



Timber Cove County Water District

2023 Financial Planning, Revenue Requirements, and Rate Setting Analysis

Presented by: California Rural Water Association

In Collaboration With:

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**TIMBER COVE COUNTY WATER DISTRICT
2023 WATER RATE STUDY**

DRAFT REPORT

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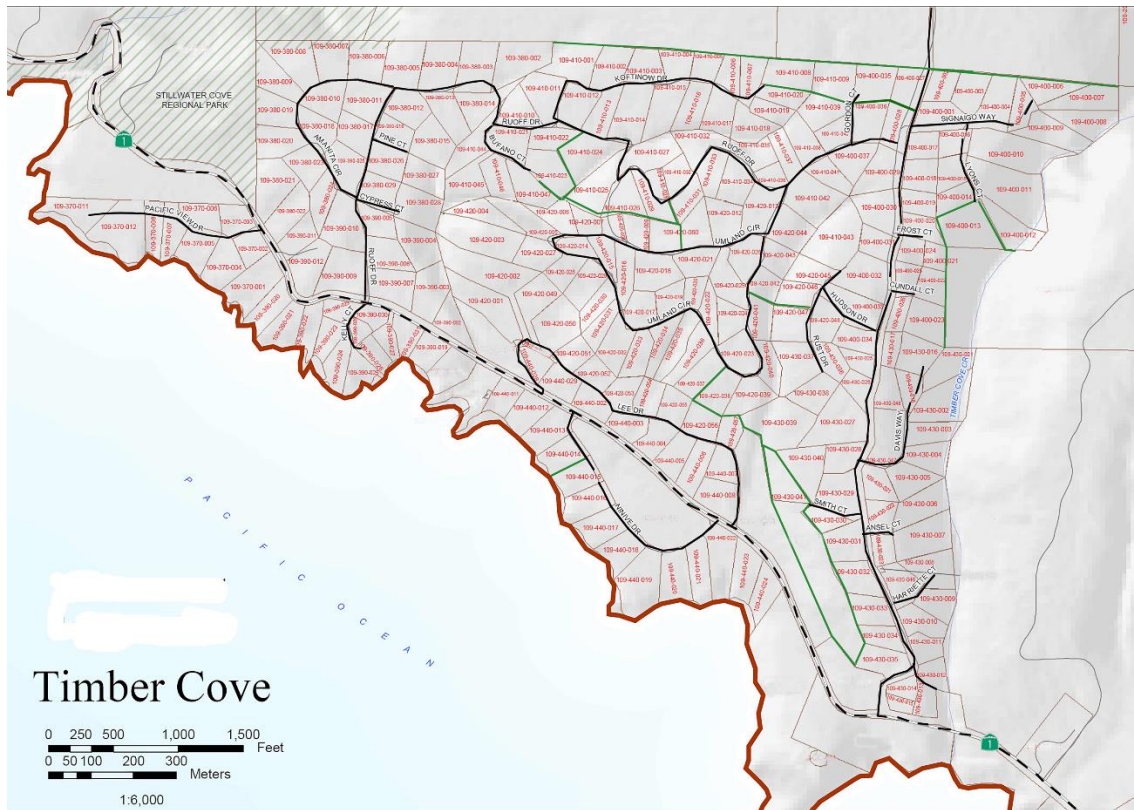
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1 EXECUTIVE SUMMARY

Background

The Timber Cove County Water District (TCCWD, District) is located in Timber Cove, CA along the Pacific coast in Sonoma County, approximately 90 miles north of San Francisco and 45 miles west of Santa Rosa. The District was first established in 1978 as a mutual water company to serve the residents of Timber Cove. Since 1984, the Timber Cove County Water District has been a Special Government Water District that provides water to approximately 270 customers, all but one of which are Residential. Timber Cove County Water District extracts water from Timber Cove Creek as its primary water source. **Figure 1** shows the current boundaries of the District.

Figure 1. Timber Cove County 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 to propose new rates, if necessary, that meet the District's financial and strategic goals. In June 2023, the California Rural Water Association (CRWA) retained Robert

D. Niehaus, Incorporated (RDN) to develop a comprehensive water rate study (Study) for the Timber Cove County 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 18 percent, 15 percent, 12 percent, 9 percent, and 9 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
- Increase the proportion of revenue generated through the monthly fixed charge to increase revenue stability

Current Rates

Currently, District water customers pay a monthly fixed fee of \$65.00 per month regardless of customer activity. The District's only commercial customer, the Timber Cove Inn, currently has 50 rooms, each charged \$65.00 per month for a total fixed charge of \$3,250.00. Active customers who use water are billed monthly for each gallon of water used. Customers are billed \$0.09 per gallon for water use. The current rates as described are displayed in **Table 1**.

Table 1. Current Rates

Fixed Charges		
Customer Class	Meter Size	Monthly Fee
Active Lot	All Meters	\$65.00
Inactive Lot	All Meters	\$65.00
Timber Cove Inn	All Meters	\$3,250.00
Variable Charges		
Customer Class	Tier - Width	Unit Cost
All Customers	All Use, per gallon	\$0.09

Proposed Rates

To allow the District to best accomplish its goals, RDN designed the financial plan which will be described in this report. Proposition 218 dictates a study horizon of five years for rates; however, where applicable this report shows a 10 year financial plan. 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	18.0%	15.0%	12.0%	9.0%	9.0%
Cumulative Adjustment	118.0%	135.7%	152.0%	165.7%	180.6%

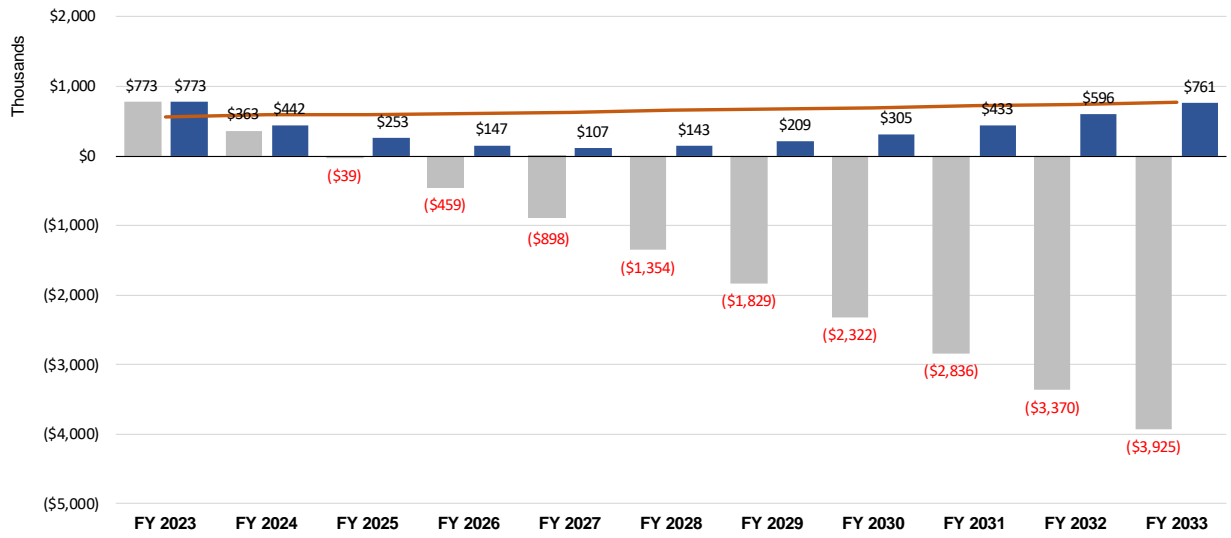
Table 3 shows the proposed fixed and variable rates under the revenue adjustment schedule.

Table 3. Proposed Rates Under Revenue Adjustment Schedule

Customer Class	Meter Size	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Fixed Charges						
Residential	All Meters	\$98.00	\$112.70	\$126.22	\$137.58	\$149.97
Timber Cove Inn	All Meters	\$10,841.60	\$12,467.84	\$13,963.98	\$15,220.74	\$16,590.61
Variable Charges						
Residential	All Meters	\$0.0575	\$0.0661	\$0.0740	\$0.0807	\$0.0880
Timber Cove Inn	All Meters	\$0.0579	\$0.0666	\$0.0746	\$0.0813	\$0.0886

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

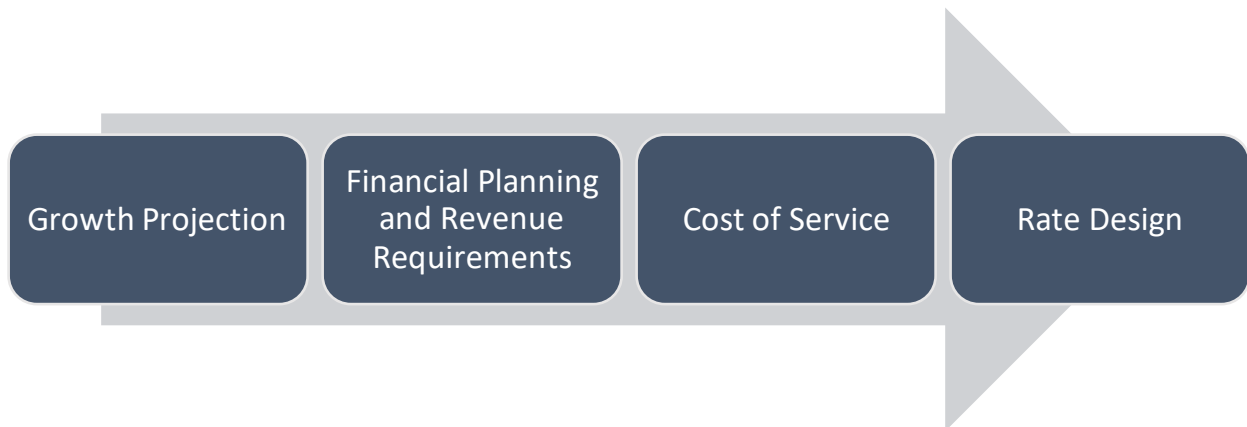
Figure 2. District Ending Fund Balances under the Status Quo and Proposed Financial Plan



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. **Figure 3** 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 were created using a methodology to establish an equitable system of charges that recovers the cost of providing service and fairly apportions costs to each customer as required by Proposition 218.

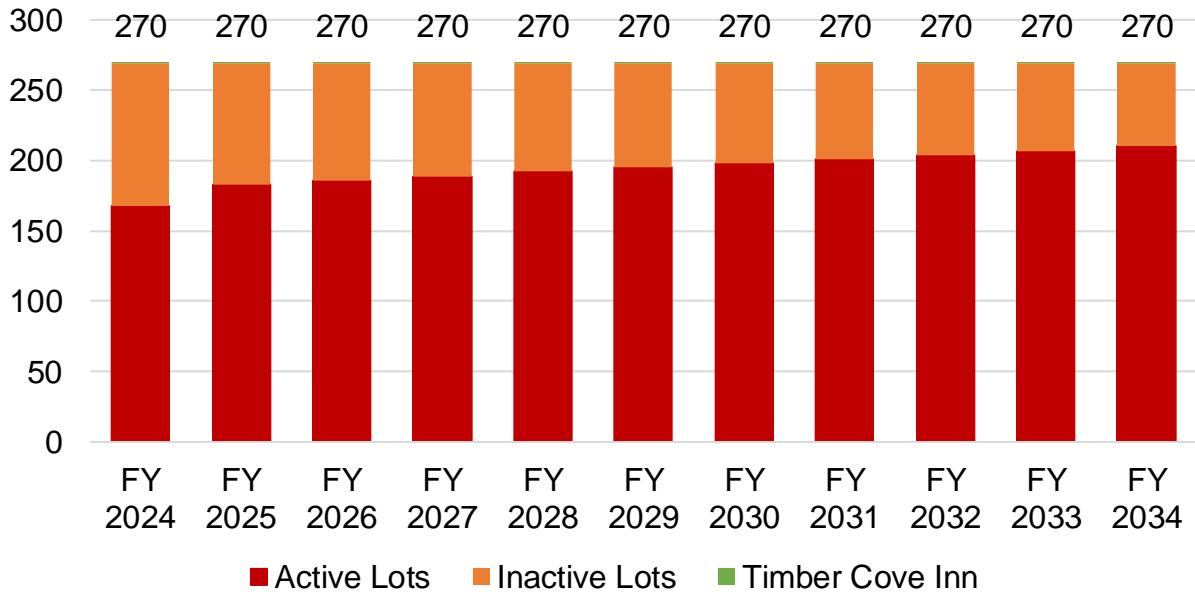
Key Assumptions

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. **Figure 4** displays the account growth for all customers. The count for FY 2024 was derived from customers' billing records. There are currently 15 homes under construction in the service area. These new active accounts are expected to begin using water by the end of FY 2025. After FY 2025, the District anticipates roughly three accounts to convert from inactive to active each year.

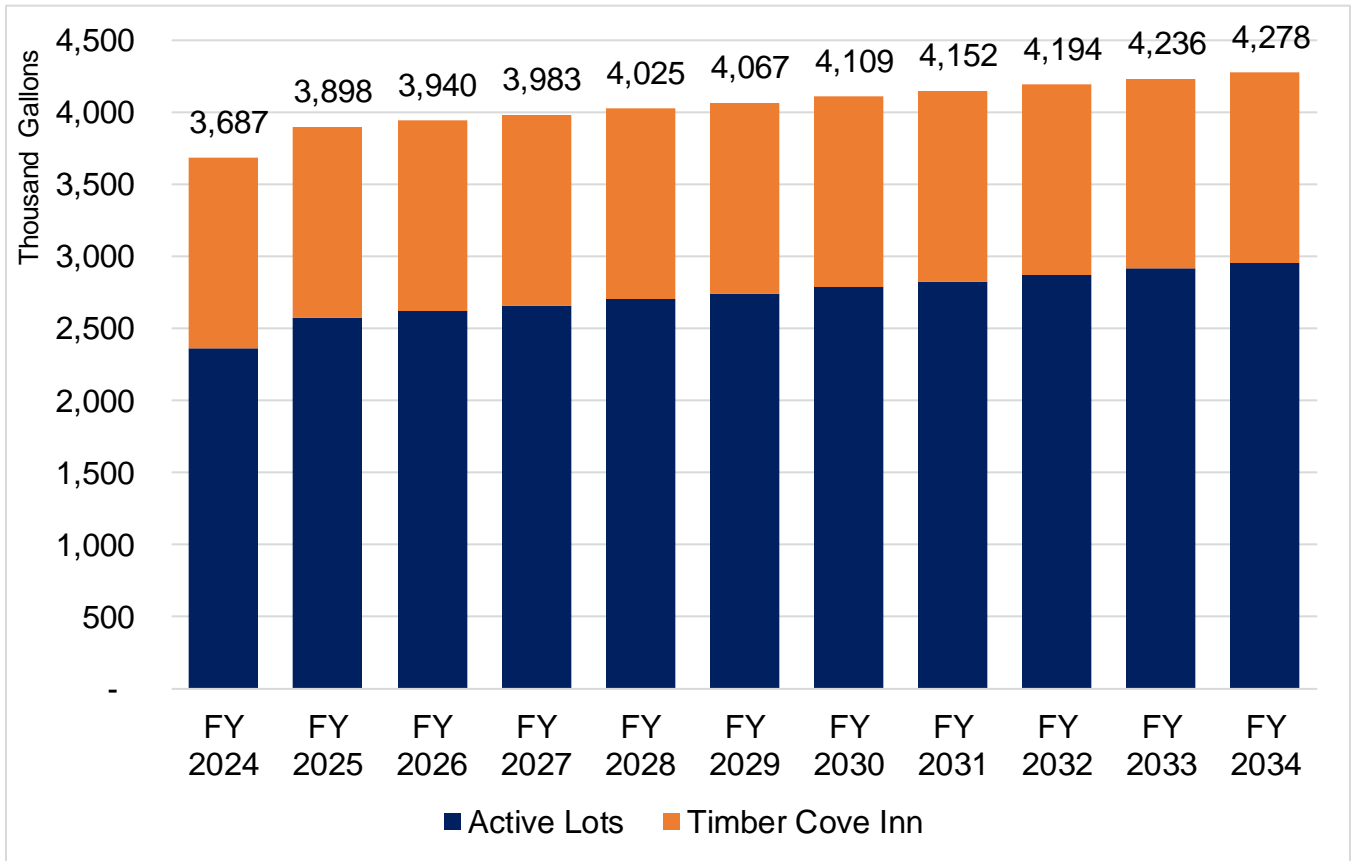
Figure 4. Customer Account Growth, FY 2024 – FY 2034



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 2.2 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 **Figure 5**.

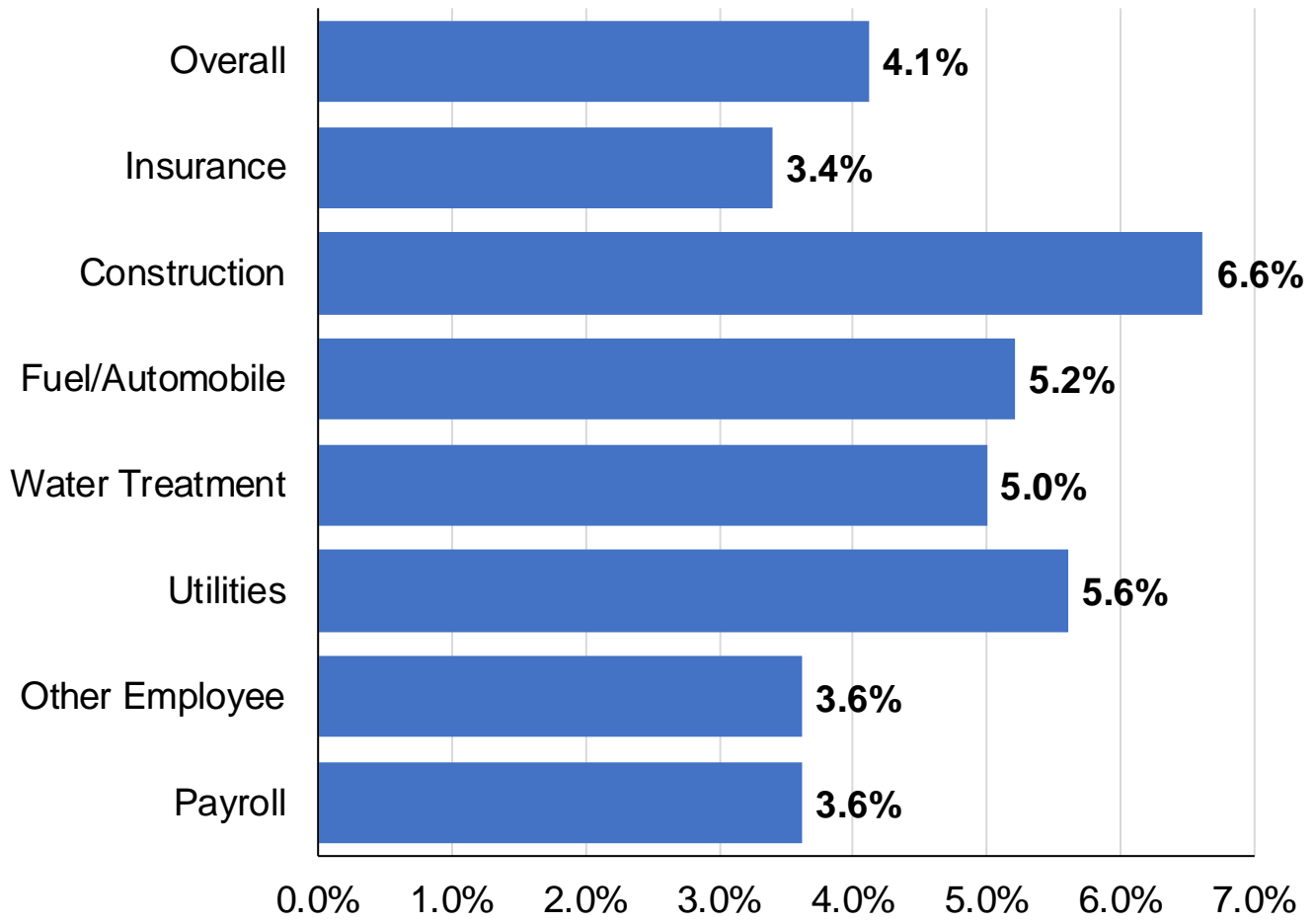
Figure 5. Annual Demand Projections, FY 2024 – FY 2034



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 (CADOFF). 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 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 \$581,000 to \$611,000 annually. Other operating income and non-operating revenue are estimated to provide supplemental revenue of roughly \$14,800 a year; thus, the system’s total revenue for the study period is estimated to be approximately \$595,000 to \$626,000 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	\$248,820	\$248,820	\$248,820	\$248,820	\$248,820
Variable Charges	\$331,837	\$350,842	\$354,643	\$358,444	\$362,245
Rate Revenue Total	\$580,657	\$599,662	\$603,463	\$607,264	\$611,065
Other Operating Revenues	\$8,800	\$8,800	\$8,800	\$8,800	\$8,800
Non-operating Revenues	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Total	\$595,457	\$614,462	\$618,263	\$622,064	\$625,865

Operating and Maintenance (O&M) Expense

The water utility’s operating budget includes \$555,000 in operating expenses for FY 2023. Operating expenses are expected to increase approximately 6.7 percent in FY 2024. By the end of the five year rate setting period, total operating expenses are expected to reach \$653,000. Annual overall inflation for operating expenses for the ten year financial planning period is expected to average around 3.4 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's capital plan details approximately \$5.8 million in water capital expenditures during the 10-year financial planning period. Because funding is not currently available to complete the projects, the District elected to fund 75 percent of planned capital expenditures through customer rates, with the remaining 25 percent funded through grants or differed to future years. RDN averaged annual costs across the 10 year planning horizon so that the District will gradually build cash to fund projects. Planned capital projects include replacing service lines, upgrading computer and software, filter tank upgrades, equipment replacements, and water tank improvements.

Debt Service and Coverage Ratios

The District currently carries no debt but does plan to issue debt during FY 2024. The bond amount is estimated to be \$300,000 to fund the Kroftinaw pump station project. Payments are projected to begin in FY 2025 in the amount of \$15,000 per year for the remainder of 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 should be 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 of District assets. The fund should be 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. Due to high levels of capital spending, the capital fund be drawn down to zero each year to mitigate impacts to customer bills. In years with less capital spending, the District may contribute surplus revenues to the capital fund.

Reserve targets at the end of the 5-year study period reach \$650,000 under the proposed financial plan which include 12 months of operations. The recommended financial plan assumes the District reaches target reserve levels by FY 2033. Building reserves over a 10 year period increases the cash on hand for capital projects in the short term.

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 18.0 percent, 15.0 percent, 12.0 percent, 9.0 percent, and 9.0 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	\$591,962	\$588,040	\$609,878	\$631,889	\$653,244
Capital Expenditures	\$413,433	\$414,138	\$414,138	\$414,138	\$414,138
Other Operating Revenue	(\$8,800)	(\$8,800)	(\$8,800)	(\$8,800)	(\$8,800)
Non-Operating Revenue	(\$6,000)	(\$6,000)	(\$6,000)	(\$6,000)	(\$6,000)
Net Balance From Operations	(\$331,549)	(\$188,235)	(\$106,647)	(\$39,816)	\$36,233
Rate Revenue Requirement	\$659,046	\$813,741	\$917,167	\$1,006,009	\$1,103,413

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, annual PAYGO, debt service, and make appropriate contributions to reserves. The District currently has a cash balance of \$773,000 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%	
Rate Month Implemented								
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028		
Cash Position Opening Balance	\$ 923,303	\$ 773,154	\$ 363,216	\$ (39,098)	\$ (459,450)	\$ (898,011)		
Revenues								
Water Rate Revenue	\$ 507,097	\$ 580,657	\$ 599,662	\$ 603,463	\$ 607,264	\$ 611,065		
Other Operating Revenue	\$ 17,600	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800		
Non-Operating Revenue	\$ 6,078	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000		
Total Revenues	\$ 530,775	\$ 595,457	\$ 614,462	\$ 618,263	\$ 622,064	\$ 625,865		
Operating Expenses								
Operating Expenses	\$ 554,724	\$ 591,962	\$ 588,040	\$ 609,878	\$ 631,889	\$ 653,244		
Current Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Proposed Debt Service	\$ -	\$ -	\$ 14,598	\$ 14,598	\$ 14,598	\$ 14,598		
Total Operating and Debt Service	\$ 554,724	\$ 591,962	\$ 602,638	\$ 624,476	\$ 646,487	\$ 667,842		
Net Revenues	\$ (23,949)	\$ 3,495	\$ 11,824	\$ (6,213)	\$ (24,423)	\$ (41,977)		
Capital Expenditure								
Capital Expenditure	\$ 126,200	\$ 713,433	\$ 414,138	\$ 414,138	\$ 414,138	\$ 414,138		
Debt Proceeds Current	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Debt Proceeds Proposed	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ -		
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Cash	\$ 126,200	\$ 413,433	\$ 414,138	\$ 414,138	\$ 414,138	\$ 414,138		
Net Income	\$ (150,149)	\$ (409,938)	\$ (402,315)	\$ (420,351)	\$ (438,561)	\$ (456,115)		
Ending Balance	\$773,154	\$363,216	(\$39,098)	(\$459,450)	(\$898,011)	(\$1,354,126)		

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

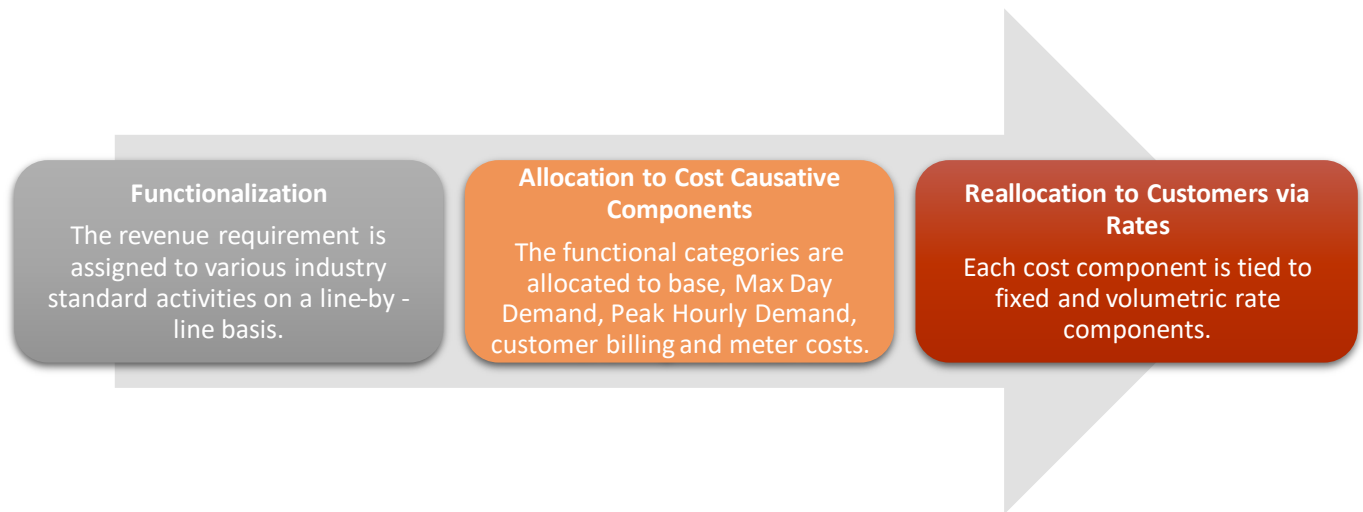
Table 7. Proposed Financial Pro Forma for District Water System, FY 2024 to FY 2028

Rate Increase	18.0%		15.0%		12.0%		9.0%	
Rate Month Implemented	December		July		July		July	
	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028		
Cash Position Opening Balance	\$ 923,303	\$ 773,154	\$ 441,605	\$ 253,370	\$ 146,723	\$ 106,906		
Revenues								
Water Rate Revenue	\$ 507,097	\$ 659,046	\$ 813,741	\$ 917,167	\$ 1,006,009	\$ 1,103,413		
Other Operating Revenue	\$ 17,600	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800	\$ 8,800		
Non-Operating Revenue	\$ 6,078	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000	\$ 6,000		
Total Revenues	\$ 530,775	\$ 673,846	\$ 828,541	\$ 931,967	\$ 1,020,809	\$ 1,118,213		
Operating Expenses								
Operating Expenses	\$ 554,724	\$ 591,962	\$ 588,040	\$ 609,878	\$ 631,889	\$ 653,244		
Current Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Proposed Debt Service	\$ -	\$ -	\$ 14,598	\$ 14,598	\$ 14,598	\$ 14,598		
Total Operating and Debt Service	\$ 554,724	\$ 591,962	\$ 602,638	\$ 624,476	\$ 646,487	\$ 667,842		
Net Revenues	\$ (23,949)	\$ 81,884	\$ 225,903	\$ 307,491	\$ 374,322	\$ 450,371		
Capital Expenditure								
Capital Expenditure	\$ 126,200	\$ 713,433	\$ 414,138	\$ 414,138	\$ 414,138	\$ 414,138		
Debt Proceeds Current	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Debt Proceeds Proposed	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ -		
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Cash	\$ 126,200	\$ 413,433	\$ 414,138	\$ 414,138	\$ 414,138	\$ 414,138		
Net Income	\$ (150,149)	\$ (331,549)	\$ (188,235)	\$ (106,647)	\$ (39,816)	\$ 36,233		
Ending Balance	\$773,154	\$441,605	\$253,370	\$146,723	\$106,906	\$143,139		

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:

- Pumping – costs associated with general pumping and electricity use
- Treatment – costs associated with water treatment and chemicals
- Transmission and Distribution – costs associated with transmitting and distributing water to customers

- Storage - costs associated with water storage
- Meter Services – costs associated with the reading and maintenance of meters
- Customer Service – costs associated with customer service and concerns
- 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	\$591,962	100.0%
Pumping	\$4,500	0.8%
Treatment	\$2,000	0.3%
Transmission and Distribution	\$22,500	3.8%
Storage	\$4,500	0.8%
Meter Services	\$4,500	0.8%
Customer Service	\$2,500	0.4%
Administrative and General	\$551,462	93.2%

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

Non-Operating Expense		
Category	Allocation	Percent
Total CIP	\$5,476,880	100.0%
Pumping	\$320,287	5.8%
Treatment	\$3,500	0.1%
Transmission and Distribution	\$4,203,898	76.8%
Storage	\$199,979	3.7%
Meter Services	\$83,363	1.5%
Public Fire	\$47,250	0.9%
Administrative and General	\$618,603	11.3%

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 Water²) 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 80.4 percent and 19.6 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 53.6 percent, 13.1 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
- Public Fire – the costs of maintaining public fire protection infrastructure
- Customer Service – the costs of administering monthly billing and customer noticing

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 13** show the functionalized costs allocated to the cost causative components.

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

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

O&M Expense									
Category	Total Allocation	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service	Total
Water Supply	\$0	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Pumping	\$4,500	0.0%	53.6%	13.1%	33.3%	0.0%	0.0%	0.0%	100.0%
Treatment	\$2,000	0.0%	80.4%	19.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Transmission and Distribution	\$22,500	0.0%	80.4%	19.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Storage	\$4,500	0.0%	80.4%	19.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Meter Services	\$4,500	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Customer Service	\$2,500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Administrative and General	\$551,462	0.0%	63.9%	15.5%	0.0%	13.2%	0.0%	7.4%	100.0%

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

O&M Expense									
Category	Total Allocation	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service	
Water Supply	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pumping	\$4,500	\$0	\$2,413	\$587	\$1,500	\$0	\$0	\$0	\$0
Treatment	\$2,000	\$0	\$1,608	\$392	\$0	\$0	\$0	\$0	\$0
Transmission and Distribution	\$22,500	\$0	\$18,095	\$4,405	\$0	\$0	\$0	\$0	\$0
Storage	\$4,500	\$0	\$3,619	\$881	\$0	\$0	\$0	\$0	\$0
Meter Services	\$4,500	\$0	\$0	\$0	\$0	\$4,500	\$0	\$0	\$0
Customer Service	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,500
Administrative and General	\$551,462	\$0	\$352,184	\$85,741	\$0	\$72,988	\$0	\$0	\$40,549
Percent of Total		0.0%	63.8%	15.5%	0.3%	13.1%	0.0%	7.3%	

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

Non-Operating Expense									
Category	Total Allocation	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service	Total
Pumping	\$320,287	0.0%	53.6%	13.1%	33.3%	0.0%	0.0%	0.0%	100.0%
Treatment	\$3,500	0.0%	53.6%	13.1%	33.3%	0.0%	0.0%	0.0%	100.0%
Transmission and Distribution	\$4,203,898	0.0%	53.6%	13.1%	33.3%	0.0%	0.0%	0.0%	100.0%
Storage	\$199,979	0.0%	80.4%	19.6%	0.0%	0.0%	0.0%	0.0%	100.0%
Meter Services	\$83,363	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Public Fire	\$47,250	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
Administrative and General	\$618,603	0.0%	53.3%	13.0%	30.9%	1.8%	1.0%	0.0%	100.0%

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

Non-Operating Expense									
Category	Total Allocation	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service	
Pumping	\$320,287	\$0	\$171,719	\$41,806	\$106,762	\$0	\$0	\$0	\$0
Treatment	\$3,500	\$0	\$1,876	\$457	\$1,167	\$0	\$0	\$0	\$0
Transmission and Distribution	\$4,203,898	\$0	\$2,253,879	\$548,720	\$1,401,299	\$0	\$0	\$0	\$0
Storage	\$199,979	\$0	\$160,825	\$39,154	\$0	\$0	\$0	\$0	\$0
Meter Services	\$83,363	\$0	\$0	\$0	\$0	\$83,363	\$0	\$0	\$0
Public Fire	\$47,250	\$0	\$0	\$0	\$0	\$0	\$47,250	\$0	\$0
Administrative and General	\$618,603	\$0	\$329,418	\$80,199	\$191,168	\$11,373	\$53,696	\$0	\$0
Administrative and General		0.0%	53.3%	13.0%	31.0%	1.7%	1.0%	0.0%	

The non-operating expenses are made up of planned capital expenditures. Those costs are distributed to the cost components based on the final percentages shown in Table 12, above. Operating allocations are based on the actual projected test year expense and the total for each cost component reflect the percentages in Table 10. 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	Public Fire	Customer Service
O&M Revenue Requirements	\$591,962	\$0	\$377,919	\$92,007	\$1,500	\$77,488	\$0	\$43,049
Non-Operating Revenue Requirements	\$413,433	\$0	\$220,250	\$53,621	\$128,358	\$7,151	\$4,053	\$0
Total	\$1,005,395	\$0	\$598,169	\$145,628	\$129,858	\$84,639	\$4,053	\$43,049
Percent of Total		0.0%	59.5%	14.5%	12.9%	8.4%	0.4%	4.3%
Other Operating Revenue	(\$8,800)	\$0	(\$5,236)	(\$1,275)	(\$1,137)	(\$741)	(\$35)	(\$377)
Non-Operating Revenue	(\$6,000)	\$0	(\$3,570)	(\$869)	(\$775)	(\$505)	(\$24)	(\$257)
Net Balance From Operations	(\$331,549)	\$0	(\$197,258)	(\$48,024)	(\$42,823)	(\$27,911)	(\$1,337)	(\$14,196)
Rate Revenue Requirement	\$659,046	\$0	\$392,105	\$95,460	\$85,123	\$55,482	\$2,657	\$28,219

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 gallons. 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 (August) and divides that by the number of days in the month (31). 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

Unit	Count of Units
Customers	270
EMs	270
Water Use	3,687,082
Max Month	385,874
Average Day	10,129
Max Day	12,595
Peak Hourly	18,893

Table 16 shows the total cost allocation by cost component divided by the corresponding unit values to develop a unit cost for each. Public Fire costs are divided by the total number of bills per year.

Table 16. Rate Revenue Requirements Divided by the Corresponding Units

	Total	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service
Rate Revenue Requirement	\$659,046	\$0	\$392,105	\$95,460	\$85,123	\$55,482	\$2,657	\$28,219
Units		3,687,082	3,687,082	12,595	18,893	270	3,240	270
Unit Cost		\$0.00	\$0.11	\$7.58	\$4.51	\$205.49	\$0.82	\$104.51

Allocation to Customer Classes (Residential and Commercial)

The District maintains two distinct customer classes, Residential and commercial (Timber Cove Inn) 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	Public Fire	Customer Service
Residential	2,365,022	2,365,022	8,013	12,019	269	211,947	269
Timber Cove Inn	1,322,060	1,322,060	4,583	6,874	1	112,716	1
Total	3,687,082	3,687,082	12,595	18,893	270	324,663	270

Table 18. Unit Costs Multiplied by Customer Class Units

Customer Class	Total	Source of Supply	Base	MDD	PHD	Meters	Public Fire	Customer Service
Residential	\$452,427	\$0	\$251,510	\$60,728	\$54,152	\$55,276	\$2,647	\$28,114
Timber Cove Inn	\$206,619	\$0	\$140,595	\$34,732	\$30,971	\$205	\$10	\$105
Total	\$659,046	\$0	\$392,105	\$95,460	\$85,123	\$55,482	\$2,657	\$28,219

5 RATE DESIGN

RDN proposes the following adjustments to customer water rate structures:

- Make annual revenue (rate) adjustments of 18 percent, 15 percent, 12 percent, 9 percent, and 9 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
- Increase the proportion of revenue generated through the monthly fixed charge to enhance District revenue stability

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, 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 gallon.

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

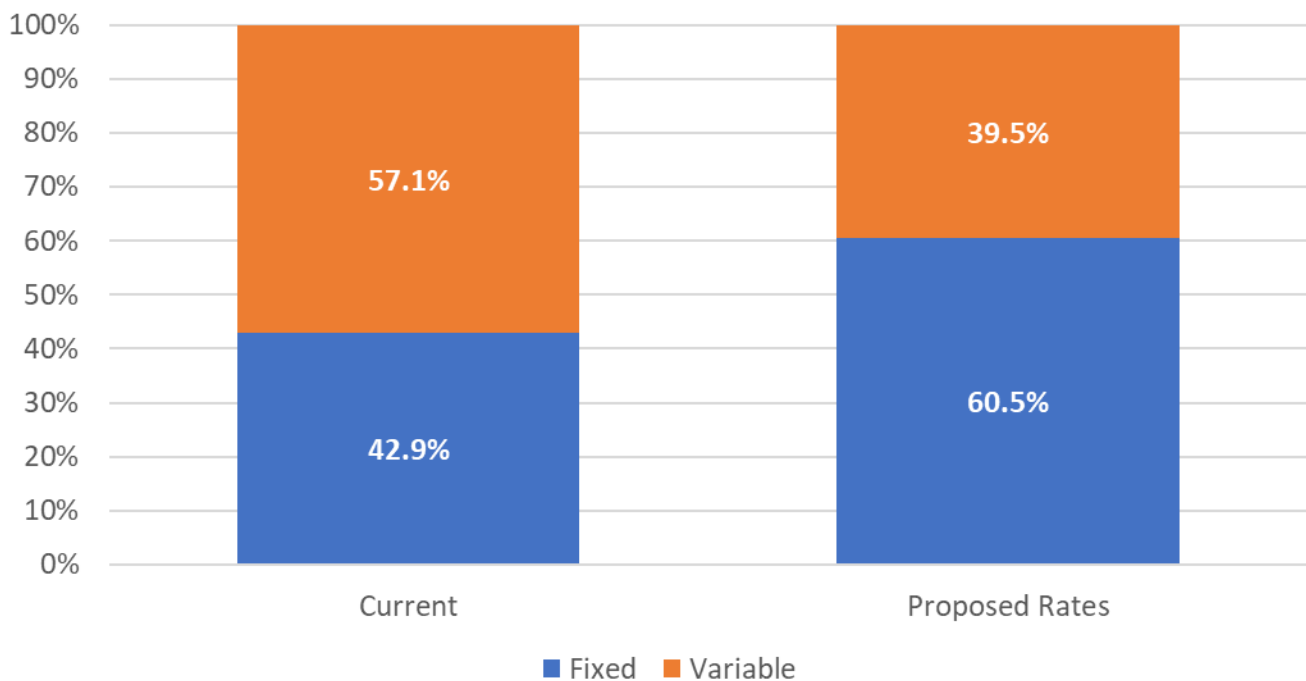
A percentage of base costs and all meter, customer service, and public fire costs are allocated to the fixed charge. Base costs (approximately 92 percent) are included in the fixed charge for both Residential and Timber Cove Inn customers to increase the share of rate revenue generated from fixed charges. Volumetric rates are designed based on variable costs such as treatment, base and peak delivery costs. **Table 19** and **Figure 8** show the total test year revenue requirements allocated to fixed and variable rates based on the District's customer class

categories and the percent of total rate revenue generated through the fixed and variable charges, respectively.

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			
Base	\$251,510	\$230,308	\$21,202
MDD	\$60,728	\$0	\$60,728
PHD	\$54,152	\$0	\$54,152
Meters	\$55,276	\$55,276	\$0
Public Fire	\$2,647	\$2,647	\$0
Customer Service	\$28,114	\$28,114	\$0
Total	\$452,427	\$316,345	\$136,082
Timber Cove Inn			
Base	\$140,595	\$129,779	\$10,816
MDD	\$34,732	\$0	\$34,732
PHD	\$30,971	\$0	\$30,971
Meters	\$205	\$205	\$0
Public Fire	\$10	\$10	\$0
Customer Service	\$105	\$105	\$0
Total	\$206,619	\$130,099	\$76,520

Figure 8. Fixed and Variable Share of Rate Revenue under Current and Proposed Rates



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 (Gallons)	Cost per Unit
Residential	\$136,082	2,365,022	\$0.0575
Timber Cove Inn	\$76,520	1,322,060	\$0.0579

To calculate the monthly fixed charge, fixed component costs are divided by the number of customers within each customer class then divided by 12 to determine the monthly charge. Customer Service costs are divided by the total number of bills per year. **Table 21** shows the fixed rate calculation by customer class.

Table 21. Fixed Rate Calculation by Customer Class

Cost Category	Fixed Costs	Fixed Units	Monthly Fixed Charge
Residential			
Base	\$230,308 ÷	269 ÷ 12	\$71.35
MDD	\$0 ÷	269 ÷ 12	\$0.00
PHD	\$0 ÷	269 ÷ 12	\$0.00
Meters	\$55,276 ÷	269 ÷ 12	\$17.12
Public Fire	\$2,647 ÷	269 ÷ 12	\$0.82
Customer Service	\$28,114 ÷	3,228	\$8.71
Total	\$316,345		\$98.00
Timber Cove Inn			
Base	\$129,779 ÷	1 ÷ 12	\$10,814.95
MDD	\$0 ÷	1 ÷ 12	\$0.00
PHD	\$0 ÷	1 ÷ 12	\$0.00
Meters	\$205 ÷	1 ÷ 12	\$17.12
Public Fire	\$10 ÷	1 ÷ 12	\$0.82
Customer Service	\$105 ÷	12	\$8.71
Total	\$130,099		\$10,841.60

Table 22 shows the proposed fixed and variable rates under the revenue adjustment schedule.

Table 22. Proposed Rates Under Revenue Adjustment Schedule

Customer Class	Meter Size	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Fixed Charges						
Residential	All Meters	\$98.00	\$112.70	\$126.22	\$137.58	\$149.97
Timber Cove Inn	All Meters	\$10,841.60	\$12,467.84	\$13,963.98	\$15,220.74	\$16,590.61
Variable Charges						
Residential	All Meters	\$0.0575	\$0.0661	\$0.0740	\$0.0807	\$0.0880
Timber Cove Inn	All Meters	\$0.0579	\$0.0666	\$0.0746	\$0.0813	\$0.0886

6 CONCLUSION

Recommendations:

- Make annual revenue (rate) adjustments of 18 percent, 15 percent, 12 percent, 9 percent, and 9 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
- Increase the proportion of revenue generated through the monthly fixed charge to enhance District revenue stability

Water Rate Impacts:

Because of the proposed changes to the rate structure, customers will have slightly different impacts based on their water use. **Figure 9** shows the potential impacts of rate changes in the test year for Residential customers at different use levels. Residential Customers who use 1,000 gallons in a month will see their bill increase by \$0.50. A residence that uses 2,000 gallons of water in a month will have a bill of \$213.00, an overall decrease of \$32.00 a month. Due to the changes in the water rate structure, customers who use more water will see a greater reduction in their total bill than customers who use less water. The Timber Cove Inn monthly bill, assuming usage of 110,172 gallons, would increase from \$13,165 to \$17,220 in FY 2024. Similar to Residential customers, the Timber Cove Inn will see a smaller increase in their bill with increased water usage. **Figure 10** shows the change in average monthly bill between the current rates and the FY 2024 proposed rates for the Timber Cove Inn.

Figure 9. Residential Water Bill Under Various Use Levels

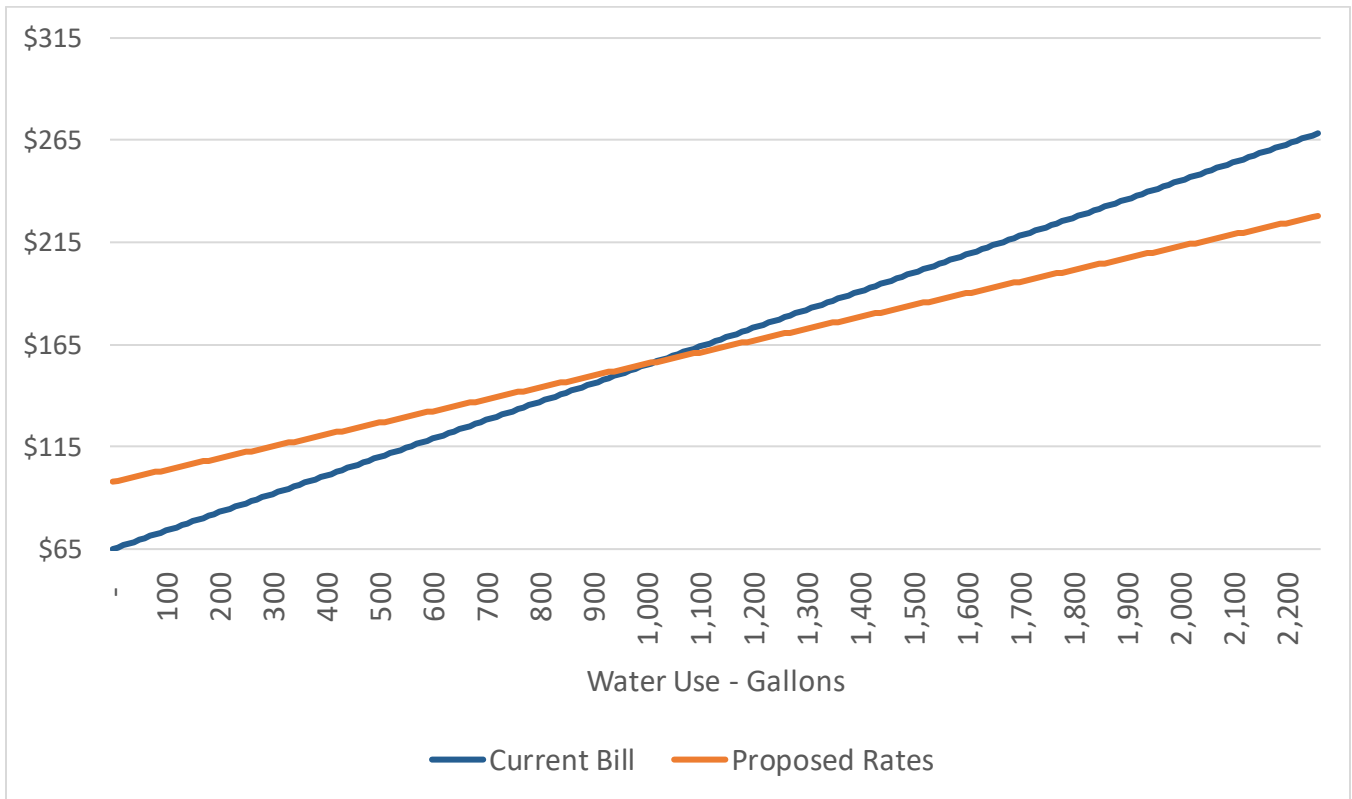


Figure 10. Timber Cove Inn Average Monthly Bills under Current Rates and Proposed FY 2024 Rates

