

Twain Harte Community Services District



WATER & SEWER RATE STUDY

November 8, 2023

Twain Harte Community Services District
Water and Sewer Rate Study

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1.0 Introduction

1.1 Purpose

In the 2019 Strategic Plan, the Twain Harte Community Services District (District) Board of Directors set an objective to complete a water and sewer rate study that identified costs of providing services to each customer class, projected five-year revenues and expenses, analyzed rate structures, and recommended a financial plan for the next five years. The intent of this study is twofold: (1) short term and long-term financial health and stability and (2) equitable cost of service rates.

1.2 Background

The District was formed on August 1, 1996, to provide water, sewer, park and recreation, fire protection, and hydroelectric services to the Twain Harte community. Its formation resulted in the consolidation of three districts whose service to the community dates as far back as 1935 – Twain Harte Fire Protection District, Tuolumne County Water District No. 1 and Twain Harte Recreation and Park District. The District has a population of approximately 2,226 full-time residents and an additional unknown number of seasonal/vacation residents, who primarily reside in other water/sewer districts.

This rate study focuses only on the District’s water and sewer services, which are generally described as follows:

- **Water:** The District provides treated water to approximately 1,600 customers. Raw water stored in Lyons Reservoir is transported to the District via an open ditch system and is purchased from the Tuolumne Utilities District. The water is treated at the District’s water treatment plant (one million gallons per day capacity), pumped through two pump stations, distributed through approximately 27 miles of pipeline and stored in six storage tanks (totaling 2.5 million gallons of storage). The District



also owns and operates three groundwater wells (capable of producing 125 gallons per minute) and an emergency water supply reservoir (capacity of 15 acre-feet).

- **Sewer:** The District owns and operates a wastewater collection system consisting of approximately 25 miles of sewer mains and three sewer lift stations. All wastewater collected by the District is conveyed to Tuolumne Utilities District for treatment. The Sherwood Forest subdivision is the only area within the District that utilizes individual septic systems to treat wastewater.

In Fiscal Year 2022-23, the District generated approximately \$1.464 million in water service revenue and \$1.137 million in sewer service revenue. Revenues for water and sewer services are primarily generated from service fees and are used to fund the costs of each respective service, including but not limited to, operations and maintenance, debt, capital improvements and adequate reserves. All such revenues are used only to fund the type of service for which they are collected and only for service within that service's respective service area.

1.3 Initial Findings

Revenues collected from water and sewer rates must be sufficient to completely cover operating and capital expenses. If sufficient revenues are not collected, the water or sewer system cannot be adequately maintained and will eventually fall into disrepair, resulting in service disruptions or lack of service altogether.

Based on a financial review of the District's sewer fund at current rates, the District is projected to end FY 23/24 with an operating deficit of \$69,412 which will grow to approximately \$278,714 by FY 27/28. In addition, capital reserve funds are projected to deplete below the board approved minimum level by FY 25/26 leaving all capital projects thereafter unfunded and leaving an overall deficit of over \$1.4M by the end of FY 27/28. This revenue shortfall primarily results from substantial increases in wastewater treatment costs imposed by TUD, who provides wastewater treatment services to the District. The sewer fund has also experienced significant increased costs due to rising inflation levels, high electricity costs and continual fuel price fluctuations. The gap between collected sewer revenue and sewer expenses is projected to increase over the next five years as sewer infrastructure continues to degrade and TUD implements its adopted annual wastewater treatment rate increases.

Unlike the sewer fund, the District's water fund currently collects enough revenue to fund existing operations and maintenance expenditures but projections show that an operating deficit will occur in FY 26/27. In addition, its revenues are not sufficient to fully fund water capital improvement needs and has recently had to use reserves to cover those costs. These reserve funds are scheduled to dip below the board approved minimum level by FY 25/26 leaving a projected overall deficit of over \$1M by the end of FY 27/28. The revenue shortfall primarily results from an increase in wholesale water costs recently levied

by the District's wholesale supplier, rising inflation levels and increased electricity costs and fluctuating fuel prices.

The District's last rate increase was adopted in July of 2019 and despite no rate revenue increases since that time, the District has negated or minimized water and sewer revenue shortfalls by reducing operations and maintenance costs through creative operational efficiency improvements, weeding out excess maintenance costs and negotiating a reasonable contract with the District's employee labor union. The District also obtained approximately \$2.3M in grants to offset capital improvement costs.

Even though the District has been able to continue operations and capital improvements throughout the last four years without a rate increase, projected revenues for the next five years are not sufficient to cover operating and capital improvement costs and the District will need to generate more revenue to continue to provide adequate water and sewer services. This rate study identifies the District's revenue needs over the next five years, thoroughly analyzes costs to ensure they are shared equitably among customer classes and presents a five year financial plan that will generate sufficient revenue to cover all water and sewer expenses.

2.0 Rate Design Principles and Goals

2.1 Overview of Rate Design Principles

The rate design method used in this study incorporates a combination of generally accepted and District-specific principles and goals. These principles and goals work together to establish rates that generate sufficient revenues, equitably recover costs and meet the unique needs of the District.

2.2 General Principles

While no water or sewer agency uses the exact same rate design approach, water and sewer rate design methods should be consistent with the general principles accepted and practiced industry wide. In general, the industry-accepted rate design methods implement and maintain a reasonable balance between the following principles:

- Rates must generate revenues that are sufficient to cover operating and capital expenses.
- Rates must collect revenue from each customer class in an equitable manner that is reasonably proportionate to the cost of service provided to each customer class.
- Rate structures should be simple for customers to understand and for agencies to administer.
- Rates should promote sustainable use of resources.
- Rates should be levied in a manner that reasonably minimizes customer impact.

2.3 District-Specific Principles

Every water and sewer agency operates under unique circumstances that require their rate structures to vary according to their individual needs. For example, many water agencies have a relatively steady population base year-round and can generate a steady revenue stream with a rate structure that collects most of its revenue through volumetric charges (\$/gallon). The District cannot generate steady revenues with that rate structure model because its customer base more than doubles in the summer due to tourism. In order to account for the District's unique needs and makeup, the District's Board of Directors adopted the following principles to guide the rate design carried out in this study:

General Rate Principles

- Equitable distribution of costs to each customer class based on real costs of services in compliance with the requirements of Proposition 218.
- Simplified administration.
- Easy-to-understand rate structures.

- District fiscal responsibility and stability.
- Continued efficient provision of professional, reliable and quality services.
- Reasonable rate adjustments through balancing the need for increased revenues and customer cost impacts over a 5-year rate adjustment period.

Water Rate Principles

- Promote efficient and conservative use of the District’s limited water supply.
- Provide a stable revenue stream with an irregular seasonal population base.
- Plan for reasonable future water demands by projecting a use that is based on averaging the past five fiscal years.

Sewer Rate Principles

- Equitably distributes costs based on equivalent single-family resident (ESFR) units, based on average winter water use for each customer type.

2.4 District-Specific Goals

In addition to setting District-specific principles to guide the rate design process, the District board adopted financial goals to identify the costs that rate revenues should cover. Some of the goals are already set forth in District policy, such as minimum levels of Operating Reserves and the “pay as you go” method of funding capital improvements (paying for capital improvements with cash instead of with loans). Other goals are specific to the rate design undertaken in this study. Those goals seek to improve the District’s mission of providing services in a reliable and fiscally responsible manner, such as making accelerated unfunded liability payments and funding depreciation. The District desires to fund the following financial goals through the rate design accomplished in this study:

District Financial Goals

- 100% of operations and maintenance costs every year.
- 100% of capital costs in the 5-year Capital Improvement Plan.
- 100% of depreciation costs of future capital improvements.
- Accelerated payment toward unfunded liability.
- A minimum \$350,000 Water Fund Capital Reserves Account balance at the end of five years.
- A minimum \$250,000 Sewer Fund Capital Reserves Account balance at the end of five years.
- Operating and Rate Stabilization Reserve Account levels required by the District Reserves Policy.

- Pass-through of wholesale water and sewer services costs to avoid negative future financial impacts resulting from increased costs imposed by wholesale water and sewer service providers.

2.5 Meeting Principles and Goals

While a perfect rate design would completely incorporate all rate principles and goals, successful rate designs usually cannot, due to competing principles and goals. A successful rate design must delicately balance and prioritize all principles and goals to attain rates that are sufficient, fair, and reasonable. For example, the District must balance the principle of implementing rates that reasonably impact customers with their goal to make accelerated payments toward unfunded retirement liability, which increases customer impacts. Some principles and goals must be met due to law or basic, sound fiscal management, while others carry some flexibility. The balancing and prioritizing undertaken in this rate study resulted in a recommended rate structure that did not accomplish or only partially accomplished the following District goals and principles:

- 100% Funding of Depreciation. While funding depreciation (funding the cost of replacing infrastructure as it ages) is important, the District found that rate increases to fully fund both capital improvements and depreciation within five years would result in unreasonable customer impacts. The District reasoned that developing a rate design that fully funds its five-year capital improvement needs, which includes replacement of aging infrastructure, was a reasonable step toward funding future infrastructure replacement costs.
- Accelerated Unfunded Liability Payments. The District is currently required to make annual payments to the California Public Employees Retirement System (CalPERS) to pay off its projected water and sewer related unfunded liability (the projected shortfall of current retirement investments to meet future retirement payments) over twenty years. In order to reduce customer rate impacts, the District opted not to increase payments beyond those required to pay off its projected unfunded liability over twenty years.

3.0 Rate Design Process

3.1 General Process

The rate design process in this study is based on an industry-accepted process, which consists of conducting a comprehensive analysis to develop cost-based water and sewer user charges. The process develops rates that generate sufficient revenues to cover water and sewer expenses, recover costs from customer classes in a manner that is proportional to the service provided and incorporate the District's rate design principles and goals. The rate design process is comprised of the following three main components:

1. Revenue Requirements Analysis
2. Cost of Services Analysis
3. Rate Design Analysis

3.2 Revenue Requirements Analysis

The revenue requirements analysis identifies the amount of annual revenue that is needed to provide reliable and efficient water and sewer services to customers. The analysis thoroughly evaluates present and anticipated future water and sewer expenses to determine whether current rate revenues are sufficient to cover expenses over the coming five years. The analysis serves as the basis for accomplishing the fundamental goal of rate design – generating sufficient revenue to cover expenses.

The revenue requirements analysis involves identifying all water and sewer expenses, including operating, maintenance, debt service (principal and interest) and capital improvements. It also identifies revenues needed to fund adequate reserve balances set forth in the District's Reserves Policy. These expenses and revenue needs are combined, quantified, and projected annually over five years using known cost increases, a five-year capital improvement plan and inflation. The final annual costs are compared with existing rate and other revenue sources to quantify the annual revenue required to completely meet the water and sewer fund needs.

3.3 Cost of Service Analysis

The cost-of-service analysis provides the framework for collecting the rate revenue needs identified in the revenue requirements analysis in a manner that is proportionate to the service provided to each water and sewer customer class. The analysis equitably allocates water and sewer expenses to individual customer classes through the following three steps:

1. Allocate Revenue Requirements to Functional Cost Categories. Revenue requirements, represented as costs, are broken down into categories that lump similar costs together based on the type of system function each cost supports. For example, water costs related to water treatment are lumped into one category and water costs related to pumping are lumped into another category. This process simplifies cost allocations undertaken in the next step.
2. Allocate Functional Costs to Demand Cost Categories. The total costs in each functional cost category are allocated to demand categories based on the types of demand that function places on the system. For example, a portion of water treatment costs are related to both average water use and peak water use. Allocating costs to these demand categories is necessary to equitably allocate costs to each customer class based on each class's demand characteristics.
3. Allocate Demand Costs to Customer Classes. The total costs in each demand cost category are allocated to individual customer classes based on the level of demand each class places on the system. For example, residential and non-residential customer classes differ in their historical average and peak water use. That difference is used to equitably divide and assign costs related to average demand and peak demand to each class.

3.4 Rate Design Analysis

After water and sewer revenue needs have been identified through the revenue requirements analysis and equitable collection of those revenues has been determined through the cost-of-service analysis, the rate design analysis can take place. The rate design analysis involves development of a rate structure that successfully balances equitable collection of sufficient revenues with the District's unique principles and goals to achieve rates and charges that meet the unique needs of the District and its customers. The rate design analysis generally consists of the following steps:

1. Existing Rate Structure Analysis. The existing rate structure is analyzed to determine how well it meets the District's specific objectives and the general principles of rate design. This analysis results in the identification of strengths and deficiencies in the existing rate structure.
2. Rate Structure Development. A new rate structure is developed, or the existing rate structure is modified so that it best accommodates the District's unique needs and accomplishes the equitable collection of revenue determined in the cost of service analysis.
3. Rate Level Setting. Five-year rate levels are set for the rate structure using present and projected system demands and revenue needs identified in the rate requirement analysis. Although the water and sewer revenue needs drive rate levels, the levels may be adjusted over the five-year period to minimize customer impacts.

4.0 Water Rate Analysis

4.1 Revenue Requirements Analysis

4.1.1 General Methodology

The first step of rate design is performance of a revenue requirements analysis. This assessment of the District's water fund financial health involves a detailed analysis of existing expenses and revenues along with reasonable projections of future expenses to determine current and future revenue needs over a five year span. The analysis then compares revenue needs with collected revenues to determine whether rates must be adjusted to continue adequate water services.

4.1.2 Data Input

The following data items were reviewed and incorporated in this analysis:

- District rate design principles and goals
- Fiscal Year 2022-23 water fund actuals
- Fiscal Year 2023-24 water fund budget
- 5-year capital outlay plan
- District Reserves Policy
- Adopted Tuolumne Utilities District wholesale water rate increase schedule
- Debt service data from existing loans

4.1.3 Existing Water Revenues

The water fund receives revenue primarily from rates and service charges and collects only a limited amount from property taxes. From time to time, the district also receives grants to improve water supply or complete specific capital projects. These grants are not granted on a continuous basis and, therefore, are not considered regular operational revenue. Over the past three years, the District received approximately 82% of its revenue from rates and service charges, 5% from property taxes, and 13% from other one-time, non-continuous revenue sources such as grants.

In Fiscal Year 2022-23, the District collected \$1,984,856 in water revenues, consisting of the following:

- Rate Revenue: \$1,463,948
- Fees and Misc Revenue: \$116,674
- Property Taxes & Assessments: \$40,295
- One-Time Grant Revenue: \$363,939

The District’s last water rate increase was in 2019. After that increase, revenues remained fairly steady through 2023, varying slightly based on water use.

4.1.4 Existing Water Expenses

District revenue requirements are determined by combining all expenses, including all operational and maintenance costs, capital improvement costs, and payments on debt. Figure 4-1 depicts a breakdown of the District’s average water fund expenses into each of these cost categories.

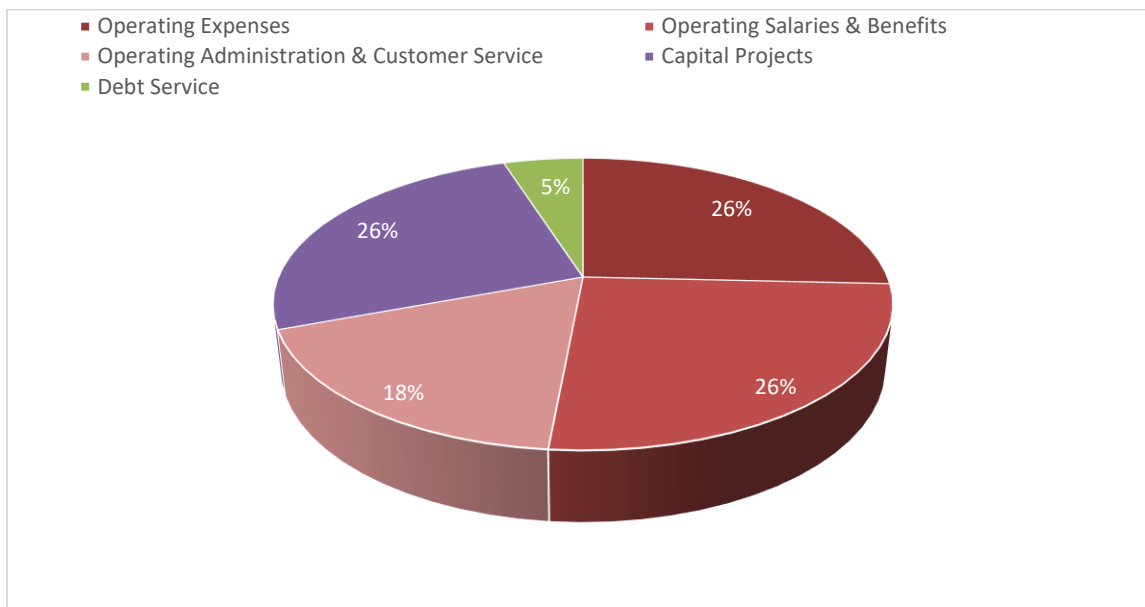


Figure 4-1. Breakdown of Average Water Expenses

As evidenced in Figure 4-1, the majority (69%) of water fund expenses are related to operating costs – 26% Operating Expenses (i.e. repairs, electricity, treatment chemicals, maintenance, etc.), 26% Operating Salaries & Benefits (i.e. water treatment personnel, distribution personnel, etc.) and 18% Operating Administration & Customer Service. Capital projects (pipeline and facility replacement and upgrades) make up 26% of costs and debt service payments to pay for previously constructed capital projects make up 5% of costs.

4.1.5 Projected Water Revenues and Expenses

In order to assess the short- and long-term water fund financial health, existing revenues and expenses were projected out over five years. For the purposes of this analysis, it is assumed that the Fiscal Year (FY) 2023-24 water fund budget accurately represents existing revenues and expenses. The only exception is that one-time revenues and expenses related to grant-funded projects were removed to accurately represent re-occurring revenues and expenses.

Operating and maintenance costs are projected to increase annually over the five-year period. Projected increases are generally based on the following:

- Cost of water is based on a rate increase schedule adopted by Tuolumne Utilities District.
- Salaries and benefits are based on the provisions of the existing Collective Bargaining Agreement (labor union contract) and the career development path of existing employees.
- Most of the other operating and maintenance costs (i.e. electricity, repair materials, treatment chemicals, etc.) are projected to increase by 4% per year due to inflation. Although this percentage is lower than inflation rates over the past few years, it is in line with the historical inflation pattern and is an industry-accepted value for projecting costs.

Capital improvement costs are projected based on the District’s 5-Year Capital Outlay Plan (Table 4-1). Debt service costs were projected based on existing loan schedules with no new debt scheduled.

Table 4-1. 5-Year Capital Outlay Plan (Water Fund)

| | Requested FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 | Out Years 6 to 10 | TOTAL |
|--|-----------------------|------------------|---------------------|---------------------|-------------------|----------------------|----------------------|
| FH Improvements | \$ 15,000 | \$ 15,000 | \$ 15,000 | \$ 15,000 | \$ 15,000 | \$ 75,000 | \$ 150,000 |
| SCADA Upgrade ⁴ | \$ 365,000 | | | | | | \$ 375,000 |
| WTP Motor Control Center Upgrade ⁴ | \$ 172,056 | | | | | | \$ 185,000 |
| Million Gallon Tank #2 Rehab/Recoat ^{4,6} | \$ 1,089,880 | | | | | | \$ 1,275,000 |
| Turbidimeter Replacement | \$ 40,000 | | | | | | \$ 40,000 |
| Refurbish Treatment Filters | \$ 25,000 | | | | | | \$ 25,000 |
| Truck #4 Plow (35% Sewer) | \$ 8,500 | | | | | | \$ 8,500 |
| Cedar Pines Pressure Zone Upgrades | \$ 100,000 | \$350,000 | | | | | \$ 450,000 |
| Manzanita Ct Waterline Upgrade | | \$160,000 | | | | | \$ 160,000 |
| Emergency Response Trailer (50% S) | | \$ 5,000 | | | | | \$ 5,000 |
| Sherwood Forest Water System Upgrade ⁷ | | \$300,000 | \$ 2,000,000 | \$1,400,000 | | | \$ 3,700,000 |
| Rehab/Recoat Black Oak Tanks | | | \$ 300,000 | | | | \$ 300,000 |
| High Pressure Pipe/Lateral Replacement | | | | \$ 100,000 | \$ 150,000 | \$2,500,000 | \$ 2,750,000 |
| Shadybrook Dredging/Bypass | | | | | \$ 100,000 | \$ 850,000 | \$ 950,000 |
| Recoat Sherwood Tank | | | | | | \$ 100,000 | \$ 100,000 |
| Vehicle/Equipment Replacement | | | | | | \$ 145,420 | \$ 145,420 |
| TOTAL CAPITAL OUTLAY | \$ 1,815,436 | \$830,000 | \$ 2,315,000 | \$ 1,515,000 | \$ 265,000 | \$ 3,670,420 | \$ 10,618,920 |

NOTES:

- 1 Vehicle/Equipment replacement items match the THCSO Vehicle/Equipment Replacement Plan.
- 2 An inflation factor of 3% per year has been applied to future capital costs.
- 3 Project completed or anticipated to be completed in previous fiscal year.
- 4 Entire project was budgeted in previous fiscal year. New budget requests represent anticipated unspent funds and will be adjusted to reflect actuals
- 5 Project to be included with SCADA Upgrade
- 6 Project costs 100% covered by DWR grant
- 7 Project anticipated to be 100% grant funded

In addition to expenses, revenue requirements must include the cost of maintaining adequate reserve levels. Among other reserve accounts, the District’s Reserves Policy requires maintaining an Operating Reserve balance of 25% of budgeted operating expenses (approximately \$364,000 for FY 2023-24), a Rate/Revenue Stabilization Reserve balance of 10% of total budgeted operating revenue (approximately \$154,000 for FY 2023-24) and a Capital Reserve balance capable of funding 100% of capital projects. All reserve account balances currently meet the minimum levels, however, operating and capital reserve are

projected to fall below the board adopted minimum levels, if no additional rate revenue is realized in the next five years.

Since no rate adjustments are currently scheduled in the next five years, projected revenues remain almost unchanged over the five-year period. Revenue generated from rates, fees and miscellaneous sources is not projected to change. The slight year-to-year variation resulting from water consumption and the number of late fees is considered inconsequential for this analysis. The \$1,463,948 in rate revenue is based on the 22/23 actual revenue. Property taxes, the only projected revenue increase over the next five years, are projected to increase by 2% per year. Interest revenue is projected to decrease due to the decrease in interest earning capital reserve funds.

4.1.6 Revenue Requirements Results

Table 4-2 compares the projected water revenues and expenses over the next five years to show total revenue required each year. The analysis reveals that projected revenues are not sufficient to meet operating, capital and debt service needs in any of the five years if rates remain at current levels. Specifically, projected revenues fall short of project expenses as follows:

- FY 23-24: \$687,395 shortfall (funded through capital reserves)
- FY 24-25: \$541,375 shortfall (funded through capital reserves)
- FY 25-26: \$405,230 shortfall (\$109,390 funded through capital reserves; remaining unfunded)
- FY 26-27: \$269,899 shortfall
- FY 27-28: \$478,091 shortfall

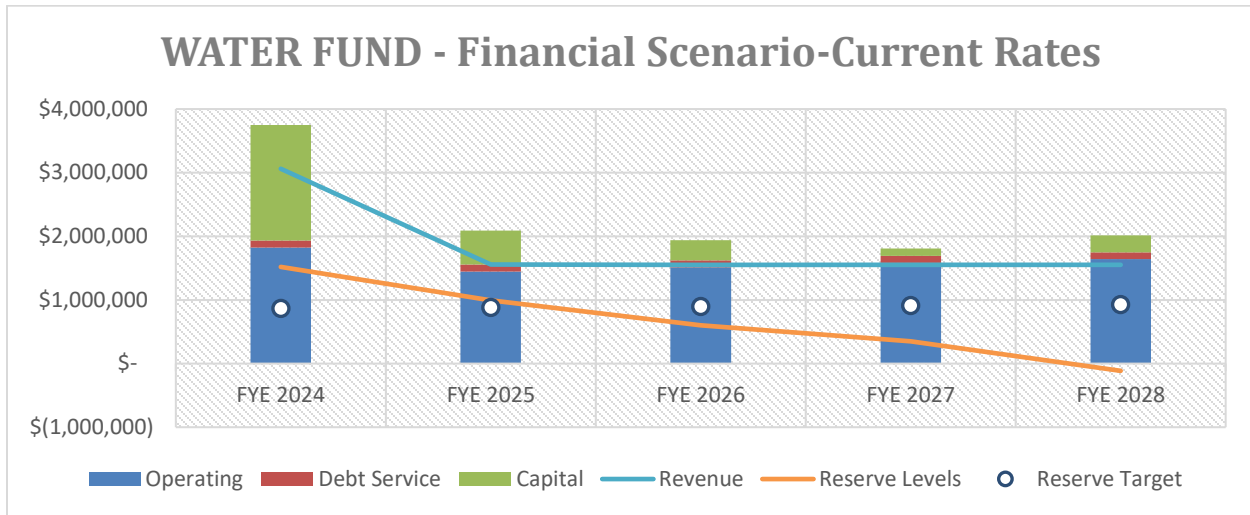
The revenue requirements analysis reveals that existing revenues cannot provide for sustainable water service over the next five years. Current revenues cover operating and debt service payments but are not sufficient to fully pay for capital expenses. This shortfall is currently covered with Capital Reserve funds.

Table 4-2. Revenue Requirements Results

| Twain Harte Community Services District WATER PROJECTIONS WITH CURRENT RATES 5 Year Revenue Requirement Analysis | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 23/24 Budget | 24/25 Budget | 25/26 Budget | 26/27 Budget | 27/28 Budget |
| Operating Expenses | | | | | |
| Salaries | \$ 344,769 | \$ 356,581 | \$ 378,620 | \$ 399,578 | \$ 413,554 |
| Benefits | 201,287 | 216,236 | 225,052 | 235,732 | 245,960 |
| Equip, Auto, Maint, & Repairs | 152,300 | 149,132 | 155,097 | 161,300 | 167,751 |
| Materials & Supplies | 49,458 | 45,865 | 47,700 | 49,608 | 51,592 |
| Outside Services | 446,148 | 26,812 | 27,885 | 29,001 | 30,161 |
| Other (Purchased Water, Utilities, Regulatory Fee) | 247,100 | 255,134 | 264,251 | 273,591 | 283,267 |
| Total Program Expenses | \$ 1,441,062 | \$ 1,049,760 | \$ 1,098,605 | \$ 1,148,809 | \$ 1,192,284 |
| Administrative Cost Allocation | 381,544 | 398,711 | 415,186 | 433,068 | 447,812 |
| TOTAL OPERATING EXPENSES | \$ 1,822,606 | \$ 1,448,471 | \$ 1,513,791 | \$ 1,581,877 | \$ 1,640,096 |
| Capital and Debt Service | | | | | |
| Debt Service | \$ 110,684 | \$ 110,539 | \$ 110,389 | \$ 110,272 | \$ 110,070 |
| Capital Outlay | 1,815,436 | 530,000 | 315,000 | 115,000 | 265,000 |
| Total Capital & Debt Service | \$ 1,926,120 | \$ 640,539 | \$ 425,389 | \$ 225,272 | \$ 375,070 |
| Reserve Funding Requirements | | | | | |
| Transfer To/(From) Capital Reserve | (687,395) | (541,375) | (109,390) | | |
| Transfer To/(From) Operating Reserve | | 14,519 | 17,022 | 14,555 | 15,581 |
| Transfer To/(From) Stabilization Reserve | | | | | |
| Total Transfers To/(From) Reserve Accounts | \$ (687,395) | \$ (526,856) | \$ (92,368) | \$ 14,555 | \$ 15,581 |
| TOTAL REVENUE REQUIRED | \$ 3,061,330 | \$ 1,562,154 | \$ 1,846,811 | \$ 1,821,704 | \$ 2,030,747 |
| Current Revenue | | | | | |
| Service Charges | \$ 1,463,948 | \$ 1,463,948 | \$ 1,463,948 | \$ 1,463,948 | \$ 1,463,948 |
| Fees | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Taxes & Assessments | 40,078 | 40,880 | 41,697 | 42,531 | 43,382 |
| Grants & Donations | 1,487,978 | | | | - |
| Other Revenue | 48,000 | 36,000 | 24,000 | 24,000 | 24,000 |
| Total Program Revenue | \$ 3,057,984 | \$ 1,558,808 | \$ 1,547,625 | \$ 1,548,459 | \$ 1,549,310 |
| Administrative Cost Allocation | 3,346 | 3,346 | 3,346 | 3,346 | 3,346 |
| GRAND TOTAL CURRENT REVENUE | \$ 3,061,330 | \$ 1,562,154 | \$ 1,550,971 | \$ 1,551,805 | \$ 1,552,656 |
| Additional Rate Revenue Required | \$ (0) | \$ 0 | \$ (295,840) | \$ (269,899) | \$ (478,091) |
| GRAND TOTAL RATE REVENUE REQUIRED: \$1,043,831 | | | | | |

If rates remain unchanged, reserve levels required by the District’s Reserves Policy will no longer be met in FY 2025-26 and recovered revenue would no longer completely fund operating and debt service payments. Reserves would continue to deplete until all reserve accounts are completely exhausted sometime in FY 2027-28. This phenomenon is depicted in Figure 4-2.

Figure 4-2. Projected Revenue, Expenses and Reserve Impacts



In order to meet the District’s revenue requirements over the next five years and achieve the District’s rate design principles and goals (excluding those discussed in Section 2.5, *Meeting Principles and Goals*), the District would need to increase rates at the beginning of each fiscal year as follows:

- FY 23-24: 0%
- FY 24-25: 1%
- FY 25-26: 27%
- FY 26-27: 0%
- FY 27-28: 0%

4.2 Cost of Services Analysis

4.2.1 General Methodology

The cost-of-service analysis provides the framework for collecting the rate revenue needs identified in the revenue requirements analysis in a manner that is proportionate to the service provided to each water customer class. The systematic process used in this study to equitably allocate water expenses to individual customer classes is detailed in the industry-accepted American Water Works Association (AWWA) M-1 Manual, *Principles of Water Rates, Fees and Charges*. Specifically, this analysis uses the M-1 Manual’s Base-Extra Capacity Method, which generally involves the following three steps:

1. Identify water costs by functional category (i.e. water treatment, pumping, etc.).
2. Allocate each functional cost category to capacity component cost categories (defined in Section 4.2.2).

3. Allocate capacity component costs to each water customer class based on water use and other characteristics of each class.

4.2.2 Cost Allocation by Function

The total annual cost of service was first broken down into categories classified by “utility function”. A utility function refers to the type of operational activity for which a particular cost is expended. For example, electrical and maintenance costs related to a pump station are classified as “pumping” costs. All District water costs were broken down into the following functional cost categories in accordance with the AWWA M-1 Manual:

- Source of Supply
- Pumping
- Treatment
- Transmission and Distribution
- Customer Accounts
- General and Administrative

4.2.3 Allocation of Functional Costs to Capacity Components

The functional cost categories were further allocated to capacity components. These components identify either the level of demand each functional category places on the water system or how functional categories relate to customer classes. The capacity components are driven by the annual volume of water consumed, the peak water demands incurred, the number of customers in the system, and the number of fire services required to maintain adequate fire protection. The following capacity components were used in this cost-of-service analysis:

- Base Costs – Operating and capital costs directly related to the average quantity of water used, including costs associated with service to customers under average load conditions.
- Extra Capacity Costs (max day & max hour) – Operating costs associated with meeting peak demand water use, or water in excess of average (base) use, including any capital costs that will provide excess capacity.
- Customer Costs – Customer costs are fixed costs, irrespective of the amount of water used. They are equal for all customers and include meter reading, billing, accounting, and administration.
- Meter Service Costs – Meter costs are fixed costs specific to the size of meter utilized by the customer and include maintenance and capital costs directly attributable to meters.

- Fire Protection Costs – Costs directly related to public fire hydrants and associated branch pipelines and valves.

The water fund's budget was analyzed line-by-line and expenditures were distributed to functional cost categories and then allocated to each capacity component. Table 4-3 provides the resulting breakdown of this process. As seen in Table 4-3, functional cost categories were allocated to capacity components differently based on function. For example, 100% of Customer Account category costs were allocated to the Customer Cost component because they are not dependent upon the volume of water used or the number of connections in a system. These costs would be the same if the entire District used five gallons or one million gallons of water. Also, Transmission and Distribution category costs are allocated to Base, and Extra Capacity (both Max Day and Peak Hour) capacity components because the different parts of the transmission and distribution system are used to meet various types of water use demands. For example, distribution pipelines are primarily used to meet average water flows, but they are sized larger than needed for average water flows, so they can also handle much larger water flows, such as: maximum day flows (normally experienced on hot August days) and maximum hour flows (typically experienced in the morning when most people shower).

Table 4-3. Expenses by Functional Cost Category and Capacity Component

| Description | Total Water | | | | Meters | Customer | |
|---|------------------|----------------|----------------|----------------|---------------|----------------|--------------|
| | Expenses | Base | Max Day | Max Hour | & Services | Accounts | Fire |
| % Allocation | | 29.58% | 12.56% | 10.59% | 3.53% | 43.63% | 0.09% |
| Total Allocation | 2,021,411 | 598,027 | 253,933 | 214,137 | 71,455 | 881,944 | 1,916 |
| SALARIES & BENEFITS | | | | | | | |
| | 546,056 | 136,195 | 63,056 | 59,219 | 20,090 | 267,477 | 21 |
| EQUIP, AUTO, MAINT, & REPAIR | | | | | | | |
| EQUIP MAINTENANCE & RE | 7,400 | 3,392 | 1,894 | 2,114 | - | - | - |
| FACILITIES MAINT/REPAI-SOS | 9,300 | 9,300 | - | - | - | - | - |
| FACILITIES MAINT/REPAI-Pump | 4,100 | - | 4,100 | - | - | - | - |
| FACILITIES MAINT/REPAI-W.T. | 23,500 | 15,079 | 8,421 | - | - | - | - |
| FACILITIES MAINT/REPAI-T.&D. | 58,201 | 26,676 | 14,896 | 16,629 | - | - | - |
| FACILITIES MAINT/REPAI-G.& A. | 1,300 | 336 | 156 | 146 | 50 | 612 | - |
| VEHICLE MAINTENANCE | 7,800 | 2,018 | 934 | 877 | 298 | 3,673 | - |
| FUEL | 24,700 | 6,389 | 2,958 | 2,778 | 942 | 11,632 | 1 |
| EQUIP UNDER \$5K - Pumping | - | - | - | - | - | - | - |
| EQUIP UNDER \$5K - W.T. | 5,900 | 3,786 | 2,114 | - | - | - | - |
| EQUIP UNDER \$5K - T&D | 7,600 | 3,484 | 1,945 | 2,171 | - | - | - |
| EQUIP UNDER \$5K - G&A | 499 | 129 | 60 | 56 | 19 | 235 | - |
| PERSONAL PROTECTIVE EQUIP | 2,000 | - | - | - | - | 2,000 | - |
| MATERIALS & SUPPLIES | | | | | | | |
| OFFICE SUPPLIES | 1,000 | - | - | - | - | 1,000 | - |
| OFFICE SUPPLIES-CUSTOMER | 200 | - | - | - | - | 200 | - |
| POSTAGE | 200 | - | - | - | - | 200 | - |
| POSTAGE - CUSTOMER ACC | 4,800 | - | - | - | - | 4,800 | - |
| EMERG. RESPONSE FOOD SUPPLY | 400 | 104 | 48 | 45 | 15 | 188 | - |
| CHEMICAL & TESTING SUP | 42,500 | 42,500 | - | - | - | - | - |
| JANITORIAL SUPPLIES | 360 | 94 | 43 | 40 | 14 | 169 | - |
| OUTSIDE SERVICES | | | | | | | |
| LEGAL FEES | 7,000 | - | - | - | - | 7,000 | - |
| IT SERVICES | 1,700 | - | - | - | - | 1,700 | - |
| ENGINEERING SERVICES | 433,598 | 191,648 | 106,142 | 117,735 | 1,354 | 16,718 | 1 |
| MEDICAL EXAMS | 550 | 142 | 66 | 62 | 21 | 259 | - |
| OTHER PROFESSIONAL SER | 3,300 | 854 | 395 | 371 | 126 | 1,554 | - |
| OTHER PROFESSIONAL SER | | | | | | | |
| UTILITIES - SOS | - | - | - | - | - | - | - |
| UTILITIES - PUMPING | 18,000 | 18,000 | - | - | - | - | - |
| UTILITIES - WATER TREATMENT | 23,700 | 15,208 | 8,492 | - | - | - | - |
| UTILITIES - GEN & ADMIN | 4,600 | 1,190 | 551 | 517 | 176 | 2,166 | - |
| PHONE/COMMUNICATIONS | 7,200 | 1,862 | 862 | 810 | 275 | 3,391 | - |
| COMPUTER LIC./MAINT. AGREE. | 19,800 | - | - | - | - | 19,800 | - |
| PROPERTY/LIABILITY INSURANCE | 46,000 | - | - | - | - | 46,000 | - |
| PROPERTY TAX | 500 | 104 | - | 348 | - | - | 48 |
| MEMBERSHIPS/PUBS/SUBSC | 11,800 | 3,052 | 1,413 | 1,327 | 450 | 5,558 | - |
| LICENSES & CERTIFICATIONS | 1,400 | 362 | 168 | 157 | 53 | 660 | - |
| TRAINING/CONFERENCES/TRAVEL | 4,101 | 1,061 | 491 | 461 | 156 | 1,932 | - |
| UNCOLLECTABLE ACCOUNTS | 500 | - | - | - | - | 500 | - |
| ADVERTISING & PUBLIC EDUCATION | 1,400 | 362 | 168 | 157 | 53 | 660 | - |
| LABORATORY FEES | 27,300 | - | - | - | 27,300 | - | - |
| REGULATORY FEES | 18,500 | - | - | - | 18,500 | - | - |
| PURCHASED WATER | 51,000 | 51,000 | - | - | - | - | - |
| BANK & INVESTMENT FEES | 11,300 | - | - | - | - | 11,300 | - |
| CLAIMS | - | - | - | - | - | - | - |
| ADMIN COST ALLOCATION | 381,544 | - | - | - | - | 381,544 | - |
| DEBT SERVICE | | | | | | | |
| Total Debt Service | 110,684 | 10,593 | 4,904 | 4,606 | 1,563 | 89,017 | 2 |
| Capital Projects - Rate Funded | 88,118 | 53,107 | 29,656 | 3,511 | - | - | 1,843 |

Key:

| |
|-----------------------------|
| Source of Supply |
| Pumping |
| Water Treatment |
| Transmission & Distribution |
| Customer Accounts |
| General & Administrative |
| Multiple Categories Above |

4.2.4 Allocation of Capacity Component Costs to Customer Classes

The final cost allocation step is to allocate the capacity component costs to the District's specific customer classes – Residential and Non-Residential. This becomes the basis by which the rates, by customer class, are developed consistent with the cost of providing service to those customer classes.

Table 4-4 presents the allocation of capacity component costs to customer classes (residential and non-residential). Base and extra capacity components were allocated to each class based on their respective annual base, max day and max hour water use statistics over the past five years. This data was used to determine the percentage of Base component and Extra Capacity component costs attributable to each class. Meter Service component costs were allocated to each class based on their respective number of meters. Meter Service costs are typically split by equivalent meter sizes, but after analysis it was determined that the expenses associated with the meter service capacity component would not increase for larger meters and were, therefore, split evenly on a per meter basis. Customer component costs were allocated to each class based on their respective number of customer accounts since the functional costs included in the Customer component benefits every customer equally without respect to water usage. Fire component costs were allocated to each class based on their respective number of meters because the same level of benefit is provided to each customer's meter without respect to meter size or water usage.

The resulting allocation of these component costs provides a road map for equitable rates that will collect the appropriate revenue from Residential and Non-Residential customer classes in proportion to the amount of service and demand they place on the water system. According to the cost-of-service analysis, the Residential customer class is responsible for 88.8% of total revenue requirements and the Non-Residential customer class is responsible for 11.2% of total revenue requirements.

Table 4-4. Allocation of Capacity Component Costs to Customer Classes



| Summary of Expenses by Capacity Components | | | | | | | |
|--|-------------|----------------|-----------|----------------|----------------|--------|--------------|
| Functional Cost Component | Base | Extra Capacity | | Meter Services | Customer Costs | Fire | Total |
| | Average Day | Max Day | Max Hour | | | | |
| Total Costs | \$ 357,151 | \$ 122,127 | \$ 86,102 | \$ 67,280 | \$ 830,419 | \$ 869 | \$ 1,463,948 |

Allocation of Capacity Costs to Customer Classes:

| Calculation of Unit Cost for Base, Max Day and Max Hour Cost Components | | | | | | | | Meter Services | Customer Costs | Fire |
|---|-------------------|--------------------|------------------------|---|-------------------------|--------------------------------------|-------------------|--------------------|------------------|------|
| Customer Class | Total Annual Flow | Average Daily Flow | Max Day Peaking Factor | Max Day Flow Above the Average Day Flow | Max Hour Peaking Factor | Max Hour Flow Above the Max Day Flow | Number of Meters | Number of Bills | Number of Meters | |
| Residential | 46,573,076 | 127,597 | 156% | 199,221 | 196% | 250,260 | 1551.85 | 1488.5 | 1551.85 | |
| Non-Residential | 12,569,546 | 34,437 | 128% | 43,931 | 168% | 57,706 | 134 | 83.5 | 134 | |
| Total | 59,142,622 | 162,034 | | 243,152 | | 307,966 | 1,686 | 1,572 | 1,686 | |
| <i>Unit Cost</i> | | <i>\$ 2.2042</i> | | <i>\$ 0.5023</i> | | <i>\$ 0.2796</i> | <i>\$ 39.9087</i> | <i>\$ 528.2564</i> | <i>\$ 0.5155</i> | |

| Allocation of Capacity Costs to Customer Classes | | | | | | | | |
|--|----------------------|----------------------|---------------------|---------------------|----------------------|------------------|------------------------|---------------------|
| Customer Class | Base | Extra Capacity | | Meter Services | Customer Costs | Fire | Total | % Cost Distribution |
| | Average Day | Max Day | Max Hour | | | | | |
| Residential | \$ 281,245.97 | \$ 100,062.46 | \$ 69,968.89 | \$ 61,932.28 | \$ 786,309.96 | \$ 800.35 | \$ 1,300,319.90 | 88.8% |
| Non-Residential | 75,905.10 | 22,065.02 | 16,133.60 | 5,347.76 | 44,109.43 | 69.11 | \$ 163,630.02 | 11.2% |
| Total | \$ 357,151.07 | \$ 122,127.48 | \$ 86,102.48 | \$ 67,280.04 | \$ 830,419.39 | \$ 869.45 | \$ 1,463,949.92 | 100% |

4.3 Rate Design Analysis

4.3.1 General Methodology

The rate design analysis involves development of a rate structure that successfully balances equitable collection of sufficient revenues with the District’s unique principles and goals to achieve rates and charges that meet the unique needs of the District and its customers. The rate design analysis generally consists of the following steps:

1. Existing Rate Structure Analysis
2. Rate Structure Development
3. Rate Level Setting

4.3.2 Existing Rate Structure Analysis

The District currently collects revenue from its water customers with a monthly, three-tiered rate structure. The District’s customer classes are solely based on whether they are a Residential or Non-Residential customer. The rate structure is comprised of two components:

Base Charge: The base charge is a fixed monthly charge that collects revenue for each capacity component cost in the proportions allocated to each customer class in the cost of services analysis. This manner of collection ensures that present and future rate revenues are collected in proportion to the cost of services provided to each customer class. The base charge accounts for 86% of the overall required rate revenue and consists of the following capacity components:

- *Base and Extra Capacity Components* – A portion of costs related to the Base and Extra Capacity Components is included in the base charge. Base and Extra Capacity components account for 40.59% of required rate revenue; however, only 26.59% is accounted for in the base charge (the remaining 14% is collected through the commodity charge). The portion of Base and Extra Capacity component costs covered by the base charge are distributed to each customer based on equivalent 5/8-inch meter size, as determined in the AWWA M-1 Manual, in the proportions attributed to each customer class in the cost of services analysis. Meter size is used to represent a customer’s potential capacity, which directly relates to system costs associated with average, max hour, and max flow demands. For example, a 1-inch meter can accommodate 2.5 times greater flows than a 5/8-inch meter and, therefore, customers with 1” meters are responsible for 2.5 times more of these costs than customers with 5/8” meters. This method is applied to all Non-Residential Customers. However, analysis of District Residential customers revealed that water use did not depend on meter size and some customers were supplied with a 1-inch to provide higher pressures. To accommodate this, all Residential customers are considered to have a 5/8-inch meter. The only exception to this is multi-residential customers. Based on analysis of average water use between multi-unit and single family residential, it was determined that each dwelling unit in a multi-residential dwelling has a capacity of 85% of a single-family dwelling unit. Therefore, the base charge for multi-family dwellings is based on 85% of a 5/8” meter per unit in the multi-family dwelling.
- *Meter Service, Customer and Fire Components* – All costs related to Meter Service, Customer and Fire capacity components are included in the base charge in the proportions attributed to each customer class in the cost of services analysis. These costs are distributed to each customer based on number of meters, irrespective of meter size. Since these costs benefit all customers equally, they are shared equally as fixed costs by all customers and are not dependent on customer capacity of water use.

Commodity Charge: The commodity charge for each customer class consists primarily of a portion of the costs included in the Base and Extra Capacity component, which includes costs associated with average system use. Since a portion of these costs are determined by average Residential and Non-Residential water use and vary based on water use, it is appropriate to recover these costs from each customer class through a charge based on actual water usage. Assuming that the ratio of Residential and Non-Residential water use remains consistent, this ensures proportionate collection of future revenue between customer classes. In order to provide consistent revenue streams, the commodity

charge is designed to cover 14% of required rate revenues (the base charge covers the remaining 86% of required rate revenues).

Commodity charges are collected through two tiers based on monthly water use in 1,000 gallon units. The cost to deliver each unit of water is the same no matter how much is consumed; however, the District Board of Directors chose to encourage water conservation by subsidizing the first tier by using \$25,000 in property tax revenue (property taxes can be used at the District's discretion instead of in proportion to service provided). Therefore, commodity charges are collected in two tiers – the first two thousand gallons at a subsidized charge in the first tier and at cost for any water consumed above two thousand gallons.

4.3.3 Rate Structure Development

Analysis of the existing rate structure revealed that the current rate structure accomplishes the following:

- Collects revenue from Residential and Non-Residential customers in the proportions set forth in the cost-of-service analysis.
- Promotes efficient water use in a cost-justified manner without significantly impacting consistent revenue collection.
- Maintains a consistent, easily understood and easily administered rate structure.
- Incorporates the maximum number of District-specific and general principles.

Due to the above, the District decided not to modify the existing rate structure.

4.3.4 Rate Level Setting

The primary goal of rate level setting is to ensure collection of sufficient revenues to meet District revenue requirements. This must also be balanced with the District's adopted principle of minimizing customer impacts. The revenue requirements analysis shows that one small rate increase is needed in the second year and one very large rate increase is needed in the third year of the five-year analysis period. However, the resulting customer impacts are too significant and the District had to create a more reasonable method of proposed rate levels that both generated sufficient revenues and minimized customer impacts.

The District chose to recommend initial water rate increases that kept the annual base charge increase at a fairly equal amount each year with the exception of slightly higher increases in the first two years. This method of rate level setting does not generate sufficient rate revenues to cover all capital expenses, but capital reserve funds will be used in any given year to fund the difference. With this model, revenue will exceed operating costs in all five years and reserves will never dip below the minimum requirements. The District deemed this to be an appropriate compromise to keep increases reasonable for its customers. The result of this rate level setting method is illustrated in Figure 4-3.

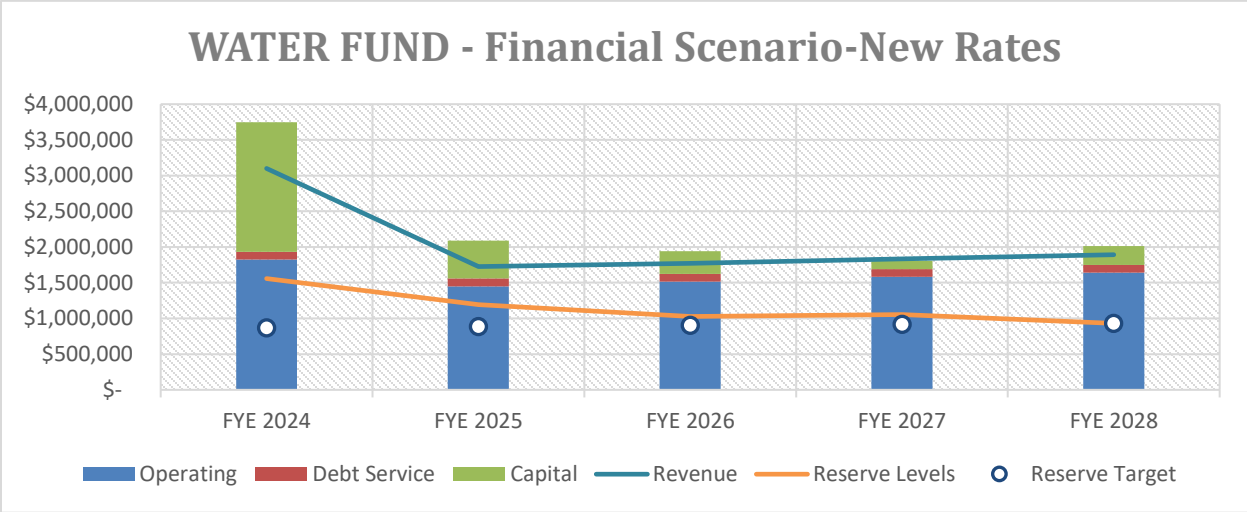


Figure 4-3. Projected Water Revenue, Expenses and Reserves Impacts after Rate Increases

4.4 Recommended Water Rates

Table 4-5 presents recommended water rates, based on the rate level setting method in the previous section, for the five-year analysis period. Although these rates account for scheduled cost increases from the District’s wholesale water provider and inflation of other utility costs, it is recommended that a pass-through clause be adopted with the recommended rates so that the District can pass through any such expense increases that are beyond those anticipated in the revenue requirements analysis.

Table 4-5. Recommended Water Rates

| Base Charge (Fixed Monthly) | | | | | | |
|--------------------------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| USER CLASS (by meter size) | | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| Residential | Single Family Unit | \$ 65.50 | \$ 68.79 | \$ 71.16 | \$ 73.62 | \$ 76.16 |
| | Multi Family Unit | \$ 55.68 | \$ 58.47 | \$ 60.49 | \$ 62.57 | \$ 64.73 |
| Non-Residential | 3/4" | \$ 67.42 | \$ 70.81 | \$ 73.25 | \$ 75.77 | \$ 78.39 |
| | 1" | \$ 90.99 | \$ 95.56 | \$ 98.85 | \$ 102.26 | \$ 105.79 |
| | 1.5" | \$ 149.91 | \$ 157.44 | \$ 162.87 | \$ 168.48 | \$ 174.30 |
| | 2" | \$ 220.62 | \$ 231.69 | \$ 239.68 | \$ 247.95 | \$ 256.50 |
| | 3" | \$ 409.17 | \$ 429.71 | \$ 444.52 | \$ 459.86 | \$ 475.72 |
| Commodity Charge (Variable) | | | | | | |
| ALL USER CLASSES (per 1,000 gallons) | | FY 23-24 1/15/24 | FY 24-25 7/15/24 | FY 25-26 7/15/25 | FY 26-27 7/15/26 | FY 27-28 7/15/27 |
| 0-2,000 | Gal | \$ 2.85 | \$ 3.06 | \$ 3.21 | \$ 3.36 | \$ 3.52 |
| 2,001+ | Gal | \$ 4.10 | \$ 4.31 | \$ 4.46 | \$ 4.61 | \$ 4.77 |

Table 4-6 presents the projected revenue that will be generated if the recommended rates are implemented.

Table 4-6. Revenue Generated by Recommended Water Rates

| Twain Harte Community Services District WATER PROJECTIONS WITH RECOMMENDED INCREASE 5 Year Revenue Requirement Analysis | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 23/24 Budget | 24/25 Budget | 25/26 Budget | 26/27 Budget | 27/28 Budget |
| Operating Expenses | | | | | |
| Salaries | \$ 344,769 | \$ 356,581 | \$ 378,620 | \$ 399,578 | \$ 413,554 |
| Benefits | 201,287 | 216,236 | 225,052 | 235,732 | 245,960 |
| Equip, Auto, Maint, & Repairs | 152,300 | 149,132 | 155,097 | 161,300 | 167,751 |
| Materials & Supplies | 49,458 | 45,865 | 47,700 | 49,608 | 51,592 |
| Outside Services | 446,148 | 26,812 | 27,885 | 29,001 | 30,161 |
| Other (Purchased Water, Utilities, Regulatory Fee) | 247,100 | 255,134 | 264,251 | 273,591 | 283,267 |
| Total Program Expenses | \$ 1,441,062 | \$ 1,049,760 | \$ 1,098,605 | \$ 1,148,809 | \$ 1,192,284 |
| Administrative Cost Allocation | 381,544 | 398,711 | 415,186 | 433,068 | 447,812 |
| TOTAL OPERATING EXPENSES | \$ 1,822,606 | \$ 1,448,471 | \$ 1,513,791 | \$ 1,581,877 | \$ 1,640,096 |
| Capital and Debt Service | | | | | |
| Debt Service | \$ 110,684 | \$ 110,539 | \$ 110,389 | \$ 110,272 | \$ 110,070 |
| Capital Outlay | 1,815,436 | 530,000 | 315,000 | 115,000 | 265,000 |
| Total Capital & Debt Service | \$ 1,926,120 | \$ 640,539 | \$ 425,389 | \$ 225,272 | \$ 375,070 |
| Reserve Funding Requirements | | | | | |
| Transfer To/(From) Capital Reserve | (648,479) | (377,474) | (184,355) | 9,945 | (137,214) |
| Transfer To/(From) Operating Reserve | - | 14,519 | 17,022 | 14,555 | 15,581 |
| Transfer To/(From) Stabilization Reserve | - | - | - | - | - |
| Total Transfers To/(From) Reserve Accounts | \$ (648,479) | \$ (362,955) | \$ (167,333) | \$ 24,500 | \$ (121,633) |
| TOTAL REVENUE REQUIRED | \$ 3,100,246 | \$ 1,726,055 | \$ 1,771,846 | \$ 1,831,649 | \$ 1,893,533 |
| Current Revenue | | | | | |
| Service Charges | \$ 1,502,865 | \$ 1,627,849 | \$ 1,684,823 | \$ 1,743,792 | \$ 1,804,825 |
| Fees | 17,980 | 17,980 | 17,980 | 17,980 | 17,980 |
| Taxes & Assessments | 40,078 | 40,880 | 41,697 | 42,531 | 43,382 |
| Grants & Donations | 1,487,978 | - | - | - | - |
| Other Revenue | 48,000 | 36,000 | 24,000 | 24,000 | 24,000 |
| Total Program Revenue | \$ 3,096,901 | \$ 1,722,708 | \$ 1,768,501 | \$ 1,828,303 | \$ 1,890,187 |
| Administrative Cost Allocation | 3,346 | 3,346 | 3,346 | 3,346 | 3,346 |
| GRAND TOTAL CURRENT REVENUE | \$ 3,100,247 | \$ 1,726,054 | \$ 1,771,847 | \$ 1,831,649 | \$ 1,893,533 |
| Additional Rate Revenue Required | \$ 0 | \$ (0) | \$ 0 | \$ (0) | \$ (0) |

4.5 Customer Impacts

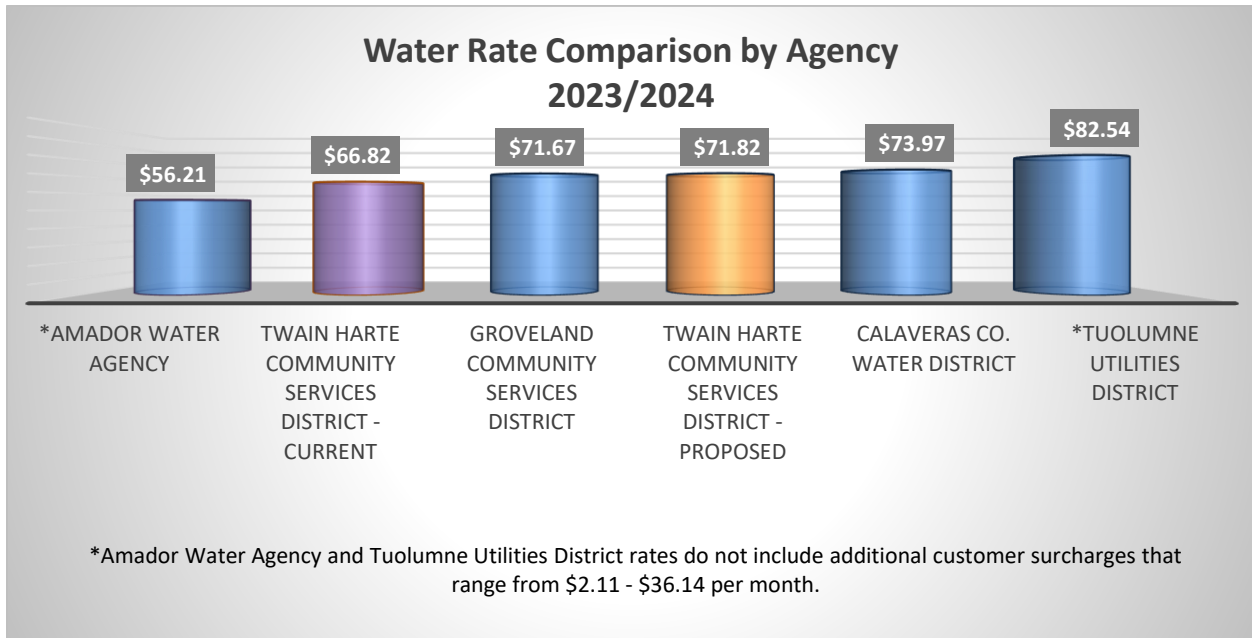
As noted throughout this study, many rate design measures were undertaken to minimize customer rate impacts, including depleting Capital Reserves below minimum levels. Table 4-7 displays the recommended impacts with a comparison of existing rates and recommended rates.

Table 4-7. Existing vs. Recommended Rates

| Base Charge (Fixed Monthly) | | | | | | | |
|---|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| USER CLASS (by meter size) | | CURRENT | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| Residential | Single Family Unit | \$ 61.50 | \$ 65.50 | \$ 68.79 | \$ 71.16 | \$ 73.62 | \$ 76.16 |
| | Multi Family Unit | \$ 61.50 | \$ 55.68 | \$ 58.47 | \$ 60.49 | \$ 62.57 | \$ 64.73 |
| Non-Residential | 3/4" | \$ 61.50 | \$ 67.42 | \$ 70.81 | \$ 73.25 | \$ 75.77 | \$ 78.39 |
| | 1" | \$ 80.85 | \$ 90.99 | \$ 95.56 | \$ 98.85 | \$ 102.26 | \$ 105.79 |
| | 1.5" | \$ 129.23 | \$ 149.91 | \$ 157.44 | \$ 162.87 | \$ 168.48 | \$ 174.30 |
| | 2" | \$ 187.29 | \$ 220.62 | \$ 231.69 | \$ 239.68 | \$ 247.95 | \$ 256.50 |
| | 3" | \$ 342.09 | \$ 409.17 | \$ 429.71 | \$ 444.52 | \$ 459.86 | \$ 475.72 |
| Commodity Charge (Variable) | | | | | | | |
| ALL USER CLASSES (per 1,000 gallons) | | CURRENT | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| | | | 1/15/24 | 7/15/24 | 7/15/25 | 7/15/26 | 7/15/27 |
| 0-2,000 | Gal | \$ 2.38 | \$ 2.85 | \$ 3.06 | \$ 3.21 | \$ 3.36 | \$ 3.52 |
| 2,001+ | Gal | \$ 3.74 | \$ 4.10 | \$ 4.31 | \$ 4.46 | \$ 4.61 | \$ 4.77 |
| Proposed Incremental Increases | | | | | | | |
| Single Family Residential Base Charge | | | \$ 4.00 | \$ 3.29 | \$ 2.37 | \$ 2.45 | \$ 2.54 |
| Average Single Family Residential- Base + Commodity | | | \$ 5.05 | \$ 3.86 | \$ 2.87 | \$ 3.00 | \$ 3.14 |
| Non-Residential (General Commercial) Base Charge | | | \$ 5.92 | \$ 3.38 | \$ 2.44 | \$ 2.53 | \$ 2.61 |

When considering customer impacts, the District also looked at neighboring water agencies to determine if District customers were being asked to pay much more than similar areas for water services. As illustrated in Figure 4-4, the recommended rates are comparable to water rates levied in other nearby Sierra Nevada foothill communities like Twain Harte.

Figure 4-4. Recommended Rate Comparison to Similar Water Agencies



5.0 Sewer Rate Analysis

5.1 Revenue Requirements Analysis

5.1.1 General Methodology

The first step of rate design is performance of a revenue requirements analysis. This assessment of the District's sewer fund financial health involves a detailed analysis of existing expenses and revenues along with reasonable projections of future expenses to determine current and future revenue needs over a five year span. The analysis then compares revenue needs with collected revenues to determine whether or not rates must be adjusted to continue adequate sewer services.

5.1.2 Data Input

The following data items were reviewed and incorporated in this analysis:

- District rate design principles and goals
- Fiscal Year 2022-23 sewer fund actuals
- Fiscal Year 2023-24 sewer fund budget
- 5-year capital outlay plan
- District Reserves Policy
- Adopted Tuolumne Utilities District sewer rate increase schedule
- Debt service data from existing loans

5.1.3 Existing Sewer Revenues

The sewer fund receives revenue almost completely from rates and service charges. Over the past three years, the District received approximately 90% of its revenue from rates and service charges and 10% from other one-time, non-continuous revenue sources.

In Fiscal Year 2022-23, the District collected \$1,170,537 in sewer revenues, consisting of the following:

- Rate Revenue: \$1,137,469
- Fee revenue: \$13,758
- Other One-Time Revenue: \$19,310

The District's last sewer rate increase was in 2019. After that increase, collected sewer revenue was sufficient to meet operational and some capital sewer expenses. However, projections show that a

revenue shortfall will exist in the fiscal year ending 2024 primarily due to substantial increases in wastewater treatment costs imposed by TUD, who provides wastewater treatment services to the District. The gap between collected sewer revenue and sewer expenses is projected to increase over the next five years as sewer infrastructure continues to degrade and TUD implements its adopted annual tiered wastewater treatment rate increases.

5.1.4 Existing Sewer Expenses

District revenue requirements are determined by combining all expenses, including all operational and maintenance costs, capital improvement costs, and payments on debt. Figure 5-1 depicts a breakdown of the District’s average sewer fund expenses into each of these cost categories.

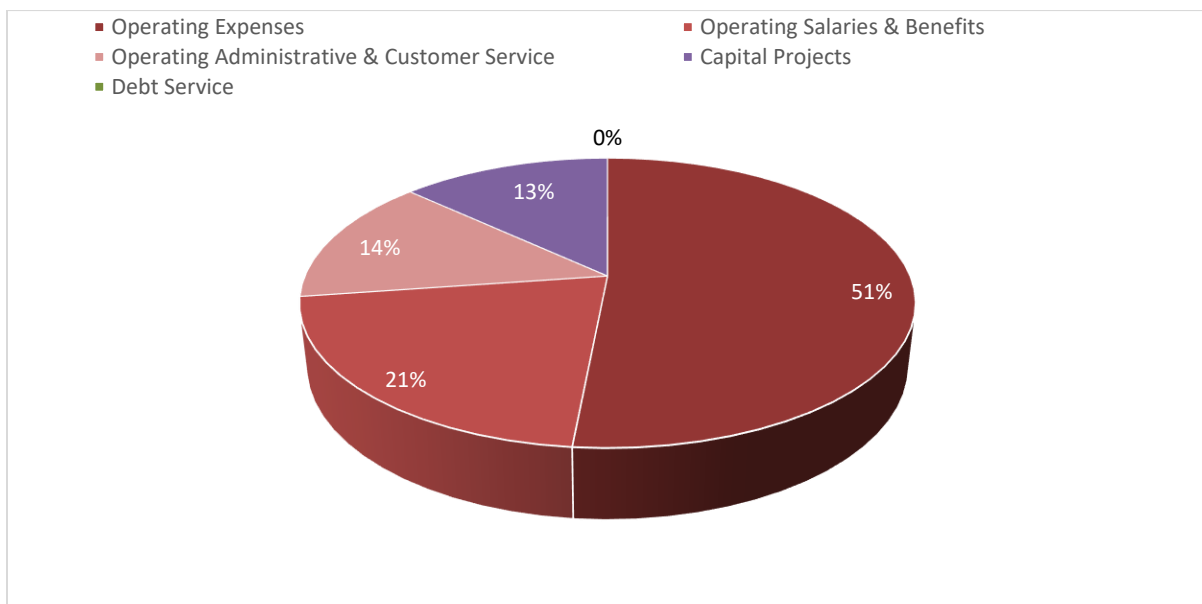


Figure 5-1. Breakdown of Average Sewer Expenses

As evidenced in Figure 5-1, the majority (87%) of sewer fund expenses are related to operating costs – 51% Operating Expenses (i.e. repairs, electricity, TUD treatment services, maintenance, etc.), 21% Operating Salaries & Benefits (i.e. collections personnel) and 14% Operating Administration & Customer Service. Capital projects (pipeline and facility replacement and upgrades) make up 13% of costs, and debt service payments to pay for previously constructed capital projects make up 0% of costs.

5.1.5 Projected Sewer Revenues and Expenses

In order to assess short term and long-term sewer fund financial health, existing revenues and expenses were projected out over five years. For the purposes of this analysis, it is assumed that the Fiscal Year (FY) 2023-24 sewer fund budget accurately represents existing revenues and expenses.

Operating and maintenance costs were projected to increase annually over the five-year period. Projected increases are generally based on the following:

- Cost of sewer treatment and disposal is based on a rate increase schedule adopted by Tuolumne Utilities District.
- Salaries and benefits are based on provisions of the existing Collective Bargaining Agreement (labor union contract) and the career development path of existing employees.
- Most of the other operating and maintenance costs (i.e. electricity, repair materials, etc.) are projected to increase by 4% per year due to inflation. Although this percentage is slightly lower than inflation rates over the past few years, it is in line with the historical inflation pattern and is an industry-accepted value for projecting costs.

Capital improvement costs were projected based on the District’s 5-Year Capital Outlay Plan (Table 5-1). Debt service costs were projected based on existing loan schedules with no new debt scheduled.

Table 5-1. 5-Year Capital Outlay Plan (Sewer Fund)

5-YEAR CAPITAL OUTLAY PLAN
Sewer Fund - FY 23/24

| | Requested FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 | Out Years 6 to 10 | TOTAL |
|--|-----------------------|--------------------|--------------------|-------------------|-------------------|----------------------|---------------------|
| I&I Manhole Repair/Replacement ³ | \$ 9,000 | | | | | | \$ 25,000 |
| SCADA Upgrade ⁴ | \$100,000 | | | | | | \$ 100,000 |
| Sewer Main Re-Lining/Replacement | \$150,000 | \$ 150,000 | \$ 150,000 | \$ 150,000 | \$ 150,000 | \$ 750,000 | \$ 1,500,000 |
| Truck #4 Plow (65% W) | \$ 4,500 | | | | | | \$ 4,500 |
| Push Camera | \$ 25,000 | | | | | | \$ 25,000 |
| Lift Station Backup Pump | \$ 13,000 | | | | | | \$ 13,000 |
| TH Pipeline Replacement Project ⁵ | \$490,000 | \$2,700,000 | \$1,300,000 | | | | \$ 4,490,000 |
| Emergency Response Trailer | | \$ 5,000 | | | | | \$ 5,000 |
| Sequoia Dr - 6" Replacement | | \$ 60,000 | | | | | \$ 60,000 |
| East Ave/Cedar Pines - 8" Replacement | | | | | \$ 70,000 | \$ 330,000 | \$ 400,000 |
| Cresta/Oakview - 6" Replacement | | | | | | \$ 580,000 | \$ 580,000 |
| Little Fuller/Virgina - 6" Replacement | | | | | | \$ 80,000 | \$ 80,000 |
| Big Pine - 6" Replacement | | | | | | \$ 40,000 | \$ 40,000 |
| Sherwood Forest Sewer ⁶ | | | | | | \$3,575,000 | \$ 3,575,000 |
| Vehicle/Equipment Replace | | | | | | \$ 86,380 | \$ 86,380 |
| TOTAL CAPITAL OUTLAY | \$791,500 | \$2,915,000 | \$1,450,000 | \$ 150,000 | \$ 220,000 | \$5,441,380 | \$11,047,368 |

NOTES:

Vehicle/Equipment replacement items match the THCSO Vehicle/Equipment Replacement Plan.

An inflation factor of 3% per year has been applied to future capital costs.

Project completed or anticipated to be completed in previous fiscal year.

Entire project was budgeted in previous fiscal year. New budget requests represent anticipated unspent funds and will be adjusted to reflect actuals at mid-year.

This project is anticipated to be 100% SWRCB grant funded

This project is a new sewer system that will require a special assessment and property owner vote

In addition to expenses, revenue requirements must include the cost of maintaining adequate reserve levels. Among other reserve accounts, the District's Reserves Policy requires maintaining an Operating Reserve balance of 25% of budgeted operating expenses (approximately \$330,652 for FY 2023-24), a Rate/Revenue Stabilization Reserve balance of 10% of total budgeted operating revenue (approximately \$115,332 for FY 2023-24) and a Capital Reserve balance capable of funding 100% of capital projects.

Since no rate adjustments are currently scheduled in the next five years, projected revenues remain almost unchanged over the five-year period. Revenue generated from rates, fees and miscellaneous sources is projected to decrease slightly due to a reduction in interest earning reserve funds.

5.1.6 Recommended Revenue Requirements

Table 5-2 compares the projected sewer revenues and expenses over the next five years to show the total revenue required each year. The analysis reveals that projected revenues are not sufficient to meet operating, capital and debt service needs in any of the five years if rates remain at current levels. Specifically, projected revenues falls short of project expenses as follows:

- FY 23-24: \$387,870 shortfall (\$318,458 funded through capital reserve funding)
- FY 24-25: \$397,294 shortfall (\$231,862 funded through capital reserve funding)
- FY 25-26: \$359,563 shortfall (\$61,718 funded through capital reserve funding)
- FY 26-27: \$400,038 shortfall
- FY 27-28: \$509,518 shortfall

The revenue requirements analysis reveals that due to a substantial TUD rate increase, existing revenues cannot provide for sustainable sewer service over the next five years. In fiscal year 23/24 and each year thereafter, current revenues are projected to be lower than operating, debt service and capital project expenses. This shortfall is currently covered with Capital Reserves and Rate/Revenue Stabilization Reserves, but that practice is not sustainable.

Table 5-2. Revenue Requirements Results

| Twain Harte Community Services District SEWER PROJECTIONS WITH CURRENT RATES Revenue Requirements Analysis | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 23/24 Budget | 24/25 Budget | 25/26 Budget | 26/27 Budget | 27/28 Budget |
| Expenses | | | | | |
| Salaries | \$ 186,563 | \$ 193,372 | \$ 205,186 | \$ 216,416 | \$ 223,808 |
| Benefits | 109,937 | 117,134 | 123,107 | 128,937 | 134,507 |
| Equip, Auto, Maint, & Repairs | 66,500 | 69,160 | 71,927 | 74,804 | 77,796 |
| Materials & Supplies | 6,000 | 6,240 | 6,489 | 6,749 | 7,018 |
| Outside Services | 30,350 | 28,444 | 29,582 | 30,765 | 31,995 |
| Other (TUD Treatment & Disposal, Utilities, Regulatory Fees etc.) | 611,758 | 696,177 | 703,905 | 714,236 | 727,174 |
| Total Program Expenses | \$ 1,011,107 | \$ 1,110,526 | \$ 1,140,196 | \$ 1,171,907 | \$ 1,202,298 |
| Administrative Cost Allocation | 202,949 | 212,080 | 220,843 | 230,355 | 238,198 |
| TOTAL OPERATING EXPENSES | \$ 1,214,056 | \$ 1,322,606 | \$ 1,361,039 | \$ 1,402,262 | \$ 1,440,496 |
| Capital and Debt Service | | | | | |
| Capital Outlay | 301,500 | 215,000 | 150,000 | 150,000 | 220,000 |
| Debt Service | 16,958 | 16,862 | | | |
| Total Capital & Debt Service | 318,458 | 231,862 | 150,000 | 150,000 | 220,000 |
| Reserve Funding Requirements | | | | | |
| Transfer To/(From) Capital Reserve | (318,458) | (231,862) | (61,718) | | |
| Transfer To/(From) Operating Reserve | 27,138 | 9,608 | 10,306 | 9,558 | 10,804 |
| Transfer To/(From) Stabilization Reserve | | | | | |
| Total Transfers To/(From) Reserve Accounts | \$ (291,320) | \$ (222,254) | \$ (51,412) | \$ 9,558 | \$ 10,804 |
| TOTAL REVENUE REQUIRED | \$ 1,241,194 | \$ 1,332,214 | \$ 1,459,627 | \$ 1,561,820 | \$ 1,671,300 |
| Current Revenue | | | | | |
| Service Charges | \$ 1,137,469 | \$ 1,137,469 | \$ 1,137,469 | \$ 1,137,469 | \$ 1,137,469 |
| Fees | 13,758 | 13,758 | 13,758 | 13,758 | 13,758 |
| Other Revenue | 18,775 | 13,775 | 8,775 | 8,775 | 8,775 |
| Total Program Revenue | \$ 1,170,002 | \$ 1,165,002 | \$ 1,160,002 | \$ 1,160,002 | \$ 1,160,002 |
| Administrative Cost Allocation | 1,780 | 1,780 | 1,780 | 1,780 | 1,780 |
| GRAND TOTAL CURRENT REVENUE | \$ 1,171,782 | \$ 1,166,782 | \$ 1,161,782 | \$ 1,161,782 | \$ 1,161,782 |
| ADDITIONAL RATE REVENUE REQUIRED | \$ (69,412) | \$ (165,432) | \$ (297,845) | \$ (400,038) | \$ (509,518) |
| GRAND TOTAL RATE REVENUE REQUIRED: \$1,442,246 | | | | | |

If rates remain unchanged, recovered revenue would no longer completely fund operating and debt service payments. Reserves would continue to deplete until all reserve accounts are completely exhausted by the end of 25/26. This phenomenon is depicted in Figure 5-2.

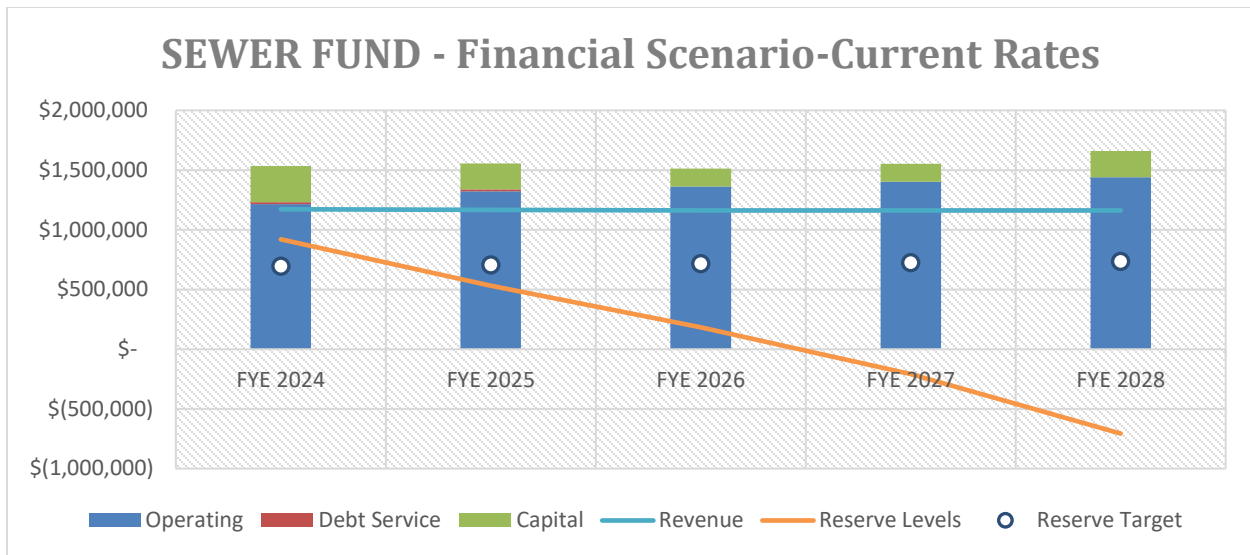


Figure 5-2. Projected Revenue, Expenses and Reserve Impacts

In order to meet the District’s revenue requirements over the next five years and achieve the District’s rate design principles and goals (excluding those discussed in Section 2.5, *Meeting Principles and Goals*), the District would need to increase rates during each fiscal year as follows:

- FY 23-24: 11.5%
- FY 24-25: 2.8%
- FY 25-26: 10.1%
- FY 26-27: 7.1%
- FY 27-28: 7.2%

5.2 Cost of Services Analysis

5.2.1 Methodology

The cost-of-service analysis provides the framework for collecting the rate revenue needs identified in the revenue requirements analysis in a manner that is proportionate to the service provided to each sewer customer class. The method used to allocate sewer expenses equitably to each individual customer class is detailed in Section 3 (Classification of Users, Charges and Fees) of District Ordinance #32 – Wastewater Code. Said method establishes user classifications by the principal activity conducted on the user’s premises and the typical quantity of wastewater demand flows (volume of wastewater discharged into the sewer system). Since flow meters are not feasible in sewer mains, demand flow is considered to be the same for every user within a given classification. For example, all single-family dwellings are considered to have similar sewer discharges because they all exhibit the same type of sewer discharges (showers, toilet flushing, dishwasher, laundry, etc.) for a similar number of people.

Without flow meters, demand flows for each user classification are difficult to establish. Therefore, District Ordinance #32 requires an industry standard method of estimating wastewater discharge volumes by using average winter water use for typical users within a given user classification. This estimate is considered an equitable and reasonable method of determining demand flows because there is virtually no outdoor watering in the winter and so it is reasonable to assume that nearly all winter water use is discharged to the sewer system.

Once demand flows are determined, users are grouped by principal activity conducted on their premises to form user classification. User demand flows within each classification are analyzed and averaged to generate a typical demand flow for each user classification.

The District's methodology assumes that every user classification has an equal strength of wastewater discharge, which accounts for discharge of substances that are difficult to treat (i.e. grease, industrial waste, etc.). Although restaurants often account for stronger discharges than residences, the District is not charged based on strength by its treatment service provider (TUD), and, therefore, cannot associate any measurable costs to strength of discharge.

User classifications and demand flows for the District are set forth in Exhibit A of District Ordinance #32 (see Table 5-3 below).

5.2.2 Cost Allocation to Customer Classes

Using the demand flows set forth in District Ordinance #32 (see Table 5-3), sewer revenue requirements can be allocated to each customer class in an equitable manner based on the demand each customer class places on the sewer system. In other words, sewer costs for each user classification are based on the actual amount of use that classification places on the sewer system in proportion to all other users.

Demand flows for each user classification are expressed in Equivalent Single-Family Residence (ESFR) Units. Total sewer revenue requirements are divided by the total number of ESFR units in the District (1,608.6) to obtain a unit charge for each ESFR. Costs are then allocated to each user class based on its demand flow in ESFR units, or its proportional use of the sewer system. Table 5-3 presents the demand flows established for each user classification in Exhibit A of District Ordinance No. 32.

Table 5-3. Wastewater Demand Flow by User Classification

| User Classification | Demand Flow (ESFR Units) |
|---|--------------------------------|
| Residential - Single Family Single family residential dwelling unit, fire stations and other primary residence. | 1.0 per living unit |
| Residential - Multi-Family and Accessory Multi-family dwelling units, apartments, accessory dwelling units. | 0.85 per living unit |
| General Commercial Offices, retail stores, service stations, barbers, salons, post offices, banks, chiropractic, recreation and other general commercial uses. | 0.7 per commercial unit |
| Lodging Hotels, motels, bed and breakfast, rooming houses, cottages and other commercial lodging. | 0.3 per room |
| Restaurant - Small Restaurants, cafes, coffee shops, ice cream shops and other food services. Indoor Dining Area < 500 SF or Average 5-year Winter Water Use < 5,000 gallons/month | 1.4 per facility |
| Restaurant - Large All restaurants and other food services exceeding the requirements of the "Restaurant - Small" classification. | 3.6 per facility |
| Medical Doctor offices, veterinarians, dentists and other medical facilities. | 2.0 per facility |
| Super Market Grocery, butcher, produce and other food products. | By Calculation |
| Laundromat | 0.5 per washer |
| Car Wash | 2.4 per stall |
| Schools | 10.1 per campus |
| Church | 1.1 per facility |
| Public Restrooms | 1.3 per facility |
| Multi-Use Demand flow for wastewater connections serving combinations of the above user classifications. Demand flow will be calculated based on demand flow units for each type of use. | By Calculation |

NOTES

- 1 Demand flow is measured in Equivalent Single Family Residence (ESFR) units.
- 2 Demand flow is determined to be uniform for each user within a given user classification.
- 3 Demand flow is calculated based on the average winter water usage of individual users within each user classification.
Winter water usage is used to reasonably estimate actual wastewater discharges by eliminating non-wastewater usage, such as irrigation.
- 4 Demand flows for users who do not specifically fit within a user classification will be determined by the District Manager from the most similar classification or from usage records of a similar establishment.

This method of allocation bases all cost allocation on system demand. An argument can be made that a portion of sewer costs should be shared equally by each user, such as billing costs. The District chose not to allocate these types of costs by customer for the following reasons:

1. The overall sum of these costs is minor and would create a negligible difference in the allocation of costs to each user class.
2. Allocating this minor cost to each customer class would complicate a simple rate structure based on ESFR units, making the rate structure more difficult for customers to understand.
3. The District's sewer treatment costs, which make up a large percentage of the District's overall sewer costs, are levied by TUD based on ESFR units.

5.3 Rate Design Analysis

5.3.1 General Methodology

The rate design analysis involves development of a rate structure that successfully balances equitable collection of sufficient revenues with the District's unique principles and goals to achieve rates and charges that meet the unique needs of the District and its customers. The rate design analysis generally consists of the following steps:

1. Existing Rate Structure Analysis
2. Rate Structure Development
3. Rate Level Setting

5.3.2 Existing Rate Structure

The existing sewer rate structure is made up of a fixed monthly charge based on each customer's typical type of use. This is a common type of sewer charge that provides a consistent stream of revenue even with population variation and varied levels of system use. The charge is designed to meet all operating, debt service and capital improvement costs. Overall, the rate structure is appropriate for the District's unique characteristics and needs and accomplishes the following:

- Collects revenue reasonably and equitably in proportion to the service provided to each customer class.
- Provides a consistent revenue stream.
- Is easily understood by customers and easily administered by staff.

5.3.3 Rate Level Setting

The primary goal of rate level setting is to ensure collection of sufficient revenues to meet District revenue requirements. This must also be balanced with the District's adopted principle of minimizing customer impacts. The revenue requirements analysis shows that one small, two medium and two large increases are needed throughout the five-year period. The resulting customer impacts in some of those years are too significant, especially when combined with concurrent water rate increases, so the District created a

more reasonable method of proposed rate levels to both generate sufficient revenues and minimize customer impacts.

The District chose to recommend initial sewer rate increases that kept the annual base charge increase at a fairly equal amount each year with the exception of slightly higher increases in the first two years. This method of rate level setting does not generate sufficient rate revenues to cover all operating, debt service, and capital expenses, but reserve funds will be used in any given year to fund the difference. With this model, revenue will exceed operating costs in all five years and reserves will never dip below the minimum requirements. The District deemed this to be an appropriate compromise to keep increases reasonable for its customers. The result of this rate level setting method is illustrated in Figure 5-3.

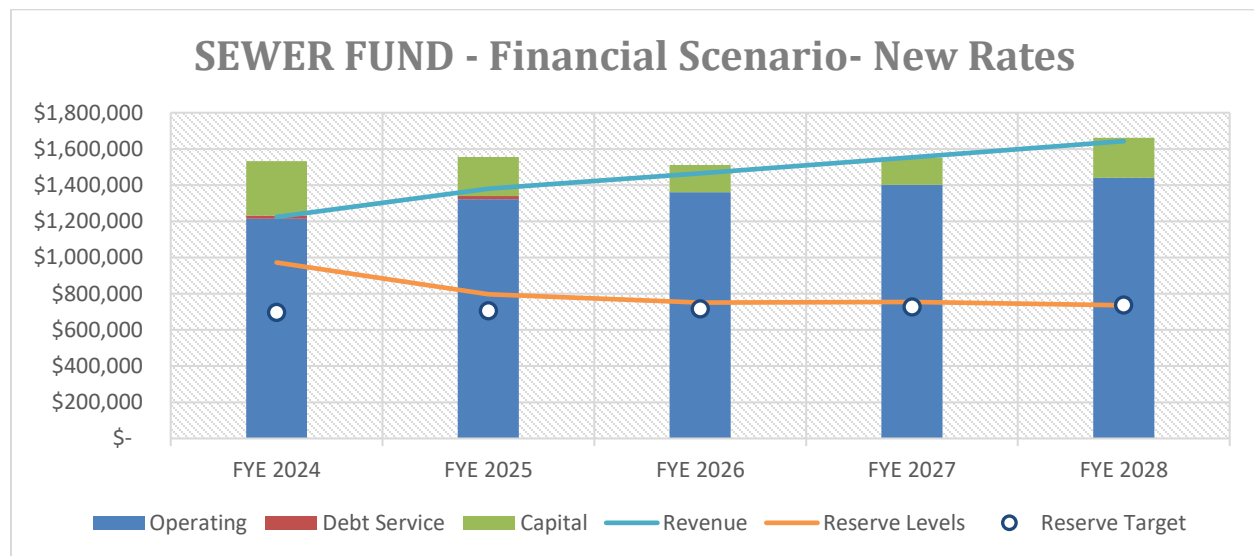


Figure 5-3. Projected Sewer Revenue, Expenses and Reserves Impacts after Rate Increases

5.4 Recommended Sewer Rates

Table 5-4 presents recommended sewer rates, based on the rate level setting method in the previous section, for the five-year analysis period. For simplicity, the recommended rate schedule only shows increases in the ESFR unit charge since all sewer customer class rates are directly related to the ESFR charge. Although these rates account for scheduled cost increases from the District’s sewer treatment service provider and inflation of other utility costs, it is recommended that a pass-through clause be adopted with the recommended rates so that the District can pass through any such expense increases that are beyond those anticipated in the revenue requirements analysis.

Table 5-4. Recommended Sewer Rates

| DEMAND FLOW CHARGE | | | | | |
|--------------------|----------|----------|----------|----------|----------|
| DEMAND FLOW | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| | 1/15/24 | 7/15/24 | 7/15/25 | 7/15/26 | 7/15/27 |
| Per ESFR Unit | \$ 64.82 | \$ 69.94 | \$ 74.66 | \$ 79.25 | \$ 83.85 |

Table 5-5 presents the projected revenue that will be generated if the recommended rates are implemented.

Table 5-5. Revenue Generated by Recommended Sewer Rates

| Twain Harte Community Services District SEWER PROJECTIONS WITH RECOMMENDED INCREASE 5 Revenue Requirements Analysis | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 |
| | Budget | Budget | Budget | Budget | Budget |
| Expenses | | | | | |
| Salaries | \$ 186,563 | \$ 193,372 | \$ 205,186 | \$ 216,416 | \$ 223,808 |
| Benefits | 109,937 | 117,134 | 123,107 | 128,937 | 134,507 |
| Equip, Auto, Maint, & Repairs | 66,500 | 69,160 | 71,927 | 74,804 | 77,796 |
| Materials & Supplies | 6,000 | 6,240 | 6,489 | 6,749 | 7,018 |
| Outside Services | 30,350 | 28,444 | 29,582 | 30,765 | 31,995 |
| Other (TUD Treatment & Disposal, Utilities, Regulatory Fees etc.) | 611,758 | 696,177 | 703,905 | 714,236 | 727,174 |
| Total Program Expenses | \$ 1,011,107 | \$ 1,110,526 | \$ 1,140,196 | \$ 1,171,907 | \$ 1,202,298 |
| Administrative Cost Allocation | 202,949 | 212,080 | 220,843 | 230,355 | 238,198 |
| TOTAL OPERATING EXPENSES | \$ 1,214,056 | \$ 1,322,606 | \$ 1,361,039 | \$ 1,402,262 | \$ 1,440,496 |
| Capital and Debt Service | | | | | |
| Capital Outlay | 301,500 | 215,000 | 150,000 | 150,000 | 220,000 |
| Debt Service | 16,958 | 16,862 | - | - | - |
| Total Capital & Debt Service | 318,458 | 231,862 | 150,000 | 150,000 | 220,000 |
| Reserve Funding Requirements | | | | | |
| Transfer To/(From) Capital Reserve | (315,851) | (190,763) | (60,841) | (11,683) | (32,900) |
| Transfer To/(From) Operating Reserve | 7,253 | 15,670 | 15,306 | 13,558 | 15,271 |
| Transfer To/(From) Stabilization Reserve | - | - | - | - | - |
| Reserve Funding | (308,598) | (175,093) | (45,535) | 1,875 | (17,629) |
| TOTAL REVENUE REQUIRED | \$ 1,223,916 | \$ 1,379,375 | \$ 1,465,504 | \$ 1,554,137 | \$ 1,642,867 |
| Current Revenue | | | | | |
| Service Charges | \$ 1,189,603 | \$ 1,350,062 | \$ 1,441,191 | \$ 1,529,824 | \$ 1,618,554 |
| Fees | 13,758 | 13,758 | 13,758 | 13,758 | 13,758 |
| Grants & Donations | - | - | - | - | - |
| Other Revenue | 18,775 | 13,775 | 8,775 | 8,775 | 8,775 |
| Total Program Revenue | \$ 1,222,136 | \$ 1,377,595 | \$ 1,463,724 | \$ 1,552,357 | \$ 1,641,087 |
| Administrative Cost Allocation | 1,780 | 1,780 | 1,780 | 1,780 | 1,780 |
| GRAND TOTAL CURRENT REVENUE | \$ 1,223,916 | \$ 1,379,375 | \$ 1,465,504 | \$ 1,554,137 | \$ 1,642,867 |
| Revenue Requirement (Shortage)/Surplus | \$ (0) | \$ (0) | \$ 0 | \$ 0 | \$ (0) |

5.5 Customer Impacts

As noted throughout this study, many rate design measures were undertaken to minimize customer rate impacts, including depleting Capital Reserves below minimum levels. Table 5-6 displays the recommended impacts with a comparison of existing rates and recommended rates.

Table 5-6. Existing vs. Recommended Sewer Rates

| DEMAND FLOW CHARGE | | | | | | |
|---------------------------------------|----------|---------------------|---------------------|---------------------|---------------------|---------------------|
| DEMAND FLOW | CURRENT | FY 23-24 1/15/24 | FY 24-25 7/15/24 | FY 25-26 7/15/25 | FY 26-27 7/15/26 | FY 27-28 7/15/27 |
| Per ESFR Unit | \$ 58.50 | \$ 64.82 | \$ 69.94 | \$ 74.66 | \$ 79.25 | \$ 83.85 |
| Proposed Incremental Increases | | | | | | |
| Single Family Residential Charge | | \$ 6.32 | \$ 5.12 | \$ 4.72 | \$ 4.59 | \$ 4.60 |
| General Commercial Charge | | \$ 4.42 | \$ 3.58 | \$ 3.30 | \$ 3.21 | \$ 3.22 |

When considering customer impacts, the District also looked at neighboring sewer agencies to determine if District customers were being asked to pay much more than similar areas for sewer services. As illustrated in Figure 5-4, the recommended rates are comparable and much lower than most sewer rates levied in other nearby Sierra Nevada foothill communities like Twain Harte.

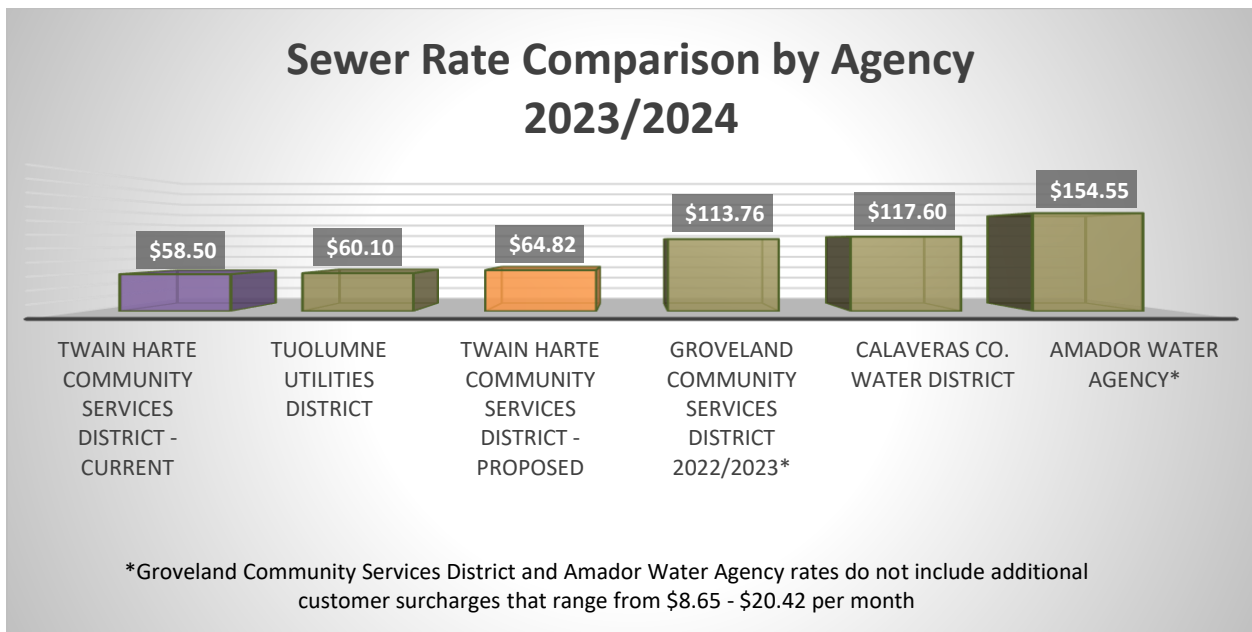


Figure 5-4. Recommended Rate Comparison to Similar Sewer Agencies

6.0 Conclusions

6.1 Study Conclusions

After conducting a detailed revenue requirements analysis, cost of service analysis and rate design for the District’s water and sewer funds, the District concluded the following:

- Current rate revenues are not sufficient to support water and sewer operating, debt service, capital and adequate reserves level costs over the next five years.
- Rate levels must be adjusted to generate revenues that sufficiently cover water and sewer revenue requirements.

6.2 Rate Recommendations

In order to generate sufficient sewer revenues over the next five years, the sewer rates in Table 6-1 are recommended for implementation. Note that to minimize customer impacts, the recommended rates involve use of sewer Capital Reserves to lessen rate impacts. Sewer Capital Reserves will not drop below the minimum \$250,000 level during the five-year period.

Table 6-1. Recommended Sewer Rates

| DEMAND FLOW CHARGE | | | | | |
|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| DEMAND FLOW | FY 23-24 1/15/24 | FY 24-25 7/15/24 | FY 25-26 7/15/25 | FY 26-27 7/15/26 | FY 27-28 7/15/27 |
| Per ESFR Unit | \$ 64.82 | \$ 69.94 | \$ 74.66 | \$ 79.25 | \$ 83.85 |

In order to generate sufficient water revenues over the next five years, the water rates in Table 6-2 are recommended for implementation. Note that to minimize customer impacts, the recommended rates involve use of water Capital Reserves to lessen rate impacts. Water Capital Reserves will not drop below the minimum \$350,000 level during the five-year period.

Table 6-2. Recommended Water Rates

| Base Charge (Fixed Monthly) | | | | | | |
|---|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| USER CLASS (by meter size) | | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| Residential | <i>Single Family Unit</i> | \$ 65.50 | \$ 68.79 | \$ 71.16 | \$ 73.62 | \$ 76.16 |
| | <i>Multi Family Unit</i> | \$ 55.68 | \$ 58.47 | \$ 60.49 | \$ 62.57 | \$ 64.73 |
| Non-Residential | 3/4" | \$ 67.42 | \$ 70.81 | \$ 73.25 | \$ 75.77 | \$ 78.39 |
| | 1" | \$ 90.99 | \$ 95.56 | \$ 98.85 | \$ 102.26 | \$ 105.79 |
| | 1.5" | \$ 149.91 | \$ 157.44 | \$ 162.87 | \$ 168.48 | \$ 174.30 |
| | 2" | \$ 220.62 | \$ 231.69 | \$ 239.68 | \$ 247.95 | \$ 256.50 |
| | 3" | \$ 409.17 | \$ 429.71 | \$ 444.52 | \$ 459.86 | \$ 475.72 |
| Commodity Charge (Variable) | | | | | | |
| ALL USER CLASSES (per 1,000 gallons) | | FY 23-24 | FY 24-25 | FY 25-26 | FY 26-27 | FY 27-28 |
| | | 1/15/24 | 7/15/24 | 7/15/25 | 7/15/26 | 7/15/27 |
| 0-2,000 | Gal | \$ 2.85 | \$ 3.06 | \$ 3.21 | \$ 3.36 | \$ 3.52 |
| 2,001+ | Gal | \$ 4.10 | \$ 4.31 | \$ 4.46 | \$ 4.61 | \$ 4.77 |

6.3 Overall Customer Impacts

Rate structures and rate level setting for the recommended water and sewer rates incorporated several measures to minimize rate impacts. The District used Capital Reserves to spread out recommended rate increases so that the monthly base charge related to water or sewer were manageable in any given year.

Recommended rates were also compared with neighboring Sierra Nevada foothill water and sewer agencies to ensure recommended water and sewer rates are not excessively more than other like agencies. Figure 6-1 illustrates that recommended combined District water and sewer rates are much less than most like agencies.

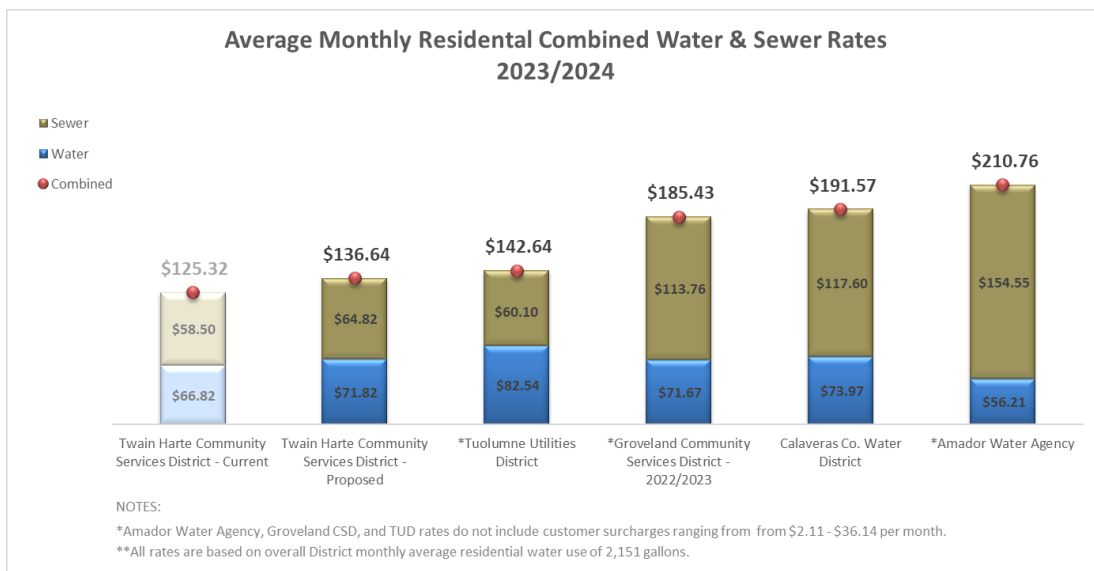


Figure 6-1. Comparison of Combined Average Water and Sewer Rates