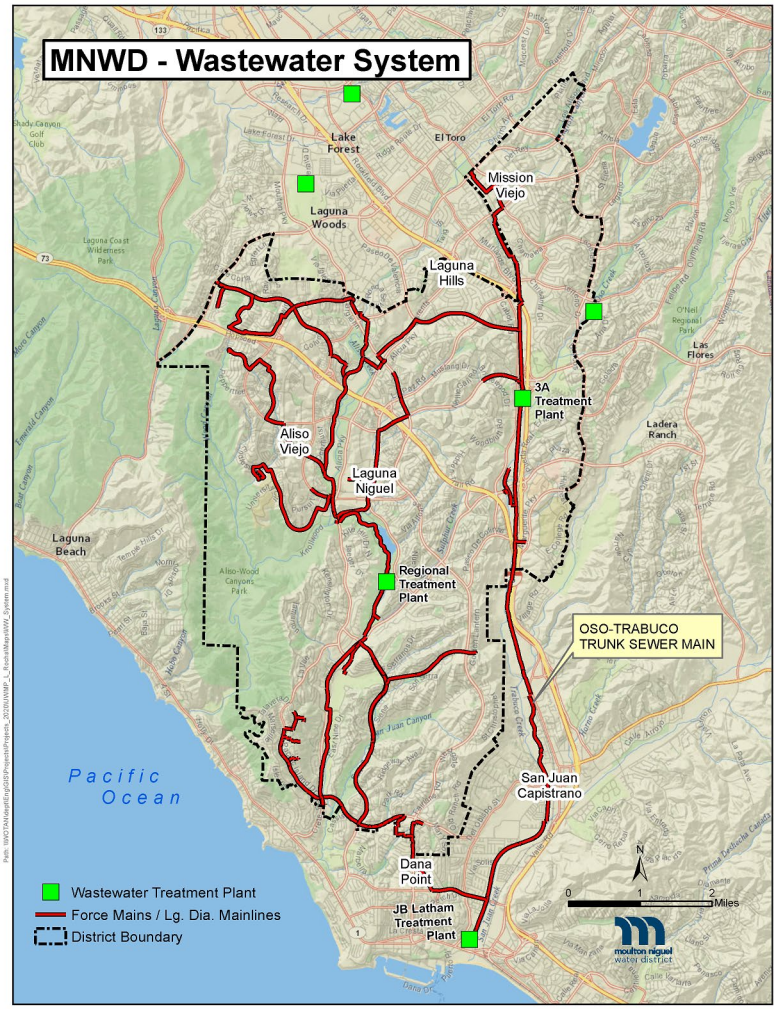
Figure 1-3. MNWD Recycled Water System



1.1.3. Wastewater System

MNWD maintains approximately 500 miles of wastewater pipelines. The District's Wastewater System includes 17 lift stations that pump wastewater over the ridge lines to the various treatment plants for disposal or recycling. The District is a member agency of the South Orange County Wastewater Authority (SOCWA), a joint powers authority (JPA) composed of ten governmental agencies, which operates three regional treatment plants and two ocean outfalls. SOCWA's budget includes the costs of wastewater treatment and costs allocated by capacity ownership for capital improvements, repairs and replacements necessary to operate within legal compliance requirements and accepted industry standards. Based on SOCWA's FY 2021-22 Total Operating Budget Document, MNWD's projected share of wastewater disposal and treatment costs are approximately $9.5 million, representing 41.8 percent of SOCWA's total operations and maintenance (O&M) costs. In addition, District staff has included SOCWA related capital cost projections of approximately $4.2 million based on cost projections provided by SOCWA for capital expenses for the same projected fiscal year. The District also owns and operates a fourth advanced wastewater treatment plant, Plant 3A, representing $3.3 million of capital revenue requirements for FY 2021-22. The wastewater system serves 50,919 accounts within its service area (Figure 1-4). The map also shows the wastewater system trunk lines and treatment plants.

Figure 1-4. MNWD Wastewater System



1.2. Project Methodology

The purpose of this analysis is to assess the District's projected rate revenue requirements relative to its current rate revenue recovery. As graphed in Figure 1-1 in the previous section, the District's potable water imports and sales have largely remained at the reduced levels experienced during the last drought with increases in FY 2020-21 being mostly attributable to weather and increased Single-family Residential demands resulting from COVID-19 related stay at home orders. This change is reflective of water use characteristics for the District as a whole as well as among each of the District's customer classes. Though its existing marginal cost-based rate structure insulates the District's financial position from reductions in volumetric sales, these changes in water consumption patterns impact the distribution of revenue requirements among the District's customer classes. Recognizing the unprecedented changes in relative customer class demands, a four-year average (FY 2017-18 through FY 2020-21) of water demands was used to allocate system costs across customer classes.

Each System's cost of service was allocated to each customer class utilizing a cost causative approach endorsed by the American Water Works Association (AWWA) M1 Principles of Water Rates, Fees, and Charges, Seventh Edition and Water Environment Federation's (WEF) Financing and Charges for Wastewater Systems, WEF MOP 27: Manual of Practice No. 27. The recommended rate schedules comply with all requirements of California Constitution Article XIII D, Section 6 commonly referred to as Proposition 218. The recommended rates are designed to meet current and future revenue needs. The analysis includes three major components:

- The **Long-Range Financial Plan (LRFP)** develops detailed budget projections through FY 2030-31 for each of the District's individual systems. This analysis incorporates the latest forecasts of water demands, operations and maintenance costs, capital expenditures, debt service, available cash and reserve balances, recycled water conversions, and conservation trends available in the District's financial planning model. The General Fund rate revenues are computed based on an overall 4.0 percent rate increase. Non-rate revenues, which include property tax, investment income, and capacity fees are also forecasted for the study period.
- The **Cost of Service (COS) analysis** allocates the revenue requirements for a specific system, as projected in the LRFP, among that system's customer classes in a multi-step process. For the selected ***test year*** **(FY 2021-22)**, the revenue requirements were broken down into major functional categories. For example, the water service functions include pumping, supply, storage, transmission, distribution, meters, fire protection, customer service, billing, and general administration. The District also allocates costs to functions within the Water Efficiency (WE) program, which include rebate program administration, customer service, water reliability investments, efficiency device rebates, and turf removal rebates. The requirements were classified by function according to their peak and base characteristics as well as their relationship to general administration of the District, customer service, and fire protection needs. System capacity[3] is designed to serve peak needs—for example, the need of the Potable Water System or Recycled Water System to supply potable and recycled water throughout the service area at the time of greatest demand, or the Wastewater System's ability to collect wastewater at all collection points when

[3] System capacity is the System's ability to supply water to all delivery points at the time demanded. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital asset-related costs incurred to accommodate the peak flows are generally allocated to each customer class based upon the class's contribution to the peak month, day, and hour event.

demanded. The time of greatest demand is known as "peak demand." A COS analysis will analyze both the average quantity of water consumed and the peak rate at which it is consumed, and the average quantity of wastewater discharged and the peak rate at which it is discharged. The District must construct infrastructure to deliver potable and recycled water and collect wastewater at peak times. The incremental costs associated with creating this above average peak capacity (peaking costs) include designing (i.e. sizing), constructing, and operating and maintaining the potable water, recycled water, and wastewater collection and treatment facilities. Because these peaking characteristics vary by customer class—both for capital assets and operating capacity costs—the cost of service varies from one customer class to another. The classifications in this Report were accomplished by analyzing the characteristics of customer classes and their respective contribution to incurred costs. Specific consideration was given to differing delivery costs, peaking factors, service characteristics, and demand patterns for service. This included a review of such factors as system operations and usage data, peak demand relative to average demand, number of customers, customer service and accounting requirements, equivalent meter size, and fire protection. The FY 2021-22 ***test year*** revenue requirements were then allocated by function and classification to each customer class to determine the cost of providing service to specific customer classes.

- Finally, the **Rate Design** addresses how rate revenues will be collected from each customer class in accord with its projected COS. It is the District's goal that the recommended rates adhere to all legal and regulatory standards (particularly California Constitution article XIII D, section 6) while encouraging efficient water use, minimizing adverse impacts to customers, and assuring reasonable and prudent revenue stability for the District.

The computed numbers for the purposes of this study are rounded to the nearest decimal points, and sums of these numbers may therefore not add up to totals.

1.3. Sources of Information Used in this Rate Study Report

Staff and RDN reviewed several District planning documents and draft reports during the course of this study. Where applicable, these are cited within the body of this report. A summary of key sources includes, but is not limited to:

- MNWD LRFP & COS FY 2021-22 Budget update model
- Detailed line- item budget for FY 2021-22;
- LRFP Report, attached as APPENDIX A;
- 10-Year Daily Demands through June 2021;
- Rate Study Report dated November 2017 (2017 Rate Study Report);
- Comprehensive Annual Financial Report for FY 2019-20;
- Unaudited Comprehensive Annual Financial Report for FY 2020-21;
- 2020 Urban Water Management Plan (UWMP);
- Comprehensive list of District assets as of June 2021;
- Debt repayment schedules as of June 2021;
- Reserve Policies (adopted annually, most recently June 2021);
- FOG (Fats, Oils & Grease abatement) program costs and list of registered accounts;
- SOCWA audited financial statement FY 2019-20;
- SOCWA Budget FY 2021-22;
- AWWA M1 Manual; and
- MOP 27.

1.4. Acronyms and Abbreviations

AB	Assembly Bill
AF, AFY	Acre-Feet, Acre-Feet Per Year
AWWA	American Water Work Association
BOD	Biological Oxygen Demand
CIP	Capital Improvement Plan
COP	Certificates Of Participation (Debt Instrument)
COS	Cost Of Service
CY	Calendar Year (January 1 – December 31)
CPI	Consumer Price Index
DSCR	Debt Service Coverage Ratio
FEMA	Federal Emergency Management Agency
FOG	Fats, Oils, And Grease
FY	Fiscal Year (July 1 – June 30)
GO	General Obligation (Bond Type)
GPM	Gallons Per Minutes
GPCD	Gallons Per Capita per Day
hcf	Hundred Cubic Feet (Volume)
JRWSS	Joint Regional Water Supply System
LBS	Pounds
LRFP	Long Range Financial Plan
MG, MGD	Million Gallons, Millions of Gallons Per Day
mg/L	Milligrams Per Liter
MOU	Memorandum Of Understanding
MNWD	Moulton Niguel Water District
MWDSC/MET	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
O&M	Operation And Maintenance
R&R	Replacement And Refurbishment
RDN	Robert D. Niehaus, Inc.
SB	Senate Bill
SOCWA	South Orange County Water Authority
TSS	Total Suspended Solids
WBBRS	Water Budget-Based Rate Structure
WEF	Water Environment Federation
WE	Water Efficiency

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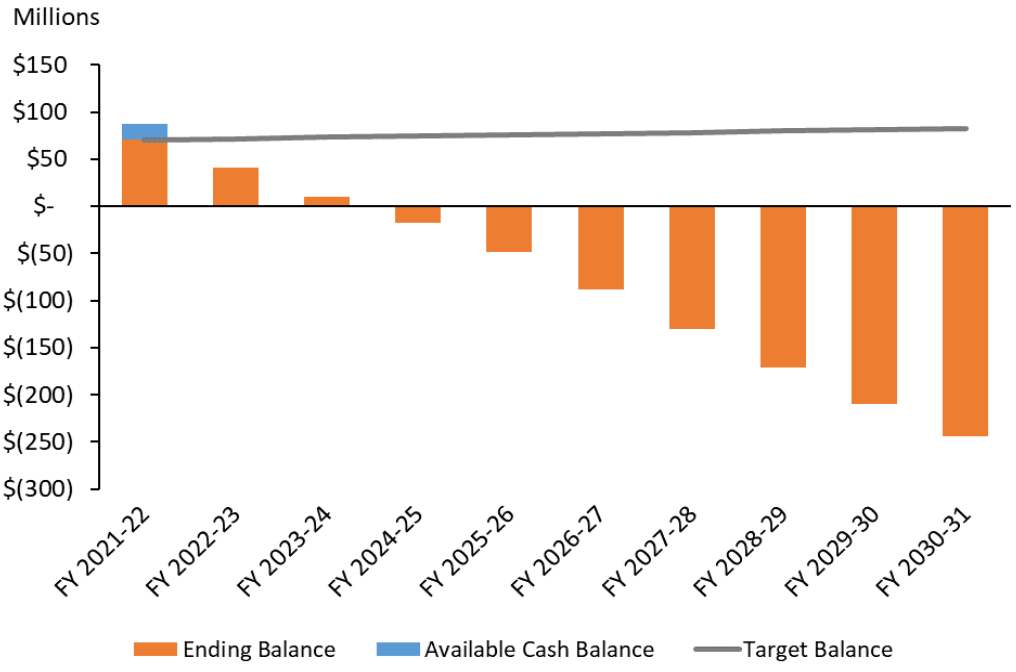
2. FINANCIAL PLAN

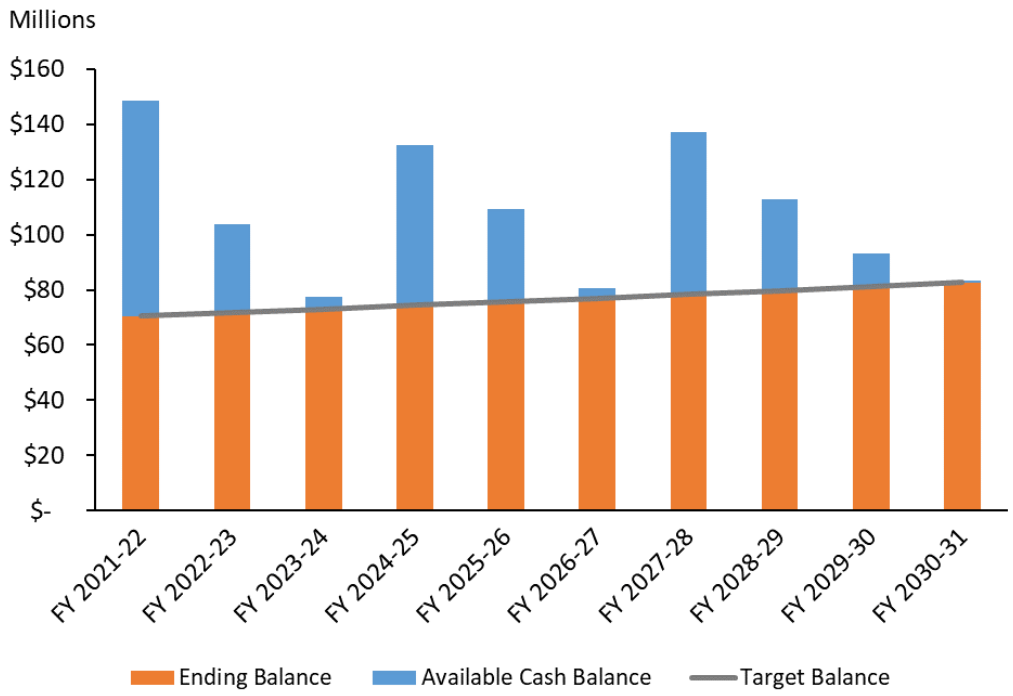
The District has maintained its financial position by planning and budgeting conservatively, funding adequate unrestricted cash balances, and sustaining a strong debt service coverage ratio (DSCR - the ratio of revenues net of expenses relative to the annual debt service payments). A major objective of the LRFP is to ensure that this strong performance continues into the future through timely and thoughtful financial analysis and planning. The LRFP projects the District's future operating and capital expenditures and identifies the rate revenue requirements necessary for the District to continue providing water, recycled water, and wastewater services over the 10-year forecast period from FY 2021-22 through FY 2030-31. Through continued implementation of fiscally prudent policies and proactive, but conservative financial management, the District's financial health remains consistent with the LRFP forecasts developed as part of the 2015 and 2017 Rate Study Reports. Refinements made to the District's WBBRS as part of the 2017 Rate Study Report have proven successful as the District has maintained its financial position during the COVID-19 crisis and recent low rainfall. However, the District's ability to continue providing essential services to its customers is wholly dependent on its ability to meet ongoing operating costs as well as the repair and maintenance needs of its capital infrastructure while addressing inflationary pressures and enhancing water efficiency programs to mitigate current drought conditions and their long-term supply reliability impacts. The assumptions, conclusions, and recommendations identified in the LRFP have been incorporated into this Report. To demonstrate what is needed to achieve this goal, Figure 2-1 displays MNWD's General Fund cash balances when service rates for the Potable Water, Recycled Water, and Wastewater Systems are held at current levels and no supplemental financings (such as bond issuances) are assumed over the next ten years.

Figure 2-1. District-wide General Fund Cash Balance Projections without Rate Revenue Adjustments and Supplemental Financings, Compared to the District's Target Reserve Balance, FY 2021-22 – FY 2030-31



After careful review and analysis of each component of the District's financial plan, overall 4.0 percent annual rate increases (3.0 percent for Potable and Recycled Water, and 5.5 percent for Wastewater) were identified as the necessary level of rate revenue adjustments, combined with anticipated capital market financings of approximately $60 million in FY 2021-22 and $75 million FY 2024-25 and $83 million in FY 2027-28, to meet the rate revenue requirements for the projected years. Figure 2-2 presents a 10-year forecast of the District's General Fund cash balances with the proposed rate revenue adjustments as compared to the reserve targets[4]. An overall 4.0 percent annual rate increase with supplemental financing will maintain the District's General Fund unrestricted cash balance level above target throughout the projected period.

Figure 2-2. District-wide General Fund Cash Balance Projections with Rate Revenue Adjustments (4.0 Percent) and Supplemental Financings, Compared to the District's Target Cash Balances, FY 2021-22 to 2030-31



[4] Reserve targets are established by the District's Reserve Policy which is discussed in Section 2.3.

Figure 2-3 presents the District-wide General Fund rate revenues and DSCRs for FY 2021-22 through FY 2030-31 when the rate revenues for all Systems remain at current levels and no supplemental financings are utilized. The District's policy minimum DSCR will fall below the District's target of 1.75 by FY 2026-27 and continue to decline below the bond covenant requirement of 1.25 by FY 2028-29 without any rate revenue adjustment.

Figure 2-3. District-wide General Fund Rate Revenues and Debt Service Coverage Ratio (DSCR) without Rate/ Supplemental Financing Adjustments, FY 2021-22 – FY 2030-31

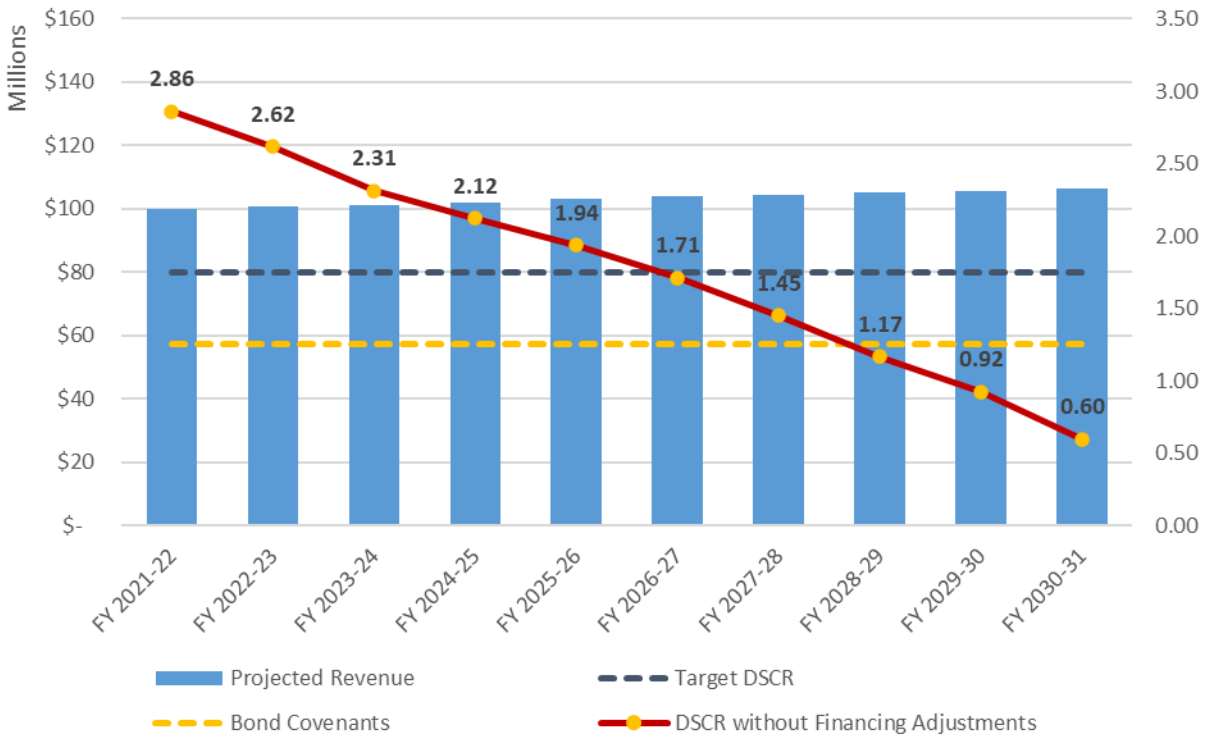
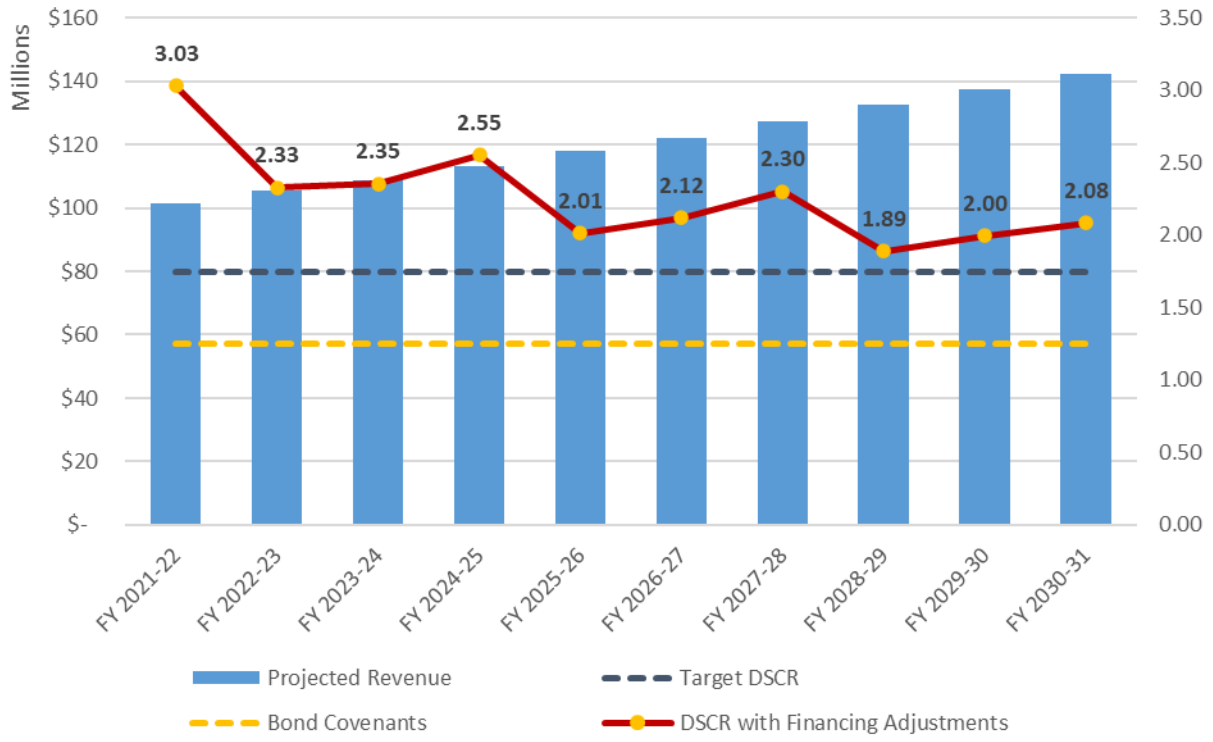


Figure 2-4 presents the District-wide General Fund rate revenues and DSCRs with an overall cumulative 4.0 percent rate revenue adjustment, combined with capital market financings of approximately $60 million in FY 2021-22, $75 million in FY 2024-25, and $83 million in FY 2027-28. With these adjustments, the District's DSCR will remain above the District's target rate of 1.75 throughout the projected years.

Figure 2-4. District-wide General Fund Rate Revenues and Debt Service Coverage Ratio (DSCR) with Rate Revenue Adjustments (4.0 Percent) and Supplemental Financings, FY 2021-22 – FY 2030-31



This Report includes revenue requirements for two primary funds: the General Fund and the Water Efficiency Fund. The General Fund accounts for operation and maintenance of the Potable and Recycled Water Systems, management of the Wastewater System, and planning and executing capital improvement projects for the three Systems. The Water Efficiency Fund is used for purposes related to water efficiency, conservation goals and policies, and water reliability projects. In this chapter, financial plan and revenue requirements are individually discussed for each system under the funding types: the Potable Water, Recycled Water, and Wastewater System under the General Fund (Sections 2.4–2.6), and the Potable Water and Recycled Water Systems under the Water Efficiency Fund (Section 2.7). The District's DSCR and reserve levels are managed at the District-wide level and discussed in Sections 2.2 and 2.3, respectively.

The District's comprehensive LRFP model considers the costs of operations and maintenance (O&M), capital, and debt, while also accounting for non-rate revenues, reserve targets, and financial performance metrics.

2.1. Modeling Assumptions

The 10-Year LRFP employs assumptions to project future year revenues and expenses where budget projections are not available. The following assumptions were reviewed by District staff and RDN as part of the development of this Report. The test year cost-of-service analyses detailed in subsequent chapters of this Report are based on adopted FY 2021-22 budgets. This Report repeats information provided in the District's Long Range Financial Plan report, attached as APPENDIX A.

2.1.1. District-wide General Fund Financial Projections

The District operates as a self-sufficient enterprise that oversees the operations, maintenance, and capital infrastructure needed to provide potable water, recycled water, and wastewater services to its customers. This autonomy allows the District to structure its costs to reflect its approach to management, planning and commitment to exemplary service while maintaining the lowest average bill in South Orange County.

The District's General Fund accounts for the programs and activities related to providing service for efficient use of the Potable and Recycled Water Systems and the management of its Wastewater System.

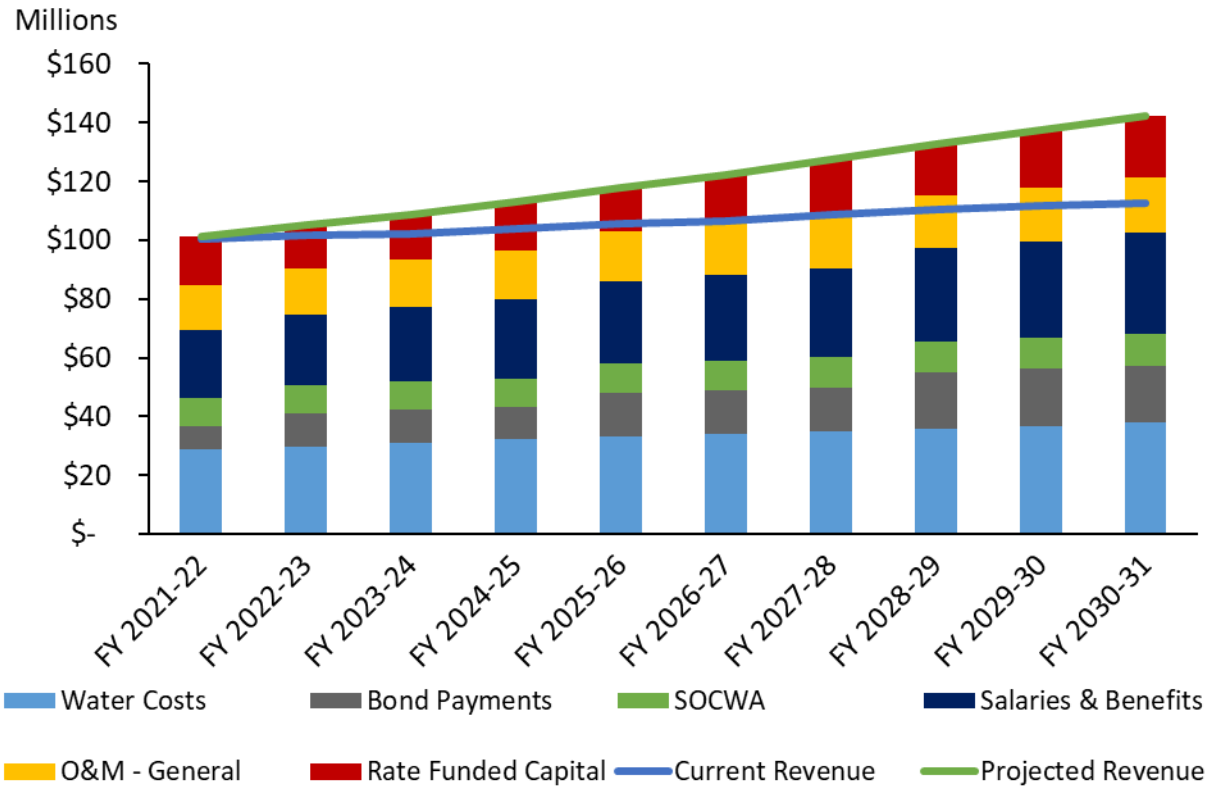
The District's General Fund revenue requirements can be organized into four components: O&M costs, capital costs (cash and debt service), reserve requirements, and debt service coverage ratio requirements. The former two components are described below, while the latter two components are described in Sections 2.3.1 and 2.3.2.

O&M Costs - This Report uses the District's adopted O&M budget for FY 2021-22. Operating costs beyond FY 2021-22 were calculated based on cost inflation assumptions (see Section 2.1.2) unless otherwise specified.

Capital Costs - The District maintains a long-range fiscal perspective through the use of its 10-year CIP to maintain the reliability of the District's Potable Water, Recycled Water, and Wastewater infrastructure. Capital spending has been projected through FY 2030-31, although it should be noted that spending projections beyond a five-year horizon are intended to reflect expectations of long-term revenue requirements and will be updated annually to reflect updated capital investments.

Figure 2-5 presents the District's General Fund revenue requirements alongside current and projected revenues, inclusive of recommended rate revenue adjustments for FY 2021-22 through FY 2030-31. As previously discussed, the projected rate revenue was computed based on an overall 4.0 percent annual rate revenue adjustment to meet fully recover revenue requirements. Water purchases are the District's largest operating cost, representing a projected 28.3 percent of the General Fund's total operating expenses for FY 2021-22. Wastewater treatment costs from SOCWA, representing 9.4 percent of the District's total operating costs, are another major revenue requirement.

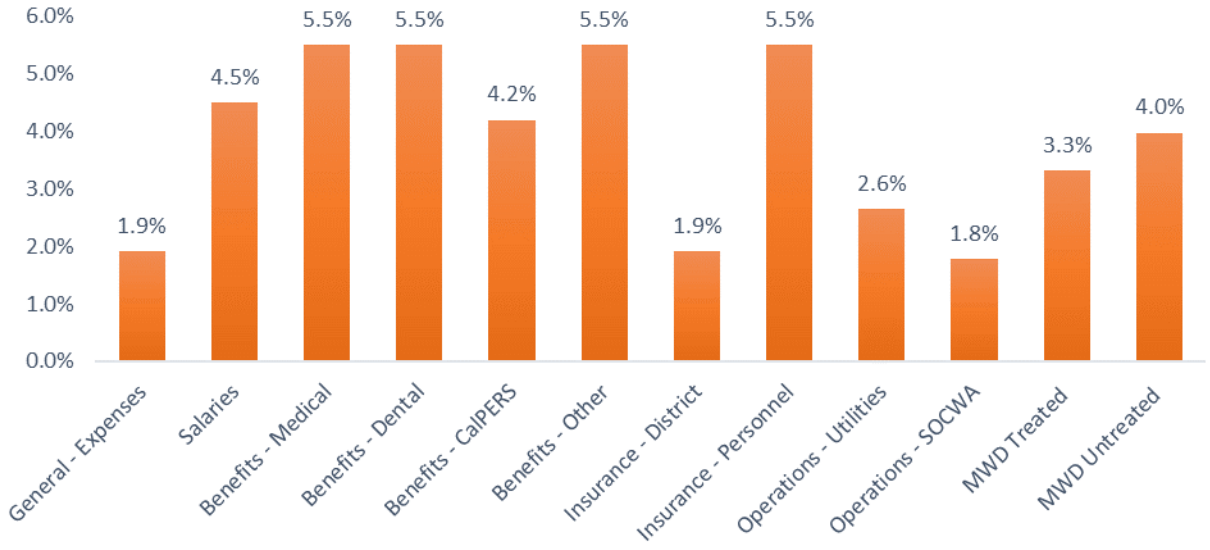
Figure 2-5. General Fund Total Revenue Requirements and Total Current and Proposed Revenues, FY 2021-22 –FY 2030-31



2.1.3. Inflation Assumptions

The following describes the cost inflation factors that were applied to specific expenditure categories during the study period. All inflation factors are displayed in Figure 2-6.

Figure 2-6. Ten-Year Average of Inflation Assumptions for FY 2021-22 – FY 2030-31



- **General**: The general inflation assumption is based on CPI data for the Los Angeles area provided by the California Department of Finance.

- **Salaries and Benefits:** The inflation assumptions for salaries and benefits are estimated based on the terms of the District's Memorandum of Understanding (MOU) with the District's Employee Association for FY 2021-22 and FY 2022-23. The salaries inflation assumption for the remaining eight years reflects the average annual increases for performance-based salary increases. The inflation assumption for benefits for the remaining forecast period is based on a CalPERS actuarial report estimating the District's cost responsibilities.

- **Insurance**: Insurance for the District is escalated using the general inflation assumption. Personnel-based insurance is escalated with the same approach as benefits—using projections based on the District Employee Association MOU for FY 2021-22 and FY 2022-23 and CalPERS actuarial reports and trends for the remaining years.

- **Operating Costs:** Electricity dominates the District's utility expenditures and utilities use the same factor as general inflation (based on Los Angeles-area CPI data). Over the past few years, recent electricity prices statewide and in southern California have remained stable or grown slowly with overall inflation. Escalating utilities at the rate of general inflation is therefore a conservative estimate for electricity. A sensitivity analysis for higher electricity rates was performed but the general 2.6 percent was used to capture the District's recent energy management efforts, but rates will be closely monitored. SOCWA costs are escalated based on data provided by SOCWA and an analysis of trends prepared by District staff.

- **Water Purchase Costs:** The inflation assumptions for treated and untreated water purchase costs are based on rate projections from MWDSC's biannual FY 2020-21 and FY 2021-22 Budget. In the LRFP (FY 2021-22 through FY 2030-31), costs for treated water are expected to increase 33.1 percent cumulatively, and costs for untreated water are expected to increase 39.7 percent cumulatively. Table 2-1 presents the year-over-year changes in effective wholesale rates for water delivered via the Diemer WTP and Baker WTP from FY 2021-22 through FY 2030-31 (rates shown include variable rates and fixed charges as well as debt service payments for Baker). It should be noted that MWDSC has projected overall revenue increases between 4 and 6 percent annually through FY 2024-25, but how those overall increases will be allocated across the different charges will be determined as part of the upcoming MWDSC rate study. At the time of publication, the MWDSC rate study is on-going and MNWD staff will continue to monitor its development for deviations from the assumptions used in this Report.

Table 2-1. Diemer and Baker Water Inflation Assumptions for FY 2021-22 – FY 2030-31

	FY2021-22	FY2022-23	FY2023-24	FY2024-25	FY2025-26	FY2026-27	FY2027-28	FY2028-29	FY2029-30	FY2030-31
Diemer Water	3.5%	4.6%	4.4%	3.8%	2.3%	2.5%	2.4%	2.8%	3.1%	3.7%
Baker Water	2.8%	6.6%	3.8%	4.2%	3.3%	3.6%	3.4%	3.8%	4.2%	4.0%

- **Capital Costs:** Costs for projects in the 10-year CIP are based on planning-level estimates which include contingencies that are intended to address assumptions about future materials and labor costs. Additionally, District staff have found that many construction projects often result in cost savings. Recognizing this, projected capital costs are not additionally inflated above levels already assumed in the developed estimates.

2.1.4. Water Supply Assumptions

Though all of the District's potable water deliveries are supplied by MWDSC through purchases furnished by MWDOC, they are segregated into two categories based on the water treatment facility and its associated costs. Baker WTP (a facility the District owns jointly with Santa Margarita Water District, El Toro Water District, Trabuco Canyon Water District, and Irvine Ranch Water District) treats raw MWDSC water and provides approximately one-third of the District's treated potable water (projected to be approximately 8,908 AFY). The remaining 15,537 AFY of potable water deliveries are treated at Diemer WTP.

Although the District's demand for recycled water is expected to increase as new services are connected to the Recycled Water System, existing recycled water customers responded to the 2011 to 2016 drought by dramatically increasing their water efficiency, and therefore decreased their individual demands on the system. Based on projections developed as part of the District's 2020 Long-Range Reliability Plan and Urban Water Management Plan, District staff anticipate that Potable Irrigation customers will increasingly convert their meters to Recycled Irrigation meters over the next 10 years, offsetting 306 AFY in potable water demand by 2025 and 1,066 AFY through 2030. Recognizing the increasingly efficient water use practices of the District's recycled water customers, this study assumes a slightly more conservative growth rate in recycled water use with only 250 AFY reached by 2025. The current recycled water use represents approximately 21.2 percent of MNWD's total treated/untreated water supply.

The current meter count for recycled water customers is 1,394, surpassing the count of dedicated potable irrigation customers' total meter count as shown in Figure 2-7.

Figure 2-7. MNWD Water Supply and Customer Meter Counts FY 2021-22 – FY 2030-31

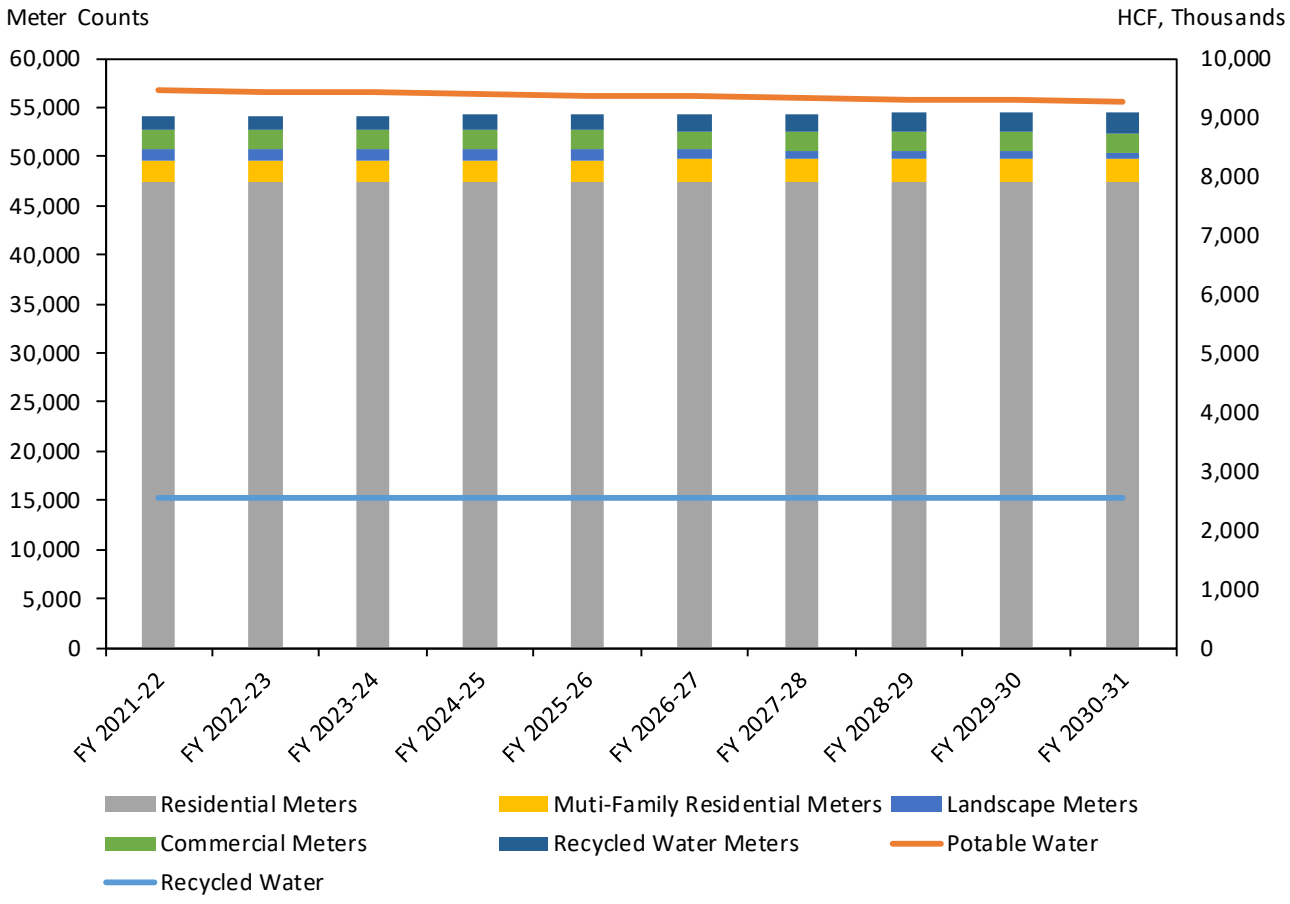


Table 2-2 presents a detailed breakdown of the component rates and charges of the two treated water supplies. The projected variable rates for deliveries from the Diemer WTP are represented by the "MWD Treated Variable Rate" and are based on projections of Treated Tier 1 water rates from MWDSC. The effective variable rates for deliveries from the Baker WTP are calculated as the sum of the "MWD Untreated Variable Rate" and "Baker Variable Costs", which captures both the purchase cost of raw water at MWDSC Tier 1 rates and the variable costs of treating the purchased raw water at the Baker WTP. The "Baker Fixed Costs" include both O&M and annual debt service payments attributable to the Baker WTP. The wholesale supply rates charged to the District are presented in detail in the Modeling Assumptions section of the LRFP, attached in APPENDIX A.

Table 2-2: Projected Water Supply Rates and Charges, FY 2021-22 - FY 2030-31

Projected Rates and Charges	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
MWD Treatment Variable Rate ($/AF)	$1,103	$1,156	$1,208	$1,257	$1,296
MWD Untreated Variable Rate ($/AF)	$767	$805	$847	$881	$914
Baker Variable Costs ($/AF)	$110	$112	$114	$117	$119
Baker Fixed Costs	$858,979	$876,159	$893,682	$911,556	$929,787
MWD Readiness-to-Serve Charge	$1,448,126	$1,448,126	$1,515,169	$1,583,420	$1,686,911
MWD Capacity Charge	$457,317	$457,317	$609,756	$615,176	$623,324
MWDOC Annual Connection Charge	$685,139	$702,564	$720,163	$737,929	$755,850
Projected Rates and Charges	**FY 2026-27**	**FY 2027-28**	**FY 2028-29**	**FY 2029-30**	**FY 2030-31**
MWD Treatment Variable Rate ($/AF)	$1,327	$1,360	$1,395	$1,436	$1,485
MWD Untreated Variable Rate ($/AF)	$945	$978	$1,014	$1,054	$1,097
Baker Variable Costs ($/AF)	$121	$126	$130	$135	$140
Baker Fixed Costs	$948,383	$982,639	$1,018,133	$1,054,909	$1,093,014
MWD Readiness-to-Serve Charge	$1,717,959	$1,831,799	$1,852,498	$1,852,498	$1,926,598
MWD Capacity Charge	$651,842	$651,842	$651,842	$651,842	$677,916
MWDOC Annual Connection Charge	$773,918	$792,417	$811,357	$830,749	$850,603

In recent years, the District has taken several steps to reduce water loss, such as the development of a leak detection team and improvements to its meter testing program. Though these initiatives are still relatively new, the District has seen a decrease in water losses since 2017, with non-revenue water[5] totaling 2,063 AF in FY 2021-22, down from 2,946 AF in FY 2016-17. The District's Long Range Financial Plan assumes a water loss factor of 7.53 percent for the FY 2021-22 test year based on a typical weather year and continued expansion of the District's meter testing program, leak detection efforts, and other water loss reduction programs.

The District has been proactive in its planning efforts to ensure water reliability. The District developed the 2020 Long-Range Water Reliability Plan to provide an adaptive management approach to reliability planning. This is a working document that the District recently updated to reflect the changed water demand assumptions that have persisted since the last drought emergency and any changes to the status of local supply projects. District staff are also evaluating opportunities to expand recycled water and other water reliability investments, as well as considering direct potable reuse as regulations are developed. Other local efforts such as ocean desalination and transfers are also being closely monitored to determine the District's and South Orange County interest in these types of alternative water supply projects.

2.1.5. Debt Financing Assumptions

In evaluating future financing needs, this analysis made assumptions regarding initial and ongoing costs associated with issuing debt. Table 2-3 summarizes the projected terms for debt issuance mechanisms that were considered as part of the LRFP analysis. These were provided by District finance staff, in conjunction with the District's Financial Advisors, based on conservative estimates of long-term trends and expected issuance costs for highly-rated municipal debt.

Table 2-3. Summary of Debt Financing Assumptions

Debt Mechanism	Interest Rate	Term (Years)	Issuance Cost
Certificate of Participation (COP)	*3.5%*	*30*	*$250,000*

2.1.6. Existing Debt Service

As the District has developed over the past 61 years, issuing bonds has been a key strategy to expanding infrastructure across the service area while also keeping rates and charges affordable. Currently, the District has a portfolio of three issuances: the 2019 Certificates of Participation (2019 COPs), the 2015 Revenue Refunding Bonds, and the 2019 Revenue Refunding Bonds (2019 Refunding Bonds). Most recently, the District issued $64,570,000 of 2019 Certificates

[5] Non-revenue water refers to water that enters the District's system but is not captured as metered use due to such factors as system breaks or failing meters. Non-revenue water as a percent of volume of Water Supplied is reported annually to the State Water Resources Control Board as calculated using AWWA Free Water Audit Software.

of Participation (2019 COPs). Due to favorable market conditions, the District issued at a premium and received approximately $68 million in proceeds from the issuance which were being used to finance construction and other project costs related to the replacement and upgrade of the District's reservoir management system and pump stations, lift station enhancements, pipeline improvements, and other projects that have been identified as part of the District's adopted Capital Improvement Program.

In addition to supporting investments in new infrastructure, staff actively work with the District's Financial Advisor to identify potential refunding opportunities to ensure that the debt portfolio is at optimal interest rates. On March 1, 2019, the District issued $48.6 million of 2019 Refunding Bonds. Proceeds from the issuance were used to refund the 2009 Certificates of Participation federally taxable "Build America Bonds" and pay the cost of issuing the 2019 Refunding Bonds. The refunded COPs were originally issued to fund reliability improvements including Upper Chiquita Reservoir, expansion of the recycled water system, an interconnection to Irvine Ranch Water District, and to fund the District's portion of the Baker Water Treatment Plant. These projects in total increased the District's system reliability, or ability to maintain service in the event of an outage at the Diemer Water Treatment Plant, from 2 days to almost 31 days on average, when coupled with the District's demand management programs.

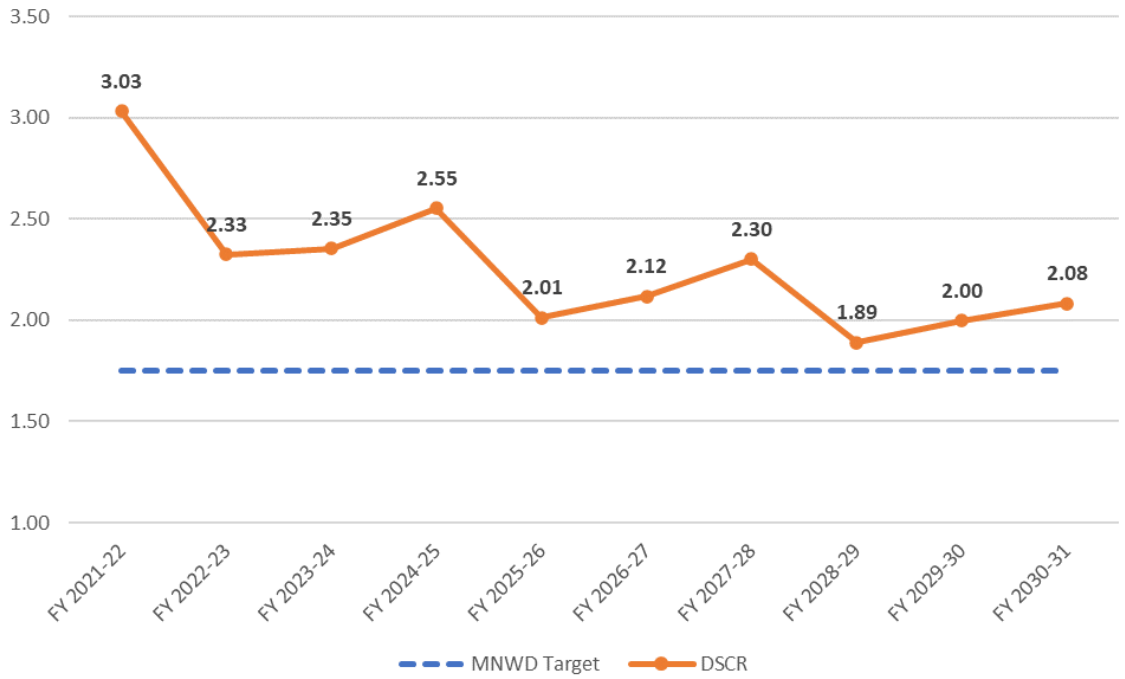
Similarly, the 2015 Revenue Bonds were issued to refund the 2003 COP series which had initially been issued to fund water and wastewater infrastructure. The District currently holds a AAA rating from both Fitch Ratings and S&P Global Ratings, which enables the District to go to the public finance markets competitively when needing to borrow to fund future infrastructure projects.

2.2. Capital Financing Policies – Debt Service Coverage Ratio (DSCR)

The District's policy is to manage revenues and debt levels such that the District's overall DSCR can be maintained above the Board adopted minimum target of 1.75, with a minimum of 1.25 required by bond covenants. DSCR is calculated as the ratio of net operating income to annual debt service payments, where net operating income is the District's total annual income less operating expenses and annual debt service is the total amount of all interest and principal to be paid in the respective year. It should be noted that, for added conservatism, the DSCR amounts shown in this report do not include revenues associated with the District's WE Fund. Maintaining a coverage ratio at or above the target level allows the District to maintain a strong credit rating, which in turn gives the District the ability to borrow at low interest rates when needed. Historically, the District has regularly maintained DSCRs above 2.00 and is rated AAA by both S&P Global Ratings and Fitch Ratings. While the District requires each System to meet its individual financial obligations from a cost-of-service perspective, reserve levels and DSCR are managed at the District level, as finance markets in general would evaluate the District's financial health as a whole. Therefore, the DSCR is not discussed at the individual System level in this Report. The District's DSCR will continue to be above target levels through the projected 10-year period assuming the recommended overall 4.0 percent annual rate revenue adjustment is approved.

Figure 2-8 displays the District's DSCR for FY 2021-22 through FY 2030-31.

Figure 2-8. Debt Service Coverage Ratio (DSCR) for FY 2021-22 – FY 2030-31



2.3. Reserve Policies

The District has established reserves in order to mitigate potential revenue and expense volatility and reduce the risk of unplanned, large rate revenue adjustments. The reserve policies help to maintain the District's creditworthiness by adequately providing for:

- Funding infrastructure replacement and refurbishment,
- Economic uncertainties, extraordinary costs, and other financial impacts,
- Loss of significant non-rate revenue sources such as property tax receipts,
- Local disasters or catastrophic events,
- Losses not covered by insurance,
- Future debt or capital obligations, and
- Cash flow requirements.

2.3.1. Reserves

The District currently maintains four types of reserves: a General Operating Reserve, a Self-Insurance Reserve, a Rate Stabilization Reserve, and an Emergency Reserve. Each of these reserves is described below.

General Operating Reserve - The District maintains a General Operating Reserve in order to provide sufficient liquidity for funding day-to-day operating expenses and supporting the District's cash flow needs during normal operations. There is typically a delay between the receipt of revenues and the payment of expenses and the establishing a cash reserve to mitigate or eliminate the risk of monthly negative cash positions represents prudent financial planning. The target balance of the General Operating Reserve will equal **three months of operating expenses,** consistent with industry best practices for agencies with monthly billing. Sufficient funding for the General Operating Reserve shall be identified at the beginning of each fiscal year and maintained within the General Fund.

Self-Insurance Reserve – The District maintains a Self-Insurance Reserve to fund property and liability insurance deductibles, losses exceeding insurance limits, and unemployment benefit payments in the event that a claim is made. The target amount of the Self-Insurance Reserve will equal **five times the current JPIA insurance deductible** (current deductible is up to $50,000). Sufficient funding for the Self-Insurance Reserve shall be provided at the beginning of each fiscal year via budget transfers and maintained in the Self-Insurance Fund.

Rate Stabilization Reserve - The District maintains a Rate Stabilization Reserve to provide for revenue losses, significant increases in water purchase costs, and other extraordinary financial impacts to revenues and expenses. This mitigates the risk and impact on rate revenues in the event of the loss of property tax revenues and helps avoid large fluctuations in customer rates and charges that would otherwise be caused by the timing of property tax receipts. The target balance of the Rate Stabilization Reserve is set to be equal to **fifty percent of the District's budgeted 1% property tax revenue**. The Rate Stabilization Reserve will be maintained in the Rate Stabilization Fund.

Emergency Reserve - The Emergency Reserve will provide funds to enable the District to quickly repair critical assets in the event of a natural disaster or facility failure. The target balance of the Emergency Reserve will equal **2% of the replacement costs of the District's assets**, as outlined in current guidelines from the Federal Emergency Management Agency (FEMA). The Emergency Reserve is maintained within the General Fund. Table 2-4 presents FY 2021-22 MNWD reserve targets.

Table 2-4. FY 2021-22 Reserve Targets

Type		Target
General Operating	$	19,376,112
Self-Insurance	$	225,184
Rate Stabilization	$	15,553,415
Emergency	$	35,300,000
Total Reserves	**$**	**70,454,712**

Note: Reserve Targets are based on the District's FY 2021-22 budget.

2.3.2. Debt Service Reserve

The District maintains Debt Service Reserves for its 2015 Revenue Refunding Bonds. As provided in the bond covenant, the Debt Service Reserve is held in trust with a third-party trustee. Increases and decreases in this reserve will be consistent with the respective bond covenants. The District's accounting records show these amounts in the appropriate debt fund.

2.4. Potable Water System General Fund Financial Plan

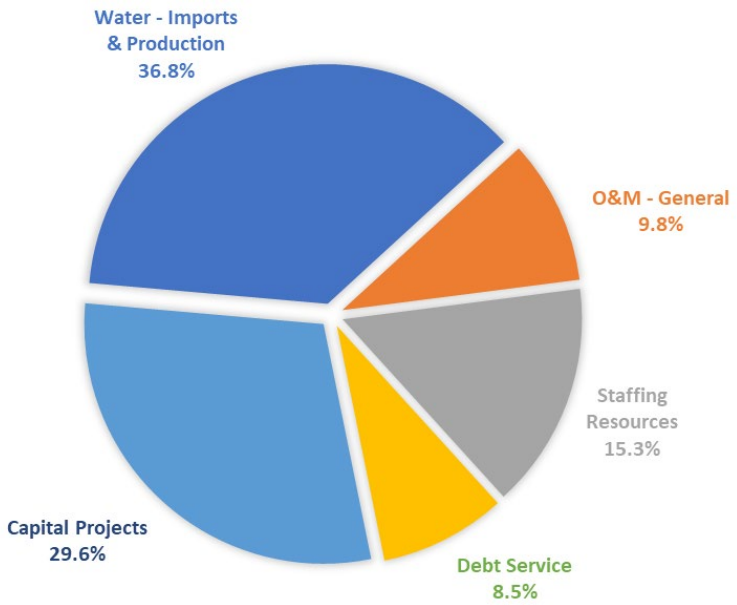
The following describes the revenue requirements over the next ten years for the Potable Water System. All cost projections are based on the District staff's best available data on wholesale water costs, future operational needs, projected water demands, and delivery cost escalation.

2.4.1. Potable Water Total System Cost

Figure 2-9 displays the cost distribution of the Potable Water System costs for test year FY 2021-22, which amounts to approximately $77.1 million for FY 2021-22 based on the District's adopted FY 2021-22 operating and capital budgets. The largest costs are **Water – Imports & Production**, which amount to $28.4 million and represent 36.8 percent of the total Potable Water System cost, followed by **Capital Projects** (estimated to be $22.6 million representing 29.6 percent of the total Potable Water System cost). Other expenses include approximately $7.5 million for **O&M - General** expenses (9.8 percent), $11.8 million for **Staffing Resources** which includes salaries and benefits (15.3 percent), and $6.6 million for debt service (8.5 percent). As noted previously, these amounts represent only the General Fund costs and exclude any costs associated with the Water Efficiency Fund.

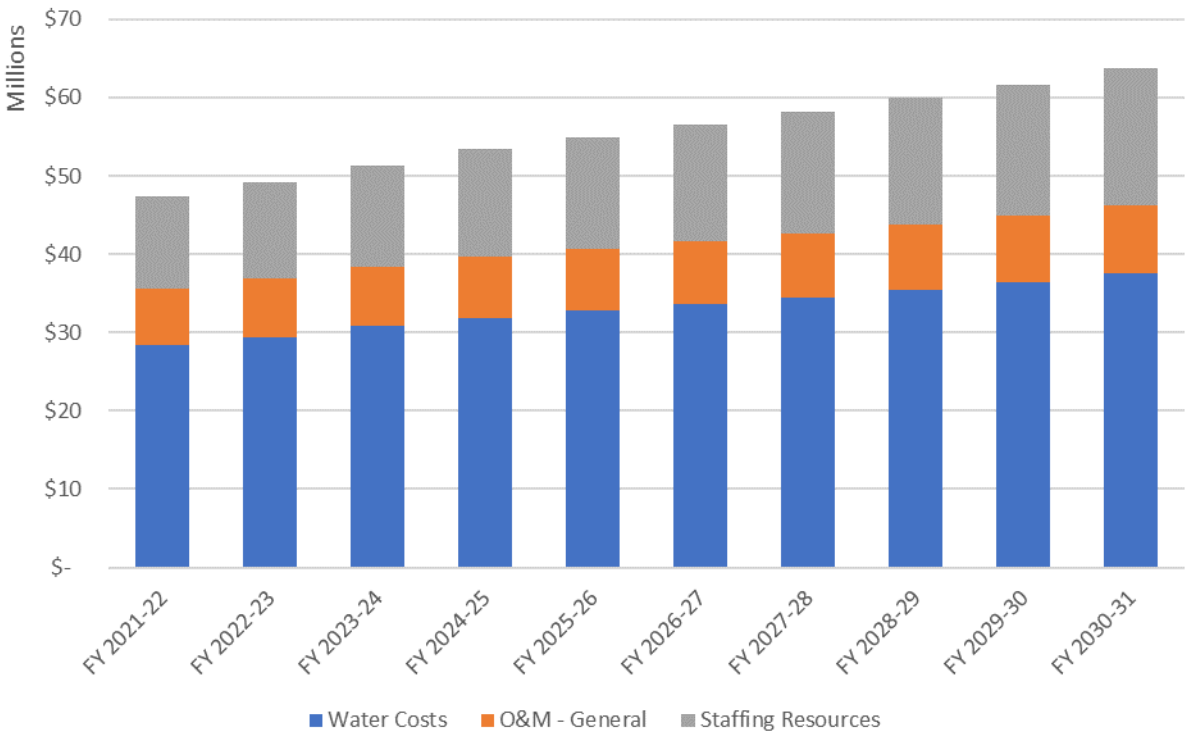
Figure 2-9. Potable Water Total System Cost for FY 2021-22

Note: the distribution in the pie chart represents only the General Fund portion of expenses



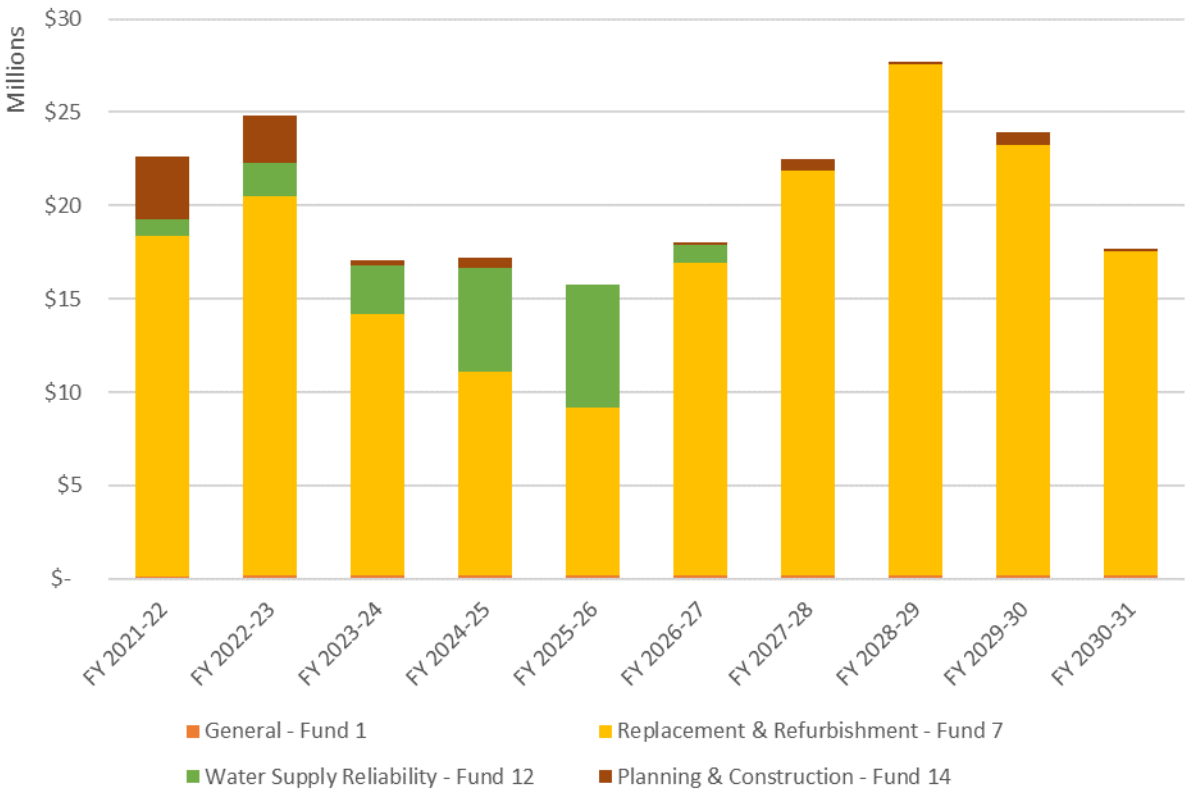
The Potable Water System O&M expense projections for FY 2021-22 through FY 2030-31 are summarized in Figure 2-10. Costs for **test year** FY 2021-22 are based on adopted budgets and costs projections for FY 2022-23 through FY 2030-31 are escalated by the inflation factors discussed in Section 2.1.2. **Water – Imports & Productions** continue to represent the largest portion of O&M costs attributable to the Potable Water System throughout the forecast period.

Figure 2-10. Potable Water System O&M Expense Summary, FY 2021-22 – FY 2030-31



The District's LRFP projects capital spending from FY 2021-22 through FY 2030-31 based on the District's 10-Year Capital Financing Plan. The Potable Water System is expected to fund approximately $207.3 million in capital projects over the next 10 years. Anticipated projects include on-going valve replacements, reservoir management system replacements, transmission main replacements, storage tank recoating projects, and water reliability projects, among others. Figure 2-11 displays the projected CIP projects for the 10-year period summarized by the funding type.

Figure 2-11. Potable Water System General Fund Capital Financing Plan, FY 2021-22 – FY 2030-31



2.4.2. Potable Water System Debt Service

In 2009, the District issued Certificates of Participation (COPs) to fund reliability improvements including Upper Chiquita Reservoir, an interconnection to Irvine Ranch Water District, and the District's share of the Baker Water Treatment Plant. These projects in total increased the District's system reliability, or ability to maintain service in the event of an outage at the Diemer WTP, from two days to almost 31 days on average, when coupled with the District's demand management programs. On March 1, 2019, the District issued $48.6 million of 2019 Revenue Refunding Bonds to refund the 2009 COPs.

In 2015, revenue bonds were issued to refund previously issued COPs which financed water and wastewater infrastructure construction. Annual debt service expenses have been allocated to the different systems in proportion to the projects that they funded.

In November 2019, the District issued $64,570,000 of 2019 Certificates of Participation (2019 COPs). Due to favorable market conditions, the District issued at a premium and received approximately $68 million in proceeds from the issuance which were being used to finance construction and other project costs related to the replacement and upgrade of the District's reservoir management system and pump stations, lift station enhancements, pipeline improvements, and other projects that have been identified as part of the District's adopted Capital Improvement Program.

The District anticipates issuing $60 million of 2021 Certificates of Participation (2021 COPs) in December 2021. The LRFP assumes $26.6 million in proceeds from the 2021 COPs will be used to fund Potable Water System projects, such as: replacement of the reservoir management system, steel reservoir seismic retrofits, and pump station and transmission main replacements. In addition to the 2021 COPs issuance, the issuances identified in FY 2024-25 and FY 2027-28 have been allocated to the different systems in proportion to their share of rolling 4-year capital project costs assuming a mid-fiscal year issuance. Debt service payments are assumed to begin in September of the fiscal year following an issuance. Consistent with this assumption, the first debt service payment associated with the 2021 COPs occurs in FY 2022-23 and is shown in the Proposed Debt Service category in Figure 2-12. These issuances will add $1.4 million in FY 2022-23, $1.8 million in FY 2025-26, and $2.6 million in FY 2028-29 to the District's debt service payment obligations.

The annual debt service payments to be recovered from Potable Water System rates and charges are shown in Figure 2-12. To reflect the IRS expectation that proceeds from tax-exempt bonds be used within three years of issuance date, in addition to the anticipated 2021 COPs issuance, the potential issuances identified in FY 2024-25 and FY 2027-28 have been allocated to the different systems in proportion to their share of rolling 4-year capital project costs assuming a mid-year issuance. Debt service payments are assumed to begin in September of the fiscal year following an issuance.

Figure 2-12. Potable Water System Existing and Proposed New Debt Service Obligations, FY 2021-22 to 2030-31

2.4.3. Potable Water System Revenues

Potable Water System revenue requirements are met with a mix of both rate and non-rate revenues. Figure 2-13 displays the breakdown of Potable Water System revenues projected for **test year** FY 2021-22 based on the District's adopted FY 2021-22 operating and capital budgets. The Potable Water System is projected to receive $66.0 million in revenues for **test year** FY 2021-22 assuming the recommended 3.0 percent potable water rate increase is adopted. **Property Tax** receipts represent 46.6 percent of total revenues, while **Water Sales - Volumetric** account for 33.5 percent and **Water Sales - Fixed** represent 14.8 percent. Other revenue components account for 5.1 percent or less of Potable Water System revenues. The **Property Lease** revenue is from cell site carriers placing antennas and equipment on reservoir properties and other District locations. The **Other Operating Revenue** consists of miscellaneous fees and charges, including customer service fees, tag fees, and meter sales. **Capacity Fees** (not shown) are the District's charges assessed on new or expanded development to buy into existing assets and available capacity to achieve parity with existing rate payers and equates to 0.03 percent for the test year. Revenues from capacity fees are restricted for funding capital projects and have been used to directly offset capital revenue requirements shown in Section 3.1.7.

Figure 2-13. Potable Water System General Fund Revenue by Type, FY 2021-22

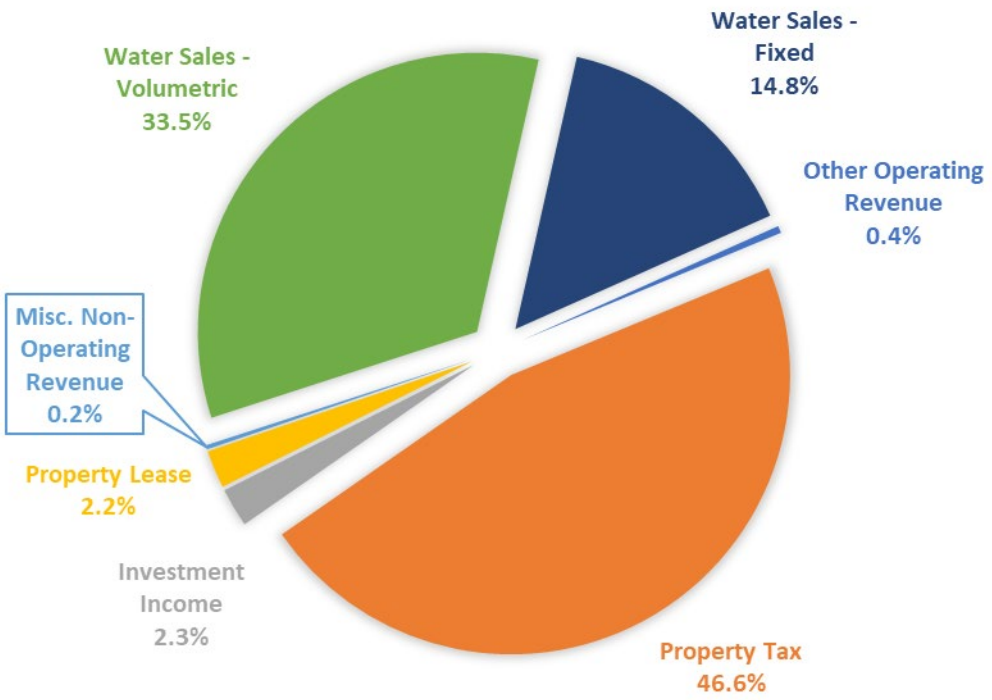
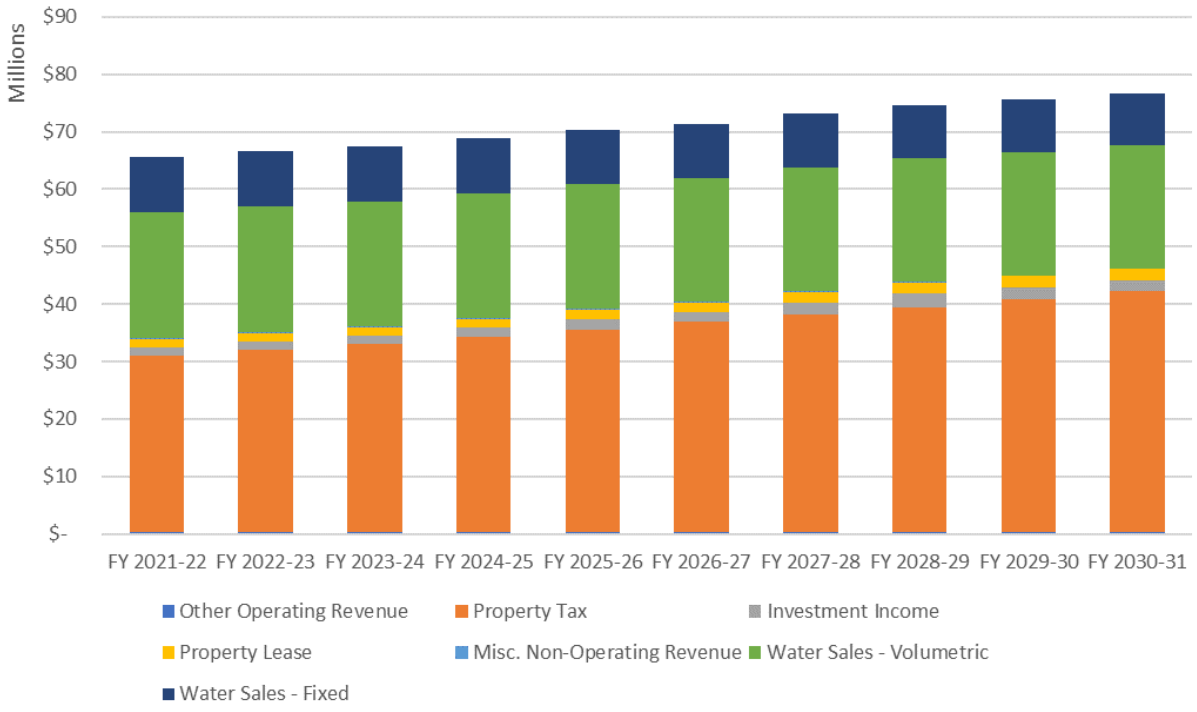


Figure 2-14 presents a summary of the Potable Water System's projected revenues for FY 2021-22 through FY 2030-31 assuming the recommended annual 3.0 percent rate revenue adjustment is adopted.

Figure 2-14. Potable Water System General Fund Projected Revenues for FY 2021-22- FY 2030-31



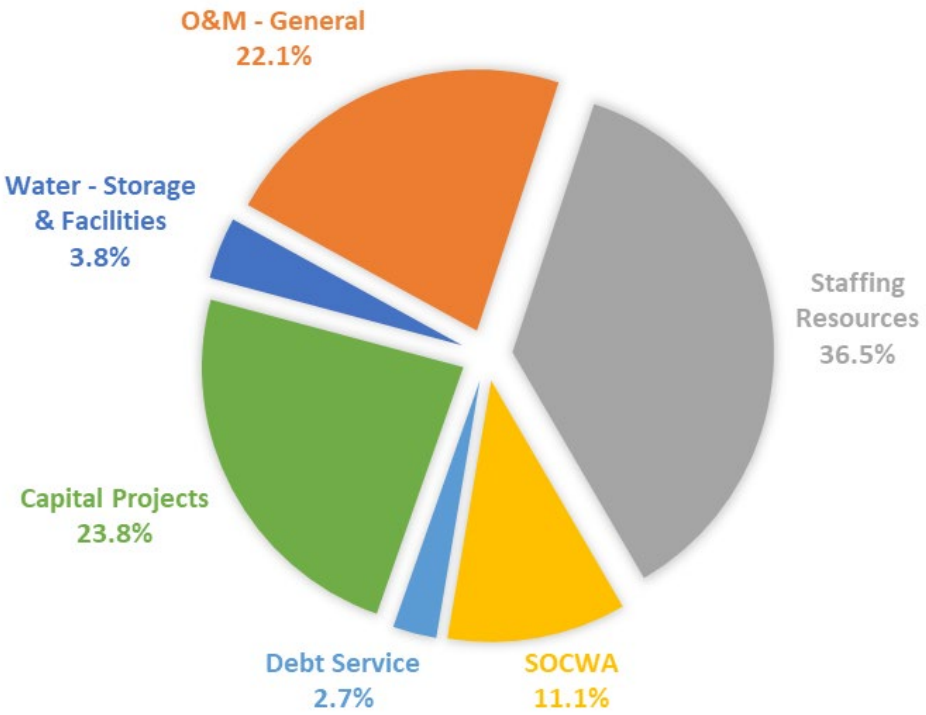
2.5. Recycled Water Financial Plan

The principles for the Recycled Water System financial plan mirror those of the Potable Water System financial plan as described in Section 2.4. The Recycled Water System revenue requirements over the next ten fiscal years are described below.

2.5.1. Recycled Water Total System Cost

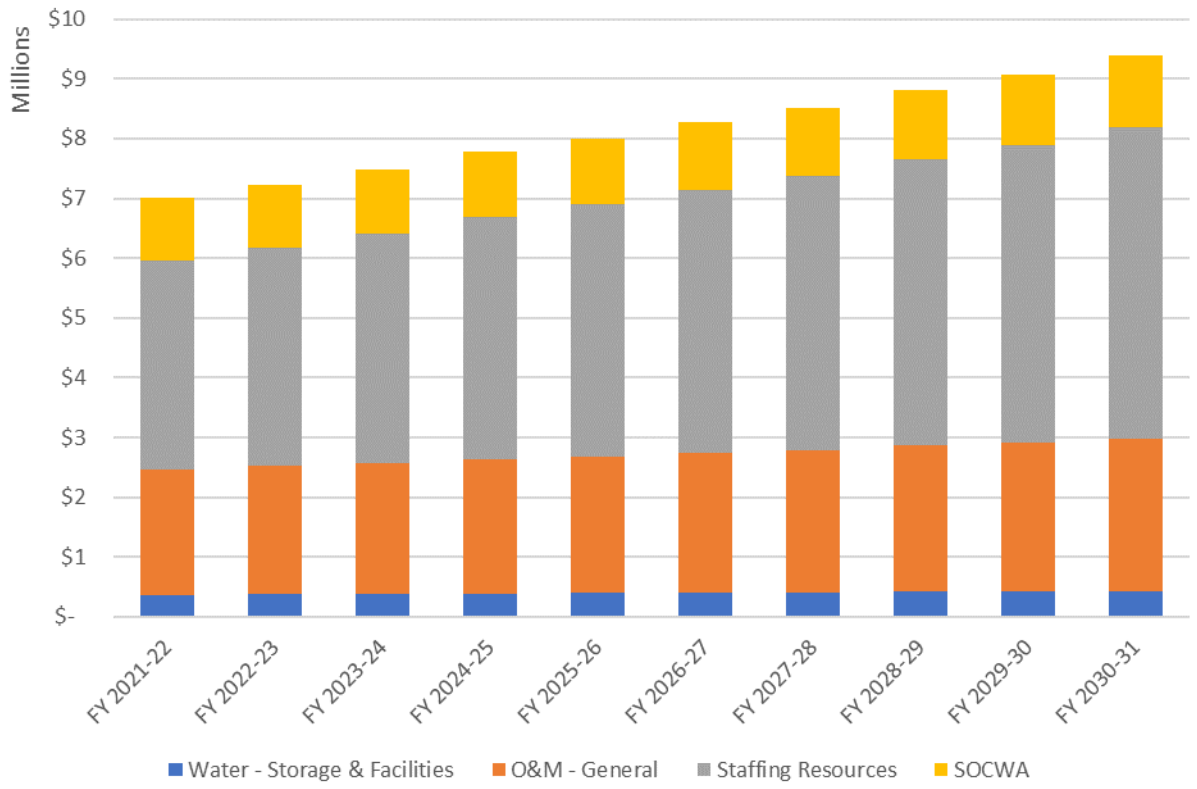
The Recycled Water System's General Fund costs for test year FY 2021-22 amounts to approximately $9.6 million based on the District's adopted FY 2021-22 operating and capital budgets. **Staffing Resources** are at $3.5 million (36.5 percent) related to regulatory compliance for inspections and permits . **Capital Project** expenses are the second largest cost and are estimated to be $2.3 million, representing 23.8 percent. Other costs include $2.1 million for **O&M - General** expenses (representing 22.1 percent), $0.3 million for **Debt Service** (2.7 percent), and $1.1 million contribution to **SOCWA** (11.1 percent). The remaining 3.8 percent is for the cost associated with **Water Storage and Facilities**, which amounts to $0.4 million (Figure 2-15).

Figure 2-15. Recycled Water Total System Cost, FY 2021-22



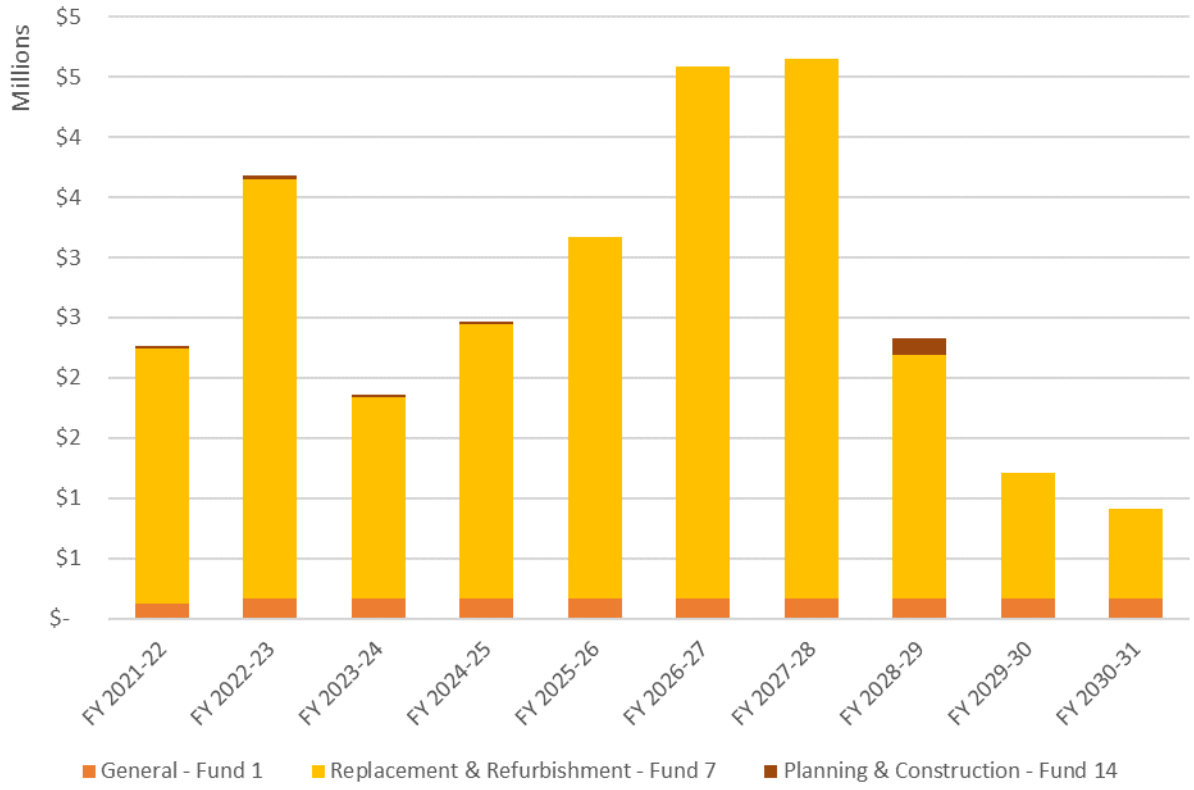
The District will continue to evaluate options for increasing recycled water production, primarily from operational and site improvements at the District's Plant 3A, while ensuring that any expansion of the recycled water program is cost-effective for the District's ratepayers. Recycled water production is a critical component of the District's water reliability strategies. As such, the District will continue to review the available recycled water production opportunities, available treatment technologies, and recycled water needs of its ratepayers. The Recycled Water System's O&M expense projections for the study period are summarized in Figure 2-16.

Figure 2-16. Recycled Water System Operating Budget Summary, FY 2021-22 – FY 2030-31



The District's LRFP projects capital expenditures for the Recycled Water System from FY 2021-22 through FY 2030-31 based on the District's 10-Year Capital Financing Plan. The Recycled Water System is expected to fund more than $27 million in capital projects over the next 10 years (Figure 2-17). Anticipated projects include pipeline rehabilitation and replacements, meter replacements, valve and service line replacements, and various main replacements, among others.

Figure 2-17. Recycled Water System General Fund Capital Improvement Project (CIP), FY 2021-22 – FY 2030-31



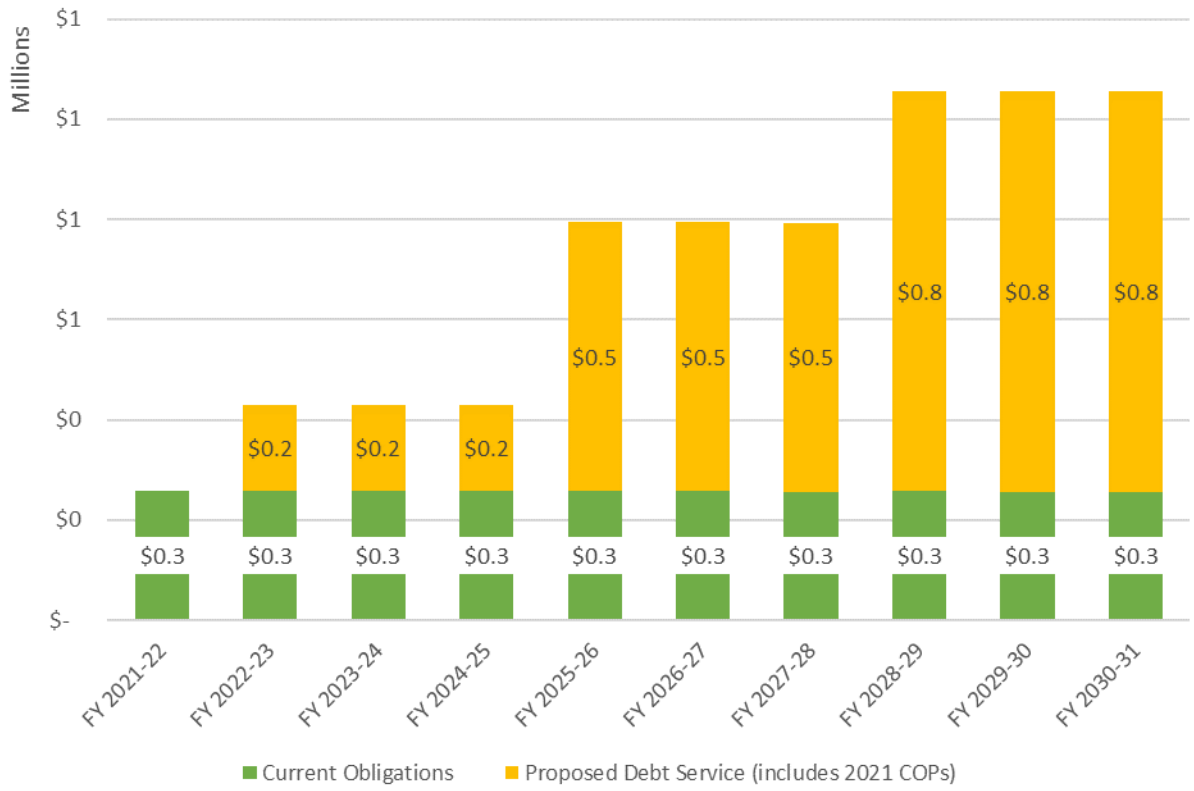
2.5.2. Recycled Water System Debt Service

Existing debt service for the Recycled Water System includes a portion the 2019 COPs. As noted previously, annual debt service expenses have been allocated to the different systems in proportion to the projects that they funded. The annual debt service payments to be recovered from recycled water rates are shown in Figure 2-18.

In addition to the anticipated 2021 COPs, the potential issuances identified in FY 2024-25 and FY 2028-29 have been allocated to the different systems in proportion to their share of rolling 4-year capital project costs assuming a mid-year issuance. Debt service payments are assumed to begin in September of the fiscal year following an issuance. Note that the first debt service payment associated with the 2021 COPs occurs in FY 2022-23 and is shown in the Proposed Debt Service category in Figure 2-18. These debt issuances will add $0.2 million in FY 2022-23, $0.3 million in FY 2025-26, and $0.3 million in FY 2028-29 for debt service payments to be recovered from the Recycled Water System.

To reflect the IRS expectation that proceeds from tax-exempt bonds be used within three years of issuance date, in addition to the anticipated 2021 COPs issuance, the potential issuances identified in FY 2024-25 and FY 2027-28 have been allocated to the different systems in proportion to their share of rolling 4-year capital project costs assuming a mid-year issuance. Debt service payments are assumed to begin in September of the fiscal year following an issuance.

Figure 2-18. Recycled Water System General Fund
Existing and Proposed New Debt Service Obligations, FY 2021-22 to FY 2030-31



2.5.3. Recycled Water System Revenues

The Recycled Water System costs are recovered through a mix of rate and non-rate revenue. Figure 2-19 presents projected Recycled Water System revenues for the **test year FY 2021-22**. Revenues projected for FY 2021-22 total $7.5 million assuming the recommended annual 3.0 percent rate revenue increases are adopted. **Property Tax** revenues are forecasted to account for 12.7 percent, while **Recycled Sales - Volumetric** revenues account for 57.6 percent, and **Recycled Sales - Fixed** represent 20.0 percent. **Property Lease** income accounts for 7.6 percent and other revenue components account for the remaining 2.1 percent.

Figure 2-19. Recycled Water System General Fund Revenue by Type, FY 2021-22

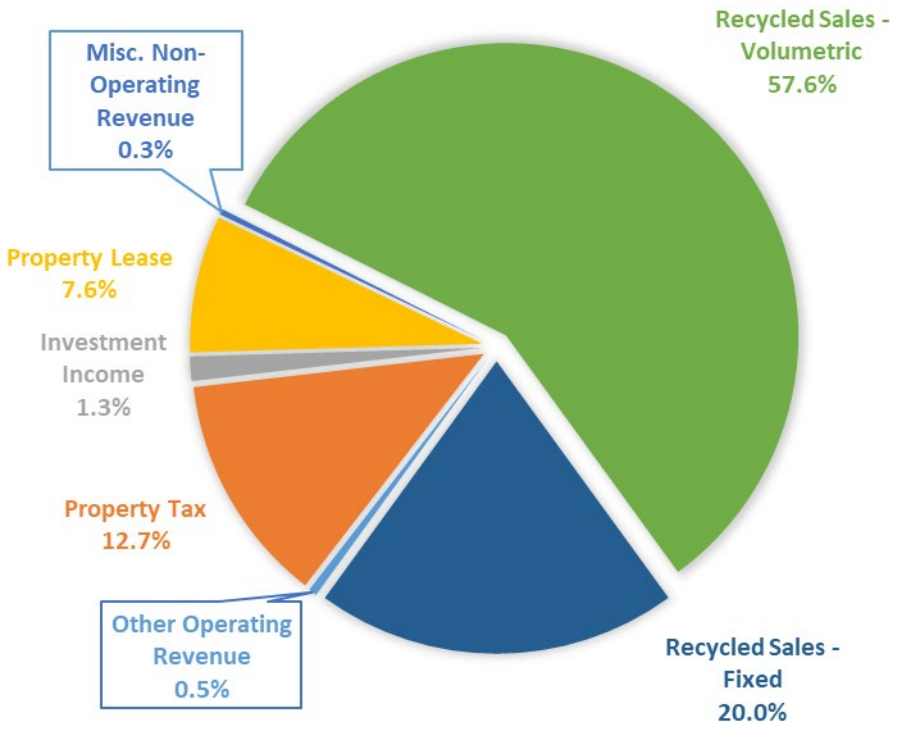
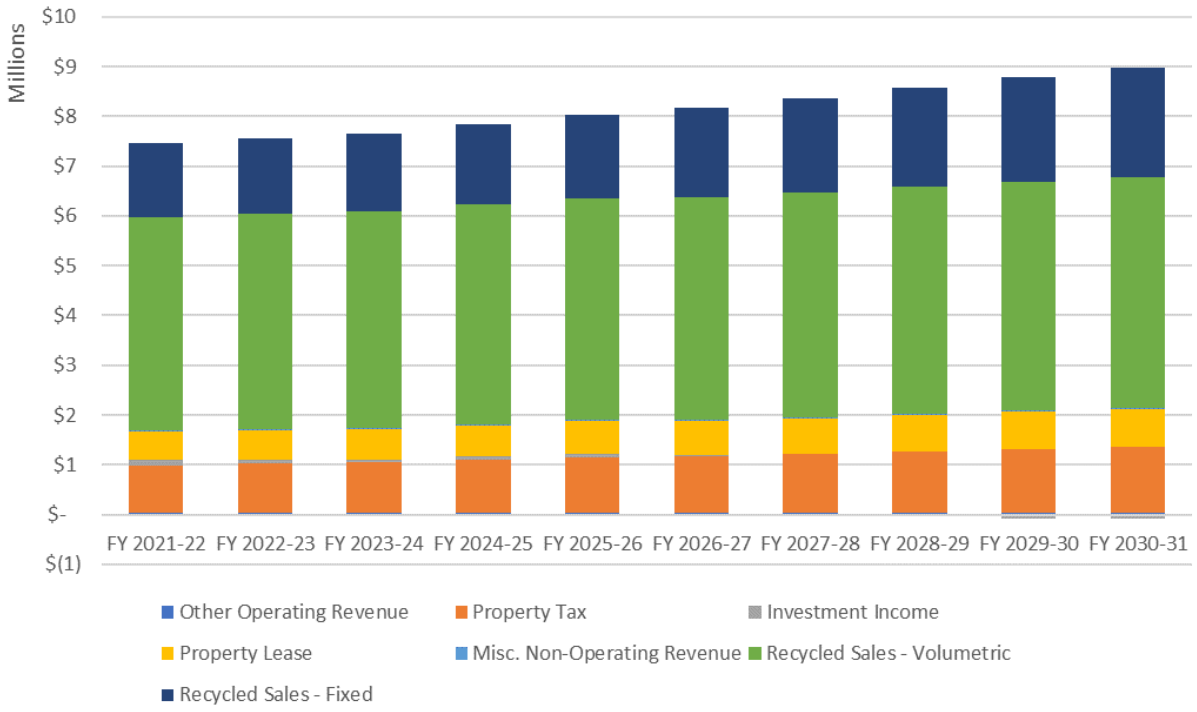


Figure 2-20 shows a summary of projected Recycled Water System revenues through FY 2030-31 assuming the recommended annual 3.0 percent rate revenue adjustment is approved.

Figure 2-20. Recycled Water System General Fund Projected Revenues for FY 2021-22 – FY 2030-31



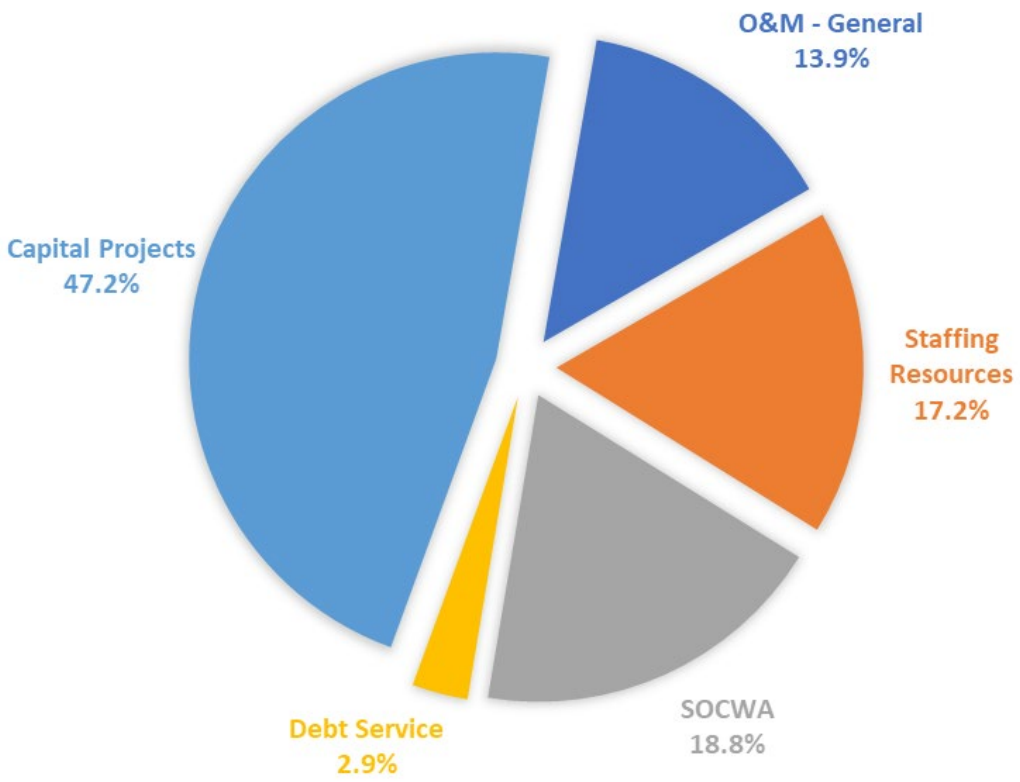
2.6. Wastewater System Financial Plan

The principles for the Wastewater System financial plan mirror those of the Potable Water System financial plan as described in Section 2.4. The following describes the Wastewater System revenue requirements over the next ten years.

2.6.1. Wastewater Total System Cost

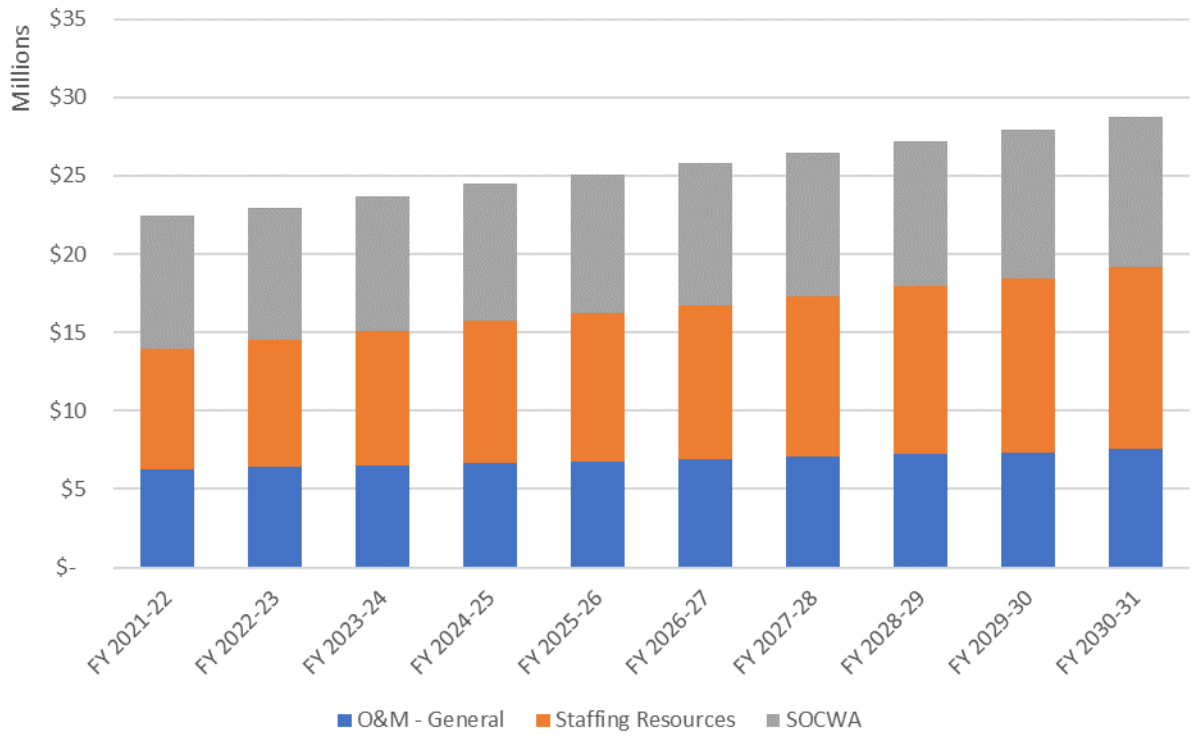
The Wastewater System General Fund costs for **test year** FY 2021-22 amounts to approximately $46.0 million based on the District's adopted FY 2021-22 operating and capital budgets. Figure 2-21 presents a breakdown of projected total system costs by category for the Wastewater System. **Capital Projects** represent the Wastewater System's largest cost category, representing $21.7 million or 47.2 percent of the System's total costs. The District's contribution to the **SOCWA** operating costs amount to $8.6 million, representing 18.8 percent of the total system costs. Other large costs for FY 2021-22 include **O&M – General** expenses of approximately $6.4 million (13.9 percent), and $7.9 million for **Staffing Resources** (17.2 percent). The remaining expense is $1.4 million for **Debt Service**.

Figure 2-21. Wastewater Total System Cost for FY 2021-22



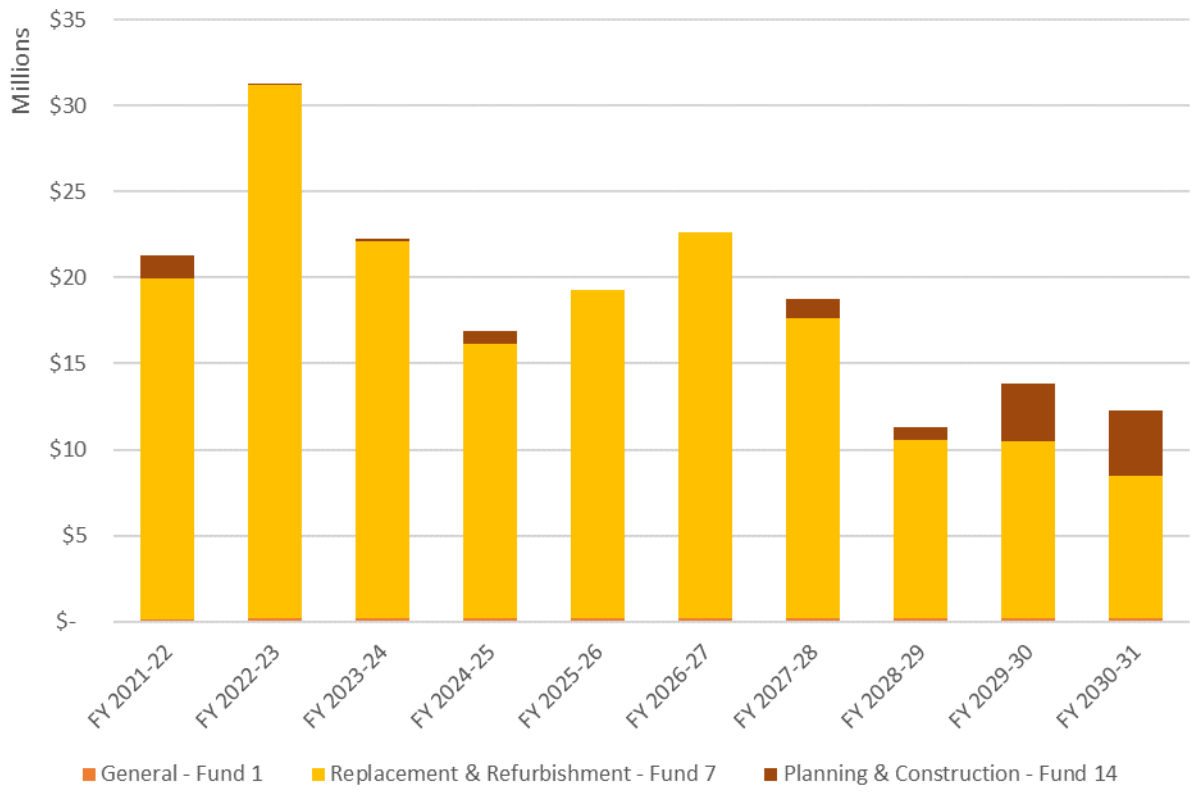
The Wastewater System's **O&M - General** expense projections for the study period are summarized in Figure 2-22. The Wastewater System's largest operating expense is attributable to the District's share of **SOCWA** operating costs. The remaining operating costs are attributable to the **Staffing Resources,** which will steadily increase due to the District taking full operation and maintenance functions of Plant 3A from Santa Margarita Water District.

Figure 2-22. Wastewater System Operating Expense Summary, FY 2021-22 – FY 2030-31



The District's LRFP projects capital spending from FY 2021-22 through FY 2030-31 based on the District's 10-Year Capital Financing Plan. The Wastewater System is expected to fund approximately $189.8 million in capital project costs over the next 10 years. Anticipated major capital projects include replacement of the Regional Lift Station force mains, Lower Salada Lift Station force main replacement, vertical assets rehabilitation and replacement, outfall line valves, and manhole rehabilitation projects, among others. Figure 2-23 displays the projected projects for the 10-year study period summarized by project type.

Figure 2-23. Wastewater System General Fund Projected Capital Financing Plan, FY 2021-22 – FY 2030-31



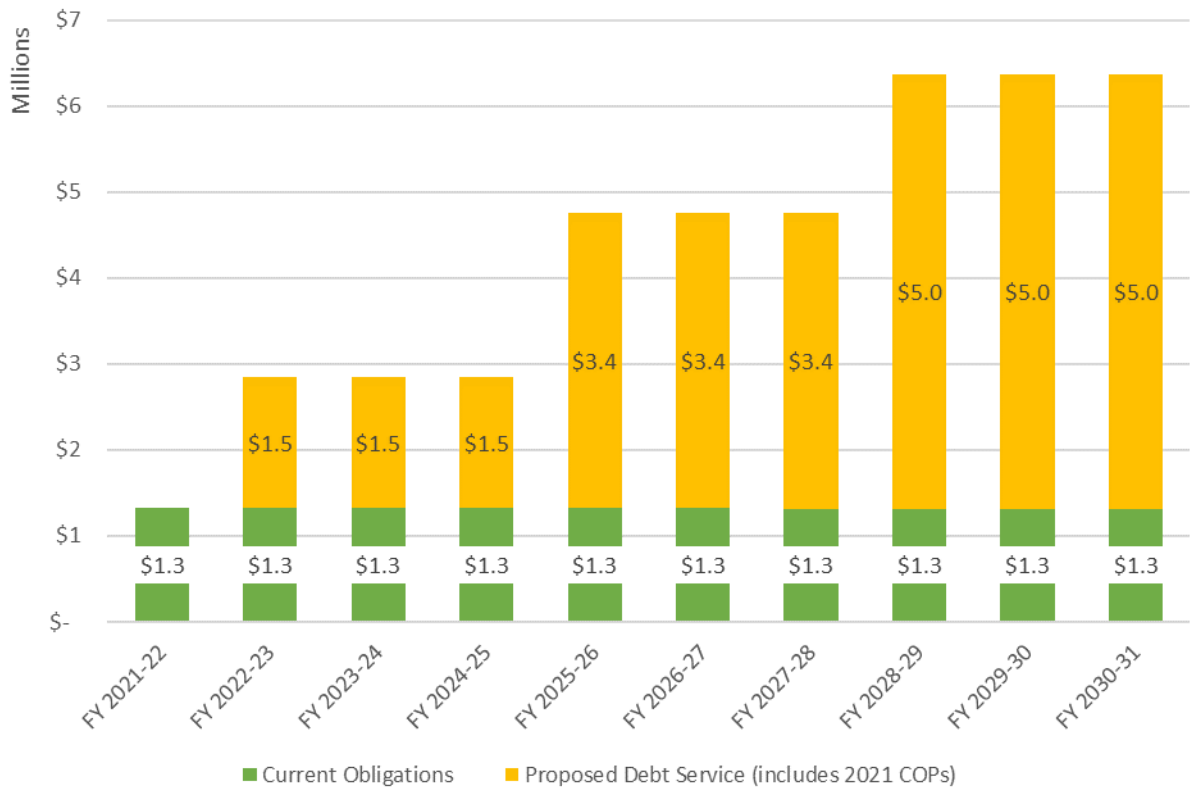
2.6.2. Wastewater System Debt Service

Existing debt service for the Wastewater System is comprised of the relative portion of the 2019 COPs which are allocated to wastewater projects. Annual debt service expenses have been allocated to the different systems in proportion to the projects that they funded. The annual debt service payments to be recovered from Wastewater rates are shown in Figure 2-24.

To reflect the IRS expectation that proceeds from tax-exempt bonds be used within three years of issuance date, in addition to the anticipated 2021 COPs issuance, the potential issuances identified in FY 2024-25 and FY 2027-28 have been allocated to the different systems in proportion to their share of rolling 4-year capital project costs assuming a mid-year issuance. Debt service payments are assumed to begin in September of the fiscal year following an issuance. Note that the first debt service payment associated with the 2021 COPs occurs in FY 2022-23 and is shown in the Proposed Debt Service category in Figure 2-24. These anticipated debt issuances add $1.5 million in FY 2022-23, $1.9 million in FY 2025-26, and $1.6 million in FY 2028-29 to total annual debt service payments.

Figure 2-24 provides a breakdown of existing and proposed total debt service associated with the Wastewater System.

Figure 2-24. Wastewater System General Fund
Existing and Proposed New Debt Service Obligations, FY 2021-22 – FY 2030-31



2.6.3. Wastewater System Revenues

The Wastewater System also receives a mix of both rate and non-rate revenue. Revenues projected for FY 2021-22 totaled $27.9 million assuming the recommended 5.5 percent wastewater rate increase is adopted. Figure 2-25 presents the relative amount of revenue that the Wastewater System is projected to receive in FY 2021-22 by revenue type. **Sewer Charges – Variable** (representing the Per-Person Wastewater Charges for Single-family Residential and Multi-family Residential customers) and **Sewer Charges – Fixed** (representing the fixed charges for all customer classes) are forecast to account for 96.1 percent of system revenues, while **Misc. Non-Operating Revenue** represents 0.6 percent and other revenue components total to 3.3 percent of revenues.

Figure 2-25. Wastewater System General Fund Projected Revenues by type for FY 2021-22

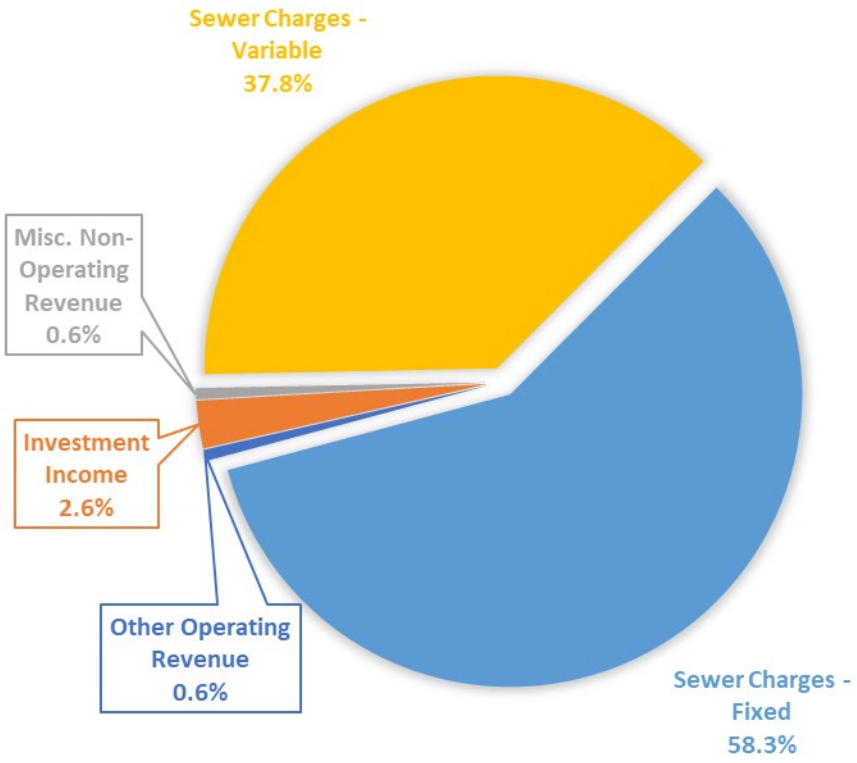
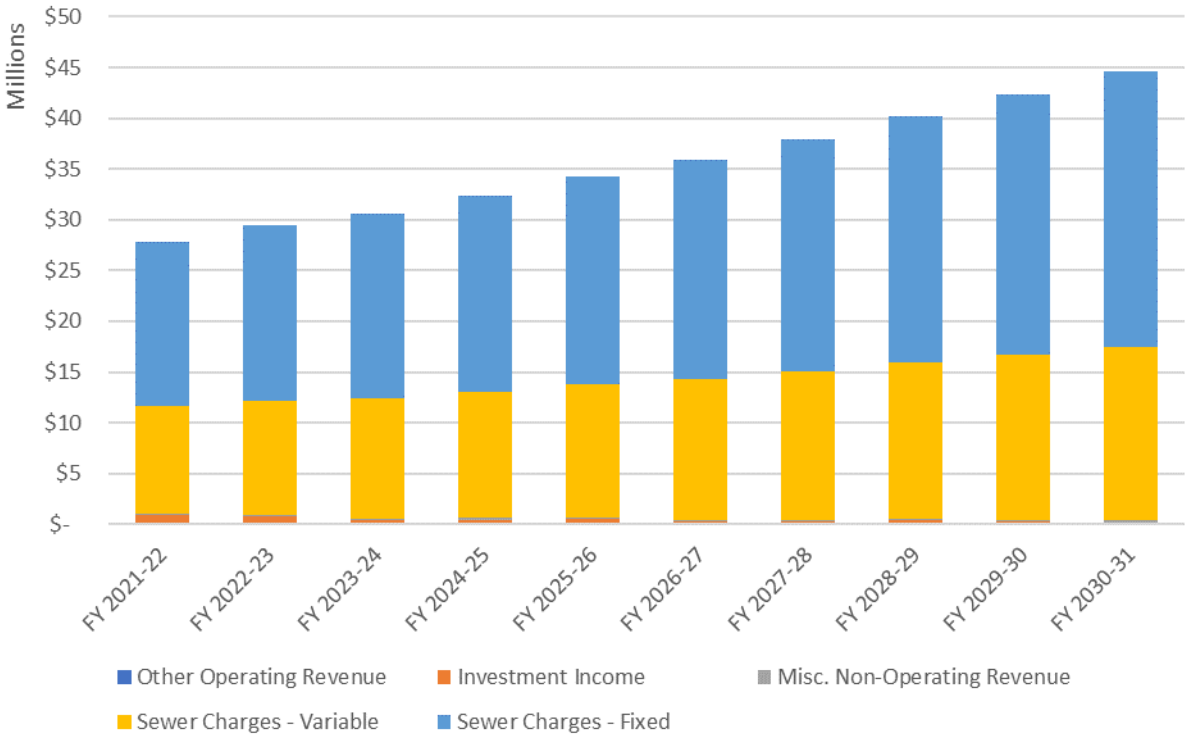


Figure 2-26 shows a summary of the Wastewater System's projected revenue from FY 2021-22 through FY 2030-31, assuming the recommended annual 5.5 percent rate revenue increase is adopted.

Figure 2-26. Wastewater System General Fund Projected Revenue for FY 2021-22 – FY 2030-31



2.7. Water Efficiency (WE) Fund Financial Plan

As was done for the General Fund, an updated LRFP was developed for the WE Fund in which a 10-year forecast of operating and capital costs was created in order to understand the financial implications of the District's water efficiency programs and objectives being considered as part of this study. A detailed discussion of the WE Fund's financial plan can be found in APPENDIX A. Though similar methods were used to develop both plans, the underlying rationale for the WE Fund plan differs from that of the General Fund plan in that the WE Fund plan separately accounts for both the immediate costs and potential long-term supply impacts attributable specifically to inefficient water use. Each month, District customers receive a calculated water budget sufficient to efficiently meet the water needs of their property. Customers who use water inefficiently—in excess of their calculated water budgets—place greater demands on the District's Potable Water and Recycled Water Systems and supplies. Those customers who use more than their allocated water budgets are therefore subject to higher water use rates to offset the costs they create. The District ensures increased rates within each tier corresponds to increasing marginal supply costs, and incremental revenues collected from higher tiers are used to fund alternative water supply programs, rebates, water conservation, and demand management, which increases the efficient use of water and provides water supply and reliability while offsetting the impacts of inefficient water use.

In 2018, the State of California enacted Senate Bill (SB) 606 and Assembly Bill (AB) 1668 to improve long-term water efficiency. These two bills require urban water suppliers to report their water use monthly and set an agency-wide water use target based on efficient indoor and outdoor water use standards. The District is well prepared to meet the target as its Water Budget Based Rate Structure (WBBRS) aligns with the methodology used to calculate the targets. However, the parameters used in the budget calculation may be tightened in the future by the State as an additional measure to conserve water. The WE Fund reflects the active role the District takes in administering its water efficiency and rebate programs to proactively prepare for these future changes.

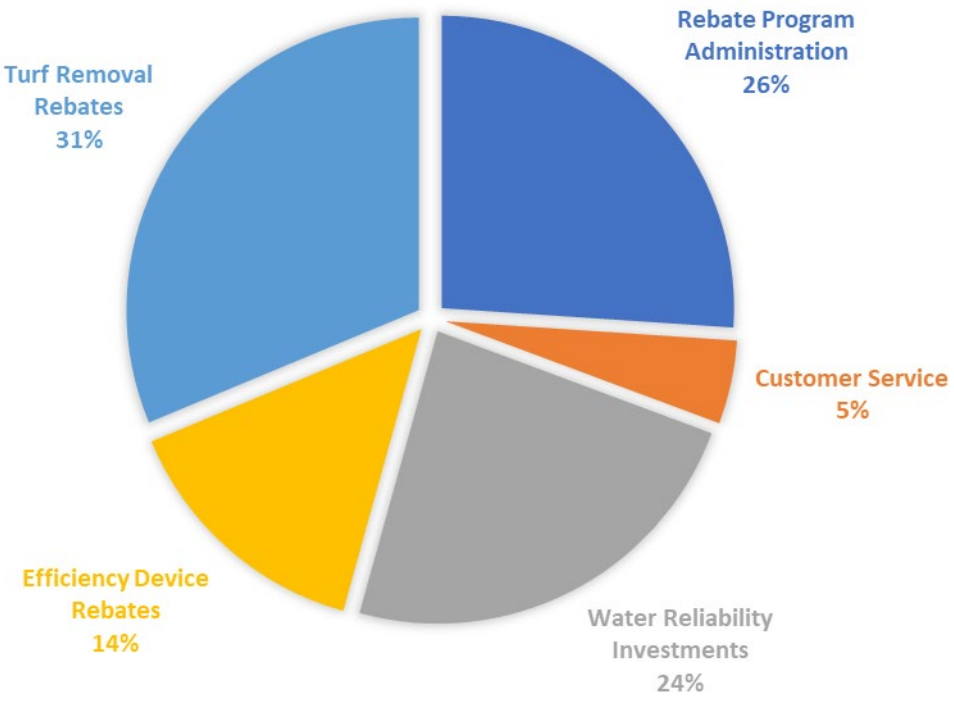
In addition to the costs associated with the ongoing management of the District's WE and conservation programs, capital costs associated with recycled water optimization projects have been allocated to the WE Fund to reflect the increased supply reliability that recycled water provides by offsetting outdoor water demands that would otherwise be met with potable water. This approach also captures the overall collective benefit provided by the efficient use of water from any source: efficient potable water use reduces demand on potable supplies while efficient recycled water use further extends existing recycled supplies. To support the rationale that all water supplies should be used efficiently, the efficiency and rebate program costs allocated to each tier are spread over the total volume of water associated with that tier.

As the District continues to increase engagement with customers and promote its various water efficiency and rebate programs, especially in light of the current drought, it is expected that customers' program participation will increase beyond the level seen in FY 2020-21 and has been reflected in the FY 2021-22 budget.

2.7.2. WE Total Program Cost

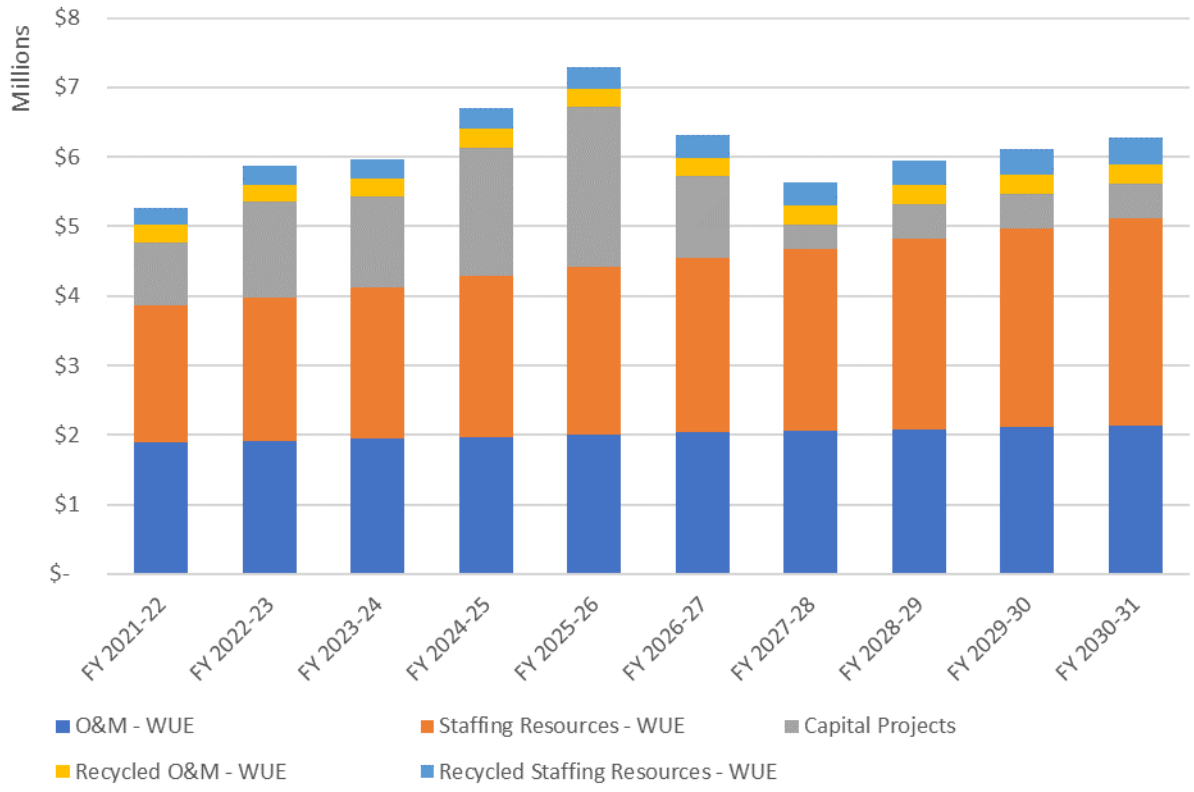
WE Fund costs are projected to be approximately $6.0 million for FY 2021-22 based on the District's adopted FY 2021-22 operating and capital budgets. Of this total, **Turf Removal Rebates** are forecasted to account for 31 percent ($1.9 million), and **Rebate Program Administration** for 26 percent ($1.6 million). **Water Reliability Investments** for the WE program total $1.4 million, representing 24 percent of the total program cost. Figure 2-27 presents a distribution of the total program cost by type.

Figure 2-27. WE Total Program Cost by Type, FY 2021-22



The WE Program O&M expense projections for FY 2021-22 through FY 2030-31 are summarized in Figure 2-28.

Figure 2-28. WE Program O&M Expense Summary, FY 2021-22 – FY 2030-31



In addition to the costs associated with the ongoing management of the District's water efficiency and conservation programs, a portion of the 10-Year Capital Financing Plan's costs associated with recycled water optimization projects have been allocated to the WE Fund to reflect the increased supply reliability that recycled water provides by offsetting outdoor water demands that would otherwise be met with potable water. This approach also captures the overall collective benefit provided by the efficient use of water from any source: efficient potable water use reduces demand on potable supplies while efficient recycled water use further extends existing recycled supplies. Efficiency and rebate program costs increase water supply and reliability for all customers, and as such, the efficiency and rebate program costs allocated to a particular tier are spread over the total volume of water (potable and recycled) associated with that tier such that the WE Fund unit rate for the respective tier is the same regardless of the type of water that is being used inefficiently. A detailed accounting of this allocation can be found in Section 3.4.1. The District has identified $10.8 million in expected capital project costs from the 10-Year Capital Financing Plan that are appropriate to allocate to the WE Fund.

2.7.4. WE Program Revenue

The District's continued investment in conservation efforts and rebate programs along with its future supply reliability investments will draw down current WE Fund balances within three years without an adjustment in rate revenues or other supplemental funding source. Based on the revenue requirements and increased spenddown of WE Fund balances, District staff is proposing a one-time adjustment to its WE rates as part of the recommended four-year rate adjustment, specifically, an average $0.83 per billing unit in rate revenues. This one-time adjustment in rates is sufficient to avoid a negative fund balance in any one year of the 10-year financial plan.

Including the proposed one-time rate revenue adjustment, projected WE revenues for FY 2021-22 total about $5.9 million. The majority of WE revenue is collected through rates charged to recover the cost of inefficient potable and recycled water use. In addition to rate revenue, the District also collects Demand Offset Fees[6] and retains any interest earned on WE Fund balances within the WE Fund in order to accurately account for the associated revenue of the program fund balance. Figure 2-29 presents the relative amount of revenue that the WE Fund is projected to receive in FY 2021-22 by revenue type. Revenues received from the Potable Water System and the Recycled Water System total approximately $5.8 million, representing 88.2 percent and 10.6 percent respectively. Other revenues include **Investment Income** ($65,841), representing 1.1 percent of total revenues, and approximately 0.1 percent ($5,378) of income generated from the **Demand Offset Fees** to customers upon establishment of new services which require potable water for dedicated irrigation.

Figure 2-29. Water Efficiency Fund Revenue by Type, FY 2021-22

[6] Pursuant to California Government Code Section 66013, the District has adopted "Water Demand Offset Fees" to fund future water reliability and water efficiency projects, programs, and capital improvement projects, in order to offset the additional potable outdoor demand from new or expanded development that would otherwise impact existing water supply reliability. Such a fee meets the definition of a "Capacity Charge" as outlined in California Government Code Section 66013.

Figure 2-30 presents WE Program revenue projections by Type for FY 2021-22 through FY 2030-31.

Figure 2-30. WE Program Projected Revenues, FY 2021-22 – FY 2030-31

2.8. Summary of System Rate Revenue Requirements by Fund

Tables 2-5 through Table 2-8 provide a detailed summary of the General Fund and WE Fund user-charge revenue requirements for each System for the FY 2021-22 test year as outlined in in Sections 2.4 - 2.7.

2.8.1. General Fund User-Charge Revenue Requirements

Table 2-5. Rate Revenue Requirements Potable Water System – General Fund, FY 2021-22

O&M Expenses	
Water – Import & Production	$28,143,825
O&M – General	$7,467,562
Staffing Resources	$11,690,558
Subtotal O&M Expenses	**$47,301,945**
Debt Service	
Existing	$6,532,589
Proposed[1]	$0
Subtotal Debt Service Expenses	**$6,532,589**
Capital Projects	**$22,619,687**
Annualization of Partial Year Rate Adjustment	**$630,767**
Total Costs for Potable Water System	**$76,979,877**
Change in Fund Balance	**($10,521,263)**
Non-Rate Revenue	
Other Operating Revenue	$272,110
Property Tax	$30,715,832
Investment Income	$1,484,367
Property Lease	$1,447,451
Misc. Non-Operating Revenue	$159,460
Subtotal Non-Rate Revenue	**$34,079,220**
Total Rate Revenue Requirement	**$32,484,506**

[1]Debt service payments for 2021 COPs begins in FY 2022-23.

Table 2-6. Rate Revenue Requirements Recycled Water System – General Fund, FY 2021-22

O&M Expenses	
Water – Storage & Facilities	$365,280
O&M – General	$2,103,389
Staffing Resources	$3,483,744
SOCWA	$1,055,500
Subtotal O&M Expenses	**$7,007,913**
Debt Service	
Existing	$257,879
Proposed	$0
Subtotal Debt Service Expenses	**$257,879**
Capital Projects	**$2,267,948**
Annualization of Partial Year Rate Adjustment	**$115,504**
Total Costs for Recycled Water System	**$9,649,245**
Change in Fund Balance	**($2,017,005)**
Non-Rate Revenue	
Other Operating Revenue	$35,069
Property Tax	$955,525
Investment Income	$101,351
Property Lease	$568,642
Misc. Non-Operating Revenue	$23,190
Subtotal Non-Rate Revenue	**$1,683,776**
Total Rate Revenue Requirement	**$5,948,464**

Table 2-7. Rate Revenue Requirements Wastewater System – General Fund, FY 2021-22

O&M Expenses	
O&M – General	$6,258,509
Staffing Resources	$7,727,652
SOCWA	$8,451,971
Subtotal O&M Expenses	**$22,438,132**
Debt Service	
Existing	$1,323,967
Proposed	$0
Subtotal Debt Service Expenses	**$1,323,967**
Capital Projects	**$21,243,876**
Annualization of Partial Year Rate Adjustment	**$964,201**
Total Costs for Recycled Water System	**$45,970,175**
Change in Fund Balance	**($17,153,572)**
Non-Rate Revenue	
Other Operating Revenue	$172,096
Investment Income	$731,910
Misc. Non-Operating Revenue	$169,908
Subtotal Non-Rate Revenue	**$1,073,913**
Total Rate Revenue Requirement	**$27,742,690**

2.8.2. Water Efficiency Fund User-Charge Revenue Requirements

Table 2-8. Rate Revenue Requirements WE Program, FY 2021-22

O&M Expenses	
O&M – WE	$2,142,553
Staffing Resources - WE	$2,220,426
Subtotal O&M Expenses	**$4,362,978**
Capital Projects	**$910,000**
Annualization of Partial Year Rate Adjustment	**$775,990**
Total Costs for Recycled Water System	**$6,048,968**
Change in Fund Balance	**($157,827)**
Non-Rate Revenue	
Investment Income	$65,841
Demand Offset Fees	$5,378
Subtotal Non-Rate Revenue	**$71,219**
Total Rate Revenue Requirement	**$5,819,922**

2.9. Recommended Rate Revenue Adjustments

The District's LRFP strategy includes leveraging available debt capacity to minimize rate revenue increases and smooth out the costs of capital projects. The District plans to issue certificates of participation worth approximately $60.0 million in FY 2021-22, $75.0 million in FY 2024-25 and $83.0 million in FY 2027-28 to fund capital projects without triggering large rate increases, deferring planned capital projects, or reducing current service levels. Figure 2-31 displays this pattern of capital outlays and financing.

Figure 2-31. Annual CIPs Funded by Cash Reserves and Market Debt Proceeds, FY 2021-22 – FY 2030-31

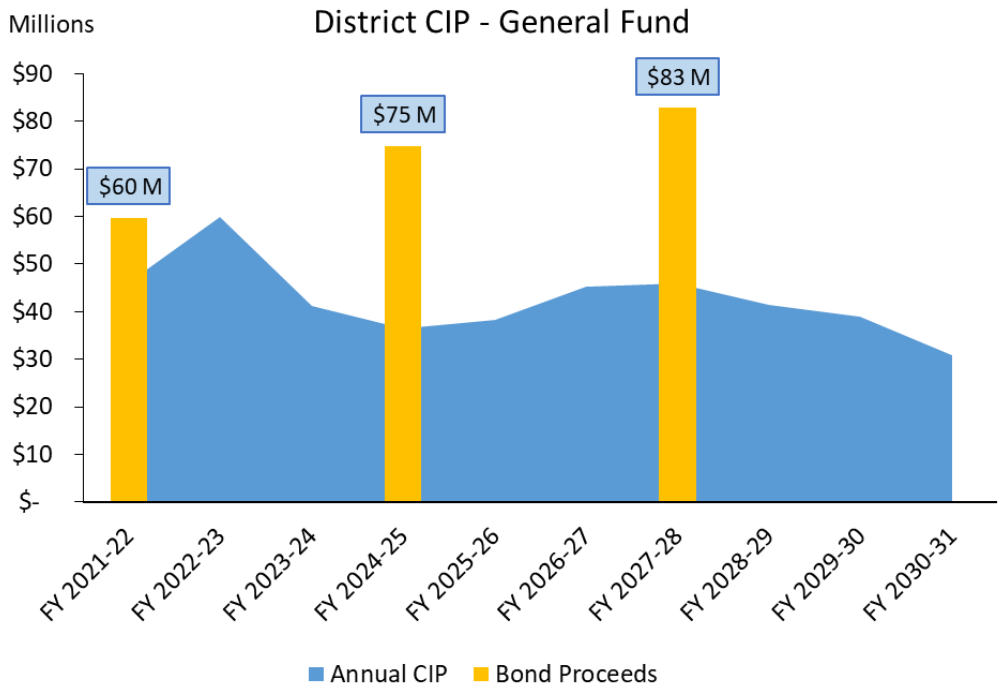


Figure 2-32 provides the planned adjustments to the General Fund rate revenue for all three Systems in order to maintain the District's debt coverage ratio at or above 1.75, and reserves at or above target levels over the course of the 10-year planning period.

Figure 2-32. Rate Revenue Adjustments for Water, Recycled Water, and Wastewater Systems

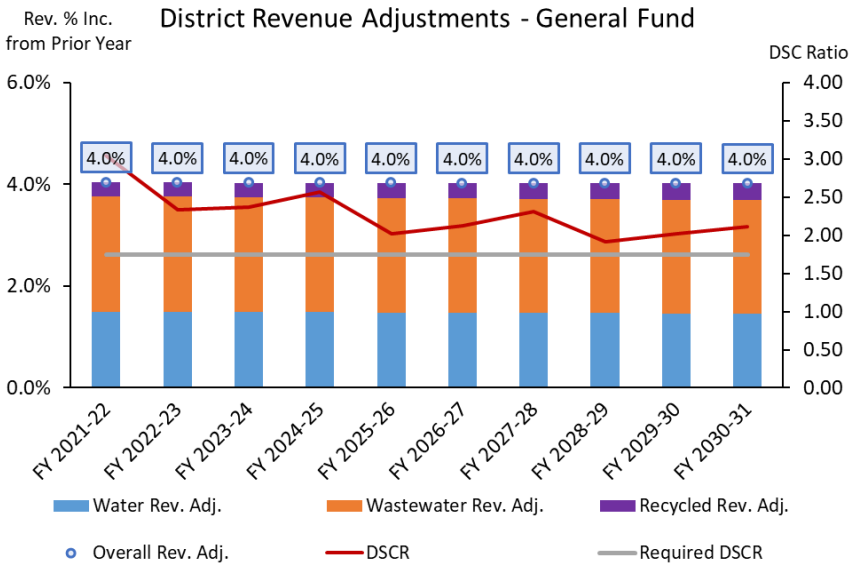
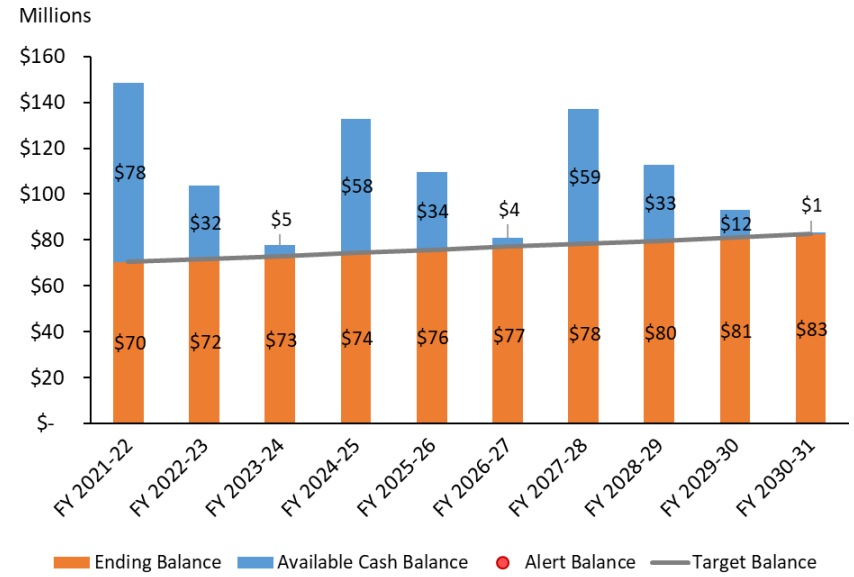


Figure 2-33 provides a 10-year forecast of the District's General Fund Ending Balances assuming the recommended financial plan is adopted. Aggregated across all three Systems, the proposed financial strategy will provide sufficient funding to invest in the District's capital infrastructure, operate and maintain the three Systems to meet the service needs of the District's customers, and maintain the District's coverage ratios and reserves at or above target levels in all years. Specifically, the Figure 2-33 shows that the ending balances will be maintained above the target levels during the projected years.

Figure 2-33. General Fund Ending Balances for FY 2021-22 – FY 2030-31



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3. COST-OF-SERVICE ANALYSIS

Having identified the District's FY 2021-22 test year revenue requirements, discussed in Chapter 2 and the LRFP report, the next step is to allocate the respective system costs across customer classes commensurate with their service requirements. The concept of proportionate allocation of costs to customer classes implies that allocations should take into consideration not only the relative quantity of water used by each class but also the peak rate at which it is consumed. For example, there are costs associated with constructing a pumping station capable of meeting peak demands. These costs need to be allocated appropriately such that the customer class with higher peak demands pays proportionately more towards the infrastructure costs that accommodate said peak demands. Through the process of cost functionalization and allocation, the cost-of-service analysis identifies what differing relative demands exist between customer classes. Annual revenue from rates must recover expenditures such as O&M, debt service payments, and capital costs, as discussed in Section 2.9.

3.1. Potable Water System Cost-of-Service

The Potable Water System customers place the following demands on the System:

- Customer service requirements such as bill processing, customer service support, meter reading, and other administrative services, determined by the number of customers connected to the Potable Water System,
- The water capacity demands measured by each class's average-day water use (base), maximum-day (max-day) use, and maximum-hour (max-hour) use (impacting the size of a customer's meter and other system capacity),
- Reservation for fire flow capacity to provide emergency water service to property served by the District during fire events that is applicable to the Potable Water System,
- Costs to offset the water supply and reliability impacts attributable to inefficient usage of Potable Water, which will be discussed in Section 3.4.

3.1.1. Customer Classes

The cost of providing water service can reasonably be determined for groups or classes of customers that have similar service characteristics and water use demand patterns. Assigning costs accurately to classes of customers based on their service requirements is critical in designing nondiscriminatory rates that proportionately allocate the cost of service among customer classes. The District's Potable Water System consists of the following customer classes:

- **Single-Family Residential:** Customers who reside in single-family detached homes, or individually metered condominiums and townhouses.
- **Multi-family Residential**: Customers who reside in a housing structure where multiple housing units share a single meter (master meter).
- **Commercial**: Nonresidential or nonindustrial business enterprise and institutional customers, from small retail shops to office buildings, car washes, schools, and restaurants.

- **Potable Irrigation:** Customers who use individually metered potable water service for the sole purpose of outdoor irrigation. This class includes private irrigation connections such as homeowners' associations and some municipal accounts with a separate meter dedicated to outdoor irrigation.
- **Private Fire Protection:** Customers with private fire protection within a structure, such as apartments and commercial buildings equipped with water systems that provide sufficient capacity for fire protection. While these accounts use very little water, the District's distribution infrastructure has to be sized in order to serve high volume water when needed in the event of an emergency.

Table 3-1 displays the number of the Potable Water customer accounts by customer class.

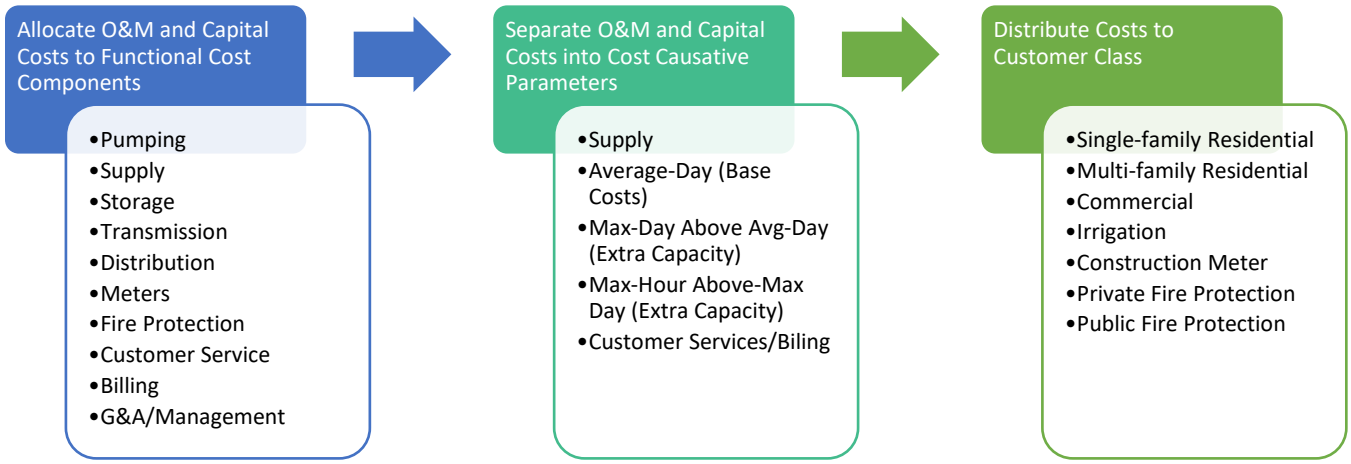
Table 3-1. Number of Potable Water Customer Accounts by Customer Class

Customer Class	Number of Accounts
Single-family Residential	47,331
Multi-family Residential	2,163
Commercial	1,928
Irrigation	1,281
Private Fire Protection	973
Public Fire Protection	-
Total	**53,676**

Construction Meters (temporary meters) are used as requested to install at fire hydrants for temporary activities such as providing water to construction sites or street cleaning. The costs incurred from the Public Fire Protection services are first allocated to its own class and ultimately reallocated to other Potable Water customer classes in proportion to the number of equivalent meters of each customer class.

Figure 3-1 illustrates the general process for allocating costs of service to customer classes. The cost-of-service methodology first allocates costs to major functional cost components, then to cost categories, and subsequently distributes the costs to customer classes.

Figure 3-1. MNWD Potable Water System Cost-of-Service Analysis Flow Chart



3.1.2. Cost Functionalization

The District is composed of multiple facilities that serve a particular function related to providing water service. These facilities are designed and operated to meet both the average-day and peak demands as well as customer-related requirements. The revenue requirements to operate, maintain, and expand the Potable Water System are allocated to the functions which provide specific services. For purposes of the cost-of-service analysis, the Potable Water System costs are allocated into the following major functional areas:

- Pumping: costs associated with pumping water from treatment takeout facilities to transmission and distribution systems
- Supply: costs associated with the (source of) supply of water, including supply development
- Storage: costs associated with storing water, such as reservoir maintenance
- Transmission: costs associated with transmitting of water from treatment takeout facilities to the distribution system. An Internal diameter of 12” or greater was used to distinguish pipes and delivery infrastructure associated with transmission
- Distribution: costs associated with distributing water to end users. An internal diameter of less than 12” was used to distinguish pipes and delivery infrastructure associated with transmission
- Meters: costs associated with customer water meters, including provision, replacement, servicing, and testing
- Fire Protection: costs associated with private fire suppression systems and public fire hydrants to provide water service to property served by the District during fire events

- Customer Service and Billing: costs associated with meter reading, billing, collections, and managing customer accounts (such as responding to customer requests and complaints)
- General and Administrative: costs associated with the overall management of the District's operations, as well as supplementary tasks such as accounting, legal services, and human resources

Costs are allocated for each District employee, based on job description, salary, and the percentage of the employee's time spent on tasks corresponding to each functional category. Each of these functional categories contains specific facilities associated with that function. Costs are further allocated to specific facilities in a particular function to assist the cost allocation.

3.1.3. Cost Allocation

The cost of providing water service to customers depends not only on the total volume of water used, but also on the rate of use or peak demand requirements. In using the base-extra capacity method described in the AWWA M1, costs are typically separated into three broad cost components: "Base," "Extra Capacity," and "Customer." Calculated peaking factors are used as a proxy for determining and allocating the cost of providing extra capacity in the system to meet peak demands. Based on the District's expenditures and the system characteristics, costs are also allocated to "Supply," which includes subcomponents for either Diemer or Baker water supply. Supply costs are further divided into their respective fixed and variable components to facilitate the development of marginal cost based volumetric rates, discussed in detail in Section 4.2.3. "Customer" is another cost component that the District further separates into two subcomponents, "Customer" and "Meter." A COS analysis considers both the average quantity of water consumed in a day (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands). Peaking costs are costs that are incurred during peak times of consumption. There are additional costs associated with designing, constructing, operating, and maintaining facilities to meet peak demands. The cost of these peak demands needs to be allocated to those imposing such costs on the utility. In other words, not all customers share the same responsibility for peaking related costs. Each cost component is described in detail below:

- **Supply (Diemer/Baker)**: Costs associated with water imports and production including water purchases, MWDOC annual connection charge, IRWD Baker fixed and variable costs, and pipeline maintenance, among others. As noted, these Supply costs will be further divided into their respective fixed and variable components to facilitate the development of marginal cost based volumetric rates, discussed in detail in Section 4.2.3.
- **Base Costs**: Costs that tend to vary with the total quantity of water used, plus the costs incurred to provide water under average daily demand conditions. Base demands for customer classes are measured as average daily demand of each customer class.
- **Extra-Capacity Costs (Max-Day and Max-Hour)**[7]: Costs incurred to meet peak demands for water in excess of basic demand (base). This cost category includes the infrastructure costs related to providing the required extra capacity of the System to meet maximum-day (max-day) and maximum-hour (max-hour) demands such as tanks and pump stations.

[7] Maximum day demand is the maximum amount of water used in a single day in a year. Maximum hour demand is the maximum usage of water in an hour on the maximum usage day.

- **Customer Services/Meter**: Customer service related costs such as the meter reading, maintenance and capital projects on meters and services, accounting, general and administrative costs, and other related expenses. The customer costs are allocated based on the number of customer accounts. These costs are incurred at the same level regardless of whether the District provides water to the customers.
- **Billing:** Costs related to the number of bills issued and distributed to customer classes on the basis of the number of bills rendered to customers within each class.

Functionalization provides a reasonable, appropriate, and industry-standard basis for proportionately distributing costs to customers based on their usage patterns. It is also grounded in cost-of-service principles and standards.

3.1.4. Average Daily Water Demands

In the base-extra capacity method, costs are carefully separated between base costs and extra capacity costs. The base costs are incurred as a result of providing water to meet demands at an average daily rate. Since customer meters are not read on a daily basis, the average daily demands were estimated by dividing average billed monthly demand by 30 days. Recognizing that customer demands have varied significantly among customer classes due to COVID-related business closures and work-from-home requirements, this COS analysis used average water usage data calculated from actual billed consumption from July 1, 2017 to June 30, 2021 (FY 2020-21). Using an average of usage data over the entire four-year period captures a range of hydrologic conditions and minimizes the impact of periods of non-conventional water use. Table 3-2 shows the average annual water demands and average daily water demands by the Potable customer classes. The cost implications of water demands are discussed in the next section.

Table 3-2. Potable Water System Annual Water Demand and Average Daily Demand by Customer Class

Customer Class	Annual Water Demand (hcf)	Average Daily Water Demand (hcf /day)
Single-family Residential	6,291,969	17,716
Multi-family Residential	1,001,925	2,798
Commercial	909,333	2,825
Irrigation	1,259,265	3,616
Construction Meter	6,383	18
Private Fire Protection	773	2
Total Potable Usage	**9,469,648**	**26,975**

Note: Annual Water Demand is based on an average of billed water usage for FY 2017-18 through FY 2020-21.

3.1.5. Maximum-Day and Maximum-Hour Demands

The peak demands have significant cost-of-service implications because infrastructure for water supply and the distribution system needs to be sized to provide not just the average water demand, but rather the peak demands of customers. Customers with high seasonal use, such as summertime irrigators, tend to have the highest max-day and max-hour demands. The maximum-day usage for the Potable Water System was estimated using the four-year average billed monthly usage data by customer class. The average of the maximum-day total water usage for the total system was 40,564 hcf (approximately 30.3 mgd) on average during FY 2017-18 – FY 2020-21, which represents approximately

1.5 times the average daily (i.e., base) demand of 26,975 hcf (20.2 mgd). The max-hour demand is estimated to be 1.5 times the max-day demand for all customer classes based on minimum design requirements per the California Code of Regulations (Titles 17 and 22 of the California Code of Regulations California Regulations Related to Drinking Water, 2016). Table 3-3 presents average-day, max-day, and max-hour demands by customer class for the Potable Water System and Table 3-4 presents their distribution as percentages.

Table 3-3. Potable Water System Average Day, Max-Day, and Max-Hour Demand by Customer Class

Customer Class	Total Annual Usage (hcf)	Avg-Day Usage (hcf)	Max-Day Usage (hcf)	Max-Day above Avg Day (hcf)	Max-Hr Usage (hcf)	Max-Hr above Max-Day (hcf)
Single-family Residential	6,291,969	17,716	27,023	9,307	40,535	13,512
Multi-family Residential	1,001,925	2,798	3,266	468	4,898	1,633
Commercial	909,333	2,825	3,388	563	5,082	1,694
Irrigation	1,259,265	3,616	6,209	2,593	9,314	3,105
Construction Meter	6,383	18	34	17	52	17
Private Fire Protection	773	2	2	0	3	1
Public Fire Protection	0	0	642	642	3,850	3,208
Total	**9,469,648**	**26,975**	**40,564**	**13,589**	**63,734**	**23,170**

Note: Annual Water Demand is based on an average of billed water usage for FY 2017-18 through FY 2020-21.

Table 3-4. Potable Water System Average Day (Base), Max-Day, and Max-Hour Demand Distribution among Cost Components

Customer Class	Avg-Day Base (%)	Max-Day above Avg-Day (%)	Max-Hr above Max-Day (%)	Total
Single-family Residential	43.7%	23.0%	33.3%	100.0%
Multi-family Residential	57.1%	9.6%	33.3%	100.0%
Commercial	55.6%	11.1%	33.3%	100.0%
Irrigation	38.8%	27.8%	33.3%	100.0%
Private Fire Protection	63.8%	2.9%	33.3%	100.0%
Public Fire Protection	0.0%	16.7%	83.3%	100.0%

Note: The computed percentages are rounded to the nearest decimal point, and the sums of these may therefore not add up to totals.

Public fire protection capacity was added to reflect a fire-flow requirement of 2,000 gallons per minute (GPM) for a 4 - hour duration, yielding approximately 0.5 mgd for max-day and 2.9 mgd for max-hour demand. The methodology used to calculate water service for public fire protection demands and associated costs are based on development requirements outlined in the District's Standards and Specifications and District engineering staff estimates of fire flow capacity requirements. These requirements are consistent with industry standards, as described in the AWWA M1. These requirements reflect the costs for delivering water to property served by the District through public fire hydrants at sufficient quantities and pressures to fight fires.

3.1.6. Customer-Related Costs (Customer Services/Billing)

Customer-related costs such as customer services and billing must be distributed among customer classes proportionally based on certain demands associated with these costs. Customer costs are related to the number of customer accounts served in the District's service area. Meter costs are related to the number and size of the meters. The number of equivalent meters is used to compute the Customer-related demands, which vary depending on the size of service pipe, materials used, locations of meters and other local characteristics. This assumes that larger meters have the potential to demand more capacity, or said differently, exert more peaking characteristics compared to smaller meters. The potential capacity demanded (peaking) is proportional to the potential flow through each meter size. The ratios shown in Table 3-6 are the ratio of potential flow through each meter size compared to the flow through a 5/8-inch meter as the standard meter size. As a result of District's service area's rapid development, a variety of water meter sizes are used to deliver water to parcels with otherwise similar water demands. As these parcels place similar demands on the Systems, 3/4-inch and 1-inch meters are assigned the same ratio as the smaller 5/8-inch meter. For example, the second column of Table 3-6 shows that the flow through a 2-inch meter is 5.3 times that of a 5/8-inch meter. The number of customer accounts and the equivalent meter counts are summarized in Table 3-5. The AWWA-recommended equivalent meter and service ratios used to compute the equivalent meter counts are presented in Table 3-6.

Table 3-5. Potable Water System Number of Customer Accounts and Equivalent Meters by Customer Class

Customer Class	# of Customer Accounts	# of Equivalent Meters
Single-family Residential	47,331	47,645
Multi-family Residential	2,163	11,135
Commercial	1,928	8,184
Potable Irrigation	1,281	6,039
Private Fire Protection	973	31,312
Total	**53,676**	**104,315**

Table 3-6. AWWA Equivalent Meter and Service Ratios

Meter Size	AWWA Ratio
5/8"	1.0
3/4"	1.0
1"	1.0
1.5"	3.3
2"	5.3
3"	11.7
4"	20.0
6"	41.7
8"	60.0
10"	96.7

Billing Costs are related to the number of bills issued and distributed to customer classes on the basis of the number of bills rendered to customers within each class. MNWD bills customers monthly, thus the District's customer class responsibility for billing is determined by multiplying the billing unit cost by 12 in each customer class rendered for the test year.

3.1.7. Cost-of-Service Analysis Procedure

Procedure 1: Functionalize Potable Water System Costs

The first step of the cost-of-service analysis is to analyze and segregate the O&M costs of the Potable Water System by the system functions. The functional categories discussed in Section 3.1.2 and their associated values were used to determine the proper allocation of O&M costs to the customer classes based on their demand characteristics.

Table 3-7 provides a summary of the test year O&M expenses by function and a distribution of the costs. The values were assigned based on reviewing each line item of the District's O&M budget.

Table 3-7. General Fund Potable Water System O&M Cost Allocation and Distribution by Function

System Function	Cost Allocation	% Allocated
Pumping	$2,044,495	4.3%
Supply Diemer	$19,708,616	41.7%
Supply Baker	$8,957,020	19.0%
Storage	$1,176,501	2.5%
Transmission	$1,908,122	4.0%
Distribution	$2,306,131	4.9%
Meters	$2,516,431	5.3%
Fire	$7,478	0.0%
Customer Service	$806,309	1.7%
Billing	$759,148	1.6%
G&A - O&M	$7,058,994	14.9%
Total	**$47,249,245**	**100.0%**

Note: The total amount of $47.2 million does not include O&M expense for WE program

The capital costs of the Potable Water System were also analyzed and segregated by the system functions. A summary of the net capital assets by function and the resultant capital budget allocation by function are presented in Table 3-8. Total Potable Water System capital costs for the test year are approximately $19.3 million.

Table 3-8. General Fund Potable Water System Assets and Capital Expenses by Functions

System Function	Cost Allocation	% Allocated
Pumping	$1,155,314	6.0%
Supply	$4,423,123	23.0%
Storage	$3,387,741	17.6%
Transmission	$4,888,580	25.4%
Distribution	$2,292,642	11.9%
Meters	$489,312	2.5%
Fire	$45,974	0.2%
Customer Service	$46,185	0.2%
Billing	$500	0.0%
G&A - CIP	$2,525,983	13.1%
Total	**$19,255,354**	**100.0%**

Note: The total amount of $19.3 million does not include CIPs for WE program

Procedure 2: Allocate Costs Based on Customer Service Characteristics

The functionalized O&M and capital costs are then assigned to the cost components described in Section 3.1.3. Table 3-9 and Table 3-10 summarize the cost allocations of the functionalized O&M and the capital costs to each Potable Water System customer class.

Table 3-9. General Fund Allocation of Potable Water System Functionalized O&M Cost to Customer Class

Customer Class	Supply - Diemer	Supply - Baker	Base	Max-Day	Max-Hour	Customer	Meter	Total
Single-family Residential	$13,041,356	$5,970,354	$6,092,682	$1,464,564	$1,381,828	$1,622,537	$1,349,625	$30,922,946
Multi-family Residential	$1,991,641	$1,006,870	$962,170	$73,626	$166,989	$74,149	$315,407	$4,590,851
Commercial	$1,860,984	$915,365	$971,461	$88,603	$173,238	$66,093	$231,832	$4,307,576
Irrigation	$2,811,968	$1,063,586	$1,243,593	$408,059	$317,508	$43,913	$171,072	$6,059,699
Construction Meter	$2,380	$754	$6,098	$2,637	$1,764	$366	$3,525	$17,523
Private Fire Protection	$288	$91	$738	$15	$115	$33,355	$886,955	$921,558
Public Fire Protection	$0	$0	$0	$100,975	$328,117	$0	$0	$429,092
Total	**$19,708,616**	**$8,957,020**	**$9,276,742**	**$2,138,480**	**$2,369,558**	**$1,840,413**	**$2,958,415**	**$47,249,245**

Table 3-10. General Fund Allocation of Potable Water System Functionalized CIP Cost to Customer Class

Customer Class	Supply	Base	Max-Day	Max-Hour	Customer	Meter	Total
Single-family Residential	$2,904,973	$5,083,092	$2,445,929	$1,693,696	$47,372	$256,928	$12,431,990
Multi-family Residential	$458,760	$802,733	$122,960	$204,677	$2,165	$60,044	$1,651,339
Commercial	$463,190	$810,484	$147,974	$212,336	$1,930	$44,134	$1,680,048
Irrigation	$592,941	$1,037,523	$681,489	$389,167	$1,282	$32,567	$2,734,969
Construction Meter	$2,907	$5,087	$4,405	$2,162	$11	$671	$15,243
Private Fire Protection	$352	$616	$26	$141	$974	$168,850	$170,958
Public Fire Protection	$0	$0	$168,635	$402,171	$0	$0	$570,806
Total	**$4,423,123**	**$7,739,536**	**$3,571,418**	**$2,904,349**	**$53,734**	**$563,194**	**$19,255,354**

Table 3-11 and Table 3-12 display the distribution of Potable Water System O&M costs and capital costs among customer classes.

Table 3-11. General Fund Potable Water System O&M Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Single-family Residential	$30,922,946	65.4%
Multi-family Residential	$4,590,851	9.7%
Commercial	$4,307,576	9.1%
Irrigation	$6,059,699	12.8%
Construction Meter	$17,523	0.0%
Private Fire Protection	$921,558	2.0%
Public Fire Protection	$429,092	0.9%
Total	**$47,249,245**	**100.0%**

Table 3-12. General Fund Potable Water System Capital Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Single-family Residential	$12,431,990	64.6%
Multi-family Residential	$1,651,339	8.6%
Commercial	$1,680,048	8.7%
Irrigation	$2,734,969	14.2%
Construction Meter	$15,243	0.1%
Private Fire Protection	$170,958	0.9%
Public Fire Protection	$570,806	3.0%
Total	**$19,255,354**	**100.0%**

Procedure 3: Allocate Non-Rate Revenues to Customer Classes

Non-rate revenues are allocated back to customer classes based on the number of equivalent meters in each customer class as shown in Table 3-6, reflecting the relative demands of each customer class. The non-rate revenues allocated to the Potable Water System customers are used to minimize the bill impact to individual customer classes and includes the District's share of property tax, investment income, property lease, miscellaneous non-operating revenue, and capacity fees. The revenue from property tax amounts to approximately $29.3 million, representing 89.7 percent of the Potable Water System's total non-rate revenues. The property tax revenues are unrestricted and may be used by the District for any purpose. Table 3-13 summarizes the non-rate revenue credited to each customer class.

Table 3-13. General Fund Potable Water System Non-Rate Revenue Allocation by Customer Class

Customer Class	Property Tax	Other Non-Rate Revenues	Total Non-Rate Revenues
Single-family Residential	$20,861,115	$2,198,647	$23,059,762
Multi-family Residential	$2,893,683	$319,522	$3,213,205
Commercial	$2,975,632	$376,027	$3,351,659
Irrigation	$3,955,875	$469,193	$4,425,068
Construction Meter	$19,646	$0	$19,646
Total	**$30,705,951**	**$3,363,389**	**$34,069,340**

Procedure 4: Distribute Total Costs to Specific Customer Classes

The total rate revenue requirement is determined by combining the O&M and capital costs and subtracting the credits from non-rate revenues for each respective class. From the total rate revenue requirements, the Public Fire Protection revenue requirements are allocated among the remaining customer classes (except Construction Meters) based on their respective capacity demands on the distribution system measured by the number of equivalent meters. The values in Column g of Table 3-14 are the revenue requirements used when calculating the water rates and charges for each customer class of the Potable Water System.

Table 3-14. General Fund Potable Water System Summary of Rate Revenue Requirements

	a	b	c	d	e=a+b+c+d	f	g=e+f	
Customer Class	Total O&M Revenue Requirements	Total Capital Revenue Requirements	Non-rate Revenue Credit	Property Tax	Total Rate Revenue Requirements	Reallocation of Public Fire Protection	Rate Revenue Requirements	Cost Allocation (%)
Single-family Residential	$30,922,946	$12,431,990	($2,198,647)	($20,861,115)	$20,295,173	$31,369	$20,326,542	62.6%
Multi-family Residential	$4,590,851	$1,651,339	($319,522)	($2,893,683)	$3,028,986	$7,331	$3,036,317	9.3%
Commercial	$4,307,576	$1,680,048	($376,027)	($2,975,632)	$2,635,965	$5,388	$2,641,353	8.1%
Irrigation	$6,059,699	$2,734,969	($469,193)	($3,955,875)	$4,369,600	$3,976	$4,373,576	13.5%
Construction Meter	$17,523	$15,243	$0	($19,646)	$52,413	$82	$52,495	0.2%
Private Fire Protection	$921,558	$170,958	$0	$0	$1,092,516	$951,752	$2,044,268	6.3%
Public Fire Protection	$429,092	$570,806	$0	$0	$999,898	($999,898)	$0	0.0%
Total	**$47,249,245**	**$19,255,354**	**($3,363,389)**	**($30,705,951)**	**$32,474,551**	**($0)**	**$32,474,550**	**100.0%**

Note: The costs shown above reflect General Fund activities only and do not include the costs associated with WE program

3.1.8. Cost Allocation Comparison (Current vs. Proposed)

Table 3-15 summarizes the required rate revenues derived from each customer class based on the proposed cost allocation identified in Section 3.1.7 and compares them to the current cost allocation. Under the proposed cost allocation, 97.0 percent of the total property tax revenue is allocated to the Potable Water System customers while 3.0 percent is allocated to the Recycled Water System customers. The District recognizes the importance of incentivizing the Recycled Water System's expansion and increased utilization, and incentivizing customers' transition to recycled water use. The incentive ultimately reduces the strain on the Potable Water System as more customers use recycled water instead of potable water supplies for outdoor irrigation. It is important to note that the Recycled Water System revenue requirements are determined independent of the Potable System revenue requirements. The Recycled Water System cost of service is provided in detail in Section 3.2 but is included in summary to highlight the overall allocation of property tax to each system and customer class. Recycled Irrigation and Private Fire Protection customers' cost share will increase while most customers cost share will slightly decrease.

Table 3-15. Potable Water System Current vs. Proposed Cost Allocation by Customer Class

	a	b	c	d	e = c - a	f = d - b
Customer Class	**Revenues under Current Rate Structure**	**Cost Distribution (%)**	**Revenues under Proposed Rate Structure**	**Cost Distribution (%)**	**Cost Difference**	**% Difference**
Single-family Residential	$19,897,384	53.3%	$20,303,849	52.9%	$406,465	-0.4%
Multi-family Residential	$2,978,279	8.0%	$3,032,485	7.9%	$54,206	-0.1%
Commercial	$2,600,364	7.0%	$2,637,388	6.9%	$37,024	-0.1%
Potable Irrigation	$4,326,665	11.6%	$4,369,579	11.4%	$42,914	-0.2%
Recycled Irrigation	$5,775,208	15.5%	$5,966,135	16.0%	$190,927	0.5%
Private Fire Protection	$1,735,663	4.6%	$2,044,268	4.9%	$308,605	0.3%
Total	**$37,313,563**	**100.0%**	**$38,353,704**	**100.0%**	**$1,040,141**	

3.2. Recycled Water System Cost-of-Service

The Recycled Water System customers place the following demands on the System:

- Customer service requirements such as bill processing, customer service support, meter reading, and other administrative services, determined by the number of customers connected to the Recycled Water System
- The water capacity demands measured by average day water use, max-day use, and max-hour use (impacting the size of a customer's meter)
- Costs for the inefficient usage of Recycled Water, which will be discussed in Section 3.4.

3.2.1. Customer Classes

The District currently provides recycled water service to a customer class identified as Recycled Irrigation. The District also rents meters (temporary meters) described in section 3.1.1 to provide recycled water for construction; however, this class accounts for only 0.07 percent of the total System demand.

Table 3-16. Number of Recycled Water Customer Accounts

Customer Class	Number of Accounts
Recycled Irrigation	1,394

he cost-of-service methodology is the same in all three Systems, however, the functions, cost components, and customer classes vary depending on the System, as some facilities related to the functions, cost components, and customer classes may be specific to that System.

3.2.2. Cost Functionalization

The Recycled Water System's functions are similar to those of the Potable Water System as both systems operate in a similar manner. These facilities are designed and operated to meet both average-day and peak demands, as well as customer-related requirements. The only function that is part of the Potable Water System but not of the Recycled Water System is Fire Protection. The Recycled Water System costs are allocated into the following major functional categories (see the detailed description for each function in Section 3.1.2):

- Pumping
- Supply
- Storage
- Transmission
- Distribution
- Meters
- Customer Service/Billing
- General and Administrative

Each of these functional categories contains specific facilities associated with that function. Costs are further allocated to specific facilities associated with a particular function.

3.2.3. Cost Allocation

The same principle of allocating costs to functional categories for potable water largely applies to the Recycled Water System. The cost of service depends not only on the total volume of water used, but also on the rate of use or peak demand requirements. The five cost components of the Potable Water System also exist for the Recycled Water System: Supply, Base, Extra Capacity (Max-Day and Max-Hour), Customer, and Meter. See the description of the cost categories in Section 3.1.3.

This functional allocation process provides a reasonable, appropriate, and industry-standard basis for proportionately distributing costs to customers classes based on their usage patterns and is grounded in cost-of-service principles and standards.

3.2.4. Average Daily Water Demands

The base costs are incurred as a result of providing water to meet demands at an average daily rate. Since customer meters are not read on a daily basis, the average daily demands were estimated by dividing average monthly demand by 30 days. Based on the best available data, this cost-of-service analysis used the average water usage data from July 2017 through June 2021 (FY 2020-2021). Table 3-17 shows the annual water demands and average daily water demands by the Recycled Water customer classes. The cost implications of water demands are discussed in the next section.

Table 3-17. Recycled Water System Annual Water Demand and Average Daily Demand by Customer Class

Customer Class	Annual Water Demand (hcf)	Average Daily Water Demand (hcf /day)
Recycled Irrigation	3,033,399	7,876
Construction Meter	5,141	14
Total Potable Usage	**3,038,540**	**8,325**

Note: Annual Water Demand is based on an average of billed water usage for FY 2017-18 through FY 2020-21.

3.2.5. Maximum-Day and Maximum-Hour Demands

A peaking analysis was performed to compute the rate of peak demand (max-day demand over average-day demand and max-hour demand above max-day demand) for Recycled Irrigation customers. In aggregate, Recycled Irrigation customer demand has a peaking factor of 2.3 times average-day demand for max-day usage and 3.4 times average-day demand for max-hour usage, which equates to 18,008 hcf (approximately 13.5 mgd) and 27,011 hcf (20.2 mgd) of recycled water consumption, respectively. Recycled Water demand spikes during the summer months such as August and September, to approximately 1.7 times its average month.

Table 3-18 presents average-day, max-day, and max-hour demand by customer class for the Recycled Water System and Table 3-19 presents their distribution as percentages.

Table 3-18. Recycled Water System Average Day, Max-Day, and Max-Hour Demand by Customer Class

Customer Class	Total Annual Usage (hcf)	Avg-Day Usage (hcf)	Max-Day Usage (hcf)	Max-Day above Avg Day (hcf)	Max-Hr Usage (hcf)	Max-Hr above Max-Day (hcf)
Recycled Irrigation	3,033,399	7,876	18,008	10,131	27,011	9,004
Construction Meter	5,141	14	23	9	34	11
Total	**3,038,540**	**7,890**	**18,031**	**10,140**	**27,045**	**9,015**

Table 3-19. Recycled Water System Average Day (Base), Max-Day, and Max-Hour Demand Distribution among Cost Components

Customer Class	Avg-Day Base (%)	Max-Day above Avg-Day (%)	Max-Hr above Max-Day (%)	Total
Recycled Irrigation	29.0%	38.0%	33.0%	100.0%
Construction Meter	41.0%	26.0%	33.0%	100.0%

3.2.6. Customer-Related Costs (Customer/Meter)

Customer-related costs such as Customer and Meter are distributed to the Recycled Water System customers proportionally based on certain demands associated with these costs. The number of customer accounts and the equivalent meter counts are summarized in Table 3-20.

Table 3-20. Recycled Water System Number of Customer Accounts and Equivalent Meters by Customer Class

Customer Class	# of Customer Accounts	# of Equivalent Meters
Recycled Irrigation	1,394	7,891
Construction Meter	15	170
Total	**1,409**	**8,061**

3.2.7. Cost-of-Service Analysis Procedure

Procedure 1: Functionalize Recycled Water System Costs

O&M costs of the Recycled Water System were analyzed and segregated by the system functions. The functional categories discussed in Section 3.2.2 and their associated values were used to determine the proper allocation of the O&M costs. Table 3-21 provides a summary of the test year O&M costs by function and a distribution of the costs.

Table 3-21. General Fund Recycled Water System O&M Cost Allocation and Distribution by Function

System Function	Cost Allocation	% Allocated
Pumping	$1,076,068	15.4%
Supply	$1,561,646	22.3%
Storage	$594,332	8.5%
Transmission	$1,117,675	16.0%
Distribution	$292,348	4.2%
Meters	$216,719	3.1%
Customer Service	$43,437	0.6%
Billing	$21,234	0.3%
G&A - O&M	$2,077,902	29.7%
Total	**$7,001,363**	**100.0%**

Note: The total amount of $7.0 million does not include O&M expense for WE program

The capital costs of the Recycled Water System were also analyzed and segregated by the system functions. Total Recycled Water System capital costs for the test year are $0.62 million.

Table 3-22. General Fund Recycled Water System Assets and Capital Expenses by Functions

System Function	Cost Allocation	% Allocated
Pumping	$39,623	6.3%
Supply	$107,851	17.3%
Storage	$54,814	8.8%
Transmission	$268,205	43.0%
Distribution	$57,610	9.2%
Meters	$10,688	1.7%
Customer Service	$255	0.0%
Billing	$573	0.1%
G&A – CIP	$84,690	13.6%
Total	**$624,309**	**100.0%**

Note: The total amount of $624K does not include CIP expense for WE program

Procedure 2: Allocate Costs Based on Customer Service Characteristics

The functionalized O&M and capital costs are then assigned to the cost components described in Section 3.2.3. Table 3-23 and Table 3-24 summarize the cost allocations of the functionalized O&M and the capital costs to Recycled Water System customer classes.

Table 3-23. General Fund Recycled Water System Functionalized O&M Cost Allocation by Customer Class

Customer Class	Supply	Base	Max-Day	Max-Hour	Customer	Meter	Total
Recycled Irrigation	$1,558,858	$2,165,049	$1,938,585	$929,187	$91,012	$301,679	$6,984,370
Construction Meter	$2,788	$3,872	$1,693	$1,183	$952	$6,505	$16,993
Total	**$1,561,646**	**$2,168,921**	**$1,940,278**	**$930,370**	**$91,964**	**$308,184**	**$7,001,363**

Table 3-24. General Fund Recycled Water System Functionalized Capital Cost Allocation by Customer Class

Customer Class	Supply	Base	Max-Day	Max-Hour	Customer	Meter	Total
Recycled Irrigation	$107,659	$203,676	$240,248	$58,562	$948	$12,104	$623,197
Construction Meter	$193	$364	$210	$75	$10	$261	$1,113
Total	**$107,852**	**$204,040**	**$240,458**	**$58,637**	**$958**	**$12,365**	**$624,310**

Table 3-25 and Table 3-26 display the allocation of Recycled Water System O&M costs and capital costs to its customer classes.

Table 3-25. General Fund Recycled Water System O&M Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Recycled Irrigation	$6,984,369	99.8%
Construction Meter	$16,993	0.2%
Total	**$7,001,363**	**100.0%**

Table 3-26. General Fund Recycled Water System Capital Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Recycled Irrigation	$623,197	99.8%
Construction Meter	$1,112	0.2%
Total	**$624,309**	**100.0%**

Procedure 3: Allocate Non-Rate Revenues to Customer Classes

Non-rate revenues are allocated to the Recycled Water System customers as shown in Table 3-27. The System's non-rate revenues include property tax, investment income, property lease, and miscellaneous non-operating revenues. The property tax revenue amounts to approximately $935K, representing 3.0 percent of the total property tax revenues ($31.7 million) of the District. The expansion of the Recycled Water System and increased utilization to meet the needs of outdoor irrigation improves the availability of potable water supplies for all customers. The District recognizes the continued District-wide benefit that an affordable recycled water supply provides and elects to utilize its unrestricted property tax revenue to incentivize the adoption of recycled water use. The non-rate revenues are unrestricted revenues that may be used for any purpose of the District. When combined with other non-rate revenues, the allocated property tax revenues offset more than 20 percent of the recycled water system's rate revenue requirements.

Table 3-27. General Fund Recycled Water System Non-Rate Revenue Allocation by Customer Class

Customer Class	Property Tax	Other Non-Rate Revenues	Total Non-Rate Revenues
Recycled Irrigation	$935,939	$728,252	$1,664,190

Procedure 4: Distribute Total Costs to Specific Customer Classes

The total rate revenue requirement is determined by combining the O&M and capital costs and subtracting the credits for non-rate revenues for the Recycled Water System customers. The values in the last column of Table 3-28 are the revenue requirements used when calculating the water rates for the Recycled Water System customers.

Table 3-28. General Fund Recycled Water System Summary of Rate Revenue Requirements

	a	b	c	d	e=a+b+c+d
Customer Class	**Total O&M Revenue Requirements**	**Total Capital Revenue Requirements**	**Non-rate Revenue Credit**	**Property Tax**	**Total Rate Revenue Requirements**
Recycled Irrigation	$6,984,369	$623,197	($728,252)	($935,939)	$5,943,376
Construction Meter	$16,993	$1,112	$0	$0	$18,105
Total	**$7,001,363**	**$624,309**	**($728,252)**	**($935,939)**	**$5,961,481**

3.3. Wastewater System Cost-of-Service

Much like the Potable and Recycled Water Systems, the Wastewater System incurs costs as a result of specific customer demands. The Wastewater System customer demands were determined, and costs were allocated to the following cost components:

- **Flow**: Costs that vary with the hydraulic flow of sewage. The Flow costs typically include the operating, maintenance, and capital costs associated with treatment or collection lines or lift stations, and outfall infrastructure, which are typically designed to accommodate maximum hydraulic flow rates. These costs were assigned to the customer classes based on demand characteristics of each customer class.

- **Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) Loadings:** Costs associated with sewage loadings. Loadings are measures of the concentration and mass of wastes contributed to the Wastewater System. Most wastewater utilities, measure waste composition for two primary categories, BOD and TSS Loadings. The removal of BOD is primarily associated with the degradation of organic compounds. The cost of BOD removal is measured by total BOD loadings by customer class, as described in Section 3.3.2. The cost of TSS removal is primarily associated with the separation and disposal of solids. The cost of TSS removal is measured by total TSS loadings by customer class, as described in Section 3.3.2.

- **Customer Costs:** Costs incurred as a result of serving customers are incurred regardless of the amount of wastewater produced, because the District's Wastewater System costs are not impacted by the amount of produced wastewater. This policy was driven by the District's service agreement with SOCWA whereby the District pays for most of SOCWA's O&M and capital costs based on the District's ownership of SOCWA facilities, not based on the actual wastewater flows or composition. Customer costs include the costs of billing, customer accounting, general and administrative costs, and other customer-related costs. The Customer costs are measured by the number of accounts in each customer class.

3.3.1. Customer Classes

The District's Wastewater System is composed of the following customer classes:

- Single-family Residential
- Multi-Family
- Commercial, which is subdivided into four categories based on sewage strength

Costs were allocated to customer classes using the standard user strength data published by the California State Water Quality Control Board in the Revenue Program Guidelines, March 1998, in which customers are charged based on the approximate volume and strength of their wastewater.

Table 3-29 lists the six customer classes, along with industry standard values for wastewater concentrations by customer class, including examples of the type of customers that fall into each respective class.

Table 3-29. Wastewater Strength by Customer Class

Customer Class	BOD (mg/L)	TSS (mg/L)	Description
Residential	212.50	212.50	Single-family Residential
Multi-family	212.50	212.50	Master Metered Residential
Commercial 1	132.08	133.75	Banks, car washes, churches, department stores, laundromats, offices, schools, and colleges
Commercial 2	278.00	188.00	Beauty and barber shops, hospitals and convalescence, commercial laundry, repair shops, service stations, and veterinarian hospitals
Commercial 3	700.00	733.33	Hotels with dining facilities, markets with garbage disposals, mortuaries, and fast food restaurants
Commercial 4	955.00	782.50	Restaurants, auto steam cleaning and bakeries

Wastewater flow demands are difficult to measure accurately as individual customer discharges to the Wastewater System are not metered. Currently wastewater demands are estimated based on metered potable water usage. However, using metered potable water usage as a proxy for the volume of wastewater discharge does not fully account for the "return-to-sewer" factor. "Return-to-sewer" factor describes how much discharged potable water goes back to the sewer drain. To compute this factor, the average wintertime (December through March) water usage was compared to year-round average water usage, assuming that the wintertime water demand is primarily for indoor use (returned to the Wastewater System) while during the rest of the year customers were assumed to use both indoor and outdoor water. Although some irrigation does occur during the wintertime, this approach uses the best available data and is applied equally (therefore equitably) to all customer classes. For purposes of this analysis, water usage data was used from FY 2020-21. The results are provided in Table 3-30.

Table 3-30. Wastewater System Return-to-Sewer Factors by Customer Class

Customer Class	Return to Sewer Factor
Residential	0.82
Multi-family	1.00
Commercial 1	0.88
Commercial 2	0.94
Commercial 3	0.96
Commercial 4	0.98

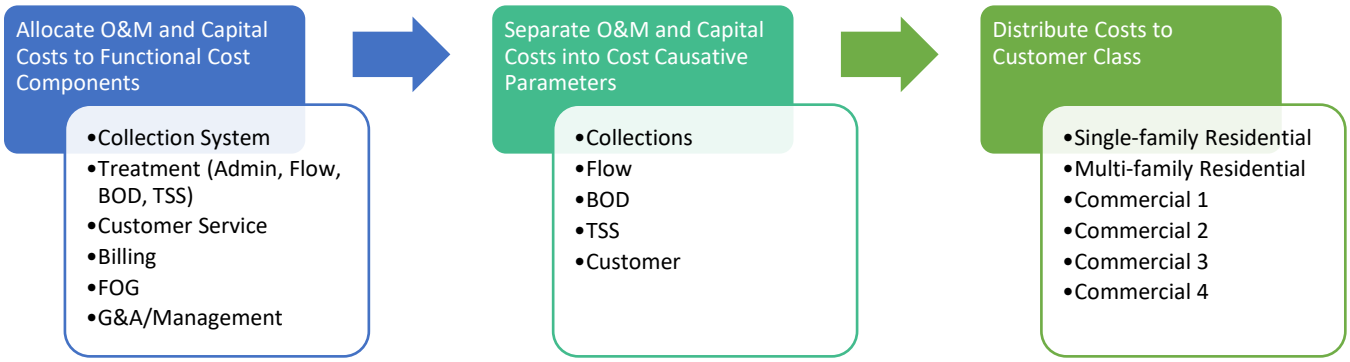
Based on the assumptions listed above and using projected water usage data, the total flow and loading values by customer class were projected for the test year and are provided in Table 3-31.

Table 3-31. Number of Customer Accounts and Equivalent Meters, and Wastewater Flows and Loading, FY 2021-22

Customer Class	# of Customer Accounts	# of Equivalent Meters	Wastewater Flow	BOD Loading	TSS Loadings
Residential	46,909	47,210	3,814,104	9,042,349	9,042,349
Multi-family	2,157	11,103	941,185	2,231,330	2,231,330
Commercial 1	1,217	5,144	328,279	483,749	489,853
Commercial 2	376	1,809	259,304	804,237	543,873
Commercial 3	178	663	118,444	924,995	969,042
Commercial 4	82	293	51,200	545,511	446,976

Figure 3-2 illustrates the general process of allocating costs-of-service to the Wastewater System customers.

Figure 3-2. Wastewater System Cost-of-Service Analysis Flow Chart



The District has a fats, oils, and grease (FOG) program, which is administered by a third party to permit fats, oil, and grease interceptors for food waste facilities. In developing the Wastewater System revenue requirements, the costs of administering this permit program are offset by approximately $137,426 in projected FOG fees.

3.3.2. Cost-of-Service Analysis Procedure

Procedure 1: Functionalize Costs

O&M costs for the Wastewater System were analyzed and segregated by the distinct System functions. The functions were as follows:

- **Collection System:** Costs associated with conveying sewage from the customer site to treatment facilities.
- **Treatment Administrative:** Costs associated with the administrative function at SOCWA.
- **Treatment Flow:** Costs associated with the conveyance of sewage through the treatment plant(s).
- **Treatment BOD:** Costs associated with the removal of BOD.
- **Treatment TSS:** Costs associated with the removal of TSS.
- **Billing**: Costs associated with billing customers for wastewater services.
- **Customer Service:** Costs associated with serving customers.
- **General/Administrative:** District overhead costs.

Table 3-32 provides a summary of the test year O&M expenses by function for the Wastewater System.

Table 3-32. Wastewater System O&M Cost Allocation and Distribution by Function

System Function	Cost Allocation	% Allocated
Collection System	$5,561,588	24.8%
Treatment Admin	$1,427,158	6.4%
Treatment Flow	$4,353,424	19.4%
Treatment BOD	$2,759,804	12.3%
Treatment TSS	$2,270,002	10.1%
Customer Service	$711,222	3.2%
Billing	$703,743	3.1%
FOG	$137,426	0.6%
G&A - O&M	$4,513,767	20.1%
Total	**$22,438,132**	**100.0%**

The capital costs of the Wastewater System were also analyzed and classified by function. A summary of the capital budget allocation by function is presented in Table 3-33. The total Wastewater System capital costs for the test year are estimated to be approximately $6.4 million.

Table 3-33. Wastewater System Capital Expenses by Functions

System Function	Cost Allocation	% Allocated
Collection System	$4,199,432	65.8%
Treatment Admin	$209,739	3.3%
Treatment Flow	$738,679	11.6%
Treatment BOD	$460,412	7.2%
Treatment TSS	$539,007	8.5%
Customer Service	$27,958	0.4%
Billing	$507	0.0%
G&A - CIP	$202,737	3.2%
Total	**$6,378,471**	**100.0%**

Procedure 2: Allocate Costs Based on Customer Service Characteristics

The functionalized O&M and capital costs were then assigned to the cost categories described in the previous section. A summary of the test year assignment of O&M and capital costs by customer class for the Wastewater System are shown in Table 3-34 and Table 3-35, respectively.

Table 3-34. Wastewater System Functionalized O&M Cost Allocation by Customer Class

Customer Class	Collections	Flow	BOD	TSS	FOG	Customer	Total
Residential	$4,824,573	$5,014,546	$2,229,728	$1,875,264	$0	$1,634,329	$15,578,440
Multi-family	$1,190,533	$1,237,411	$550,218	$462,748	$0	$75,151	$3,516,061
Commercial 1	$415,249	$431,600	$119,286	$101,589	$0	$42,401	$1,110,126
Commercial 2	$328,002	$340,917	$198,315	$112,792	$0	$13,100	$993,126
Commercial 3	$149,823	$155,722	$228,092	$200,967	$82,641	$6,202	$823,446
Commercial 4	$64,764	$67,315	$134,516	$92,697	$54,785	$2,857	$416,933
Total	**$6,972,944**	**$7,247,512**	**$3,460,155**	**$2,846,057**	**$137,426**	**$1,774,039**	**$22,438,132**

Table 3-35. Wastewater System Functionalized Capital Cost Allocation by Customer Class

Customer Class	Collections	Flow	BOD	TSS	Customer	Total
Residential	$3,000,968	$677,752	$306,430	$366,810	$27,084	$4,379,043
Multi-family	$740,532	$167,245	$75,616	$90,516	$1,245	$1,075,154
Commercial 1	$258,292	$58,334	$16,393	$19,871	$703	$353,593
Commercial 2	$204,023	$46,077	$27,254	$22,063	$217	$299,634
Commercial 3	$93,192	$21,047	$31,346	$39,310	$103	$184,998
Commercial 4	$40,285	$9,098	$18,486	$18,132	$47	$86,048
Total	$4,337,292	$979,553	$475,526	$556,701	$29,400	$6,378,471

Procedure 3: Allocate Non-Rate Revenues to Customer Classes

As with the Potable and Recycled Water Systems, non-rate revenues are applied as credits against the rate revenue requirement for the Wastewater System. Table 3-36 summarizes the non-rate revenue credits by customer class.

Table 3-36. Wastewater System Non-Rate Revenue Allocation by Customer Class

Customer Class	Non-Rate Revenues
Residential	(-$649,181)
Multi-family	(-$214,783)
Commercial 1	(-$72,489)
Commercial 2	(-$92,357)
Commercial 3	(-$32,217)
Commercial 4	(-$12,887)
Total	**(-$1,073,914)**

The total rate revenue requirements by customer class for the Wastewater System are shown in Table 3-37. The values in Column e are the revenue requirements that will be used to calculate the Wastewater rates for each customer class, as described in Section 4.

Table 3-37. Wastewater System Summary of Rate Revenue Requirements by Customer Class

	a	b	c	d	e=a+b+c+d	
Customer Class	**Total O&M Revenue Requirements**	**Total Capital Revenue Requirements**	**Non-rate Revenue Credit**	**Property Tax**	**Total Rate Revenue Requirements**	**Cost Allocation (%)**
Residential	$15,578,440	$4,379,043	($649,181)	$0	$19,308,302	69.6%
Multi-family	$3,516,061	$1,075,154	($214,783)	$0	$4,376,432	15.8%
Commercial 1	$1,110,126	$353,593	($72,489)	$0	$1,391,230	5.0%
Commercial 2	$993,126	$299,634	($92,357)	$0	$1,200,403	4.3%
Commercial 3	$823,446	$184,998	($32,217)	$0	$976,227	3.5%
Commercial 4	$416,933	$86,048	($12,887)	$0	$490,094	1.8%
Total	**$22,438,132**	**$6,378,471**	**($1,073,914)**	**$0**	**$27,742,689**	**100.0%**

3.3.3. Cost Allocation Comparison (Current vs. Proposed)

Table 3-38 summarizes the required rate revenues derived from each customer class based on the proposed cost allocation identified in Section 3.3.2 and compares them to the current cost allocation. Under the proposed cost allocation, the cost shares of Multi-family customers will decrease by 0.1 percent while Single-family Residential customers cost share will increase by 1.0 percent. All other customers will see an decrease of 0.3 percent or less.

Table 3-38. Wastewater System Current vs. Proposed Cost Allocation by Customer Class

	a	b	c	d	e=c-a	f=d-b
Customer Class	**Revenue under Current Rate Structure**	**Cost Distribution (%)**	**Revenues under New Proposed Structure**	**Cost Distribution (%)**	**Cost Difference**	**% Difference**
Residential	$18,030,168	68.6%	$19,308,303	69.6%	$1,278,135	1.0%
Multi-family	$4,174,554	15.9%	$4,376,432	15.8%	$201,878	-0.1%
Commercial 1	$1,390,371	5.3%	$1,391,230	5.0%	$859	-0.3%
Commercial 2	$1,228,542	4.7%	$1,200,403	4.3%	($28,139)	-0.3%
Commercial 3	$992,164	3.8%	$976,227	3.5%	($15,937)	-0.3%
Commercial 4	$480,590	1.8%	$490,095	1.8%	$9,505	-0.1%
Total	**$26,296,389**	**100.0%**	**$27,742,690**	**100.0%**	**$1,446,301**	

3.4. WE Program

California water agencies are stewards of scarce resources, and regularly engage in programs and efforts designed to conserve water, such as rebates, targeted education, and diversifying water portfolios to ensure reliability. Such programs have costs, and California water agencies can recover those costs from the customers causing agencies to engage in such programs.

The District's rate structure allocates a water budget to each customer based on individual needs and certain parameters to promote the efficient use of water. Customers who use water inefficiently (i.e. in excess of their calculated water budgets) place greater demands on the District's Potable Water and Recycled Water Systems and supplies. Inefficient customers are therefore subject to higher water use rates to offset the costs resulting from the higher demand they place on the District's Potable Water and Recycled Water Systems. The District invests a portion of rate revenues from water sales in the out-of-budget tiers of the Potable Water and Recycled Water System customer classes associated with conservation costs into alternative water supply programs, rebates, and water conservation and/or demand management measures to increase efficient uses of water and offset the impact of inefficient usage on supply reliability. In addition, the District uses interest income earned from the WE Fund cash balances, as well as revenue from Demand Offset Fees to supplement the WE program fund.

3.4.1. Cost-of-Service Analysis Procedure

Procedure 1: Functionalize Costs

O&M costs and capital costs for the WE program were analyzed and segregated by the distinct System functions. The defined functions were as follows:

- **Customer Service:** costs associated with responding to customer inquiries concerning WE programs, educational content development, workshops, leak alerts, and monitoring program effectiveness
- **Rebate Program Administration:** costs associated with management of the District's rebate programs and other efficiency programs
- **Water Reliability Investments:** costs associated with Recycled Water System efficiency retrofits, meter infrastructure upgrades, and other supply reliability projects
- **Efficiency Device Rebates:** costs associated with improving end-user efficiency, such as MNWD's commercial audit program, installation of smart timers, and rebate programs for washing machines and drip irrigation
- **Turf Removal Rebates:** costs associated with conservation programs, such as NatureScape, turf inspections, rebates, and installation

Table 3-39 provides a summary of combined Potable Water and Recycled Water O&M expenses by function for the WE program.

Table 3-39. WE Program O&M Cost Allocation and Distribution by Function

System Function	Total Cost	Percentage
Customer Service	$237,282	5.4%
Rebate Program Administration	$1,337,965	30.3%
Water Reliability Investments	$497,024	11.2%
Efficiency Device Rebates	$740,882	16.8%
Turf Removal Rebates	$1,609,065	36.4%
Total	**$4,422,218**	**100.0%**

Table 3-40 provides a summary of combined Potable and Recycled Water capital expenses by function for the WE program. The District's cash reserves were allocated to the WE program for both Potable and Recycled Water, offsetting most of the costs on the program's capital expenses.

Table 3-40. WE Program Capital Cost Allocation and Distribution by Function

System Function	Total Cost	Percentage
Customer Service	$37,567	2.5%
Rebate Program Administration	$213,035	13.9%
Water Reliability Investments	$910,000	59.5%
Efficiency Device Rebates	$116,885	7.6%
Turf Removal Rebates	$252,863	16.5%
Total	**$1,530,351**	**100.0%**

Procedure 2: Allocate Costs Based on Customer Service Characteristics

Table 3-41 and Table 3-42 summarize the cost allocations of the functionalized O&M and the capital costs to each Potable Water and Recycled Water System customer class. The costs are allocated to each customer class based on the amount of usage in Tier 3, 4, and 5.

Table 3-41. WE Program O&M Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Single-family Residential	$2,527,725	57.2%
Multi-family Residential	$224,999	5.1%
Commercial	$237,008	5.4%
Potable Irrigation	$923,050	20.9%
Recycled Irrigation	$509,436	11.5%
Total	**$4,422,218**	**100.0%**

Table 3-42. WE Program Capital Cost Distribution by Customer Class

Customer Class	Cost Allocation	% Allocated
Single-family Residential	$903,971	59.1%
Multi-family Residential	$80,465	5.3%
Commercial	$84,759	5.5%
Potable Irrigation	$330,103	21.6%
Recycled Irrigation	$131,053	8.6%
Total	**$1,530,351**	**100.0%**

Procedure 3: Allocate Non-Rate Revenues to Customer Classes

Non-rate revenues are allocated to the WE Program as shown in Table 3-43. The non-rate revenues allocated to the WE program include investment income and Demand Offset Fees. Demand Offset Fees are charged for new development and used to offset new Potable Irrigation customers' demands on the System and create equity in reliability between new and existing customers. The non-rate revenues are unrestricted revenues that may be used by the District for any purpose.

Table 3-43. WE Program Non-Rate Revenue Allocation by Customer Class

Customer Class	Investment Income	Demand Offset Fees	Total Non-Rate Revenues
Single-family Residential	$38,407	$3,137	$41,544
Multi-family Residential	$5,582	$456	$6,037
Commercial	$6,569	$537	$7,105
Potable Irrigation	$8,196	$669	$8,865
Recycled Irrigation	$7,088	$579	$7,667
Total	**$65,841**	**$5,378**	**$71,219**

Procedure 4: Distribute Total Costs to Specific Customer Classes

The total rate revenue requirement is determined by combining the O&M and capital costs and subtracting the credits for non-rate revenues for the WE program.

Table 3-44. WE Program Potable Water, Summary of Rate Revenue Requirements by Customer Class

	a	b	c	d	e=a+b+c+d	
Customer Class	Total O&M Revenue Requirements	Total Capital Revenue Requirements	Non-Rate Revenue Credit	Property Tax	Total Rate Revenue Requirements	Cost Allocation (%)
Single-family Residential	$2,527,725	$903,971	($41,544)	$0	$3,390,152	57.6%
Multi-family Residential	$224,999	$80,465	($6,037)	$0	$299,426	5.1%
Commercial	$237,008	$84,759	($7,105)	$0	$314,662	5.3%
Potable Irrigation	$923,050	$330,103	($8,865)	$0	$1,244,288	21.1%
Recycled Irrigation	$517,081	$132,208	($7,667)	$0	$641,622	10.9%
Total	**$4,429,863**	**$1,531,506**	**($71,219)**	**$0**	**$5,890,150**	**100.0%**

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4. RATE DESIGN & RATE SCHEDULE RECOMMENDATION

The District first implemented a Water Budget Based Rate Structure (WBBRS) in July 2011, and further refined the structure in 2015 and again in 2018. Under this rate structure, a customized monthly water budget is calculated for each customer based on the efficient water use needs of their specific household or business characteristics and landscape. The underlying rationale of any WBBRS is that customers who use water inefficiently (i.e. in excess of their calculated water budgets) place greater demands on the District's Potable Water and Recycled Water Systems than those customers who use water efficiently (i.e. within their calculated water budgets). Because of the higher demand and consequently higher cost that inefficient use places on the District's Potable Water and Recycled Water Systems, water usage in excess of a customer's allocated budget is subject to higher water use rates. Higher rates in each tier within a customer's water budget are determined based on the marginal supply costs, including alternative water supply programs, rebates, water conservation, and demand management. The WBBRS provides customers with choice and an incentive to partner with the District in its effort to meet long term efficiency goals and maintain a reliable source of water by incentivizing efficient water use, while ensuring customers do not pay more than their proportional cost of service.

In 2018, the California Legislature enacted two bills – Senate Bill 606 and Assembly Bill 1668 – to establish new requirements for long-term improvements in water efficiency across the State. These two bills included water use reporting requirements and budgeted water allocations for urban water suppliers. The State determined that development of water budgets for urban water suppliers would be an effective way to improve overall efficiency in water use. The State will begin regulating how much water each urban water supplier can use and eventually face penalties if they exceed the use target. The District is well prepared to comply with these regulations without making drastic changes in its rate structure.

4.1. Recommended Changes to Potable Water and Recycled Water Rate Structure

Since its adoption in 2011, the WBBRS continues to demonstrate its ability to both safeguard the District's financial health and provide customers with economic incentives to efficiently use water, all while proportionally allocating the cost of service to each customer and within each tier. The District intends to build upon this success by continuing to refine the current rate structure's ability to accurately reflect the District's underlying cost structure and ensure those costs are proportionally recovered from customers while incidentally providing a strong price signal to encourage efficient water use. The proposed refinements are consistent with several made in the 2017 COS in that they are intended to ensure the rate structure collects sufficient revenue, reflects water usage trends, aligns cost recovery with cost creation, encourages recycled water use, and equitably recovers costs among customers. RDN acknowledges the robust design of the current rate structure and supports retaining the same basic structure with the proposed refinements as follows:

1) Annual General Fund rate revenue increases of 3.0 percent for both the Potable Water and Recycled Water Systems to ensure sufficient recovery of revenue requirements, as discussed in Chapter 2.

2) Continue the practice of allocating water deliveries from the Baker WTP to water demands for in-budget use in order to create a low-cost "blended" supply reserved for efficient water use.

3) The use of unrestricted non-rate revenues to continue providing a cost incentive for recycled water use. As part this study, the District determined that the share of property tax for potable water volumetric rates and meter charges should be 97.0 percent while recycled water will be allocated the remaining 3.0 percent share to offset its volumetric rates and meter charges.

4) A one-time $967K ($0.83 per average billing unit) adjustment in FY 2021-22 to the average annual rate revenue (Tiers 3, 4, and 5) funding for the WE Fund. This rate revenue increase is required for the District to continue funding rebates and water efficiency programs, and water reliability projects and programs, while preventing the WE Fund from having a negative balance during the projected years. This adjustment is consistent with the overall goal of spending down the WE Fund to zero at the end of the 10-year financial plan.

Potable water demands are projected to slightly decrease over the study period. This reflects the possibility that the current drought condition may persist for the next four years. The District will experience no fiscal impact by making these changes to the rate structure and will continue to proportionally recover only the cost of service.

4.2. Potable and Recycled Water Rate Design

The District's rate schedule is designed to sufficiently recover rate revenue requirements in an amount and manner that does not exceed the proportional cost of service from any customer, while promoting water efficiency and conservation to offset the supply and reliability impacts caused by inefficient usage. The District's recommended rate schedule supports and optimizes these objectives: compliance with all legal and regulatory standards, encourage efficient water use, minimize adverse impacts to customers, and assure reasonable and prudent revenue stability for the District. The District's Potable Water and Recycled Water Systems accomplish these goals through its water budget-based rate structure.

4.2.1. Potable Water and Recycled Water Budgets

The Single-Family Residential and Multi-family Residential rate structures include a calculated indoor and outdoor budget. The indoor budget is calculated based on the volume of water needed to meet the essential water use of each person in the respective household or dwelling. The outdoor budget is calculated such that customers are provided a sufficient volume of water to efficiently meet the irrigation needs of a mixed landscape on their property. By establishing a rate structure that provides for the sufficient but not excessive use of water indoors and outdoors, the District has been able to keep water use decisions in the hands of customers while realizing long-term reductions in water demand. Customers who have decided to proactively become more efficient in their water use are not asked to bear the incremental costs of inefficient water use by other customers, and as a result enjoy the lowest bills in South Orange County. Customers who have elected to maintain inefficient levels of water use in excess of their indoor and outdoor budgets may do so knowing that such supplies are available only because of the increased efficiency of their neighbors, and that the higher rates associated with increasingly inefficient levels of water use account for their proportionate impact on supply reliability by directly funding rebates and other water efficiency programs.

Single-family Residential (Individually Metered) and Multi-family Residential (Master Metered) Customers

Indoor Water Budget Calculation

The indoor water budget is calculated based on the three factors:

1. **Household Size**: Customers are asked to self-report their household size at the time they start service. Should their domestic situation change and their prior household size no longer be representative, Customers have the option to submit a budget modification request to have their household size increased or decreased as appropriate. In the event that a customer has not specified their household size a 'default' household is assigned based on dwelling type:
    - **I**ndividually metered service: an average size of four persons per household has been assumed for accounts serving detached residential homes and three persons per household for accounts serving attached condos and townhomes.
    - Master metered service: an average size of two persons per dwelling unit per metered connection has historically been assumed for Multi-family or other residential accounts which are not individually metered.
2. **Gallons per Capita per Day (GPCD)**: a volume of water sufficient for efficiently meeting the indoor water use needs of each person residing in a household, such as showers and washing clothes using a water-efficient device. Single-family Residential indoor water budgets are calculated based on an assumed factor of 55 GPCD.
3. **Number of Days in the Billing Cycle**: the number of days, typically between 28 and 35 days, for which customers were provided service.

As an equation, the indoor water budget allocation is expressed as follows:

$$\text{Indoor Allocation (hcf)} = \frac{Persons\ per\ Household\ x\ GPCD\ x\ Days\ Billed}{748}$$

Note: The conversion factor of 748 converts the calculated indoor budget from gallons to hundred cubic feet (hcf). 1 hcf = 748 gallons.

Outdoor Water Budget Calculation

The outdoor water budget is calculated based on the following three factors:

1. **Irrigable Area:** The amount of irrigable area per parcel based on the District's Geographic Information System (GIS) or on-site measurements for all non-residential accounts and for residential accounts requesting a budget modification and supplemental aerial imagery where appropriate.
2. **ET (Evapotranspiration)**: The amount of water, measured in inches, lost to the atmosphere from evaporation and plant transpiration. ET will vary across the District due to neighborhood-specific factors such as wind, humidity, and temperature. To account for this variability, each parcel is mapped into one of over 110 individually tracked 1 km^2 "microzones" which reflect the neighborhood-specific environmental factors that increase or decrease the water demand of landscaped areas.
3. **Landscaping Factor**: A factor representing water requirements of specific landscapes and the relative efficiency level of irrigation devices. Landscaping factors for efficient outdoor use are discussed further below.

$$\text{Outdoor Allocation (hcf)} = \frac{Irrigable\ Area\ x\ ET\ x\ Landscaping\ Factor\ x\ 0.62}{748}$$

To compute the outdoor water budget, the District used a combination of aerial imagery and in-person site visits to determine the irrigable area associated with each service connection. A landscaping factor of 0.7, representing a mixed landscape of turf and low-water use plants, was used to reflect the most common landscape features in the District's service area. As noted, actual daily evapotranspiration (ET) is measured at 110 virtual weather stations that calculate data for microclimate zones within the District's service area. The conversion factor of 0.62 converts inches to gallons per square feet and the conversion factor of 748 then converts the calculated outdoor budget from gallons to billing units.

Single-family Residential (Individually Metered) and Multi-family (Master Metered) Customer Water Budgets

The District's Single-family Residential and Multi-family customer rates are structured to include five tiers:

Tier 1 – Indoor water budget

Tier 2 – Outdoor water budget

Tier 3 – Usage above 100% of total water budget (where a customer's total water budget is the sum of their calculated indoor and outdoor water budgets) up to 125% of total water budget

Tier 4 – Usage above 125% of total water budget up to 150% of total water budget

Tier 5 – Usage above 150% of the total water budget

The indoor water budget (Tier 1) is calculated based on 55 GPCD to reflect current indoor water use and efficiency goals. As noted previously, customers self-report household size at the time they begin service or through the budget modification process.

Non-residential Customer Water Budgets

The District's Commercial, Potable Irrigation, and Recycled Irrigation customer class rates are structured into four tiers:

Tier 1 - Total water budget

Tier 2 - Usage above 100% of total water budget up to 125% of total water budget

Tier 3 - Usage above 125% of total water budget up to 150% of total water budget

Tier 4 - Usage above 150% of total water budget

Most Commercial customers have two metered connections, a dedicated irrigation meter which measures outdoor water use and a commercial meter which measures indoor water use. Water budgets for Commercial customers are calculated based on a three-year rolling average of daily water use for the respective billing cycle. The billing cycle is typically expressed as one calendar month with the current and historical months' water usage being weighted by the number of days in the respective bill to account for the potential difference in meter read dates for the different years. This 3-year rolling monthly average accounts for typical monthly usage for Commercial customers as well as for potential increases in business activity or recent efficiency improvements that may have been made within the current month. Water budgets for Commercial customers shall be calculated such that a minimum budget of one billing unit shall be provided. For Commercial customers with less than 3-years of data, water budgets are calculated as follows: (a) for the first year, the customer's budget is equal to water used; and (b) for the 2nd year, it is a weighted daily average of current and the previous year's usage in the respective month (e.g. February 2022 and February 2021). An example calculation of a monthly water budget for a Commercial customer is provided below:

February 2022 Budget (hcf) =

$$\frac{\left(\frac{Feb.2022\ Usage}{Days\ Billed\ in\ Feb.2022} + \frac{Feb.2021\ Usage}{Days\ Billed\ in\ Feb.2021} + \frac{Feb.2020\ Usage}{Days\ Billed\ in\ Feb.2020}\right)}{3} \text{ x } Days\ Billed\ in\ Feb.2022$$

Outdoor water budgets for non-residential accounts with areas irrigated by potable water are calculated as follows:

$$\textbf{Potable Water Irrigation Outdoor Budget (hcf)} = \frac{Irrigable\ Area\ x\ ET\ x\ 0.7\ x\ 0.62}{748}$$

Outdoor water budgets for areas irrigated with recycled water are calculated similarly to Potable Irrigation outdoor water budgets, but with a higher landscaping factor to account for the additional salinity of recycled water:

$$\textbf{Recycled Water Irrigation Outdoor Budget (hcf)} = \frac{Irrigable\ Area\ x\ ET\ x\ 0.8\ x\ 0.62}{748}$$

For areas defined as functional or high-traffic public spaces, which include public parks and sports facilities, outdoor water budgets are calculated with a landscaping factor of 1.0, regardless of water type:

$$\textbf{Public Spaces Irrigation Outdoor Budget (hcf)} = \frac{Irrigable\ Area\ x\ ET\ x\ 1.0\ x\ 0.62}{748}$$

Budget Modification Process

Each customer has the ability to apply for a budget modification to update the factors used to calculate their water budgets such as household size or irrigable area, as described by the District's adopted Water Budget Modification And Bill Adjustment policy.

4.2.2. Potable and Recycled Water Demands

Based on the budgets established in Section 4.2.1, each customer's tiered water use is aggregated to determine the total water demand for each of the respective usage tiers.

Test Year Water Demands

As noted throughout this Report, water budgets are calculated such that they provide a sufficient volume of water to efficiently meet the water needs of each customer, and the width of each tier of the District's rate structure is calculated to reflect relative levels of efficient (or inefficient) usage. FY 2021-22 usage was forecasted by taking averages from the customer class level historical usage data between FY 2017-18 and FY 2020-21. RDN supports this approach as the General Fund volumetric rates are set so as to only recover the marginal cost of water purchases and the District will utilize unrestricted non-rate revenues to establish volumetric rates for in-budget usage below the marginal cost of supply, ensuring that the recommended rates will provide sufficient revenue to fully recover cost requirements in the event of decreased or increased water sales. Table 4-1 presents potable and recycled water demands for the **test year** based on the budget factors established in Section 4.2.1. Note, in order to accurately capture the total volume of inefficient water usage for the test year, non-residential efficient in-budget usage is shown entirely in Tier 2 and out-of-budget usage is shown in tiers beginning with Tier 3. After conducting an analysis on the widths of Tier 3 and Tier 4, RDN verified that the District's tier break points reflect relative levels of inefficient usage.

Table 4-1. Potable and Recycled Water Demands by Tier, FY 2021-22

Water Demand by Tier (in hcf)		
	Potable	**Recycled**
Tier 1	4,722,058	-
Tier 2	3,426,410	2,403,014
Tier 3: ***100% - 125%*** *of total water budget*	591,117	70,679
Tier 4: ***126% - 150%*** *of total water budget*	300,161	32,858
Tier 5: ***Above 150%*** *of total water budget*	422,745	54,996
Total Demand	**9,462,491**	**2,561,548**

4.2.3. Potable Water and Recycled Water Rate Calculation

Unit rates were developed by dividing the total revenue requirement of each functional cost center over its respective demands. The District currently collects a volumetric charge and a basic service charge for water service. The volumetric charge is a variable charge, based on the volume of water delivered to the parcel, and is intended to capture both the marginal supply cost of imported water within each tier, and the incremental cost of inefficient usage that places additional demands on existing supply. The basic service charge is a fixed charge intended to reflect each customer's proportionate share of capacity in the water system and is assessed based on the diameter of the meter delivering water to the associated parcel.

Potable Water Rate Calculation – General Fund

As noted throughout this Report and the attached LRFP, the use of marginal cost-based pricing has been a major contributor to the District's present financial strength. Recognizing this, the proposed rates do not attempt to recover any of the District's fixed water supply costs through its volumetric rates. Any proportional differences in system capacity or peaking related costs are recovered on a fixed basis through the basic service charge, and as a result the unit cost of water supply does not vary between customer classes. As such, the water supply unit rates for each tier will be calculated on the basis of total water demand in each tier.

It has been several years since the Baker WTP has become fully operational and is expected to deliver approximately 8,908 AF of treated water supply per year to the District (the District has capacity rights to 9,400 AFY; however, deliveries are assumed at 8,908 AFY or 95% to recognize downtime for maintenance). As noted in Section 2.1.3, the variable costs of water deliveries from Baker WTP are lower than the Tier 1 volumetric rate for fully treated MWDSC water deliveries. From a COS standpoint, lower cost treated water from Baker WTP effectively serves as a local supply source that can be used to offset a proportion of imported water demand. Recognizing that providing access to low-cost water for efficient use is a benefit to all of its customers, the District has allocated supplies from Baker WTP entirely to usage within Tiers 1 and 2. As the supply from Baker WTP will meet only a portion of efficient water use needs, the remaining in-budget demands are met with imported water, which creates a lower-cost "blended" water supply for Tiers 1 and 2. The marginal supply cost of water is determined for each tier by dividing the associated supply cost over the volume of water required to meet the respective demands of that tier. The resulting rates are effectively the price paid by the District from its General Fund for each unit of water delivered to customers.

As shown in Table 4-2 and Table 4-3, the effective volumetric unit rates for in- and out-of-budget usage are calculated as $2.47 per hcf and $2.89 per hcf, respectively. It is important to note that these rates represent only the cost of purchasing an additional unit of water, and do not consider any costs incurred as a result of the additional demands placed on the system by the incremental use.

Table 4-2. Supply Cost by Tier

a			b	c	d	e	f=d+e
Demand*		Supply Source	Total Supply (AF)		Total Supply Cost		Supply Cost
			Baker	Diemer	Baker	Diemer	
Tier 1	10,841 AF	Baker + Diemer	5,162 AF	5,679 AF	$4,525,909	$7,129,494	$11,655,403
Tier 2	7,866 AF	Baker + Diemer	3,746 AF	4,120 AF	$3,283,904	$5,173,010	$8,456,914
Tier 3	1,358 AF	Diemer	-	1,358 AF	-	$1,704,950	$1,704,950
Tier 4	690 AF	Diemer	-	690 AF	-	$866,285	$866,285
Tier 5	971 AF	Diemer	-	971 AF	-	$1,219,077	$1,219,077
Total	**21,726 AF**	-	**8,908 AF**	**12,818 AF**	**$7,809,813**	**$16,092,815**	**$23,902,629**

*Non-residential efficient in-budget usage is shown entirely in Tier 2 and out-of-budget usage is shown in tiers beginning with Tier 3.

Table 4-3. Effective General Fund Supply Rates per hcf by Tier

a			b	c = b÷a	d = c ÷ 435.6
Demand*		Supply Source	Effective Supply Cost	Effective Unit Supply Rate	Effective Volumetric Rate
Tier 1	10,841 AF	Baker + Diemer	$11,655,403	$1,075/AF	$2.47/hcf
Tier 2	7,866 AF	Baker + Diemer	$8,456,914	$1,075/AF	$2.47/hcf
Tier 3	1,358 AF	Diemer	$1,704,950	$1,255/AF	$2.89/hcf
Tier 4	690 AF	Diemer	$866,285	$1,255/AF	$2.89/hcf
Tier 5	971 AF	Diemer	$1,219,077	$1,255/AF	$2.89/hcf
Total	21,726 AF	-	**$23,902,629**	-	-

*Non-residential efficient in-budget usage is shown entirely in Tier 2 and out-of-budget usage is shown in tiers beginning with Tier 3.

Access to the blended supply that was made possible by the District's investment in the Baker WTP has provided customers with both improved system reliability in the event of an emergency as well as an incentive for continued efficient use of water because of the new supply source's lower volumetric cost. Recognizing that the essential health and safety indoor water needs of its customers are provided for in Tier 1, the District has allocated a portion of the property tax revenues to offset the marginal supply cost of water to create a below cost tier for efficient indoor water use.

The remaining property tax revenue that was allocated to the Potable Water System was used to offset the fixed monthly service charges. The resulting tiered supply rates are presented in Table 4-4. The effect of property tax revenues on the overall tiered rate structure design is illustrated in Figure 4-1.

Table 4-4. Non-Rate Revenue Offset by Customer Class

	a	b	c = a+b
	Calculated Rate	Property Tax Offset	Effective Rate
Tiers			
1	$2.47/hcf	-$0.29/hcf	**$2.18/hcf**
2	$2.47/hcf	$0.00/hcf	**$2.47/hcf**
3	$2.89/hcf	$0.00/hcf	**$2.89/hcf**
4	$2.89/hcf	$0.00/hcf	**$2.89/hcf**
5	$2.89/hcf	$0.00/hcf	**$2.89/hcf**

Recycled Rate Calculation – General Fund

A similar unit rate approach was used to develop the General Fund volumetric rates for the Recycled Water system as shown in Table 4-5. The marginal supply cost of recycled water (column c) is determined for each tier by dividing the associated supply cost (column a) over the volume of water required to meet the respective demands of that tier (column b). The resulting rates reflect the price paid by the District from its General Fund for each unit of recycled water delivered to customers. The recycled water volumetric unit rate for in-budget usage (Tier 1) is calculated as $1.87/hcf and $2.43/hcf for Tier 2 and Tier 3 while the Tier 4 calculated unit rate is lower at $2.19/hcf due to the high concentration of usage in Tier 4 relative to Tier 3. Recognizing the supply reliability benefits that recycled water provides, the District has allocated a portion of the total *ad-valorem* property tax revenues it receives to offset the marginal supply cost of recycled water (column d) to ensure that there is a continued price incentive to use recycled water to meet outdoor water needs. The effective rate for each tier is shown in column e of Table 4-5.

Table 4-5. Recycled Volumetric Rate Calculation – General Fund

	a	b	c=a÷b	d	e=c+d
	Supply Cost	Demand	Calculated Rate	Property Tax Offset	Effective Rate
Tiers					
1	$4,489,624	2,403,014 hcf	$1.87/hcf	-$0.14/hcf	**$1.73/hcf**
2	$256,808	70,679 hcf	$2.43/hcf	-$0.44/hcf	**$1.99/hcf**
3	$223,302	32,858 hcf	$2.43/hcf	-$0.44/hcf	**$1.99/hcf**
4	$540,575	54,996 hcf	$2.19/hcf	-$0.20/hcf	**$1.99/hcf**
Total	**$6,133,188**	**$2,784,933**	-	-	-

Volumetric Rate Calculation – WE Fund

By specifically allocating the costs of its water efficiency programs and rebates to increasingly inefficient levels of water use, the District developed a conservation-based tiered rate structure that proportionally recovers the additional cost of incremental inefficient usage. RDN approves continuing this approach as the tiered WBBRS adopted in 2011 has proven itself as an effective demand management tool and earned praise from state agencies and customers alike. Routine customer service and rebate program administration costs are allocated to Tier 3 to recognize that a customer may inadvertently use slightly more than their water budget for a number of reasons that can easily be remedied by small interventions such as fixing an unknown leak after receiving an alert from the District's customer portal or replacing older indoor appliances with newer rebate-qualifying models. Water reliability investments and rebates for efficient irrigation devices are allocated to Tier 4 as offsetting the supply impacts of inefficient usage in Tier 4 (greater than 125 percent of budget) would require levels of intervention equivalent to converting spray or rotary style sprinklers with a more efficient in-line drip irrigation system or converting potable irrigation to recycled irrigation. Similarly, offsetting the supply impacts of the highest levels of inefficient usage represented by Tier 5 (greater than 150 percent of budget) would require the equivalent of converting landscapes from turf to California native plants and the costs for turf removal rebates have been allocated to Tier 5 accordingly.

As part of the detailed COS analysis presented in Section 3.4, specific efficiency program costs were allocated across all customer classes relative to their out-of-budget usage. The total cost assigned to each tier reflects the costs associated with the level of intervention that the District takes to offset the supply impacts caused by inefficient usage, as shown in Table 4-6.

Table 4-6. WE Fund Unit Rate Calculation

		a	b	c = a÷b
Tiers	**Component**	**Cost**	**Inefficient Use***	**Unit Rate**
3	Customer Service + Rebate Program Administration	$790,983	661,796 hcf	$1.20/hcf
4	Customer Service + Rebate Program Administration + Water Reliability Investments + Efficiency Device Rebates	$1,326,078	333,019 hcf	$3.99/hcf
5	Customer Service + Rebate Program Administration + Water Reliability Investments + Efficiency Device Rebates + Turf Removal Rebates	$3,764,288	477,742 hcf	$7.88/hcf

*Non-residential efficient in-budget usage is shown entirely in Tier 2 and out-of-budget usage is shown in tiers beginning with Tier 3.

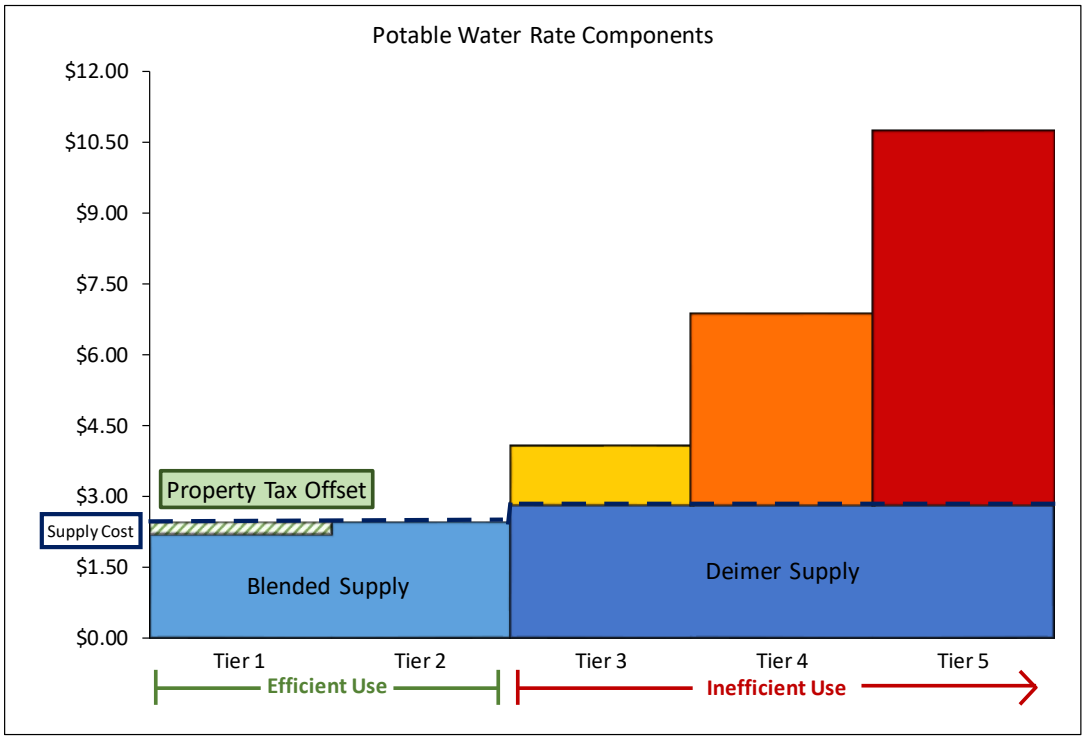
The District continues to prioritize cost-effective opportunities to expand recycled water utilization as a critical component of its long-range supply planning efforts. Specifically, the District recognizes the increased supply reliability that recycled water expansion provides by offsetting outdoor water demands that would otherwise be met with potable water. This approach also captures the overall collective benefit provided by the efficient use of water from any source: efficient potable water use reduces demand on potable supplies while efficient recycled water use further extends existing recycled supplies. To support the rationale that all water supplies should be used efficiently, the efficiency and rebate program costs allocated to each tier are spread over the total volume of water associated with that tier.

Because of the higher demand, and consequently higher cost, that inefficient usage places on the District's Water and Recycled Water Systems, water use in excess of a customer's allocated budget is subject to higher water use rates. The District maintains a strong cost nexus between increasing marginal supply costs and increasing rates by investing the incremental rate difference in alternative water supply programs, rebates, water conservation, and demand management measures to increase efficient uses of water and offset demand from inefficient water use.

As part of its holistic approach to demand management and public finance, the District further revised the rate structure to not only disincentivize inefficient usage but also to incentivize efficient water usage. By allocating its property tax and other unrestricted revenues, the District was able to effectively create below cost tiers for within budget water use by offsetting the marginal supply cost of water. The resulting tiered rate structure creates a strong price signal to customers who may inadvertently exceed their budgets, and any share of revenues collected are immediately reinvested in programs and rebates to help those same customers get back into budget or offset their impact on existing supply reliability.

Figure 4-1 illustrates the use of unrestricted property tax revenues and careful allocation of WE program costs to create a conservation based tiered rate structure. The non-discounted General Fund effective volumetric rates calculated in Table 4-3 are represented by the dashed dark blue "Supply Cost of Water" line. The dashed green area below this line represents the unrestricted property tax revenue that offsets the supply cost of in budget water usage. The effective General Fund rates derived in Table 4-4 (column c) are illustrated in Figure 4-1 as the light blue "Blended Supply" and darker blue "Diemer Supply." The unit rates for increasingly inefficient water use, calculated in Table 4-6 and represented in Figure 4-1 by their respective color, the yellow, orange, and red colors, are added to the supply cost of water to capture the additional costs associated with offsetting the supply reliability impacts attributable to these additional demands.

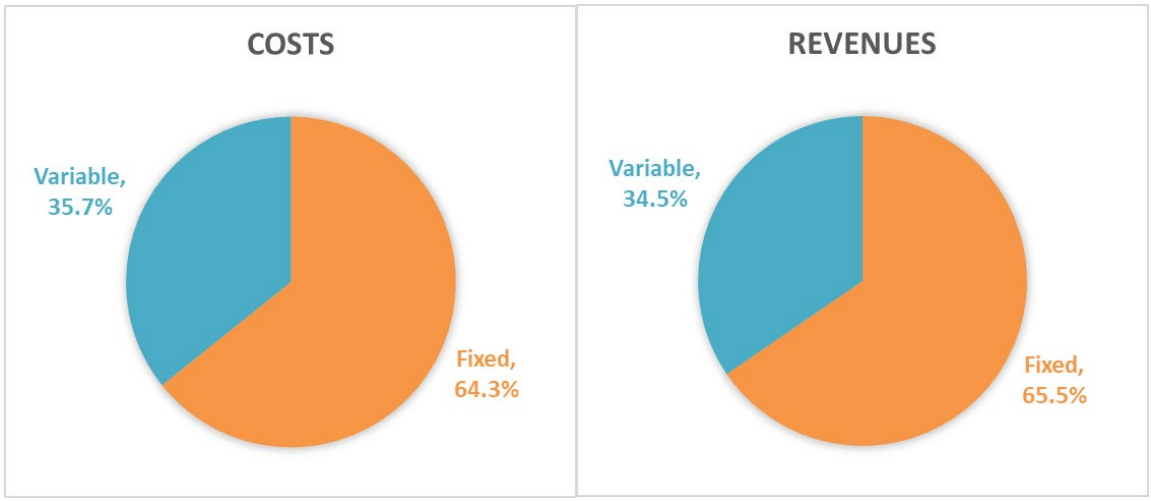
Figure 4-1. Volumetric Rate Components



Meter Service Charge Calculation

Recognizing that the overall cost of providing essential water service to customers is only partially driven by incremental increases in usage and that the majority of the ongoing costs are related to the continual maintenance and needed repair and replacement of existing system infrastructure, the District recovers the fixed share of its Potable and Recycled Water System costs via a monthly basic service charge assessed on the basis of meter size. According to its updated LRFP, the District projects Potable Water System variable (volume-related) General Fund costs to account for 35.7 percent of total FY 2021-22 costs, and variable General Fund revenues to account for 34.5 percent of the total. Figure 4-2 displays the share of variable and fixed components in costs and revenues for FY 2021-22.

Figure 4-2. General Fund Variable and Fixed Costs vs. Revenues, FY 2021-2022



During the last rate study, the District proposed to realign its rate structure with underlying costs by decreasing water service charges and increasing volumetric rates. To reduce potential financial impact on customers, the adjustment was phased in over four years by gradually shifting the allocation of property tax revenues between volumetric rates and water services charges. The District has successfully aligned costs and revenues, improved revenue stability, and provided the additional benefit of giving customers more control over their bills. Table 4-7 illustrates this calculation for the test year revenue requirements developed in Section 3.

Table 4-7. Fixed Rate Revenue Requirement Calculation

	a	b	c=a-b
Customer Class	**Total Rate Revenue Requirement**	**Variable Rate Revenue**	**Fixed Rate Revenue Requirement**
Single-family Residential	$23,515,345	$5,537,904	$17,977,440
Multi-family Residential	$3,331,543	$2,541,072	$790,471
Commercial	$2,861,676	$2,501,256	$360,420
Potable Irrigation	$5,881,892	$4,746,147	$1,135,745
Recycled Irrigation	$6,598,391	$5,114,498	$1,483,893
Total	**$42,188,847**	**$20,440,878**	**$21,747,969**

The resulting fixed rate revenue requirements consist of both customer and meter costs, as described in Section 3.1.6. For each customer class, the customer costs are recovered uniformly on a per account basis, and the meter costs are recovered proportionally on an equivalent meter basis. The uniform per account charge and scaled meter charge are combined and assessed as a single fixed charge on the basis of meter size, as shown in Table 4-8.

Table 4-8. Calculated Monthly Water Service Charges Effective February 1, 2022 ($/Meter Size in Inches)

	Single-family Residential	Multi-family Residential	Commercial	Potable Irrigation	Recycled Irrigation
Meter Size					
5/8”	$9.64	$10.04	$3.64	$15.58	$15.58
3/4”	$9.64	$10.04	$3.64	$15.58	$15.58
1”	$9.64	$10.04	$3.64	$15.58	$15.58
1.5”	$32.13	$21.51	$12.15	$51.93	$51.93
2”	$51.42	$31.34	$19.44	$83.09	$83.09
3”	$112.49	$62.47	$42.52	$181.79	$181.79
4”	$192.83	$103.42	$72.89	$311.62	$311.62
6”	$401.72	$209.91	$151.86	$649.22	$649.22
8”	$578.48	$300.01	$218.68	$934.87	$934.87
10”	$932.00	$480.22	$352.32	$1,506.19	$1,506.19

Private Fire Protection and Construction Meters

The District also has a monthly service charge for Private Fire Protection accounts which is assessed based on the size of connection required to provide sufficient flow for water service in the event of a fire. Despite the relatively small volume of water used for private fire protection within a given year, a rigorous cost of service study must appropriately allocate costs to account for not only the actual volume of water delivered to meet customer demands, but also the costs of building and maintaining a system with sufficient capacity reserved to meet potential fire flow demands. However, recognizing that early fire suppression presents a potential benefit to neighboring parcels and property served by the District through avoided fire damage, in addition to the immaterial amount of water used for this purpose, Private Fire Protection Service accounts are not charged for water used for fire suppression. These charges are reflected below in Table 4-9 and Table 4-10.

Table 4-9. Proposed Private Fire Protection Service Monthly Service Charge

Effective February 1, 2022 ($/Connection Size in Inches)			
Meter Size	**Fire Protection**	**Meter Size**	**Fire Protection**
5/8”	$5.44	**3”**	$63.48
3/4”	$5.44	**4”**	$108.81
1”	$5.44	**6”**	$226.69
1.5”	$18.13	**8”**	$326.44
2”	$29.01	**10”**	$525.93
2.5”	$46.24		

Though not subject to the provisions of Proposition 218 because the fees are not related to charges imposed for services provided on an ongoing basis to a parcel, construction meters are subject to subject to California Constitution Article XIII C, Section 1(e) and are accounted for in the COS analysis to ensure a comprehensive cost nexus. These meters are temporarily connected to fire hydrants to provide recycled or potable water to contractors, developers, or other construction customers who require a relatively large volume of water over a relatively short period of time and not on an emergency basis. To meet their needs, these customers acquire a temporary service connection from the District and are then charged the General Fund volumetric rate of their respective supply source based on the total volume delivered, as well as a monthly service meter fee, prorated over the period the temporary meter was in use.

Table 4-10. Proposed Construction Meter Rates Effective February 1, 2022

Assumed 3" Construction Meter	CY 2022
Meter Charge ($/month)	$103.14
Volumetric Charge ($/hcf)	
Potable Water	$2.89
Recycled Water	$2.43

Recommended Water & Recycled Water Rates

The proposed rate schedules for potable water and recycled water for FY 2021-22 are summarized in Table 4-11 and Table 4-12. The volumetric rates are the same between all potable water customer classes to reflect the fact that the variable cost of potable water is largely the same, irrespective of the customer demands. Approximately 3.0 percent of property tax is allocated to the Recycled Water System customers to maintain lower rates for the District-wide benefit that an affordable recycled water supply provides.

The monthly water service charge, on the other hand, varies between customers classes, reflecting the fixed costs associated with service demands of each customer class. These fixed cost drivers include system capacity, peaking factors, meter maintenance, billing costs, and customer service support.

The proposed rate schedule was designed in order to meet the results of the COS analysis. These costs were calculated using the District's LRFP model to estimate anticipated revenue based on the current water use patterns of existing customers. All volumetric rate revenue from rates at or below $2.89 (in FY 2021-22) for potable water is used to meet the revenue requirements of the General Fund while volumetric rates above $2.89 is used to meet the revenue requirements of the WE Fund. Similarly, the rate for recycled water is $2.43. As explained in Section 3.4, those customers who exceed their calculated water budget are those that drive the costs of the WE program needed to offset the impacts to water supply, and therefore shall bear the costs of the program.

Table 4-11. Recommended Water Service Charge and Volumetric Charges for Single-family Residential and Multi-family Residential Customers

SINGLE-FAMILY RESIDENTIAL: Rates for Monthly Water Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$9.64	$9.93	$10.23	$10.54
3/4”	$9.64	$9.93	$10.23	$10.54
1”	$9.64	$9.93	$10.23	$10.54
1.5”	$32.13	$33.10	$34.09	$35.11
2”	$51.42	$52.96	$54.55	$56.18
3”	$112.49	$115.86	$119.34	$122.92
4”	$192.83	$198.61	$204.57	$210.71
6”	$401.72	$413.78	$426.19	$438.98
8”	$578.48	$595.83	$613.71	$632.12
10”	$932.00	$959.96	$988.76	$1,018.42

MULTI-FAMILY RESIDENTIAL: Rates for Monthly Water Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$10.04	$10.34	$10.65	$10.97
3/4”	$10.04	$10.34	$10.65	$10.97
1”	$10.04	$10.34	$10.65	$10.97
1.5”	$21.51	$22.15	$22.82	$23.50
2”	$31.34	$32.28	$33.24	$34.24
3”	$62.47	$64.34	$66.27	$68.26
4”	$103.42	$106.52	$109.72	$113.01
6”	$209.91	$216.21	$222.69	$229.37
8”	$300.01	$309.01	$318.28	$327.83
10”	$480.22	$494.62	$509.46	$524.75

SINGLE & MULTI-FAMILY RESIDENTIAL: Rates for Volumetric Charges ($/hcf)

	Effective Dates			
Tiers	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
1	$2.18	$2.25	$2.31	$2.38
2	$2.47	$2.54	$2.62	$2.70
3	$4.09	$4.18	$4.27	$4.36
4	$6.88	$6.96	$7.05	$7.15
5	$10.77	$10.86	$10.95	$11.04

Table 4-12. Recommended Water Service Charge and Volumetric Charges for Commercial Customers

COMMERCIAL: Rates for Monthly Water Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$3.64	$3.75	$3.87	$3.98
3/4”	$3.64	$3.75	$3.87	$3.98
1”	$3.64	$3.75	$3.87	$3.98
1.5”	$12.15	$12.51	$12.89	$13.27
2”	$19.44	$20.02	$20.62	$21.24
3”	$42.52	$43.80	$45.11	$46.46
4”	$72.89	$75.08	$77.33	$79.65
6”	$151.86	$156.42	$161.11	$165.94
8”	$218.68	$225.24	$232.00	$238.96
10”	$352.32	$362.89	$373.77	$384.99

COMMERCIAL: Rates for Volumetric Charges ($/hcf)

	Effective Dates			
Tiers	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
1	$2.47	$2.54	$2.62	$2.70
2	$4.09	$4.18	$4.27	$4.36
3	$6.88	$6.96	$7.05	$7.15
4	$10.77	$10.86	$10.95	$11.04

Table 4-13. Recommended Water Service Charge and Volumetric Charges for Potable Irrigation Customers

POTABLE IRRGATION: Rates for Monthly Water Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8"	$15.58	$16.05	$16.53	$17.03
3/4"	$15.58	$16.05	$16.53	$17.03
1"	$15.58	$16.05	$16.53	$17.03
1.5"	$51.93	$53.49	$55.09	$56.75
2"	$83.09	$85.59	$88.16	$90.80
3"	$181.79	$187.24	$192.86	$198.64
4"	$311.62	$320.97	$330.60	$340.52
6"	$649.22	$668.70	$688.76	$709.42
8"	$934.87	$962.92	$991.81	$1,021.56
10"	$1,506.19	$1,551.38	$1,597.92	$1,645.85

POTABLE IRRIGATION: Rates for Volumetric Charges ($/hcf)

	Effective Dates			
Tiers	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
1	$2.47	$2.54	$2.62	$2.70
2	$4.09	$4.18	$4.27	$4.36
3	$6.88	$6.96	$7.05	$7.15
4	$10.77	$10.86	$10.95	$11.04

Table 4-14. Recommended Water Service Charge and Volumetric Charges for Recycled Irrigation Customers

RECYCLED IRRIGATION: Rates for Monthly Water Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8"	$15.58	$16.05	$16.53	$17.03
3/4"	$15.58	$16.05	$16.53	$17.03
1"	$15.58	$16.05	$16.53	$17.03
1.5"	$51.93	$53.49	$55.09	$56.75
2"	$83.09	$85.59	$88.16	$90.80
3"	$181.79	$187.24	$192.86	$198.64
4"	$311.62	$320.97	$330.60	$340.52
6"	$649.22	$668.70	$688.76	$709.42
8"	$934.87	$962.92	$991.81	$1,021.56
10"	$1,506.19	$1,551.38	$1,597.92	$1,645.85

RECYCLED IRRIGATION: Rates for Volumetric Charges ($/hcf)

	Effective Dates			
Tiers	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
1	$1.73	$1.78	$1.84	$1.89
2	$3.19	$3.25	$3.31	$3.37
3	$5.98	$6.04	$6.10	$6.16
4	$9.87	$9.93	$9.99	$10.05

The monthly service charges and volumetric usage charges for Private Fire Protection and Construction Meters. These charges are reflected below in Table 4-15 and Table 4-16.

Table 4-15. Recommended Monthly Water Service Charge Private Fire Protection Customers

PRIVATE FIRE PROTECTION: Rates for Monthly Water Service Charges ($/Connection)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8"	$5.44	$5.60	$5.77	$5.95
3/4"	$5.44	$5.60	$5.77	$5.95
1"	$5.44	$5.60	$5.77	$5.95
1.5"	$18.13	$18.68	$19.24	$19.82
2"	$29.01	$29.89	$30.78	$31.71
2.5"	$46.24	$47.62	$49.05	$50.52
3"	$63.48	$65.38	$67.34	$69.36
4"	$108.81	$112.08	$115.44	$118.90
6"	$226.69	$233.49	$240.50	$247.71
8"	$326.44	$336.23	$346.32	$356.71
10"	$525.93	$541.71	$557.96	$574.70

Table 4-16. Recommended Construction Meter Monthly Service Charge and Volumetric Charges for Potable/Recycled Water

WATER CONSTRUCTION METERS AND CONSTRUCTION WATER

	Effective Dates			
	2/1/2022	**1/1/2023**	**1/1/2024**	**1/1/2025**
Monthly Meter Charge (assumed 3" meter)	$103.14	$106.23	$109.42	$112.70
Volumetric Charge ($/hcf)				
Potable Water	$2.89	$ 2.98	$ 3.07	$ 3.16
Recycled Water	$2.43	$ 2.50	$ 2.58	$ 2.66

4.3. Wastewater Rate Design

The Wastewater System is comprised of Single-family Residential (single-family detached homes or individually metered townhomes and condos), Multi-family (master-metered apartments or condos), and Commercial customers. Commercial customers are assigned to one of the four classes described below based on land-use, and the rates for each of the Commercial customer classes are based its strength classifications.

4.3.1. Wastewater Rate Structure and Current Rate and Charges

The District currently has the following wastewater rate schedule which consists of a wastewater service charge, charged to all customers on the basis of meter size, and a per-person charge, charged to Single-family Residential and Multi-family customers on the basis of household size. Since all Single-family Residential customers have a similar wastewater service lateral that was sized to service varying usage for a typical residential home, all Single-family Residential customers are billed a monthly charge of $16.86, while Multi-family customers are billed according to their meter size, as shown in Table 4-17, which is more reflective of the magnitude of the Wastewater System capacity necessary to service Multi-family customers. Consistent with the rationale used to develop indoor water budgets and in assigning strength concentrations in Section 3.3.2, individual residents are assumed to have similar flow and strength characteristics and contribute to the wastewater system equally. As such, the variable costs are distributed equally across the District's service area population. The current per-person charge is $5.06. Commercial customers are assigned to one of the four classes below based on the type of commercial activity. These classifications were established based on customer data and industry-standard strength data for such classifications.

- **Commercial Class 1:** Typical users include residential, bank, car washes, churches, department and retail stores, Laundromats, professional offices, schools and colleges.
- **Commercial Class 2:** Typical users include beauty and barber shops, hospital and convalescent facilities, commercial laundry, repair shops, service stations and veterinary hospitals.
- **Commercial Class 3:** Typical users include hotels with dining facilities, markets with garbage disposals, mortuaries and fast-food restaurants.
- **Commercial Class 4:** Typical users include restaurants, auto-steam-cleaning facilities and bakeries.

A summary of current wastewater monthly service charge and variable rates are provided in Table 4-17 and Table 4-18 respectively.

Table 4-17. Existing Wastewater Monthly Service Charge

Meter Size	Residential	Multi-family	Commercial 1	Commercial 2	Commercial 3	Commercial 4
5/8"	$16.86	$19.89	$24.47	$58.62	$126.64	$138.53
3/4"	$16.86	$19.89	$24.47	$58.62	$126.64	$138.53
1"	$16.86	$19.89	$24.47	$58.62	$126.64	$138.53
1.5"	$16.86	$60.33	$75.62	$189.42	$416.15	$455.78
2"	$16.86	$95.00	$119.46	$301.55	$664.33	$727.74
3"	$16.86	$204.81	$258.31	$656.68	$1,450.33	$1,589.06
4"	$16.86	$349.27	$440.98	$1,123.88	$2,484.39	$2,722.20
6"	$16.86	$724.88	$915.96	$2,338.67	$5,173.08	$5,668.52
8"	$16.86	$1,042.70	$1,317.85	$3,366.53	$7,448.06	$8,161.49
10"	$16.86	$1,678.35	$2,121.66	$5,422.32	$11,998.13	$13,147.55

Table 4-18. Existing Wastewater Per-Person Monthly Variable Rate

	Residential	Multi-family	Commercial 1	Commercial 2	Commercial 3	Commercial 4
$/Per Person	$5.06	$5.06	n/a	n/a	n/a	n/a

4.3.2. Per-Person Wastewater Charge

As noted in Section 2.6, escalating wastewater treatment costs to meet regulatory and permit requirements along with capital investments into the wastewater system are the primary reasons for the Wastewater System rate increases needed to fully recover revenue requirements. Typically, wastewater treatment costs are largely fixed and a common approach to recovering those costs from customers is to develop service charges based on meter size to reflect their proportional share of system capacity. As shown in its FY 2021-22 budget, SOCWA has allocated a large percentage of these costs to agencies in proportion to the volume of flow and loadings they send to the respective treatment plants. In order to proportionally recover these costs from customers, the proposed wastewater rate structure continues the practice of decoupling the capacity and flow and strength components for Single-family Residential and Multi-family customers. Because the District does not meter household wastewater flows, and because outdoor water use is not separately metered for most residential households, the number of people per household from the water budget data reflects the best available data to calculate each household's relative contribution to the wastewater system.

Single-family Residential and Multi-family Customer per Person Wastewater Charge Calculation

Based on the best cost data available, a percentage of the flow and strength related costs allocated to Single-family Residential and Multi-family Residential in Section 3.3 were assigned to the variable cost category to be recovered through the per person wastewater charge. In total $10.4 million in costs are to be recovered from Single-family Residential and Multi-family Residential customers on a variable basis. The service area population estimate is based on projections developed by CDR and published in the District's 2020 Urban Water Management Plan. The variable rate of $5.08 per-person (column c) is calculated by dividing the total variable costs allocated to Single-family Residential and Multi-family customers (column a) over the estimated service area population (column b).

Table 4-19: Per-Person Wastewater Charge Calculation

a	b	c=a÷b÷12
Variable Cost	Population	Calculated Rate
$10,371,745	170,264 people	$5.08/person/month

Wastewater Service Charge Calculation

The revenue requirements calculated in Table 3-37 that are not recovered from the per person wastewater charges are recovered from monthly fixed service charge. For each customer class, billing and other customer service related costs are divided over the number of customer accounts and allocated equally to each account while the remaining revenue requirements are divided over the number of equivalent meters and allocated on the basis of meter size.

4.3.3. Recommended Wastewater Rates

Based on the results of the COS analysis, the District has proposed the following wastewater rate schedule which consists of a wastewater service charge, charged to all customers on the basis of meter size (see Table 4-20), and a per person charge, charged to Single-family Residential and Multi-family customers on the basis of household size (see Table 4-21).

Table 4-20. Recommended Wastewater Service Charge for Single-family Residential Customers

Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
All Sizes	$19.05	$20.10	$21.20	$22.37

Rates for Monthly Wastewater Variable Charges ($/Person)

	Effective Dates			
	2/1/2022	**1/1/2023**	**1/1/2024**	**1/1/2025**
Monthly $/Person	$5.08	$5.36	$5.66	$5.97

Table 4-21. Recommended Wastewater Service Charge for Multi-family Residential Customers

Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$21.82	$23.02	$24.29	$25.62
3/4”	$21.82	$23.02	$24.29	$25.62
1”	$21.82	$23.02	$24.29	$25.62
1.5”	$65.84	$69.47	$73.29	$77.32
2”	$103.58	$109.28	$115.29	$121.63
3”	$223.11	$235.38	$248.32	$261.98
4”	$380.35	$401.27	$423.34	$446.62
6”	$789.20	$832.61	$878.40	$926.72
8”	$1,135.15	$1,197.58	$1,263.45	$1,332.94
10”	$1,827.05	$1,927.54	$2,033.55	$2,145.40

Rates for Monthly Wastewater Variable Charges ($/Person)

	Effective Dates			
	2/1/2022	**1/1/2023**	**1/1/2024**	**1/1/2025**
Monthly $/Person	$5.08	$5.36	$5.66	$5.97

Table 4-22 Recommended Wastewater Service Charge for Commercial 1 Customers

COMMERCIAL **1**: Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8"	$24.79	$26.16	$27.59	$29.11
3/4"	$24.79	$26.16	$27.59	$29.11
1"	$24.79	$26.16	$27.59	$29.11
1.5"	$75.75	$79.91	$84.31	$88.95
2"	$119.43	$126.00	$132.93	$140.24
3"	$257.77	$271.95	$286.90	$302.68
4"	$439.77	$463.95	$489.47	$516.39
6"	$912.99	$963.21	$1,016.18	$1,072.07
8"	$1,313.40	$1,385.64	$1,461.85	$1,542.25
10"	$2,114.24	$2,230.52	$2,353.20	$2,482.62

Table 4-23 Recommended Wastewater Service Charge for Commercial 2 Customers

COMMERCIAL **2**: Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8"	$57.64	$60.81	$64.15	$67.68
3/4"	$57.64	$60.81	$64.15	$67.68
1"	$57.64	$60.81	$64.15	$67.68
1.5"	$185.22	$195.41	$206.16	$217.50
2"	$294.60	$310.80	$327.89	$345.93
3"	$640.98	$676.24	$713.43	$752.67
4"	$1,096.69	$1,157.00	$1,220.64	$1,287.77
6"	$2,281.58	$2,407.07	$2,539.46	$2,679.13
8"	$3,284.15	$3,464.78	$3,655.35	$3,856.39
10"	$5,289.35	$5,580.27	$5,887.18	$6,210.98

Table 4-24 Recommended Wastewater Service Charge for Commercial 3 Customers

COMMERCIAL 3: Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$124.93	$131.80	$139.05	$146.70
3/4”	$124.93	$131.80	$139.05	$146.70
1”	$124.93	$131.80	$139.05	$146.70
1.5”	$409.51	$432.03	$455.79	$480.86
2”	$653.47	$689.41	$727.33	$767.33
3”	$1,426.09	$1,504.52	$1,587.27	$1,674.57
4”	$2,442.54	$2,576.88	$2,718.61	$2,868.13
6”	$5,085.47	$5,365.17	$5,660.26	$5,971.57
8”	$7,321.72	$7,724.42	$8,149.26	$8,597.47
10”	$11,794.34	$12,443.03	$13,127.40	$13,849.41

Table 4-25 Recommended Wastewater Service Charge for Commercial 4 Customers

COMMERCIAL 4: Rates for Monthly Wastewater Service Charges ($/Meter)

	Effective Dates			
Meter Size	**2/1/2022**	**1/1/2023**	**1/1/2024**	**1/1/2025**
5/8”	$141.52	$149.31	$157.52	$166.18
3/4”	$141.52	$149.31	$157.52	$166.18
1”	$141.52	$149.31	$157.52	$166.18
1.5”	$464.81	$490.38	$517.35	$545.80
2”	$741.96	$782.77	$825.82	$871.24
3”	$1,619.68	$1,708.76	$1,802.74	$1,901.90
4”	$2,774.41	$2,927.00	$3,087.98	$3,257.82
6”	$5,776.86	$6,094.59	$6,429.79	$6,783.43
8”	$8,317.32	$8,774.77	$9,257.38	$9,766.54
10”	$13,398.37	$14,135.28	$14,912.72	$15,732.92

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5. CONCLUSION

This Report used methodologies aligned with industry-standard practices for rate setting as summarized by the AWWA and WEF and all applicable laws, including Proposition 218. The rate revenue adjustments recommended by the Long Range Financial Plan (LRFP) for FY 2021-22 are included in rate recommendations presented in Chapter 4. As such, those recommended rates will need to be adjusted annually, as described in the LRFP and Section 2.9 of this report.

The District's Water Budget-Based Rate Structure (WBBRS) has proven to be an effective demand management tool, allowing the District to equitably achieve target usages by promoting efficient water use. The tiered rate structure creates a strong price signal to customers who may have inadvertently exceeded their budgets, and any revenues collected beyond their allocations are immediately reinvested in programs and rebates to help those same customers stay within budget or offset their impact on existing supply reliability.

The District's WBBRS and accompanying conservation and rebate programs have helped the District reduce its potable water purchases by over 36 percent since its peak use in 2007, even while experiencing a period of economic recovery and population growth. This long-term sustained reduction in demand demonstrates the effectiveness of the WBBRS. Moreover, WBBRS has allowed the District to avoid imposing water day restrictions on its customers. We believe that WBBRS will continue to be an important demand management tool for the District as it continues to monitor water use behaviors and manage the District's limited water resources.

The adjustments to the Wastewater rates will provide revenue stability and continue to recover costs equitably and proportionately from the appropriate customers.

APPENDIX A

LONG RANGE
FINANCIAL PLAN REPORT
2021

moulton niguel
water district

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EXECUTIVE SUMMARY

The objective of the Long-Range Financial Plan (LRFP) is to identify strategies and actions to ensure sufficient financial resources are available for Moulton Niguel Water District (MNWD or District) to achieve its mission and to ensure those financial resources are utilized effectively. The LRFP forecasts operating budgets and incorporates the capital improvement program in order to determine future operating and capital needs and develop strategies to address those needs.

The LRFP projects financial and operational data of key aspects for the District such as: rate revenue, ad valorem property tax revenue, property leases, water purchases, utility costs, salaries and benefits, other revenues and expenses, capital expense cash flows, long-term investments, and debt service obligations. This detailed information is linked to a summarized pro-forma income statement and balance sheet to illustrate the impact of ongoing and future changes to MNWD's operating cash, assets, liabilities, and fund balances. The long-range financial planning model also monitors the impacts of changes in future financial plans on the key financial ratios that the District is required to maintain for debt covenants and credit-rating purposes.

District staff, in consultation with the Board of Directors and the District's Financial Advisor, inputs the broad-based planning parameters into the Long-Range Financial Planning model. The proprietary long-range financial planning model (also known as the Ten-Year Cash Flow Model or Model) is District built, owned, and operated. Updates are regularly made to the model to reflect changes in existing assumptions and future outlooks to create adaptive financial management strategies. The long-range planning and annual operating and capital budgeting processes are interrelated and form a single planning and budgeting system.

The availability of funds required to finance the capital construction and operations of the District is tracked through the model. Capital typically spans a long-time horizon; hence, a ten-year plan enables the District to project the financing needs for future capital expenditures and determine the District's ability to fund them through available cash balances, grants, state loans, revenues, or debt issuance. The key outputs of the LRFP is the schedule of rate revenue adjustments and projected bond issuances required to maintain the long-term financial health of the District. The report includes the detailed assumptions, analyses and plans driving these results.

The District has historically maintained a strong financial position based upon conservative planning and budgeting, maintenance of adequate unrestricted cash balances, reserves, and a solid debt service coverage ratio. A major objective of the LRFP is to ensure that this strong performance continues into the future through timely and thoughtful financial analysis, budgeting, and planning. As a result of the sound financial planning and Board implemented policies made possible by the LRFP, the District's debt obligations were reaffirmed at "AAA" by both, Fitch Ratings and S&P Global Ratings in November 2021.

INTRODUCTION

The Moulton Niguel Water District (MNWD) was formed on November 16, 1960, under the provisions of the California Water District Law, Division 13, of the Water Code of the State of California, commencing with Section 34000. Prior to the formation of the water district, the lands within the service area were primarily utilized for livestock grazing, with a small area devoted to citrus and field crop production. Limited by the lack of adequate local water supplies, the District was formed by local ranchers in order to secure a reliable water supply for their herds.

In 1961, the District entered into several agreements with surrounding water agencies to bring reliable supplies of water to the area. Among the agreements was one to bring treated water to the District from the East Orange County Feeder Number 2 and the Tri-Cities Transmission Main. The District sold its first waterworks bond for $6,700,000 to fund construction of the imported water pipelines. The construction of the transmission main was a joint project between the District, Tri-Cities Municipal Water District (dissolved in 2000 at which point South Coast Water District assumed operation of the pipelines and infrastructure on a contract basis for what is now identified as the Joint Regional Water Supply System), Irvine Ranch Water District (IRWD), and Orange County Water Works #4 (now the City of San Juan Capistrano). This transmission line was the District's only source of water for many years.

In 1964, an amendment to the California Water District Act was passed which granted water districts the power to provide sewage treatment and water reclamation services. As early as 1968, studies were authorized to consider the use of treated secondary wastewater effluent for use as irrigation for the El Niguel Golf Course. In 1976, the District's 3A treatment plant was the site for the pilot "Bullrush Project" undertaken in conjunction with the Biological Water Purification Company to perform advanced tertiary treatment of wastewater for use on landscapes. Water demand increased as the population continued to grow throughout the 1970s and 1980s.

The District has grown tremendously since its formation. Providing water service to a mere eight accounts when initially formed, the District now provides water, recycled water, and wastewater services to more than 170,000 people within a 37 square mile service area covering portions of six cities in southern Orange County.

As of July 2021, the District service area is largely built-out and includes the cities of Aliso Viejo, Laguna Niguel, Laguna Hills, and Mission Viejo, as well as portions of the Cities of Dana Point and San Juan Capistrano. Though its operations have evolved along with the growth of its service area, the District's primary focus has remained largely unchanged: ensuring ratepayers have a reliable, sustainable, and affordable water supply for the future, while providing for the collection, treatment, and disposal of wastewater in an environmentally responsible manner.
The District's current water needs are met by a combination of imported potable water and recycled water. The District's potable water supply is provided by Metropolitan Water District of Southern California (MWDSC) from two principal sources – the Colorado River via the Colorado Aqueduct and the Feather River Watershed/Lake Oroville in Northern California through the State Water Project (SWP). The recycled water supply is locally sourced and has steadily increased to account for more than 20% of the overall water supply in the District.

As part of the Board policy to improve water supply reliability for the service area, the District jointly participated in the construction of the Baker Water Treatment Plant (Baker), a 28.1 million gallon per day (MGD) potable water treatment facility that receives raw water from MWDSC via the Baker pipeline. The plant began operating in January 2017 and now provides a reliable local potable water supply in the event of emergency conditions or scheduled maintenance on the MWDSC treated water delivery system (Diemer Filtration Plant, Lower Feeder Pipeline, or Allen-McCullough Pipeline). The District owns 13 cubic feet per second of capacity in the plant, representing approximately 9,400 AF, annually. However, the District only budgets 95% capacity (8,930 AF) due to an annual projected 5% downtime for plant maintenance. Water from Baker is delivered through the South County Pipeline.

The District serves areas ranging in elevation from approximately 140 feet to 930 feet above mean sea level through various pressure zones. The District operates and maintains approximately 650 miles of potable water distribution pipelines. In addition, the District has 26 steel and 2 pre-stressed concrete operational storage reservoirs for a total potable water storage capacity within the District of approximately 70 million gallons. The District owns capacity rights in several adjoining water agencies' reservoirs and pipelines, such as: El Toro Water District R-6 Reservoir, Santa Margarita Water District (SMWD) Upper Chiquita Reservoir, Joint Transmission Main (a jointly owned pipeline between the District and other water agencies), Eastern Transmission Main (jointly owned by the District and the City of San Juan Capistrano) and the South County Pipeline, which conveys water from the AMP to several south county water agencies. The District also operates 24 pump stations to pump potable water from lower pressure zones to the higher-pressure zones and 16 pressure reducing stations and flow control facilities to convey water from high to low zones.

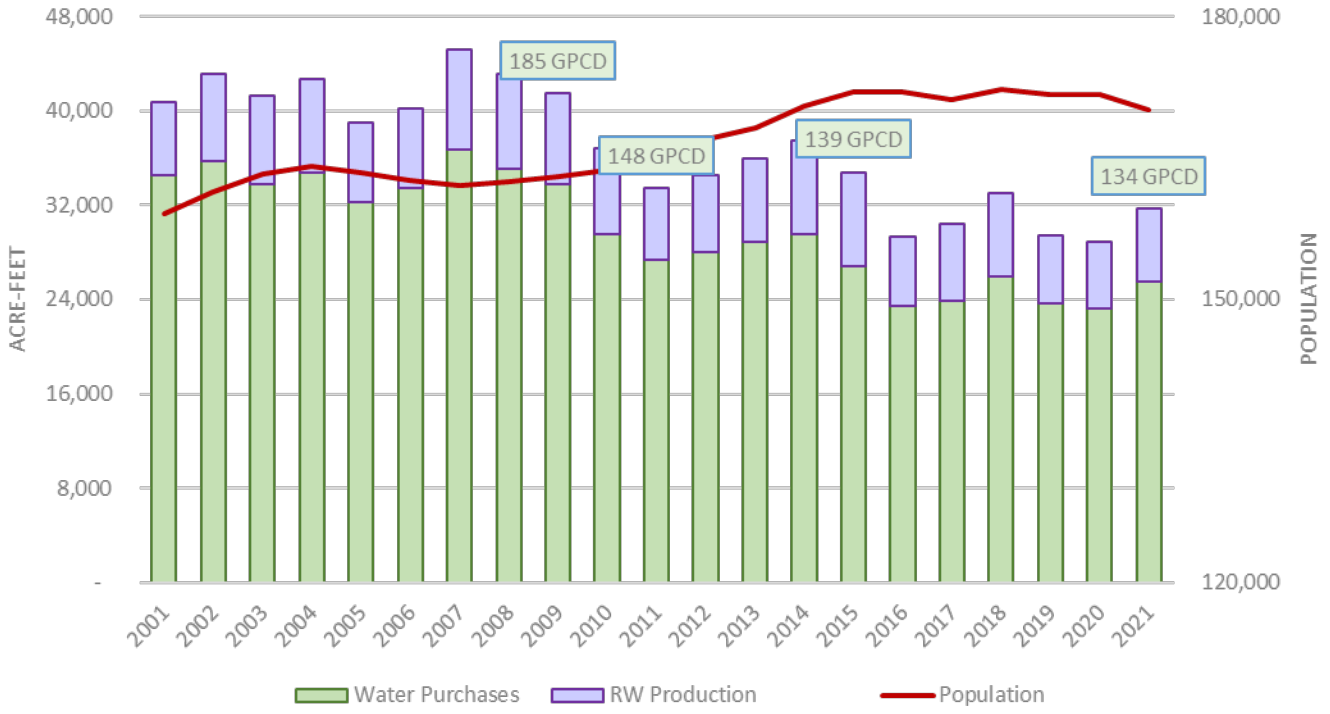
The District maintains approximately 500 miles of wastewater collection pipelines. The District's wastewater system has 17 lift stations that pump wastewater over ridge lines to the various treatment plants for treatment and recycling. The District is a member in the South Orange County Wastewater Authority (SOCWA), a joint powers authority comprised of ten governmental agencies, which operates three regional treatment plants and two ocean outfalls. The District also owns and operates a fourth wastewater treatment facility, Plant 3A.

In 1974, the District became one of the first water providers in Orange County to deliver recycled water for irrigation use. Today, the District owns capacity in two Advanced Wastewater Treatment (AWT) facilities which provide expansive recycled water service for landscaping. The District has constructed 150 miles of recycled water distribution pipelines with five pre-stressed concrete and six steel storage reservoirs to service the recycled water system. The District operates 10 recycled-water pump stations. In addition, the District owns 1,000 acre-feet of capacity rights in SMWD's Upper Oso recycled water reservoir. The projected annual demand of the recycled water system will increase over the next ten years at 50 acre-feet per year from 5,881 acre-feet in FY 2021-22. As a result, about three-fourths of all dedicated irrigation water use is estimated to be met with recycled water over the next ten years. The District continues to target cost effective recycled water conversions, consistent with the findings from the Recycled Water Master Plan.

Since FY 2001-02, MNWD's potable water purchases has averaged approximately 29,804 AF and recycled water production has averaged approximately 7,001 AF for a total annual average water usage of 36,767 AF. The current four-year average (FY 2017-18 to FY 2020-21) potable purchases are at 24,596 AF and 6,119 AF for recycled water production, totaling 30,716 AF average annual usage. This 16% decrease in total water usage is due to effective water efficiency programs and the District's water budget-based rate structure both of which encourage customers to use water efficiently and effectively.

As stewards of the water, wastewater, and recycled water systems and supplies our ratepayers have invested in over the last 61 years, it is our responsibility to ensure the continued reliability of those investments. Ensuring continued system reliability through reinvestment in the District's $2 billion critical infrastructure has remained a priority: nearly 85% of the $47 million in capital expenses budgeted for FY 2021-22 and 88% of the $435 million ten-year Capital Financing Plan can be attributed to the replacement or refurbishment of existing infrastructure. Figure 1 shows the District's water usage and supply as compared to population over the last 20 years.

Figure 1: Historical Water Supply



GOALS & POLICIES

The District is a community oriented, performance driven agency dedicated to serving its customers and the environment with reliable, affordable, and high-quality water and wastewater services. The LRFP furthers these goals by identifying a financial strategy to fund operations and capital investments while meeting the District's financial goals and policies that are detailed below.

Capital Financing Policy

The District shall utilize financing to achieve the following goals:

- Achieve an equitable allocation of operating and capital costs between current and future system users
- Continue to provide manageable rates in the near and medium term
- Minimize rate volatility
- Expedite critical infrastructure projects when needed

Capital financing shall include funding from the following sources: capital reserves, grants, general obligation bonds (historical), revenue bonds, certificates of participation, lease/purchase agreements, and other financing obligations permitted to be issued or incurred consistent with the Board adopted Debt Financing Policy and California law.

Revenues, net of all non-capital expenses should be maintained at a minimum of 175% of the maximum annual debt service for financial planning purposes. Annual adjustments to the District's rates are proposed as necessary to maintain at least the Board adopted 175% debt service coverage ratio. Setting the coverage ratio at this level is central to the District maintaining its strong credit rating, which in turn allows the District to issue bonds at the lowest interest rates. Moulton Niguel Water District is currently rated "AAA" by both S&P Global Ratings and Fitch Ratings.

Reserve Policies

The District has adopted reserves to mitigate potential revenue and expense volatility and reduce the risk of requiring unplanned, large rate adjustments. The reserve policies help to maintain the District's creditworthiness by adequately providing for:

- Economic uncertainties, extraordinary costs, and other financial impacts;
- Revenue uncertainties, such as loss of property tax receipts;
- Disasters or catastrophic events;
- Losses not covered by insurance;
- Compliance with bond covenants; and
- Funding designated infrastructure replacement and refurbishment.

Reserves

The District currently maintains the following reserves:

1. General Operating Reserve
2. Self-Insurance Reserve
3. Rate Stabilization Reserve
4. Emergency Reserve
5. Replacement and Refurbishment Reserve
6. Water Supply Reliability Reserve
7. Planning and Construction Reserve
8. Capital Facilities Restricted Reserve
9. Debt Service Reserves

General Reserves:

1. *General Operating Reserve*
   This reserve is used to provide sufficient liquidity for day-to-day operating expenses and District cashflow needs during normal operations due to normal delays between the payment of expenses and the receipt of revenues. The target balance in the General Operating Reserve is equal to three months of operating expenses, consistent with best practices in the industry for agencies with monthly rate revenue. The General Operating Reserve is maintained in the General Fund (Fund 1).

2. *Self-Insurance Reserve*
   This reserve is used to provide for expenses incurred by the District for the deductible amounts on insurance claims for repairs to facilities by outside contractors and expenses related to the State Unemployment Insurance for unemployment claims made against the District. The target level of the Self-Insurance Reserve is equal to five times the current Joint Powers Insurance Authority (JPIA) property insurance deductible (the current deductible is up to $50,000). The Self-Insurance Reserve is maintained in the Self-Insurance Fund (Fund 4).

3. *Rate Stabilization Reserve*
   This reserve is used to provide funds to smooth out potential fluctuations in water service rates of the District that may result from changes in wholesale water rates. The Rate Stabilization Reserve target level is set equal to 50% of the District's property tax revenue. The Rate Stabilization Reserve is maintained in the Rate Stabilization Fund (Fund 52).

Capital Improvement Reserves:

4. *Emergency Reserve*
   This reserve enables the District to quickly repair critical assets in the event of a natural disaster or facility failure. The target balance of the Emergency Reserve is equal to 2% of the replacement costs of the District's assets as outlined in current guidelines from the Federal Emergency Management Agency (FEMA). The Emergency Reserve is maintained in the General Fund (Fund 1).

5. *Replacement and Refurbishment (R&R) Reserve*
   The R&R Reserve was created to fund the ongoing costs related to the replacement and refurbishment of existing assets in conjunction with the District's Capital Improvement Plan. All amounts are maintained in a separate R&R Fund (Fund 7). Funding for the R&R Reserve will be from new debt issuances or fund transfers as part of the annual budget process.

6. *Water Supply Reliability Reserve*
   The Water Supply Reliability Reserve fund is used for the development of new water or recycled water supplies as identified in the District Capital Improvement Plan. All amounts are maintained in a separate Water Supply Reliability Fund (Fund 12). Funding for the Water Supply Reliability Reserve is from new debt issuances or fund transfers as part of the annual budget process.

7. *Planning and Construction Reserve*
   The Planning and Construction Reserve was created to fund the development of new capital facilities that do not result in new water or recycled water supplies as identified in the District Capital Improvement Plan. All amounts are maintained in a separate Planning and Construction Fund (Fund 14). Funding for the Planning and Construction Reserve will be from new debt issuances or fund transfers as part of the annual budget process.

8. *Capital Facilities Restricted Reserve*
   The Capital Facilities Restricted Reserve was created to fund the development of new district-wide capital facilities or replacement or refurbishment. Funding for the Capital Facilities Restricted Reserve will be from capacity fees charged to new developments or redevelopments to connect into existing assets or expansion of existing sites.

Debt Service Reserves:

9. *Debt Service Reserve*
   The District maintains Debt Service Reserves which are held in trust with a third-party trustee as provided for in bond covenants. Increases and decreases to these reserves will be consistent with bond covenants.

Table 1 presents FY 2021-22 MNWD reserve targets. Reserve targets are based on the District's FY 2021-22 budget. The Capital Improvement Reserves do not have targets but are instead funded annually based on budgeted project expenses.

Table 1. MNWD FY 2021-22 Reserve Targets

Type	Target	
General Operating	$	19,376,112
Self-Insurance	$	225,184
Rate Stabilization	$	15,553415
Emergency	$	35,300,000
Total Reserves	**$**	**70,454,712**

Financial Policies

The General Manager is authorized to implement the following Financial Policies to ensure the financial goals are being achieved in the District's day-to-day operations. Financial Policies are reviewed annually and updated as needed to provide timely updates as public agency laws or external conditions change.

Financial Reporting

All District's accounting and financial reporting systems will be maintained in conformance with all state and federal laws, Generally Accepted Accounting Principles (GAAP), standards of the Governmental Account Standards Board (GASB), and strives to meet the stringent requirements of the Government Finance Officers Association (GFOA) Award for Excellence in Financial Reporting requirements.

An Annual Audit will be performed by an independent public accounting firm; with an Audit Opinion to be included with the District's published Comprehensive Annual Financial Report.

Financial Plans

The District will continue to utilize internally developed short-term financial planning tools, while continuing to emphasize long-range planning and ongoing effective District management.

District Staff maintains a monthly cashflow model to forecast temporal distributions of cash inflows and outflows and ensure that there are sufficient liquid funds available for anticipated expenses as they are needed throughout the year. District finance staff receive monthly capital expense projections from the engineering department and update the monthly cashflow model to identify anticipated cashflow shortfalls and coordinate portfolio restructurings with the District's asset management group as needed. This regular and proactive communication between departments has allowed the District to maximize its investment earnings as cash reserves are drawn down between planned bond issuances.

The objective of the LRFP is to identify strategies and actions to ensure sufficient financial resources to enable the District to achieve its mission and to utilize those financial resources effectively. The plan projects the operating budget and incorporates the capital improvement program in order to determine the financial impact of future operating and capital needs and develops strategies to address those needs. Hence, the District's operating budget serves as a key input into the long-range financial outlook for the District. Additionally, the District's ten-year cashflow summary serves as key contextual information to aid in making near-term financial decisions.

The long-range financial planning model (also known as the Ten-Year Cash Flow Model or Model) is a working model that is regularly updated to reflect changes in existing assumptions and future outlooks to create adaptive financial management strategies. The long-range planning and annual operating and capital budgeting processes are interrelated and form a single planning and budgeting system.

Budget Appropriations

The District maintains a balanced operating budget for all funds with total ongoing revenues equal to, or greater than, total ongoing expenditures. At year-end, all funds will have a positive fund balance and the General Fund reserve balance is maintained as required.

Enterprise Funds - Rates

The District will set water, recycled water, and wastewater rates at levels which, in addition to other revenues and available cash balances, fully recover the total direct and indirect costs of providing these services – including operations and maintenance, capital outlay, reserve requirements, and cash flow and debt service requirements.

The District will review and adjust enterprise fees and rate structures as required to ensure that they remain appropriate, equitable and reflect the cost of service.

Article XIII D of Proposition 218 requires that fees for water and wastewater services meet strict cost of service requirements including:

1. Revenues for the fee cannot exceed the cost to provide the service
2. Revenues for the fee cannot be used for something other than what the fee was imposed for
3. Property owner must be able to use or have service immediately available to them

In addition to meeting the requirements of Prop. 218, the District's water budget-based rate structure is designed to encourage the beneficial uses of water and prevent the unreasonable use of water, consistent with California Constitution Article X Section 2: *"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. […]."*

Capital Management – Infrastructure

The District will maintain a long-range fiscal perspective through the use of a Capital Improvement Plan (CIP) to maintain the reliability of its water and wastewater infrastructure. The purpose of a long-term CIP is to systematically plan, schedule, and finance capital projects to ensure cost-effectiveness, as well as conformance to established District policies. The CIP will be updated annually in conjunction with the District's budget preparation, including anticipated funding sources.

Risk Management

The District will identify and quantify all areas of financial and operating risk, and prepare contingencies for those risks, including legal liabilities, infrastructure maintenance, refurbishment and replacement of assets, emergency response, and contract and employee obligations.

Investments

Investments and cash management are the responsibility of the District Treasurer or designee. The District's primary investment objective is to achieve a reasonable rate of return while minimizing the potential for capital losses arising from market changes or issuer default. Accordingly, the following factors will be considered in determining individual investment placements: safety, liquidity, and yield. The priorities of these factors are further established by the adopted Statement of Investment Policy.

Procurement

The purchasing and procurement system will encourage transparency and sufficient fiscal controls on all purchases and sales to the extent required by law for Special Districts or by District policy competition. The District's Purchasing Policy was last updated in June of 2021.

MODELING ASSUMPTIONS

The District's Ten-Year Cash Flow Model uses the most recent financial information, contract terms and the Board adopted budget to serve as the basis for future year projections. The District's fiscal year (FY) starts July 1 of each year. For example, Fiscal Year 2021-22 goes from July 1, 2021 to June 30, 2022.

The Model employs assumptions to calculate future year revenues, expenses, and cash balances. Model assumptions are reviewed as necessary and each time the Model is significantly updated. Unless more appropriate sources exist, the District utilizes inflation projections from the California Department of Finance for the Los Angeles region.

Staff and consultants reviewed and revised the Model assumptions for the 2021 Long-Range Financial Plan. The water purchase cost assumptions are detailed later in Table 14.

Inflation Assumptions – Expenses

Table 2: Inflation Factors – Expenses

Inflation Factors	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
General – Expenses	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.8%	1.8%	1.8%	1.8%
Salaries & Benefits										
Salaries	3.6%	5.7%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Benefits – Medical	5.2%	5.4%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Benefits – Dental	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Benefits – CalPERS	10.9%	4.5%	5.7%	6.6%	2.0%	1.6%	1.9%	1.6%	1.6%	1.9%
Benefits – Other	2.8%	4.3%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Insurance										
Insurance – District	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	1.8%	1.8%	1.8%	1.8%
Insurance – Personnel	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Operating Costs										
Operations – Utilities	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	3.6%	3.6%	3.6%	3.6%
Operations – SOCWA	3.3%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Capital Costs										
Capital – District	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

General - Expenses

General inflation factors used in the Model are shown in Table 2. Updated Consumer Price Index factors used are from data provided by the California Department of Finance with the most recent update in April 2021.

Salaries & Benefits

Salaries: costs are assumed to vary by year in the Model, consistent with the salary adjustment terms of the Memorandum of Understanding (MOU) with the Moulton Niguel Water District Employee Association. The MOU became effective June 24, 2017 and is based on historical employee performance. The 2017 MOU was extended for two years (FY 2021-22 and FY 2022-23) with the following increases:

- FY 2021-22 percent increase assumes a 2% Cost of Living Adjustment (COLA) and performance-based salary increases.
- FY 2022-23 percent increase assumes a 2% COLA and performance-based salary increases.

Salaries related costs are expected to increase 4.5% for the next 8 years or until a new MOU has been established. The District has been very proactive throughout the years to ensure that costs associated with salaries are appropriate to retain a quality work force while being fiscally prudent.

Benefits: there are four benefits cost categories in the Model, each with its own assumed rate of inflation. Benefits costs for FY 2021-22 have been updated based on actual plan elections by staff who were hired during FY 2020-21. Inflation rates for FY 2021-22 are shown to illustrate the recalibration of forecasting assumptions in the Model.

1. *Benefits – Medical:*
   The District's share of employee health care plan premiums. Initial health insurance increases proposed for the FY 2021-22 HMO and PPO plans was at 14.5%. The District responded to rising premiums by issuing a Request for Proposals to ensure its health insurance costs remain competitive. As a result of this process, health plan premiums will only increase an average of 5-6% above current rates. Per the terms of the MOU, employees and the District share future total plan cost increases on a 50/50 basis. An inflation rate of 5.5% has been assumed for all years: staff considers this to be a conservative estimate based on historical rate trends for District premiums, continued cost sharing of plan premium rate increases, uncertainty regarding future healthcare reform and legislation.

2. *Benefits – Dental:*
   The costs associated with dental plan premiums the District pays on behalf of its employees. All plan costs are paid entirely by the District. Baseline dental plan cost assumptions for FY 2021-22 have been adjusted upward to reflect current rates. An inflation rate of 5.5% has been assumed for all years: staff considers this to be a conservative estimate based on historical rate trends for District premiums, continued cost sharing of plan premium rate increases, uncertainty regarding future healthcare reform and legislation.

3. *Benefits – CalPERS:*
   The District's contribution to employee retirement plans, both the unfunded liability payment and normal cost payments are included. This fiscal year is the sixth year of full cost-sharing between the District and its employees. Based on recent CalPERS actuarial valuations, the District has a funded ratio of 74.3% of the present-value of its projected benefits. The District's current funding ratio is above average in the industry. Inflation assumptions for FY 2021-22 through FY 2022-23 are based on the terms of the MOU and future years are based on actuarial forecasts of annual contribution requirements over the next 30 years.

4. *Benefits – Other:*
   The benefits costs that do not fall into the other three categories or which may not require more specific assumptions.

Insurance

Inflation assumptions related to insurance have been grouped into two distinct categories to reflect the different nature of the underlying costs.

1. *Insurance – District:*
   Premiums the District pays to insure its facilities and assets against damage or other loss. The District maintains several broad insurance policies through its membership with Association of California Water Agencies Joint Powers Insurance Authority (ACWA/JPIA). To reflect the large risk-sharing pool and premiums-based incentives for reducing claims, inflation assumptions for all future years have been set equal to General – Expenses as any future rate increases would likely be tied to new asset purchases.

2. *Insurance – Personnel*:
   District's contribution to employee welfare and safety-net programs, such as: Workers' Compensation, Medicare, Federal Insurance Contributions Act (FICA), short and long-term disability, and State Unemployment Insurance. Workers Comp premiums for District employees are based on a formula that accounts for a number of operational factors that are intended to capture the relative claim risk among the ACWA/JPIA member agencies and allocates the total pool premium accordingly. The "Experience Modification Rate" or "E-Mod" reflects an agencies overall level of safety and is adjusted up or down annually based on the number and severity of claims. As the District has increased its emphasis on worksite safety and training for field staff, the number of claims the District has made have gone down and as a result, the District's E-Mod is 0.82, paying only 82% of the standard premium. All 10 years assume a 5.5% annual increase to maintain consistency with healthcare cost inflation assumptions.

Operations

1. Operations – Utilities:
   Electricity dominates the District's utility expenditures and utilities use the same factor as general inflation (based on Los Angeles-area CPI data). Over the past few years, recent electricity prices statewide and in southern California have remained stable or grown slowly with overall inflation. Escalating utilities at the rate of general inflation is therefore a conservative estimate for electricity.

2. Operations – SOCWA:
   Inflation factor assumptions related to South Orange County Wastewater Authority operations are based on annual cost estimates provided by SOCWA finance staff. Annual operating expense projections vary significantly from year to year, which greatly impairs the development of robust inflation assumptions for this major cost component. Due to the variety of expenses bundled into SOCWA's operating costs and method of allocating those costs to its member agencies, more consistent projections of annual costs are not available and inflation assumptions based on California Department of Finance estimates have not been sufficient to capture the substantial and frequent revisions that have been made to operating cost projections over the rate study period. Despite the significant probability of future revisions to annual SOCWA-related operating costs, staff does not recommend utilizing finance industry-standard assumptions as an alternative to SOCWA projections as there is no historical precedent which would warrant such a large assumption.

Capital

The Capital Improvement Plan inflation rate is assumed to be 0% in order to reflect both the uncertainty in future capital expenses and potential project cost savings.

Inflation Assumptions – Revenues

Table 3: Inflation Factors – Revenues

Inflation Factors	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
Revenue Assumptions										
General – Revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Property Tax	3.1%	3.0%	3.4%	3.8%	3.8%	3.63%	3.5%	3.5%	3.5%	3.5%
Investment Returns	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	2.0%	2.0%	2.0%	2.0%
Capacity Fees	-87.9%	238.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Property Lease Revenue	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.74	3.7%

General – Revenue

Non-rate related operating revenues are assumed not to increase above present values over the planning horizon of the Model. Staff considers this assumption both appropriate and conservative as the majority of these revenue sources are related to either: daily operations activity (e.g. sale of scrap metal or other materials), for which increases in revenue would likely be offset by increased cost of the underlying activity; or user fees related to customer service, which would only increase as a result of customer base growth or an active policy decision to increase the dollar amount of user fees.

Property Tax

Revenues from property tax are assumed to increase annually over the planning horizon of the Model. Property tax revenue for the District has continued to increase over the past four years. This has been a key component of the District's revenue base and has provided customers with some of the lowest water rates in South Orange County. Local property tax forecasts suggest about a 4% increase year over year; however, a more conservative estimate of future growth is assumed in the Model to reflect the use of property tax revenues in the development of the District's tiered rate structure. Also, the District maintains a Rate Stabilization Reserve which reduces the financial exposure resulting from a sudden reduction in property tax revenue that would otherwise warrant an even more conservative estimate of future revenue.

Investment Income

The District has adhered to the financial plan outlined in the 2017 Long-Range Financial Plan and has effectively leveraged its available unrestricted cash balances to minimize rate impacts to customers during the transition from infrequent to regular rate revenue adjustments. The planned spenddown of unrestricted cash balances has reduced the District's investment income; however, enhanced coordination between District departments has increased the accuracy of short and long-term cashflow forecasts, allowing the District's Investment Advisor to confidently restructure its investment portfolio to meet short-term liquidity needs and mid-term cash funded Capital Improvement Program costs, while maintaining long-term earnings. The assumed 1.75% factor was developed in coordination with the District's Investment Advisor and reflects realistic expectations of portfolio performance over the planning horizon.

Capacity Fees

Annual capacity fee inflation assumptions are based on development forecasts maintained by the District's private development group and reflect anticipated development within the service area over a ten-year period. The District's private development group actively works with the District's local cities to develop its ten-year forecast.

Property Lease Revenue

The main source of revenue is from cell site carriers placing antennas and equipment on reservoir properties and other District locations. These communications facilities are distributed among 17 sites. Many cell carriers are merging and no longer need duplicative sites. However, due to the changes in license fees, revenues are projected above historical levels at $2.0 million through FY 2030-31. The Model accounts for the contracted amounts from retained sites and the decommissioning of sites as the lease contracts expire.

Water Supply Assumptions

The water supply portfolio used to project the cost of the water is based on available water deliveries from Baker Water Treatment Plant (Baker) and Diemer Treatment Plant from Metropolitan Water District of Southern California (MWDSC). In addition, as a part of its Long-Range Water Reliability Plan, the District has evaluated other long-term projects to further reduce District demand of imported supplies. In FY 2016-17, Baker started operations and ramped up to full capacity in FY 2017-18. The Baker Water Treatment plant can provide the District with approximately 8,908 acre-feet annually from treating raw MWDSC water. The District projects a constant 7% for water losses (non-revenue water). Non-revenue water may consist of water used on District properties, water used for operational purposes such as hydrant flushing, or water loss due to leaks or meter inaccuracies. In an effort to reduce costs from non-revenue water, the District has implemented several water loss control programs. The Water Supply Portfolio differs slightly from the Urban Water Management Plan projections as a result of increase water loss efforts, such as dull-time water loss detection crew, regular meter testing, pressure reduction studies, and Advanced Metering Infrastructure-driven apparent loss detection.

The year-to-year, overall water demand is projected to remain relatively flat with potable water usage decreasing slightly, replaced by recycled water usage.

Table 4: Water Supply Portfolio

Water Supply Usage	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**
Usage (AF)	21,723	21,673	21,623	21,573
Non-Revenue Water	7.00%	7.00%	7.00%	7.00%
Total Demand w/ Water Loss (AF)	23,358	23,304	23,250	23,197
Supply Portfolio				
Diemer Treatment Plant (AF)	14,450	14,396	14,342	14,289
Baker Treatment Plant (AF)	8,908	8,908	8,908	8,908

Table 5 below shows the projected supply cost rates with annual escalation factor between 3-5%. In the Management of Financial Risk section of this document, the Model evaluates an additional scenario at a maximum 10% annual increase. These scenarios provide bounds on how volatile cost trends could impact District operation, absent policy tools.

Table 5: Projected Rates and Charges

Projected Rates and Charges	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
MWD Treatment Variable Rate ($/AF)	$1,103.28	$1,155.63	$1,207.71	$1,257.48	$1,295.94
MWD Untreated Variable Rate ($/AF)	$766.93	$804.68	$846.98	$881.01	$914.06
Baker Variable Costs ($/AF)	$109.79	$111.99	$114.23	$116.51	$118.84
Baker Fixed Costs	$858,979	$876,159	$893,682	$911,556	$929,787
MWD Readiness-to-Serve Charge	$1,448,126	$1,448,126	$1,515,169	$1,583,420	$1,686,911
MWD Capacity Charge	$457,317	$457,317	$609,756	$615,176	$623,324
MWDOC Annual Connection Charge	$685,139	$702,564	$720,163	$737,929	$755,850

Table 5 (continued): Projected Rates and Charges

Projected Rates and Charges	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
MWD Treatment Variable Rate ($/AF)	$1,327.26	$1,360.16	$1,395.36	$1,435.99	$1,484.60
MWD Untreated Variable Rate ($/AF)	$945.41	$978.35	$1,013.58	$1,054.24	$1,097.40
Baker Variable Costs ($/AF)	$121.22	$125.60	$130.14	$134.84	$139.71
Baker Fixed Costs	$948,383	$982,639	$1,018,133	$1,054,909	$1,093,014
MWD Readiness-to-Serve Charge	$1,717,959	$1,831,799	$1,852,498	$1,852,498	$1,926,598
MWD Capacity Charge	$651,842	$651,842	$651,842	$651,842	$677,916
MWDOC Annual Connection Charge	$773,918	$792,417	$811,357	$830,749	$850,603

Utilizing all the factors detailed above results in the annual operating revenue requirement projections shown in Table 6. FY 2022-23 and beyond are projected based on the costs in FY 2021-22.

Table 6: Revenue Requirements

Projected Revenue Requirements	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Water – Imports & Production	$28,143,825	$29,240,558	$30,588,087	$31,677,550	$32,629,286
O&M – General	$25,702,212	$26,158,477	$26,498,506	$27,162,486	$27,475,588
Staffing Resources	$22,901,953	$23,949,051	$25,308,448	$26,776,525	$27,902,843
Projected Revenue Requirements	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
Water – Imports & Production	$33,408,387	$34,306,741	$35,164,161	$36,124,751	$37,318,271
O&M – General	$28,112,988	$28,514,384	$29,242,038	$29,623,092	$30,331,017
Staffing Resources	$29,064,149	$30,290,686	$31,557,712	$32,880,850	$34,277,195

Debt Financing Assumptions

In evaluating future financing needs, the Model makes assumptions on the initial and ongoing costs associated with issuing debt. Below in Table 7 are the projected terms for debt issuance mechanisms the District has historically implemented. These are based on conservative estimates of long-term trends. The District will work with its Financial Advisor and financing team to secure the optimum rates and terms at the time of issuance.

Table 7: Debt Mechanism

Debt Mechanism	Interest Rate	Term (Years)	Issuance Cost
Certificate of Participation	3.5%	30	$250,000

REVENUE REQUIREMENTS & CURRENT REVENUE

Revenue Requirements

The revenue requirements for the District are composed of three components:

1. Annual operating costs that rise in proportion to specific inflators, outlined in Figure 2;
2. Capital costs that are one-time expenses, such as new infrastructure; and,
3. Debt Service Payments.

Figure 2 below shows combined operating and capital revenue requirements for FY 2021-22, the first year of the model while Table 8 shows the summary of district-wide revenues, proposed debt issuances, and revenue requirements.

Figure 2: Current Revenue Requirements

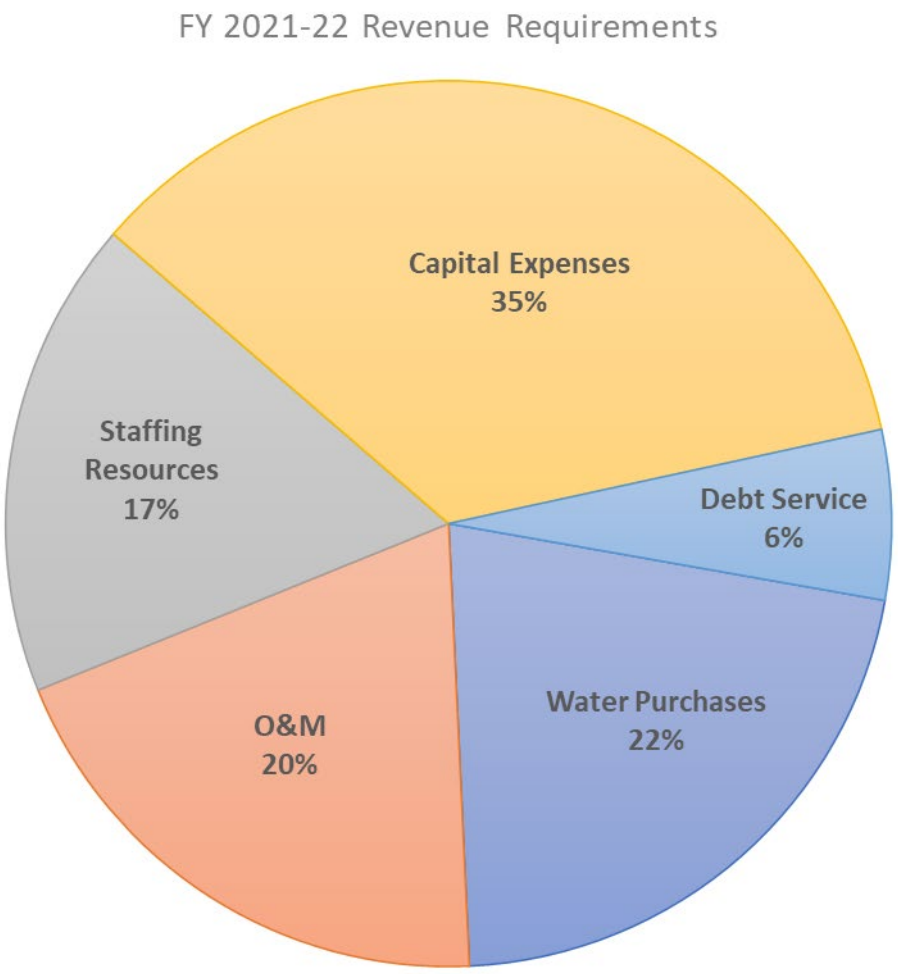


Table 8: Current Revenue and Revenue Requirements

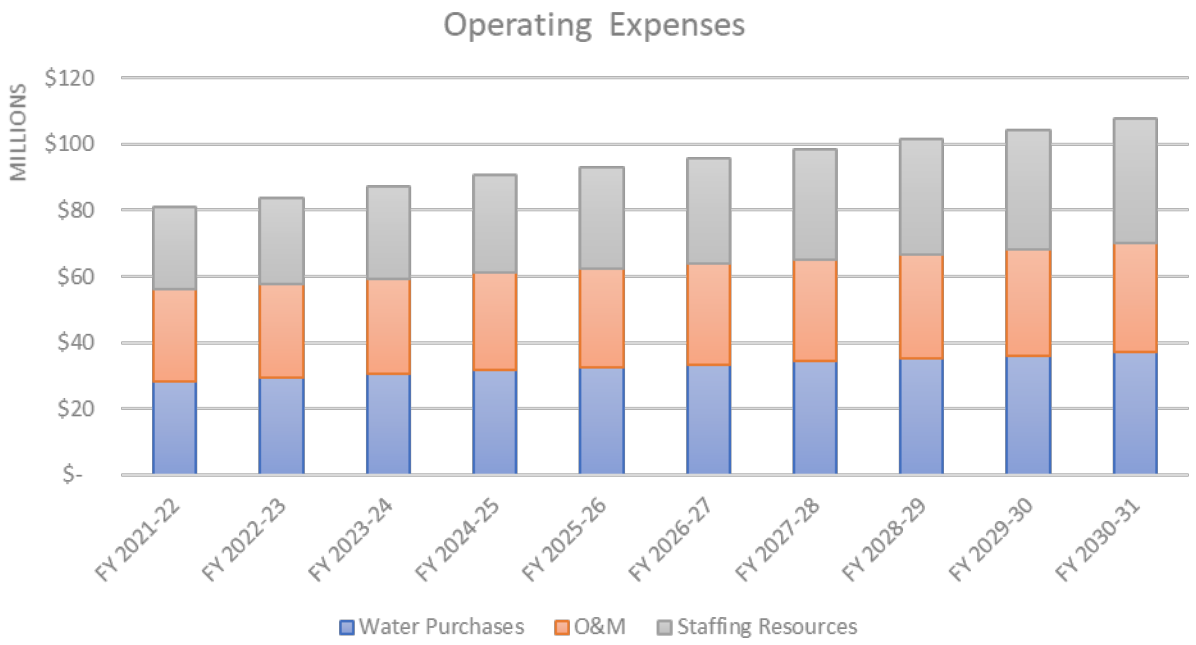
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Revenue					
Current Rate Revenue	$63,609,952	$65,340,092	$67,135,011	$68,997,432	$70,930,205
Proposed Adjustments	$2,565,708	$2,632,913	$2,702,843	$2,775,623	$2,851,384
Non-Rate Revenue	$36,882,540	$37,995,254	$38,574,548	$40,199,979	$41,902,706
Bond Issuance	$60,000,000	-	-	$75,000,000	-
Revenue Requirements					
Debt Service	$8,114,435	$11,171,162	$11,167,237	$10,809,737	$14,880,337
Operating Expenses	$76,747,991	$79,348,085	$82,395,041	$85,616,560	$88,007,717
Capital Expenses	$45,801,141	$59,271,430	$40,671,636	$36,042,792	$37,766,373

	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
Revenue					
Current Rate Revenue	$72,936,308	$75,018,858	$77,181,116	$79,426,495	$81,758,563
Proposed Adjustments	$2,930,263	$3,012,403	$3,097,957	$3,187,083	$3,279,946
Non-Rate Revenue	$42,862,642	$44,780,701	$46,559,832	$47,639,002	$48,811,563
Bond Issuance	-	$83,000,000	-	-	-
Revenue Requirements					
Debt Service	$14,879,212	$14,873,712	$19,386,157	$19,375,532	$19,374,157
Operating Expenses	$90,585,524	$93,111,810	$95,963,911	$98,628,692	$101,926,483
Capital Expenses	$44,771,052	$45,383,406	$40,858,841	$38,477,822	$30,316,924

The following figures and charts will break down the overall revenues and revenue requirements into their components and the next section will show the plan moving forward. Operations and maintenance expenses in the Long-Range Financial Plan use actual FY 2020-21 expenses and budgeted expenses for FY 2021-22. Operating expenses for FY 2022-23 through FY 2030-31 are projected based on the inflation factors discussed in Modeling Assumptions.

Figure 3 depicts a breakdown of operating costs over the next 10 years into their major components.

Figure 3: Operating Expenses



The largest operating expense is water purchases, projected to increase 33% by FY 2030-31. Currently, the District purchases all its potable water supply from MWDSC via MWDOC. In 2016, the regional Baker Water Treatment Plant came online and met 36% of FY 2020-21 potable water demand. Over the next ten years, Baker is estimated to meet approximately 38% of potable water demand. In FY 2021-22, Recycled water production is estimated to meet 25% of total water demand and is projected to grow at a rate of 50 AF until FY 2029-30 and remain constant thereafter.

Operations and maintenance of all three systems increases 17.6% by FY 2030-31. Given the significant annual financial contributions to wastewater treatment, there is a growing need to ensure the District's ratepayers receive high-quality and cost-effective wastewater treatment services from its contract service providers. It is imperative that the treatment of wastewater be closely monitored to ensure compliance with all regulations, protection of public health and the local environment, and financial accountability and transparency for the benefit of all the District's ratepayers. As the projected costs for wastewater treatment continue to increase, the District intends to review opportunities to identify the most effective ways to treat wastewater and managing costs to do so.

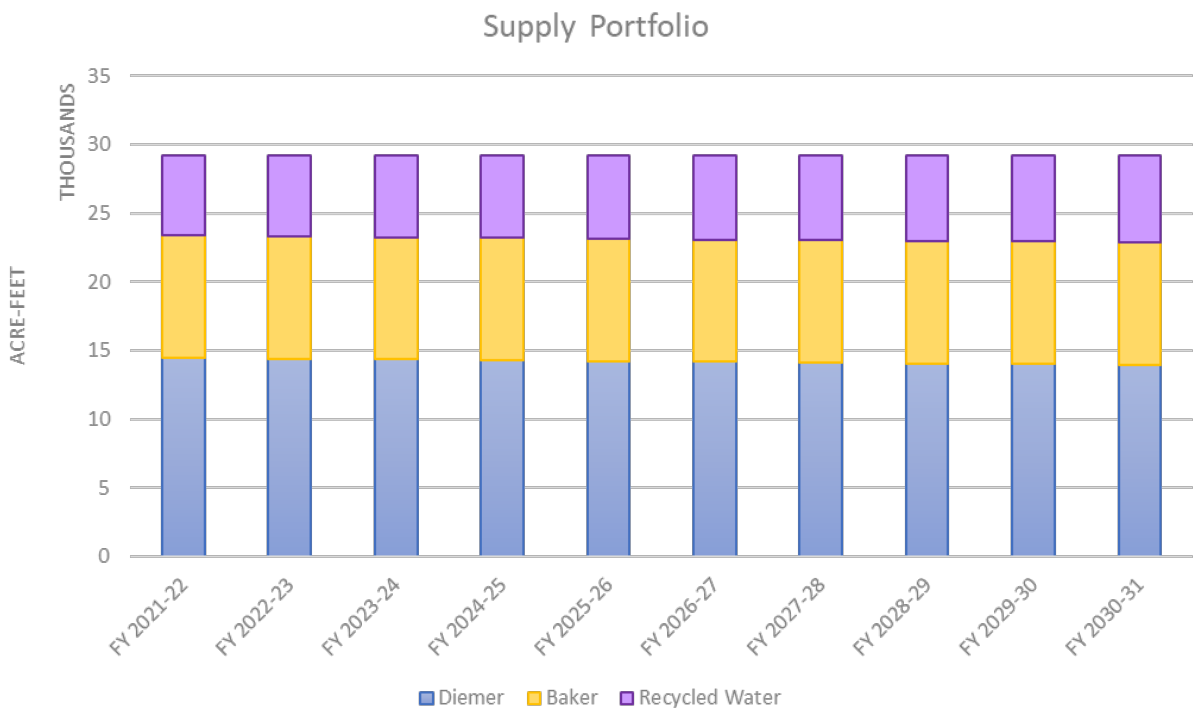
Lastly, staffing resources, which includes salaries and benefits will increase 50% by FY 2030-31, but may vary depending on the terms of future MOUs and necessary staffing resources.

The Model has the capability to analyze the financial impacts of a mixed portfolio with specified supply allocations based on projects such as expanded recycled water deliveries, emergency interconnections, or groundwater exchange programs (the District anticipates spending approximately $750,000 on a study for a joint project with Orange County Water District), as well as potential for direct portable reuse.

The supply portfolio presented below is the base case used unless specified in a given scenario. For example, if the groundwater exchange program can provide additional supplies.

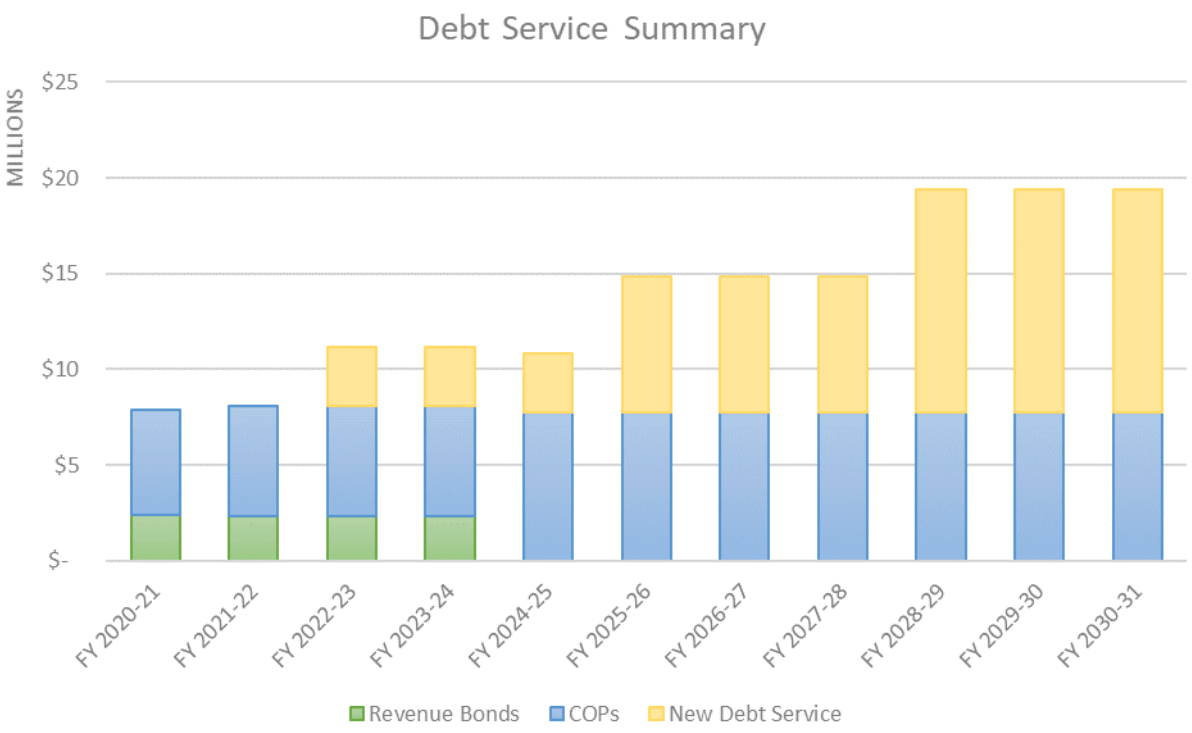
Figure 4 shows the base case forecast water supply portfolio. The overall demand will remain consistent at 30,000 acre-feet.

Figure 4: Supply Portfolio



The financial plan includes the existing debt service schedules and projected issuances intended to smooth out large, expected capital project costs over the life of the assets. Figure 5 provides a breakdown of existing debt service by issuance type and projected debt issuances of $60 million in FY 2021-22, $75 million in FY 2024-25, and $83 million in FY 2027-28 to fund capital expenditures and smooth rate adjustments in the term.

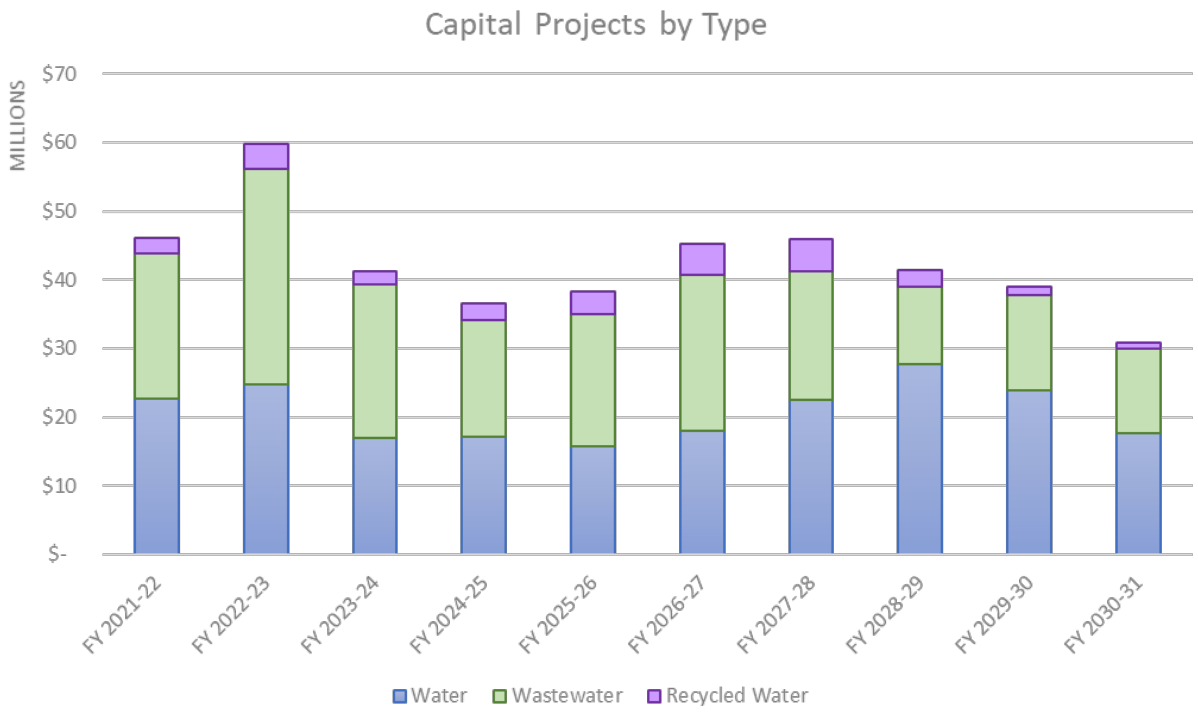
Figure 5: Debt Service Summary



Capital expenses projected for Fiscal Years 2021-22 through 2030-31 are from the District's Capital Financing Plan. Due to forecasted replacement and rehabilitation as well as large regional capital projects, the District has an expected CIP of approximately $611 million over the next 10 years. While the District reviews its 10 Year CIP annually, on-going operations, maintenance, and regular condition assessments of the District's infrastructure may require updates to the CIP which may necessitate changes in the schedule of investments.

Figure 6 provides a summary of the major capital expenses in the District's 2021 Capital Financing Plan.

Figure 6: Capital Projects Summary



Current Revenues

The two largest sources of revenue are rate revenues from the three systems (water, recycled water, and wastewater) and ad valorem property tax. Rate revenues for both water and wastewater are composed of fixed and variable charges (except Fire Protection, which is fixed charge only). Each type and class are defined below.

Water Rates

The fixed fee for providing water service to customers is based on the size of the water meter. Table 9 lists the fixed, monthly service charge for all account class in 2021.

Table 9: Fixed Monthly Water Service Charges Effective January 1, 2021 ($/Meter)

	Single-family Residential	Multi-family Residential	Commercial	Potable Irrigation	Recycled Irrigation	Fire Protection*
5/8”	$9.77	$10.26	$3.71	$15.72	$15.72	$4.69
3/4"	$9.77	$10.26	$3.71	$15.72	$15.72	$4.69
1”	$9.77	$10.26	$3.71	$15.72	$15.72	$4.69
1.5”	$32.56	$22.45	$12.36	$52.41	$52.41	$15.64
2”	$52.10	$32.90	$19.77	$83.86	$83.86	$25.02
2.5”	-	-	-	-	-	$39.88
3”	$113.98	$66.00	$43.25	$183.45	$183.45	$54.75
4”	$195.39	$109.55	$74.14	$314.48	$314.48	$93.85
6”	$407.06	$222.78	$154.46	$655.16	$655.16	$195.51
8”	$586.16	$318.59	$222.42	$943.43	$943.43	$281.54
10”	$944.36	$510.22	$358.35	$1,519.98	$1,519.98	$453.59

*Fire Protection Water Service Charges are only assessed a fixed charge, based on connection size.

The variable fee is based on the amount of water used by the class type.

1. **Residential: Single Family and Multi-Family**
   The current water volumetric rate structure is composed of five tiers. Table 10 shows the tiered rates for residential accounts, effective January 1, 2021.

Table 10: Residential Tier Width Rates Effective January 1, 2021 ($/hcf)

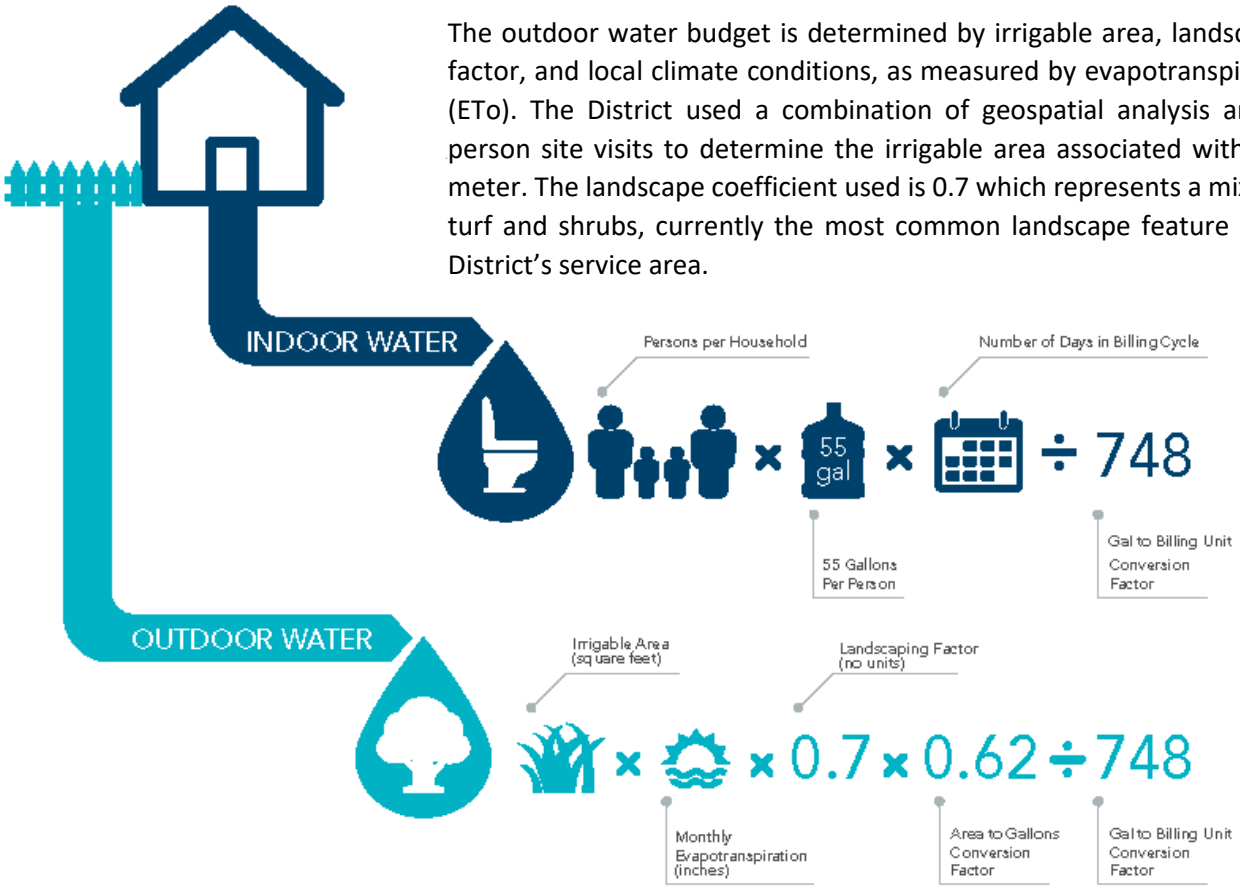
Tier	Allocation	Rate (per hcf)
1	Indoor Water Budget	$2.08
2	Outdoor Water Budget	$2.42
3	101-125% Total Water Budget	$3.59
4	126-150% Total Water Budget	$5.39
5	Over 150% Total Water Budget	$9.86

Tier 1 = Indoor Water Budget

The indoor water budget is determined by first allocating 55 gallons per capita per day (GPCD) for efficient indoor use, multiplying that allocation by the number of days in the billing cycle and the number of people in the household. The conversion factor converts from gallons to hundred cubic feet (hcf), which is the billing unit (BU). Customers report the number of people in their household when activating an account, but the median household are 4 people for single family and 2-3 people for multi-family housing.

Tier 2 = Outdoor Water Budget

The outdoor water budget is determined by irrigable area, landscaping factor, and local climate conditions, as measured by evapotranspiration (ETo). The District used a combination of geospatial analysis and in-person site visits to determine the irrigable area associated with each meter. The landscape coefficient used is 0.7 which represents a mixed of turf and shrubs, currently the most common landscape feature in the District's service area.



2. Commercial & Irrigation

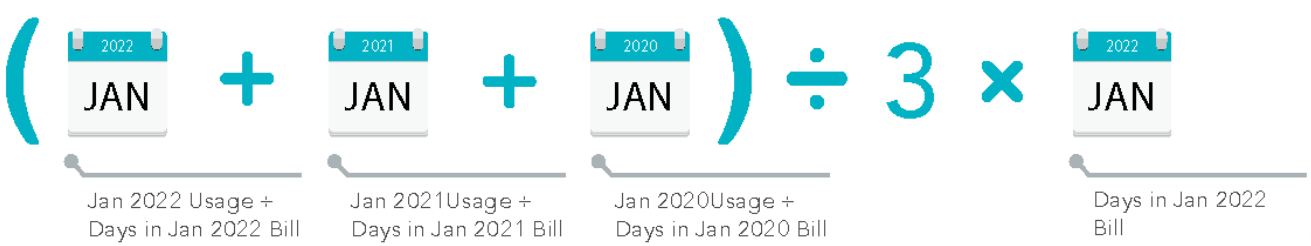
The current water volumetric rate structure for commercial and irrigation is composed of four tiers. Table 11 shows the tiered rates for commercial and irrigation accounts, effective January 1, 2021.

Table 11: Commercial and Irrigation Tier Width Rates Effective January 1, 2021 ($/hcf)

		Commercial	Potable Irrigation	Recycled Irrigation
Tier	**Allocation**			
1	Total Water Budget	$2.42	$2.42	$1.63
2	101-125% Total Water Budget	$3.59	$3.59	$3.05
3	126-150% Total Water Budget	$5.39	$5.39	$4.85
4	Over 150% Total Water Budget	$9.86	$9.86	$9.32

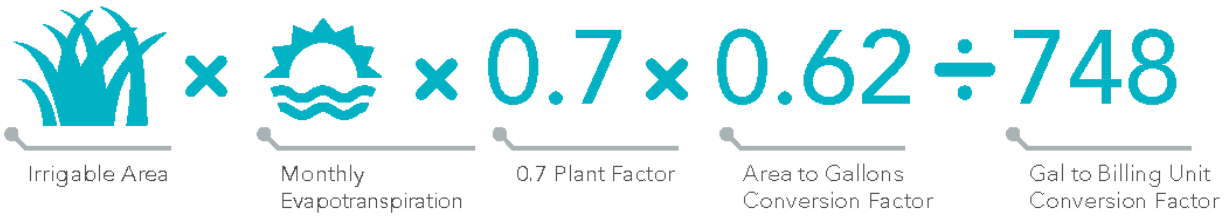
Commercial Accounts

To determine the total water budget for commercial meters, the District uses a rolling average of the current month's usage and the respective monthly usage from the past two years to determine the total water budget (with a minimum budget of one billing unit). This 3-year rolling monthly average accounts for typical monthly usage for commercial customers as well as for potential increases in business activity or recent efficiency improvements that may have occurred within the current month.



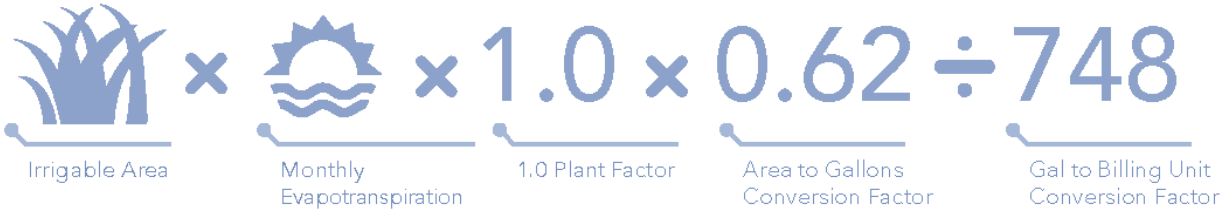
Irrigation Accounts (Potable and Recycled Water)

For all **potable water** irrigation meters, total water budget is calculated as follows:



Total water budgets for areas irrigated with **recycled water** are calculated similarly to potable irrigation budgets; however, budgets for recycled irrigation have a higher landscape factor to account for the additional salinity of recycled water.

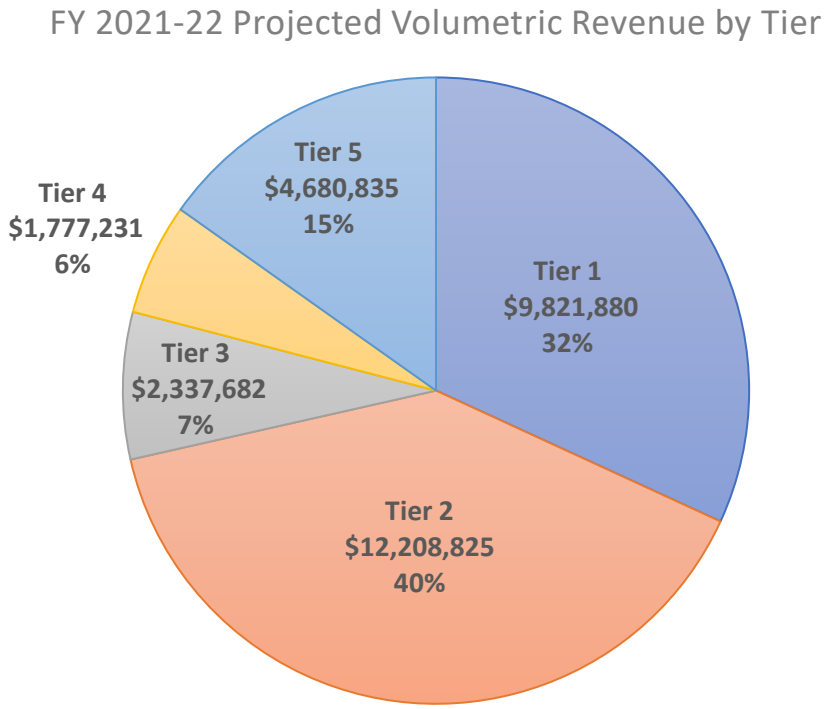
The same calculation applies to total water budgets for potable water **and** recycled water for areas defined as public spaces which includes public parks, but with a landscape factor of 1.0.

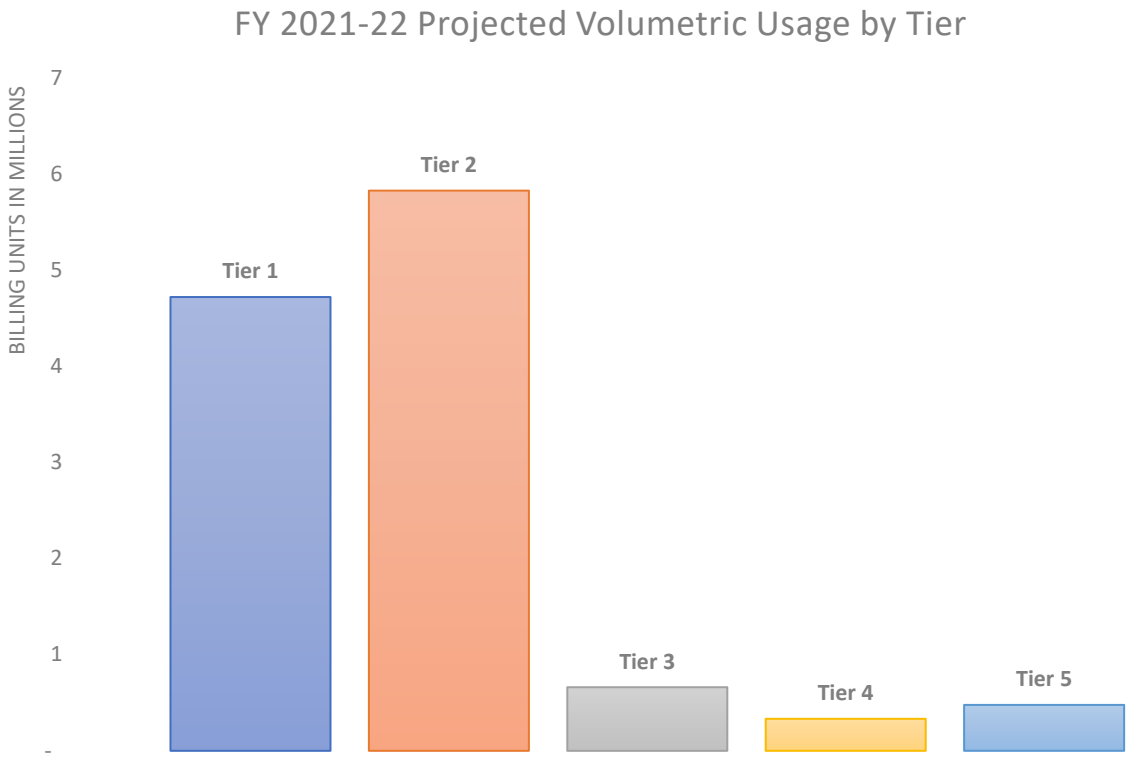


Using water in excess of a customer's individually calculated water budget results in higher rates, increasing up to $9.86 per hcf in the highest tier. For Recycled customers, usage above the basic use allocation results in an increase up to $9.32 in the highest tier. The revenue derived from out-of-budget usage goes to fund conservation and water efficiency programs, education, outreach, and program administration. In addition, the water efficiency revenue can be used to study and/or construct new water supply projects.

Figure 7 presents the projected revenue share and usage for FY 2021-22 that will be received from each of the water budget tiers based on FY 2020-21 baseline usage levels and no assumed rate structure changes.

Figure 7: Projected Volumetric Revenue and Usage by Tier





Wastewater Rates

The wastewater system has two customer groupings: residential customers and commercial customers. Residential customers are billed per person and a monthly charge of $16.86 and multi-family customers are billed based on meter size as shown in Table 12.

Table 12: Monthly Wastewater Service Charges Effective January 1, 2021 ($/Meter)

	Residential	Multi-Family	Commercial 1	Commercial 2	Commercial 3	Commercial 4
Per Person	$5.06	$5.06	-	-	-	-
5/8”	$16.86	$19.89	$24.47	$58.62	$126.64	$138.53
3/4"		$19.89	$24.47	$58.62	$126.64	$138.53
1”		$19.89	$24.47	$58.62	$126.64	$138.53
1.5”		$60.33	$75.62	$189.42	$416.15	$455.78
2”		$95.00	$119.46	$301.55	$664.33	$727.74
3”		$204.81	$258.31	$656.68	$1,450.33	$1,589.06
4”		$349.27	$440.98	$1,123.88	$2,484.39	$2,722.20
6”		$724.88	$915.96	$2,338.67	$5,173.08	$5,668.52
8”		$1,042.70	$1,317.85	$3,366.53	$7,448.06	$8,161.49
10”		$1,678.35	$2,121.66	$5,422.32	$11,998.13	$13,147.55

Commercial customers are assigned to one of the four classes below based on the type of commercial activity and the strength of the wastewater that they discharge into the system. Typical users within the four subclasses generally include, but are not limited to, the following:

COMMERCIAL CLASS 1	COMMERCIAL CLASS 2
banks, car washes, churches, department & retail stores, laundromats, professional offices, schools and colleges	beauty and barber shops, hospital and convalescent facilities, repair shops, service stations and veterinary hospitals

COMMERCIAL CLASS 3	COMMERCIAL CLASS 4
hotels with dining facilities, markets with garbage disposals, mortuaries, and fast-food restaurants	restaurants, automobile steam-cleaning facilities, and bakeries

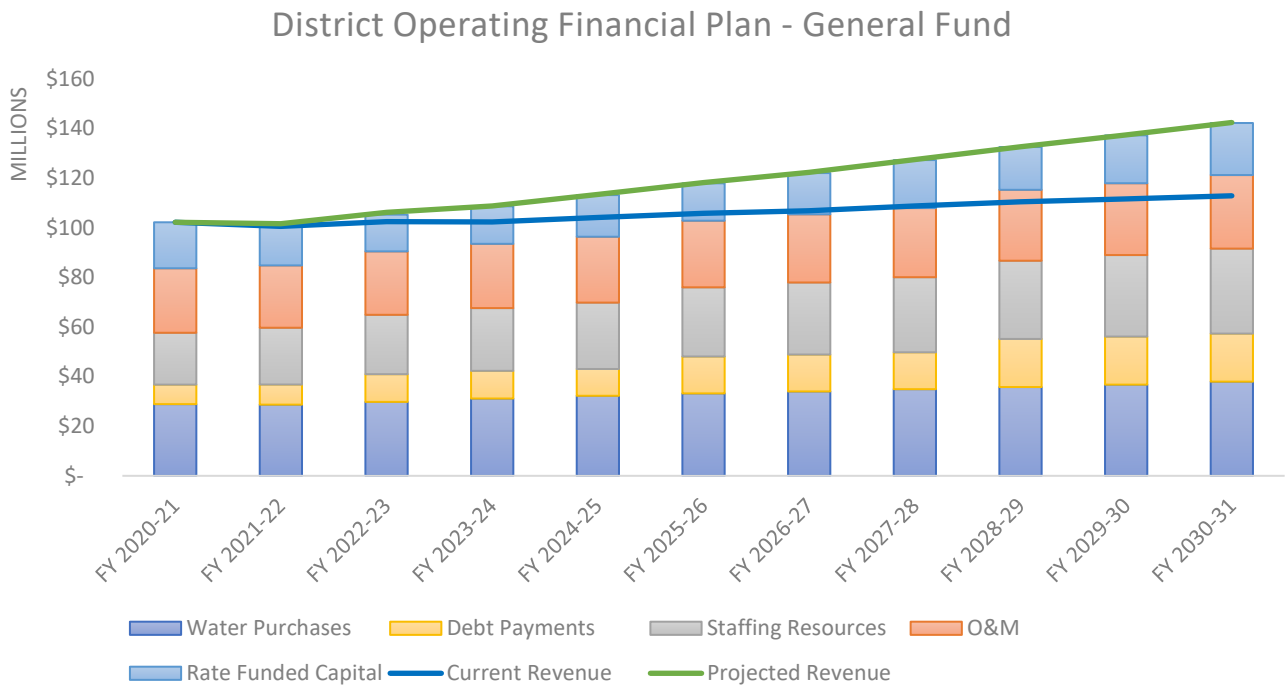
PROPOSED FINANCIAL PLAN

The LRFP incorporates both the test year (FY 2021-22) revenue requirements and assumed inflationary factors for projecting future operating costs. The District is currently planning to draw down cash reserves to target reserve levels adopted in the District's Reserve Policy in order to fund capital improvement projects in the near future (77% of FY 2022-23's CIP Budget is cash) while structuring rate adjustments and debt financing to maintain cash balances at targeted reserve levels in the future.

General Fund Summary

Figure 8 is the operating financial plan that breaks down the major component costs and compares the proposed revenue stream to the status quo.

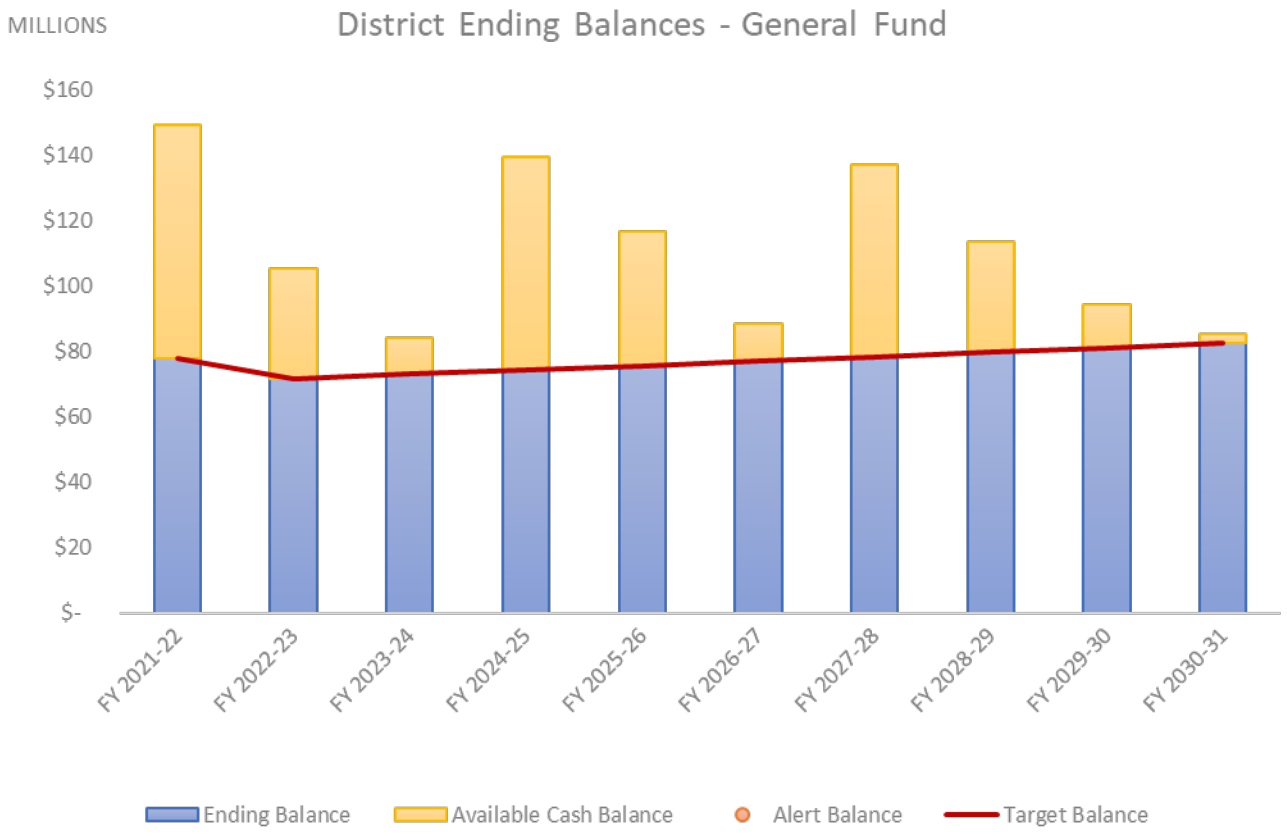
Figure 8: General Fund – District Operating Plan



Rate Funded Capital is total revenue, net of operating and debt-service related expenses that is largely used to cash-fund the Capital Improvement Plan. These funds can also be used to replenish reserve funds if they drop below target levels, either because the reserves were utilized, or the reserve targets were increased. The proposed revenue requirements equate to a 4% revenue adjustment on January 1 of each year. If the proposed revenue adjustments are not implemented, current revenue would fail to meet operating costs by FY 2023-24. When structuring future rate adjustments and debt issuance, the District should be cognizant of the impacts to the debt coverage ratio relative to the Board-adopted policy minimum of 1.75x.

In addition, the proposed rate revenue adjustments along with proposed bond issuances provide adequate cash balances to meet the current reserve policy cash requirements. Projected available cash balances and reserve cash balances are shown in Figure 9. Available cash balances will be used to cash fund capital projects and provide additional policy options and the ability to meet unforeseen risks.

Figure 9: Gen. Fund – District Ending Balances



As shown in Figure 10, timing anticipated debt issuances driven by the construction of various capital projects and historic low interest rates (i.e., FY 2021-22 issuance), presents a unique opportunity for the District to minimize financing costs over the life of the issuance.

The proposed 2021 financial plan maintains the 4% annual rate adjustments identified in the 2017 Long-Range Financial Plan, while providing for inter-generational equity amongst today's customers and the rate payers of tomorrow. The District also maintain debt coverage ratios above the Board approved 1.75x for all ten years.

Figure 10: Gen. Fund – District Revenue Adjustments

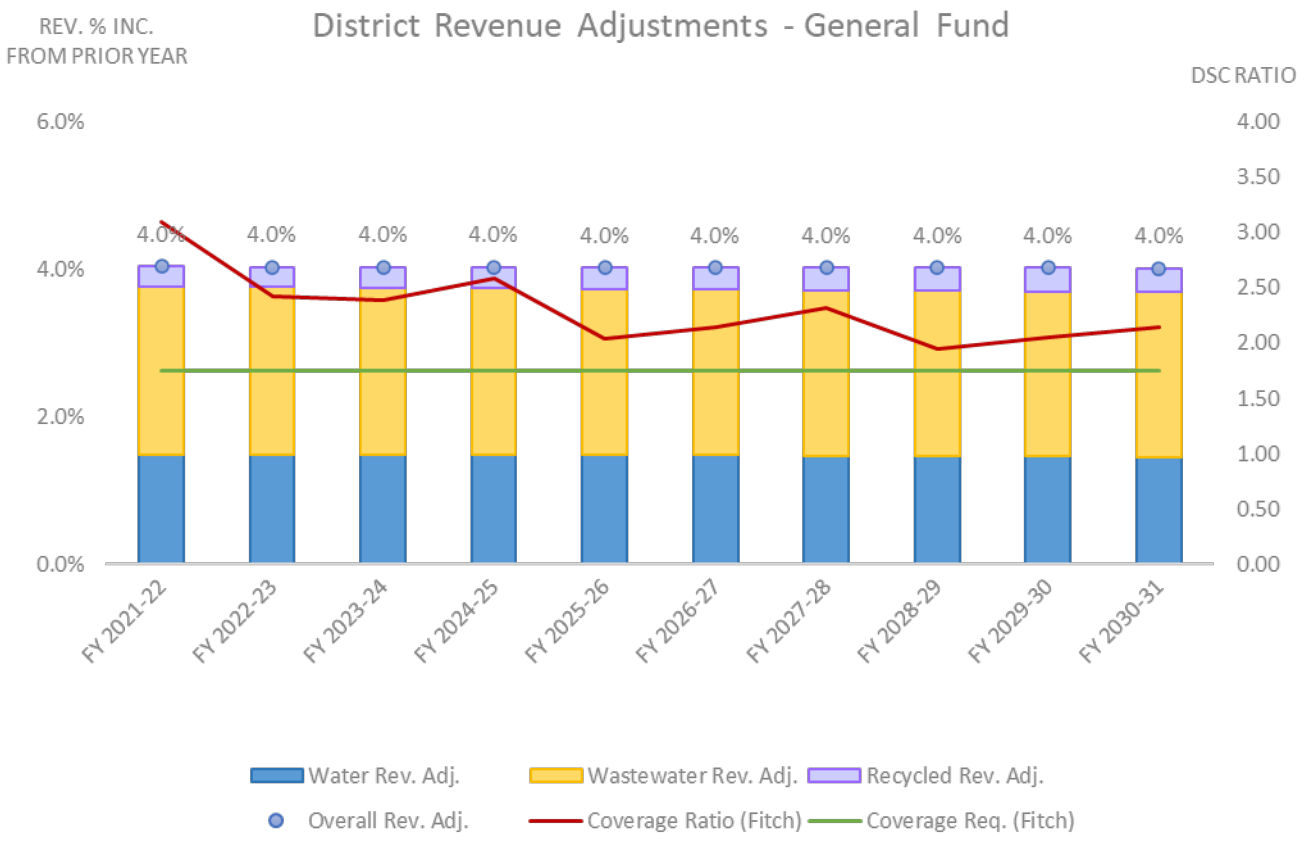


Table 13 below, the Pro-Forma, shows the overall revenues, operating expenses, debt service, capital expenses, and fund balances for the General Fund. Ending cash balances are broken down by funds allocated to meet specific reserve requirements per the District's reserve policy and available cash for capital projects.

Table 13: Proforma

MNWD Overall General Fund Pro-Forma - 2021 LRFP Report

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
General Fund Revenues - District										
Potable Water Sales	$ 31,853,739	$ 32,827,327	$ 33,725,395	$ 34,625,535	$ 35,526,395	$ 36,426,519	$ 37,348,678	$ 38,293,382	$ 39,261,155	$ 40,252,530
Sewer Sales	$ 26,778,489	$ 28,425,310	$ 30,038,129	$ 31,742,371	$ 33,543,214	$ 35,446,130	$ 37,456,898	$ 39,581,626	$ 41,826,767	$ 44,199,139
Recycled Water Sales	$ 5,832,960	$ 6,084,747	$ 6,352,693	$ 6,653,507	$ 6,989,588	$ 7,363,469	$ 7,753,493	$ 8,160,291	$ 8,584,519	$ 9,026,856
Other Operating Revenue	$ 479,275	$ 603,100	$ 603,100	$ 603,100	$ 603,100	$ 603,100	$ 603,100	$ 603,100	$ 603,100	$ 603,100
Property Tax	$ 31,671,356	$ 32,621,422	$ 33,736,691	$ 35,028,007	$ 36,368,749	$ 37,688,935	$ 39,008,047	$ 40,373,329	$ 41,786,396	$ 43,248,919
Investment Income	$ 2,317,628	$ 2,188,385	$ 1,572,514	$ 1,823,708	$ 2,099,629	$ 1,650,055	$ 2,156,550	$ 2,474,442	$ 2,040,933	$ 1,748,873
Property Lease	$ 2,016,093	$ 2,091,040	$ 2,168,860	$ 2,249,665	$ 2,333,568	$ 2,420,691	$ 2,511,159	$ 2,605,100	$ 2,702,650	$ 2,702,650
Misc. Non-Operating Revenue	$ 352,557	$ 354,592	$ 356,668	$ 358,785	$ 360,944	$ 363,147	$ 365,131	$ 367,146	$ 369,210	$ 371,306
Connection Fees	$ 45,630	$ 136,715	$ 136,715	$ 136,715	$ 136,715	$ 136,715	$ 136,715	$ 136,715	$ 136,715	$ 136,715
Total Revenues	**$ 101,347,728**	**$ 105,332,637**	**$ 108,690,764**	**$ 113,221,391**	**$ 117,961,902**	**$ 122,098,761**	**$ 127,339,770**	**$ 132,595,130**	**$ 137,311,442**	**$ 142,290,087**
District General Fund Revenue Requirements										
Operating Expenses										
Water - Imports & Production	$ 28,143,825	$ 29,240,558	$ 30,588,087	$ 31,677,550	$ 32,629,286	$ 33,408,387	$ 34,306,741	$ 35,164,161	$ 36,124,751	$ 37,318,271
Water - Storage & Facilities	$ 563,200	$ 574,464	$ 585,953	$ 597,672	$ 609,626	$ 621,818	$ 632,798	$ 643,955	$ 655,376	$ 666,983
O&M - General	$ 15,631,541	$ 16,071,087	$ 16,246,772	$ 16,743,721	$ 16,887,063	$ 17,351,928	$ 17,579,426	$ 18,130,386	$ 18,331,822	$ 18,857,241
Salaries	$ 15,729,998	$ 16,271,719	$ 17,181,522	$ 18,110,654	$ 18,925,633	$ 19,777,287	$ 20,667,265	$ 21,597,292	$ 22,569,170	$ 23,584,782
Benefits	$ 7,171,956	$ 7,677,332	$ 8,126,926	$ 8,665,871	$ 8,977,210	$ 9,286,862	$ 9,623,421	$ 9,960,421	$ 10,311,680	$ 10,692,413
SOCWA/WW	$ 9,507,471	$ 9,512,926	$ 9,665,781	$ 9,821,092	$ 9,978,899	$ 10,139,241	$ 10,302,160	$ 10,467,697	$ 10,635,893	$ 10,806,792
Subtotal O&M Expense	**$ 76,747,991**	**$ 79,348,085**	**$ 82,395,041**	**$ 85,616,560**	**$ 88,007,717**	**$ 90,585,524**	**$ 93,111,810**	**$ 95,963,911**	**$ 98,628,692**	**$ 101,926,483**
Debt Service										
Existing	$ 8,114,435	$ 8,110,007	$ 8,106,081	$ 7,748,581	$ 7,741,331	$ 7,740,206	$ 7,734,706	$ 7,734,331	$ 7,723,706	$ 7,722,331
Proposed	$ -	$ 3,061,156	$ 3,061,156	$ 3,061,156	$ 7,139,005	$ 7,139,005	$ 7,139,005	$ 11,651,826	$ 11,651,826	$ 11,651,826
Subtotal Debt Service Expense	**$ 8,114,435**	**$ 11,171,162**	**$ 11,167,237**	**$ 10,809,737**	**$ 14,880,337**	**$ 14,879,212**	**$ 14,873,712**	**$ 19,386,157**	**$ 19,375,532**	**$ 19,374,157**
Total Revenue Requirement (Non-CIP)	**$ 84,862,426**	**$ 90,519,248**	**$ 93,562,278**	**$ 96,426,297**	**$ 102,888,054**	**$ 105,464,735**	**$ 107,985,522**	**$ 115,350,068**	**$ 118,004,225**	**$ 121,300,640**
Net Change in General Fund before CIP	**$ 16,485,302**	**$ 14,813,390**	**$ 15,128,486**	**$ 16,795,094**	**$ 15,073,849**	**$ 16,634,026**	**$ 19,354,248**	**$ 17,245,062**	**$ 19,307,218**	**$ 20,989,446**
Capital and Ending Balances										
Capital Expenses (CIP + Outlays)	$ 46,177,141	$ 59,771,430	$ 41,171,636	$ 36,542,792	$ 38,266,373	$ 45,271,052	$ 45,883,406	$ 41,358,841	$ 38,977,822	$ 30,816,924
Bond Proceeds	$ 59,750,000	$ -	$ -	$ 74,750,000	$ -	$ -	$ 82,750,000	$ -	$ -	$ -
Beginning Balance	$ 118,565,630	$ 148,623,791	$ 103,665,750	$ 77,622,600	$ 132,624,902	$ 109,432,377	$ 80,795,351	$ 137,016,193	$ 112,902,414	$ 93,231,809
Ending Balance (Includes Interest)	$ 148,623,791	$ 103,665,750	$ 77,622,600	$ 132,624,902	$ 109,432,377	$ 80,795,351	$ 137,016,193	$ 112,902,414	$ 93,231,809	$ 83,404,332
Reserve Balance	$ 70,454,712	$ 71,697,732	$ 73,017,106	$ 74,468,144	$ 75,736,304	$ 77,040,848	$ 78,331,976	$ 79,727,642	$ 81,100,371	$ 82,656,081
Future Capital Improvement Projects	$ 78,169,079	$ 31,968,018	$ 4,605,494	$ 58,156,758	$ 33,696,074	$ 3,754,503	$ 58,684,216	$ 33,174,772	$ 12,131,439	$ 748,251
Debt Coverage Ratio	3.03	2.33	2.35	2.55	2.01	2.12	2.30	1.89	2.00	2.08

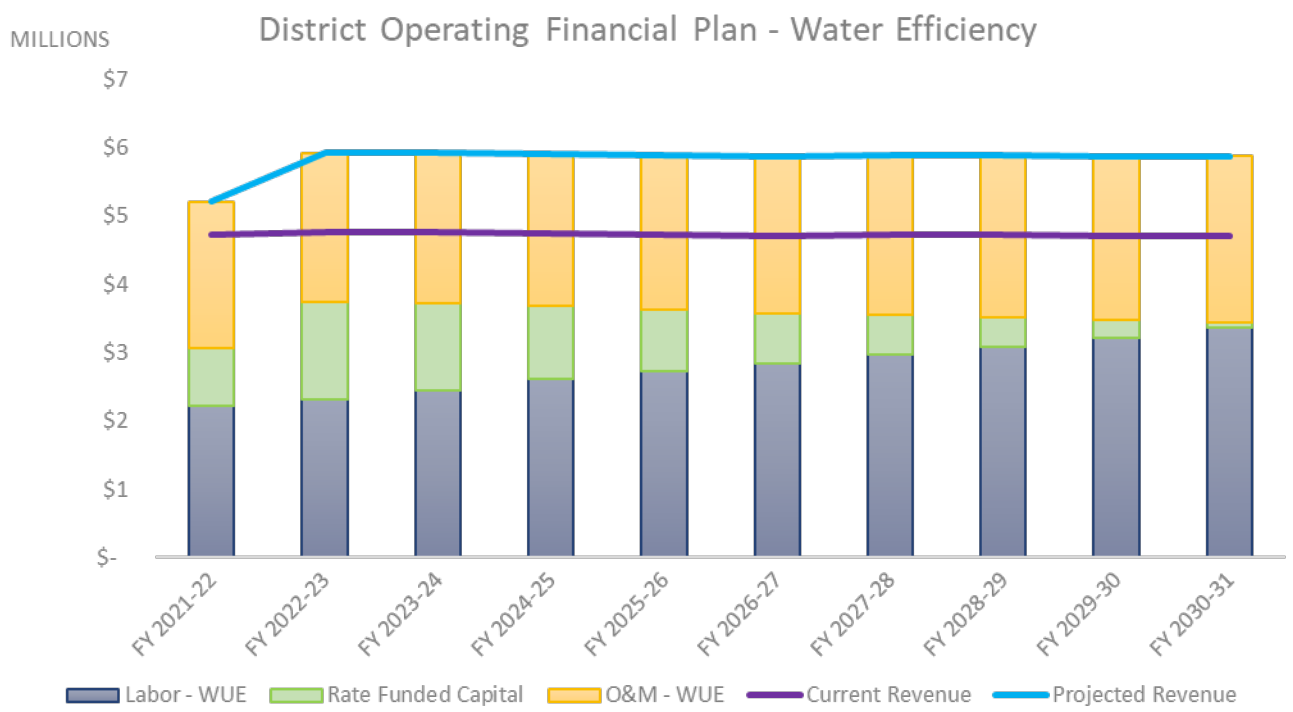
Water Efficiency (WE) Fund Summary

Since its implementation in 2011, the District's water budget-based rate structure has served as a critical component of its demand management efforts and ultimately its expanded supply reliability. The underlying rationale of any water budget-based rate structure is that customers who use water inefficiently (i.e., in excess of their calculated water budgets) place greater demands on the District's water and recycled water systems and supplies than those customers who use water efficiently (i.e., within their calculated water budgets). Due to the higher demand, and consequently higher cost, that inefficient usage places on the District's water and recycled water systems, water usage in excess of a customer's allocated budget is subject to higher rates. The District maintains a strong cost nexus between increasing marginal supply costs and increasing rates by investing the incremental rate difference in alternative water supply programs, rebates, water conservation, and demand management measures to increase efficient uses of water and offset supply reliability impacts from inefficient water use.

By establishing the Water Efficiency Fund (Fund 6), the District is able to clearly delineate the costs associated with providing continued service to its customers from those costs that could have otherwise been avoided had all customers stayed within budget. The resulting tiered rate structure creates a strong price signal to customers who may have inadvertently exceeded their budgets, and any revenues collected are immediately reinvested in programs and rebates to help those same customers get back into budget. Throughout historic droughts, the District has maintained that "it's not about using less water, it's about wasting less water", and customers have responded not only by conserving, but also by an unprecedented level of rebate program participation. District staff seeks to build upon this historic level of interest in efficiency by expanding rebate program participation beyond early adopters by actively seeking out candidates for current and future programs.

Figure 11 below is the Water Efficiency operating financial plan that breaks down the major cost components and compares the proposed revenue stream to the status quo.

Figure 11: WE – District Operating Plan

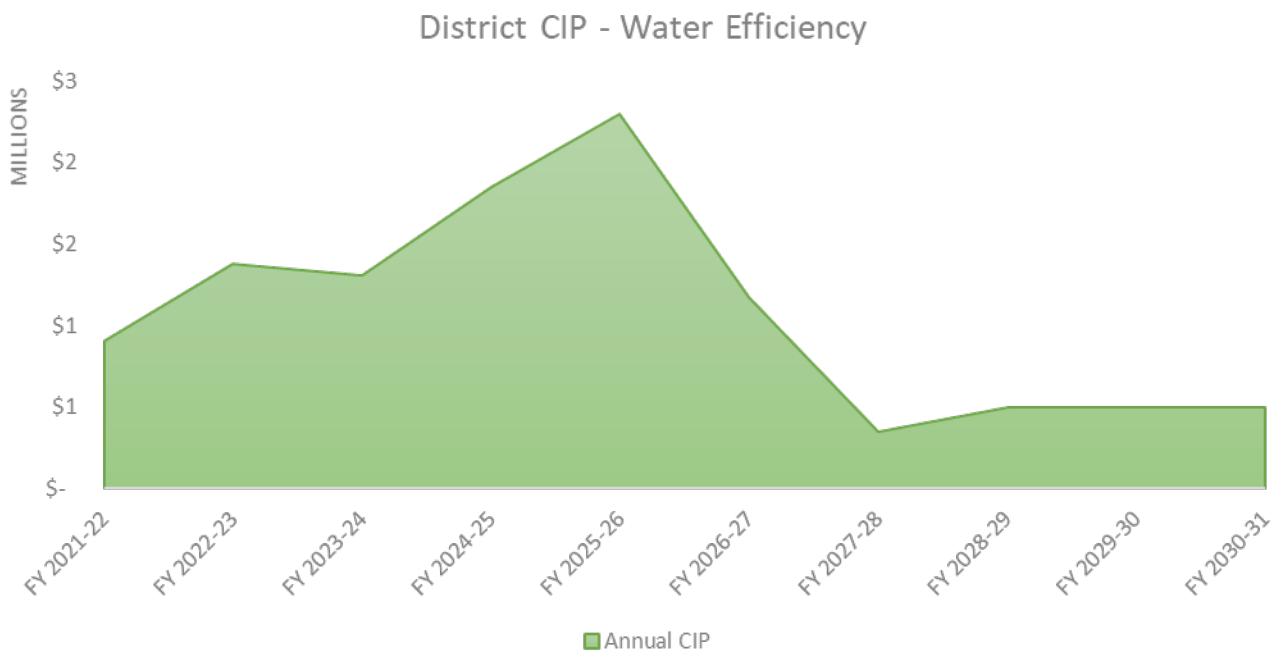


In addition to the costs associated with the ongoing management of the District's water efficiency and conservation programs, a portion of the capital costs associated with future water supply reliability enhancement projects have been allocated to the Water Efficiency Fund. There is a natural nexus between efficient water use and long-term supply reliability, as any reductions in inefficient water use decrease the size, and ultimately cost, of future supply reliability projects. Conversely, continued inefficient water use would otherwise necessitate more costly reliability projects: the costs of which should be recovered from inefficient usage. The District has identified $11 million in total capital projects costs in the next ten years, including:

- Advanced Metering Infrastructure, Phase 3
- Low Resolution Meter Replacement
- La Paz Road Bridge Crossing – Recycled Water Pipeline
- Recycled Water Retrofit Program

Figure 12 provides the timeline for water efficiency capital projects.

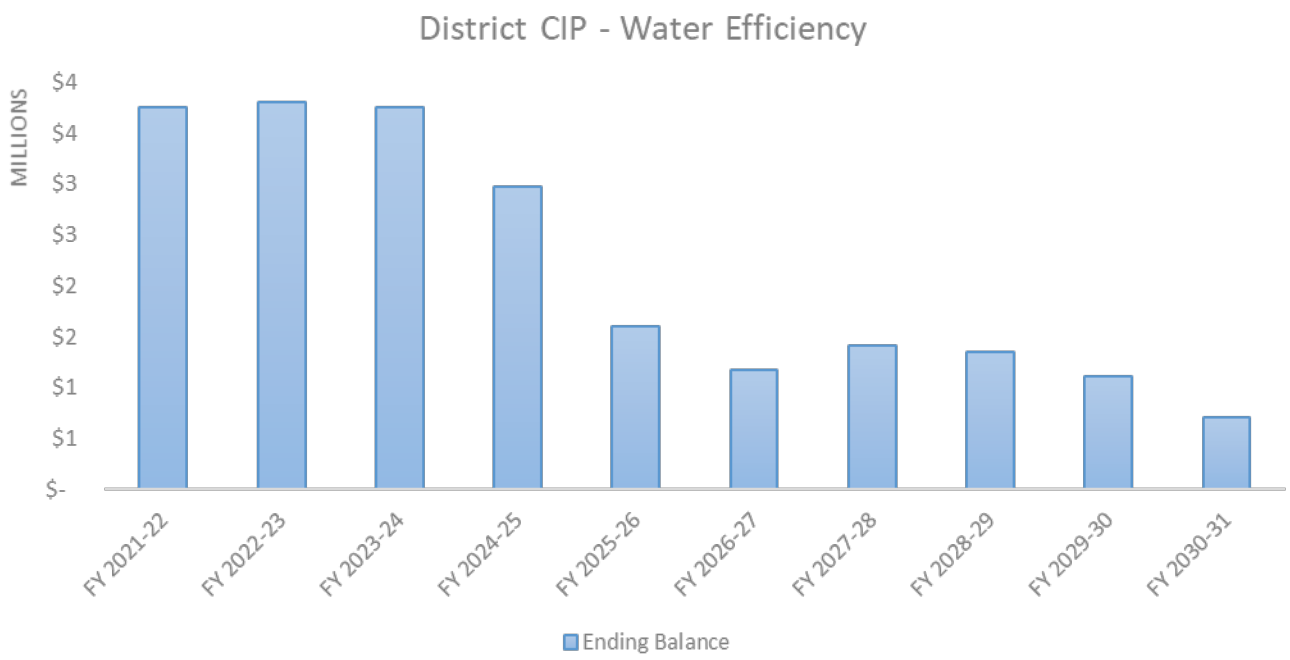
Figure 12: WE - 10-Year CIP



The District's continued investment in conservation efforts and rebate programs and its future supply reliability investments will draw down current Water Efficiency fund balances within three years without an adjustment in rate revenue or a new bond issuance. Based on the revenue requirements and increased spenddown rate of Water efficiency fund balances, District staff is proposing a one-time adjustment to its Water Efficiency surcharges as part of the recommended four-year rate structure, specifically a total annual increase of ~$0.5 million in additional revenue requirements.

Staff considers the proposed funding strategy optimal as FY 2024-25 would coincide with the District's 2025 Long-Range Financial Plan at which point Fund 6 revenue requirements would be re-evaluated. The proposed plan addresses program changes that have occurred since the development of the 2017 Long-Range Financial Plan.

Figure 13: WE – District Ending Balances



MANAGEMENT OF FINANCIAL RISK

In evaluating the robustness of the District's proposed financial plan, the Model may be used to test the sensitivity of the key assumptions. Two assumptions were tested:

- Scenario 1:
  Increase the assumption on expected MWD rate increases to 10% up from a projected 3.29% average compound annual growth rate for Tier 1 Treated Water, and a 4.11% average compound annual growth for Tier 1 Untreated Water.

- Scenario 2:
  Incorporate proposed expense escalation factors performed by consultant, Robert D. Niehaus, Inc.

Scenario 1: Increased Cost of Water

Table 14 assumes MWD's estimated annual rate increase on wholesale water supply cost is 10% (annually compounded) for Tier 1 Treated and Untreated supplies:

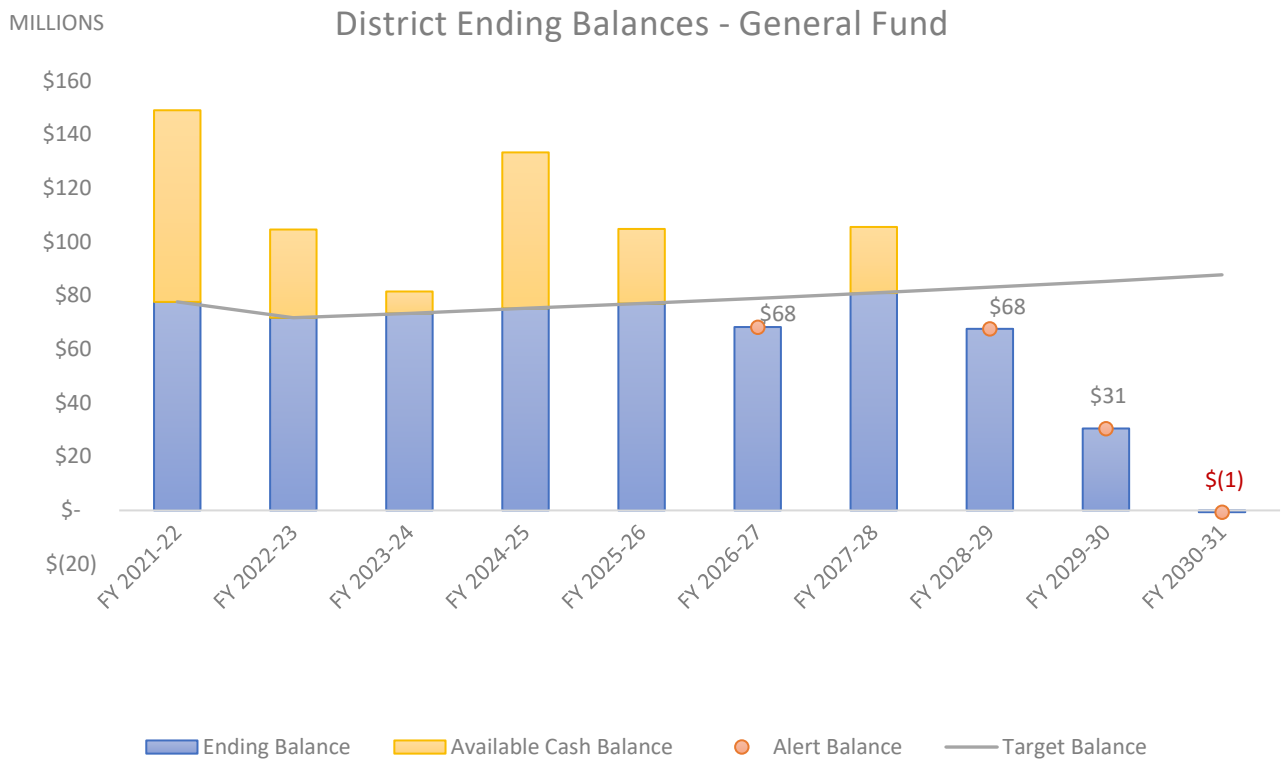
Table 14: Current and Assumed Cost of Water Rate Increases

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30	FY 2030-31
Category										
Tier 1 Treated: Current	3.53%	4.56%	4.45%	3.78%	2.30%	2.54%	2.41%	2.78%	3.05%	3.74%
Tier 1 Treated: Assumed	**3.53%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**
Tier 1 Untreated: Current	2.83%	6.63%	3.84%	4.20%	3.28%	3.59%	3.37%	3.85%	4.18%	4.00%
Tier 1 Untreated: Assumed	**2.83%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**	**10.0%**

Supply costs by FY 2030-31 increases to $58.5 million, up from the baseline scenario of FY 2030-31 supply costs at $37.9 million. The net effect is devastating with a baseline ending balance in FY 2030-31 from $85.3 million to negative $655,000. To account for this increase in supply costs, the District must effectively offset the extra expense with an increase in revenues. One option that would make the District's LRFP more robust to fluctuations in supply costs, is for the Board of Directors to re-adopt the pass-through provision currently in place to account for any MWDSC rate increases or newly imposed charges in excess of those currently forecasted. AB 3030 allows water and wastewater agencies to adjust rates based on changes to wholesale or inflation in future years outside of the Prop. 218 process, subject to 30 days of notice to all customers.

A second option is that the District could wait and address the unexpected supply cost increases as part of the next rate study. However, it is worth noting that any delay in adjusting rates to meet the increased supply costs would result in a larger than expected rate adjustment to make up for the difference in revenue and expenses. Figure 14 shows the rapid decline of ending balance in this scenario.

Figure 14: General Fund – District Ending Balances (Increased Supply Costs)



This shortfall could potentially be offset by the use of the District's rate stabilization reserve, though doing so would reduce the District's ability to respond to other unexpected crises.

Scenario 2: Incorporate Consultant-proposed Expense Escalation Factors

A key aspect of the District's LRFP is long-term financial modeling. In order to project future expenses, escalation factors need to be appropriately applied to individual expense items; however, staff does not overestimate factors as it could unduly burden ratepayers, but it is important to understand potential exposure and strategies for mitigating risk if they come to pass. In their peer review of the District's Model and 2021 Cost of Service analysis, Robert D. Niehaus, Inc. (RDN) identified several factors to conduct sensitivity analysis given potential future volatility.

Table 15: Current and Proposed Escalation Factors

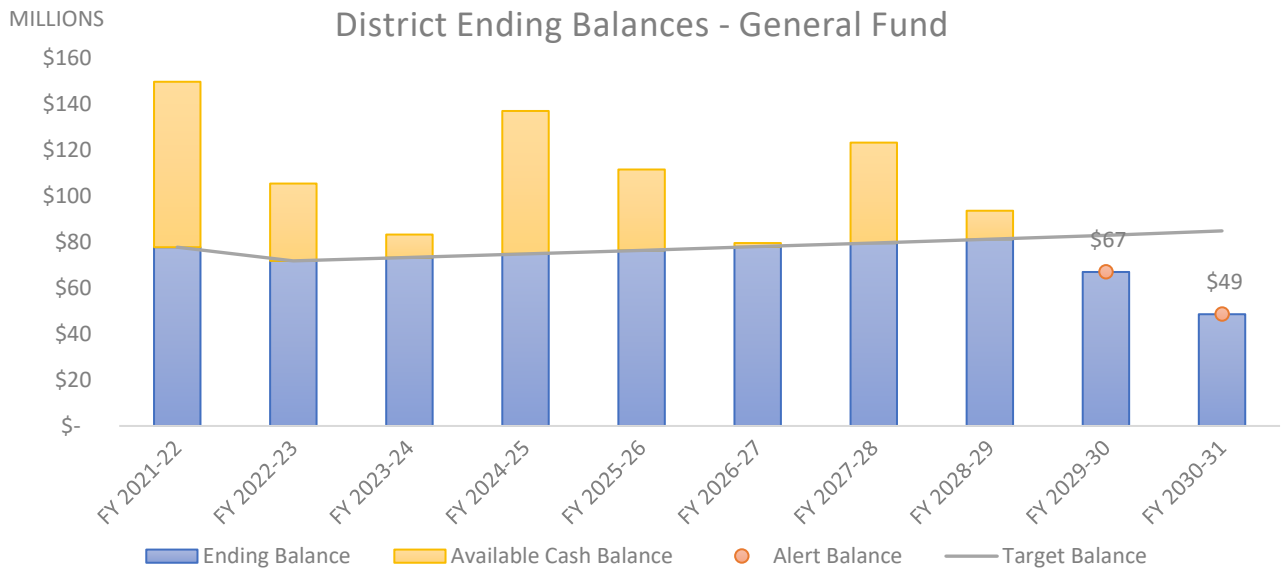
Category	Current Escalation (District)	Proposed Escalation (RDN)	Difference
Salaries	4.50%	7.80%	3.30%
Operations – Utilities	2.00%	4.63%	2.63%
Operations – SOCWA	3.27%	3.27%	-
Operations – Chemicals	2.00%	4.85%	2.85%
Insurance – Personnel	5.50%	5.50%	-
Insurance – District	2.00%	8.40%	6.40%
General – Training	0.40%	0.70%	0.30%
General – Expenses	2.00%	2.50%	0.50%
Capital – Contractor	3.00%	5.90%	2.90%
Benefits – Other	5.50%	5.50%	-
Benefits – Medical	5.50%	5.50%	-
Benefits - Dental	5.50%	5.50%	-

The District's projections for benefits were based on the historical escalation of costs and two-year extension of the current MOU to FY 2022-23. RDN concurs with the use of 5.5% for Benefit categories and Insurance – Personnel. The other categories were increased based on the following:

- *Salaries: t*he current financial planning model projects salaries to increase 4.5%, assuming existing staff levels, per year through the planning period; however, according the 2019-20 Audited Financial Statements, a 3.00% salary increase is projected for OPEB accounting. If the previous budget actuals reflect the typical increases in staffing costs for the upcoming years, an annual increase of 7.8% should be used. The 7.8% includes a projection of typical increases in the number of staff through time as well as an average cost per staff. Between FY 2013-14 and FY 2021-22, 56 new positions have been authorized within the District. Using a linear regression, annual staff increases were expected to range between 7-8 per year with an average aggregate salary increase of $38,613 per new employee. It was determined during this analysis that if there are no planned staff increases, an annual escalation factor for salaries should be 3.6%, which reflects the actual historical increases in salaries. Therefore, 4.5% is the midpoint should the District decide to increase staffing level.

- *Operations – Utilities:* electricity dominates the District's utility expenditures and utilities use a factor derived from US BLS 20-year average of Fuels and Utilities, Energy CPI Los Angeles-Riverside-Orange County, not seasonally adjusted and California Department of Finance monthly (by expenditure detail) from 2000 to 2021, Fuels and Utilities, Los Angeles.
- *Operations – Chemical:* inflation was calculated using data from the Federal Reserve Bank of St. Louis Economic Research Division and reflects the 20-year average of the Producer Price Index for Chemicals. The proposed inflation factor for the study period is 4.85%.
- *Insurance – District:* Utilizing budget actuals starting in FY 2015-16, it was determined that the District's liability insurance expenses (Insurance – District) have increased approximately 8.40% per year.
- *General – Training:* the escalation factor was adjusted to reflect budget actuals between FY 2015-16. The annual inflation for General-Training during that period was 0.70%.
- *General – Expenses:* the general inflation assumption, 2.50% per year, is based on US Bureau of Labor Statistics (BLS) 20-year average of All Items CPI Los Angeles-Riverside-Orange County, not seasonally adjusted and California Department of Finance Monthly (by expenditure detail) from 2000. 20-year average, all items, Los Angeles.
- *Capital – Contractor:* due to recent developments stemming from the COVID supply chain issues, Capital Costs are projected to be slightly higher for the study period, 5.90%. The projection is based on Engineering News Record (ENR) 5-year average of the Construction Cost Index for Los Angeles, the closest major metropolitan area which is indexed. A 5-year timeframe was chosen because it better reflects the current cost escalations, whereas a longer timeframe smooths the recent spike in costs.

Figure 15: General Fund – District Ending Balances (Increased Escalation Factors)



At the end of the 2021 Rate Study (FY 2025-26), the increase in escalation factors will result in a 2.1% increase in expenditures and the ending balance would fall from $116,529,871 to $111,475,413. As shown in Figure 15, the proposed 2021 financial plan could sustain these escalated factors. However, beyond the term of the 2021 rate study, the District would not meet its minimum debt coverage ratio by FY 2028-29 and miss its target ending balance by FY 2029-30 without additional adjustments. This case scenario will be re-evaluated during the 2025 rate study.

FINANCIAL MANAGEMENT TOOLS

The District has several tools that it may utilize when considering revenue requirements and the need to periodically adjust rate revenues. Each of the components, outlined below, are reviewed on a periodic basis and updated, if necessary, to reflect changes to District operations, the economy, or the environment.

Financial Policies
The District proactively manages its financial policies as part of its ongoing fiduciary responsibility. Any revision to current financial policies will change the District's cash and investments portfolios which will result in adjustments to future revenue requirements.

Operational Efficiencies
The District is continually looking for ways to create operational efficiencies while maintaining a high level of service. Historically, the District utilized consulting firms to conduct planning and analytical tasks, but the District has moved to utilizing in-house staff to perform these functions with the assistance of outside expertise. Maintenance of in-house expertise will enable the District to perform this analysis on a more frequent basis.

Options available to the District includes outsourcing/contracting certain services or continuing to develop more efficient processes to achieve current operations. As each opportunity is assessed, the District evaluates the cost of internally maintaining the operation compared to outsourcing/contracting the services. Each evaluation also includes the comparison of quality of work product and service provided in addition to a cost analysis.

Cooperative Agreements
The District continually looks for ways to save rate payers money by mitigating the effects of future cost increases. This can be achieved in part by seeking out cooperative agreement opportunities for both capital and operational needs. The District coordinates with neighboring agencies on capital projects that may bring additional regional water reliability benefits and cost sharing. The District also looks to find operational cost savings by participating in shared service opportunities with other local agencies.

Outside Funding Sources
The District is continually monitoring markets and the industry to identify any applicable outside funding sources that may be relevant to District capital improvements or operations, such as grant funding opportunities or low-rate debt. The District is also frequently monitoring economic markets to realize savings on current debt obligations.

Rates And Fees
The District can use its rate structure to determine if sufficient revenues are generated from each system and if cost recovery from variable or fixed revenue components remains aligned with variable or fixed costs. In addition to system rate revenue the District will also periodically review its miscellaneous fees and charges to determine applicability and adjustments needed to recover the cost of operation applicable to the fees.

District Owned Property
The District owns several properties that house its facilities as well as properties that are no longer utilized. The District can evaluate future projected needs for each property and aspire to achieve the maximum value possible from each asset. Property management options include expanding operations, leasing land, or exchange/sale of District owned land to maximize potential revenue streams from those sources.

CONCLUSIONS & RECOMMENDATIONS

As the District transitions its focus from developing infrastructure to maintaining and replacing infrastructure, the LRFP, in conjunction with other long-term planning efforts, identifies future resource needs and provides a roadmap for actions that can be taken to meet those needs. Currently, the District is evaluating the rate structures for all three enterprise systems, implementing an aggressive Capital Improvement Plan, evaluating local and regional supply reliability based on projects in the Long-Range Water Reliability Plan and Recycled Water Master Plan. The updated Model provides the ability to evaluate the outputs of these planning processes in addition to changes in financial determinants such as usage. By integrating the multitude of long-term planning efforts with current financial information, the Model serves as a tool for the District to create adaptive management strategies as major assumptions fluctuate.

In order to maintain District financial stability based on expected future expenditures and revenues, the following overall adjustments to General Fund rate revenue are suggested in Table 14:

Table 14: Gen. Fund Revenue Adjustments

General Fund Revenue Adjustments		
Implementation Day & Month	**Implementation Year**	**Revenue Adjustment**
February 1	FY 2021-22	4%
January 1	FY 2022-23	4%
January 1	FY 2023-24	4%
January 1	FY 2024-25	4%
January 1	*FY 2025-26 – FY 2030-31*	*4%**

*Projected adjustment outside of the 2021 Cost of Service Rate Study period (FY2021-22 to FY2024-25)

The revenue adjustments in Table 14 represent needed additional revenues to collect through rates; however, these adjustments could be offset by growth in non-rate revenues beyond baseline assumptions. The District will diligently monitor the major variables that impact recommendations such as Capital Improvement Plan (budgeting and spending), credit markets, water usage (distribution and conservation), and MWDSC and MWDOC wholesale rate adjustments.

The proposed revenue adjustments maintain the District's debt coverage ratio above the Board-adopted 1.75x coverage ratio target. In addition, the generated revenue meets funding requirements of the Ten-Year Capital Financing Plan with the caveat that the Financial Plan assumes a $60 million debt issuance in FY 2021-22, a $75 million issuance in FY 2024-25, and a $83 million issuance in FY 2027-28. Lastly, the Financial Plan fully fund reserves at target levels and maintains available cash balances to hedge risk exposure for the District.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