2023 Financial Planning, Revenue Requirements, and Rate Setting Analysis

Presented by: California Rural Water Association

In Collaboration With:

Robert D. Niehaus, Inc.

RDN

SUSP

SPECIALIZED UTILITIES SERVICES PROGRAM

HIGH VALLEYS WATER DISTRICT
2023 WATER RATE STUDY

DRAFT REPORT

Prepared for:

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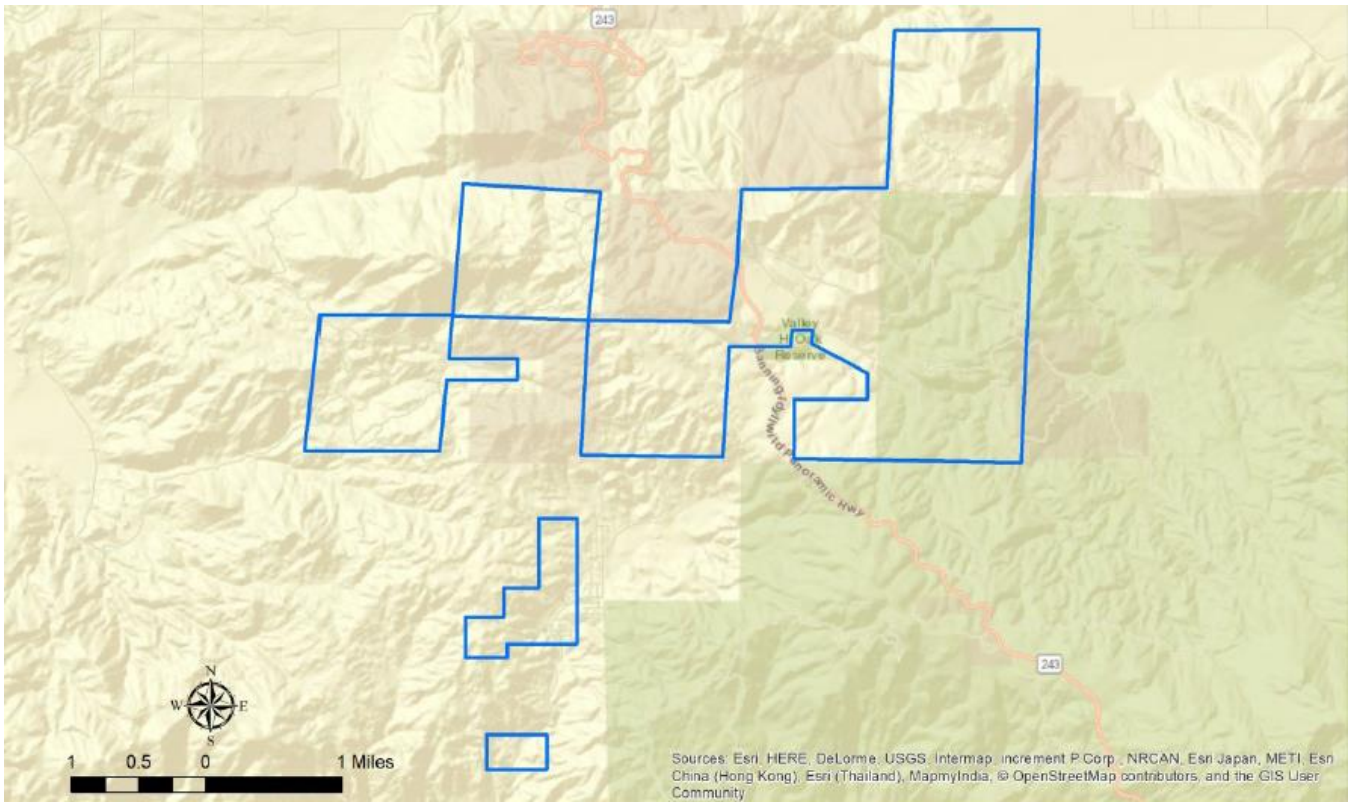
1 EXECUTIVE SUMMARY

Background

The High Valleys Water District (HVWD) is located in the San Jacinto Mountains overlooking the Banning/ Sann Gorgonio Pass Area. Developed to serve the residents of the Mt. Edna, Twin Pines, and Poppet Flats community, the High Valleys Water District is a Special Government Water District that receives funding from customers, as well as County Assessments.

Having no natural water resource, High Valleys Water District pumps the water purchased from the District of Banning, 8 miles up the mountain through 3 separate booster stations into 3 storage tanks and 40 miles of pipe to deliver this resource to its approximately 225 customers. The High Valleys Water District does not treat its water as it is delivered already treated from its source; however, the Water District performs monthly water sampling and system testing through an outside laboratory and System analyst to ensure the safety and quality of the water that is being delivered to its customers.to purchase wholesale water. Error! Reference source not found. shows the current boundaries of the District in blue.

Figure 1. High Valleys Water District



Purpose of Study

The purpose of this analysis is to conduct a rate study which evaluates the District's current rates and financial data and propose new rates, if necessary, that meet the District's financial and strategic goals. In January 2023, the California Rural Water Association (CRWA) retained Robert D. Niehaus, Incorporated (RDN) to develop a comprehensive water rate study (Study) for the High Valleys Water District.

The primary objectives of this Study include:

- Projecting revenues and expenses for a five-year study period
- Proposing revenue adjustments to fund the District's projected financial needs
- Proposing rates which do not overly impact customers
- Producing an administrative record which effectively summarizes all findings
- Supporting the District through the Proposition 218 process as necessary

Recommendations and Proposed Rates

Recommendations:

- Make annual revenue (rate) adjustments of 20 percent, 20 percent, 15 percent, 10 percent, and 10 percent, respectively for the five years of the study period
- Implement the cost of service allocations for residential and commercial customers so that their rates reflect the cost to provide service to each for both the fixed and variable rates
- Reduce the amount of water included in the base rate from 1,000 cubic feet (cf) to 700 cf a month

Current Rates

Currently, District water customers pay a monthly fixed fee of $56.00 per month. The fixed monthly fee includes 1,000 cubic feet (cf) of water use. Customers who used more than 1,000 cf in a month are billed for all additional water use based on their customer class. Residential customers are billed $0.0464 per cf for additional water use and commercial customers are billed $0.0764 per cf for each unit of additional water use. The current rates and tier widths as described are displayed in **Table 1**.

Table 1. Current Rates

Fixed Charges		
Customer Class	**Meter Size**	**Monthly Fee**
Residential	All Meters	$56.00
Commercial	All Meters	$56.00
Variable Charges		
Customer Class	**Tier - Width**	**Unit Cost**
Residential	Tier-1000 cf	$0.00
	Tier 2 - All Additional cf	$0.0464
Commercial	Tier 1-1000 cf	$0.00
	Tier 2-All Additional cf	$0.0764

Proposed Rates

To allow the District to best accomplish its goals, RDN designed the financial plan which will be described in this report. The recommended financial plan is based on optimized levels of capital spending and contributions to reserves. **Table 2** shows the proposed revenue adjustments and resulting cumulative increases.

Table 2. Proposed Revenue Adjustments FY 2024 to FY 2028

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Recommended Adjustment	20.0%	20.0%	15.0%	10.0%	10.0%

Error! Reference source not found. shows the proposed fixed and variable rates under the revenue adjustment schedule.

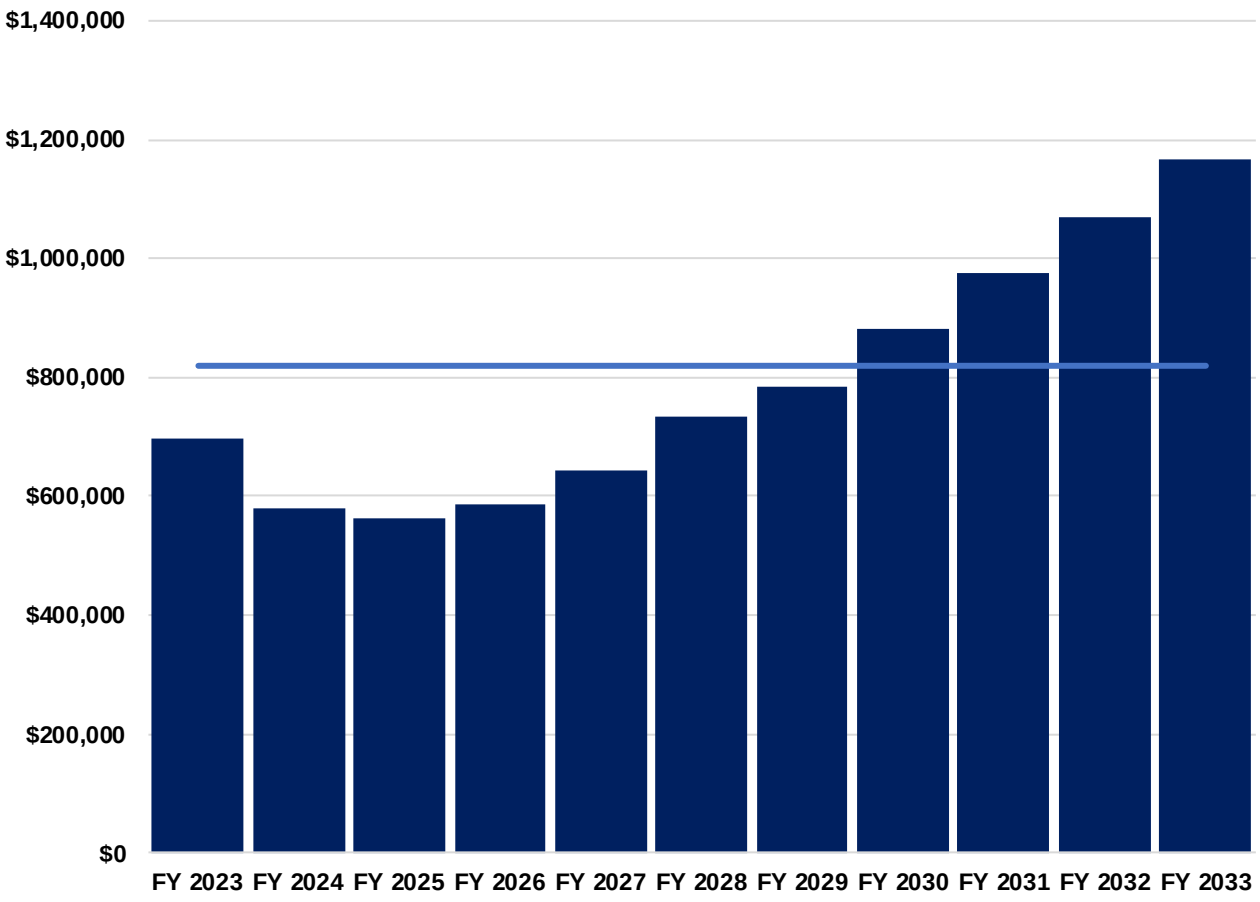
Table 3. Proposed Rates Under Revenue Adjustment Schedule

Fixed Charges					
Category	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Residential	$55.44	$66.53	$76.51	$84.16	$92.58
Commercial	$77.65	$93.18	$107.16	$117.88	$129.67

Variable Charges						
Variable Rate	**Tier (cf)**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Residential	700 cf	$0.00	$0.00	$0.00	$0.00	$0.00
	All Add	$0.0817	$0.0980	$0.1127	$0.1240	$0.1364
Commercial	700 cf	$0.00	$0.00	$0.00	$0.00	$0.00
	All Add	$0.1343	$0.1612	$0.1853	$0.2039	$0.2243

Figure 2 shows the water fund balance under the current rates and the proposed financial plan through the 10-year planning period.

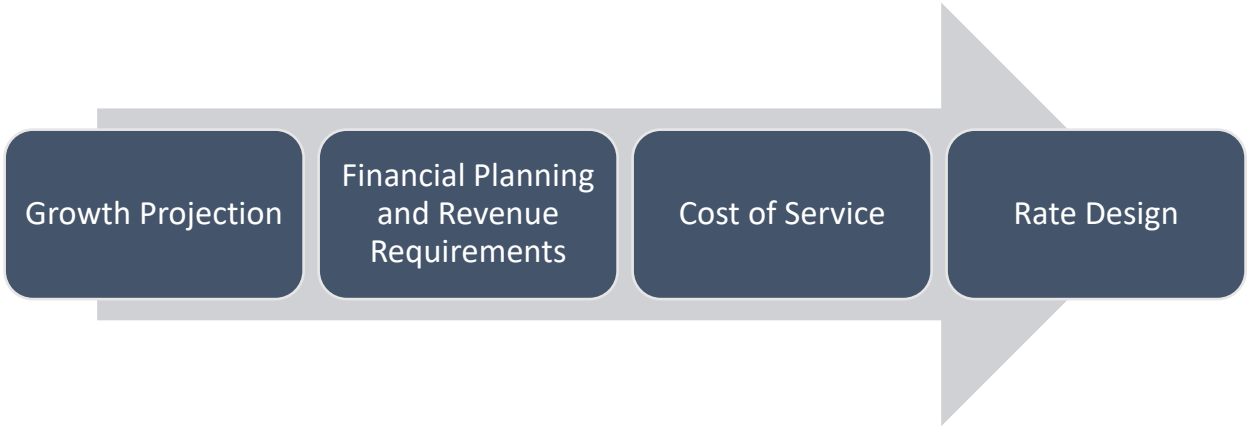
Figure 2. District Ending Fund Balances under the Proposed Financial Plan



2 GENERAL METHODOLOGY

The water rates formulated in this study were developed using principles set forth by the American Water Works Association (AWWA). RDN rate-making practices incorporate methods described in the AWWA Manual 1 (M1)1 for Water Systems. Error! Reference source not found. presents the steps taken to develop the District's proposed rates.

Figure 3. Water Rate Study Process



Growth Projection: project customer growth for the five-year study period, FY 2024 through FY 2028, using the District's customers' historical growth data. Forecast revenues for the study period based on the projected customer growth.

Financial Planning and Revenue Requirements: develop a ten-year financial plan based on the projected revenues and annual costs which include both operating and capital expenses. The District's target reserve level should also be considered as part of the financial planning. Based on the financial planning, revenue requirements are determined for each year of the 5-year rate study period.

Cost of Service: evaluate the customer classifications and allocate costs based on their service requirements.

Rate Design: design rates to recover the rate revenue requirements from each customer.

[1] Principles of Water Rates, Fees, and Charges, Seventh Edition, Manual of Water Supply Practices, American Water Works Association

Legal Considerations

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

California Constitution-Article XIII C (Proposition 26)

The voters in the State approved Proposition 26 on November 2, 2010. Proposition 26 amended Article XIII C of the State Constitution to expand the definition of "tax" to include "any levy, charge, or exaction of any kind imposed by a local government" with listed exceptions. By means of these exceptions, Article XIII C classifies several types of charges, in addition to property-related charges, that are not taxes, such as charges for specific services or benefits, regulatory charges and penalties.

Article XIII C's definition of "tax" lists the following exceptions: (1) a charge imposed for a specific benefit conferred or privilege granted directly to the payer 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; (2) a charge imposed for a specific government service or product provided directly to the payer 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; (3) a charge imposed for the reasonable regulatory costs to a local government for issuing licenses and permits, performing investigations, inspections, and audits, enforcing agricultural marketing orders, and the administrative enforcement and adjudication thereof; (4) a charge imposed for entrance to or use of local government property, or the purchase, rental, or lease of local government property; (5) a fine, penalty, or other monetary charge imposed by the judicial branch of government or a local government, as a result of a violation of law; (6) a charge imposed as a condition of property development; and (7) assessments and property-related fees imposed in accordance with the provisions of Article XIII D.

Proposition 26 also provides 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 payer bear a fair or reasonable relationship to the payer's burdens on, or benefits received from, the governmental activity. Like the proportionality requirements of Article XIII D, assessment of rates under these requirements, if applicable, would be supported by the cost of service approach.

California Constitution-Article XIII D, Section 6 (Proposition 218)

In November 1996, California voters passed Proposition 218, the "Right to Vote on Taxes Act." This constitutional amendment protects taxpayers by limiting the methods by which local governments can create or increase taxes, fees, and charges without taxpayer consent. Between 2002 and 2017, California courts have ruled that fees associated with providing water services are "property-related" and thus under the jurisdiction of Prop 218. The principal requirements for fairness of the fees, as they relate to public water service, are as follows:

Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service. Revenues derived by the fee or charge shall not be used for any other purpose other than that for which the charge was imposed. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel. Reliance by an agency on any parcel map, including, but not limited to, an assessor's parcel map, may be considered a significant factor in determining whether a fee or charge is imposed as an incident of property ownership for purposes of this article.

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

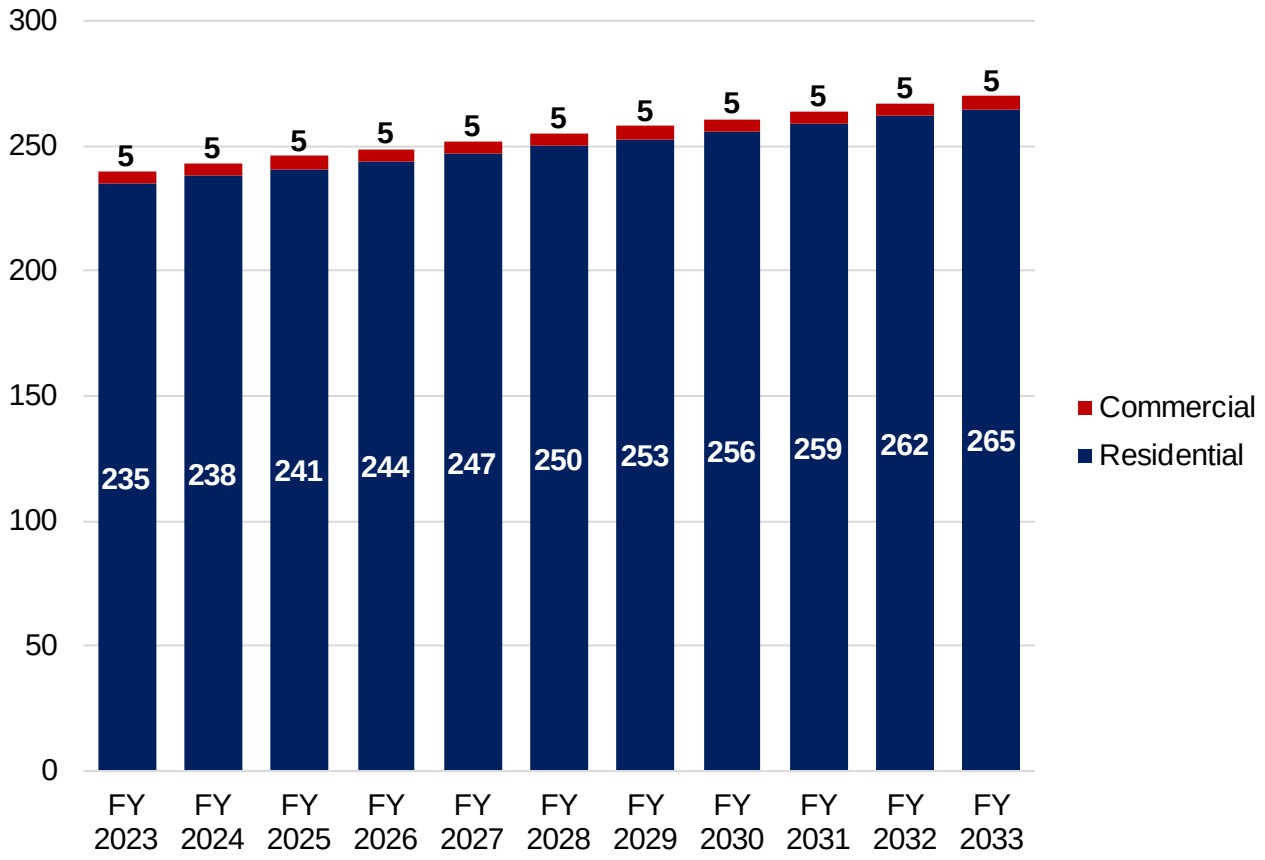
Key Assumptions

A test year, FY 2024, was selected for which costs are to be analyzed and rates to be established for this study. The District's fiscal year starts on July 1 and ends on June 30.

Customer Growth

All the analyses performed for this Study were based on an assumption of account growth. **Error! Reference source not found.** displays the account growth for all meter sizes. The count for FY 2023 was derived from customers' billing records, and the numbers of accounts for The District anticipates about 3 new accounts each year through the end of the study period.

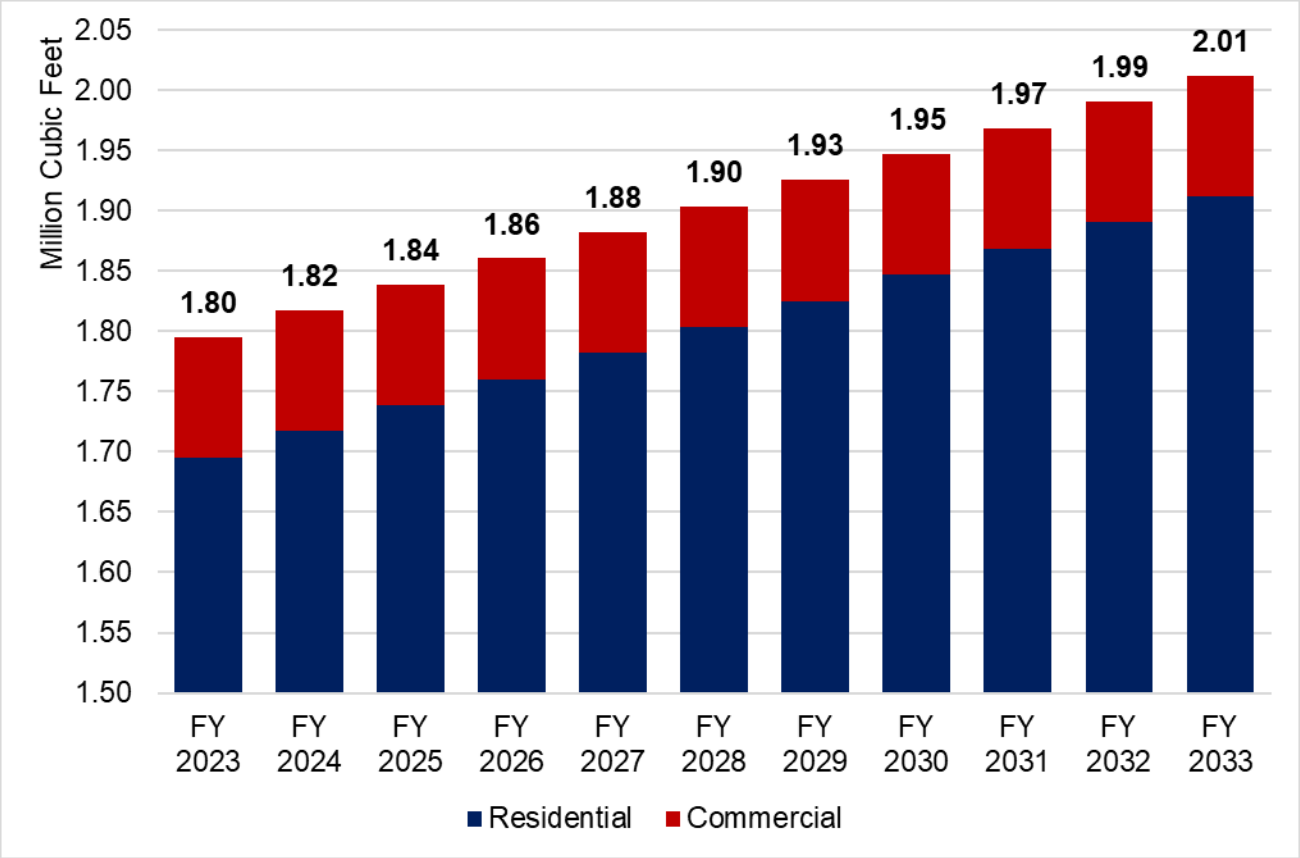
Figure 4. Customer Account Growth, FY 2023 – FY 2033



Demand Projections

Aggregate water consumption was calculated by multiplying the constant per account water usage with the number of accounts each year. Annual demand is expected to increase 0.8 percent on average each year for the remainder of the study period. The District's water demand forecasts for the study period are displayed in Error! Reference source not found..

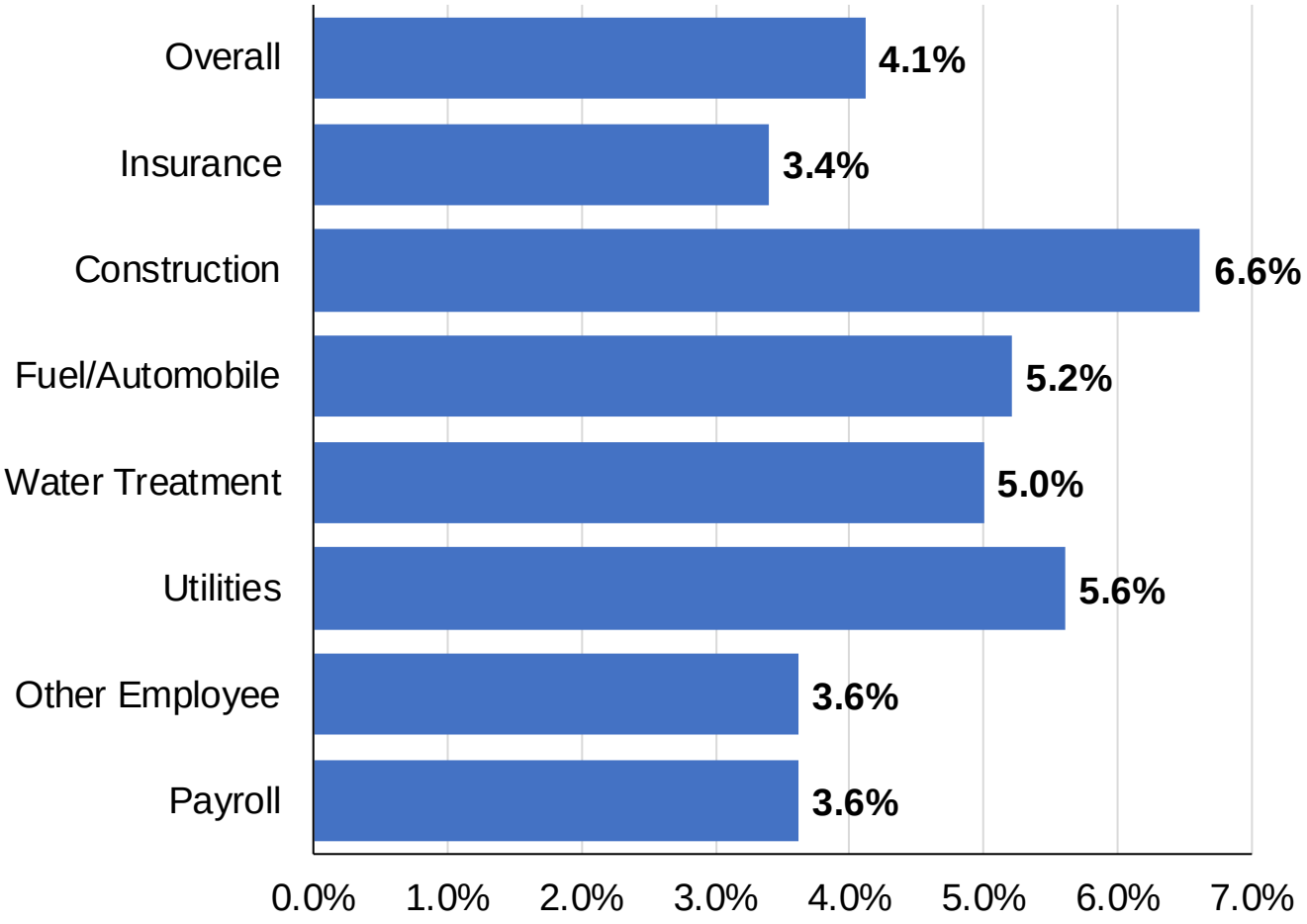
Figure 5. Annual Demand Projections, FY 2023 – FY 2033



Escalation Factors

Escalation Factors were calculated for eight independent variables using historical Consumer Price Index (CPI) data from West Class B/C cities between 2000 and the most current calendar year, and projections by the California Department of Transportation (CADOT), and the California Department of Finance (CADOF). The analysis for the status quo assumes that Operating Revenues will continue to be stable, with some increases due to customer growth, for the next five years. The escalation factors capture the effects of price inflation for this period. **Figure 6** displays the projected escalation factors for the study period. Due to extreme fluctuations in inflation over the previous two years, expenses are expected to rise quickly in the short term. In the long term, we project inflation to return to the more stable levels seen prior to the COVID-19 pandemic. Expenses that are not expected to increase during the study period were not escalated as those costs are fixed.

Figure 6. Expense Escalation Factors



3 FINANCIAL PLANNING

RDN built a 5-year financial model for the water utility to meet the District's long-term financial goals.

Revenues

Based on the account growth and water demand projections, RDN forecasts revenues generated from customer rates using the current water rates for the study period, which total approximately $196,000 to $205,000 annually. Other operating income and non-operating revenue are estimated to provide supplemental revenue of roughly $340,000 to $420,000 a year; thus, the system's total revenue for the study period is estimated to be approximately $534,000 to $620,000 annually under the status quo rate schedule. **Table 4** shows the projected revenue flow for the study period (FY 2024 – FY 2028) without any revenue adjustments.

Table 4. Water Utility Operating Forecast, FY 2024 to FY 2028

	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Revenue from Rates					
Fixed Charges	$163,296	$165,312	$167,328	$169,344	$171,360
Variable Charges	$32,531	$32,874	$33,216	$33,559	$33,901
Rate Revenue Total	**$195,827**	**$198,186**	**$200,544**	**$202,903**	**$205,261**
Other Operating Revenues	$16,040	$16,082	$16,126	$16,173	$16,222
Non-operating Revenues	$322,290	$340,561	$359,868	$380,268	$401,826
Total	**$534,157**	**$554,828**	**$576,538**	**$599,344**	**$623,309**

Operating and Maintenance (O&M) Expense

The water utility's operating budget includes $521,000 in operating expenses for FY 2023. Operating expenses are expected to increase approximately 4.3 percent in FY 2024. By the end of the five year rate setting period, total operating expenses are expected to reach $636,000. Annual overall inflation for operating expenses for the ten year financial planning period is expected to average around 4.0 percent per year.

Other Obligations

Other obligations included in the financial plan are capital improvement projects funded by PAYGO (Pay As You Go), debt service obligations, and reserve contributions made from rates.

Capital Improvement Projects

The District plans to spend approximately $1.2 million adjusted for inflation over ten years on water capital expenditures during the financial planning period. Because the District does not currently have a capital plan which details the dates when each capital project is to be accomplished and because funding is not currently available to complete the projects, RDN averaged inflated annual costs across the 10 year planning horizon so that the District will build cash to fund projects. Planned capital projects include replacing poly service lines in Poppy Flats, upgrading the pump station, fire hydrant upgrades, equipment replacements, and tie-in dead ends for fire flow.

Debt Service and Coverage Ratios

The District currently carries no debt and does not plan on issuing any debt during the study period.

Reserves

The District must maintain an appropriate reserve balance to ensure the day-to-day operation will continue during emergencies and guarantee the future stability of the system. The District's financial goal is to build an appropriate level of cash reserves for each reserve fund included in the financial plan of this Study. RDN recommends the District develop specific reserve fund policies to direct the appropriate reserve target balances for each utility. Reserve recommendations for the water utility are described below:

- **Operating Fund**: the minimum target balance of the fund should equal 12 months of budgeted operating expenses for the upcoming year. It was established to maintain working capital for current operations and to meet routine cash flow needs for the general operations and debt service payments of the system.
- **Capital Improvement Fund**: The fund's minimum annual allocation should equal the annual depreciation. The fund was established to support capital projects that improve repair, rehabilitate, or replace the capital assets, and eliminate the risk of "use it or lose it" type of spending on infrastructure.

Reserve targets at the end of the 5-year study period reach $750,000 which include 12 months of operating and five years of depreciation.

Revenue Requirements

Table 5 displays the water utility's revenue requirements for FY 2024 through FY 2028. The total expense for each year is offset by other operating revenues and non-operating revenues to compute a pure portion of revenue requirements that need to be recovered from customers' rates. RDN proposes annual revenue adjustments of 20.0 percent, 20.0 percent, 15.0 percent, 10.0 percent, and 10.0 percent for FY 2024 through FY 2028, respectively, to reach the financial goal set by the District.

Table 5. Revenue Requirements for District Water Utility, FY 2024 – FY 2028

Revenue Requirements	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
O&M Expenses	$543,407	$566,153	$589,157	$612,410	$636,100
Capital Expenditures	$127,814	$92,669	$98,302	$102,909	$107,389
Other Operating Revenue	($16,040)	($16,082)	($16,126)	($16,173)	($16,222)
Non-Operating Revenue	($322,290)	($340,561)	($359,868)	($380,268)	($401,826)
Net Balance From Operations	($97,899)	($16,792)	$20,636	$50,730	$85,853
Rate Revenue Requirement	**$234,992**	**$285,387**	**$332,101**	**$369,608**	**$411,294**

Financial Plan

Based on the projected total revenue and necessary costs to be recovered during the study period, RDN built a financial plan that will generate sufficient revenues for the day-to-day operation and annual PAYGO and make appropriate contributions to reserves. The District currently has a projected ending cash balance of $697,000 in FY 2023. **Table 6** shows the status quo water pro forma with no revenue adjustments and the resulting ending balances.

Table 6. Status Quo Financial Pro Forma for District Water System, FY 2024 to FY 2028

Rate Increase	0.0%	0.0%	0.0%	0.0%	0.0%
Rate Month Implemented					
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Cash Position Opening Balance	$ 697,014	$ 559,950	$ 455,956	$ 345,036	$ 229,061
Revenues					
Water Rate Revenue	$ 195,827	$ 198,186	$ 200,544	$ 202,903	$ 205,261
Other Operating Revenue	$ 16,040	$ 16,082	$ 16,126	$ 16,173	$ 16,222
Non-Operating Revenue	$ 322,290	$ 340,561	$ 359,868	$ 380,268	$ 401,826
Total Revenues	**$ 534,157**	**$ 554,828**	**$ 576,538**	**$ 599,344**	**$ 623,309**
Operating Expenses	$ 543,407	$ 566,153	$ 589,157	$ 612,410	$ 636,100
Current Debt Service	$ -	$ -	$ -	$ -	$ -
Proposed Debt Service	$ -	$ -	$ -	$ -	$ -
Total Operating and Debt Service	**$ 543,407**	**$ 566,153**	**$ 589,157**	**$ 612,410**	**$ 636,100**
Net Revenues	**$ (9,250)**	**$ (11,325)**	**$ (12,619)**	**$ (13,066)**	**$ (12,791)**
Capital Expenditure	$ 127,814	$ 92,669	$ 98,302	$ 102,909	$ 107,389
Debt Proceeds Current	$ -	$ -	$ -	$ -	$ -
Debt Proceeds Proposed	$ -	$ -	$ -	$ -	$ -
Grants	$ -	$ -	$ -	$ -	$ -
Cash	$ 127,814	$ 92,669	$ 98,302	$ 102,909	$ 107,389
Net Income	$ (137,064)	$ (103,994)	$ (110,921)	$ (115,975)	$ (120,180)
Ending Balance	**$559,950**	**$455,956**	**$345,036**	**$229,061**	**$108,881**

Table 7 shows the proposed water pro forma for the study period with the recommended revenue adjustments per year.

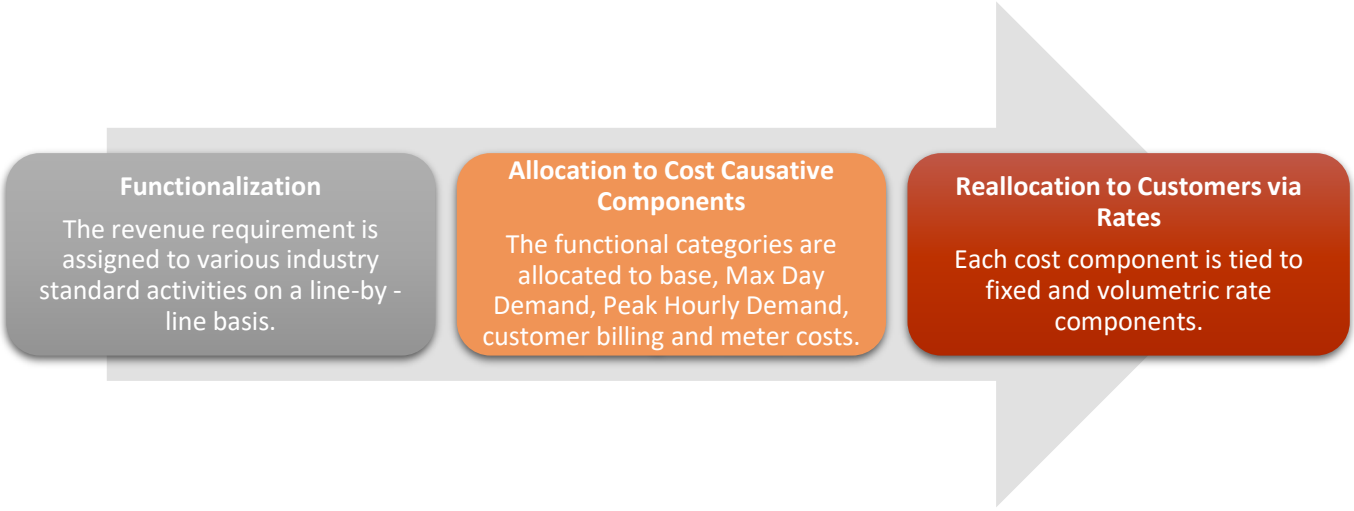
Table 7. Proposed Financial Pro Forma for District Water System, FY 2024 to FY 2028

Rate Increase	20.0%	20.0%	15.0%	10.0%	10.0%
Rate Month Implemented	January	July	July	July	July
	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Cash Position Opening Balance	$ 697,014	$ 579,518	$ 565,238	$ 593,758	$ 653,274
Revenues					
Water Rate Revenue	$ 215,395	$ 287,900	$ 339,985	$ 378,394	$ 420,161
Other Operating Revenue	$ 16,040	$ 16,082	$ 16,126	$ 16,173	$ 16,222
Non-Operating Revenue	$ 322,290	$ 340,561	$ 359,868	$ 380,268	$ 401,826
Total Revenues	**$ 553,725**	**$ 644,543**	**$ 715,978**	**$ 774,835**	**$ 838,209**
Operating Expenses	$ 543,407	$ 566,153	$ 589,157	$ 612,410	$ 636,100
Current Debt Service	$ -	$ -	$ -	$ -	$ -
Proposed Debt Service	$ -	$ -	$ -	$ -	$ -
Total Operating and Debt Service	**$ 543,407**	**$ 566,153**	**$ 589,157**	**$ 612,410**	**$ 636,100**
Net Revenues	**$ 10,318**	**$ 78,390**	**$ 126,821**	**$ 162,425**	**$ 202,109**
Capital Expenditure	$ 127,814	$ 92,669	$ 98,302	$ 102,909	$ 107,389
Debt Proceeds Current	$ -	$ -	$ -	$ -	$ -
Debt Proceeds Proposed	$ -	$ -	$ -	$ -	$ -
Grants	$ -	$ -	$ -	$ -	$ -
Cash	$ 127,814	$ 92,669	$ 98,302	$ 102,909	$ 107,389
Net Income	$ (117,496)	$ (14,280)	$ 28,519	$ 59,516	$ 94,720
Ending Balance	**$579,518**	**$565,238**	**$593,758**	**$653,274**	**$747,994**

4 COST OF SERVICE ANALYSIS

The purpose of a Cost of Service (COS) analysis is to allocate costs among customers commensurate with their service requirements. RDN employed the "base-extra capacity" cost-of-service method promulgated in AWWA's M1, whereby costs are first allocated to individual functions, which are typical industry standard activities, then the costs of each function are distributed to appropriate cost causative components, which are defined by the cost driving elements. The results of the COS form a reasonable, equitable, basis for designing rates. **Figure 7** displays a typical flow of a process for the COS analysis.

Figure 7. A Typical Flow for Cost of Service Analysis Process



Functionalization of Costs

Operating and capital costs are functionalized based on operating categories used in the District's budget and input from District staff with expertise on the system and utility industry knowledge. The functionalization of capital expenses is based on 10 years of total planned capital, which represents a better overall estimate of systemwide needs versus just one year of capital expenses. The functions of the water system for both operating and capital expenses include:

- Water Supply – costs associated with source of water supply
- Pumping – costs associated with general pumping and electricity use
- Transmission and Distribution – costs associated with transmitting and distributing water to customers

- Professional Services – costs associated with outside professional services
- Storage - costs associated with water storage
- Maintenance and General - costs associated with general maintenance activities
- Meter Services – costs associated with the reading and maintenance of meters
- Administrative and General – costs associated with administrative and general functions

Table 8 shows the amount and percentage of test year operating expenses allocated to each function. **Table 9** shows the amount and percentage of non-operating expenses allocated to each function.

Table 8. Percentage of Operating Costs Allocated to Standard Functions

O&M Expense		
Category	**Allocation**	**Percent**
Total O&M	**$543,407**	**100.0%**
Water Supply	$169,378	31.2%
Pumping	$36,963	6.8%
Transmission and Distribution	$91,869	16.9%
Professional Services	$15,618	2.9%
Mantenance and General	$27,643	5.1%
Meter Services	$6,397	1.2%
Administrative and General	$195,538	36.0%

Table 9. Percentage of Non-operating Costs Allocated to Standard Functions

Non-Operating Expense		
Category	**Allocation**	**Percent**
Total Assets	**$395,873**	**100.0%**
Water Supply	$0	0.0%
Storage	$27,483	6.9%
Transmission and Distribution	$314,792	79.5%
Mantenance and General	$27,313	6.9%
Administrative and General	$26,285	6.6%

For the system to provide adequate service to its customers at all times, it must be capable of meeting not only the annual volume requirements, but also the peak demand - the maximum rate at which water is consumed. Therefore, the capacities of the various facilities must meet the maximum coincidental demand of all customers.

Each water service facility within the system has an underlying average demand, exerted by the customers for whom the base cost component applies. For those facilities designed solely to meet average daily demand, 100% of the cost should go to the base cost component. Extra

capacity requirements associated with demand in excess of average use consist of Max Day Demand (MDD) and Peak Hourly Demand (PHD). Based on the MDD factor, RDN estimated the average hourly flow during MDD and multiplied it by a peaking factor of 1.5 (the lowest factor recommended by the State Board's Division of Drinking Water[2]) to compute a PHD factor. Functions that require capacity to perform at base and MDD levels were allocated based on the ratio of base demand compared to MDD, or 56.9 percent and 43.1 percent, respectively. Additionally, the costs associated with the functions which require extra capacity service requirements were distributed to the base, MDD, and PHD cost components at 37.9 percent, 28.8 percent, and 33.3 percent, respectively. Administrative and general costs are allocated to cost components based on the percentage of the functions allocated to the other cost categories.

The cost causative components therefore include:

- Water Supply – water purchase costs, chemicals, pumping costs, etc.
- Base – delivering water to customers under average demand conditions
- Maximum Day Demand (MDD) – the costs of delivering water to customers on the day with the highest demand
- Peaking Hourly Demand (PHD) – the costs of delivering water to customers on the hour with the highest demand on highest day
- Meters – the costs of servicing meters

The result of the COS analysis determines how the total revenue requirements should be allocated to each of the cost components, which are categorized and grouped based on the similar cost driving elements. **Table 10** through **Table 11** show the functionalized costs allocated to the cost causative components.

Table 10. Percent of Operating Function Categories Allocated to Cost Components

O&M Expense							
	Total Allocation	**Source of Supply**	**Base**	**MDD**	**PHD**	**Meters**	**Total**
Water Supply	$169,378	100.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**
Pumping	$36,963	0.0%	37.9%	28.8%	33.3%	0.0%	**100.0%**
Transmission and Distribution	$91,869	0.0%	56.9%	43.1%	0.0%	0.0%	**100.0%**
Professional Services	$15,618	0.0%	37.9%	28.8%	33.3%	0.0%	**100.0%**
Mantenance and General	$27,643	0.0%	37.9%	28.8%	33.3%	0.0%	**100.0%**
Meter Services	$6,397	0.0%	0.0%	0.0%	0.0%	100.0%	**100.0%**
Administrative and General	$195,538	0.0%	48.5%	36.8%	10.2%	4.5%	**100.0%**

[2] California Public Utilities Commission. Standard Practice for Determination of Water Supply Requirements, Standard Practice U-22. San Francisco. 2000

Table 11. Total of Operating Functional Categories Allocated to Cost Components

O&M Expense						
	Total Allocation	Source of Supply	Base	MDD	PHD	Meters
Water Supply	**$169,378**	$169,378	$0	$0	$0	$0
Pumping	**$36,963**	$0	$14,013	$10,630	$12,321	$0
Transmission and Distribution	**$91,869**	$0	$52,241	$39,628	$0	$0
Professional Services	**$15,618**	$0	$5,921	$4,491	$5,206	$0
Mantenance and General	**$27,643**	$0	$10,479	$7,949	$9,214	$0
Meter Services	**$6,397**	$0	$0	$0	$0	$6,397
Administrative and General	**$195,538**	$0	$94,836	$71,940	$19,923	$8,839
Percent of Total		**31.2%**	**32.7%**	**24.8%**	**8.6%**	**2.8%**

Table 12. Percent of Non-operating Function Categories Allocated to Cost Components

Non-Operating Expense							
	Total Allocation	Source of Supply	Base	MDD	PHD	Meters	Total
Water Supply	$0	100.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**
Storage	$27,483	0.0%	56.9%	43.1%	0.0%	0.0%	**100.0%**
Transmission and Distribution	$314,792	0.0%	37.9%	28.8%	33.3%	0.0%	**100.0%**
Mantenance and General	$27,313	0.0%	0.0%	0.0%	100.0%	0.0%	**100.0%**
Administrative and General	$26,285	0.0%	36.5%	27.7%	35.8%	0.0%	**100.0%**

Table 13. Total of Non-operating Functional Categories Allocated to Cost Components

Non-Operating Expense					
	Total Allocation	Source of Supply	Base	MDD	PHD
Water Supply	**$0**	$0	$0	$0	$0
Storage	**$27,483**	$0	$15,628	$11,855	$0
Transmission and Distribution	**$314,792**	$0	$119,336	$90,525	$104,931
Mantenance and General	**$27,313**	$0	$0	$0	$27,313
Administrative and General	**$26,285**	$0	$9,599	$7,281	$9,405
Percent of Total		**0.0%**	**36.5%**	**27.7%**	**35.8%**

The non-operating expenses are made up of planned test year capital expenditures. Those costs are distributed to the cost components based on the final percentages shown in **Table 13**, above. Operating allocations are based on the actual projected test year expense and the total for each cost component reflect the percentages in **Table 11**. **Table 14** shows the revenue requirements by cost causative components under the proposed financial plan. The test year costs and offsets are allocated to each cost causative component using the percentages derived from the cost allocation. Revenue offsets are allocated based on the total cost in each category, which includes both operating and non-operating expenses.

Table 14. Rate Revenue Requirements for Test Year, FY 2024

Cost Allocation Summary	Total	Source of Supply	Base	MDD	PHD	Meters
O&M Revenue Requirements	$543,407	$169,378	$177,490	$134,638	$46,665	$15,236
Non-Operating Revenue Requirements	$127,814	$0	$46,675	$35,406	$45,734	$0
Total	**$671,221**	**$169,378**	**$224,164**	**$170,044**	**$92,398**	**$15,236**
Percent of Total		25.2%	33.4%	25.3%	13.8%	2.3%
Other Operating Revenue	($16,040)	($4,048)	($5,357)	($4,063)	($2,208)	($364)
Non-Operating Revenue	($322,290)	($81,328)	($107,634)	($81,648)	($44,366)	($7,316)
Net Balance From Operations	($97,899)	($24,704)	($32,695)	($24,801)	($13,476)	($2,222)
Rate Revenue Requirement	**$234,992**	**$59,299**	**$78,479**	**$59,532**	**$32,348**	**$5,334**

Allocation to Units

The final step of the COS analysis is to allocate the cost causative components back to the customers. In order to perform this, unit values were determined for each cost component. **Table 15** shows the number of systemwide units under each category. Equivalent meters are determined by multiplying the total meters by their equivalent meter value.

All use categories (Water Use, Max Month, Average Day, Max Day, and Peak Hourly) were calculated based on actual (billed) customer use and are expressed in cf. As previously described, average day demand constitutes the entire year of use divided by the number of days in a year. Max day demand takes the use during the highest use month (July) and divides that by the number of days in the month (30). Peak hourly demand is estimated by taking the difference between average day and max day demand and multiplying the result by a factor of 1.5. The number of bills in one year (the number of accounts multiplied by 12) serves as the basis for distributing billing and customer service costs associated with meter reading, customer billing and collection, and other customer services costs. The number of equivalent meters is used to distribute meter related service costs.

Table 15. Cost of Service Units

it	Count of Units
Customers	243
EMs	243
Water Use	1,817,184
Max Month	272,156
Average Day	4,992
Max Day	8,779
Peak Hourly	13,169

Table 16 shows the total cost allocation by cost component divided by the corresponding unit values to develop a unit cost for each.

Table 16. Rate Revenue Requirements Divided by the Corresponding Units

	Source of Supply	Base	MDD	PHD	Meters
Rate Revenue Requirement	$59,299	$78,479	$59,532	$32,348	$5,334
Units	1,817,184	1,817,184	8,779	13,169	243
Unit Cost	**$0.03**	**$0.04**	**$6.78**	**$2.46**	**$21.95**

Allocation to Customer Classes (Residential and Commercial)

The District maintains two distinct customer classes, residential and commercial customers. The total cost allocation by customer class is shown in **Table 18. Table 17** shows the number of COS units which are the responsibility of each customer class.

Table 17. Relative Units by Customer Class

Customer Class	Source of Supply	Base	MDD	PHD	Meters
Residential	1,717,104	1,717,104	8,055	12,082	238
Commercial	100,080	100,080	725	1,087	5
Total	**1,817,184**	**1,817,184**	**8,779**	**13,169**	**243**

Table 18. Unit Costs Multiplied by Customer Class Units

er Class	Total	Source of Supply	Base	MDD	PHD	Meters
Residential	$219,712	$56,033	$74,157	$54,619	$29,679	$5,224
Commercial	$15,280	$3,266	$4,322	$4,913	$2,670	$110
Total	**$234,992**	**$59,299**	**$78,479**	**$59,532**	**$32,348**	**$5,334**

5 RATE DESIGN

RDN proposes the following adjustments to customer water rate structures:

- Make annual revenue (rate) adjustments of 20 percent, 20 percent, 15 percent, 10 percent, and 10 percent, respectively for the five years of the study period
- Implement the cost of service allocations for residential and commercial customers so that their rates reflect the cost to provide service to each for both the fixed and variable rates
- Reduce the amount of water included in the base rate from 1,000 cubic feet (cf) to 700 cf a month

The water rates have two components: 1) a fixed monthly service charge and 2) volumetric rates. Customers must pay the fixed charge regardless of the water use. In addition, the customers pay volumetric rates based on the volume of water use.

1. **Fixed monthly service charge**: the rates are calculated to recover a portion of the District's fixed costs, such as water facilities repairs and replacements, meter reading, and customer service.

2. **Volumetric rates**: the rates are calculated based on the cost of water supplies, the cost of managing the District's water resources at regular and peak use and distributing water throughout the system to customers. The remaining fixed costs that are not recovered via fixed charges are also recovered from volumetric charges. The rates are billed per cubic foot (cf).

Together, the two components (fixed and volumetric) are calculated to recover the proportionate cost of providing water service attributable to each customer.

Fixed Charge and Variable Charges

A percentage of base costs and all meter costs are allocated to the fixed charge. Base costs (approximately 40 percent) are included in the fixed charge for commercial customers to account for their generally higher use patterns. Volumetric rates are designed based on variable costs such as water purchases, treatment, and base and peak delivery costs. **Table 19** shows the total test year revenue requirements allocated to fixed and variable rates based on the District's customer class categories.

Table 19. Cost Allocation to Fixed and Variable Rates by Customer Class

Customer Class/Cost Category	Total Cost	Cost Allocated to Fixed Rates	Cost Allocated to Variable Rates
Residential			
Source of Supply	$56,033	$0	$56,033
Base	$74,157	$74,157	$0
MDD	$54,619	$0	$54,619
PHD	$29,679	$0	$29,679
Meters	$5,224	$5,224	$0
Total	**$219,712**	**$79,381**	**$140,331**
Commercial			
Source of Supply	$3,266	$0	$3,266
Base	$4,322	$1,729	$2,593
MDD	$4,913	$0	$4,913
PHD	$2,670	$0	$2,670
Meters	$110	$110	$0
Total	**$15,280**	**$1,839**	**$13,442**

To calculate the cost per unit of water use, the total variable costs are divided by the project water sales for the test year. **Table 20** shows the variable rate calculation by customer class.

Table 20. Variable Rate Calculation by Customer Class

Customer Class	Variable Cost	Units (cf)	Cost per Unit
Residential	$140,331	1,717,104	**$0.0817**
Commercial	$13,442	100,080	**$0.1343**

The District has a policy of including some water in the fixed monthly charge, so that essential water use is available without an additional variable fee. In order to allocate the appropriate costs for that water into the fixed monthly charge, the total water use in the test year was which was included in base rate, 700 cf per customer per month, was multiplied by the unit cost above. **Table 21** shows the total variable costs which we reallocated to the base rate to account for the water use which was included monthly.

Table 21. Variable Cost Units Included in the Base Rate Calculation

ner Class	Units Included in Base Rate Monthly	Unit Cost	Total Units in Base Rate	Variable Rate Allocated to Fixed Charge
Residential	700	$0.0817	966,232	$78,941
Commercial	700	$0.1343	21,000	$2,820

To calculate the monthly fixed charge, fixed component costs and the reallocated variable costs are summed then divided by the number of bills per year. **Table 22** shows the fixed rate calculation by customer class.

Table 22. Fixed Rate Calculation by Customer Class

Customer Class	Fixed Component		Variable Component		Total Fixed Charge Allocation		Fixed Units		Monthly Fixed Charge
Residential	$79,381	+	$78,941	=	$158,323	÷	238	*÷12=*	**$55.44**
Commercial	$1,839	+	$2,820	=	$4,659	÷	5	*÷12=*	**$77.65**

Table 23 Error! Reference source not found. shows the proposed fixed and variable rates under the revenue adjustment schedule.

Table 23. Proposed Rates Under Revenue Adjustment Schedule

Fixed Charges					
Category	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Residential	$55.44	$66.53	$76.51	$84.16	$92.58
Commercial	$77.65	$93.18	$107.16	$117.88	$129.67

Variable Charges						
Variable Rate	**Tier (cf)**	**FY 2024**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**
Residential	700 cf	$0.00	$0.00	$0.00	$0.00	$0.00
	All Add	$0.0817	$0.0980	$0.1127	$0.1240	$0.1364
Commercial	700 cf	$0.00	$0.00	$0.00	$0.00	$0.00
	All Add	$0.1343	$0.1612	$0.1853	$0.2039	$0.2243

6 CONCLUSION

Recommendations:

- Make annual revenue (rate) adjustments of 20 percent, 20 percent, 15 percent, 10 percent, and 10 percent, respectively for the five years of the study period
- Implement the cost of service allocations for residential and commercial customers so that their rates reflect the cost to provide service to each for both the fixed and variable rates
- Reduce the amount of water included in the base rate from 1,000 cubic feet (cf) to 700 cf a month

Water Rate Impacts:

Because of the proposed changes to the rate structure, customers will have slightly different impacts based on their water use. **Figure 8** shows the potential impacts of rate changes in the test year for Single Family Residential customers at different use levels. Single Family Residential Customers who use less than 700 cf in a month will see their rate decrease by $0.56. A single family residence who uses 1000 cf of water in a month will have a bill of $79.95, an overall increase of approximately $23.95 a month. Due to the changes in the water rate structure, customers who use more water will see a greater change in rates than customers who use less water.

Figure 8. Single Family Residential Water Rates Under Various Use Levels


RDN