



# **Hilton Creek Community Services District**

**Financial Planning, Revenue Requirements,  
Cost of Service, and Rate Setting Analysis**

**Draft Report**

**November 28, 2022**

**HILTON CREEK COMMUNITY SERVICES DISTRICT  
FINANCIAL PLANNING, REVENUE REQUIREMENTS,  
AND RATE SETTING ANALYSIS**

**DRAFT REPORT**

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RDN Project Number 319

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# EXECUTIVE SUMMARY

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## Background

Hilton Creek Community Services District (HCCSD, District) is located in Mono County, just south of Lake Crowley and approximately 15 miles southeast of Mammoth Lakes. Founded in 1963, the District currently provides sewer collection and treatment for nearly 450 residential and commercial customers within the District boundaries. The District currently provides an adequate level of service but has identified a need to improve both its facilities and services in order to serve additional development and to improve services to existing development. The district boundaries include approximately 460 acres of land in the community of Crowley Lake, 440 acres of privately owned land and 20 acres of public land managed by the US Forest Service.

Figure 1 shows the District boundaries outlined in yellow.

**Figure 1. Hilton Creek Community Services District Service Area**



The HCCSD sewage collection system consists of 12 miles of pipes (10-inch collection pipes and 8-inch interceptor pipes), one pump station, and a treatment facility. Sewage is pumped to the treatment facility by two 40-horsepower pumps. The pump station pumps 80-85% of the

district's daily sewage flow to the treatment facility. The remaining 15-20% of the daily sewage flow reaches the treatment plant via a gravity fed system. At the treatment plant, sewage is pumped into an extended aeration tank, then into a secondary clarifier, and finally to percolation/evaporation ponds. During the winter months, sludge must be stored in an aeration tank until the percolation/evaporation ponds are clear of snow and ice. The collection system's capacity is 176,000 gpd.

## **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. RDN collaborated with District staff to evaluate the sewer utility's sustainability given the District's current and future financial conditions.

The primary objectives of this Study include:

- Projecting revenues and expenses for a ten-year study period
- Developing a financial plan to ensure financial sufficiency to fund day-to-day operations and maintenance, capital improvement and capital replacement projects, while building healthy reserves up to the District's target level
- Conducting a Cost of Service (COS) analysis to find the most optimal way to equitably allocate the costs of providing service to customers in accordance with Prop 218
- Designing rates based on the results of COS analysis by establishing a strong nexus between costs and pricing of rates
- Producing an administrative record which effectively summarizes all findings
- Supporting the District through the Proposition 218 process as necessary

## Recommendation and Proposed Rates

### Recommendations:

- Adjust revenues by 25.0 percent in the first year, followed by 20.0 percent, 15.0 percent, 10.0 percent, and 5.3 percent in the following years
- Build \$150,000 in operating reserves by making annual contributions from revenue generated from rates
- Chose a financial plan which best achieves the District's goals while producing the least impact on customers
- Increase the equitability of the District's sewer rates by applying a detailed cost of service analysis which considers individual flow and strength characteristics
- The District should develop a long-term capital improvement plan that outlines yearly expenditures for a fixed period

### Current Rates

The District currently bills Single Family, Multi-Family, and Commercial customers a fixed bi-monthly sewer use fee of \$110.62 per base unit. In addition to the base charge levied on commercial customers, individual rates vary based on property use and fixture count, such as additional toilets and kitchens. Schools are billed per student by average attendance. The current rates as described are shown in **Table 1**.

**Table 1. Current Rates**

Bi-Monthly Bill	
Category	Current
Single-Family Residential	\$110.62
Multi-Family Residential	\$110.62
Commercial	\$110.62
Toilets	\$80.98
No Kitchen Nightly	\$47.32
Students	\$3.92
Kitchen	\$107.90

## Proposed Rates

In collaboration with the District's staff, RDN determined the necessary revenue adjustments for the wastewater system during the five-year study period. **Table 2** and **Table 3** show the proposed revenue adjustments and rate adjustment for the study period, respectively.

**Table 2. Proposed Revenue Adjustments FY 2022-23 to FY 2026-27**

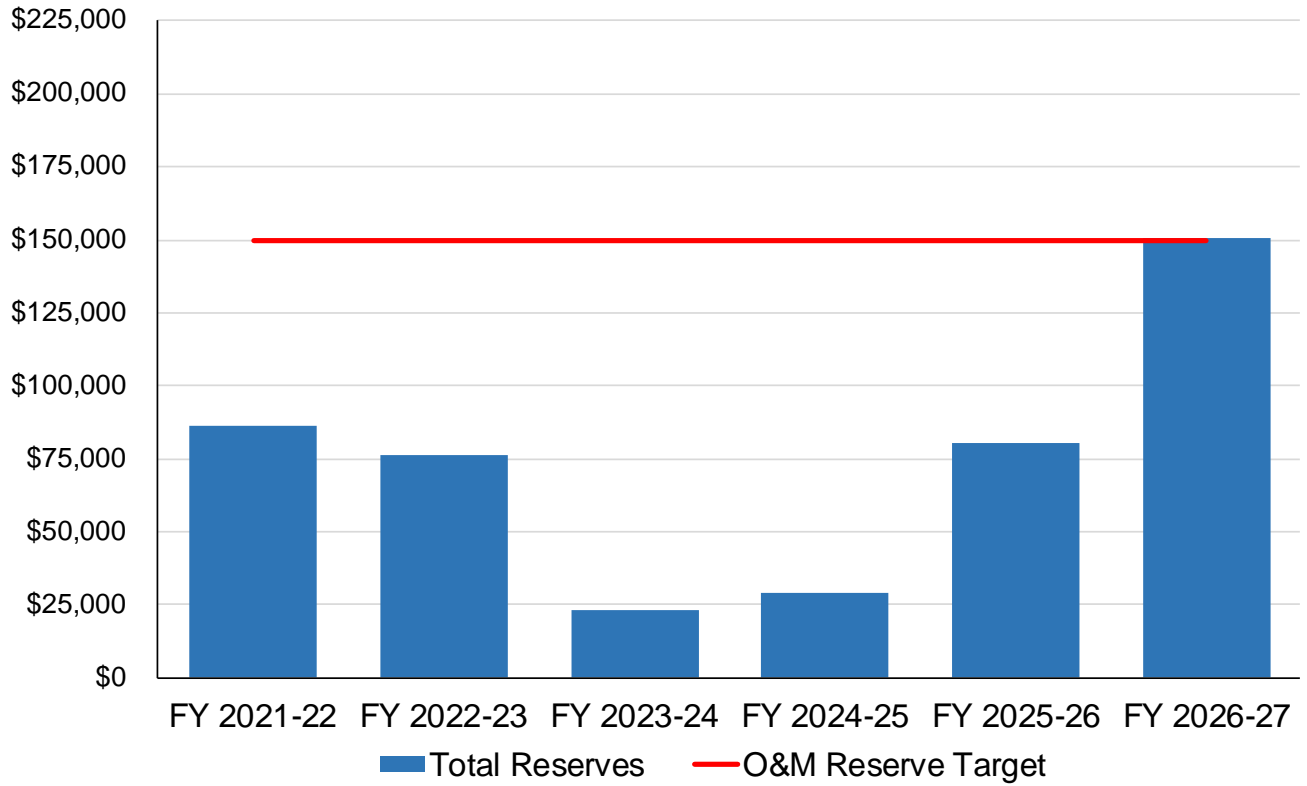
Proposed Adjustment	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Revenue Adjustment	25.0%	20.0%	15.0%	10.0%	5.3%

**Table 3. Proposed Rate Adjustments FY 2022-23 to FY 2026-27**

Proposed Rates	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
SFR/MFR 1st. Unit	\$146.30	\$175.56	\$201.90	\$222.09	\$233.86
MFR 2nd Unit+	\$117.71	\$141.26	\$162.44	\$178.69	\$188.16
Commercial	\$64.56	\$77.47	\$89.09	\$98.00	\$103.19
Studios/Hotel Rooms	\$78.48	\$94.17	\$108.30	\$119.13	\$125.44
School/Church	\$4.09	\$4.90	\$5.64	\$6.20	\$6.53
Kitchen	\$101.40	\$121.68	\$139.93	\$153.92	\$162.08
Toilets	\$79.88	\$95.86	\$110.24	\$121.26	\$127.69

The proposed financial plan includes adequate levels of capital funding as well as contributions to the wastewater utility's reserve balances. In brief, the recommended financial plan maintains capital funding levels of approximately \$130,000 a year while also contributing nearly \$64,000 on to the District's reserves over the course of the study period. **Figure 2** shows the sewer fund balances under the proposed financial plan through the study period.

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



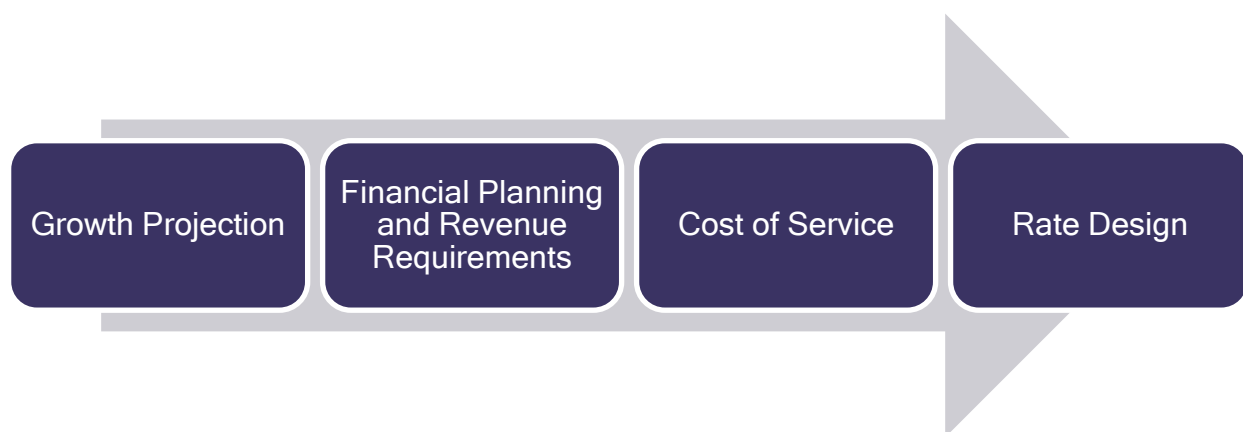


# GENERAL METHODOLOGY

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The wastewater rates formulated in this study were developed using principles set forth by the American Water Works Association (AWWA) and the Water Environment Federation (WEF). RDN rate-making practices incorporate methods described in the AWWA Manual 1 (M1)<sup>1</sup> and the WEF Financing and Charges for Wastewater Systems<sup>2</sup>. **Figure 3** presents the steps taken to develop the District's proposed rates.

**Figure 3. Wastewater Rate Study Process**



- **Growth Projection:** project customer growth for the ten-year study period, FY 2022-23 through FY 2031-32 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 a five-year rate plan to recover the rate revenue requirements from each customer.

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<sup>1</sup> Principles of Water Rates, Fees, and Charges, Seventh Edition, Manual of Water Supply Practices, American Water Works Association

<sup>2</sup> Financing and Charges for Wastewater Systems, WEF Manual of Practice Number 27, Water Environment Federation

## 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 sewer 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 sewer 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.

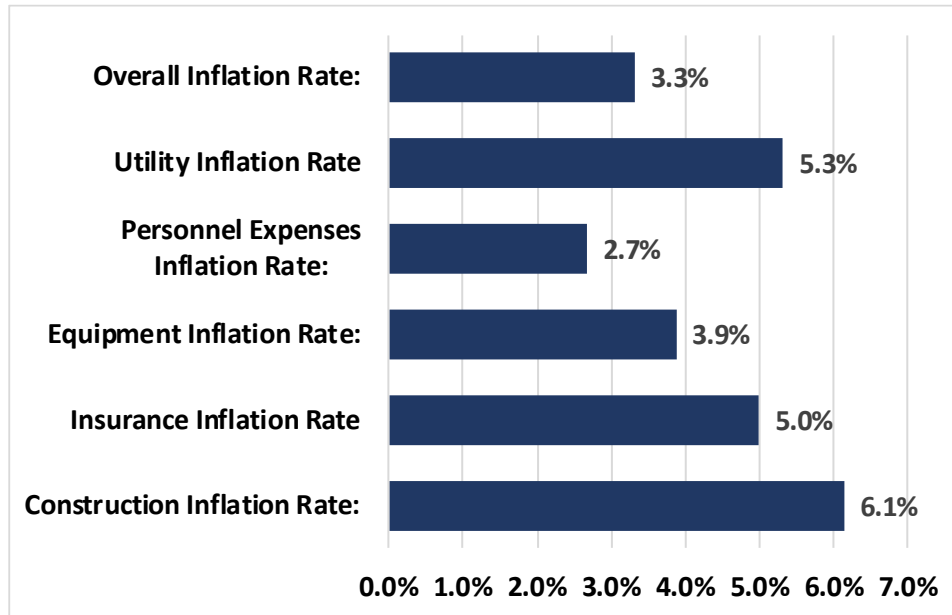
## **Key Assumptions**

A test year, FY 2022-23, was selected for which costs are to be analyzed and rates to be established for this study. The District's fiscal year begins 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, 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 4** displays the projected escalation factors for the study period. Due to local contingencies, the Construction Inflation Rate is expected to rise at the highest rate, representing 6.1 percent per year. The Personnel Expenses Inflation Rate, which includes salaries, insurance, and payroll taxes, is expected to rise 2.7 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.

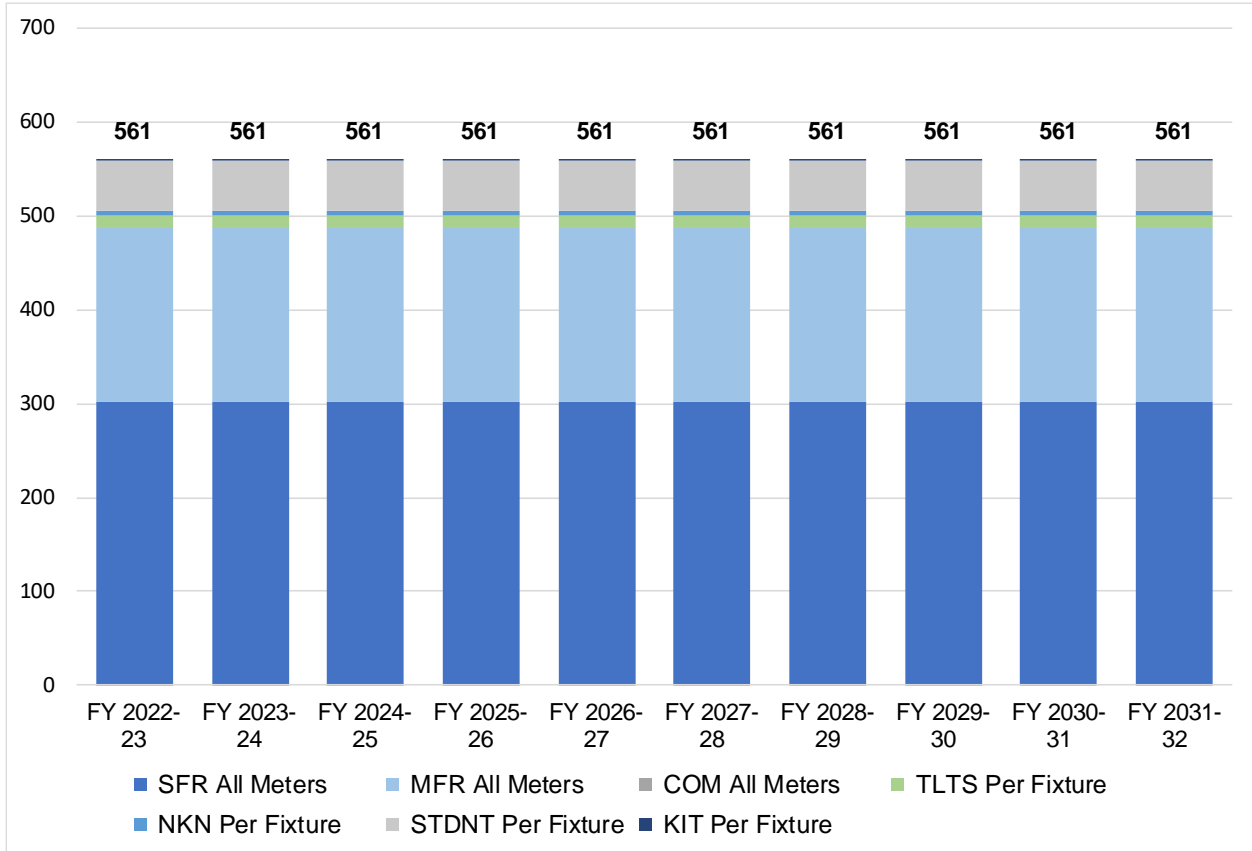
**Figure 4. Escalation Factors**



### Customer Growth

All analyses performed during the study are based on an assumption of customer account growth. Historical billing records were used to project customer baseline growth. Customer fixture counts are developed by District engineering staff when each new customer joins the system. The District's service area is nearly built out and does not expect any new customers to join the system during the study period. **Figure 5** shows the current and projected customers for the financial planning period by number of accounts and fixtures.

**Figure 5. Projected Account and Fixture Growth, FY 2022-23 (Current) to FY 2031-32**



# FINANCIAL PLANNING

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## Revenues

Based on the projected customer count 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 approximately \$334,000 per year. Additional non-operating revenues average approximately \$165,000 a year from investment income and will be used to offset future revenue requirements.

## Operating and Maintenance Expense

This District's FY 2022-23 Budget anticipates approximately \$480,000 in expenses which were classified as O&M expense. In FY 2023-24, HCCSD plans to hire one new employee which, along with the current record inflation being experienced across the country, is expected to increase total O&M costs by 27.3 percent. For the rest of the study period, annual inflation is projected to be approximately 2.7 percent per year. Total O&M expenses are expected to reach \$663,000 by FY 2026-27.

## Capital Expenses

The District's current capital plan includes approximately \$630,000 of expected improvements over the study period. The planned improvements are anticipated to be funded by both grant funding and through customer rate revenue. Only projects funded through customer rates are included in the financial analysis. On average, HCCSD will spend roughly \$105,000 in annual PAYGO (pay as you go) capital expenditures. Some major planned capital projects include sludge dewatering options, an emergency generator plant, and aeration blowers.

## Target Reserves

In conjunction with this rate study, the District has set a reserve target of \$150,000 to reach by the end of the study period. The target of \$150,000 was chosen because it represents approximately three months of operating expenses at the end of the study period. The District's current cash balance is approximately 86,000. The proposed financial plan will allow the District to reach their reserve target by the end of the study period in addition to funding increasing

O&M expenses and capital expenditures. In a future rate study, the District should also consider developing reserve funds for capital and emergency expenses.

## Debt Funding

The District has no current or planned debt during the study period.

## Revenue Requirements

Revenue requirements were developed based on the financial plan outlined above. Revenue requirements include CIP expenses 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 wastewater rates. A negative net balance indicates that cash reserves are used to supplement the shortfall for the year and positive net balance indicates the amount is contributed to the reserves. The revenue requirement of \$417,241 for the test year was used to compute cost distribution among distinct cost components and then allocated to customers equitably in the COS analysis. Revenue requirements for each year of the study are shown in Table 4.

**Table 4. Revenue Requirements, FY 2022-23 through FY 2026-27**

Revenue Requirements	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
<b>Revenue Requirements</b>					
O&M Expenses	\$480,491	\$611,784	\$629,580	\$646,100	\$663,071
Debt Service	\$0	\$0	\$0	\$0	\$0
PAYGO	\$102,009	\$102,009	\$105,431	\$106,387	\$109,945
<b>Total Revenue requirements</b>	<b>\$582,500</b>	<b>\$713,793</b>	<b>\$735,010</b>	<b>\$752,486</b>	<b>\$773,016</b>
<b>Revenue Offsets</b>					
Other Operating Revenues	\$0	\$0	\$0	\$0	\$0
Non-operating Revenues	(\$155,000)	(\$160,006)	(\$165,173)	(\$170,508)	(\$176,014)
<b>Total Revenue Offsets</b>	<b>(\$155,000)</b>	<b>(\$160,006)</b>	<b>(\$165,173)</b>	<b>(\$170,508)</b>	<b>(\$176,014)</b>
<b>Adjustments</b>					
Adjustments for Cash Balance	(\$10,259)	(\$53,098)	\$5,956	\$51,393	\$69,939
Adjustments for Mid-Year Increase	\$0	\$0	\$0	\$0	\$0
<b>Total Adjustments</b>	<b>(\$10,259)</b>	<b>(\$53,098)</b>	<b>\$5,956</b>	<b>\$51,393</b>	<b>\$69,939</b>
<b>Total Revenue Requirements</b>	<b>\$417,241</b>	<b>\$500,689</b>	<b>\$575,793</b>	<b>\$633,372</b>	<b>\$666,941</b>

## Recommended Financial Plan

Based on the revenue requirements outlined in the proposed financial plan, annual revenue adjustments of 25.0 percent in the test year, 20.0 percent the second year, 15.0 percent in year 3, 10.0 percent in the fourth year, and 5.3 percent in the final year of the study period. Under this plan a total of \$64,000 will be contributed to fund balances; additionally, the District will be able to sufficiently cover their operating expenses and an average of \$105,000 in capital

expenditures per year. Table 5 shows the proposed financial plan and the ending reserve balance for the study period. RDN recommends this plan because it best balances the future repair needs of the sewer system with customer impacts.

**Table 5. Study Period Financial Plan, FY 2022-23 to FY 2026-27**

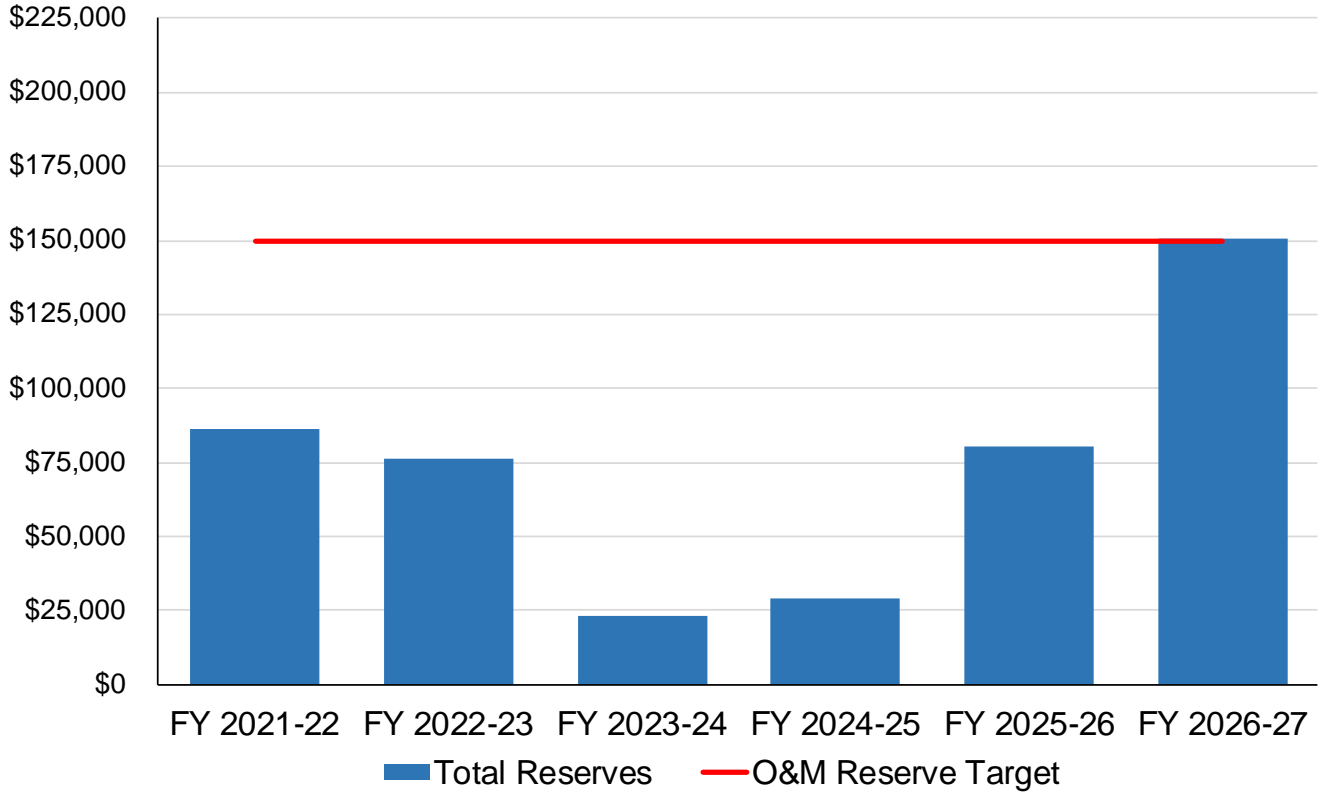
Description	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
<b>Test Year</b>					
<b>Revenue Adjustments</b>					
<b>Revenue Under Current Rates</b>	<b>\$333,793</b>	<b>\$333,793</b>	<b>\$333,793</b>	<b>\$333,793</b>	<b>\$333,793</b>
Year 1 - 25 %	\$83,448	\$83,448	\$83,448	\$83,448	\$83,448
Year 2 - 20 %	\$0	\$83,448	\$83,448	\$83,448	\$83,448
Year 3 - 15 %	\$0	\$0	\$75,103	\$75,103	\$75,103
Year 4 - 10 %	\$0	\$0	\$0	\$57,579	\$57,579
Year 5 - 5.3 %	\$0	\$0	\$0	\$0	\$33,569
<b>Total Adjustments</b>	<b>\$83,448</b>	<b>\$166,896</b>	<b>\$242,000</b>	<b>\$299,579</b>	<b>\$333,148</b>
<b>Other Revenue Sources</b>					
Other Operating Revenues	\$0	\$0	\$0	\$0	\$0
Non-operating Revenues	\$155,000	\$160,006	\$165,173	\$170,508	\$176,014
Total Other Revenue Sources	\$155,000	\$160,006	\$165,173	\$170,508	\$176,014
<b>Total Revenue</b>	<b>\$572,241</b>	<b>\$660,695</b>	<b>\$740,966</b>	<b>\$803,880</b>	<b>\$842,955</b>
<b>O&amp;M Expenses</b>	<b>(\$480,491)</b>	<b>(\$611,784)</b>	<b>(\$629,580)</b>	<b>(\$646,100)</b>	<b>(\$663,071)</b>
<b>Debt Service</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Capital PAYGO</b>	<b>(\$102,009)</b>	<b>(\$102,009)</b>	<b>(\$105,431)</b>	<b>(\$106,387)</b>	<b>(\$109,945)</b>
<b>Total Expense</b>	<b>(\$582,500)</b>	<b>(\$713,793)</b>	<b>(\$735,010)</b>	<b>(\$752,486)</b>	<b>(\$773,016)</b>
<b>Net Operating Cash Flow</b>	<b>(\$10,259)</b>	<b>(\$53,098)</b>	<b>\$5,956</b>	<b>\$51,393</b>	<b>\$69,939</b>
<b>Beginning Balance</b>	<b>\$86,405</b>	<b>\$76,146</b>	<b>\$23,049</b>	<b>\$29,005</b>	<b>\$80,398</b>
<b>Ending Balance</b>	<b>\$76,146</b>	<b>\$23,049</b>	<b>\$29,005</b>	<b>\$80,398</b>	<b>\$150,337</b>



## Proposed Reserve Balances

Figure 6 shows the sewer fund balances under the proposed financial plan through the study period.

Figure 6. District Fund Balances under the Proposed Financial Plan



# COST OF SERVICE

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## Methodology

A sewer system's COS analysis utilizes a three-step approach to allocate costs equitably among customers. These steps include 1) functionalization of cost and asset items, 2) cost classification, and 3) cost allocation to customers. The typical major functions included in a sewer study are collection, sewer treatment, customer accounts, and other general and administrative costs.

## Cost Functionalization

The total test year O&M expenses, \$480,491, were functionalized into six categories based on the type of expense being accrued. **Table 6** shows the cost per function which will be used to allocate costs to the cost causative components.

**Table 6. Test Year O&M Cost Allocation**

O&M Cost Allocation	Total by Function
Sewer Collection	\$28,890
Pumping	\$27,314
Sewer Treatment	\$37,770
Customer Accounts	\$17,260
Billing	\$16,560
Administrative and General	\$369,257
<b>Total Test Year O&amp;M</b>	<b>\$480,491</b>

Non-operating expenses were classified using total system asset values, as those are representative of the District's total investment in infrastructure. The percent of non-operating expenses for the test year will be allocated to functions and then to cost causative components based on the relative amount of investment in each function. **Table 7** shows the total functionalized assets into each category.

**Table 7. Total Asset Cost Allocation**

Asset Cost Allocation	Total by Function
Sewer Treatment	\$102,880
Collection and Disposal	\$164,518
Sewer General	\$285,737
<b>Total Assets</b>	<b>\$553,135</b>

## COS Allocation

In order to equitably allocate costs to each customer class and fixture, the functionalized costs are further divided into standard cost causative components. Each cost causative component is based on individual impacts a customer has on driving overall costs. There were four cost causative components used to allocate the operating and non-operating expenses:

- **Volume** related costs - those costs which tend to vary with the total quantity of wastewater collected.
- Strength-related costs - those costs associated with the additional handling and treatment of high “strength” wastewater. The wastewater strength is typically measured in biochemical oxygen demand (**BOD**) and total suspended solids (**TSS**). Increased levels of BOD or TSS generally equate to increased wear and tear on the system.
- Other wastewater service-related costs - those costs are a function of the number of customers served. **Customer Service**-related costs typically include the costs of billing, collecting, and accounting.

Functionalized costs were allocated to each cost component based on input from the District and industry standard allocations. **Table 8** show the percent of each functionalized O&M category allocated to each cost component.

**Table 8. Percent of Each O&M Function Allocated to Cost Components**

O&M Cost Allocation	Volume	BOD	TSS	Sewer Service	Total Percentage
<b>Sewer Collection</b>	50%	25%	25%	0%	100%
<b>Pumping</b>	50%	25%	25%	0%	100%
<b>Sewer Treatment</b>	25%	38%	38%	0%	100%
<b>Customer Accounts</b>	0%	0%	0%	100%	100%
<b>Administrative and General</b>	34%	25%	25%	16%	100%

Sewer Collection and Pumping were allocated primarily to the volume of sewer flows; whereas, treatment costs were weighted more heavily towards sewer strength categories. The Customer Account function was allocated directly to the sewer service component. Administrative and General costs were allocated based on the average of the other components.

**Figure 7** shows the resulting percentage of the total O&M costs allocated to each cost component.

**Figure 7. Percent of O&M Costs by Cost Component**

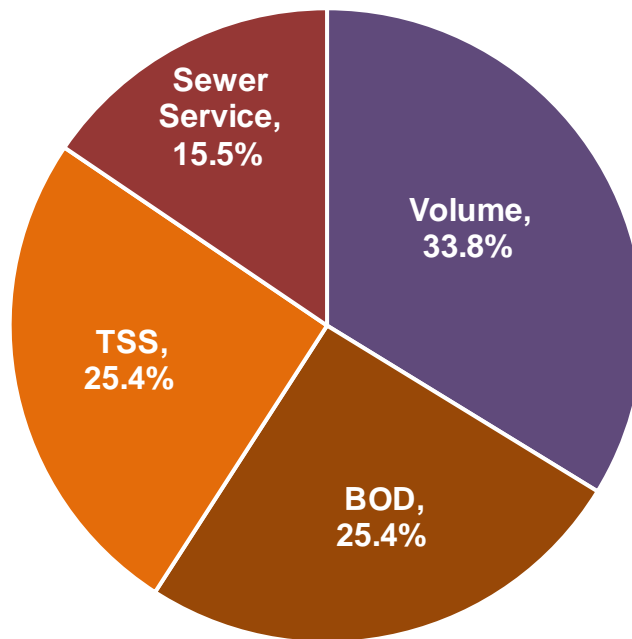


Table 9 show the percent of each functionalized O&M category allocated to each cost component.

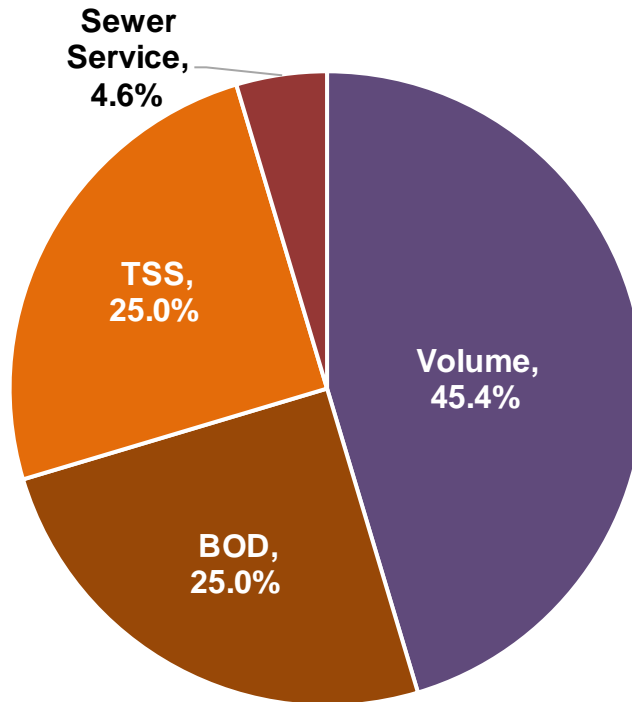
**Table 9. Percent of Each Asset Function Allocated to Cost Components**

Asset Cost Allocation	Volume	BOD	TSS	Sewer Service	Total Percentage
<b>Sewer Treatment</b>					
Structures	100%	0%	0%	0%	100%
Sewer Treatment Plant	25%	38%	38%	0%	100%
<b>Collection and Disposal</b>	50%	25%	25%	0%	100%
<b>Sewer General</b>	45%	25%	25%	5%	100%

Sewer Treatment was distributed among two subcategories, structures and treatment plant, which were allocated to the volume of sewer flows and treatment costs as appropriate. General costs were allocated based on the average of the other components.

Figure 8 shows the resulting percentage of the total O&M costs allocated to each cost component.

**Figure 8. Percent of Asset Costs by Cost Component**



The proposed cost allocation retains the current billing schema, with slight adjustments, so if additional costs are assigned, such as CIP expense, these percentages will shift slightly. The total test year costs allocated to each billing function are shown in **Table 10**.

**Table 10. Total Cost Allocations by Cost Category**

Cost Allocation Summary	Cost of Service	Volume	BOD	TSS	Sewer Service
<b>O&amp;M Expense</b>	\$480,491	\$162,179	\$121,877	\$121,877	\$74,557
<b>Debt Service</b>	\$0	\$0	\$0	\$0	\$0
<b>PAYGO</b>	\$102,009	\$46,288	\$25,506	\$25,506	\$4,709
<b>Total Revenue Requirements</b>	\$582,500	\$208,467	\$147,384	\$147,384	\$79,266
<b>% Distribution</b>		35.8%	25.3%	25.3%	13.6%
<b>Non-Rate Revenues Offset</b>	(\$155,000)				
<b>Total Revenue Requirements</b>	\$427,500	\$152,995	\$108,166	\$108,166	\$58,174
<b>Cash Reserve Adjustment</b>	(\$10,259)				
<b>Revenue Requirements for Rates</b>	<b>\$417,241</b>	<b>\$149,324</b>	<b>\$105,570</b>	<b>\$105,570</b>	<b>\$56,778</b>

The Revenue Requirements for Rates outlined in **Table 10** are derived by taking the total test year O&M expense allocated to each cost category based on the percentages outlined in **Figure 7**, adding the total non-operating expense, in this case only capital expenses, allocated by the asset cost allocation shown in **Figure 8**, then subtracting the non-operating expenses and the cash reserve adjustment. Revenue Requirements for Rates by costs component are used to allocate costs to each customer class/fixture.

## Units of Service

To allocate costs to each customer type, an analysis of the total strain that is put on the sewer system was necessary. The units of service used correspond to the cost causative components used in the COS Allocation section. Each customer type is assigned total units of service based on their general service requirements. A cost per unit of service is then determined based on the total units, which are allocated to each customer type based on their percentage of the total. The number of allocated units are then summed to determine the total cost responsibility for each customer. The unit of service analysis details the process used to determine each input.

## Sewer Flow

In order to assign flow ratios to individual customer classes, standard flow characteristics were assigned based on State Water Resources Control Board standard flow designations in their Revenue Program Guidelines. **Table 11** shows the general flow characteristics by customer class used to perform the COS analysis.

**Table 11. Flow Characteristics by Customer Class**

Customer Class	Unit Size	Flow (gpd)
Single-Family Residential	1.0	150
Full-sized MFR Units	1.0	150
Commercial	1.0	100
Studios/Hotel Rooms	1.0	100
School/Church	1.0	10
Kitchen	1.0	50
Toilets	15.0	4

Total proportional flow for each customer class was determined by multiplying the unit flow by the unit size. This total was multiplied by the total number units currently billed in each customer class and days per year. **Table 12** shows the percentage of total flow contributions by customer class and total flow in hundred cubic feet (hcf) per year.

**Table 12. Percent of Total Flow and Annual Flow by Customer Class**

Customer Class	Annual Flow (hcf)	% of Flow
Single-Family Residential	22,032	59.4%
Full-sized MFR Units	13,541	36.5%
Commercial	195	0.5%
Studios/Hotel Rooms	878	2.4%
School/Church	128	0.3%
Kitchen	24	0.1%
Toilets	322	0.9%
<b>Total</b>	<b>37,120</b>	<b>100%</b>

## Strength

Sewer strength ratios by customer class were also estimated in order to allocate costs between customer classes. **Table 13** shows the general strength (BOD/TSS) contributions by customer class and fixture used to perform the cost of service analysis.

**Table 13. Strength Characteristics by Customer Class**

Customer Class	BOD Strength (mg/L)	TSS Strength (mg/L)
Single-Family Residential	175	175
Full-sized MFR Units	175	175
Commercial	150	150
Studios/Hotel Rooms	175	175
School/Church	150	150
Kitchen	1082	209
Toilets	124	650

Total proportional strength for each customer class was determined by multiplying the total customer class flow by strength in milligrams per liter. This total was converted to pounds per year by customer class. **Table 14** shows the percentage of total strength contributions by customer class and the total pounds per year (LBS/year) contributed of BOD and TSS.

**Table 14. Percent of Total Strength by Customer Class**

Customer Class	Total Strength(LBS/year)	% of BOD	Total Strength(LBS/year)	% of TSS
Single-Family Residential	24,069	59.4%	24,069	58.0%
Full-sized MFR Units	14,793	36.5%	14,793	35.7%
Commercial	183	0.5%	183	0.4%
Studios/Hotel Rooms	960	2.4%	960	2.3%
School/Church	119	0.3%	119	0.3%
Kitchen	165	0.4%	32	0.1%
Toilets	249	0.6%	1,307	3.2%
<b>Total</b>	<b>40,539</b>	<b>100%</b>	<b>41,463</b>	<b>100%</b>

## Service

Customer service costs typically include all costs associated with billing. Each customer receives one bill, so for the purpose of allocating customer service costs, the total costs are divided by the total number of annual bills, 1,986.

## Unit Costs

Unit costs were determined by dividing the total costs allocated to each cost component by the number of service units. **Table 15** shows the total revenue requirements by cost category, divided by the number of units for each. The resulting unit cost is also shown. For each unit of flow (1 hcf) a unit cost of \$4.02 was determined, for each unit of contributed BOD (1

LBS/year) a unit cost of \$2.60 was determined, for each unit of contributed TSS (1LBS/year) a unit cost of \$2.55 was determined, and for each unit of sewer service (1 bill) a unit cost of \$28.59 was determined.

**Table 15. Revenue Requirements by Category, Divided by Unit of Service**

Category	Cost of Service	Volume	BOD	TSS	Sewer Service
Revenue Requirements for Rates	\$417,241	\$149,324	\$105,570	\$105,570	\$56,778
Unit of Service	-	37,120	40,539	41,463	1,986
<b>Unit Cost</b>	-	<b>\$4.02</b>	<b>\$2.60</b>	<b>\$2.55</b>	<b>\$28.59</b>

## Final Cost Allocation

Finally, the unit costs are multiplied by the total units assigned to each customer class/fixture to determine the total cost responsibility of each customer. **Table 16** shows the resulting cost allocation by customer class based on the cost of service analysis. The following rate design will recover the revenue requirements based on these allocations.

**Table 16. Total Units of Service and Cost of Service by Customer Class**

Customer Class	Volume	\$4.02/Unit	BOD	\$2.60/Unit	TSS	\$2.55/Unit	Sewer Service	\$28.59/Unit	Total Cost of Service
	Unit	Total	Unit	Total	Unit	Total	Unit	Total	
Single-Family Residential	22,032	\$88,627	24,069	\$62,681	24,069	\$61,283	1,806	\$51,632	<b>\$264,222</b>
Full-sized MFR Units	13,541	\$54,472	14,793	\$38,525	14,793	\$37,666	150	\$4,288	<b>\$134,951</b>
Commercial	195	\$785	183	\$476	183	\$465	24	\$686	<b>\$2,413</b>
Studios/Hotel Rooms	878	\$3,533	960	\$2,499	960	\$2,443	-	\$0	<b>\$8,475</b>
School/Church	128	\$513	119	\$311	119	\$304	6	\$172	<b>\$1,300</b>
Kitchen	24	\$98	165	\$429	32	\$81	-	\$0	<b>\$608</b>
Toilets	322	\$1,296	249	\$649	1,307	\$3,327	-	\$0	<b>\$5,272</b>
<b>Total</b>	<b>37,120</b>	<b>\$149,324</b>	<b>40,539</b>	<b>\$105,570</b>	<b>41,463</b>	<b>\$105,570</b>	<b>1,986</b>	<b>\$56,778</b>	<b>\$417,241</b>



# RATE SETTING

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## Recommendations

The District needs revenue increases to fund needed capital improvement projects and sustain operations. The financial plan and COS analysis provide the basis for a Proposition 218 compliant rate structure. The proposed revenue requirements include funding for both the District's reserves and Capital expenditures as well as sufficient funding for the daily operations of the District. If the District is able to secure additional funding sources, or if customer growth is higher than expected, resulting in increased revenues, the District Board can choose to not implement increases in any year.

## Rate Design

To create the rates outlined in this study, the essential calculation is the revenue requirements, developed in the financial planning analysis, divided by the Cost of Service units. Each customer was assigned a percentage of the total Cost of Service based on their individual service requirements (Table 16). The rate calculation for each customer class is shown in Table 17. Customers who do not receive an individual bill because they are part of a larger billing aggregate, such as toilets or kitchens in commercial units, do not pay additional customer service costs. Additionally, second units in multi-family units do not require additional customer service costs because only one bill is assessed. The total bill of the church/school customer class is based on average attendance, so the \$4.09 in the Total Bill column represents the cost to provide service to one student/staff. The total monthly bill will be multiplied by the number of students/staff.

**Table 17. Hilton Creek Community Services District Sewer Rate Calculation**

Customer Class	Volume/Strength	Cost per Bill	Customer service	Cost per Bill	Total Bill
Residential (1st Unit)	\$212,591	\$117.71	\$55,920	\$28.59	<b>\$146.30</b>
Second MFR Unit	\$130,662	\$117.71	\$0	\$0.00	<b>\$117.71</b>
Commercial	\$1,727	\$35.97	\$686	\$28.59	<b>\$64.56</b>
Studios/Hotel Rooms	\$8,475	\$78.48	\$0	\$0.00	<b>\$78.48</b>
School/Church	\$1,128	\$3.55	\$172	\$0.54	<b>\$4.09</b>
Kitchen	\$608	\$101.40	\$0	\$0.00	<b>\$101.40</b>
Toilets	\$5,272	\$79.88	\$0	\$0.00	<b>\$79.88</b>

Table 18 shows the proposed rate schedule through the study period under the proposed revenue adjustments.

**Table 18. Proposed Rates FY 2022-23 to FY 2026-27**

<b>Proposed Rates</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>FY 2026-27</b>
SFR/MFR 1st. Unit	\$146.30	\$175.56	\$201.90	\$222.09	\$233.86
MFR 2nd Unit+	\$117.71	\$141.26	\$162.44	\$178.69	\$188.16
Commercial	\$64.56	\$77.47	\$89.09	\$98.00	\$103.19
Studios/Hotel Rooms	\$78.48	\$94.17	\$108.30	\$119.13	\$125.44
School/Church	\$4.09	\$4.90	\$5.64	\$6.20	\$6.53
Kitchen	\$101.40	\$121.68	\$139.93	\$153.92	\$162.08
Toilets	\$79.88	\$95.86	\$110.24	\$121.26	\$127.69

# CONCLUSION

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## Recommendations:

- The District should adjust revenues by 25.0 percent in the first year, followed by 20.0 percent, 15.0 percent, 10.0 percent, and 5.3 percent in the following years
- The District should build \$150,000 in operating reserves by making annual contributions from revenue generated from rates
- The District should choose a financial plan which best achieves the District's goals while producing the least impact on customers
- The District should increase the equitability of the District's sewer rates by applying a detailed cost of service analysis which considers individual flow and strength characteristics
- The District should develop a long-term capital improvement plan that outlines yearly expenditures for a fixed period

## Rate Impact:

Because of the differences in costs to provide service for each customer class, the impacts on each customer class will vary slightly. Additionally, some customer's bills are an aggregate of different types of customers, such as a commercial unit with extra toilets or kitchens or a multi-family unit which will be billed the regular residential rate for the first unit, and the reduced, customer service-less rate, for each additional unit. All single-family residential customers will see a 32.3 percent increase per bill in the first year of the study, or \$35.68. Among the 31 customers which are not identified as single-family residences, bill impacts will vary from -41.6 percent to 19.3 percent. The difference in bill impact increases the overall equitability of the proposed rates by aligning them with the actual costs to provide service for each customer class.

## Financial Plan Under New Rates:

**Table 19** shows the District's financial plan under the proposed rates. The ending balance of \$144,556 is achieved after the five-year study period. The proposed financial plan will allow the District to continue paying rising operating costs, hire qualified staff, accomplish needed capital improvement projects, and contribute to operating reserves, which will allow the District to thrive in the future.

**Table 19. Financial Plan Under Proposed Rates, FY 2022-23 to FY 2026-27**

<b>Description</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>FY 2026-27</b>
Revenue from Rates - Proposed	\$416,378	\$499,654	\$574,602	\$632,062	\$665,561
O&M Expenses	(\$480,491)	(\$611,784)	(\$629,580)	(\$646,100)	(\$663,071)
Net Operating Revenues	(\$64,113)	(\$112,130)	(\$54,978)	(\$14,038)	\$2,490
Non-operating Revenues	\$155,000	\$160,006	\$165,173	\$170,508	\$176,014
Other Obligations	(\$102,009)	(\$102,009)	(\$105,431)	(\$106,387)	(\$109,945)
Debt Service Principal	\$0	\$0	\$0	\$0	\$0
Debt Service Interest	\$0	\$0	\$0	\$0	\$0
Capital PAYGO	(\$102,009)	(\$102,009)	(\$105,431)	(\$106,387)	(\$109,945)
<b>Net Balance</b>	<b>(\$11,122)</b>	<b>(\$54,133)</b>	<b>\$4,765</b>	<b>\$50,083</b>	<b>\$68,559</b>
<b>Beginning Balance</b>	<b>\$86,405</b>	<b>\$75,283</b>	<b>\$21,149</b>	<b>\$25,914</b>	<b>\$75,997</b>
<b>Ending Balance</b>	<b>\$75,283</b>	<b>\$21,149</b>	<b>\$25,914</b>	<b>\$75,997</b>	<b>\$144,556</b>