LAGUNA BEACH
COUNTY WATER DISTRICT

Rate Study and Analysis

Commission Meeting: December 14, 2021

Board Meeting: December 16, 2021

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Executive Summary

This report was prepared by the Laguna Beach County Water District (District) to document a 5-year financial plan, cost of service analysis, and rate structure for the District. The specific goals of the study were to:

- Evaluate the adequacy of projected revenues under existing bi-monthly water service charges, commodity rates, and private fire line charges to meet projected District revenue requirements.
- Develop a detailed cost of service allocation and distribution methodology to support compliance with proportionate cost of service requirements of Proposition 218 (California Constitution Articles XIIIC and XIIID) and ensure greater customer understanding of how rates are developed and set.
- Evaluate current water budget allocation factors to achieve State of California and District water conservation goals.
- Develop a cost of service and rate model for the District covering a five-year study period (Fiscal Year 2021-2022 through Fiscal Year 2025-2026) for both ongoing operations and planned capital improvements.
- Develop suitable five-year water rates that produce revenues adequate to meet financial needs of the District while recognizing customer costs of service.
- Develop projected levels of reserves and capital pay-as-you-go balances per District policy and accounting for future operating and capital needs.

District staff projected revenues, costs, and resulting rate revenue requirements for a five-year study period based on a review of historical factors and the water system's operating and capital budgets and financial policies. The study of revenue requirements recognizes projected Operation and Maintenance (O&M) expenses, establishment and/or maintenance of reserve fund levels, and capital funding requirements.

The District's costs of service and revenue requirements were allocated and distributed to customers utilizing a detailed cost causative approach. The detailed methodology produced cost of service allocations recognizing the projected customer service requirements for the water system. The design of proposed rates was in accordance with allocated cost of service and local policy considerations.

Included in this study are the cost of service analysis, estimated revenue requirement analyses, and rate calculations, along with a brief description of the assumptions used in the calculations. The estimated annual system revenues to be generated from proposed rates are derived from a comparison of total system revenues and costs, both operating and capital, during this study period.

FINDINGS AND ACTIONS TAKEN

The following lists the findings of this analysis and actions taken by District staff to address the findings:

Finding #1

Water service charge revenues at current levels will not be sufficient over the next five years to meet the increasing cost of District operating and capital expenses without negatively affecting reserve fund levels and potentially affecting District operations. In the absence of rate revenue adjustments, projections show that District reserves would be depleted during the study period.

Action Taken:

District staff developed the following customer rates to help ensure sufficient rate revenue is available over the next five years to continue providing reliable, high quality water service to all District customers. Proposed rates and charges will take effect March 1 of each fiscal year included in this rate study period. Current rates and charges are provided for reference.

Bi-Monthly Meter Service Charges

Table 1 – Current and Proposed Bi-Monthly Meter Service Charges

Meter Size	Current Bi-Monthly Service Charges [1]	Bi-Monthly Service Charge Effective 2022	Bi-Monthly Service Charge Effective 2023	Bi-Monthly Service Charge Effective 2024	Bi-Monthly Service Charge Effective 2025	Bi-Monthly Service Charge Effective 2026
3/4"	$37.36	$35.18	$38.12	$43.57	$48.27	$51.23
1"	$93.39	$44.02	$47.44	$53.27	$58.38	$61.76
1.5"	$186.79	$53.92	$58.09	$64.61	$70.45	$74.61
2"	$298.86	$65.73	$70.72	$77.94	$84.53	$89.49
3"	$560.36	$647.84	$695.39	$740.10	$787.11	$834.96
6"	$1,867.87	$675.45	$725.01	$771.49	$820.41	$870.28

1. Current Service Charges effective FY 19 - FY 21.

Commodity Rates (Tier 1 Base Use & Tier 2 Beyond Base, Conservation Rates)

Table 2 – Current and Proposed Commodity Rates

Tiers	Current Commodity Charges/hcf [1]	FY 22 Commodity Charges/hcf	FY 23 Commodity Charges/hcf	FY 24 Commodity Charges/hcf	FY 25 Commodity Charges/hcf	FY 26 Commodity Charges/hcf
Tier 1	$5.25	$6.74	$7.23	$7.61	$8.02	$8.45
Tier 2	$9.09	$9.33	$10.07	$10.62	$11.19	$11.79

1. Current Board-adopted Tier 1 rate is $5.39 but held to $5.25 for FY 19 - FY 21.

Bi-Monthly Private Fire Line Charges

Table 3 – Current and Proposed Private Fire Line Charges

Fire Line Size	Current Bi-Monthly Fire Line Charge	FY 22 Bi-Monthly Fire Line Charge	FY 23 Bi-Monthly Fire Line Charge	FY 24 Bi-Monthly Fire Line Charge	FY 25 Bi-Monthly Fire Line Charge	FY 26 Bi-Monthly Fire Line Charge
2"	$8.00	$8.19	$8.39	$8.58	$8.77	$8.97
4"	$16.00	$23.90	$31.80	$39.70	$47.60	$55.50
6"	$24.00	$51.44	$78.89	$106.33	$133.78	$161.22
8"	$32.00	$94.31	$156.63	$218.94	$281.25	$343.57
10"	$40.00	$155.57	$271.14	$386.71	$502.28	$617.85

Note: Current Fire Line Charges have not been updated for at least 15 years. There are 93 private fire line customers in the District.

Finding #2

The District's cost allocation and distribution methodology should be updated to reflect current customer water demands, operating and capital cost requirements, operational and engineering standards, and current District technology.

Action Taken:

The District developed a detailed, cost causative allocation and distribution methodology to set District water rates for the FY 22 – FY 26 period. This approach provides a strong nexus between customer rates and the cost of supplying water service to each customer class. This approach is documented in this report.

Finding #3

Water consumption patterns in the District have changed due to State water supply challenges, increased District conservation messaging, and greater use of water efficient appliances and irrigation systems. Furthermore, State standards for household and non-residential use will change over the next 10 years to further encourage conservation throughout the State. As a result of past modifications and future State conservation standards and mandates, certain factors in the District's water budget formulas should be modified to reflect the impacts of these changes and future State requirements on cost of service.

Action Taken:

The District updated customer water budget indoor and outdoor formulas with the following changes:

- Reduce gallons per capita per day (gpcpd) from 60 to 55 to reflect current State guidelines for per capita indoor use.

- Reduce the Plant Factor (PF) associated with the outdoor budget formula from 0.8 to 0.7 to reflect ongoing efforts by District customers to transition from high water intensity landscaping, such as cool season turf, to lower water intense landscaping. This reduction also matches the guidelines established by the California Department of Water Resources Model Landscape Ordinance and other related documentation.
- Utilize updated Evapotranspiration (ETo) data from CIMIS Station No. 241 located in San Clemente, California, and updated rainfall data from Laguna Beach weather stations maintained by Orange County Public Works. These data are used to calculate outdoor water budgets.
- Reduce gallons per hotel room per day from 144 to 137 per recent studies conducted by the Cornell University School of Hotel Administration.

Finding #4

Multi-family water budgets have been based on 3-year rolling averages per account (as opposed to a per dwelling unit budget) due to unavailable data on the actual number of multi-family units; however, the District now has the data regarding the number of multi-family units available for this rate study.

Action Taken:

The District converted the water budget formula for multi-family customer accounts from a 3-year rolling average basis to a per-unit water budget allocation basis similar to single-family residential customers.

Finding #5

Private fire line service charges have not been updated in at least 15 years. Current fire line charges are set well below the cost to provide service to these private fire line connections.

Action Taken:

The District updated the methodology for calculating private fire line service charges to reflect a nexus between the cost of providing service to these accounts and the charges. District staff phased in the new charges over the next 5-year period to mitigate increases in the first years of implementation.

Finding #6

The District lacks a wholesale water cost pass-through provision in its rate resolution documentation. Numerous California water agencies have incorporated similar pass-through provisions to generate adequate revenue to help cover unanticipated increases in water purchase costs from wholesale suppliers.

Action Taken:

The District has incorporated a wholesale water cost pass-through provision in the FY 22 – FY 26 rate resolution to pass on wholesale water costs to customers should those costs be above those projected and documented in this rate study. This approach will help to ensure rate revenues meet unanticipated increases in wholesale water expenses without triggering a Proposition 218 noticing process (in accordance with California Government Code Section 53756).

Introduction

The analysis described in this report considers operation and maintenance (O&M) costs, reserve levels, and planned capital improvement projects (CIP) of the District. To that end, the study examines the revenues generated by the District and makes recommendations for revenue adjustments, as needed.

BACKGROUND

Since 1925, the Laguna Beach County Water District has provided reliable, safe, and prudently managed retail water service to its customers. Today, the District provides water services to over 20,000 people within an 8.5 square mile area of Southern Orange County, including a majority of the City of Laguna Beach and portions of unincorporated Orange County (the District provides water service on a contractual basis to the unincorporated community of Emerald Bay).

The District serves approximately 8,700 connections, most of which are residential water customers. In 2016, the District embarked on a District-wide conversion of customer meters to an Advanced Metering Infrastructure (AMI) system. AMI is an integrated system of smart meters, a communications network, and data management system that enables two-way communication between the District and its customers. The system provides several important functions that were not previously possible or had to be performed manually, such as the ability to automatically and remotely measure water use, detect tampering, and identify water leaks. AMI also enables District customers to manage water consumption and resulting costs.

The District sells approximately 3,350 acre-feet of water annually to its retail connections. The District's water portfolio includes water imported from the Colorado River and the State Water Project through a wholesale arrangement with the Municipal Water District of Orange County (MWDOC) and groundwater rights in the Santa Ana River Basin established with the Orange County Water District (OCWD). The District activated its groundwater rights in 2016, thus reducing reliance on more expensive imported water. Groundwater is pumped to District facilities through wells owned and operated by the City of Newport Beach. Unfortunately, in late 2020, the City's wells that pump groundwater to the District went offline for major rehabilitation and are projected to be functional again in FY 23. This situation means that the District is solely reliant on imported water until the wells come back online or other groundwater supply arrangements are found.

The costs associated with this imported water procurement, the District's planned capital improvements, and the development of a proposed new methodology linking District operating and capital costs to customer rates are the main drivers for the rate structure update and subsequent proposed water rate adjustments.

The long-term financial plan for the District includes revenue and expense projections based on a review of historical factors and the District's current operating and capital budgets and financial policies. The study of revenue

requirements recognizes projected operation and maintenance expenses, establishment and maintenance of reserve funds, and capital funding requirements. These capital requirements include capital improvement expenditures met from annual revenues and available pay-as-you-go (PAYGO) reserve funds. In addition, District staff are researching alternative financial sources such as low-interest loans through the State Revolving Fund program to help fund capital requirements.

The District's costs of service analysis was conducted through the use of cost causative approach that links each operating and capital cost item to a fixed, variable, or fire protection-related component. Within the fixed category are sub-categories based on 1) costs that are attributed to customer accounts regardless of class of customer and meter size associated with each account, and 2) costs that are attributed to the size of each customer's meter. Within the variable category are sub-categories based on 1) costs that are attributed to Tier 1, or base, water use, and 2) costs that are attributed to Tier 2, or above base, water use. Finally, within the fire-protection category, costs are allocated to public fire protection and private fire protection components. District staff believe that this approach provides a reasonable nexus between customer rates and the costs associated with providing water service to District customers. The proposed rates presented in this report are a product of this cost of service allocation methodology and considers District policies and financial needs, such as minimum reserve funding levels and projected capital needs.

OVERVIEW OF LEGAL REQUIREMENTS AND INDUSTRY BEST PRACTICES FOR COST OF SERVICE STUDIES

The State of California considers water services as property-related and, as such, fees or charges for such services are subject to certain state constitutional and statutory requirements. A primary requirement is that agencies imposing property-related charges must demonstrate that the rates for such charges do not exceed the proportional cost of providing the property related service. Presented in the next few sections are brief summaries of the relevant authorities governing retail water rate setting in California.

Proposition 13

Proposition 13 was adopted by the California voters in 1978, and (among other things) added article XIII A, section 4 to the California Constitution. Article XIII A, section 4 requires that all "special taxes" require voter approval. Although Proposition 13 did not define the term "special tax," the Legislature adopted Government Code Section §50076 in 1979, which provides that "special taxes shall not include any fee which does not exceed the reasonable cost of providing the service or regulatory activity for which the fee is charged."

Proposition 218

California voters approved Proposition 218 in November 1996. This voter-approved initiative added articles XIII C and D to the California Constitution. Article XII D Section 2(e) defines a "fee" as "any levy other than an ad valorem tax, a special tax,

or an assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property related service". In 2006, the California Supreme Court confirmed in *Bighorn-Desert View Water Agency v. Verjil*, that water service is property-related, and therefore, subject to the requirements of Proposition 218. As such, any addition of a new water service fee or charge, or any increase or extension of an existing water service fee or charge, must comply with the substantive and procedural requirements of Proposition 218. The substantive requirements include:

- Revenues derived from the fee or charge cannot exceed the funds required to provide the property-related service.
- Revenues derived from the fee or charge cannot be used for any other purpose other than for which the fee or charge was imposed for and cannot be used for general governmental services such as public safety or libraries.
- A property-related fee or charge cannot exceed the proportional cost of service attributable to the parcel.
- No property-related fee or charge may be imposed for a service unless the service is used by, or immediately available to, the owner of the property in question.

California Water Code Sections 370-374

California Water Code Sections 370 – 374 provide criteria for establishing allocation-based conservation water pricing in support of California Constitution Article X, Section 2. Article X, Section 2 states that waste or unreasonable use of water shall be prevented. Allocation-based conservation water pricing allows for the design of water budget rate structures. Per AWWA M1, "a water-budget rate structure is a form of increasing block rates where the amount of water within the first block or blocks is based on the estimated, efficient water needs of the individual customer."

Under the Water Code sections, allocation-based rates can be employed if they meet the following criteria:

- Billing based on metered use.
- A base allocation (water amount) is established based on each customer's needs and property characteristics.
- A basic charge is imposed for all water used within the customer's base allocation.
- A conservation charge is imposed on all excess of the customer's base allocation.

Also, tiered rates can be employed to pass the "incremental costs" of water service through to those customers causing the agency to incur such incremental costs. Incremental costs include water supply costs, capital costs incurred as a result of excess water use, and costs for implementing water conservation or demand management measures to offset impacts on water supply and reliability from excessive water users, including:

- Conservation best management practices, conservation education, irrigation controls and other conservation devices, and other demand management measures.
- Water system retrofitting, dual plumbing and facilities for production, distribution, and all uses of recycled water and other alternative water supplies.
- Projects and programs for prevention, control, or treatment of the runoff of water from irrigation and other outdoor water uses. Incremental costs shall not include the costs of stormwater management systems and programs.

Proposition 26

California voters approved Proposition 26 in November 2010. Included in the language of proposition, which amended California Constitution Article XIII C, Section 1, is a definition of "tax". Essentially, as defined by Proposition 26, a tax is any "levy, charge, or exaction of any kind imposed by a local government" with specifically outlined exceptions. These exceptions are:

- A charge imposed for a specific benefit conferred or a privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege, and
- A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product.
- Assessments and property-related fees imposed in accordance with the provisions of article XIII D.

Proposition 26 establishes that the "…local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity."

Retail water service fees and charges (which include provision of water for consumption as opposed to resale) will fall under the third bullet point above. In other words, so long as the fees or charges are adopted in accordance with article XIII D (added as a part of Proposition 218 and described above), they will be exempt from the definition of a tax.

Government Code Section §54999.7

Under this section, rate-setting activities by public agencies are directed to follow cost-of-service principles and states that fees "…for public utility service, other than electricity or gas, shall not exceed the reasonable cost of providing the utility service." It also provides that these fees will be "established in consideration of service characteristics, demand patterns, and other relevant factors."

Generally Accepted Rate-Setting Standards

The American Water Works Association (AWWA) is the industry organization tasked with providing guidance on the operation and management of water utilities. AWWA has established a general set of principles used to guide the development of water rates. These principles were developed to provide a consistent approach and minimum standards to rate-setting procedures. It is important to note that AWWA observes that there is no prescribed single approach for establishing cost-based rates. Rather, agencies must exercise judgment to align rates and charges with local conditions and requirements, as well as applicable state law.

District staff considered the guidelines contained in the AWWA documentation and followed the applicable State law, including Proposition 218, to conduct the analysis contained herein.

The projections set forth in this report are intended as "forward-looking statements". In formulating these projections, District staff have made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized in performing the analysis follows generally accepted practices for such projections. Such assumptions and methodologies are reasonable and appropriate for the purpose for which they are used. While District staff believe the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that occur. Such factors that may affect the District's ability to manage the system and meet regulatory or environmental requirements include, but are not limited to, the following: the District's ability to execute the capital improvement program as scheduled and within budget, drought-induced State water supply restrictions, significant regional and local economic conditions, and adverse legislative, regulatory, or legal decisions (including environmental laws and regulations).

Water Rate Study and Cost of Service Analysis

The rate study/cost of service process followed in this study consists of three parts, with each part answering a specific question:

- Revenue Requirements – This section develops the District's Financial Plan and answers the question "How much revenue is needed to operate the utility and fund capital improvements?"
- Cost of Service – This section allocates the different costs for providing water service to customers. The question addressed in this part of the process is "From whom should the money be collected?"
- Rate Design – This last part of the process examines different possible rate structures to answer the question "How should the District's services be priced?"

The subsequent sections of this study present the three parts of the analysis conducted by District staff and reviewed by the District's legal counsel.

REVENUE REQUIREMENTS

A review of the District's revenue requirements is the first step in the rate study process. The review involves an analysis of customer account and consumption pattern data, annual operating revenues under existing customer rates, current and projected non-operating revenues, current and projected operating and maintenance expenses, and the District's future capital requirements. The projections and cost escalators used in the analysis are based on historical cost increases and information available to District staff at the time of the study. The analysis also incorporates District financial and reserve fund balance policies.

The following tables (Tables 4 through 6) present current and projected customer account information (metered accounts and private fire line accounts) and current and projected water consumption information during the study period. Projections are based on historical growth patterns in the District and current staff assumptions about customer account growth and water use during the study period.

Table 4 – Estimated and Projected Metered Customer Accounts

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
3/4"	6,953	6,943	6,932	6,922	6,911	6,901
1"	1,269	1,282	1,295	1,307	1,321	1,334
1.5"	321	323	324	326	327	329
2"	158	159	160	160	161	162
3"	13	13	13	13	13	13
6"	2	2	2	2	2	2
Total	8,716	8,721	8,726	8,731	8,736	8,741

Table 5 – Estimated and Projected Private Fire Line Customer Accounts

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Fire Service (by fire main size)						
2"	3	3	3	3	3	3
4"	58	58	59	59	59	59
6"	29	29	29	29	30	30
8"	5	5	5	5	5	5
10"	2	2	2	2	2	2
Total Fire Service	97	97	98	98	99	99

Table 6 – Estimated and Projected Water Consumption by Tiers

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Total By Tiers						
Tier 1 (hcf)	1,310,461	1,297,356	1,297,356	1,307,087	1,316,890	1,326,766
Tier 2 (hcf)	174,748	161,642	158,409	158,409	159,597	160,794
Total (hcf)	**1,485,209**	**1,458,998**	**1,455,765**	**1,465,496**	**1,476,487**	**1,487,560**

* 1 unit of water is represented as 1 'hcf'. One 'hcf' equals 748 gallons of water.

O&M and Supply Expense Projections

The O&M expense projection analysis considers the anticipated increases in the costs of operating the utility over the 5-year study period. Table 7 presents the study period O&M cost projections utilizing the District's FY 2020/21 estimated actual expenditures and FY 21/22 adopted budget figures to derive the baseline annual revenues and expenses of the study. Escalators are applied to each category based on historical cost increases and District staff assessment based on relevant available information (the District rate model provides detailed listings of each escalator).

Projected imported water purchase costs from Metropolitan Water District of Orange County (MWDOC) were based on Metropolitan Water District (MWD) and MWDOC published budgets. Projected groundwater purchase costs from Orange County Water District (OCWD) were based on published data by OCWD and District staff estimates of future year increases to groundwater rates. Annual OCWD percentage projections account for the anticipated cost impact of per- and poly-fluoroalkyl substances (PFAS) treatment in the Orange County Groundwater Basin (Basin) from which the District's groundwater is supplied. Furthermore, District water cost projections include the cost of delivering groundwater from the Basin to

the District through wells owned and operated by the City of Newport Beach.[1] Table 8 presents the projected water purchase costs over the next five years based on the above-mentioned factors.[2]

Table 7 – Estimated and Projected Operating and Maintenance Expenses

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Summary by Department						
Operations - Source of Supply (51000)	$ 4,110,327	$ 4,735,675	$ 4,435,582	$ 4,018,210	$ 4,229,461	$ 4,444,382
Operations - Pumping (52000)	773,469	1,068,700	1,100,761	1,133,784	1,167,797	1,202,831
Operations - Transmission & Distribution (54000)	3,912,840	4,239,840	4,367,035	4,498,046	4,632,988	4,771,977
General Manager's Office (55000)	877,930	858,940	884,708	911,249	938,587	966,745
Administration & Customer Service (56000 & 57000)	1,186,428	1,564,210	1,606,679	1,650,333	1,695,206	1,741,332
Finance (58000)	874,860	898,260	925,208	952,964	981,553	1,011,000
Engineering (59000)	698,090	620,140	638,744	657,907	677,644	697,973
Total by Department	**$ 12,433,944**	**$ 13,985,765**	**$ 13,958,718**	**$ 13,822,494**	**$ 14,323,236**	**$ 14,836,240**

[1] In 2020, the City of Newport Beach informed the District that the wells supplying groundwater to the District, as well as to the City, required major rehabilitation work. As a result of this condition, the wells have been taken off-line and cannot transmit groundwater to the District. The City anticipates this situation to continue through the 2022/2023 fiscal year at which time the wells should become operational again. In the meantime, the District is fully reliant on more expensive imported water. The District rate study factors this situation into the water cost projection analysis.

[2] Water purchase costs are included in the overall O&M cost projections shown in Table 4.

Table 8 – Estimated and Projected Water Purchase and Delivery Expenses

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Water Cost Summary						
Fixed Costs	$ 281,683	$ 281,100	$ 294,312	$ 308,144	$ 318,929	$ 328,657
Variable Costs	3,674,934	4,197,845	3,876,839	3,437,701	3,629,996	3,826,774
Total Water Cost	**$ 3,956,617**	**$ 4,478,945**	**$ 4,171,150**	**$ 3,745,846**	**$ 3,948,926**	**$ 4,155,430**
MWD/MWDOC Fixed Charges						
MWD Readiness-to-Serve	114,000	98,200	102,815	107,648	111,415	114,814
MWD Capacity Charges	60,000	63,100	66,066	69,171	71,592	73,775
MWDOC Meter Charges	107,683	119,800	125,431	131,326	135,922	140,068
Total MWD/MWDOC Fixed Charges	281,683	281,100	294,312	308,144	318,929	328,657
MWD/MWDOC Variable Charges						
Imported Water Purchases	3,305,961	3,944,345	3,512,117	1,953,455	2,068,171	2,171,380
Total MWD/MWDOC Variable Charges	3,305,961	3,944,345	3,512,117	1,953,455	2,068,171	2,171,380
Groundwater Variable Charges						
OCWD Water Purchases	269,110	253,500	268,710	1,101,732	1,167,836	1,249,585
Newport Beach Charges	99,863	-	96,011	382,513	393,989	405,809
Total Groundwater Variable Charges	368,973	253,500	364,721	1,484,246	1,561,825	1,655,394
Acre Feet by Source						
MWDOC	3,047	3,517	3,009	1,599	1,625	1,652
OCWD	551	-	500	1,934	1,934	1,934
Total Acre Feet	3,598	3,517	3,509	3,533	3,559	3,586

Operating Revenue Projections from Existing Rates

Operating revenue projections are based on existing customer rates (bi-monthly meter service charge and commodity rates), private fire line service charges, service installation fees, and other miscellaneous administration charges. Escalators are applied to customer account growth, customer water consumption, and miscellaneous revenue categories based on historical data and District staff assessments (the District rate model provides detailed listings of each escalator). Where applicable, some projections may show a decrease in a customer account category, water consumption, or revenue line item. This is the case for the ¾" customer meter size category. The City of Laguna Beach does not allow for new construction to install ¾-inch meters and, in the case of major remodels in the City, any existing ¾-inch metered connection must upsize to a 1-inch meter to meet City fire flow requirements. The result of this City policy and regulation, is that the number of ¾-inch water meters in the District service area is declining. This decline is reflected in the rate analysis.

Service charge revenues are attributable to the bi-monthly meter service charges, consumption revenues are attributable to the commodity rates, and fire service revenues are attributable to private fire line service charges for those customers who have a private fire line connection on their property separate from the potable

water metered connection. Other operating revenue includes service installation fees, administrative fees and penalties, engineering/planning fees, overhead and equipment charges, and other miscellaneous revenues. Table 9 presents these estimated and projected figures by year.

Table 9 – Estimated and Projected Operating Revenues under Existing Water Rates

Description	Estimated FY 2021	Budgeted FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Total Operating Revenue						
Service Charge Revenue	$ 2,982,050	$ 2,982,904	$ 2,991,047	$ 2,999,281	$ 3,007,608	$ 3,016,027
Fire Service Revenue	11,136	11,356	11,413	11,470	11,528	11,585
Consumption Revenue	8,468,380	8,280,446	8,251,059	8,302,143	8,364,409	8,427,142
Other Operating Revenue	131,050	178,000	179,780	181,578	183,394	185,228
Total Operating Revenue	**$ 11,592,615**	**$ 11,452,706**	**$ 11,433,300**	**$ 11,494,472**	**$ 11,566,938**	**$ 11,639,982**

Capital Expense Projections

While O&M expenses are related to daily operations, the District incurs non-operating, or capital, expenses to construct, install, repair, rehabilitate, or replace water facilities. For planning purposes, the District develops and maintains a long-term Capital Improvement Program (CIP) that identifies future water facility needs. The program of facilities is generated through staff's assessment of the water system and through scheduled updates to the District's water facilities master plan. The most recent water master plan update occurred in 2018.

The CIP is a constantly evolving program; District staff review all ongoing and future planned projects on a regular basis throughout each year. Consequently, projects may shift from one year to the next, new projects may be added to the plan, or projects may by removed from the CIP, should new conditions or information provide a basis for the action. Table 10 presents the projected 5-year CIP as categorized by major system function. The escalator used for the CIP projection analysis is the historical (past 10 years) Engineering News Record Construction Cost Index (ENR-CCI) for the Los Angeles Region.

Table 10 – Estimated and Projected Capital Improvement Projects by Major Functional Category

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Total Estimated CIP Expenses						
Supply Lines/Joint Powers Projects	$ 30,000	$ 125,000	$ -	$ -	$ 100,469	$ 217,653
Reservoirs & Pump Stations	800,000	2,130,000	5,578,114	4,178,038	274,969	107,749
Transmission & Distribution	700,000	1,440,000	1,630,134	2,205,796	2,458,854	2,397,414
Office Equipment & Technology	600,000	35,000	21,396	22,836	23,267	121,756
Operations Equipment & Vehicles	260,000	639,000	217,012	225,251	234,781	244,590
Facility/Building Improvements	5,000	421,000	212,936	31,141	-	32,325
Water Supply	620,000	-	1,324,484	1,764,637	-	-
Contingency/Prior Open Projects	400,000	-	-	-	-	-
Total	**$ 3,415,000**	**$ 4,790,000**	**$ 8,984,074**	**$ 8,427,699**	**$ 3,092,339**	**$ 3,121,486**

Non-Operating Revenue Projections

Table 11 presents the estimated and projected non-operating revenues during the study period. District non-operating revenues are considered unrestricted; however, they are generally used to fund capital projects. Any surplus non-operating revenues can be used to fund net operating income losses (if necessary) or can be deposited in the District 'pay-as-you-go' (PAYGO) capital reserve fund to be applied to PAYGO-identified capital projects. Note in Table 11 that the Other Non-Operating Revenues line item increases significantly in FY 2023 due to the anticipated sale of a District property that has been declared surplus by the District Board of Directors in 2021. The anticipated proceeds from the land sale can be deposited to the PAYGO capital reserve fund balance or can directly fund capital projects during the study period.

Table 11 – Estimated and Projected Non-Operating Revenues

Description	Estimated FY 2021	Budgeted FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Total Non-Operating Revenue						
Property Tax	$ 3,469,561	$ 3,573,648	$ 3,680,857	$ 3,791,283	$ 3,905,021	$ 4,022,172
Lease Revenues	540,108	540,000	556,200	572,886	590,073	607,775
Other Non-Operating Revenues	594,143	470,000	1,048,873	400,341	310,520	345,184
Total	**$ 4,603,812**	**$ 4,583,648**	**$ 5,285,931**	**$ 4,764,510**	**$ 4,805,614**	**$ 4,975,131**

Revenue Requirements Analysis

The components described in this section comprise the foundation of the District revenue requirement analysis. Emphasis was placed on several areas including generating sufficient rate revenues to support the District's operational and capital needs while considering customer rate impact, determining the amount of funds required to be used from reserves, both PAYGO and other reserves, to fund expenses, and maintaining reserve levels at or near District policy minimum target levels throughout the 5-year rate study period. Should other reserves dip below

minimum policy targets, rate revenues should be adjusted to ensure that the minimum targets are re-established.

The resulting revenue requirements analysis presented in Table 12 incorporates rate revenues and other revenues required to meet operating and capital needs. The first line of Table 12, 'Rate Revenue Required' includes District revenues derived from existing customer rates in each year ('Service Charge Revenue' plus 'Consumption Revenue' from Table 9) plus additional rate revenues needed for that year to achieve District operational and capital funding objectives. Additional rate revenues would come from future rate increases as projected in the District's cost of service and rate model. The 'Other Revenue' line item in Table 12 represents other operating revenues sources for each year of the rate study period ('Fire Service Revenue' plus 'Other Operating Revenues' from Table 9). The 'Total Operating Revenue' line item in Table 12 is the sum of the 'Rate Revenue Required' line and the 'Other Revenue' line. The 'Total Operating Expense' line item represents operating expenses from each year (from Table 7). Net operating income is total operating revenues less total operating expenses. The figures shown in the line items 'Total Non-Operating Revenue' and 'Total Non-Operating Expense' are the District's projected revenues from non-operating sources such as property taxes and interest income and projected costs from the District's CIP program. The sources for these two line items are Tables 11 and 10, respectively. Net non-operating income is total non-operating revenues less total non-operating expenses. The final line item in Table 12 is 'Net Income' which is the sum of net operating income and net non-operating income for each year. A net gain in any year is deposited to the appropriate reserve balance; a net loss in any year is met through available reserve balances.

Table 12 – Estimated and Projected District Revenue Requirements and Net Income Analysis

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
Rate Revenue Required	$ 11,450,429	$ 11,488,617	$ 12,334,839	$ 13,081,918	$ 13,887,632	$ 14,743,123
Other Revenue	142,186	189,356	191,193	193,048	194,921	196,813
Total Operating Revenue	11,592,615	11,677,973	12,526,032	13,274,966	14,082,553	14,939,936
Total Operating Expense	12,433,703	13,985,765	13,958,718	13,822,494	14,323,236	14,836,240
Net Operating Income	(841,088)	(2,307,791)	(1,432,685)	(547,527)	(240,682)	103,696
Total Non-Operating Revenue	4,603,812	4,583,648	5,285,931	4,764,510	4,805,614	4,975,131
Total Non-Operating Expense	3,515,000	4,790,000	8,984,074	8,427,699	3,092,339	3,121,486
Net Non-Operating Income	1,088,812	(206,352)	(3,698,144)	(3,663,189)	1,713,276	1,853,644
Net Income	**$ 247,724**	**$ (2,514,144)**	**$ (5,130,829)**	**$ (4,210,716)**	**$ 1,472,593**	**$ 1,957,340**

Table 13 presents the resulting effect of these actions on the District's PAYGO capital reserves and other reserves. The 'Other Reserves' line item in Table 13 represents the minimum balances for this group of reserves. The 'PAYGO Capital Reserves' line

item in Table 13 represents funds available for capital projects each year. Depending on the CIP needs each year, this balance can fluctuate above and below the minimum policy target levels.

The resulting projected net income losses in FY 2022 through FY 2024 illustrate the effect of increased imported water purchase costs and large-scale capital project plans in those years. These losses can be addressed by increasing customer rates, by deferring critical capital project needs, and/or by utilizing existing District reserves. This rate analysis plan includes a combination of moderate overall rate revenue increases as well as the use of current District reserve funds. The District plans to utilize $600,000 of District reserves to mitigate increases to customer service charges from FY 2022 through FY 2024. Table 13 shows how these funds will be allocated in each year in the 'Use of Other Reserves' line item.

Table 13 – Estimated and Projected Reserve Balances for the Study Period

Description	Estimated FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026
District Reserves Balances						
PAYGO Capital Reserves	$ 14,394,319	$ 11,200,040	$ 5,778,768	$ 1,453,630	$ 2,751,245	$ 4,529,189
Other Reserves	5,061,608	5,741,743	5,782,186	5,646,608	5,721,586	5,900,983
Use of Other Reserves	-	(250,000)	(250,000)	(100,000)	-	-
Total Reserves Balance	**$ 19,455,927**	**$ 16,691,783**	**$ 11,310,954**	**$ 7,000,238**	**$ 8,472,831**	**$ 10,430,171**

COST OF SERVICE ANALYSIS

The principles and methodology of a cost of service analysis are summarized in this section. The annual cost of providing water service is distributed among customer classes commensurate with their service requirements and the proportionate costs attributed to those service requirements. This process establishes a nexus between the cost to provide water service to customers and the rates and charges that these customers pay for their water service. This cost of service analysis involved the following activities:

1. List operating and capital cost line items. This step requires listing each line-item cost detail and their related projected costs over the study period. Annual costs are summed and averaged over the 5-year study period.
2. Allocate line-item costs to fixed, variable functional cost components. Cost components include customer accounts (those costs that do not vary according to customer class or meter size), meters (those costs that vary by meter size), base water consumption (Tier 1), beyond base water consumption (Tier 2), and fire protection (both public and private).
3. Develop unit costs for each cost component using appropriate units of service for each component.

4. Distribute the cost components. For service charge-related costs, distribute cost components to accounts and, where applicable, to each meter size per account. For commodity rate-related costs, distribute cost components to projected water consumption at base and beyond base levels. For private fire protection-related costs, distribute cost components to private fire line connection accounts.

Allocation of O&M Expenses

District staff identified all operating expense line items that relate to providing water service to its customers. Costs for each line item for each year of the rate study period (FY 22 – FY 26) were based on FY 22 budget figures and projections for the remaining years of the period. Projections were based on historical escalators, published data (when available), and staff experience and estimations. The costs for each were summed and then averaged over the 5-year period to arrive at an amount per line item to be used for the allocation analysis.

The allocation process began with interviews with District staff regarding allocation mechanisms. During these interviews, each cost line item was reviewed, and it was determined what mechanism (or mechanisms) was (were) available and how it (they) should be applied. The mechanisms identified were staff labor/work effort data, cost data related to water consumption, customer account data, customer meter data, facility operating data and design standards, service/work order data, agenda item records, customer call data, and staff experience and expertise.

For some line items, data and records were not available. In these cases, staff discussed the relationships between the cost items and the fixed, variable, and fire protection functional cost components of the District [customer accounts, meters/meter sizes, base and beyond base water consumption (Tier 1 and Tier 2 water use), and fire protection] and determined if there was a systematic or direct relationship between the item and cost component. For example, pump station operating expenses are directly related to water demand. As demand increases, pumping expenses increase, and vice versa. Therefore, the pumping expense line item is directly related to base, or Tier 1, water consumption and allocated accordingly.

As described earlier, the functional cost components of the District are grouped into three major categories: fixed costs, variable costs, and fire protection costs. Within each of these major categories are sub-categories and the basis of allocation as presented in Table 14. Based on the allocation mechanism, each cost line item was attributed to one or more of these functional cost sub-categories. In many cases, a cost item is related to only one sub-category, yet in others, to two or more categories.

Table 14 – Functional Cost Component Categories

Major Cost Category	Sub-Category	Basis for Allocation
Fixed	Customer Account	Costs allocated uniformly to customer accounts regardless of customer class or meter size
	Meters	Costs related to meter size (meter size is the main determinant of cost of service)
Variable	Tier 1 Consumption	Costs related to base (Tier 1) water use
	Tier 2 Consumption	Costs related to beyond base (Tier 2) water use
Fire Protection	Public Fire	Costs related to general, service area-wide fire protection service
	Private Fire	Costs related to specific customer private fire line service

Once this allocation process was completed, the amounts listed for each line item in each sub-category were summed to arrive at a total operating cost allocation by sub-category. Each sub-category total was divided by the sum of all sub-category costs to yield a percentage amount for each sub-category. These percentages were utilized to allocate general support cost line items to each functional cost sub-category.

There are several general support categories that do not directly relate to a specific cost sub-category. These costs include, but are not limited to, insurance costs, information technology, human resources, and so on. These general support costs are typically categorized as indirect costs that support all functions of the District and therefore are allocated based on the percentage figures derived from the direct cost allocation process described above. Table 15 presents the results of this operating cost allocation process. Appendix A includes the detailed line item cost categories and allocation bases.

Table 15 – Results of Operating Cost Allocation Process

Description	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable Base - Tier 1	Variable Base - Tier 2	Total Average Annual Operating Costs
Total Allocated Direct Cost Line Items (a)	$ 880,754	$ 1,562,420	$ 277,555	$ 9,190,503	$ 640,521	$ 12,551,754
Direct Cost Line Item Percentages	7.0%	12.4%	2.2%	73.2%	5.1%	100.0%
Total Allocated Indirect/General Support Cost Line Items (b)	114,625	203,340	36,122	1,196,089	83,360	1,633,536
Total Direct and Indirect Allocated Cost Line Items (a + b)	$ 995,379	$ 1,765,760	$ 313,677	$ 10,386,593	$ 723,881	$ 14,185,290

Allocation of Capital Expenses

Similar to the process followed for allocation operating expenses, District staff identified all capital project expense line items that relate to providing water service to its customers. Identified capital projects and related costs for each line item for each year of the rate study period (FY 22 – FY 26) were based on several sources: the District 2018 Water Master Plan update, engineering and operations staff assessments of projects required during the 5-year study period, and available data on conditions of the District facility assets. Capital costs for the study period were identified and an escalator was applied to the FY 23 – FY 26 cost figures to account for future inflation. The escalator source is Engineering News Record's Construction Cost Index (ENR-CCI) for the Los Angeles region. The prior 10 years of the LA ENR-CCI was averaged to arrive at an annual escalator of 1.88 percent. The resulting

costs for each project were summed and then averaged over the 5-year period to arrive at an amount per line item to be used for the allocation analysis.

The allocation process began with interviews with District staff regarding allocation mechanisms. During these interviews, each cost line item was reviewed, and it was determined what mechanism (or mechanisms) was (were) available and how it (they) should be applied. The mechanisms identified were facility design standards, use of each capital asset, and staff experience and expertise. Based on these sources, capital items are allocated to base water consumption, fire protection, or a combination of both components. District capital projects are directly related to the storage, transmission, and distribution of water for customer use and for fire protection, if needed. These uses vary with customer demand patterns and other needs and thus, capital projects are not allocated as a fixed cost.

Once this allocation process was completed, the amounts listed for each line item in were summed to arrive at a total capital cost allocation by base water demand, fire protection, or combination of both components. Each component total was divided by the sum of all capital costs to yield a percentage amount for each component. These percentages were utilized to allocate general capital and capital support cost line items to each functional cost component. Similar to the operating allocation analysis, there are several general capital and capital support capital projects that do not directly relate to a specific cost component. These costs include information technology, facility improvements, and fuel storage projects. These general projects support all capital functions of the District and therefore are allocated based on the percentage figures derived from the direct cost allocation process described above. Table 16 presents the results of this capital cost allocation process. Appendix B includes the detailed line item capital cost categories and allocation bases.

Table 16 – Results of Capital Cost Allocation Process

Description	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable Base - Tier 1	Variable Base - Tier 2	Total Average Annual Capital Costs
Total Allocated Direct Capital Cost Line Items (a)	$ -	$ -	$ 924,439	$ 4,574,349	$ -	$ 5,498,788
Direct Capital Cost Line Item Percentages	0.0%	0.0%	16.8%	83.2%	0.0%	100.0%
Total Allocated General Capital Support Cost Line Items (b)	-	-	30,989	153,342	-	184,331
Total Allocated Capital Cost Line Items (a + b)	$ -	$ -	$ 955,429	$ 4,727,691	$ -	$ 5,683,120

Summary of Operating and Capital Allocations

Table 17 shows the total operating and capital allocations based on the analyses described above and Tables 15 and 16. The final allocation percentages listed at the bottom of Table 17 are then utilized to allocate revenue requirements of the District.

Table 17 – Summary Results of Operating and Capital Cost Allocation Processes

Expenses	Fixed - Meter Size	Fixed - Uniform	Variable - Tier 1	Variable - Tier 2	Fire Protection	Total
O&M Expenses	$ 995,379	$ 1,765,760	$ 10,386,593	$ 723,881	$ 313,677	$ 14,185,290
Capital Expenses	-	-	4,727,691	-	955,429	5,683,120
Total Allocation	$ 995,379	$ 1,765,760	$ 15,114,284	$ 723,881	$ 1,269,106	$ 19,868,410
Final Allocation %	**5.0%**	**8.9%**	**76.1%**	**3.6%**	**6.4%**	**100.0%**

Final Cost Allocation of Revenue Requirement

The total revenue recoverable from each cost causation component through water rates is shown in Table 18 using the rate revenue requirement from Table 12 (first row of the table) and the operating and capital allocations derived in Table 17.

Table 18 – Allocation of Revenue Requirement FY 22 – FY 26

Fiscal Year	Fixed - Meter Size	Fixed - Uniform	Variable - Tier 1	Variable - Tier 2	Fire Protection	Total Revenue Requirements
Final Allocation %	5.0%	8.9%	76.1%	3.6%	6.4%	100.0%
FY 21/22	575,563	1,021,025	8,739,613	418,574	733,842	11,488,617
FY 22/23	617,958	1,096,231	9,383,351	449,405	787,895	12,334,839
FY 23/24	655,385	1,162,626	9,951,668	476,624	835,615	13,081,918
FY 24/25	695,750	1,234,232	10,564,590	505,979	887,081	13,887,632
FY 25/26	738,609	1,310,262	11,215,379	537,148	941,725	14,743,123
Total	**$ 3,283,266**	**$ 5,824,376**	**$ 49,854,601**	**$ 2,387,729**	**$ 4,186,158**	**$ 65,536,130**

Allocation of Fire Protection to Private and Public

Water systems provide two types of fire protection: public fire protection for firefighting, which is generally visible as hydrants on a street that are installed for the purpose of protecting property served by the District, and private fire protection which provides fire flow to building and other structure sprinkler systems for fire suppression within private improvements. Public fire hydrants are generally constructed in proximity to property served by the District. Public fire hydrants, and the infrastructure necessary to deliver water to such hydrants in sufficient quantities and pressures to fight fire, deliver such water to property served by the District. To determine the share of total fire costs responsible to each, District staff performed an analysis of the public hydrants and private fire lines within the water system.

Table 19 shows the elements of allocating costs between public and private fire protection. Each connection size to a hydrant or to a fire line has a fire flow demand factor like a hydraulic capacity factor of potable meters. The diameter of the connection is raised to the 2.63 power to determine the fire flow demand factor. This exponent is derived from the Hazen-Williams equation, which is frequently used to design pressure pipe systems for water distribution and for estimating necessary capacity for fire flow. The count of connections of a specific size is multiplied by the fire flow demand factor to derive total equivalent connections.

Total costs allocated to fire protection (see Table 18) are further allocated based on the percentage share of total equivalent fire connections between public and private shown in Table 19.

From the analysis it is determined that 93.1 percent of equivalent fire connections relate to public fire protection and will be included and recovered through each District water customer's bi-monthly meter service charges. It is appropriate to recover these costs through the bi-monthly meter service charges because public hydrants provide a property-related water service insofar as they provide water to property served by the District in sufficient quantities and pressures to be used in the event of a fire. The remaining 6.9 percent of equivalent fire connections is attributable to private fire and will be recovered through private fire line charges for those accounts that have a dedicated fire line connection serving their property. The annual fire-related revenue requirements derived in Table 18 are then allocated to public and private fire protection components based on the equivalent connection figures calculated in Table 19. The results of this analysis are presented in Table 20.

Table 19 – Fire Protection Equivalent Connections Analysis

Fire Allocation Analysis					
Line Connection Size	Demand Factor	Unit Counts	Equivalent Connections	Percent Allocation	Fire Exponent [1]
Public Hydrants					2.63
2.5"	11.13	0	0		
4"	38.32	15	575		
6"	111.31	901	100,291		
10"	426.58	0	0		
Total Public Hydrants [2]		**916**	**100,866**	93.1%	
Private Fire Lines					
2"	6.19	3	19		
4"	38.32	58	2,223		
6"	111.31	29	3,228		
8"	237.21	5	1,186		
10"	426.58	2	853		
Total Private Fire Lines [3]		**97**	**7,508**	6.9%	
Total Fire Connections		**1,013**	**108,374**	100%	

1. Using the principles of the Hazen-Williams equation for flow through pressure conduits, the relative flow potential for various size pipes is dependent on the diameter of the pipe raised to the power of 2.63.

2. The number of public fire hydrants and connection sizes provided by the District's GIS database.

3. The number of private fire lines by size provided by the District's customer billing database.

Table 20 – Allocation of Fire-related Revenue Requirement FY 22 – FY 26

Fiscal Year	Fire Protection Revenue Requirements	Public Fire Protection	Private Fire Protection
	100%	93.1%	6.9%
FY 21/22	733,842	683,001	50,841
FY 22/23	787,895	733,309	54,586
FY 23/24	835,615	777,723	57,892
FY 24/25	887,081	825,622	61,458
FY 25/26	941,725	876,482	65,244
Total	**$ 4,186,158**	**$ 3,896,136**	**$ 290,022**

Distribution of Cost Components to Meters, Accounts, Commodity Tiers, and Private Fire Protection

To allocate costs to different customer accounts, meters, commodity rate tiers, and private fire line accounts, unit costs of service need to be developed for each cost causation component. The unit costs of service are developed by dividing revenue requirements allocated to each component by the total annual service units of the respective component. The following sections illustrate the annual units of service analysis and the unit costs for each component.

Fixed Charges (Meters and Accounts) Distribution

The bi-monthly meter service charges incorporate the fixed costs of operating the water system. These fixed costs are ongoing costs regardless of water consumption levels; that is, even when a customer does not use any water, the District incurs such fixed costs as maintenance of facility assets serving customers, meter testing, the ability/readiness to serve each connection, and administrative services provided to each connection.

Account Services Component

These costs are incurred at the same level regardless of land use, customer class, customer meter size, or the total amount of water that a customer uses. The customer accounts component is based on the number of accounts times the number of billing periods and does not fluctuate with increases in meter size. The result is total account service units to allocate revenue requirements. Table 21 presents the account distribution utilizing allocated revenue requirements from Table 18, public fire protection revenue requirements from Table 20, and customer account data shown in Table 4. In Table 21, there is a line item related to a reserve fund allocation; a certain amount of available, unrestricted reserve funds are credited against the overall account-related revenue requirements in fiscal years 2022 through 2024. The reserve funds applied total $250,000 in FY 22, $250,000 in FY 23, and $100,000 in FY 24. The District recommends this reserve fund application for three fiscal years to help mitigate the increase in the overall bi-monthly service charge for each District customer in these fiscal years. The results of this distribution analysis are shown in the bottom line of Table 21. For example,

in FY 22, the account component of the customer bi-monthly service charge is $27.79. This amount will be added to the FY 22 meter services bi-monthly amount described in the next section to comprise the total customer bi-monthly service charge for each fiscal year.

Table 21 – Customer Accounts Cost Component – Unit Rate for Each Fiscal Year

Accounts Cost Distribution	FY 22	FY 23	FY 24	FY 25	FY 26
Fixed-Uniform Revenue Requirement	$1,021,025	$1,096,231	$1,162,626	$1,234,232	$1,310,262
Public Fire Protection Revenue Requirement	683,001	733,309	777,723	825,622	876,482
Total Accounts Revenue Requirement	1,704,025	1,829,540	1,940,349	2,059,854	2,186,743
Total Accounts Revenue Requirement w/ Reserve Fund Allocation	1,454,025	1,579,540	1,840,349	0	0
÷ Number of Potable Accounts	8,721	8,726	8,731	8,736	8,741
÷ Number of Billing Periods	6.00	6.00	6.00	6.00	6.00
Billing Period Amount per Account	**$27.79**	**$30.17**	**$35.14**	**$39.30**	**$41.70**

Meter Services Component

The Meter Services cost component includes costs related to the servicing of the meters serving the District's customers. Certain meter services cost the same per meter regardless of meter size, while other meter services do fluctuate based on the size of a meter. For each meter size category, District staff provided data related to labor effort, customer contact calls and walk-in requests, and service/work orders. Table 22 presents an overview of the bases for distributing meter services-related revenue requirements. For example, source of supply capacity charges are billed to the District by MWDOC each year. Meter services-related revenue requirements are allocated based on the percentage of source of supply capacity costs to total operating costs. In this case, source of supply capacity charges represent 7.8 percent of total meter services-related operating costs. Therefore, 7.8 percent of meter services-related revenue requirements will be allocated among all meters in the District. Table 22 lists the percentages and the allocation methods for each of these distribution categories. Table 23 presents the application of each of the allocation percentages from Table 22 to arrive at the distribution of meter services revenue requirements by distribution category.

Table 22 – Distribution Bases for Meter Services

Meters Cost Distribution	% Allocation	Allocation Method
Source of Supply - Capacity Charges	7.80%	Equivalent Meters
Meter Services - Meter Testing	6.25%	3-inch and 6-inch Meters
Customer Service - Service Orders	26.28%	Service Order Calls by Meter Size
Customer service - Customer Affairs	35.04%	Customer Contact by Meter Size
Engineering - Development Services	11.27%	Labor Effort Spent by Meter Size (1-inch to 6-inch Meters)
Water Quality - Backflow Program	13.35%	Labor Effort Spent by Meter Size (3/4-inch to 6-inch Meters)
Total	**100.00%**	

Table 23 – Meter Services Revenue Requirement Distribution Analysis

Meters Cost Distribution	% Allocations	FY 22	FY 23	FY 24	FY 25	FY 26	Allocation Method
Fixed-Meters Revenue Requirement	100.00%	$575,563	$617,958	$655,385	$695,750	$738,609	
Source of Supply - MWDOC Capacity Charges	7.80%	44,921	48,230	51,151	54,302	57,647	Equivalent Meters
Meter Services - Meter Testing	6.25%	36,001	38,652	40,993	43,518	46,199	3-inch and 6-inch Meters
Customer Service - Service Orders	26.28%	151,248	162,389	172,224	182,832	194,094	Service Order Calls by Meter Size
Customer service - Customer Affairs	35.04%	201,665	216,519	229,633	243,776	258,792	Customer Contact by Meter Size
Engineering - Development Services	11.27%	64,889	69,669	73,889	78,439	83,271	Labor Effort Spent by Meter Size (1-inch to 6-inch Meters)
Water Quality - Backflow Program	13.35%	76,839	82,499	87,495	92,884	98,606	Labor Effort Spent by Meter Size (3/4-inch to 6-inch Meters)

Source of supply capacity charges are billed to the District by MWDOC. The basis for the charges relate to the number of active meters in the District service area and the capacity of flow of these meters as required by the District. Flow ranges of meters differ by meter size, that is, larger flows are associated with larger meters and smaller flows are associated with smaller meters. Safe maximum operating flows for all customer meters were provided by the District's meter manufacturer, Sensus. The operating flow figures were used to derive equivalent meter ratios for each meter size category with the ¾" meter size used as the baseline meter size in the District; there are no 5/8" meters in use in the District service area. This approach is consistent with the purpose and intent of the MWDOC capacity charges. Table 24 presents the meter flow ratios and related meter equivalents by meter size for those active meters within the District. Appendix C presents the detailed meter equivalent analysis which provides the number of District equivalent meters found in Table 25.

Table 24 – Meter Flow Capacity and Meter Equivalent Ratios

Meter Size	Meter Flow Capacity [1]	Meter Equivalents
3/4"	35	1.00
1"	55	1.57
1 ½"	150	4.29
2"	200	5.71
3"	400	11.43
4"	800	22.86
6"	1600	45.71

1. Safe maximum operating capacity flows in gallons per minute as provided by the meter manufacturer, Sensus.

Table 25 presents the distribution analysis for the revenue requirements that are directly related to the MWDOC charge costs for the study period. These revenue requirements (from Table 23) are divided by the total number of equivalent meters (found in Appendix C) and then divided by the number of bill periods in a fiscal year to arrive at rate per equivalent meter for each bill period. Table 26 is the culmination of this distribution analysis. The rate per equivalent meter is multiplied by each meter size category's total number of meter equivalents to arrive at a bi-monthly amount per meter size. This amount will be added to the other distributed meter-related revenue requirements and account charges (as described in this section). The sum of these distributed amounts equals each customer's proposed bi-monthly service charge.

Table 25 – Revenue Requirement Distribution Related to MWDOC Capacity Charges

MWDOC Capacity Charges Distribution	FY 22	FY 23	FY 24	FY 25	FY 26
Revenue Requirement	$44,921	$48,230	$51,151	$54,302	$57,647
÷ Number of EMs	11,487	11,509	11,530	11,552	11,575
÷ Number of Bill Periods	6.00	6.00	6.00	6.00	6.00
Capacity Charge/EM/Period	**$0.65**	**$0.70**	**$0.74**	**$0.78**	**$0.83**

Table 26 – Distribution Rate by Meter Size

Meter Size	Meter Equivalents	FY 22	FY 23	FY 24	FY 25	FY 26
3/4"	1.00	$0.65	$0.70	$0.74	$0.78	$0.83
1"	1.57	1.02	1.10	1.16	1.23	1.30
1 ½"	4.29	2.79	2.99	3.17	3.36	3.56
2"	5.71	3.72	3.99	4.23	4.48	4.74
3"	11.43	7.45	7.98	8.45	8.95	9.49
6"	45.71	29.80	31.93	33.80	35.82	37.95

The second meter-based services distribution category is related to meter testing. The District routinely tests active 3-inch and 6-inch meters (testing on smaller meters is not performed by the District as it is cost prohibitive relative to the cost of replacing smaller meters). There is a cost associated with this testing function and this cost is the same whether the meter is 3-inch or 6-inch. Based on the cost allocation percentage for this category as listed in Table 23, the revenue requirements associated with meter testing are then distributed to all 3-inch and 6-inch meters in the District service area as demonstrated in Tables 27 and 28. The resulting rate per meter per bill period is shown in the last line of Table 28 and becomes a component of the bi-monthly service charge for customers with 3-inch and 6-inch meter sizes.

Table 27 – Description of Meter Testing Allocation

Description	% of Meters Tested
Operations - Meter Testing [1]	
3" & 6" Meters	100%
Total	**100%**

1. The District only tests 3-inch and 6-inch meters.

Table 28 – Revenue Requirement Distribution Related to Meter Testing

Meter Testing Distribution	FY 22	FY 23	FY 24	FY 25	FY 26
Revenue Requirement	$36,001	$38,652	$40,993	$43,518	$46,199
÷ Number of 3" & 6" Meters	15	15	15	15	15
÷ Number of Bill Periods	6.00	6.00	6.00	6.00	6.00
Meter Testing Charge/Period	**$400.04**	**$429.50**	**$455.52**	**$483.57**	**$513.36**

The third meter-based services distribution category is related to customer service order requests. The District receives numerous service order requests throughout each fiscal year. There are costs associated with these service order requests that are part of the general services of the District and should be allocated through customer rates. Based on documented service order requests by meter size during FY 20-21, Table 29 presents the number of service requests by meter size and the percentage of total service orders attributed to each meter size category.[3] These percentages are applied to the revenue requirements associated with customer service orders (see Table 23) to arrive at the distributed revenue requirements associated with each meter size as shown in Table 30. The resulting rate per meter per bill period is shown Table 31 and becomes a component of the bi-monthly service charge for customers based on their account's meter size.

Table 29 – Service Orders by Meter Size

Description	Amount	% of Service Orders
Customer Service - Service Orders		
3/4" Meters	3,433	78.94%
1" Meters	685	15.75%
1.5" Meters	152	3.50%
2" Meters	71	1.63%
3" Meters	7	0.16%
6" Meters	1	0.02%
Total	**4,349**	**100.00%**

Source: CUSI Customer Records, 7/1/2020 - 6/30/2021.

[3] The service order activity for FY 20-21 as listed in Table 29 is similar to other years' worth of activity based on staff experience.

Table 30 – Revenue Requirement Distribution Related to Service Orders

Customer Service - Service Orders Cost Distribution	% Allocations	FY 22	FY 23	FY 24	FY 25	FY 26
Fixed-Service Orders Revenue Requirement	100.00%	$151,248	$162,389	$172,224	$182,832	$194,094
Meter Size						
3/4"	78.94%	119,396	128,190	135,954	144,327	153,218
1"	15.75%	23,822	25,576	27,125	28,796	30,570
1 ½"	3.50%	5,294	5,684	6,028	6,399	6,793
2"	1.63%	2,465	2,647	2,807	2,980	3,164
3"	0.16%	242	260	276	293	311
6"	0.02%	30	32	34	37	39

Table 31 – Rates Related to Service Order Distribution per Meter Size per Bill Period

Service Orders Cost per Account per Billing Period	FY 22	FY 23	FY 24	FY 25	FY 26
Meter Size					
3/4"	$2.87	$3.08	$3.27	$3.48	$3.70
1"	3.10	3.29	3.46	3.63	3.82
1 ½"	2.74	2.92	3.08	3.26	3.44
2"	2.59	2.76	2.92	3.08	3.26
3"	3.10	3.31	3.51	3.71	3.93
6"	2.52	2.71	2.87	3.05	3.24

The fourth meter-based services distribution category is related to customer affairs requests. These requests are submitted by customers by phone or on a walk-in basis. The District receives many customer-related phone calls and walk-in requests for information and service throughout each fiscal year. There are costs associated with these customer affairs requests that are part of the general services of the District and should be allocated through customer rates. Based on documented customer phone calls and walk-ins to the District main office by meter size during FY 20-21, Table 32 presents the number of customer affairs requests by meter size and the percentage of requests attributed to each meter size category.[4] These percentages are applied to the revenue requirements associated with customer

[4] The customer affairs activity for FY 20-21 as listed in Table 29 is similar to other years' worth of activity based on staff experience.

affairs (see Table 23) to arrive at the distributed revenue requirements associated with each meter size as shown in Table 33. The resulting rate per meter per bill period is shown Table 34 and becomes a component of the bi-monthly service charge for each customer based on account meter size.

Table 32 – Customer Affairs by Meter Size

Description	Amount	% of Calls/Walk-ins
Customer Service - Customer Affairs (Calls & Walk-Ins)		
3/4" Meters	7,175	75.42%
1" Meters	1,610	16.92%
1.5" Meters	471	4.95%
2" Meters	229	2.41%
3" Meters	22	0.23%
6" Meters	7	0.07%
Total	**9,514**	**100.00%**

Source: CUSI Customer Records, 7/1/2020 - 6/30/2021.

Table 33 – Revenue Requirement Distribution Related to Customer Affairs

Customer Service - Customer Affairs Cost Distribution	% Allocations	FY 22	FY 23	FY 24	FY 25	FY 26
Fixed-Customer Affairs Revenue Requirement	100.00%	$201,665	$216,519	$229,633	$243,776	$258,792
Meter Size						
3/4"	75.42%	152,095	163,298	173,189	183,856	195,181
1"	16.92%	34,122	36,635	38,854	41,247	43,788
1 ½"	4.95%	9,982	10,718	11,367	12,067	12,810
2"	2.41%	4,860	5,218	5,534	5,875	6,237
3"	0.23%	464	498	528	561	595
6"	0.07%	141	152	161	171	181

Table 34 – Rates Related to Customer Affairs Distribution per Meter Size per Bill Period

Customer Affairs Cost per Account per Billing Period	FY 22	FY 23	FY 24	FY 25	FY 26
Meter Size					
3/4"	$3.65	$3.93	$4.17	$4.43	$4.71
1"	4.44	4.72	4.95	5.21	5.47
1 ½"	5.16	5.51	5.81	6.14	6.49
2"	5.10	5.45	5.75	6.08	6.42
3"	5.93	6.35	6.72	7.12	7.54
6"	11.76	12.63	13.40	14.22	15.10

The fifth meter-based services distribution category is related to development services-related requests. The District's Engineering Department routinely processes development requests as they relate to water service. There are costs associated with these requests that are part of the general services of the District and should be allocated through customer rates. District staff work flow related to these requests was determined by the meter size associated with the development services request. Table 35 presents the number of general development services requests by meter size and the percentage of requests attributed to each meter size category. Development service activity within the District is relatively stable from year to year. Therefore, the percentages presented in Table 35 based on meter size are similar from year to year. These percentages are applied to the revenue requirements associated with general development services requests (see Table 23) to arrive at the distributed revenue requirements associated with each meter size as shown in Table 36. The resulting rate per meter per bill period is shown Table 37 and becomes a component of the bi-monthly service charge for customers based on their account's meter size.

Table 35 – General Development Services Requests by Meter Size

Description	% of Effort
Engineering - Development Services	
1" Meters	40%
1.5" Meters	20%
2" Meters	20%
3" & 6" Meters	20%
Total	**100%**

Table 36 – Revenue Requirement Distribution Related to Development Services

Engineering - Development Services Cost Distribution	% Allocations	FY 22	FY 23	FY 24	FY 25	FY 26
Fixed-Development Services Revenue Requirement	100.00%	$64,889	$69,669	$73,889	$78,439	$83,271
Meter Size						
1"	40.00%	25,956	27,868	29,555	31,376	33,309
1 ½"	20.00%	12,978	13,934	14,778	15,688	16,654
2"	20.00%	12,978	13,934	14,778	15,688	16,654
3" & 6"	20.00%	12,978	13,934	14,778	15,688	16,654

Table 37 – Rates Related to Development Services Distribution per Meter Size per Bill Period

Development Services Cost per Account per Billing Period	FY 22	FY 23	FY 24	FY 25	FY 26
Meter Size					
1"	$3.38	$3.59	$3.77	$3.96	$4.16
1 ½"	6.71	7.16	7.56	7.99	8.43
2"	13.62	14.55	15.36	16.22	17.14
3" & 6"	143.90	154.16	163.15	172.82	183.07

The final meter-based services distribution category is related to water quality and backflow program services. There are costs associated with these requests that are part of the general services of the District and should be allocated through customer rates. District staff work flow related to this service was determined by the meter size associated with backflow testing services. Table 38 presents the number of backflow testing services by meter size and the percentage of services attributed to each meter size category. These percentages are applied to the revenue requirements associated with water quality backflow program services (see Table 23) to arrive at the distributed revenue requirements associated with each meter size as shown in Table 39. The resulting rate per meter per bill period is shown Table 40 and becomes a component of the bi-monthly service charge for customers based on their account's meter size.

Table 38 – Backflow Program Services by Meter Size

Description	% of Effort
Engineering - Backflow Program	
3/4" Meters	12%
1" Meters	43%
1.5" Meters	22%
2" Meters	16%
3" & 6" Meters	7%
Total	**100.00%**

Table 39 – Revenue Requirement Distribution Related to Backflow Program Services

Water Quality - Backflow Program Cost Distribution	% Allocations	FY 22	FY 23	FY 24	FY 25	FY 26
Fixed-Backflow Program Revenue Requirement	100.00%	$76,839	$82,499	$87,495	$92,884	$98,606
Meter Size						
3/4"	12.00%	9,221	9,900	10,499	11,146	11,833
1"	43.00%	33,041	35,474	37,623	39,940	42,401
1 ½"	22.00%	16,905	18,150	19,249	20,435	21,693
2"	16.00%	12,294	13,200	13,999	14,861	15,777
3" & 6"	7.00%	5,379	5,775	6,125	6,502	6,902

Table 40 – Rates Related to Backflow Program Services Distribution per Meter Size per Bill Period

Backflow Program Cost per Account per Billing Period	FY 22	FY 23	FY 24	FY 25	FY 26
Meter Size					
3/4"	$0.22	$0.24	$0.25	$0.27	$0.29
1"	4.30	4.57	4.80	5.04	5.30
1 ½"	8.73	9.33	9.85	10.40	10.99
2"	12.91	13.79	14.55	15.37	16.23
3" & 6"	59.64	63.89	67.62	71.63	75.87

The FY 22 Account Services component from Table 21 and the FY 22 Meter Services components from Tables 26, 28, 31, 34, 37, and 40 are summed to arrive at the FY 22 bi-monthly customer service charge by meter size as presented in Table 41 below. Each of these components are described above and are the result of a detailed cost of service allocation and distribution analysis. The total service charge components for FY 23 through FY 26 are shown in Appendix D.

Table 41 – Meter Services Cost Component – Unit Rate

FY 22 Service Charge Calculation (Bi-Monthly)	Account Component	MWDOC Capacity Charge Component	Meter Testing Component	Service Orders Component	Customer Affairs Component	Development Services Component	Backflow Program Component	Total FY 22
	($)	($)	($)	($)	($)	($)	($)	($)
3/4"	27.79	0.65	-	2.87	3.65	-	0.22	35.18
1"	27.79	1.02	-	3.10	4.44	3.38	4.30	44.02
1.5"	27.79	2.79	-	2.74	5.16	6.71	8.73	53.92
2"	27.79	3.72	-	2.59	5.10	13.62	12.91	65.73
3"	27.79	7.45	400.04	3.10	5.93	143.90	59.64	647.84
6"	27.79	29.80	400.04	2.52	11.76	143.90	59.64	675.45

Variable Charges (Commodity Rates and Tiers) Distribution

The variable commodity rates are comprised of water supply, purchase, delivery, and conservation program cost components. Proposition 218 does not specify the type of rate structure that should be used to develop rates; however, the rates must reflect the proportionate cost of serving customers. Because the District has two water supply sources (imported water and groundwater) and two, tiered rate levels, supply, purchase, and delivery costs are recovered evenly from both tier levels. However, the Tier 2 (beyond base or conservation use) rate is higher than the Tier 1 (base use) rate to account for conservation program costs.[5] The goal of the conservation component is to increase water supply and reliability, and such costs are shifted to tier 2 water users because excessive water use causes the District to incur such costs. Tier 1 water use is deemed to be basic, or efficient, use and therefore water billed in this tier does not include a conservation component. Table 42 presents the calculation of Tier 1 rates based on Tier 1 projected use and supply and delivery revenue requirements shown in Table 18. Table 43 shows the calculation of the Tier 2 *increment* related to conservation (water use efficiency) revenue requirements found in Table 18. The Tier 2 cost component is added to the Tier 1 cost component to derive the full Tier 2 commodity rate to be presented in the next section on Rate Design.

[5] The District bills commodity rates based on one unit of water consumed and is represented by one hundred cubic feet of water, or 'hcf'. A unit of water, or one hcf, is equal to 748.05 gallons.

Table 42 – Tier 1 (Base Use) Cost Component – Unit Rate per HCF

Tier 1 Development	FY 22	FY 23	FY 24	FY 25	FY 26
Revenue Requirement	$8,739,613	$9,383,351	$9,951,668	$10,564,590	$11,215,379
÷ Basic Use (Tier 1) Consumption	1,297,356	1,297,356	1,307,087	1,316,890	1,326,766
Basic Use (Tier 1) Rate	**$6.74**	**$7.23**	**$7.61**	**$8.02**	**$8.45**

Table 43 – Tier 2 (Beyond Base - Conservation) Incremental Cost Component – Unit Rate per HCF

Tier 2 Development	FY 22	FY 23	FY 24	FY 25	FY 26
Conservation Rev Req	$418,574	$449,405	$476,624	$505,979	$537,148
÷ Above Basic Use (Tier 2) Consumption	161,642	158,409	158,409	159,597	160,794
Conservation (Tier 2) Increment	**$2.59**	**$2.84**	**$3.01**	**$3.17**	**$3.34**

Private Fire Line Distribution

For customers who have a private fire line account, Table 44 presents the calculation of the per equivalent connection fire line charge on a bi-monthly basis. The private fire protection revenue requirements derived in Table 20 are divided by the equivalent connections for each year as shown in Table 19 to arrive at a private fire line charge related to each account's equivalent connections.

Table 44 – Private Fire Line Cost Component – Unit Rate per Equivalent Connection

Private Fire Services Component	FY 22	FY 23	FY 24	FY 25	FY 26
Revenue Requirement	$50,841	$54,586	$57,892	$61,458	$65,244
÷ Number of ECs [1]	7,508	7,508	7,508	7,508	7,508
÷ Number of Bill Periods	6.00	6.00	6.00	6.00	6.00
Charge/EC/Period	**$1.13**	**$1.21**	**$1.29**	**$1.36**	**$1.45**

1. 'ECs' is Equivalent Fire Line Connections. Analysis assumes no growth in Private Fire Lines.

RATE DESIGN

The final step of the rate study is the design of the water rates and charges to collect the required level of rate revenue determined in the revenue requirement analysis. The District primary water rate structure consists of two main components: a bi-monthly meter service charge and a two-tiered commodity rate (those accounts with private fire line connections incur an additional fire line charge). The cost allocation and revenue requirement distribution calculations of each rate structure component were presented in the previous sections of this report. The bi-monthly meter service charge is applied in a straightforward manner in which fixed meter and account related costs are applied to each meter size category. For the

commodity rate, the District employs a unique type of inclining tier commodity rate structure called a water allocation budget rate structure. According to the 7th edition of the American Water Works Association M1 Manual of Water Supply Practices, Principles of Water Rates, Fees, and Charges (2017), a water budget rate structure is a form of increasing block (tier) rates where the amount of water within the first block, or blocks, is based on the estimated efficient, or base, water needs of the individual customer. Subsequent blocks above the base use or efficient block consider water use to be more discretionary. Rates within each block correspond to the incremental costs of providing water service, meaning that increased rates in higher tiers are established to cover the increased costs of providing water service.

As an added layer of complexity, water rate setting in California includes more stringent requirements than found in other states. There are strict substantive and procedural requirements of the California Constitution (Articles XIIIC and XIIID, or commonly known as Proposition 218) that apply to water rate setting not found in any other state. Therefore, California public agencies that set water rates incur a burden to demonstrate and document that a customer class's water rate is proportional to the cost to provide water service to that customer class. The first rate structure component, the bi-monthly meter service charge, is presented, followed by a discussion of the commodity rate component, and ending at a discussion of the private fire line charges.

Bi-Monthly Meter Service Charge

Tables from the previous section and Appendices C and D presented the final calculation of the bi-monthly service charge for the study period. The fixed account and meter services components by meter size are summed to form the FY 22 through FY 26 bi-monthly service charges. Table 45 presents the current service charges and all proposed service charges for the study period (FY 22 through FY 26).

Table 45 illustrates that most bi-monthly service charges are decreasing in FY 22 from current levels and are projected to increase from FY 22 levels as the costs of providing water service are projected to increase in the future years of the study period. The resulting FY 22 changes are due to modifications in the rate structure cost allocation methodology as described in this report. District staff believe that the new methodology is better aligned to current cost of service, and incorporates more precise detail and data. This approach is a more detailed way to support the proportionate cost of service principles required of Proposition 218, which also enhances transparency in rate structure methodology and design, and is easier for customers to understand how their rates are developed.

Table 45 – Current and Proposed Bi-Monthly Service Charges

Meter Size	Current Bi-Monthly Service Charges [1]	Bi-Monthly Service Charge Effective 2022	Bi-Monthly Service Charge Effective 2023	Bi-Monthly Service Charge Effective 2024	Bi-Monthly Service Charge Effective 2025	Bi-Monthly Service Charge Effective 2026
3/4"	$37.36	$35.18	$38.12	$43.57	$48.27	$51.23
1"	$93.39	$44.02	$47.44	$53.27	$58.38	$61.76
1.5"	$186.79	$53.92	$58.09	$64.61	$70.45	$74.61
2"	$298.86	$65.73	$70.72	$77.94	$84.53	$89.49
3"	$560.36	$647.84	$695.39	$740.10	$787.11	$834.96
6"	$1,867.87	$675.45	$725.01	$771.49	$820.41	$870.28

1. Current Service Charges effective FY 19 - FY 21.

Commodity Charges

The Tier 1 and Tier 2 commodity charges incorporate the variable-related cost components as described in this report. Table 46 presents the results for the proposed tiered rates as well as the current rates for comparison purposes. As described in the section related to Tables 42 and 43, the difference between Tiers 1 and 2 are the revenue requirements related to funding the District's conservation, or water use efficiency, program services. The conservation program provides a valuable service by helping to maintain water reliability in the service area, therefore protecting water resources and availability of water for all customers. The need for conservation programs is driven by beyond basic or excessive water use. District conservation program requirements include staff expenses for conservation-based personnel, conservation-oriented programs and rebates, conservation-based outreach efforts and events conducted by the District, and water-saving devices and materials distributed to customers.

Table 46 – Current and Proposed Commodity Charges

Tiers	Current Commodity Charges/hcf [1]	FY 22 Commodity Charges/hcf	FY 23 Commodity Charges/hcf	FY 24 Commodity Charges/hcf	FY 25 Commodity Charges/hcf	FY 26 Commodity Charges/hcf
Tier 1	$5.25	$6.74	$7.23	$7.61	$8.02	$8.45
Tier 2	$9.09	$9.33	$10.07	$10.62	$11.19	$11.79

1. Current Board-adopted Tier 1 rate is $5.39 but held to $5.25 for FY 19 - FY 21.

Wholesale Water Purchase Cost Pass-Through Provision

Many California water agencies have enacted a wholesale water cost pass-through provision as part of their rate program. These provisions afford water agencies the ability to generate adequate rate revenue to help cover unanticipated increases in water purchase costs from wholesale suppliers. As part of this rate study effort and implementation, the District would institute a wholesale water cost pass-through

provision in the District's FY 22 – FY 26 rate resolution to pass on wholesale water costs from MWDOC and OCWD to District customers should those costs be above those projected and documented in this rate study. This approach will help to ensure District rate revenues meet unanticipated increases in wholesale water expenses without delay. Any pass-throughs of unanticipated wholesale water purchase costs would be applied to the customer Tier 1 commodity rate.

Water Budget Formulas

To promote conservation and sustain financial sufficiency from rate revenues, a policy for determining water budget allocation for each customer and a policy to define the tiers for each user classification are necessary. For purposes of the water budget analysis for this rate study, customer classes are grouped into four categories:

- Single-family and Multi-family Residences
- Hotel/Motel
- Commercial, Education, Dual Usage, Other
- Irrigation

A water budget allocation should be objectively and impartially based on each customer's unique demands placed on the water system. After reviewing and analyzing other water budget structures in existence in Southern California and a thorough research effort of available District parcel and account consumption history data, the District adopted the four previously identified customer groupings in 2010 based on the following water allocation policies:

- Single-family Residences – Water budget allocation based on indoor and outdoor allocations
- Hotel/Motel – Water budget allocation based on per hotel room per day consumption allocation
- Multi-family Residences, Commercial, Schools, Dual Usage, Other - Water budget allocation based on 3-year moving average
- Irrigation – Water budget allocation based on outdoor allocations

For this current rate study, Multi-family Residences are grouped with Single-family Residences because District staff now have a complete dataset of total number of multi-family dwelling units in which to apply indoor/outdoor budget calculations on a per dwelling unit basis.

Single-family Residential and Multi-family Residential Customers

For single-family and multi-family residential customers, the bi-monthly indoor allocation is determined by the number of persons per dwelling unit or account, the efficient water usage per person per day, and the number of days in the billing cycle. According to the latest California Department of Finance population and housing estimates (*Report E-5 City/County Population and Housing Estimates*), the average

household size in the City of Laguna Beach is approximately 2.2 persons. In past rate structures, the District rounds this data point to 3 persons per household; this report proposes to continue this practice.

For the past rate studies, the District utilized study data from the AWWA Research Foundation (AWWARF) to apply a gallons per capita per day (GPCPD) figure to water budget formulas. AWWARF's survey data of approximately 1,200 households throughout the Southwest and Florida demonstrated that a typical residence consumed 60 GPCPD. However, since the last rate study, ongoing water resource challenges in California have prompted a statewide effort to reduce water use in both indoor and outdoor applications. Current state standards recommend a 55 GPCPD figure. Additionally, this amount is consistent with District residential per capita use based on District consumption data. Therefore, for this rate analysis, the District utilized the 55 GPCPD standard to establish the indoor allocation amount.

The product of these factors is then divided by 748 gallons to convert the figure to hundred cubic feet (hcf), the measuring unit of water utilized by the District. The result of this equation is an indoor allocation of approximately 13.2 hcf per two-month billing period. In the past, the District rounds up the indoor allocation figure in consideration of its billing software parameters. Therefore, the indoor allocation for a 3-person household is rounded up to 13.5 hcf from 13.2 hcf, or 4.5 hcf per person per dwelling unit, for a two-month billing period.

The outdoor allocation is determined by employing the following factors:

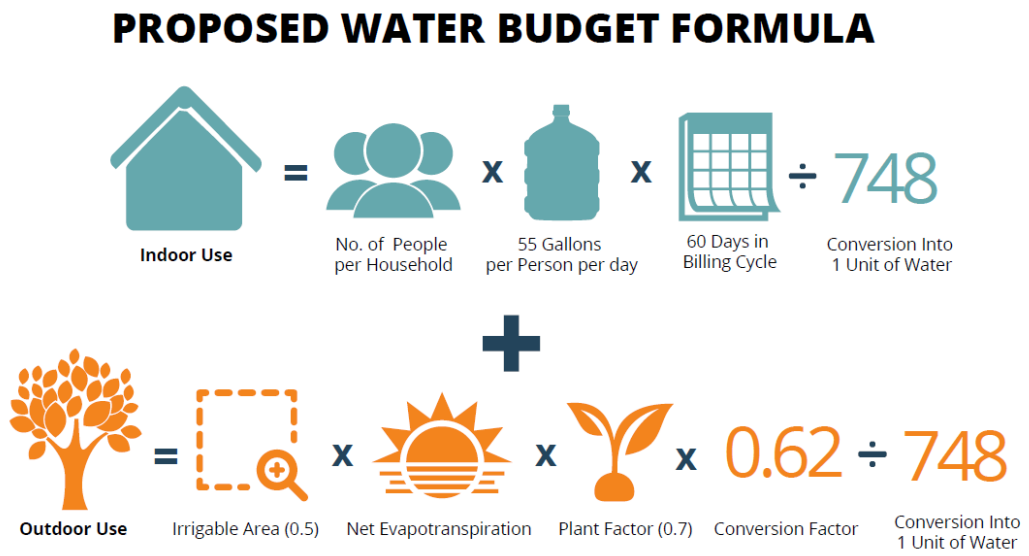
- Total square footage of the SFR property adjusted by an area factor to estimate irrigable area of a parcel. As part of the original 2010 analysis, the District adopted an outdoor allocation area factor (AF) set at 60 percent of total parcel area. Using City of Laguna Beach GIS data, this figure was based on estimating the ratio of building square footage to parcel area and allows for some impervious areas such as driveways, sidewalks, decking and other hardscape. Many water budget studies utilize an AF of 45 percent. A higher AF allows for more outdoor water allocations. To further encourage conservation in outdoor water use, the District reduced the AF to 50 percent. This updated figure is proposed in this current rate analysis.
- Evapotranspiration data from the closest CIMIS (California Irrigation Management Information System) weather station (Station #241 located in San Clement). Evapotranspiration is evaporation and plant transpiration that travels from the Earth's surface to the atmosphere. It can be affected by many variables including, but not limited to, temperature, relative humidity, wind and air movement, and type of plant. For purposes of this analysis, evapotranspiration represents the amount of water required for the plant material, or reference crop, typically found in the Laguna Beach area.
- Weather data from the Orange County Public Works Department Laguna Beach weather stations (Woodland and Laguna Canyon Repeater) to measure bi-monthly rainfall averages. These rainfall data are reduced by 25 percent and

deducted from the bi-monthly evapotranspiration data to arrive at a net evapotranspiration amount to be applied in the outdoor water budget formula. Only 75 percent of the rainfall averages are used to account for runoff of a portion of rainfall that does not get absorbed by plant material. This is a reasonable amount considering that natural ground cover can generate about 10 percent of runoff in a typical rainfall event whereas 90 percent of rainfall can be absorbed or processed by evapotranspiration (Vermont Agency of Natural Resources).

- Landscape/Plant factor to account for water use intensity of established landscaping in typical Laguna Beach residences. The current California Model Water Efficient Landscape Ordinance suggests a 70 percent plant factor (high water needs landscaping) to apply to outdoor budget formulas.

The indoor and outdoor formulas are illustrated in Figure 1. Note that the 0.62 conversion factor included in the outdoor use formula is used to convert inches per year to gallons per square foot per year.

Figure 1 – Illustration of Indoor and Outdoor Water Budget Formulas



Hotel/Motel Customers

Hotel/Motel accounts are allotted water on a bi-monthly basis based on the number of rooms of each hotel account. There are a variety of studies that demonstrate the typical water use of a hotel room for occupant use, cleaning, laundry and restaurant use. Most studies utilized a specific hotel or chain of hotels to arrive at their conclusions. One of the more comprehensive studies on this subject was generated by the Cornell University School of Hotel Administration. The School's most recent survey data indicate that a typical hotel utilizes 137 gallons of water per day for typical hotel use. The District considers this figure to be a reasonable amount to use for the District's update water budget analysis.

Commercial, Education, Dual Usage, Other

For these customer classes, allocations for water use are based on 3-year historical averages for each customer. These data are maintained on a bi-monthly basis by District staff to determine averages for each billing period.

Irrigation Customers

For this customer group, the District applies the outdoor allocation formula utilized for residential customers; however, a 100% irrigable area factor is applied to these accounts due to the nature of their outdoor use (outdoor irrigated areas within the District's service area typically do not include hardscape areas).

Private Fire Line Charges

Using the unit rate per equivalent connection figures from Table 44, bi-monthly fire line charges for FY 22 through FY 26 were developed. Current fire line charges have not been adjusted or increased in over 15 years. During that time, the cost of serving these private fire connection customers has increased. In addition, the application of a more detailed cost allocation methodology to develop the charges has changed the basis for calculating the charges. These two conditions have caused the new fire line charges to increase significantly since the last update to these rates over 15 years ago. To mitigate the large increase in these charges in a one-year period, the District is phasing in the increases over a 5-year period. The revenue shortfall from the phase-in approach is nominal compared to the overall revenues and costs of the District. The resulting revenue shortfall in each year will be made up from the District's non-operating revenues such as property taxes or antenna lease revenues. Thus, no other customer rates would subsidize the rates of the private fire line accounts during the study period. Table 47 presents the current and proposed bi-monthly private fire line charges.

Table 47 – Current and Proposed Private Fire Line Charges

Fire Line Size	Current Bi-Monthly Fire Line Charge	FY 22 Bi-Monthly Fire Line Charge	FY 23 Bi-Monthly Fire Line Charge	FY 24 Bi-Monthly Fire Line Charge	FY 25 Bi-Monthly Fire Line Charge	FY 26 Bi-Monthly Fire Line Charge
2"	$8.00	$8.19	$8.39	$8.58	$8.77	$8.97
4"	$16.00	$23.90	$31.80	$39.70	$47.60	$55.50
6"	$24.00	$51.44	$78.89	$106.33	$133.78	$161.22
8"	$32.00	$94.31	$156.63	$218.94	$281.25	$343.57
10"	$40.00	$155.57	$271.14	$386.71	$502.28	$617.85

Note: Current Fire Line Charges have not been updated for at least 15 years. There are 93 private fire line customers in the District.

Appendix A

Table A-1 –Operating Cost Allocation Line Items – Projected and 5-Year Annual Average

Cost Line Time by GL Account	Estimated FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	5-Year Average
Source of Supply - CSL (51200)	87,460	90,084	92,786	95,570	98,437	92,867
Source of Supply - ATM (51300)	169,270	174,348	179,579	184,966	190,515	179,735
Source of Supply - Water Purchases (51500)	4,197,845	3,876,839	3,437,701	3,629,996	3,826,774	3,793,831
Source of Supply - Capacity/Fixed Charges (51500)	63,100	66,066	69,171	71,592	73,775	68,741
Source of Supply - Uniform/Fixed Charges (51500)	218,000	228,246	238,974	247,338	254,881	237,488
Pumping Expense (52100)	793,700	817,511	842,036	867,297	893,316	842,772
Pumping Power (52200)	275,000	283,250	291,748	300,500	309,515	292,002
Reservoir Expense (54100)	1,118,090	1,151,633	1,186,182	1,221,767	1,258,420	1,187,218
Mainline Expense (54200)	2,060,070	2,121,872	2,185,528	2,251,094	2,318,627	2,187,438
Meter Expense (54300)						
Meter Testing (20%) - 3" and larger meters only	51,882	53,438	55,042	56,693	58,394	55,090
Meter Repair & Maintenance (80%)	207,528	213,754	220,166	226,771	233,575	220,359
Valve, Vault, Fire Hydrant Expense (54400)	451,530	465,076	479,028	493,399	508,201	479,447
Paving Expense (54500)	48,000	49,440	50,923	52,451	54,024	50,968
General Plant-Building (54700) (cumulative O&M %)	252,340	259,910	267,708	275,739	284,011	267,941
SCADA Expense (54800)	50,400	51,912	53,469	55,073	56,726	53,516
General Manager's Expense (55100)	423,480	436,184	449,270	462,748	476,630	449,663
Human Resources (55200)	197,100	203,013	209,103	215,376	221,838	209,286
Commission/Board (55400)	86,640	89,239	91,916	94,674	97,514	91,997
Legal (55500)	132,000	135,960	140,039	144,240	148,567	140,161
Audit (55600)	19,720	20,312	20,921	21,549	22,195	20,939
Administrative Expense (56100)	220,920	227,548	234,374	241,405	248,647	234,579
Data Management (56200)	116,160	119,645	123,234	126,931	130,739	123,342
Records Retention (56300)	1,020	1,051	1,082	1,115	1,148	1,083
Public Information (56400)	27,180	27,995	28,835	29,700	30,591	28,860
District Recognition (56800)	26,640	27,439	28,262	29,110	29,984	28,287

Cost Line Time by GL Account	Estimated FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	5-Year Average
Customer Service (57200)						
Billing/Collections (20%)	145,314	149,673	154,164	158,789	163,552	154,298
Service Orders (30%)	217,971	224,510	231,245	238,183	245,328	231,448
Payment Processing (10%)	72,657	74,837	77,082	79,394	81,776	77,149
Customer Affairs (40%)	290,628	299,347	308,327	317,577	327,104	308,597
WUE - Office Expense (57510)	264,170	269,453	274,842	280,339	285,946	274,950
WUE - Programs/Rebates (57520)	52,500	53,550	54,621	55,713	56,828	54,642
WUE - Outreach/Events/Sponsorships (57530)	58,800	59,976	61,176	62,399	63,647	61,200
WUE - Devices/Materials (57540)	12,000	12,240	12,485	12,734	12,989	12,490
WUE - Smartscape Info/Expo (57550)	58,250	59,415	60,603	61,815	63,052	60,627
Finance Expense (58100)	593,460	611,264	629,602	648,490	667,944	630,152
General Office Expense (58200) (cumulative O&M)	78,600	80,958	83,387	85,888	88,465	83,460
Insurance (58300) (cumulative O&M)	226,200	232,986	239,976	247,175	254,590	240,185
Engineering Expense (59100)						
Capital Projects (45%)	168,327	173,377	178,578	183,935	189,454	178,734
Development (25%)	93,515	96,320	99,210	102,186	105,252	99,297
Operations Support (25%)	93,515	96,320	99,210	102,186	105,252	99,297
Regulatory Reporting (5%)	18,703	19,264	19,842	20,437	21,050	19,859
Water Quality Expense (59200)						
Backflow Program (45%)	110,736	114,058	117,480	121,004	124,634	117,582
Sampling (45%)	110,736	114,058	117,480	121,004	124,634	117,582
Other Regulatory - CCR (10%)	24,608	25,346	26,107	26,890	27,697	26,129
Total by Detailed Department Expenses	**$ 13,985,765**	**$ 13,958,718**	**$ 13,822,494**	**$ 14,323,236**	**$ 14,836,240**	**$ 14,185,290**

Table A-2 – Operating Cost Allocation Bases and Percentages

Cost Line Time by GL Account	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable - T1	Variable - T2	Basis for Allocation
Source of Supply - CSL (51200)	0%	0%	0%	100%	0%	CSL costs vary directly with levels of production or consumption
Source of Supply - ATM (51300)	0%	0%	0%	100%	0%	ATM costs vary directly with levels of production or consumption
Source of Supply - Water Purchases (51500)	0%	0%	0%	100%	0%	Water purchase costs vary directly with levels of production or consumption
Source of Supply - Capacity/Fixed Charges (51500)	100%	0%	0%	0%	0%	MWD charges based on capacity of system allocated by number of meters in a system. There is a systematic relationship between larger meters and the need for more system capacity.
Source of Supply - Uniform/Fixed Charges (51500)	0%	100%	0%	0%	0%	MWDOC charges based solely on number of meters in a system regardless of meter size.
Pumping Expense (52100)	0.0%	0%	0.0%	100.0%	0%	Pumping operations directly related to consumption demands.
Pumping Power (52200)	0.0%	0%	0.0%	100.0%	0%	Pumping operations directly related to consumption demands.
Reservoir Expense (54100)	0.0%	0%	8.2%	91.8%	0%	Reservoir capacity is based on storage capacity needs as well as fire flow requirements. Per District master plan, 2.73MG is related to fire flow capacity and 33.27MG is the existing storage capacity. Therefore, 8.2% (2.73 / 33.27 = 8.2%) of storage capacity (is related to fire flow capacity).
Mainline Expense (54200)	0.0%	0%	0.0%	100.0%	0%	Mainline O&M directly related to consumption demands and patterns.
Meter Expense (54300)						
Meter Testing (20%) - 3" and larger meters only	100%	0%	0%	0%	0%	Per Operations Manager, 20% of Meter Expense is attributed to Meter Testing and testing effort only occurs for 3" and 6" meters. No difference in testing time between 3" and 6" meters.
Meter Repair & Maintenance (80%)	0%	100%	0%	0%	0%	Per Operations Manager, 80% of Meter Expense is attributed to Meter Repair and Maintenance. Same amount of time to repair or install meters regardless of meter size.
Valve, Vault, Fire Hydrant Expense (54400)	0%	0%	30%	70%	0%	Per Operations Manager, John Langill, effort on maintenance for this program is allocated 30% PRVs, 30% Hydrants, 30% Valves, and 10% Air Vacs.
Paving Expense (54500)	0%	100%	0%	0%	0%	Per service order paperwork for FY 20 and FY 21, all paving expenses attributed to customer accounts.
General Plant-Building (54700) (cumulative O&M %)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
SCADA Expense (54800)	0%	0%	8.2%	91.8%	0%	SCADA system is managed based on looking at tank levels.
General Manager's Expense (55100)	0%	61%	3%	22%	14%	GM allocation based on content of agenda items for FY 20-21.
Human Resources (55200)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Commission/Board (55400)	0%	61%	3%	22%	14%	Based on GM allocation as these expenses are directly related to GM activity.
Legal (55500)	0%	61%	3%	22%	14%	Based on GM allocation as these expenses are directly related to GM activity.
Audit (55600)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Administrative Expense (56100)	0%	60%	5%	0%	35%	Per Asst General Manager, administrative effort is related to customer accounts (60%), risk and resiliency [(including fire mitigation)(5%)], and water conservation (35%).
Data Management (56200)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Records Retention (56300)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Public Information (56400)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
District Recognition (56800)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.

Cost Line Time by GL Account	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable - T1	Variable - T2	Basis for Allocation
Customer Service (57200)						
Billing/Collections (20%)	0%	100%	0%	0%	0%	Per Customer Service Supervisor, 20% of Customer Service functions are related to Billing/Collections services. Costs are uniform to each account as amount of effort and cost are the same per bill.
Service Orders (30%)	100%	0%	0%	0%	0%	Per Customer Service Supervisor, 30% of Customer Service functions are related to Service Orders services. Costs are based on meter size based on CUSI data for number of service orders per meter size in FY 21.
Payment Processing (10%)	0%	100%	0%	0%	0%	Per Customer Service Supervisor, 10% of Customer Service functions are related to Payment Processing services. Costs are uniform to each account as amount of effort and cost are the same per payment processing function per account.
Customer Affairs (40%)	100%	0%	0%	0%	0%	Per Customer Service Supervisor, 40% of Customer Service functions are related to Customer Affairs services. Costs are based on meter size based on CUSI data for number of customer contacts per meter size in FY 21.
WUE - Office Expense (57510)	0%	0%	0%	0%	100%	WUE services are directly related to the District's conservation program efforts.
WUE - Programs/Rebates (57520)	0%	0%	0%	0%	100%	WUE services are directly related to the District's conservation program efforts.
WUE - Outreach/Events/Sponsorships (57530)	0%	0%	0%	0%	100%	WUE services are directly related to the District's conservation program efforts.
WUE - Devices/Materials (57540)	0%	0%	0%	0%	100%	WUE services are directly related to the District's conservation program efforts.
WUE - Smartscape Info/Expo (57550)	0%	0%	0%	0%	100%	WUE services are directly related to the District's conservation program efforts.
Finance Expense (58100)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
General Office Expense (58200) (cumulative O&M)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Insurance (58300) (cumulative O&M)	0%	0%	0%	0%	0%	A support expense allocated based on total allocation of all direct service expenses since this GL expense supports all functions and operations of the District.
Engineering Expense (59100)						
Capital Projects (45%)	0%	0%	0%	100%	0%	Per Manager of Engineering, 45% of Engineering functions are related to supporting the capital program of the District. Capital costs are directly related to water transmission, distribution, and storage and thus there is systematic relationship between this service and variable costs of providing water service.
Development (25%)	100%	0%	0%	0%	0%	Per Manager of Engineering, 25% of Engineering functions are related to development services. There is systematic relationship between these services and effort by meter size, with a larger proportionate share being spent on 1-inch meter connections as that meter size group is the most active in terms of new connections and upsizes from 3/4-inch meters.
Operations Support (25%)	0%	100%	0%	0%	0%	Per Manager of Engineering, 25% of Engineering functions are related to supporting the technical and field service operations of the District. Costs are uniform to each account as amount of effort and cost are not distinguishable by meter size nor is there a systematic relationship to water consumption.
Regulatory Reporting (5%)	0%	100%	0%	0%	0%	Per Manager of Engineering, 5% of Engineering functions are related to supporting regulatory reporting efforts required of the District by outside agencies. Costs are uniform to each account as amount of effort and cost are not distinguishable by meter size nor amount of water consumption. These services directly affect each District customer uniformly.
Water Quality Expense (59200)						
Backflow Program (45%)	100%	0%	0%	0%	0%	Per Manager of Engineering, 45% of Water Quality functions are related to Backflow program services. There is systematic relationship between these services and effort by meter size, with a larger proportionate share being spent on 1-inch meter connections.
Sampling (45%)	0%	100%	0%	0%	0%	Per Manager of Engineering, 45% of Water Quality program functions are related to Sampling services of the District. Costs are uniform to each account as amount of effort and cost are not distinguishable by meter size nor is there a systematic relationship to water consumption.
Other Regulatory - CCR (10%)	0%	100%	0%	0%	0%	Per Manager of Engineering, 10% of Water Quality program functions are related to regulatory services of the District. Costs are uniform to each account as amount of effort and cost are not distinguishable by meter size nor is there a systematic relationship to water consumption.

Appendix B

Projects by Functional Category	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	5-Year Average
Joint Powers Projects						
Evaluation of CSL Pipeline (LBCWD Costs)	-	-	-	-	-	-
Evaluation of ATM Pipeline (LBCWD Costs)	125,000	-	-	100,469	217,653	88,624
Pump Stations & Reservoirs						
Rimrock Reservoir Replace & TH 600 Relocate - Construction	1,000,000	5,094,168	3,736,878	-	-	1,966,209
Reservoir Mixer Program	25,000	25,471	25,951	26,439	-	20,572
TH 800 Reservoir & Pump Station Replacement	400,000	356,592	-	-	-	151,318
El Morro Reservoir (No. 1) Flashing (LBCWD Costs)	135,000	-	-	-	-	27,000
Tijuana Reservoir (No. 1) Rehabilitation	300,000	-	-	-	-	60,000
Zitnik and Rimel Pipeline Cathodic Protection	120,000	-	-	-	-	24,000
Viejo Pump Station Power Check Valve	75,000	-	-	-	-	15,000
Paving at El Morro and Moorhead Reservoir Sites	75,000	-	-	-	-	15,000
Reservoir Repairs	-	101,883	103,802	105,757	107,749	83,838
Sweany Reservoir Pipeline Relacement	-	-	311,407	-	-	62,281
Moulton Meadows Tank Installation	-	-	-	-	-	-
El Morro Reservoir (No. 1) Valve Replacement (LBCWD Costs)	-	-	-	142,772	-	28,554
Transmission & Distribution						
Valve Replacement	400,000	407,533	415,209	423,029	430,996	415,353
Hydrant Replacement	420,000	331,121	337,357	343,711	350,184	356,475
Pipeline Replacement Program	-	127,354	519,011	528,786	538,745	342,779
Fire Hyrdrant Flow Improvements	-	203,767	207,604	211,514	215,498	167,677
Pacific Vista Pipeline Replacement	135,000	-	-	-	-	27,000
PCH 2" Pipeline Replacement	300,000	-	-	-	-	60,000
Mountain & Glenneyre Pipeline Replacement	105,000	-	-	-	-	21,000
Air Vac Relocation on Hillcrest Dr	80,000	-	-	-	-	16,000
Agate Control Valve for Summit Flow	-	152,825	-	-	-	30,565
Summit Dr DI Pipeline Replacement	-	407,533	-	-	-	81,507
Low Pressure Problem in All View Terrace	-	-	726,615	528,786	-	251,080
Temple Terrace 2" Pipeline replacement	-	-	-	211,514	-	42,303
Park Ave Pressure Conversion and Pipelines	-	-	-	211,514	861,991	214,701

Projects by Functional Category	Projected FY 2022	Projected FY 2023	Projected FY 2024	Projected FY 2025	Projected FY 2026	5-Year Average
Water Supply						
Groundwater Reliability - Land Acquisition (LBCWD Costs)	-	305,650	-	-	-	61,130
Groundwater Reliability - Construction (LBCWD Costs)	-	1,018,834	1,764,637	-	-	556,694
Office Equipment						
Computers, Peripherals & Network Infrastructure	35,000	21,396	22,836	23,267	121,756	44,851
Equipment & Vehicles						
Hydro Excavator Replacement	485,000	-	-	-	-	97,000
Truck Radios	20,000	-	-	-	-	4,000
Replacement of Skid Steer Loader	44,000	-	-	-	-	8,800
Replacement of Truck #5	45,000	-	-	-	-	9,000
Replacement of Truck #57	45,000	-	-	-	-	9,000
Replacement of Vehicles & Heavy Equipment	-	217,012	225,251	234,781	244,590	184,327
Facility Improvements						
Facility Improvements, incl remain balance of PY appr-$121K)	121,000	212,936	31,141	-	32,325	79,480
Fuel Storage	300,000	-	-	-	-	60,000
Total	**$ 4,790,000**	**$ 8,984,074**	**$ 8,427,699**	**$ 3,092,339**	**$ 3,121,486**	**$ 5,683,120**

Projects by Functional Category	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable - T1	Variable - T2	Basis for Allocation
Joint Powers Projects						
Evaluation of CSL Pipeline (LBCWD Costs)	0%	0%	0%	100%	0%	Direct relationship to water supply
Evaluation of ATM Pipeline (LBCWD Costs)	0%	0%	0%	100%	0%	Direct relationship to water supply
Pump Stations & Reservoirs						
Rimrock Reservoir Replace & TH 600 Relocate - Construction	0%	0%	16%	84%	0%	Per District Engineering Manger, fire flow design standard @ 16%.
Reservoir Mixer Program	0%	0%	0%	100%	0%	Water quality program directly related to water consumption
TH 800 Reservoir & Pump Station Replacement	0%	0%	0%	100%	0%	Per District Engineering Manager, fire flow design standard @ 0%.
El Morro Reservoir (No. 1) Flashing (LBCWD Costs)	0%	0%	0%	100%	0%	Water quality program directly related to water consumption
Tijuana Reservoir (No. 1) Rehabilitation	0%	0%	0%	100%	0%	Water quality program directly related to water consumption
Zitnik and Rimel Pipeline Cathodic Protection	0%	0%	0%	100%	0%	Asset protection - extend useful life; directly related to water consumption
Viejo Pump Station Power Check Valve	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Paving at El Morro and Moorhead Reservoir Sites	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Reservoir Repairs	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Sweany Reservoir Pipeline Relacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Moulton Meadows Tank Installation	0%	0%	33%	67%	0%	New design standards
El Morro Reservoir (No. 1) Valve Replacement (LBCWD Costs)	0%	0%	0%	100%	0%	Asset protection - extend useful life; directly related to water consumption
Transmission & Distribution						
Valve Replacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Hydrant Replacement	0%	0%	100%	0%	0%	In kind replacement directly related to fire flow and protection
Pipeline Replacement Program	0%	0%	25%	75%	0%	Per District Engineering Manager, fire flow design standard @ 25% and Commodity-based at 75%.
Fire Hyrdrant Flow Improvements	0%	0%	100%	0%	0%	Directly related to fire flow and protection
Pacific Vista Pipeline Replacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
PCH 2" Pipeline Replacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Mountain & Glenneyre Pipeline Replacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Air Vac Relocation on Hillcrest Dr	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Agate Control Valve for Summit Flow	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Summit Dr DI Pipeline Replacement	0%	0%	0%	100%	0%	In kind replacement. Per District Engineering Manager, no fire flow allocation.
Low Pressure Problem in All View Terrace	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Temple Terrace 2" Pipeline replacement	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption
Park Ave Pressure Conversion and Pipelines	0%	0%	0%	100%	0%	In kind replacement of asset directly related to water consumption

Projects by Functional Category	Fixed - Meter Size	Fixed - Uniform	Fire Protection	Variable - T1	Variable - T2	Basis for Allocation
Water Supply						
Groundwater Reliability - Land Acquisition (LBCWD Costs)	0%	0%	0%	100%	0%	Directly related to water consumption
Groundwater Reliability - Construction (LBCWD Costs)	0%	0%	0%	100%	0%	Directly related to water consumption
Office Equipment						
Computers, Peripherals & Network Infrastructure	0%	0%	0%	0%	0%	IT are general capital that support all capital projects and thus are allocated based on allocations of total capital.
Equipment & Vehicles						
Hydro Excavator Replacement	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Truck Radios	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Replacement of Skid Steer Loader	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Replacement of Truck #5	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Replacement of Truck #57	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Replacement of Vehicles & Heavy Equipment	0%	0%	0%	100%	0%	Equipment and Vehicles directly support T&D capital which vary based on production and consumption.
Facility Improvements						
Facility Improvements, incl remain balance of PY appr-$121K)	0%	0%	0%	0%	0%	Facility Improvements are general capital that support all capital projects and thus are allocated based on allocations of total capital.
Fuel Storage	0%	0%	0%	0%	0%	Fuel Storage is general capital that supports all capital projects and thus are allocated based on allocations of total capital.

Appendix C

Meter Size	Meter Equivalents	# of Meters FY 22	# of Meters FY 23	# of Meters FY 24	# of Meters FY 25	# of Meters FY 26	# of EMs FY 22 [1]	# of EMs FY 23	# of EMs FY 24	# of EMs FY 25	# of EMs FY 26
	A	B	C	D	E	F	A x B	A x C	A x D	A x E	A x F
3/4"	1.00	6,943	6,932	6,922	6,911	6,901	6,943	6,932	6,922	6,911	6,901
1"	1.57	1,282	1,295	1,307	1,321	1,334	2,014	2,034	2,055	2,075	2,096
1.5"	4.29	323	324	326	327	329	1,383	1,390	1,396	1,403	1,410
2"	5.71	159	160	160	161	162	907	912	916	921	926
3"	11.43	13	13	13	13	13	149	149	150	150	150
4"	22.86	0	0	0	0	0	0	0	0	0	0
6"	45.71	2	2	2	2	2	91	91	91	91	91
Total		8,721	8,726	8,731	8,736	8,741	11,487	11,509	11,530	11,552	11,575

1. 'EMs' represents Equivalent Meters.

Appendix D

FY 23 Service Charge Calculation (Bi-Monthly)	Account Component	MWDOC Capacity Charge Component	Meter Testing Component	Service Orders Component	Customer Affairs Component	Development Services Component	Backflow Program Component	Total FY 23
	($)	($)	($)	($)	($)	($)	($)	($)
3/4"	30.17	0.70	-	3.08	3.93	-	0.24	38.12
1"	30.17	1.10	-	3.29	4.72	3.59	4.57	47.44
1.5"	30.17	2.99	-	2.92	5.51	7.16	9.33	58.09
2"	30.17	3.99	-	2.76	5.45	14.55	13.79	70.72
3"	30.17	7.98	429.50	3.31	6.35	154.16	63.89	695.39
6"	30.17	31.93	429.50	2.71	12.63	154.16	63.89	725.01

FY 24 Service Charge Calculation (Bi-Monthly)	Account Component	MWDOC Capacity Charge Component	Meter Testing Component	Service Orders Component	Customer Affairs Component	Development Services Component	Backflow Program Component	Total FY 24
	($)	($)	($)	($)	($)	($)	($)	($)
3/4"	35.14	0.74	-	3.27	4.17	-	0.25	43.57
1"	35.14	1.16	-	3.46	4.95	3.77	4.80	53.27
1.5"	35.14	3.17	-	3.08	5.81	7.56	9.85	64.61
2"	35.14	4.23	-	2.92	5.75	15.36	14.55	77.94
3"	35.14	8.45	455.52	3.51	6.72	163.15	67.62	740.10
6"	35.14	33.80	455.52	2.87	13.40	163.15	67.62	771.49

FY 25 Service Charge Calculation (Bi-Monthly)	Account Component	MWDOC Capacity Charge Component	Meter Testing Component	Service Orders Component	Customer Affairs Component	Development Services Component	Backflow Program Component	Total FY 25
	($)	($)	($)	($)	($)	($)	($)	($)
3/4"	39.30	0.78	-	3.48	4.43	-	0.27	48.27
1"	39.30	1.23	-	3.63	5.21	3.96	5.04	58.38
1.5"	39.30	3.36	-	3.26	6.14	7.99	10.40	70.45
2"	39.30	4.48	-	3.08	6.08	16.22	15.37	84.53
3"	39.30	8.95	483.57	3.71	7.12	172.82	71.63	787.11
6"	39.30	35.82	483.57	3.05	14.22	172.82	71.63	820.41

FY 26 Service Charge Calculation (Bi-Monthly)	Account Component	MWDOC Capacity Charge Component	Meter Testing Component	Service Orders Component	Customer Affairs Component	Development Services Component	Backflow Program Component	Total FY 26
	($)	($)	($)	($)	($)	($)	($)	($)
3/4"	41.70	0.83	-	3.70	4.71	-	0.29	51.23
1"	41.70	1.30	-	3.82	5.47	4.16	5.30	61.76
1.5"	41.70	3.56	-	3.44	6.49	8.43	10.99	74.61
2"	41.70	4.74	-	3.26	6.42	17.14	16.23	89.49
3"	41.70	9.49	513.36	3.93	7.54	183.07	75.87	834.96
6"	41.70	37.95	513.36	3.24	15.10	183.07	75.87	870.28