



2023 Financial Planning, Revenue Requirements, and Rate Setting Analysis

Presented by: California Rural Water Association

In Collaboration With:

Robert D. Niehaus, Inc.



**CHESTER PUBLIC UTILITIES DISTRICT
FINANCIAL PLANNING, REVENUE REQUIREMENTS,
AND RATE SETTING ANALYSIS**

FINAL REPORT

Prepared for:

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RDN Project Number 322.05

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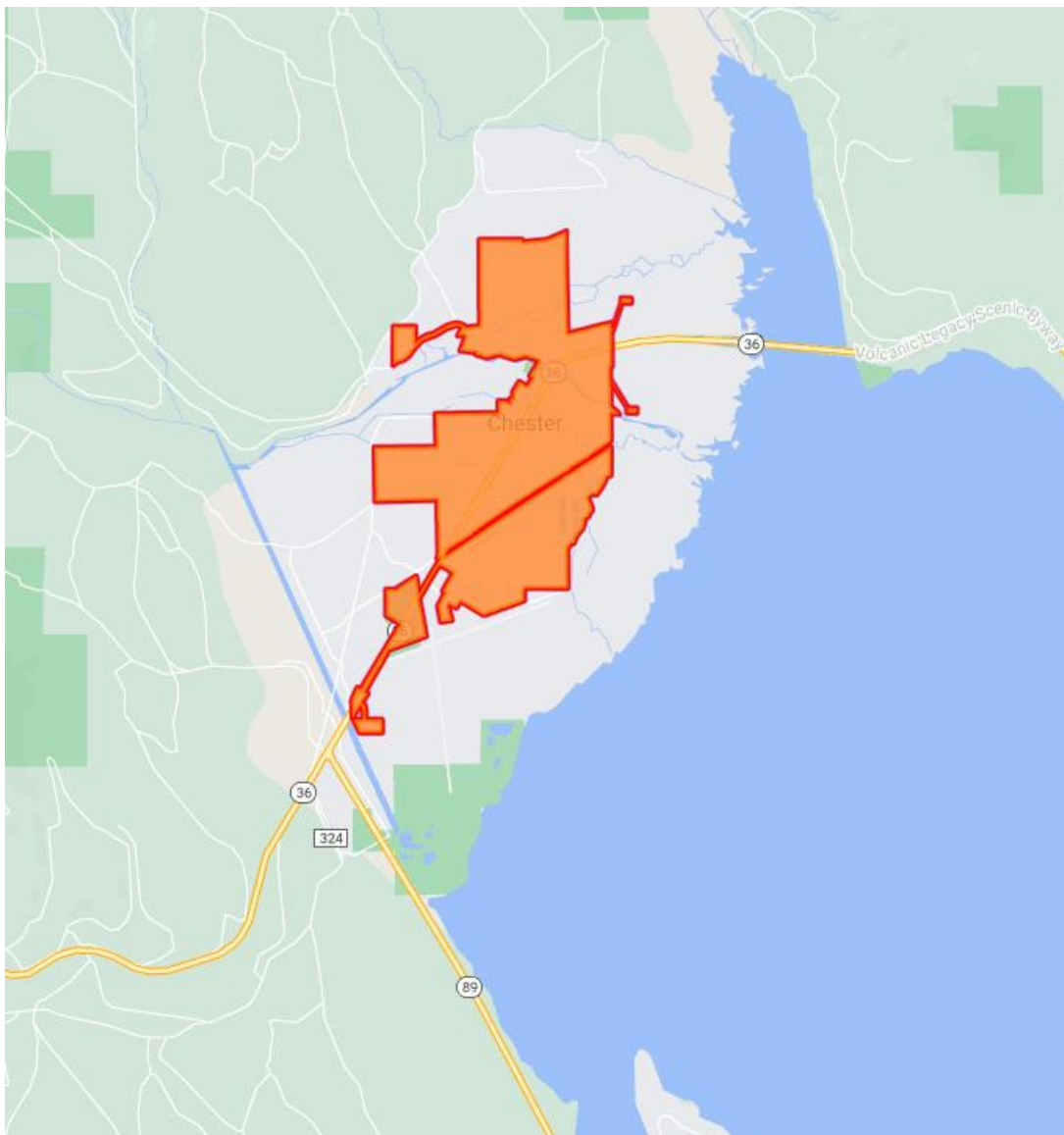
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EXECUTIVE SUMMARY

Background

The Chester Public Utilities District (CPUD) is located in the census designated place of Chester in Northern California's Plumas County. Located on the northwest corner of Lake Almanor, Chester serves as the retail center for the region with tourism being the primary driver of the local economy. The District owns and operates the water and wastewater distribution system that serves a population of approximately 2,000 residents. The District sources all drinking water through four groundwater wells and treats wastewater using percolation ponds. **Figure 1** displays the District's service area outlined in red and shaded in orange.

Figure 1. Chester Public Utilities 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 July 2022, the California Rural Water Association (CRWA) retained Robert D. Niehaus, Incorporated (RDN) to develop a comprehensive water and sewer rate study (Study) for the Chester Public Utilities 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

Water System

Recommendations:

- Build specific reserve funds by making annual contributions from revenue generated from rates
- Update meter ratios to capture the cost of service requirements for each meter size
- Establish a Standby Fee to recover costs associated with providing the most basic services

Current Rates

Currently, District water customers pay a monthly fixed charge based on each customer's meter size which includes 6,000 gallons of water use. In addition, customers pay variable charges based on water use beyond the meter allocation. Customers usage is billed \$0.90 per thousand gallons (tGal) of water use over 6,000. The current rates as described are displayed in **Table 1**.

Table 1. Current Water Rates

Meter Size	Fixed Charge
5/8-in	\$27.17
3/4-in	\$28.49
1-in	\$30.56
1 1/2-in	\$36.69
2-in	\$48.85
3-in	\$88.34
4-in	\$152.41
6-in	\$165.79
8-in	\$440.99

All Customers	Width (Tgal)	Variable Charge
Tier 1	6.0	\$0.00
Tier 2	6.0+	\$0.90

Proposed Rates

In collaboration with the District’s staff, RDN determined that the necessary revenue adjustments for the water system during the five-year study period. **Table 2** shows the proposed revenue adjustments and resulting cumulative rate increases. **Table 3** shows the proposed rate schedules for the five years of the study period. Meter ratios reflect American Water Works Association (AWWA) standards with 3/4” meter serving as the base meter. Most customers are serviced through this meter size. Capacity differences between 5/8” and 3/4” meters and actual use pattern differences were determined to be marginal; thus, both will pay the same fixed charge under the proposed rates.

Table 2. Proposed Revenue Adjustments FY 2023-24 to FY 2027-28

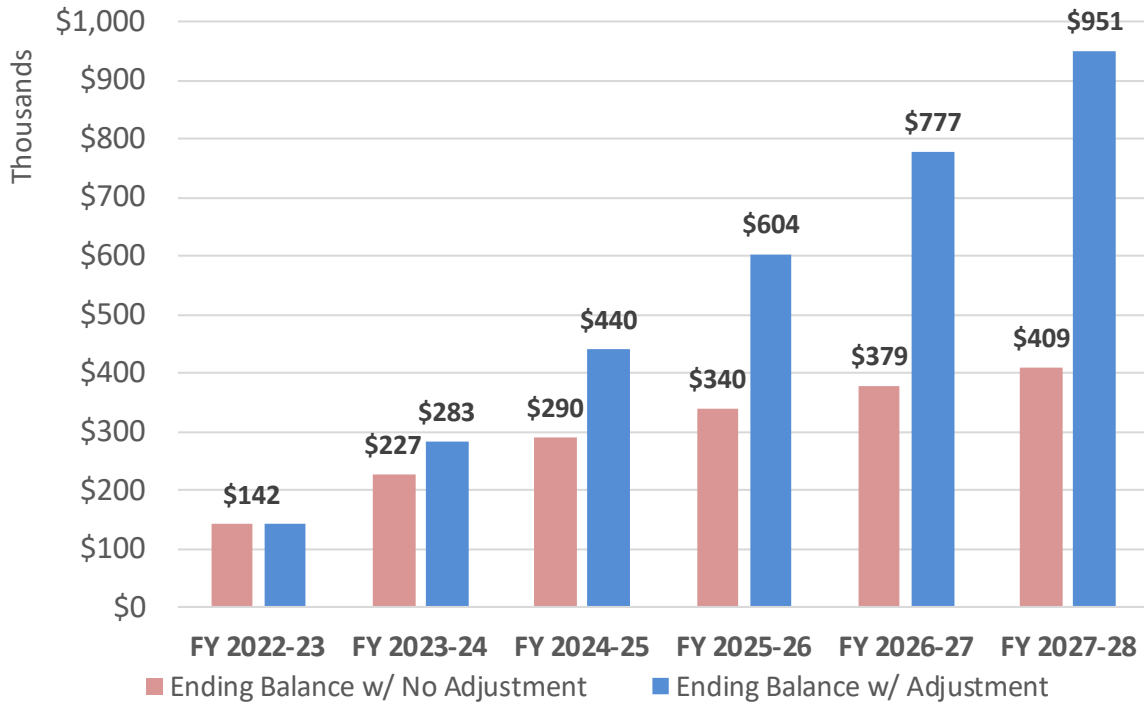
Proposed Adjustment	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Revenue Adjustment	10.0%	6.0%	3.0%	3.0%	1.0%
Cumulative Rate Increase	110.0%	116.6%	120.1%	123.7%	124.9%

Table 3. Proposed Rate schedules, FY 2023-24 to FY 2027-28

Fixed Charge	FY 2022-23 (Current)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
5/8-in	\$27.17	\$27.49	\$29.14	\$30.01	\$30.91	\$31.22
3/4-in	\$28.49	\$27.49	\$29.14	\$30.01	\$30.91	\$31.22
1-in	\$30.56	\$39.20	\$41.55	\$42.80	\$44.09	\$44.53
1 1/2-in	\$36.69	\$68.48	\$72.59	\$74.77	\$77.01	\$77.78
2-in	\$48.85	\$103.62	\$109.83	\$113.13	\$116.52	\$117.69
3-in	\$88.34	\$185.60	\$196.74	\$202.64	\$208.72	\$210.80
4-in	\$152.41	\$302.72	\$320.88	\$330.51	\$340.42	\$343.83
6-in	\$165.79	\$595.51	\$631.24	\$650.18	\$669.69	\$676.38
Variable Charge	FY 2022-23 (Current)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Residential						
Tier 1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tier 2	\$0.90	\$0.95	\$1.00	\$1.03	\$1.06	\$1.07
Commercial						
Tier 1	\$0.00	\$0.55	\$0.59	\$0.61	\$0.62	\$0.63
Tier 2	\$0.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Figure 2 shows the water fund balances under the proposed financial plan through the study period.

Figure 2. District Water Fund Balance under the Proposed Financial Plan



Sewer System

Recommendations:

- Build specific reserve funds by making annual contributions from revenue generated from rates
- Maintain current Sewer rates as current rates generate sufficient revenue

Current Rates

Currently, District sewer customers pay a monthly fixed charge of \$38.05 regardless of customer class. Commercial customers pay variable charges based on water use if they exceed the flow allocation, 32,900 gallons. Commercial customers pay \$1.16 per tGal for use above their allotment. The current rates as described are displayed in **Table 4**.

Table 4. Current Sewer Rates

Customer Class	Fixed Charge
Residential	\$38.05
Commercial	\$38.05

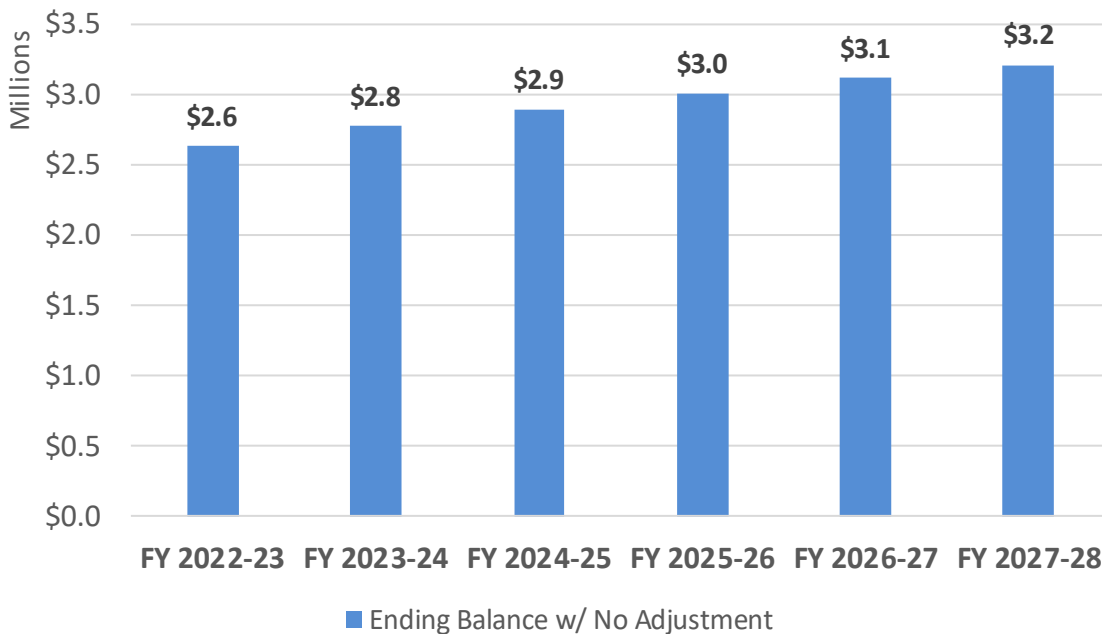
Commercial Customers	Width (Tgal)	Variable Charge
Tier 1	32.8	\$0.00
Tier 2	32.9+	\$1.16

Proposed Rates

In collaboration with the District’s staff, RDN determined that no revenue adjustments were necessary for the sewer system during the five-year study period. The District’s current sewer rates generate revenue sufficient to fund operating costs and build healthy reserve levels. While the District should eventually assess the sewer rates for their cost basis and Proposition 218 compliance, the current rates capture some differences between customer types.

Figure 3 shows the sewer fund balances under the proposed financial plan through the study period.

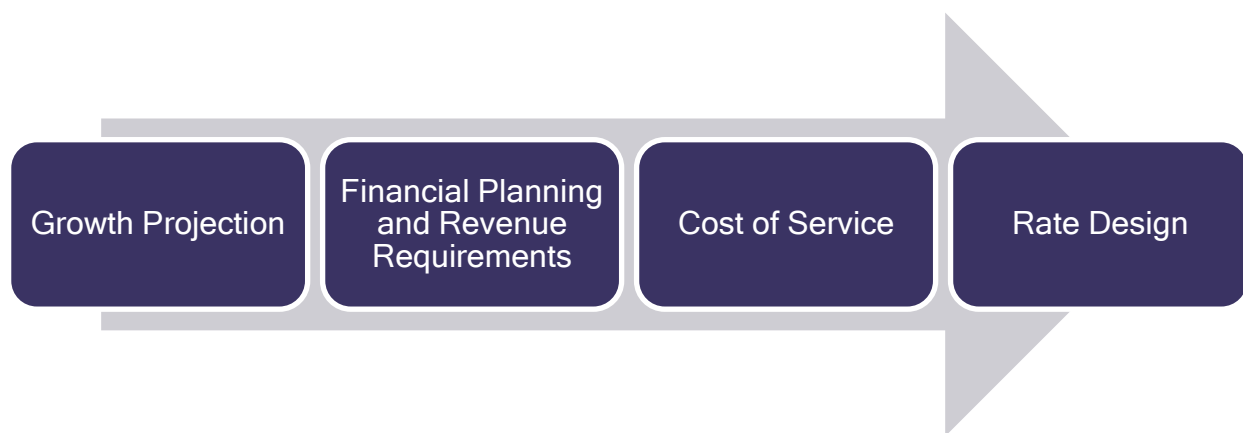
Figure 3. District Sewer Fund Balance under the Proposed Financial Plan



GENERAL METHODOLOGY

RDN's water rate-making practices incorporate methods described in the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges Manual of Water Supply Practices Manual 1 (M1). This study uses the Base-Extra Capacity Method built on cost of service principles, in which the costs are distributed to customers commensurate with their service requirements. The Sewer cost of service analysis and rates are consistent with the guidelines detailed in the Water Environment Federation (WEF) Manual of Practice No. 27 Financing and Charges for Wastewater Systems (MOP #27). **Figure 4** presents the steps taken to develop the District's proposed rates.

Figure 4. Rate Study Process



- **Growth Projection:** project customer growth for the five-year study period, FY 2023-24 through FY 2027-28, 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 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.

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 recover the cost of providing service and fairly apportion costs to each customer as required by Proposition 218.

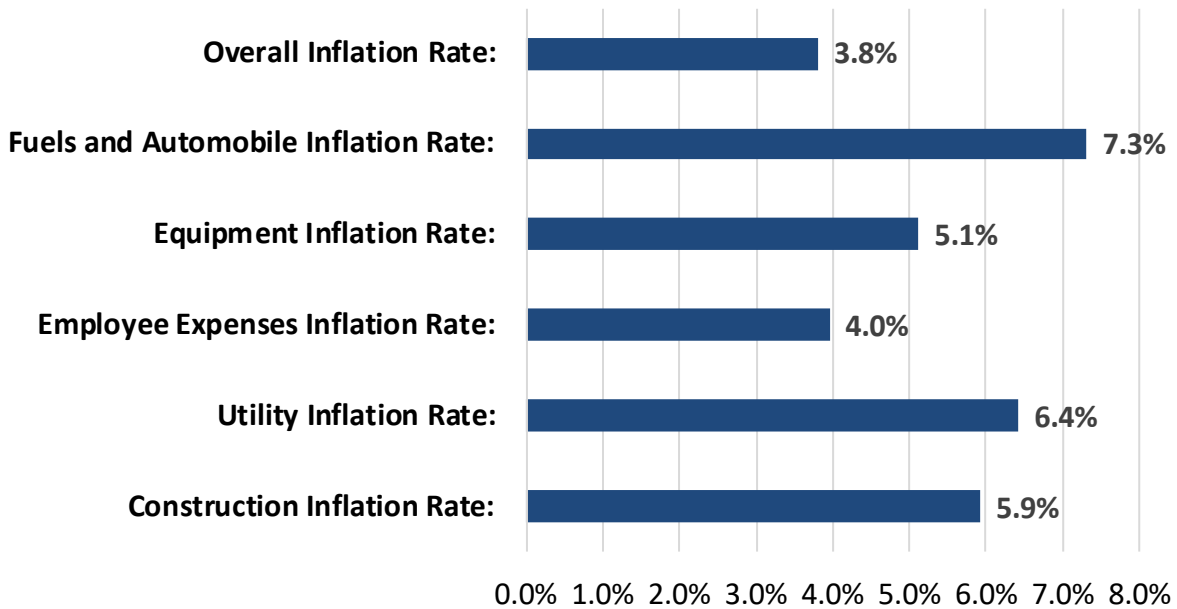
Key Assumptions

A test year, FY 2023-24, 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.

Escalation Factors

Escalation Factors were calculated for six independent variables using historical Consumer Price Index (CPI) data from West Class B/C cities between 2000 and the most current calendar year, 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 5** displays the projected escalation factors for the study period. Due to local contingencies, the Fuels and Automobiles Inflation Rate is expected to rise at the highest rate, representing a 7.3 percent increase in the test year. The Overall Inflation Rate, which includes supplies, legal expenses, and professional services, is expected to rise 3.8 percent per year during the study period. Expenses that are not expected to increase during the study period were not escalated as those costs are fixed.

Figure 5. Escalation Factors



Meter Ratios

In order to calculate the ratio of customer capacity on the system RDN used industry standard meter capacity ratios provided by the M1. **Table 5** shows the ratios used to allocated meter costs to each customer in this study.

Table 5. AWWA Meter Ratios

Meter Size	Meter Ratio
5/8-in	1.00
3/4-in	1.00
1-in	1.67
1 1/2-in	3.33
2-in	5.33
3-in	10.00
4-in	16.67
6-in	33.33

Customer Growth

All analyses performed during the study were based on an assumption of customer account growth. Historical billing records were used to project customer baseline growth for both the water and sewer enterprises. Growth projections for this study reflect the current number of billed customers (as of August 2022) with an annual increase of about 0.5 percent based on trends extrapolated from the historical data. Customer counts differ between the water and sewer enterprises as some customers rely on septic tanks for sewage disposal. **Figure 6** and **Figure 7** show the projected customer growth by meter size for the financial planning period for the water and sewer enterprises, respectively.

Figure 6. Projected Water Customer Growth, FY 2022-23 to FY 2032-33

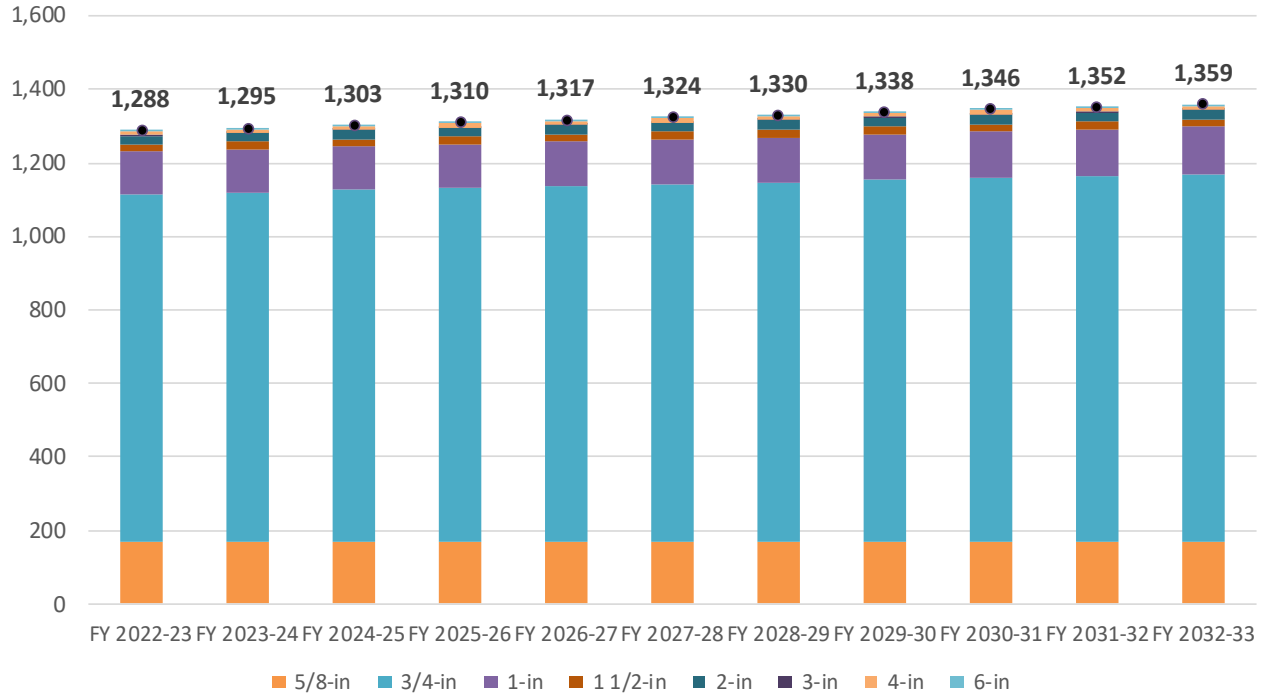
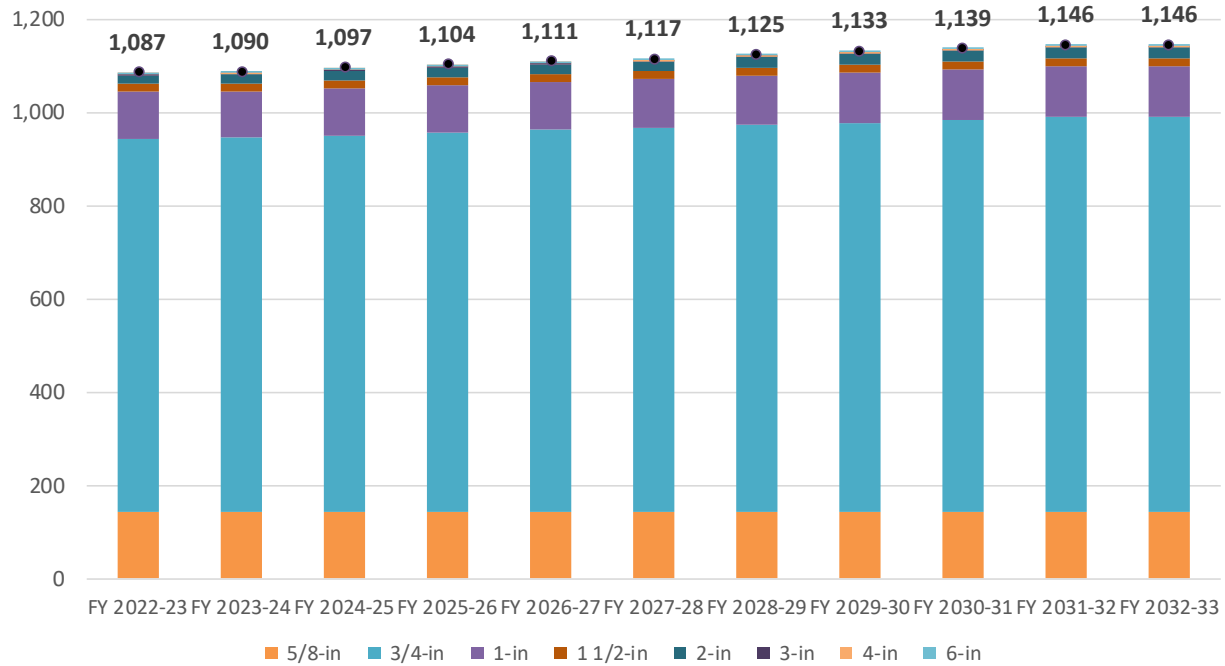


Figure 7. Projected Sewer Customer Growth, FY 2022-23 to FY 2032-33



FINANCIAL PLANNING

Water Enterprise

Revenues

Based on the customer growth and water demand projected through the study period, rate revenues under the current rates were calculated for each year of the study. Additionally, non-rate revenues were estimated based on historical values and District input. With no rate increases, the District is expected to collect between \$561,000 and \$577,000 per year in operating revenue. Additional non-operating revenues total approximately \$75,000 a year from property taxes which will be used to offset future revenue requirements.

Operating and Maintenance Expense

This District's FY 2021-22 Budget anticipated approximately \$479,000 in expenses which were classified as O&M expense. Based on the sum of all O&M expense line items, the overall inflation rate for FY 2023-24 is 4.8 percent, which is consistent with the District's budget projections. For the rest of the study period, annual inflation is projected to be approximately 3.9 percent per year. Total O&M expenses will reach \$629,000 by FY 2027-28.

Capital Expenses

The Districts current capital plan includes approximately \$20 million of expected improvements over the study period. The planned improvements are anticipated to be fully funded by Clean Water State Revolving Fund (CWSRF) grants and therefore are not included in the analysis. No other planned projects will be funded with customer rates.

Target Reserves

The District currently has no reserve policy, but does have a small cash reserve on hand. At the time of writing, the water fund balance is approximately \$38,000. Optimally, the District should have a detailed reserve plan which separates different funds based on their proposed uses. For example, similar sized utilities will often have an operating fund which totals six months of operating expenses, approximately \$271,000 in FY 2023-24 for the Chester Public Utilities District, that can be used in times of revenue shortfall. Additionally, the District identified a need to maintain reserves which are set aside in case of a natural disaster such as wildfires, mudslides, and flooding. The optimal fund balance for the Disaster Recovery Reserve Fund is one year of operating expenses, which totals approximately \$543,000 in FY 2023-24. The

proposed financial plan assumes annual contributions to reserves which achieve the desired balance by the end of the study period.

Debt Funding

The District currently pays \$9,800 per year in debt service payments on an equipment purchase loan. The loan is scheduled to be fully paid by the end of FY 2026-27. The current financial plan maintains debt service coverage ratios well above the industry standard of 1.20 through the duration. No additional loans are planned at this time.

Revenue Requirements

Revenue requirements were developed based on the financial plan outlined above. Revenue requirements include CIP expense and all O&M expenses. The total expense of each year is offset by other operating revenues and non-operating revenues to compute the pure portion of revenue requirements, which need to be collected from water rates. The negative net balance indicates that cash reserves are used to supplement the shortfall for the year and positive net balance indicates that the amount is contributed to the cash reserves. The revenue requirement of \$616,225 for the test year was used to compute cost distribution among distinctive cost components and then allocated to customers equitably in the COS analysis.

Recommended Financial Plan

Based on the revenue requirements outlined in the proposed financial plan, annual revenue adjustments of 10.0 percent in the test year, 6.0 percent the second year, 3.0 percent in the third and fourth year, and 1.0 percent in the fifth year are proposed for the study period. Under this plan a total of \$808,000 will be contributed to water fund balances; additionally, the District will be able to sufficiently cover their operating expenses. **Table 6** shows the proposed financial plan and ending reserve balances for the study period.

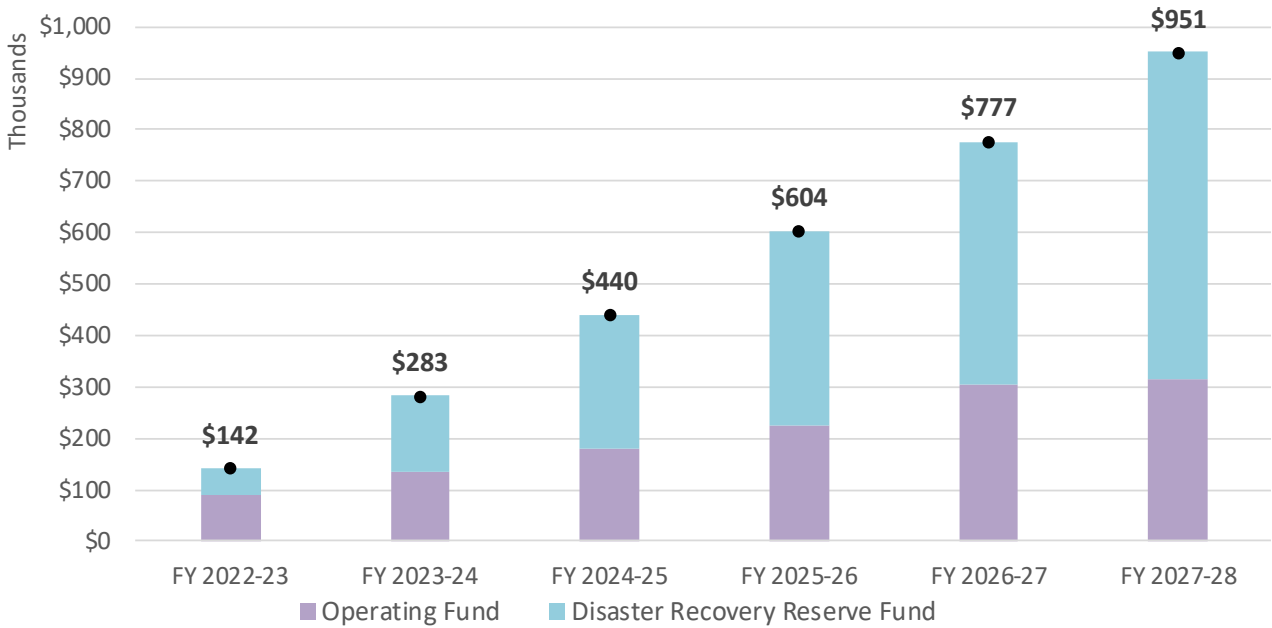
Table 6. Study Period Financial Plan, FY 2023-24 to FY 2027-28

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Test Year					
Revenue Adjustment					
Revenue under Current Rates	\$560,204	\$563,654	\$566,737	\$569,829	\$572,912
Year 1 - 10 %	\$56,020	\$56,365	\$56,674	\$56,983	\$57,291
Year 2 - 6 %		\$0	\$37,201	\$37,405	\$37,609
Year 3 - 3 %			\$0	\$19,824	\$19,933
Year 4 - 3 %				\$0	\$20,531
Year 5 - 1 %					\$0
Total Adjustments	\$56,020	\$93,567	\$113,903	\$135,055	\$142,873
Other Revenue Sources					
Other Operating Revenues	\$4,250	\$4,250	\$4,250	\$4,250	\$4,250
Non-operating Revenues	\$73,529	\$75,753	\$78,048	\$80,418	\$82,864
Total Other Revenue Sources	\$77,779	\$80,003	\$82,298	\$84,668	\$87,114
Total Revenue	\$694,004	\$737,223	\$762,938	\$789,552	\$802,899
O&M Expenses	(\$543,899)	(\$570,114)	(\$589,235)	(\$608,955)	(\$629,430)
Debt Service	(\$9,805)	(\$9,805)	(\$9,805)	(\$7,403)	\$0
Capital PAYGO	\$0	\$0	\$0	\$0	\$0
Total Expense	(\$553,703)	(\$579,918)	(\$599,039)	(\$616,358)	(\$629,430)
Net Operating Cash Flow	\$140,301	\$157,305	\$163,898	\$173,194	\$173,469
Beginning Balance	\$142,378	\$282,679	\$439,984	\$603,882	\$777,076
Ending Balance	\$282,679	\$439,984	\$603,882	\$777,076	\$950,545

Proposed Reserve Balances

Figure 8 shows the water fund balances under the proposed financial plans through the study period.

Figure 8. Water Reserve Fund Balances under the Proposed Financial Plan



Sewer Enterprise

Revenues

Based on the customer growth and water demand projected through the study period, rate revenues under the current rates were calculated for each year of the study. Additionally, non-rate revenues were estimated based on historical values and District input. With no rate increases, the District is expected to collect between \$525,000 and \$537,000 per year in operating revenue. Additional non-operating revenues total approximately \$65,000 a year from property taxes and will be used to offset future revenue requirements.

Operating and Maintenance Expense

This District's FY 2021-22 Budget anticipated approximately \$391,000 in expenses which were classified as O&M expense. Based on the sum of all O&M expense line items, the overall inflation rate for FY 2023-24 is 4.4 percent, which is consistent with the District's budget projections. For the rest of the study period, annual inflation is projected to be approximately 3.7 percent per year. Total O&M expenses will reach \$508,000 by FY 2027-28.

Capital Expenses

The District's sewer utility currently has no projects funded with customer rates planned during the study period.

Target Reserves

The District currently has no reserve policy, but does have a substantial cash reserve on hand. At the time of writing, the sewer fund balance is approximately \$2.4 million. Based on the District's projected expenses, the current reserve balance is sufficient and should be maintained through the study period. The District identified a need to maintain reserves which are set aside in case of a natural disaster such as wildfires, mudslides, and flooding. The optimal fund balance for the Disaster Recovery Reserve Fund is one year of operating expenses, which totals approximately \$440,000 in FY 2023-24. The proposed financial plan assumes annual contributions to reserves which achieve the desired balance by the end of the study period.

Debt Funding

The District currently pays \$9,800 per year in debt service payments on an equipment purchase loan. The loan is scheduled to be fully paid by the end of FY 2026-27. The current financial plan maintains debt service coverage ratios well above the industry standard of 1.20 through the duration. No additional loans are planned at this time.

Revenue Requirements

Revenue requirements were developed based on the financial outlined above. Revenue requirements include CIP expense and all O&M expenses. The total expense of each year is offset by other operating revenues and non-operating revenues to compute the pure portion of revenue requirements, which need to be collected from water rates. The negative net balance indicates that cash reserves are used to supplement the shortfall for the year and positive net balance indicates that the amount is contributed to the cash reserves. The revenue requirement of \$524,866 for the test year was used to compute cost distribution among distinctive cost components and then allocated to customers equitably in the COS analysis.

Recommended Financial Plan

Based on the revenue requirements outlined in the proposed financial plan, no revenue adjustments are required during the study period. Under the current rates a total of \$581,000 will be contributed to fund balances; additionally, the District will be able to sufficiently cover their operating expenses. **Table 7** shows the proposed financial plan and ending reserve balances for the study period.

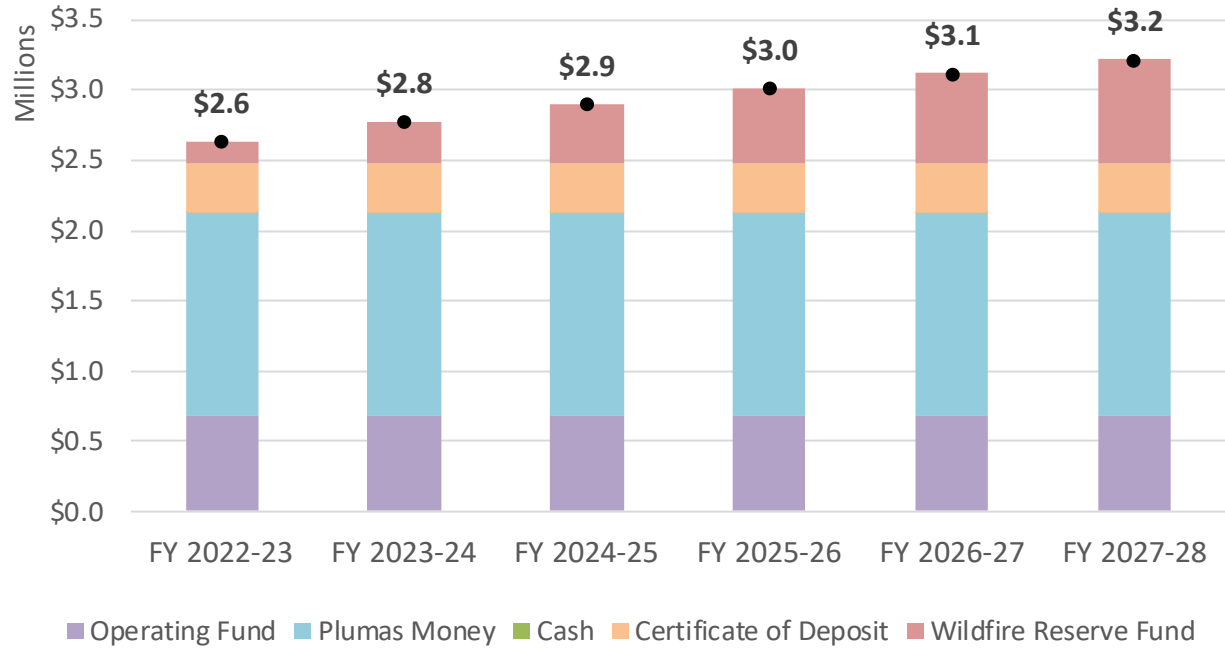
Table 7. Study Period Financial Plan, FY 2023-24 to FY 2027-28

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Test Year					
Revenue Adjustment					
Revenue under Current Rates	\$524,866	\$528,274	\$531,470	\$534,879	\$537,618
Year 1 - 9 %	\$0	\$0	\$0	\$0	\$0
Year 2 - 5 %		\$0	\$0	\$0	\$0
Year 3 - 4 %			\$0	\$0	\$0
Year 4 - 3 %				\$0	\$0
Year 5 - 3 %					\$0
Total Adjustments	\$0	\$0	\$0	\$0	\$0
Other Revenue Sources					
Other Operating Revenues	\$0	\$0	\$0	\$0	\$0
Non-operating Revenues	\$65,175	\$66,274	\$67,394	\$68,535	\$69,696
Total Other Revenue Sources	\$65,175	\$66,274	\$67,394	\$68,535	\$69,696
Total Revenue	\$590,040	\$594,549	\$598,865	\$603,413	\$607,314
O&M Expenses	(\$440,111)	(\$459,560)	(\$475,357)	(\$491,953)	(\$508,904)
Debt Service	(\$9,805)	(\$9,805)	(\$9,805)	(\$7,403)	\$0
Capital PAYGO	\$0	\$0	\$0	\$0	\$0
Total Expense	(\$449,915)	(\$469,364)	(\$485,162)	(\$499,356)	(\$508,904)
Net Operating Cash Flow	\$140,125	\$125,184	\$113,703	\$104,057	\$98,410
Beginning Balance	\$2,637,908	\$2,778,033	\$2,903,217	\$3,016,920	\$3,120,977
Ending Balance	\$2,778,033	\$2,903,217	\$3,016,920	\$3,120,977	\$3,219,387

Proposed Reserve Balances

Figure 9 shows the water fund balances under the proposed financial plans through the study period.

Figure 9. Sewer Reserve Fund Balances under the Proposed Financial Plan



COST OF SERVICE

Water

Methodology

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.

Cost Components

Operating costs are functionalized based on input from District staff with expertise on the system and utility industry knowledge. Total system asset value was utilized in the analysis to distribute the necessary costs to repair/rehabilitate system assets. 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 energy use
- Transmission and Distribution - costs associated with transmitting and distributing water to customers
- Customer Accounts - costs associated with billing and customer services
- Administrative and General - costs associated with administrative and general functions
- Fire - costs associated with water service for fire protection provided to property and structures

COS Allocation

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) to compute a PHD factor. requirements were distributed to the base, MDD, and PHD cost components for 28.7%, 38.0%, and 33.3%, respectively. The number of bills in one year (the number of accounts multiplied by 12) serves as the basis for distributing accordingly. The costs associated with the functions which require extra capacity service 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 measure meter related service costs.

The cost causative components therefore include:

- 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
- Customer Service - billing and other customer service-related costs
- Direct Fire Protection Service - the costs of providing water service for public and private fire protection services

The result of the COS analysis determines how the total revenue requirements should be allocated to the each of the cost components, which are categorized and grouped based on the similar cost driving elements. **Figure 10** shows the total Test Year Revenue Requirements allocated to each cost component.

Figure 10. Cost of Service Cost Components by Category

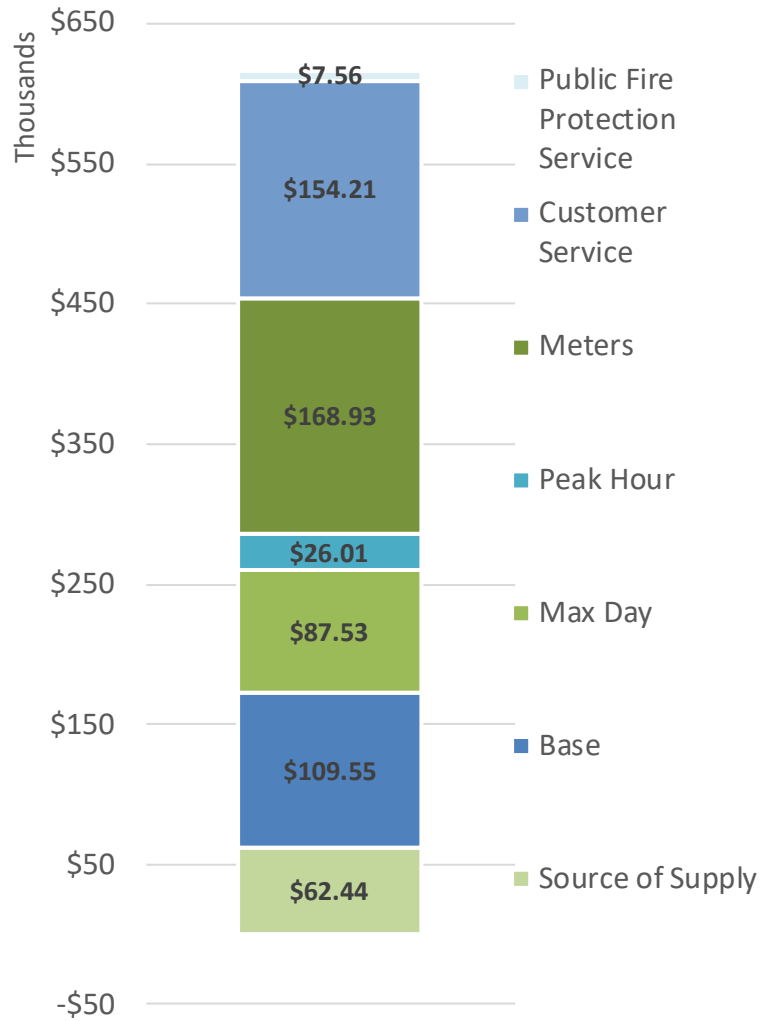


Table 8 shows the revenue requirements by cost causative components under the proposed financial plan. The test year capital expense, debt service payments, and other obligations are allocated to each cost causative component using the percentages derived from the cost allocation.

Table 8. Rate Revenue Requirements for Test Year, FY 2023

Cost Allocation Summary	Revenue Requirement	Source of Supply	Base	MDD	PHD	Meters	Customer Service	Public Fire Protection Service
Revenue Requirement								
O&M Expenses	\$543,899	\$65,071	\$98,789	\$84,299	\$36,094	\$131,708	\$120,451	\$7,487
Debt Service	\$9,805	\$1,173	\$1,781	\$1,520	\$651	\$2,374	\$2,171	\$135
Total Revenue Requirements	\$553,703	\$66,244	\$100,570	\$85,819	\$36,744	\$134,082	\$122,622	\$7,622
		10.13%	17.78%	14.20%	4.22%	27.41%	25.02%	1.23%
Transfers from/to Reserves								
Net Balance Adjustment	\$140,301	\$14,217	\$24,942	\$19,929	\$5,922	\$38,462	\$35,109	\$1,720
Total Reserve Contribution	\$140,301	\$14,217	\$24,942	\$19,929	\$5,922	\$38,462	\$35,109	\$1,720
Less Revenue Offsets								
Other Operating Revenues	(\$4,250)	(\$508)	(\$772)	(\$659)	(\$282)	(\$1,029)	(\$941)	(\$59)
Non-operating Revenues	(\$73,529)	(\$17,509)	(\$15,191)	(\$17,558)	(\$16,375)	(\$2,584)	(\$2,584)	(\$1,728)
Total Revenue Offsets	(\$77,779)	(\$18,018)	(\$15,963)	(\$18,216)	(\$16,657)	(\$3,613)	(\$3,525)	(\$1,787)
Revenue Requirements from Rates	\$616,225	\$62,444	\$109,548	\$87,531	\$26,010	\$168,930	\$154,206	\$7,556

Table 9 shows the FY 2023-24 fixed and variable revenue requirements (\$616,225) allocated to each cost causative component by proposed customer class.

Table 9. Fixed and Variable Cost Components, FY 2022-23

Customer Class	Source of Supply	Base	MDD	PHD	Meters	Customer Service	Public Fire Protection Service	Total
Residential	\$48,313	\$84,758	\$65,320	\$19,740	\$115,562	\$132,891	\$5,169	\$471,753
Commercial	\$14,131	\$24,790	\$22,211	\$6,270	\$40,223	\$17,981	\$1,799	\$127,405
Sprinkler	\$0	\$0	\$0	\$0	\$11,033	\$834	\$493	\$12,360
Standby	\$0	\$0	\$0	\$0	\$2,112	\$2,501	\$94	\$4,707
Total	\$62,444	\$109,548	\$87,531	\$26,010	\$168,930	\$154,206	\$7,556	\$616,225

Volumetric charges are established based on variable costs such as treatment and energy costs. The peaking and delivery costs on the volumetric side are the remaining fixed costs intended to be recovered from volumetric charges.

Sewer

Methodology

RDN reviewed the sewer cost of service from methods described in the WEF MOP 27 and determined that the current rates fit appropriate COS principles. Because the current sewer rates are adequately and equitably generating sufficient revenues, no changes in the cost of service are suggested for the sewer utility.

RATE SETTING

The last step of a rate study is designing rates. Rates must be designed to equitably recover the rate revenue requirements from each customer given the projected customer demand identified as a result of the COS analysis. In reviewing the District's water rates and finances, RDN used the following criteria in developing our recommendations:

- 1) Revenue sufficiency: rates should recover the annual cost of service and provide revenue stability.
- 2) Rate impacts: while rates are calculated to generate sufficient revenue to cover all costs, they should be designed to minimize, as much as possible, the impacts on ratepayers.
- 3) Equitability: rates should be fairly allocated among all customers based on their estimated demand characteristics.
- 4) Practicality: rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer, and easy to understand.

Recommendations

This study evaluated the current rates and financial condition of CPUD and determined necessary revenue adjustments for the study period, FY 2023-24 - FY 2027-28. RDN, in consultation with District staff, performed multi-level analysis to find the most effective and equitable way to recover necessary revenues from customer's rates. RDN proposes the following adjustments to the District's water rate structure:

- Update meter ratios to AWWA standard using ¾" meter as the base in order to capture the true cost of service requirements for each meter size
- Develop Variable rates for each customer class based on results of the Cost of Service analysis
- Develop a Standby charge for inactive customers during winter months

Proposed Rates

It is estimated that approximately 95.0 percent of the water utility's O&M costs are fixed while 5.0 percent are variable. In order to maintain an incentive for water conservation, there should be a reasonable balance between cost recovered under the fixed base charges and volumetric charges; therefore, not all fixed costs will be recovered from the fixed monthly service charges. Under the proposed rates, the revenues recovered from fixed charges represent 83.6 percent of the total revenue.

Under the proposed rates, fixed charges will remain the same for all retail customer classes and will be based on the size of a meter which services the customer. To determine individual customer fixed charges, the total fixed revenue requirement is divided by the number of equivalent meters within the system. A 3/4-inch meter was set as the base meter for EM (equivalent meter) calculations. Using the EM ratios provided by the AWWA, meters larger than 3/4-inch were multiplied by their appropriate factor to determine the relative cost allocation which should be applied to that meter size. The monthly service charge for one equivalent meter per month is \$27.49. The billed fixed charge of larger meters reflects the capacity needed to serve the larger connection. A total of \$498,149 is the revenue requirements that need to be collected from customers' fixed charges.

Tier Widths

At the request of the District, tier widths for Residential customers remain unchanged from the current rate structure. Customers monthly fixed charge includes the cost of Tier 1 usage which provides customers with 6,000 gallons. At the projected usage levels for FY 2023-24, the Tier 1 water usage yields approximately 35,901 tGals of usage. All usage in excess of the Tier 1 allotment is billed at the Tier 2 rate of \$0.95 per 1,000 gallons.

RDN designed a uniform rate for Commercial Customers to increase compliance with Proposition 218 as no direct cost basis was found to justify a multi-tier rate structure for this customer class.

Based on the results from the financial planning and COS analysis, RDN developed rates as shown in **Table 10**.

Table 10. Proposed Rates

Proposed Rates	
Fixed Charge	Retail Customers
5/8-in	\$27.49
3/4-in	\$27.49
1-in	\$39.20
1 1/2-in	\$68.48
2-in	\$103.62
3-in	\$185.60
4-in	\$302.72
6-in	\$595.51
Variable Charge	per tGallon
Residential	
Tier 1: 0-6 tGal	\$0.00
Tier 2: 6+ tGal	\$0.95
Commercial	
Tier 1: All Use	\$0.55

Proposed Rates	
Fixed Charge	Sprinkler
5/8-in	\$18.16
3/4-in	\$18.16
1-in	\$23.65
1 1/2-in	\$37.37
2-in	\$53.83
3-in	\$92.25
4-in	\$147.14
6-in	\$284.36

Table 11 presents the current and recommended rate adjustments through the study period.

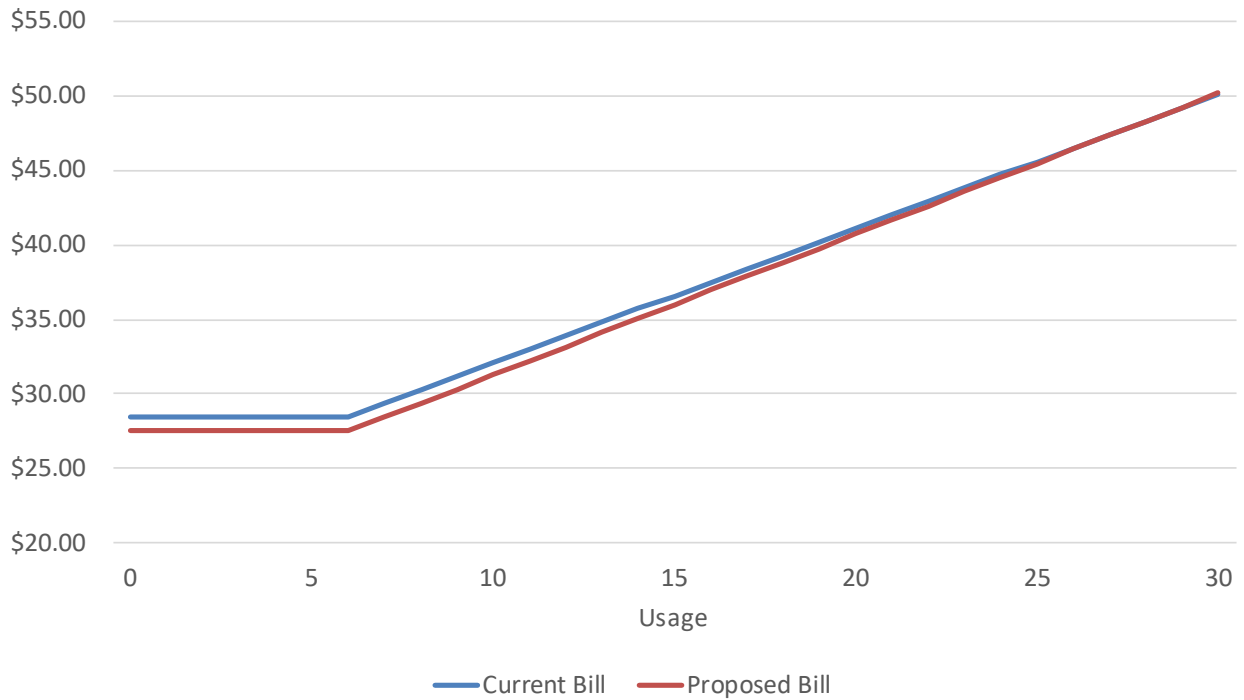
Table 11. Current (FY 2022-23) and Proposed Rates, FY 2023-24 – 2027-28

Retail Customers						
Fixed Charge	FY 2022-23 (Current)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
5/8-in	\$27.17	\$27.49	\$29.14	\$30.01	\$30.91	\$31.22
3/4-in	\$28.49	\$27.49	\$29.14	\$30.01	\$30.91	\$31.22
1-in	\$30.56	\$39.20	\$41.55	\$42.80	\$44.09	\$44.53
1 1/2-in	\$36.69	\$68.48	\$72.59	\$74.77	\$77.01	\$77.78
2-in	\$48.85	\$103.62	\$109.83	\$113.13	\$116.52	\$117.69
3-in	\$88.34	\$185.60	\$196.74	\$202.64	\$208.72	\$210.80
4-in	\$152.41	\$302.72	\$320.88	\$330.51	\$340.42	\$343.83
6-in	\$165.79	\$595.51	\$631.24	\$650.18	\$669.69	\$676.38
Variable Charge	FY 2022-23 (Current)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Residential						
Tier 1	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Tier 2	\$0.90	\$0.95	\$1.00	\$1.03	\$1.06	\$1.07
Commercial						
Tier 1	\$0.00	\$0.55	\$0.59	\$0.61	\$0.62	\$0.63
Tier 2	\$0.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Sprinkler Customers						
Fixed Charge	FY 2022-23 (Current)	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
5/8-in	\$27.17	\$18.16	\$19.25	\$19.82	\$20.42	\$20.62
3/4-in	\$28.49	\$18.16	\$19.25	\$19.82	\$20.42	\$20.62
1-in	\$30.56	\$23.65	\$25.06	\$25.82	\$26.59	\$26.86
1 1/2-in	\$36.69	\$37.37	\$39.61	\$40.80	\$42.02	\$42.44
2-in	\$48.85	\$53.83	\$57.06	\$58.78	\$60.54	\$61.14
3-in	\$88.34	\$92.25	\$97.79	\$100.72	\$103.75	\$104.78
4-in	\$152.41	\$147.14	\$155.97	\$160.65	\$165.47	\$167.12
6-in	\$165.79	\$284.36	\$301.42	\$310.47	\$319.78	\$322.98

Bill Impacts

Figure 11 shows the potential impacts on a customer with a 3/4" meter at various use levels. Under the proposed rates, customers who use minimal water will have a lower monthly bill than under the current rates. Customers who stay within the Tier 1 allocation would experience a 3.6 percent reduction in their monthly bill.

Figure 11. Hypothetical Bills 3/4" Meter at Different Use Levels



Standby Charge

RDN developed a Standby Charge for accounts remaining dormant for several months of the year. Standby service accounts are normally charged a fixed monthly charge only and the costs allocated to these accounts include costs associated with the most basic levels of service to ensure that adequate water and sewer services will be available. **Table 12** shows the proposed Standby charges through the study period.

Table 12. Proposed Standby Charge, FY 2023-24 – 2027-28

Standby Charge	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
All Meters	\$18.68	\$19.80	\$20.39	\$21.01	\$21.22

CONCLUSION

Water System

Recommendations:

- Build specific reserve funds by making annual contributions from revenue generated from rates
- Develop Variable Rates commensurate with each customer classes relative strain on the water system
- Update meter ratios to capture the cost of service requirements for each meter size
- Establish a Standby Fee to recover costs associated with providing the most basic services

Financial Planning with Proposed Rate Adjustments

Table 13 shows the financial plan under the proposed rates. By the end of the study period the District's cash balance will reach a reserve level of just over \$950,000. This amount is consistent with the proposed reserve policy and funding goals.

Table 13. Financial Plan, FY 2022-23 – FY 2026-27

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Test Year					
Revenue Adjustment					
Revenue under Current Rates	\$560,204	\$563,654	\$566,737	\$569,829	\$572,912
Year 1 - 10 %	\$56,020	\$56,365	\$56,674	\$56,983	\$57,291
Year 2 - 6 %		\$0	\$37,201	\$37,405	\$37,609
Year 3 - 3 %			\$0	\$19,824	\$19,933
Year 4 - 3 %				\$0	\$20,531
Year 5 - 1 %					\$0
Total Adjustments	\$56,020	\$93,567	\$113,903	\$135,055	\$142,873
Other Revenue Sources					
Other Operating Revenues	\$4,250	\$4,250	\$4,250	\$4,250	\$4,250
Non-operating Revenues	\$73,529	\$75,753	\$78,048	\$80,418	\$82,864
Total Other Revenue Sources	\$77,779	\$80,003	\$82,298	\$84,668	\$87,114
Total Revenue	\$694,004	\$737,223	\$762,938	\$789,552	\$802,899
O&M Expenses					
	(\$543,899)	(\$570,114)	(\$589,235)	(\$608,955)	(\$629,430)
Debt Service					
	(\$9,805)	(\$9,805)	(\$9,805)	(\$7,403)	\$0
Capital PAYGO					
	\$0	\$0	\$0	\$0	\$0
Total Expense	(\$553,703)	(\$579,918)	(\$599,039)	(\$616,358)	(\$629,430)
Net Operating Cash Flow	\$140,301	\$157,305	\$163,898	\$173,194	\$173,469
Beginning Balance	\$142,378	\$282,679	\$439,984	\$603,882	\$777,076
Ending Balance	\$282,679	\$439,984	\$603,882	\$777,076	\$950,545

Sewer System

Recommendations:

- Build specific reserve funds by making annual contributions from revenue generated from rates
- Maintain current Sewer rates as current sewer rates generate sufficient revenue

Financial Planning with Proposed Rate Adjustments

Table 14 shows the sewer financial plan under the current rates. By the end of the study period the District's cash balance will reach a reserve level of \$3.2 million. This amount is consistent with District funding goals.

Table 14. Financial Plan, FY 2022-23 – FY 2026-27

Description	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
Test Year					
Revenue Adjustment					
Revenue under Current Rates	\$524,866	\$528,274	\$531,470	\$534,879	\$537,618
Year 1 - 9 %	\$0	\$0	\$0	\$0	\$0
Year 2 - 5 %		\$0	\$0	\$0	\$0
Year 3 - 4 %			\$0	\$0	\$0
Year 4 - 3 %				\$0	\$0
Year 5 - 3 %					\$0
Total Adjustments	\$0	\$0	\$0	\$0	\$0
Other Revenue Sources					
Other Operating Revenues	\$0	\$0	\$0	\$0	\$0
Non-operating Revenues	\$65,175	\$66,274	\$67,394	\$68,535	\$69,696
Total Other Revenue Sources	\$65,175	\$66,274	\$67,394	\$68,535	\$69,696
Total Revenue	\$590,040	\$594,549	\$598,865	\$603,413	\$607,314
O&M Expenses	(\$440,111)	(\$459,560)	(\$475,357)	(\$491,953)	(\$508,904)
Debt Service	(\$9,805)	(\$9,805)	(\$9,805)	(\$7,403)	\$0
Capital PAYGO	\$0	\$0	\$0	\$0	\$0
Total Expense	(\$449,915)	(\$469,364)	(\$485,162)	(\$499,356)	(\$508,904)
Net Operating Cash Flow	\$140,125	\$125,184	\$113,703	\$104,057	\$98,410
Beginning Balance	\$2,637,908	\$2,778,033	\$2,903,217	\$3,016,920	\$3,120,977
Ending Balance	\$2,778,033	\$2,903,217	\$3,016,920	\$3,120,977	\$3,219,387