



Mission statement of McKinleyville Community Services District:
"Provide McKinleyville with safe and reliable water, wastewater, lighting, open space, parks and recreation, library services, and other appropriate services for an urban community in an environmentally and fiscally responsible manner."

**NOTICE IS HEREBY GIVEN THAT A *Special* MEETING OF THE
MCKINLEYVILLE COMMUNITY SERVICES DISTRICT BOARD OF DIRECTORS
AUDIT AND FINANCE COMMITTEE MEETING
WILL BE HELD
TUESDAY, AUGUST 30, 2022 AT 11:00 AM**

**LOCATION: MCSD District Office Conference Room
1656 Sutter Road
McKinleyville, CA 95519**

MEETING AGENDA

1. Introductions & Call to Order
2. Public Comment
3. Review McKinleyville CSD Rate Study Report

Posted 10:00 am on August 26, 2022

Pursuant to California Government Code Section 54957.5, this agenda and complete packet are available for public inspection on the web at McKinleyvillecsd.com or upon request at the MCSD office, 1656 Sutter Road, McKinleyville.

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McKinleyville Community Services District, CA

Report

Comprehensive Utility Rate Study



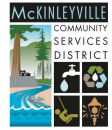


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Section 1 – Executive Summary

1.1 Introduction

Willdan Financial Services (Willdan) is pleased to submit to McKinleyville Community Service District (the "District") the Water and Sewer Rate Study report (the "Report") for your consideration. Willdan has completed the study of the District's water and sewer rates and summarized the results of the investigations, analyses and conclusions in this Report.

The District owns and operates water storage, transmission and distribution facilities, and provides sewer treatment and collection services to residential and nonresidential customers within its incorporated limits. During recent years, the District has focused a significant amount of attention and effort on strategic planning measures in all areas of utility operations to ensure that it remains prepared for the future. As part of its ongoing strategic planning efforts, the District has commissioned Willdan to perform a water and sewer rate study to analyze the revenue sources and expenditures of the utility system and provide recommendations for proposed rate and/or rate structure adjustments to meet the financial and administrative goals and objectives of the District. The primary objectives of the rate study include:

- Full cost recovery (i.e., operating costs, debt and other expenditure requirements);
- Cost-based rate structures;
- Consistency with American Water Works ("AWWA") and Water Environment Federation ("WEF") guidelines;
- Equity among customer classes;
- Meeting substantive and procedural Proposition 218 requirements;
- Administrative efficiency (i.e., easy to understand and implement); and
- 5-Year capital funding plan.

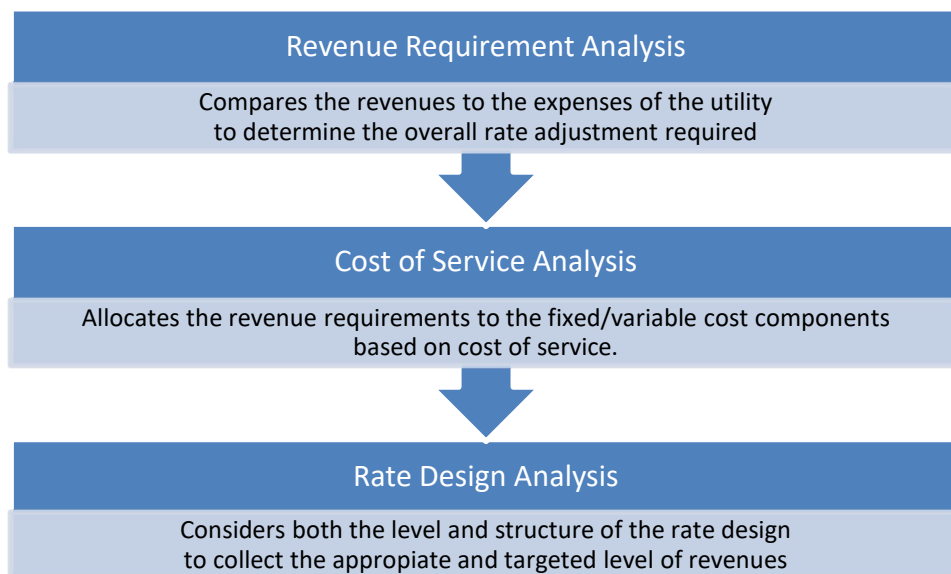
1.2 Overview of the Rate Study Process

The study develops water and sewer financial plans for the upcoming 5-year planning period and includes the development of cost-based rates through a cost-of-service and rate design analysis. Utility rates must be set at a level such that operating, maintenance, debt and capital expenses are funded with the revenues received from customers. In addition, the revenues generated from utility rates must only be used for this purpose and for each system separately. This is a significant point, as failure to achieve the needed revenues can lead to unacceptable service levels and inadequately maintained facilities. Therefore, a rate study typically consists of following three interrelated analyses:

- I. **Financial Planning/Revenue Requirement Analysis:** Creates a five-year plan to support an orderly, efficient program of on-going maintenance and operating costs, capital improvement and replacement activities, debt financing, and retirement of outstanding debt. In addition, the plan should fund and maintain appropriate reserve balances based on industry standards, as well as the District's fiscal policies and specific needs.

- II. **Cost-of-Service Analysis:** Identifies and apportions annual revenue requirements (i.e., expenditures) to functional cost components based on the demand placed on the utility system. The purpose of this analysis is to develop rates that generate revenues relatively proportionate to the share of each utility's costs. This objective is consistent with industry standards as well as the requirements of Proposition 218.

- III. **Rate Design:** Develops an equitable and proportionate fixed/variable schedule of rates for the District's customer base. The policy objectives are coordinated with cost-of-service objectives to achieve a balance between customer equity and financial stability goals. The balance of fixed and variable charges considers the need for a stable revenue source (the fixed charge) and the variable component of the rate structure such that customers placing higher costs on the system (through higher water and sewer use) incur a higher bill reflective of their impact on the system.



This rate study utilizes generally accepted rate-making principles and standards established by such industry experts as the AWWA in its "M1 - Principles of Water Rates Fees and Charges" manual and WEF in its "Financing and Charges for Sewer Systems, Manual of Practice No. 27". The principles established by these entities are used as guidelines in the development of



the proposed rates for water and sewer. A discussion of some of the key principles of rate-making is presented in the following subsection of this Report.

1.3 Summary of Proposed Rates

The rate study methodology applied in the development of updated water and sewer rates, outlined in this Report, consisted of reviewing the historical operating results of the water and sewer utility systems, analyzing the budget to identify the net revenue requirements to be recovered from user rate revenues, performing general cost-of-service allocations based on the rate components and functional cost categories, and revising the rates based on the applicable costs and expenditures to be recovered from user rates. In addition, an analysis of the system customers and usage characteristics was performed to identify the rate determinants since these are the primary sources for generating revenues. The allocated revenue requirements were utilized in conjunction with the rate determinants and rate structure to develop proposed rates for water and sewer.

The findings and conclusions of the rate analysis, as well as the resulting revised rate recommendations, were utilized to develop a projection of future operating results for a 5-year planning period from Fiscal Year (FY) 2023 (beginning July 1, 2022) through FY 2027 (ending June 30, 2027), herein referred to as the "Projection Period". The purpose for developing the 5-year projections is to demonstrate the financial capability of the water and sewer revenues to support system operations and fund planned capital improvements. The analyses, findings and accompanying recommendations are presented in the subsequent sections of the Report.

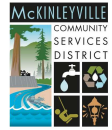
The water and sewer rate analyses described in the Report are performed based on the general guidelines of the defined objectives, as well as common industry standards for setting utility rates. In addition to focusing on these major objectives, the rate analyses performed herein will consider other factors in designing rates. As will be discussed in detail later in the Report, such other rate considerations generally include sensitivity to the impact on existing customers, the relative comparability with neighboring utilities and the District's existing rate structure. The proposed water and sewer rates for assumed implementation effective January 1, 2023 (or other such date as determined by the District) for FY 2022/23 (FY 2023, herein referred to as the "Test Year") are provided in **Tables 1 and 2**, respectively. The existing rates are provided in **Tables 3 and 4**, respectively.

Table 1 – Proposed Monthly Water Rates

| Description | Rate |
|---|-------------|
| Monthly Base Charge by Meter Size: | |
| General Service | |
| 5/8 Inch | \$ 20.45 |
| 3/4 Inch | \$ 28.39 |
| 1.0 Inch | \$ 44.28 |
| 1.5 Inch | \$ 83.98 |
| 2.0 Inch | \$ 131.63 |
| 3.0 Inch | \$ 242.81 |
| 4.0 Inch | \$ 401.63 |
| 6.0 Inch | \$ 798.69 |
| 8.0 Inch | \$ 1,275.17 |
| | |
| Volumetric Rates Per 100 Cubic Feet: | |
| 0 - 800 Cubic Feet | \$ 2.47 |
| Over 800 Cubic Feet | \$ 3.32 |
| HBMWD Pass Through ^[1] | \$ 1.76 |
| <p>Notes: [1] All customers pay an additional pass-through charge per 100 cubic feet of flow used by Humboldt Bay Municipal Water District.</p> | |

Table 2 – Proposed Monthly Sewer Rates

| Description | Rate |
|---|----------|
| Monthly Base Charge ^[1]: | |
| All Customers | \$ 35.69 |
| Volumetric Rates Per 100 Cubic Feet ^[2]: | |
| 2 sewer Units/Commercial | \$ 3.13 |
| Apartment/Multi Unit (Each) | \$ 3.13 |
| Bakery | \$ 4.25 |
| Barber/Beauty Shop | \$ 3.13 |
| Car Wash | \$ 2.91 |
| Church & Residence | \$ 3.13 |
| Churches | \$ 3.13 |
| Coast Guard Station/Airport | \$ 3.13 |
| Dialysis Clinic | \$ 3.08 |
| Fire Station/School | \$ 2.97 |
| Gas Stations (No Market) | \$ 3.19 |
| Laundromats | \$ 3.00 |
| Market | \$ 4.26 |
| Metered Septage Vault | \$ 3.55 |
| Moblie Homes (Each) | \$ 3.13 |
| Motels/Hotels | \$ 3.79 |
| Office Building/Post Office | \$ 3.13 |
| Restaurant/Tavern | \$ 4.25 |
| Retail/Banks/Theater/Other | \$ 3.13 |
| Round Table/Market | \$ 4.03 |
| Sewer Only Accounts | \$ - |
| Sewer Units - Commercial | \$ 3.19 |
| Single Family Residential | \$ 3.13 |
| Two Sewer Units/Business | \$ 3.13 |
| Two Sewer Units/Daycare | \$ 3.13 |
| Brewery | \$ 11.20 |
| Notes: | |
| [1] All sewer customers pay the same base charge. | |
| [2] Each customer class pays a different volumetric rate based on the strength of their respective sewer discharge. | |



Section 2 – Revenue Sufficiency Analysis

2.1 Financial Planning Principles

While the individual rates for each of the utility systems vary based on a variety of factors, rates should be consistent with common rate-making principles within the utility industry. The guiding principle is that rates designed for any utility should provide a reasonable balance between several key factors. In general, the utility rates should:

- Generate a stable revenue stream that, when combined with other sources of funds, is sufficient to meet the expenditure requirements and goals of the system;
- Be based upon the proportionate cost of providing the service and not exceed the cost of providing the service;
- Be equitable – that is, they should generate revenue from customer classes in a manner which is reasonably in proportion to the cost to provide service to that customer class;
- Be easy to understand by customers; and
- Be easy to administer by the utility.

Striking the appropriate balance between the principles of rate-making is the result of a detailed process of evaluation of revenue requirements and cost-of-service, and how those translate into the rate design alternatives which meet legal requirements and the specific objectives of the utility under the circumstances in which it operates.

2.2 Existing Rates

The District has established user rates that are applied to the retail customers (residential and non-residential) of the system. The rates charged for water and sewer service are approved by the District Board and are not subject to administrative review or approval by any other local or state agency. The District has historically adjusted rates, as necessary, to provide for recovery of financial obligations including operating expenses, debt service, capital expenditures and any other expenses and transfers.

The existing water rates consist of 1) monthly base charge that designates the minimum amount a customer will pay regardless of water use, and 2) volumetric rates per 100 cubic feet (CCF) based upon the amount of monthly metered water usage. The monthly base charge is incremented based on the size of the metered connection. The volumetric rates apply an inclining tiered structure such that the rate per CCF increases as monthly flows exceed the defined thresholds. The existing rates for water service are provided in **Table 3**.

Table 3 – Water Monthly Existing Rates

| Description | Rate |
|---|-------------|
| Monthly Base Charge by Meter Size: | |
| General Service | |
| 5/8 Inch | \$ 19.80 |
| 3/4 Inch | \$ 29.11 |
| 1.0 Inch | \$ 47.52 |
| 1.5 Inch | \$ 93.06 |
| 2.0 Inch | \$ 147.91 |
| 3.0 Inch | \$ 291.85 |
| 4.0 Inch | \$ 459.76 |
| 6.0 Inch | \$ 915.75 |
| 8.0 Inch | \$ 1,464.41 |
| Volumetric Rates Per 100 Cubic Feet: | |
| 0 - 800 Cubic Feet | \$ 1.89 |
| Over 800 Cubic Feet | \$ 4.73 |
| HBMWD Pass Through ^[1] | \$ 1.76 |
| Notes: | |
| [1] All customers pay an additional pass-through charge per 100 cubic feet of flow used by Humboldt Bay Municipal Water District. | |

The existing sewer rates consist of 1) a monthly base charge regardless of sewer flows that designates the minimum amount a customer will pay, and 2) a volumetric rate per 100 CF based upon the amount of monthly metered water usage. The monthly base charge is constant regardless of the size of the water-metered connection. The volumetric rates are applied based on the assumed strength of sewer discharge related to each respective customer class. The existing rates for sewer service are provided in **Table 4**.

Table 4 – Wastewater Monthly Existing Rates

| Description | Rate |
|---|----------|
| Monthly Base Charge ^[1]: | |
| All Customers | \$ 34.59 |
| Volumetric Rates Per 100 Cubic Feet ^[2]: | |
| 2 sewer Units/Commercial | \$ 3.03 |
| Apartment/Multi Unit (Each) | \$ 2.89 |
| Bakery | \$ 13.81 |
| Barber/Beauty Shop | \$ 2.89 |
| Car Wash | \$ 0.66 |
| Church & Residence | \$ 3.41 |
| Churches | \$ 3.03 |
| Coast Guard Station/Airport | \$ 3.03 |
| Dialysis Clinic | \$ 3.61 |
| Fire Station/School | \$ 1.97 |
| Gas Stations (No Market) | \$ 2.86 |
| Laundromats | \$ 2.28 |
| Market | \$ 11.56 |
| Metered Septage Vault | \$ 3.24 |
| Moblie Homes (Each) | \$ 2.89 |
| Motels/Hotels | \$ 7.37 |
| Office Building/Post Office | \$ 2.89 |
| Restaurant/Tavern | \$ 13.81 |
| Retail/Banks/Theater/Other | \$ 3.03 |
| Round Table/Market | \$ 9.65 |
| Sewer Only Accounts | \$ - |
| Sewer Units - Commercial | \$ 2.86 |
| Single Family Residential | \$ 2.89 |
| Two Sewer Units/Business | \$ 3.03 |
| Two Sewer Units/Daycare | \$ 2.92 |
| Brewery | \$ 23.12 |
| Notes: | |
| [1] All sewer customers pay the same base charge. | |
| [2] Each customer class pays a different volumetric rate based on the strength of their respective sewer discharge. | |

2.3 Revenue Sufficiency Process

In evaluating whether the existing rates will generate sufficient revenue to meet the expenditure requirements of the water and sewer systems, the annual expenditures required (herein referred to as the "Revenue Requirements") must be developed. The Revenue Sufficiency Analysis compares the forecasted revenues of each system under its existing rates (including customer growth) to the projected Revenue Requirements.

2.3.1 Test Year Revenue Requirements

The rate analysis performed herein utilizes the District's preliminary budget for fiscal year 22/23 (the "Budget" for fiscal year ending June 30, 2023) as the basis for developing the Revenue Requirements to be recovered from user rates over the Projection Period. The Budget, as prepared by the District, has certain expenditures that are allocated between identifiable water and sewer components, as well as expenditures that are associated with the combined system operations. In developing the rate analysis, certain adjustments are made such that the expenditures are categorized into either Operating and Maintenance (O&M) expenses or Non-Operating expenses. The O&M expenses are primarily those ongoing costs for labor, materials, supplies, services, etc., required to manage and operate the utility system on a day-to-day basis while maintaining a dependable level of service. The O&M requirements are generally a function of a budgetary process and are directly related to the level of service provided to customers of the utility system. The non-operating expenses include such items as capital outlay and any other expenses & transfers. The Budget also identifies estimated revenues to be derived from sources other than the retail water and sewer user rates. Such other revenue sources include interest earnings on investments, water meter sales and various other miscellaneous service charges. The revenues generated from the other sources are applied to the gross Revenue Requirements to reduce the amount of revenues required from user rates. The result is the net Revenue Requirement.

In performing the rate analysis, each of the budgeted expenditures and revenues are allocated between water and sewer on a line-item basis. The allocations are based on such factors as revenues (water vs. sewer), specific system identification, capital expenditures and combined expenditure results (e.g., total O&M allocated to water vs. sewer).

The proposed water and sewer rates developed in the Report are designed for assumed implementation for FY 2022/23 (the Test Year as previously defined). The projected Test Year Revenue Requirements are estimated by utilizing the Budget, actual debt service requirements as provided in the applicable debt service schedules, using capital outlay estimates as provided by the District, and tying non-operating transfers to revenues or O&M expenses as applicable. The Test Year Revenue Requirements that are used for developing the user rates proposed herein are detailed in **Appendix A** at the end of this report and summarized in **Table 5**.



Table 5 – Test Year Revenue Requirements – FY 2023

| Description | Water | Wastewater | Total |
|----------------------------------|---------------------|---------------------|---------------------|
| Total O&M | \$ 3,380,194 | \$ 2,402,326 | \$ 5,782,520 |
| Debt Service | 455,627 | 1,039,140 | 1,494,767 |
| Other Expenditures & Transfers | 878,384 | 1,236,155 | 2,114,539 |
| Gross Revenue Requirement | \$ 4,714,205 | \$ 4,677,621 | \$ 9,391,826 |
| Less Other Revenues | (341,566) | (406,725) | (748,291) |
| Net Revenue Requirement | \$ 4,372,639 | \$ 4,270,896 | \$ 8,643,535 |

2.3.2 Projected Revenue Requirements

As previously discussed, the estimated Revenue Requirements for the Test Year are developed utilizing the District's Budget as a basis. The Revenue Requirements for the Test Year and the remainder of the Projection Period are developed by escalating the budgeted costs on a line-item basis in accordance with assumed future activities and events that may impact the system. The costs associated with certain operating expenses that are typically more variable in nature, such as chemicals and electrical power, are escalated pursuant to various factors based on a combination of estimated customer and/or flow growth and assumed inflationary factors. Personnel related costs such as employee salaries and benefits are generally escalated based on assumed labor escalator factors that, over the Projection Period, include adjustments in pay and incremental addition of employees as necessary. Certain expenses that do not generally vary with system growth (e.g., telephones, publications, training, etc.) are assumed to either escalate based only on inflation or remain relatively constant. Materials, supplies, general repair and maintenance expenses generally increase from current levels based on inflationary factors that directly impact the water and sewer industry. Such factors are derived on a composite basis from historical analyses of price indices used by many utilities for financial forecasting. Line-item budgeted costs are also evaluated to make determinations as to whether they are recurring or one-time, and adjustments made accordingly.



The projected Revenue Requirements for the water and sewer systems over the entire Projection Period are provided in **Tables 6 and 7**.

Table 6 – Water Revenue Requirements for the Projection Period

| Description | Projected for Fiscal Year Ending June 30, | | | | |
|----------------------------------|---|---------------------|---------------------|---------------------|---------------------|
| | 2023 | 2024 | 2025 | 2026 | 2027 |
| Total O&M | \$ 3,380,194 | \$ 3,511,921 | \$ 3,657,352 | \$ 3,810,374 | \$ 3,960,790 |
| Existing Debt Service | 455,627 | 455,587 | 457,057 | 458,326 | 453,168 |
| Future Debt Service | - | - | - | - | - |
| Other Expenditures & Transfers | 878,384 | 904,558 | 1,040,617 | 1,173,114 | 1,285,887 |
| Gross Revenue Requirement | \$ 4,714,205 | \$ 4,872,066 | \$ 5,155,026 | \$ 5,441,814 | \$ 5,699,845 |
| Less Other Revenues | (341,566) | (358,648) | (376,580) | (395,409) | (415,179) |
| Net Revenue Requirement | \$ 4,372,639 | \$ 4,513,418 | \$ 4,778,446 | \$ 5,046,405 | \$ 5,284,666 |

Table 7 – Sewer Revenue Requirements for the Projection Period

| Description | Projected for Fiscal Year Ending June 30, | | | | |
|----------------------------------|---|---------------------|---------------------|---------------------|---------------------|
| | 2023 | 2024 | 2025 | 2026 | 2027 |
| Total O&M | \$ 2,402,326 | \$ 2,501,536 | \$ 2,597,394 | \$ 2,696,022 | \$ 2,797,428 |
| Existing Debt Service | 1,039,140 | 970,320 | 973,015 | 971,632 | 965,921 |
| Future Debt Service | - | - | - | - | - |
| Other Expenditures & Transfers | 1,236,155 | 1,332,765 | 1,469,423 | 1,648,269 | 1,844,616 |
| Gross Revenue Requirement | \$ 4,677,621 | \$ 4,804,621 | \$ 5,039,832 | \$ 5,315,923 | \$ 5,607,965 |
| Less Other Revenues | (406,725) | (421,367) | (436,538) | (452,253) | (468,533) |
| Net Revenue Requirement | \$ 4,270,896 | \$ 4,383,254 | \$ 4,603,294 | \$ 4,863,670 | \$ 5,139,432 |

2.4 Customers & Billable Flows

The rate study performed herein is heavily reliant upon a detailed analysis of system customers and accompanying usage characteristics. The existing utility customer base and metered/billable flows provide the determinants utilized in calculating the monthly user rates and charges, which become the foundation for projecting future revenues generated by the water and sewer systems.

It is important to note that the customer and flow analysis focuses primarily on the customer classifications that will be impacted by the user rates and charges to be developed in the Report. This consists of the general service (retail) customers that currently pay for utility services pursuant to the existing user rates and charges as previously detailed. For the purposes of the rate study, it is these customers and their accompanying flows that will generate revenues based upon the proposed user rates and charges.

2.4.1 Customer Billing Analysis

For the purpose of the rate study, detailed information was provided for each individual customer for the 48-consecutive month period from July 2017 through June 2021. This data offered a breakdown of water and sewer customers by class, billed flows and billed charges. The historical billing data was queried from the District's electronic billing records for the time

period described. An analysis of the billing data was conducted in order to obtain an understanding of existing customers, customer classes, and metered usage per customer class. In addition, the historical billing data provides a basis to estimate future customer growth trends within each class. In accordance with the data, as well as discussions with the District staff, the utility system provides service to various identifiable retail customer classes consisting of:

- Residential, and
- Non-Residential.

Each of these customer classes embodies certain common characteristics in their utility use and service demand profiles that provide the basis for establishing an equitable allocation of system costs. The billing data was utilized to identify the number of customer accounts within each class, the applicable equivalent residential units (ERUs) based on meter size, and the metered/billable usage profiles.

2.4.2 Customer Accounts

A customer account is representative of a single physical connection to the water and/or sewer system regardless of the size of the meter, the number of dwelling units or the amount of flow. The historical customer data was utilized to establish growth trends for each customer classification. The growth trends were then used to project the average number of accounts/users within each class for the Test Year plus the remaining years of the Projection Period. The existing and projected average customer accounts are summarized in **Figure 1**. The projected customer accounts and billable flows are provided in **Tables 8 and 9** for water and sewer, respectively.

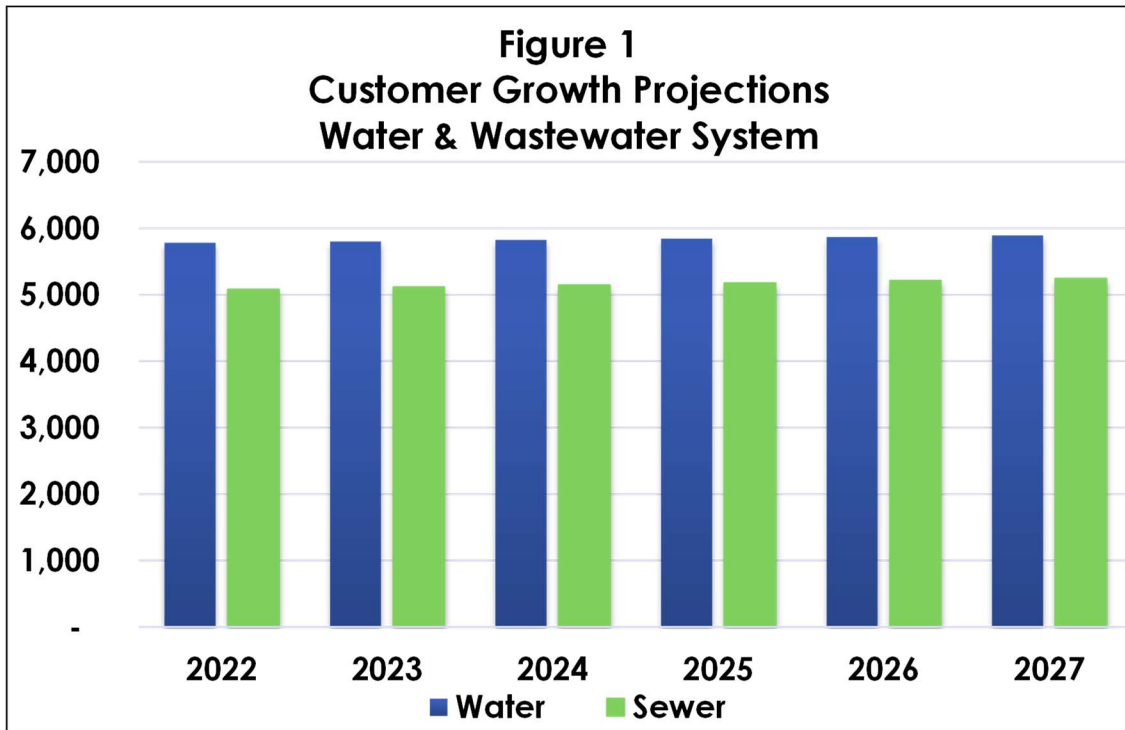


Table 8 – Projected Number of Customer Accounts

| System | Estimated | Projected | | | | |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
| Water | | | | | | |
| Residential | 5,027 | 5,047 | 5,068 | 5,090 | 5,114 | 5,139 |
| Multi-Family | 512 | 512 | 512 | 512 | 512 | 512 |
| Commercial | 245 | 245 | 245 | 245 | 245 | 245 |
| Total Water | 5,784 | 5,804 | 5,825 | 5,847 | 5,871 | 5,896 |
| Sewer | | | | | | |
| 2 sewer Units/Commercial | 3 | 3 | 3 | 3 | 3 | 3 |
| Multi-Family | 439 | 442 | 445 | 448 | 451 | 454 |
| Bakery | 1 | 1 | 1 | 1 | 1 | 1 |
| Barber/Beauty Shop | 7 | 7 | 7 | 7 | 7 | 7 |
| Car Wash | 3 | 3 | 3 | 3 | 3 | 3 |
| Church & Residence | 1 | 1 | 1 | 1 | 1 | 1 |
| Churches | 14 | 14 | 14 | 14 | 14 | 14 |
| Coast Guard Station/Airport | 4 | 4 | 4 | 4 | 4 | 4 |
| Dialysis Clinic | 1 | 1 | 1 | 1 | 1 | 1 |
| Fire Station/School | 5 | 5 | 5 | 5 | 5 | 5 |
| Gas Stations (No Market) | 9 | 9 | 9 | 9 | 9 | 9 |
| Laundromats | 6 | 6 | 6 | 6 | 6 | 6 |
| Market | 5 | 6 | 6 | 6 | 6 | 7 |
| Metered Septage Vault | 1 | 1 | 1 | 1 | 1 | 1 |
| Mobile Homes | 29 | 29 | 29 | 29 | 29 | 29 |
| Motels/Hotels | 2 | 2 | 2 | 2 | 2 | 2 |
| Office Building/Post Office | 52 | 52 | 52 | 52 | 52 | 52 |
| Restaurant/Tavern | 19 | 19 | 19 | 19 | 19 | 19 |
| Retail/Banks/Theater/Other | 48 | 48 | 48 | 48 | 48 | 48 |
| Round Table/Market | 1 | 1 | 1 | 1 | 1 | 1 |
| Sewer Only Accounts | 36 | 36 | 36 | 36 | 36 | 36 |
| Sewer Units - Commercial | 7 | 7 | 7 | 7 | 7 | 7 |
| Single Family Residential | 4,380 | 4,410 | 4,440 | 4,470 | 4,501 | 4,531 |
| Two Sewer Units/Business | 5 | 5 | 5 | 5 | 5 | 5 |
| Brewery | 1 | 1 | 1 | 1 | 1 | 1 |
| Total Sewer | 5,080 | 5,113 | 5,146 | 5,180 | 5,213 | 5,247 |

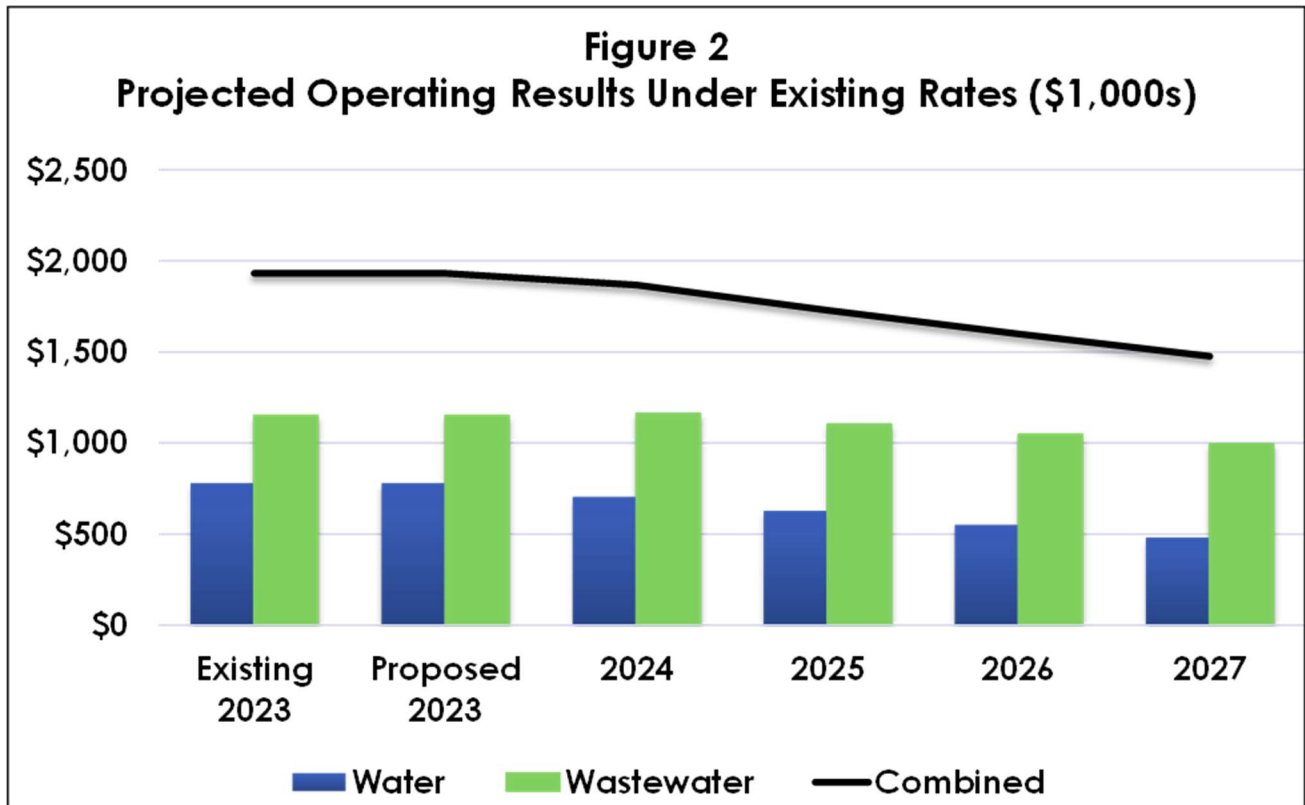
Table 9 – Projected Billed Volume Sold (100s CF)

| System | Estimated | Projected | | | | |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 |
| Water | | | | | | |
| Residential | 384,293 | 385,610 | 386,993 | 388,443 | 390,024 | 391,671 |
| Multi-Family | 108,355 | 108,355 | 108,355 | 108,355 | 108,355 | 108,355 |
| Commercial | 49,805 | 49,805 | 49,805 | 49,805 | 49,805 | 49,805 |
| Total Water | 542,453 | 543,770 | 545,153 | 546,603 | 548,184 | 549,831 |
| Sewer | | | | | | |
| 2 sewer Units/Commercial | 251 | 251 | 251 | 251 | 251 | 251 |
| Multi-Family | 79,188 | 79,715 | 80,256 | 80,797 | 81,339 | 81,880 |
| Bakery | 122 | 122 | 122 | 122 | 122 | 122 |
| Barber/Beauty Shop | 488 | 488 | 488 | 488 | 488 | 488 |
| Car Wash | 1,728 | 1,728 | 1,728 | 1,728 | 1,728 | 1,728 |
| Church & Residence | 288 | 288 | 288 | 288 | 288 | 288 |
| Churches | 1,469 | 1,469 | 1,469 | 1,469 | 1,469 | 1,469 |
| Coast Guard Station/Airport | 7,707 | 7,707 | 7,707 | 7,707 | 7,707 | 7,707 |
| Dialysis Clinic | 2,035 | 2,035 | 2,035 | 2,035 | 2,035 | 2,035 |
| Fire Station/School | 1,482 | 1,482 | 1,482 | 1,482 | 1,482 | 1,482 |
| Gas Stations (No Market) | 409 | 409 | 409 | 409 | 409 | 409 |
| Laundromats | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Market | 3,205 | 3,358 | 3,511 | 3,663 | 3,867 | 4,070 |
| Metered Septage Vault | 5,036 | 5,036 | 5,036 | 5,036 | 5,036 | 5,036 |
| Moblie Homes | 2,033 | 2,033 | 2,033 | 2,033 | 2,033 | 2,033 |
| Motels/Hotels | 2,317 | 2,317 | 2,317 | 2,317 | 2,317 | 2,317 |
| Office Building/Post Office | 3,406 | 3,406 | 3,406 | 3,406 | 3,406 | 3,406 |
| Restaurant/Tavern | 5,900 | 5,900 | 5,900 | 5,900 | 5,900 | 5,900 |
| Retail/Banks/Theater/Other | 6,900 | 6,900 | 6,900 | 6,900 | 6,900 | 6,900 |
| Round Table/Market | 291 | 291 | 291 | 291 | 291 | 291 |
| Sewer Only Accounts | - | - | - | - | - | - |
| Sewer Units - Commercial | 11,990 | 11,990 | 11,990 | 11,990 | 11,990 | 11,990 |
| Single Family Residential | 299,603 | 301,638 | 303,690 | 305,754 | 307,834 | 309,926 |
| Two Sewer Units/Business | 835 | 835 | 835 | 835 | 835 | 835 |
| Brewery | 1,152 | 1,152 | 1,152 | 1,152 | 1,152 | 1,152 |
| Total Sewer | 441,835 | 444,550 | 447,296 | 450,053 | 452,879 | 455,715 |

2.5 Financial Projections Under Existing Rates

The projected customers and accompanying billable flows are applied to the existing rates to develop a projection of user rate revenues under existing rates. The revenues are then compared to the projected revenue requirements/expenditures to determine if rate adjustments are needed. Based on this comparison, it is projected that both the water and sewer systems can meet their projected operating (O&M) financial obligations at the existing rates. While this is the case, neither the water nor sewer system can cover the costs of capital projects that are anticipated to be funded with cash reserves under existing rates. Therefore, anticipated revenue increases are required to generate additional cash in order to fund capital projects and maintain adequate cash reserves. The District currently looks to maintain 360 days of cash reserves in order to help fund ongoing operations, and to cover

any unexpected capital projects that may need to be funded with cash. A graphical illustration of the projected operating results under the existing rates is provided in **Figure 2** for water and sewer, respectively.



Since it is projected that neither the water nor sewer utility systems will meet their respective financial and capital requirements without rate adjustments, the analysis developed herein proposes annual adjustments that will address the financial objectives of each utility system and mitigate the impacts of rate shock on system customers. The proposed rates and projected financial results are addressed in the subsequent sections of this Report.



Section 3 – Cost of Service Analysis

3.1 General

In accordance with the American Water Works Association (AWWA) Manual M1, the costs incurred in a water utility system are generally driven by specific service requirements imposed on the system by its customers. The primary service requirements that drive costs include annual flow volumes, peaking flow volumes (e.g., peak day, peak hour), the number of customers and the type of customers served. There are several different options that can be used to perform a cost-of-service (COS) analysis and the allocation methodology depends upon the basis applied. The analysis performed for the rate study utilizes a common industry approach known as the base-extra capacity method. Sewer analyses involve an examination of flows and strength factors.

3.2 Water Cost-of-Service

The COS utilizes the revenue requirements for the Test Year as the cost basis. The Test Year revenue requirements as identified in the previous section of the Report are functionally unbundled, classified and allocated to customer classes to determine the cost of service by class. More detail relating to the water COS approach can be found in **Appendix B**.

3.2.1 Peaking Factors

System-wide peaking factors are used to derive the cost component allocation bases for Base (Delivery), Max Day, and Max Hour costs. Base represents average daily demand during the year, which has been normalized to a factor of 1.00. Based on data provided by District staff, the average water demand was 1.40 million gallons per day (MGD), the Max Day water demand was 1.88 MGD, and the Max Hour water demand was 2.97 MGD, in the most recent full fiscal year. The Max Day peaking factor shows that the system-wide Max Day demand is 1.34 (1.88 Max Day MGD divided by 1.40 Base Delivery) times greater than the average daily demand. The Max Hour peaking factor shows that the system-wide Max Hour demand is 2.12 (2.97 Max Hour MGD divided by 1.40 Base Delivery) times greater than average daily demand. The system-wide peaking factors are shown in **Table 10**.

The Max Day allocations are calculated as follows:

$$\text{Base Delivery: } 1.88 / 1.40 \times 100\% = 74.47\%$$

$$\text{Max Day: } (1.88 - 1.40) / 1.88 \times 100\% = 25.53\%$$

The Max Hour allocations are calculated as follows:

$$\text{Base Delivery: } 1.40 / 2.97 \times 100\% = 47.17\%$$

$$\text{Max Day: } (1.88 - 1.40) / 2.97 \times 100\% = 16.17\%$$

$$\text{Max Hour: } (2.97 - 1.88) / 2.97 \times 100\% = 36.66\%$$

Table 10 – Peaking Factors System-Wide

| Description | Demand (MGD) | Factor | Base | Max Day | Max Hour | Total |
|-------------|--------------|--------|---------|---------|----------|----------------|
| Avg Day | 1.40 | 1.00 | 100.00% | 0.00% | 0.00% | 100.00% |
| Max Day | 1.88 | 1.34 | 74.47% | 25.53% | 0.00% | 100.00% |
| Max Hour | 2.97 | 2.12 | 47.17% | 16.17% | 36.66% | 100.00% |

Max Day Customer specific peaking factors are then developed, based on the maximum monthly usage divided by average monthly usage for each customer class. Since daily peaking statistics are not available, the maximum month peaking factor is used as a proxy for the class-specific Max Day peaking factors. For Max Hour demands, the Max Day customer-specific peaking factors are inflated based on the ratio between the system-wide Max Day and Max Hour peaking factors to determine the Max Hour peaking factors for all classes. This is calculated using the following equation:

$$(\text{Max Day Peaking Factor (Table 11)} \times [(2.97 / 1.40) / (1.88 / 1.40)])$$

The peaking factors by customer class are shown in **Table 12**.

Table 11 – Peaking Factors by Customer Class

| Description | Max Day Peaking Fator | Max Hour Peaking Factor |
|----------------------|-----------------------|-------------------------|
| All Customers | | |
| Tier 1 | 1.22 | 1.92 |
| Tier 2 | 2.32 | 3.67 |

Once peaking factors are determined, Max Day and Max Hour demands of each customer class are calculated and shown in **Table 12**. Total annual usage is derived from the customer data and then converted to an average daily usage by dividing the total annual usage by 365 days in a year. Total Max Day capacity is developed by multiplying the customer-specific peaking factors (from **Table 11**) by the average daily usage to arrive at the total capacity required to meet each class's Max Day demand. The extra capacity required to meet Max Day demands is calculated by subtracting the average daily usage from the total capacity for Max Day. The total capacity for Max Hour demand is calculated by multiplying the average daily usage by the Max Hour peaking factors. The extra capacity required for Max Hour demand is equal to the Max Hour total capacity less the Max Day total capacity. The calculation of additional capacity to meet Max Day and Max Hour demands for each customer class is shown in **Table 12**.

Table 12 – Usage and Extra Capacity by Customer Class

| Description | | | Max Day | | | Max Hour | | |
|----------------------|-------------------------|--------------------------|----------------|--------------------------|-------------------------------|----------------|--------------------------|-------------------------------|
| | Total Annual Flow (CCF) | Average Daily Flow (CCF) | Peaking Factor | Total Capacity (CCF/Day) | Additional Capacity (CCF/Day) | Peaking Factor | Total Capacity (CCF/Day) | Additional Capacity (CCF/Day) |
| All Customers | - | - | - | - | - | - | - | - |
| Tier 1 | 417,571 | 1,144 | 1.22 | 1,392 | 248 | 1.92 | 2,198 | 806 |
| Tier 2 | 126,199 | 346 | 2.32 | 803 | 458 | 3.67 | 1,268 | 465 |
| Total | 543,770 | 1,490 | | 2,196 | 706 | | 3,466 | 1,271 |

The discussion thus far related to peaking factors reflect the system wide peaking factors including an average day factor of 1.00. It should be noted for further cost-of-service analysis and rate design under the base extra capacity method, base costs include a peaking factor. Previously the industry standard was to assume there was no peaking within base demand (often the lowest tier of a tiered rate structure). However, the industry standard has evolved to recognize that there are differing water demands from month to month and peaking factors within the base demand category should be recognized. Our cost-of-service and rate design analyses recognizes and incorporates this evolution.

3.2.2 Functional Unbundling of Revenue Requirements

The water system costs are unbundled into operating components consisting of Supply/Treatment, Transmission, Distribution, Customer, and Administration functions. These are the primary services provided by most water utility systems to its customers. A brief description of each component is as follows:

- **Supply/Treatment** – the costs associated with obtaining and converting raw water to potable water;
- **Transmission** – the costs associated with major pumping and large diameter line facilities that transmit potable water throughout the system at-large;
- **Distribution** – the costs associated with smaller diameter lines that carry water to individual customer properties;
- **Customer** – the costs associated with metering, billing and providing other services to customers (e.g. printing, delivering and collecting utility bills, recordkeeping, etc.);
- **Administration** – various overhead and other non-operating costs.

The allocation of the functionally unbundled revenue requirements for the Test Year are summarized in **Table 13**.

Table 13 – Functionally Unbundled Cost Allocations

| Description | Test Year |
|--|---------------------|
| Total O&M | \$ 3,380,194 |
| Existing Debt Service | 455,627 |
| Future Debt Service | - |
| Other Expenditures & Transfers | 878,384 |
| Gross Revenue Requirement | \$ 4,714,205 |
| Less Other Revenues | (341,566) |
| Net Revenue Requirement | \$ 4,372,639 |
| Functional Unbundled Revenue Requirement | |
| Treatment | \$ - |
| Transmission & Distribution | 816,179 |
| Pumping | 117,171 |
| Customer Service | 58,300 |
| Admin | 1,058,082 |
| Source of Supply | 1,330,462 |
| Transfers | - |
| Existing Bond DS | 455,627 |
| New Bond DS | - |
| CIP | 1,874,000 |
| Non-Rate Revenue | (341,566) |
| Fund Balance ^[1] | (995,616) |
| Total | \$ 4,372,639 |
| Notes: | |
| [1] Represents a transfer from reserves to provide funding for capital outlay and CIP costs. | |

3.2.3 Classification of Water System Costs

As previously addressed, the functionally unbundled water system revenue requirements are then classified using the base-extra capacity cost allocation method. Applying this methodology, costs are classified into the following categories:

- **Base Costs** – capital costs and O&M expenses associated with service to customers under average demand conditions. This category does not include any costs attributable to variations in water use resulting from peaks in demand. Base costs tend to vary directly with the total quantity of water used.
- **Maximum Day/Extra Capacity Costs** – costs attributable to facilities that are designed to meet peaking requirements. These costs include capital and operating costs for additional plant and system capacity beyond that required for average usage. For the purposes of this analysis, the max/extra capacity costs are further separated into systemwide facilities and distribution facilities.
- **Customer Costs** – costs associated with any aspect of customer service including billing, accounting, recordkeeping and meter services. These costs are



independent of the amount of water used and the size of the customer's meter and are not subject to peaking factors.

As the name would indicate, using the base-extra capacity method, the costs are separated between those attributed to base capacity and those attributed to extra capacity. Other components such as treatment, transmission and distribution are allocated based on flows and peaking factors. All customer service-related costs are allocated 100% to customer billing.

Based on discussions with District staff, the general makeup of the customer base is not expected to change, so it is anticipated that the allocation percentages and factors will not change materially during the Projection Period. However, it is important to note that COS analyses are based on the data at a specific point in time (e.g., the most recent fiscal year). To the extent that weather conditions, economic conditions and customer usage characteristics change during the Projection Period, the cost allocators can be impacted. The system-wide costs by service characteristic are shown in **Table 14**.

Table 14 - Classification of Unbundled Revenue Requirements

| Component | Base | Max Day | Max Hour | Meters & Services | Billing & Collection | Total |
|-----------------------------|---------------------|-------------------|-------------------|---------------------|----------------------|---------------------|
| Treatment | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Transmission & Distribution | 384,990 | 131,997 | 299,192 | - | - | 816,179 |
| Pumping | 87,255 | 29,916 | - | - | - | 117,171 |
| Customer Service | - | - | - | 30,573 | 27,727 | 58,300 |
| Admin | - | - | - | 554,870 | 503,212 | 1,058,082 |
| Source of Supply | 1,330,462 | - | - | - | - | 1,330,462 |
| Transfers | - | - | - | - | - | - |
| Existing Bond DS | - | - | - | 455,627 | - | 455,627 |
| New Bond DS | - | - | - | - | - | - |
| CIP | 880,780 | - | - | 993,220 | - | 1,874,000 |
| Capital Outlay | - | - | - | - | - | - |
| Non-Rate Rev & Fund Bal | (628,445) | (37,918) | (70,068) | (476,410) | (124,341) | (1,337,182) |
| Total | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$ 4,372,639 |

3.2.4 Allocation to Customer Classes and Unit Cost Development

The functionalized and classified revenue requirements are allocated to customer classes as follows:

- **Base Costs** – Based on relative percentage of Base Annual Usage.
- **Maximum Day/Extra Capacity System Costs** – Based on relative percentage of Extra Capacity for the entire system.



- **Maximum Day/Extra Capacity Distribution Costs** – Based on relative percentage of Extra Capacity for the distribution system.
- **Customer Costs** – Based on relative percentage of Equivalent Residential Units (ERUs).

The units of service for each component of cost by customer class (if applicable) are provided in **Table 15**. The units of service consist of the number of accounts and units, ERUs, annual flows in CCF and Max Day and Max Hour extra capacity. Units are based on the number of customers as provided in the customer data. ERUs are based on meter equivalencies in accordance with AWWA standards. Base is the total annual usage projected for the test year based on historical customer data. Max Day and Max Hour are the extra capacity demand results as previously developed in **Table 12**.

Table 15 – Units of Service

| Description | Accounts/ Units | ERUs | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) |
|----------------------|--------------------|--------------|----------------|----------------------|-----------------------|
| All Customers | 7,413 | 8,174 | 543,770 | 706 | 1,271 |
| Tier 1 | | | 417,571 | 248 | 806 |
| Tier 2 | | | 126,199 | 458 | 465 |
| Total | 7,413 | 8,174 | 543,770 | 706 | 1,271 |

The revenue requirement for each cost component is divided by its respective unit of service to calculate a unit cost. The unit cost for each cost component is demonstrated in **Table 16**.

Table 16 – Cost Per Unit

| Description | Base | Max Day | Max Hour | Meters & Services | Billing & Collection | Total |
|---------------------------|----------------|------------------|------------------|----------------------|-------------------------|--------------------|
| Total Revenue Requirement | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$4,372,639 |
| Units of Service | 543,770 | 706 | 1,271 | 98,088 | 88,956 | |
| | CCF | CCF/Day | CCF/Day | ERUs/Year | Bills/Year | |
| Cost Per Unit | \$ 3.78 | \$ 175.69 | \$ 180.32 | \$ 15.88 | \$ 4.57 | |
| | CCF | CCF/Day | CCF/Day | ERU | Bill | |

The allocation of the revenue requirement to each customer class is based on the unit costs for each component multiplied by the units of service for each customer class. For example, the Base unit cost is multiplied by the base flow amounts for each customer class to generate the allocated revenue requirement. The total costs to be recovered from each customer class by rate component are shown in **Table 17**.



Table 17 – Cost of Service by Customer Class and Cost Component

| Rate Class | ERUs | Accounts | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) | Total Costs |
|----------------------|--------------------|-------------------|--------------------|-------------------|--------------------|--------------------|
| All Customers | \$1,557,880 | \$ 406,598 | \$2,055,042 | \$ 123,995 | \$ 229,124 | \$4,372,639 |
| Tier 1 | | | \$ 1,578,105 | \$ 43,608 | \$ 145,292 | |
| Tier 2 | | | \$ 476,937 | \$ 80,387 | \$ 83,832 | |
| Total | \$1,557,880 | \$ 406,598 | \$2,055,042 | \$ 123,995 | \$ 229,124 | \$4,372,639 |

3.2.5 Rate Design by Unit Cost

The unit costs developed in the previous section are used to design the proposed rates for the Test Year. The fixed rate components are based on accounts, ERUs and the allocated customer-related costs. The volumetric rate component is based on the annual usage and extra capacity requirements (Max Day and Max Hour).

The first component of the fixed charge is the meter charge and is applied on an ERU basis. It is common practice in the utility industry to establish a rate structure that includes an incremented service availability charge (monthly meter charge) such that customers placing a greater potential demand requirement on the system (those with larger meters) will pay proportionately more for the service availability component. The methodology for incrementing the availability charge is based upon standardized meter/capacity criteria established by the AWWA relative to the size of the water meter. The AWWA equivalent meter capacity criteria are commonly used to establish a standard unit of measure for customers referred to as an ERU. Based upon the established standards, an ERU is equal to one single-family residential connection with a 5/8 x 3/4-inch water meter (the standard meter size for a single-family residential customer in the District). The applicable ERU factors for larger water meters are based upon the incremental increase in potential capacity of those meters as compared to the standard meter size. These factors are derived from actual flow testing results as performed and defined by the AWWA, and commonly utilized by the water and sewer utility industry. In fact, many state public service commissions have adopted the AWWA meter equivalency basis as the required structure for rate-making by the private utility systems within their regulatory jurisdiction. The AWWA equivalency factors can be applied to the meter charge for a 5/8 x 3/4-inch meter to calculate the applicable meter charges for each meter size. A summary of the AWWA meter-size equivalency factors is provided in **Table 18**.

Table 18 - AWWA Meter Equivalency Factors

| Description | AWWA Factors ⁽¹⁾ |
|---|-----------------------------|
| Meter Size | |
| 5/8 Inch | 1.00 |
| 3/4 Inch | 1.50 |
| 1.0 Inch | 2.50 |
| 1.5 Inch | 5.00 |
| 2.0 Inch | 8.00 |
| 3.0 Inch | 15.00 |
| 4.0 Inch | 25.00 |
| 6.0 Inch | 50.00 |
| 8.0 Inch | 80.00 |
| <p>Notes: (1) Meter-size equivalency factors established by the AWWA and identified in AWWA Standards C700, M1 and M22. Such factors are commonly applied consistently for both water and wastewater rate design.</p> | |

The second component of the fixed charge is the customer charge. Unlike meter-related costs, customer costs do not vary with meter size. Therefore, the monthly customer unit cost is applied equally to each account. The two fixed charge components are added together to develop the total proposed monthly base charge for each respective meter size. The proposed monthly base charges for the Test Year are shown in **Table 19**.

Table 19 – Monthly Base Charge Calculation

| Meter Size | Capacity Ratio | Meter Charge | Customer Charge | Proposed Charge |
|------------------------|----------------|--------------|-----------------|--------------------|
| General Service | | | | |
| 5/8 Inch | 1.00 | \$ 15.88 | \$ 4.57 | \$ 20.45 |
| 3/4 Inch | 1.50 | \$ 23.82 | \$ 4.57 | \$ 28.39 |
| 1.0 Inch | 2.50 | \$ 39.71 | \$ 4.57 | \$ 44.28 |
| 1.5 Inch | 5.00 | \$ 79.41 | \$ 4.57 | \$ 83.98 |
| 2.0 Inch | 8.00 | \$ 127.06 | \$ 4.57 | \$ 131.63 |
| 3.0 Inch | 15.00 | \$ 238.24 | \$ 4.57 | \$ 242.81 |
| 4.0 Inch | 25.00 | \$ 397.06 | \$ 4.57 | \$ 401.63 |
| 6.0 Inch | 50.00 | \$ 794.12 | \$ 4.57 | \$ 798.69 |
| 8.0 Inch | 80.00 | \$ 1,270.60 | \$ 4.57 | \$ 1,275.17 |

The water volumetric rates are made up of two different cost components. The first cost component is for base usage. The second cost component represents peaking costs (the combination of Max Day and Max Hour cost components). The base unit cost is \$3.78 as previously identified in **Table 16**. The Max Day and Max Hour peaking costs for each customer class (from **Table 17**) are added together and then divided by the annual usage. The peaking unit costs are shown in **Table 20**.

Table 20 – Peaking Unit Cost Calculation

| Rate Class | Annual Use (CCF) | Peaking Costs | Peaking Unit Cost |
|----------------------|------------------|-------------------|-------------------|
| All Customers | | | |
| Tier 1 | 417,571 | \$ 188,900 | \$ 0.45 |
| Tier 2 | 126,199 | \$ 164,219 | \$ 1.30 |
| Total | 543,770 | \$ 353,119 | |

The peaking unit costs are then added to the base unit cost to come up with the proposed volumetric rates for each customer class. The proposed volumetric rates are shown in **Table 21**.

Table 21 – Volumetric Rate Calculation

| Meter Size | Base | Peaking | Proposed Rate (\$/CCF) [1] | Tier Differential |
|----------------------|---------|---------|----------------------------|-------------------|
| All Customers | | | | |
| Tier 1 | \$ 3.78 | \$ 0.45 | \$ 4.23 | 1.00 |
| Tier 2 | \$ 3.78 | \$ 1.30 | \$ 5.08 | 1.20 |

Notes:

[1] The proposed rate per CCF for each tier includes the \$1.76 HBMWD passthrough charge.

3.3 Sewer Cost-of-Service

As with the water system, the COS analysis for the sewer utility utilizes the revenue requirements for the Test Year as the cost basis. The Test Year revenue requirements are functionally unbundled, classified and allocated to customer classes to determine the cost-of-service by class. More detail relating to the sewer COS approach can be found in **Appendix C**.

3.3.1 Functional Unbundling of Revenue Requirements

The sewer system costs are unbundled into Collection, Treatment, and Customer functions. A brief description of each component is as follows:

- **Collection** – costs associated with lines and facilities that transport wastewater from customer properties to the plants for treatment;
- **Treatment** – costs associated with treating wastewater for disposal reclamation and/or discharge;
- **Customer** – costs associated with metering, billing and providing other services to customers (e.g. printing, delivering and collecting utility bills, recordkeeping, etc.).

The allocation of the functionally unbundled revenue requirements for the Test Year are summarized in **Table 22**.

Table 22 - Functional Unbundled Cost Allocations

| Description | Test Year |
|--|---------------------|
| Total O&M | \$ 2,402,326 |
| Existing Debt Service | 1,039,140 |
| Future Debt Service | - |
| Other Expenditures & Transfers | 1,236,155 |
| Gross Revenue Requirement | \$ 4,677,621 |
| Less Other Revenues | (406,725) |
| Net Revenue Requirement | \$ 4,270,896 |
| Functional Unbundled Revenue Requirement | |
| Treatment | \$ 304,000 |
| Collection | 87,500 |
| Administration | 1,893,026 |
| Pumping | 78,500 |
| Customer Service | 39,300 |
| Transfers | - |
| CIP | 1,996,000 |
| Capital Outlay | - |
| Existing Debt | 1,039,140 |
| New Debt | - |
| Non-Rate Revenue | (406,725) |
| Fund Balance ^[1] | (759,845) |
| Non-Rate Rev & Fund Bal | \$ 4,270,896 |
| Notes: | |
| [1] Represents a transfer from reserves to provide funding for capital outlay and CIP costs. | |

3.3.2 Classification of Revenue Requirements

The functionally unbundled revenue requirements for the sewer system are classified into fixed and volumetric customer components based on methodology consistent with the Water Environmental Federation (WEF), Manual of Practice No. 27. As discussed for the water COS analysis, it is anticipated that the allocation percentages will not change materially during the Projection Period. However, it is important to note that COS analyses are based on the data at a specific point in time (e.g., the most recent fiscal year). To the extent that weather conditions, economic conditions and customer usage characteristics change during the Projection Period, the cost allocators can be impacted. The system-wide costs by service characteristic are shown in **Table 23**.

Table 23 - Classification of Unbundled Revenue Requirements

| Component | Volume | Capacity | Strength - SS | Strength - BOD | Billing & Collection | Customer Service | Total |
|-------------------------|-------------------|-------------------|------------------|------------------|----------------------|--------------------|--------------------|
| Treatment | \$ 30,400 | \$ 30,400 | \$ 121,600 | \$ 121,600 | \$ - | \$ - | \$ 304,000 |
| Collection | 43,750 | 43,750 | - | - | - | - | 87,500 |
| Administration | - | - | - | - | 946,513 | 946,513 | 1,893,026 |
| Pumping | 39,250 | 39,250 | - | - | - | - | 78,500 |
| Customer Service | - | - | - | - | 19,650 | 19,650 | 39,300 |
| Transfers | - | - | - | - | - | - | - |
| CIP | 499,000 | 499,000 | - | - | 499,000 | 499,000 | 1,996,000 |
| Capital Outlay | - | - | - | - | - | - | - |
| Existing Debt | 166,262 | 166,262 | - | - | 353,308 | 353,308 | 1,039,140 |
| New Debt | - | - | - | - | - | - | - |
| Non-Rate Rev & Fund Bal | (167,057) | (167,057) | (26,088) | (26,088) | (390,140) | (390,140) | (1,166,570) |
| Total | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | \$1,428,331 | \$1,428,331 | \$4,270,896 |

3.3.3 Allocation to Customer Classes

The functionalized and classified costs are allocated to customer classes proportionate to service characteristics such as biochemical oxygen demand (BOD) and suspended solids (SS) as well as billable flow levels for each class. BOD and SS are considered “strength factors” which reflect different treatment costs. Discharge from customers with higher concentrations of BOD and SS are more expensive to provide service to. There are incrementally higher costs (capital, chemical, electricity etc.) to treat the discharge from these customers. By contrast there is no difference in the cost to convey the flows from different customers classes as conveyance costs are independent of the strength of a customer's discharge. Customer costs are commonly allocated based on ERUs in accordance with WEF guidelines that are also the same as the AWWA meter equivalency factors. All of these factors are considered in a cost-of-service and rate design analysis in determining rates by customer class. The functionalized and classified costs are allocated to the applicable customer class is summarized in **Table 24**.



Table 24 - Allocation of Functionalized & Classified Revenue Requirements

| Rate Class | Volume Cost/CCF | Capacity Cost/CCF | Strength - SS Cost/pound | Strength - BOD Cost/pound | Billing & Collection | Customer Service | Total |
|------------------------------|-------------------|-------------------|--------------------------|---------------------------|----------------------|--------------------|--------------------|
| Single Family Residential | \$ 414,989 | \$ 414,989 | \$ 57,832 | \$ 55,997 | \$ 942,814 | \$ 942,814 | \$ 2,829,436 |
| Apartment//Multi Unit (Each) | 109,671 | 109,671 | 15,284 | 14,799 | 369,857 | 369,857 | 989,137 |
| 2 sewer Units/Commercial | 345 | 345 | 48 | 47 | 1,283 | 1,283 | 3,351 |
| Bakery | 168 | 168 | 70 | 113 | 214 | 214 | 947 |
| Barber/Beauty Shop | 671 | 671 | 94 | 91 | 1,497 | 1,497 | 4,520 |
| Car Wash | 2,377 | 2,377 | 248 | 32 | 641 | 641 | 6,318 |
| Church & Residence | 396 | 396 | 55 | 53 | 428 | 428 | 1,756 |
| Churches | 2,021 | 2,021 | 282 | 273 | 3,634 | 3,634 | 11,865 |
| Coast Guard Station/Airport | 10,603 | 10,603 | 1,478 | 1,431 | 855 | 855 | 25,825 |
| Dialysis Clinic | 2,800 | 2,800 | 195 | 472 | 214 | 214 | 6,694 |
| Fire Station/School | 2,039 | 2,039 | 142 | 179 | 1,069 | 1,069 | 6,537 |
| Gas Stations (No Market) | 563 | 563 | 110 | 68 | 1,924 | 1,924 | 5,152 |
| Laundromats | 5,503 | 5,503 | 422 | 557 | 1,283 | 1,283 | 14,551 |
| Market | 4,620 | 4,620 | 2,575 | 2,494 | 1,283 | 1,283 | 16,874 |
| Metered Septage Vault | 6,928 | 6,928 | 2,704 | 1,309 | 214 | 214 | 18,297 |
| Moblie Homes (Each) | 2,797 | 2,797 | 390 | 377 | 6,200 | 6,200 | 18,761 |
| Motels/Hotels | 3,188 | 3,188 | 1,333 | 1,075 | 428 | 428 | 9,639 |
| Office Building/Post Office | 4,686 | 4,686 | 653 | 632 | 25,227 | 25,227 | 61,112 |
| Restaurant/Tavern | 8,117 | 8,117 | 3,394 | 5,476 | 4,276 | 4,276 | 33,656 |
| Retail/Banks/Theater/Other | 9,493 | 9,493 | 1,323 | 1,281 | 10,262 | 10,262 | 42,114 |
| Round Table/Market | 400 | 400 | 190 | 181 | 428 | 428 | 2,027 |
| Sewer Only Accounts | - | - | - | - | 8,552 | 8,552 | 17,103 |
| Sewer Units - Commercial | 16,496 | 16,496 | 3,218 | 2,003 | 44,468 | 44,468 | 127,150 |
| Two Sewer Units/Business | 1,149 | 1,149 | 160 | 155 | 1,069 | 1,069 | 4,751 |
| Two Sewer Units/Daycare | - | - | - | - | - | - | - |
| Brewery | 1,585 | 1,585 | 3,313 | 6,416 | 214 | 214 | 13,326 |
| Total | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | \$1,428,331 | \$1,428,331 | \$4,270,896 |

Section 4 – Proposed Test Year Rates

4.1 General

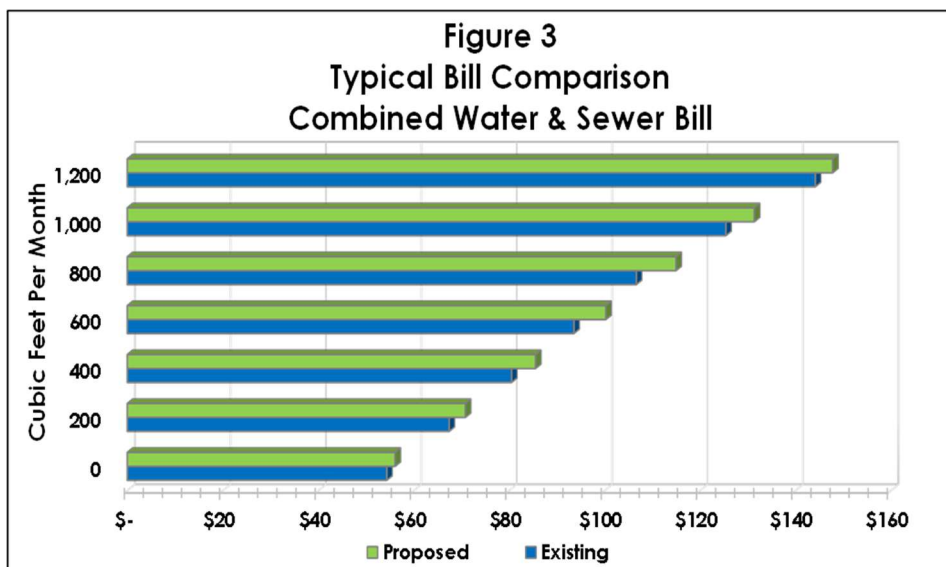
The methodology used to calculate the water and sewer rates proposed herein involves applying the projected customers and flows to the existing rates in order to develop the estimated revenues (separately for water and sewer), comparing the projected revenues to the estimated Test Year revenue requirements, and adjusting the water and/or sewer rates on a percentage basis as necessary to generate the revenues sufficient to meet the revenue needs of the utility system. In addition, there are other factors that must be considered in designing rates in order to satisfy the District's objectives. Such other rate considerations include, but are not limited to:

1. **Sensitivity to existing customers** - the proposed rates must consider the impact on existing customers and avoid putting an inequitable financial burden on any particular customer class.
2. **Comparability with neighboring utilities** - the proposed rates should consider the rates and charges applied to customers of neighboring utilities of relatively similar size for similar service.
3. **Existing rate structure** - the proposed rates must consider the logistics and cost/benefit implications of instituting significant changes to the existing rates and rate structure.
4. **Economic development** - the proposed rates must consider the potential for future development within the District's service area and ensure that the rates do not make it cost-prohibitive for future development.

The proposed rates developed herein utilize these considerations, as well as discussions with the District staff, professional judgment, and prior experience with comparable utility systems. The results of the COS indicated that, although the existing rates will not generate sufficient revenues to meet all the expenditure needs, the existing rate structure equitably recovers the costs allocated to each customer class. When reviewing potential rate structure options in conjunction with the need for additional revenues, it was determined that existing rate structure will be maintained at this time, however, the specific rates within the rate structure are proposed to be adjusted.

In conjunction with the existing rate structure, the proposed water and sewer rates for the upcoming fiscal year are composed of two rate components consisting of a monthly base charge and a volumetric rate for both water and sewer. The proposed water and sewer rates for the Test Year were provided at the beginning of this Report in **Tables 1 and 2**, respectively.

4.2 Typical Monthly Bill Comparison



In addition to reviewing the effect that a change in the rates will have on the system revenues, it is also important for utility management to understand the impact that a change will have on the existing customers. **Tables 25, 26 and 27** provide a comparison of several typical

monthly bills at various flow levels for water and sewer, as well as the combined utility bills under the existing and proposed rates. A graphical illustration of the typical bill comparison is provided in **Figure 3** for a residential customer with both water and sewer service. Based on the proposed rates, a typical customer with monthly flow of 600 CF (approximately 4,500 gallons) will experience an increase of **\$6.68** in their combined monthly water and sewer bill.

Table 25 – Residential Water Rate Impact

| Description | Monthly Flow | Monthly Charges | | \$ Amount Difference |
|--------------------|--------------|-----------------|-----------|----------------------|
| | | Existing | Proposed | |
| Residential | | | | |
| 5/8 Inch | 0 | \$ 19.80 | \$ 20.45 | \$ 0.65 |
| 5/8 Inch | 100 | \$ 23.45 | \$ 24.68 | \$ 1.23 |
| 5/8 Inch | 200 | \$ 27.10 | \$ 28.92 | \$ 1.82 |
| 5/8 Inch | 300 | \$ 30.75 | \$ 33.15 | \$ 2.40 |
| 5/8 Inch | 400 | \$ 34.40 | \$ 37.38 | \$ 2.98 |
| 5/8 Inch | 500 | \$ 38.05 | \$ 41.61 | \$ 3.56 |
| 5/8 Inch | 600 | \$ 41.70 | \$ 45.84 | \$ 4.14 |
| 5/8 Inch | 700 | \$ 45.35 | \$ 50.07 | \$ 4.72 |
| 5/8 Inch | 800 | \$ 49.00 | \$ 54.31 | \$ 5.31 |
| 5/8 Inch | 1,000 | \$ 61.98 | \$ 64.47 | \$ 2.49 |
| 5/8 Inch | 1,200 | \$ 74.96 | \$ 74.63 | \$ (0.33) |
| 5/8 Inch | 1,400 | \$ 87.94 | \$ 84.79 | \$ (3.15) |
| 5/8 Inch | 1,600 | \$ 100.92 | \$ 94.95 | \$ (5.97) |
| 5/8 Inch | 1,800 | \$ 113.90 | \$ 105.11 | \$ (8.79) |
| 5/8 Inch | 2,000 | \$ 126.88 | \$ 115.27 | \$ (11.61) |

Table 26 – Residential Sewer Rate Impact

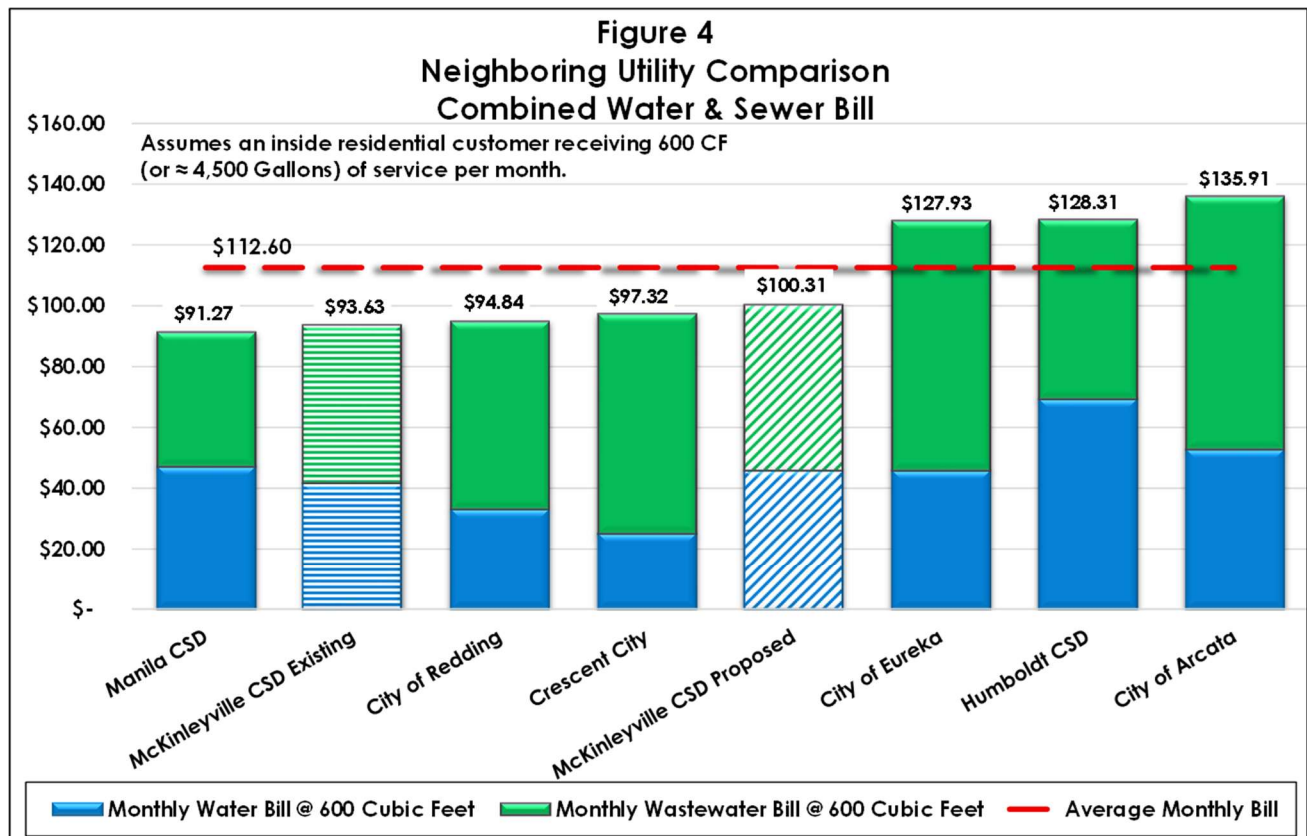
| Description | Monthly Flow | Monthly Charges | | \$ Amount Difference |
|--------------------|--------------|-----------------|----------|----------------------|
| | | Existing | Proposed | |
| Residential | | | | |
| 5/8 Inch | 0 | \$ 34.59 | \$ 35.69 | \$ 1.10 |
| 5/8 Inch | 100 | \$ 37.48 | \$ 38.82 | \$ 1.34 |
| 5/8 Inch | 200 | \$ 40.37 | \$ 41.95 | \$ 1.58 |
| 5/8 Inch | 300 | \$ 43.26 | \$ 45.08 | \$ 1.82 |
| 5/8 Inch | 400 | \$ 46.15 | \$ 48.21 | \$ 2.06 |
| 5/8 Inch | 500 | \$ 49.04 | \$ 51.34 | \$ 2.30 |
| 5/8 Inch | 600 | \$ 51.93 | \$ 54.47 | \$ 2.54 |
| 5/8 Inch | 700 | \$ 54.82 | \$ 57.59 | \$ 2.77 |
| 5/8 Inch | 800 | \$ 57.71 | \$ 60.72 | \$ 3.01 |
| 5/8 Inch | 1,000 | \$ 63.49 | \$ 66.98 | \$ 3.49 |
| 5/8 Inch | 1,200 | \$ 69.27 | \$ 73.24 | \$ 3.97 |
| 5/8 Inch | 1,400 | \$ 75.05 | \$ 79.50 | \$ 4.45 |
| 5/8 Inch | 1,600 | \$ 80.83 | \$ 85.76 | \$ 4.93 |
| 5/8 Inch | 1,800 | \$ 86.61 | \$ 92.01 | \$ 5.40 |
| 5/8 Inch | 2,000 | \$ 92.39 | \$ 98.27 | \$ 5.88 |

Table 27 – Residential Combined Rate Impact

| Description | Monthly Flow | Monthly Charges | | \$ Amount Difference |
|--------------------|--------------|-----------------|-----------|----------------------|
| | | Existing | Proposed | |
| Residential | | | | |
| 5/8 Inch | 0 | \$ 54.39 | \$ 56.14 | \$ 1.75 |
| 5/8 Inch | 100 | \$ 60.93 | \$ 63.50 | \$ 2.57 |
| 5/8 Inch | 200 | \$ 67.47 | \$ 70.87 | \$ 3.40 |
| 5/8 Inch | 300 | \$ 74.01 | \$ 78.23 | \$ 4.22 |
| 5/8 Inch | 400 | \$ 80.55 | \$ 85.59 | \$ 5.04 |
| 5/8 Inch | 500 | \$ 87.09 | \$ 92.95 | \$ 5.86 |
| 5/8 Inch | 600 | \$ 93.63 | \$ 100.31 | \$ 6.68 |
| 5/8 Inch | 700 | \$ 100.17 | \$ 107.66 | \$ 7.49 |
| 5/8 Inch | 800 | \$ 106.71 | \$ 115.03 | \$ 8.32 |
| 5/8 Inch | 1,000 | \$ 125.47 | \$ 131.45 | \$ 5.98 |
| 5/8 Inch | 1,200 | \$ 144.23 | \$ 147.87 | \$ 3.64 |
| 5/8 Inch | 1,400 | \$ 162.99 | \$ 164.29 | \$ 1.30 |
| 5/8 Inch | 1,600 | \$ 181.75 | \$ 180.71 | \$ (1.04) |
| 5/8 Inch | 1,800 | \$ 200.51 | \$ 197.12 | \$ (3.39) |
| 5/8 Inch | 2,000 | \$ 219.27 | \$ 213.54 | \$ (5.73) |

4.3 Rate Comparison with Other Utilities

In order to provide the District with additional insight regarding the proposed rate levels, the analysis includes a comparison of both the existing and proposed user rates relative to the user rates imposed by other water and sewer utility systems located in same region. A summary analysis is provided comparing the cost of monthly water and sewer service for a typical residential customer (assumed to have a 5/8-inch water meter) calculated under the existing and proposed rates of the District with those of the other utilities. The rates utilized for the other neighboring utilities shown were in effect as of February 2022 and are exclusive of local taxes, outside surcharges, franchise fees, regulatory fees or other rate adjustments. A summary comparison with other utilities for a residential customer using 600 CF (approximately 4,500 gallons) per monthly billing is illustrated in **Figure 4**.





It should be noted that when making comparisons for water and sewer service, several factors effect the level of rates and charges. Such factors may include:

- 1) Terms of wholesale service agreements;
- 2) Time since last rate update for comparison providers;
- 3) Level of treatment required before the distribution of water to the ultimate customers;
- 4) Level of treatment and effluent disposal methods of sewer service;
- 5) Anticipated capital improvement programs and capital financing methods;
- 6) Plant capacity utilization, age of facilities, and assistance in construction by federal or state grants, connection fees, developer contributions, etc.;
- 7) General Fund and/or administrative fee transfers made by other systems which may account for differences in the level of rates charged; and
- 8) Bond covenants and funding requirements of the rates.

For the utilities included in the rate comparisons, no analysis has been performed with consideration to the above-mentioned factors as they relate to the reported water and sewer rates currently being charged.



Section 5 – Projected Operating Results

5.1 General

As a conclusion to the study, individual proforma operating statements are developed for both the water and sewer systems, and together with a combined proforma of the collective operations. The statements summarize the projected financial results based on the system revenues, expenses and other revenue requirements anticipated in future years. The individual operating statements cover the 5-fiscal year Projection Period through June 30, 2027 and are prepared on a cash-flow basis. In addition, the individual statements provide the applicable annual percentage rate adjustments necessary to meet the projected revenue requirements. The annual rate adjustments are considered separately for both water and sewer and further separated by the base charge and volumetric rate components. The following discussions describe the development of the major components of the projected operating results.

5.2 Projected Revenues

The user rate and charge revenues are estimated by applying the existing and proposed rates to the projected customers and flows. The revenues for the Projection Period are estimated separately for both water and sewer and further segmented by rate component and customer class. The resulting revenues are then compared to the projected revenue requirements (i.e., O&M expenses, debt service, capital outlay, transfers, etc.) in each fiscal year in order to determine if the revenues are sufficient to satisfy the expenditure needs of the system. To the extent that there are revenue shortfalls, the water and/or sewer rates are adjusted on a percentage basis as necessary to generate the required level of revenues. The projected water, sewer and combined revenues are provided in **Table 28**.

Table 28 – Projected User Rate Revenues

| System | Existing | Proposed | Projected | | | |
|-------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | 2023 | 2023 | 2024 | 2025 | 2026 | 2027 |
| Total Water Revenue | \$ 4,273,977 | \$ 4,372,639 | \$ 4,513,418 | \$ 4,778,446 | \$ 5,046,405 | \$ 5,284,666 |
| Total Sewer Revenue | \$ 4,186,171 | \$ 4,270,896 | \$ 4,383,254 | \$ 4,603,294 | \$ 4,863,670 | \$ 5,139,432 |
| Combined Revenue | \$ 8,460,148 | \$ 8,643,535 | \$ 8,896,672 | \$ 9,381,740 | \$ 9,910,075 | \$10,424,098 |

The projected revenues include the annual water and sewer rate adjustments anticipated for the remaining years of Projection Period beyond the Test Year. The proposed user rates from which the projected operating results are developed for the entire 5-fiscal year Projection Period are provided in **Tables 29 and 30**. The rates identified in the tables reflect the cost of providing service to individual customer classes based on peaking factors, volume of flow, and strength characteristics.



Table 29 – Proposed Monthly Water Rates

| Description | Existing Rates | Projected For Fiscal Year Ending June 30: | | | | |
|---|----------------|---|-------------|-------------|-------------|-------------|
| | | 2023 | 2024 | 2025 | 2026 | 2027 |
| Monthly Base Charge by Meter Size: | | | | | | |
| General Service | | | | | | |
| 5/8 Inch | \$ 19.80 | \$ 20.45 | \$ 21.68 | \$ 22.98 | \$ 24.13 | \$ 25.10 |
| 3/4 Inch | \$ 29.11 | \$ 28.39 | \$ 30.10 | \$ 31.90 | \$ 33.50 | \$ 34.85 |
| 1.0 Inch | \$ 47.52 | \$ 44.28 | \$ 46.93 | \$ 49.75 | \$ 52.24 | \$ 54.34 |
| 1.5 Inch | \$ 93.06 | \$ 83.98 | \$ 89.02 | \$ 94.36 | \$ 99.08 | \$ 103.06 |
| 2.0 Inch | \$ 147.91 | \$ 131.63 | \$ 139.53 | \$ 147.89 | \$ 155.29 | \$ 161.54 |
| 3.0 Inch | \$ 291.85 | \$ 242.81 | \$ 257.37 | \$ 272.80 | \$ 286.46 | \$ 297.97 |
| 4.0 Inch | \$ 459.76 | \$ 401.63 | \$ 425.72 | \$ 451.25 | \$ 473.83 | \$ 492.88 |
| 6.0 Inch | \$ 915.75 | \$ 798.69 | \$ 846.60 | \$ 897.36 | \$ 942.27 | \$ 980.15 |
| 8.0 Inch | \$ 1,464.41 | \$ 1,275.17 | \$ 1,351.65 | \$ 1,432.70 | \$ 1,504.40 | \$ 1,564.87 |
| Volumetric Rates Per 100 Cubic Feet: | | | | | | |
| 0 - 800 Cubic Feet | \$ 1.89 | \$ 2.47 | \$ 2.62 | \$ 2.78 | \$ 2.92 | \$ 3.04 |
| Over 800 Cubic Feet | \$ 4.73 | \$ 3.32 | \$ 3.51 | \$ 3.73 | \$ 3.91 | \$ 4.07 |
| HBMWD Pass Through ^[1] | \$ 1.76 | \$ 1.76 | \$ 1.81 | \$ 1.89 | \$ 1.97 | \$ 2.04 |
| Notes: | | | | | | |
| [1] All customers pay an additional pass-through charge per 100 cubic feet of flow used by Humboldt Bay Municipal Water District. | | | | | | |

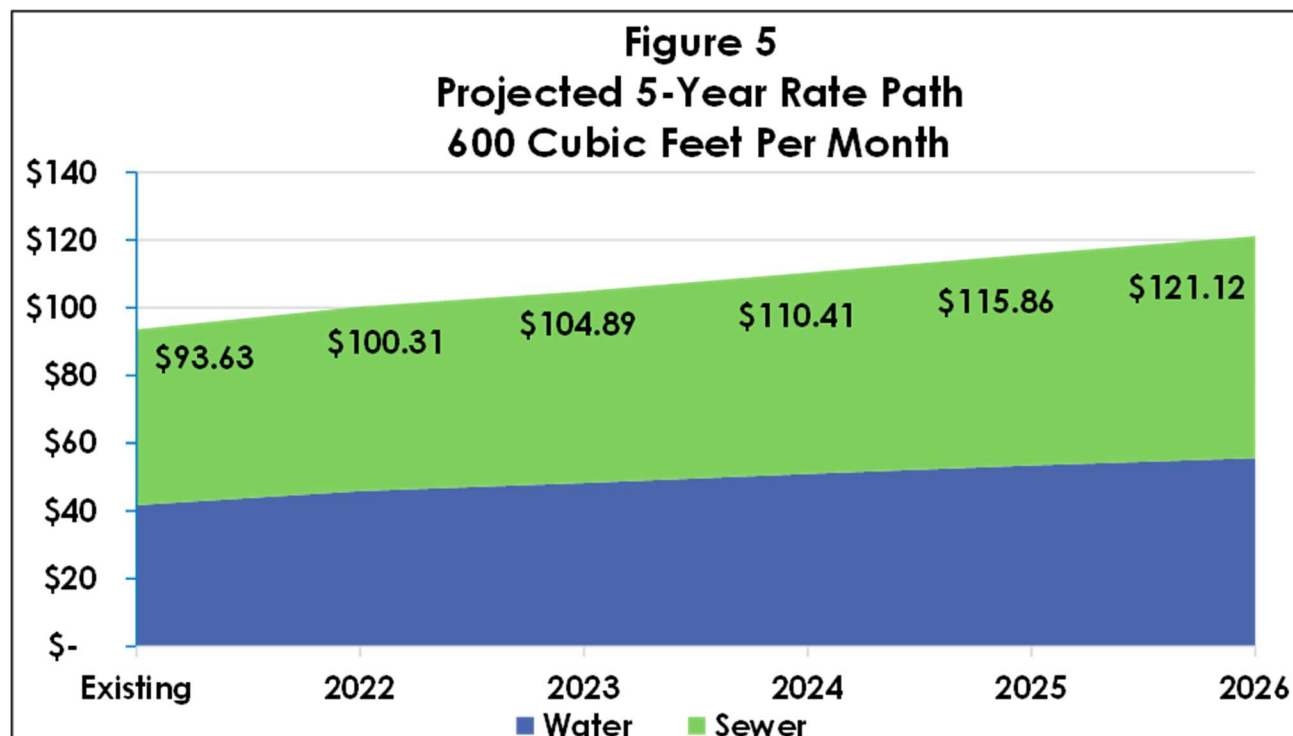


Table 30 – Proposed Monthly Sewer Rates

| Description | Existing Rates | Projected For Fiscal Year Ending June 30: | | | | |
|---|----------------|---|----------|----------|----------|----------|
| | | 2023 | 2024 | 2025 | 2026 | 2027 |
| Monthly Base Charge ^[1]: | | | | | | |
| All Customers | \$ 34.59 | \$ 35.69 | \$ 37.12 | \$ 38.98 | \$ 40.93 | \$ 42.98 |
| Volumetric Rates Per 100 Cubic Feet ^[2]: | | | | | | |
| 2 sewer Units/Commercial | \$ 3.03 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Apartment/Multi Unit (Each) | \$ 2.89 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Bakery | \$ 13.81 | \$ 4.25 | \$ 4.42 | \$ 4.64 | \$ 4.87 | \$ 5.11 |
| Barber/Beauty Shop | \$ 2.89 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Car Wash | \$ 0.66 | \$ 2.91 | \$ 0.75 | \$ 0.78 | \$ 0.82 | \$ 0.86 |
| Church & Residence | \$ 3.41 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Churches | \$ 3.03 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Coast Guard Station/Airport | \$ 3.03 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Dialysis Clinic | \$ 3.61 | \$ 3.08 | \$ 3.20 | \$ 3.36 | \$ 3.52 | \$ 3.70 |
| Fire Station/School | \$ 1.97 | \$ 2.97 | \$ 2.21 | \$ 2.32 | \$ 2.43 | \$ 2.56 |
| Gas Stations (No Market) | \$ 2.86 | \$ 3.19 | \$ 3.22 | \$ 3.38 | \$ 3.54 | \$ 3.72 |
| Laundromats | \$ 2.28 | \$ 3.00 | \$ 2.57 | \$ 2.69 | \$ 2.83 | \$ 2.97 |
| Market | \$ 11.56 | \$ 4.26 | \$ 4.43 | \$ 4.64 | \$ 4.88 | \$ 5.12 |
| Metered Septage Vault | \$ 3.24 | \$ 3.55 | \$ 3.64 | \$ 3.82 | \$ 4.01 | \$ 4.21 |
| Mobile Homes (Each) | \$ 2.89 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Motels/Hotels | \$ 7.37 | \$ 3.79 | \$ 3.94 | \$ 4.13 | \$ 4.34 | \$ 4.56 |
| Office Building/Post Office | \$ 2.89 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Restaurant/Tavern | \$ 13.81 | \$ 4.25 | \$ 4.42 | \$ 4.64 | \$ 4.87 | \$ 5.11 |
| Retail/Banks/Theater/Other | \$ 3.03 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Round Table/Market | \$ 9.65 | \$ 4.03 | \$ 4.18 | \$ 4.39 | \$ 4.60 | \$ 4.84 |
| Sewer Only Accounts | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Sewer Units - Commercial | \$ 2.86 | \$ 3.19 | \$ 3.22 | \$ 3.38 | \$ 3.54 | \$ 3.72 |
| Single Family Residential | \$ 2.89 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Two Sewer Units/Business | \$ 3.03 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Two Sewer Units/Daycare | \$ 2.92 | \$ 3.13 | \$ 3.25 | \$ 3.41 | \$ 3.58 | \$ 3.76 |
| Brewery | \$ 23.12 | \$ 11.20 | \$ 11.63 | \$ 12.20 | \$ 12.81 | \$ 13.45 |
| Notes: | | | | | | |
| [1] All sewer customers pay the same base charge. | | | | | | |
| [2] Each customer class pays a different volumetric rate based on the strength of their respective sewer discharge. | | | | | | |

The projected user rates provided herein for the periods beyond the Test Year are intended for strategic planning purposes and to provide the District with the estimated future rates that may be needed to satisfy the projected cash flow requirements. The rates are developed in accordance with the assumed customer, flow, expenditure and revenue estimates projected in this rate study. It is important to note that, since it is necessary to utilize a number of assumptions to develop the projected operating results, to the extent that actual customers, flows and/or system expenditures differ from those assumed herein, additional rate adjustments may be required. For informative purposes, a calculation of the typical monthly bill for a representative District residential customer based on the projected rates, as well as the accompanying change in the monthly bill for each year of the Projection

Period is included herein. An illustration of the projected typical bill rate path is provided in **Figure 5**.



5.3 Debt Service Coverage

The combined operating statement also includes a calculation of the annual debt service coverage. Debt service coverage is generally viewed as an indicator of the financial strength of the utility. The debt service coverage ratio is broadly calculated by dividing the net revenues by the annual debt service requirement. For the purposes of the debt service coverage calculation developed herein, the net revenues consist of the total operating revenues (user rate revenues plus other revenues) less the O&M expenses. In accordance with the requirements of the outstanding loan requirements, the District must maintain coverage of at least 120% (1.20 times) of the debt service requirements. Assuming this will be the required coverage amount for any anticipated new debt, the pro-forma operating statements indicate that the combined water and sewer system is expected to exceed the minimum level of debt service coverage in each fiscal year of the Projection Period. It is important to note that the coverage results are provided for informative purposes only and not intended as a legally supportable calculation for representation to bondholders. The debt service coverage for the water and sewer enterprise systems respectively over the projection period is provided in **Table 31**.

Table 31 – Water and Sewer Enterprise System Projected Debt Service Coverage

| Fiscal Year | Water Enterprise | | Sewer Enterprise | |
|-------------|------------------|---------|------------------|---------|
| | Projected | Minimum | Projected | Minimum |
| 2023 | 2.93 | 1.20 | 2.19 | 1.20 |
| 2024 | 2.99 | 1.20 | 2.37 | 1.20 |
| 2025 | 3.28 | 1.20 | 2.51 | 1.20 |
| 2026 | 3.56 | 1.20 | 2.70 | 1.20 |
| 2027 | 3.84 | 1.20 | 2.91 | 1.20 |

5.4 Summary of Projected Operating Results

The cash-flow statements developing the projected operating results are summarized in **Tables 32, 33** and **34** for water, sewer and the combined systems, respectively. The projected results are graphically illustrated in **Figure 6** for water, sewer and the combined systems, respectively. The results demonstrate that the proposed rates and charges along with the other system revenues and estimated future rate adjustments are anticipated to be sufficient to satisfy the projected revenue requirements and capital needs of the combined utility system.



Table 32 – Water System Projected Operating Results

| Description | Projected for Fiscal Year Ending June 30, (\$1,000s) | | | | | |
|---|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Existing 2023 | Proposed 2023 | 2024 | 2025 | 2026 | 2027 |
| Revenues: | | | | | | |
| Water Sales | \$ 4,274 | \$ 4,373 | \$ 4,513 | \$ 4,778 | \$ 5,046 | \$ 5,285 |
| Other Revenues | 342 | 342 | 359 | 377 | 395 | 415 |
| Total Revenues | \$ 4,616 | \$ 4,714 | \$ 4,872 | \$ 5,155 | \$ 5,442 | \$ 5,700 |
| O&M Expenses | (3,380) | (3,380) | (3,512) | (3,657) | (3,810) | (3,961) |
| Net Income For Debt | \$ 1,235 | \$ 1,334 | \$ 1,360 | \$ 1,498 | \$ 1,631 | \$ 1,739 |
| Debt Service: | | | | | | |
| Existing | \$ 456 | \$ 456 | \$ 456 | \$ 457 | \$ 458 | \$ 453 |
| Future | - | - | - | - | - | - |
| Total Debt Service | \$ 456 | \$ 456 | \$ 456 | \$ 457 | \$ 458 | \$ 453 |
| Balance After Debt | \$ 780 | \$ 878 | \$ 905 | \$ 1,041 | \$ 1,173 | \$ 1,286 |
| Other Expenditures & Transfers: | | | | | | |
| Capital Outlay | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Transfers In | - | - | - | - | - | - |
| Transfers Out | - | - | - | - | - | - |
| Total Other Expenditures & Transfers | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Results | \$ 780 | \$ 878 | \$ 905 | \$ 1,041 | \$ 1,173 | \$ 1,286 |
| Fund Balance Activity: | | | | | | |
| Operating Fund | | | | | | |
| Beginning Balance | \$ 6,125 | \$ 6,125 | \$ 5,130 | \$ 3,357 | \$ 2,087 | \$ 2,099 |
| Deposit/(Withdrawal) from Operations | 780 | 878 | 905 | 1,041 | 1,173 | 1,286 |
| Cash Funded Capital Projects | (1,874) | (1,874) | (2,678) | (2,310) | (1,162) | (833) |
| Total Operating Fund Balance | \$ 5,031 | \$ 5,130 | \$ 3,357 | \$ 2,087 | \$ 2,099 | \$ 2,552 |
| Ending Fund Balance | \$ 5,031 | \$ 5,130 | \$ 3,357 | \$ 2,087 | \$ 2,099 | \$ 2,552 |
| Debt Coverage | 2.71 | 2.93 | 2.99 | 3.28 | 3.56 | 3.84 |



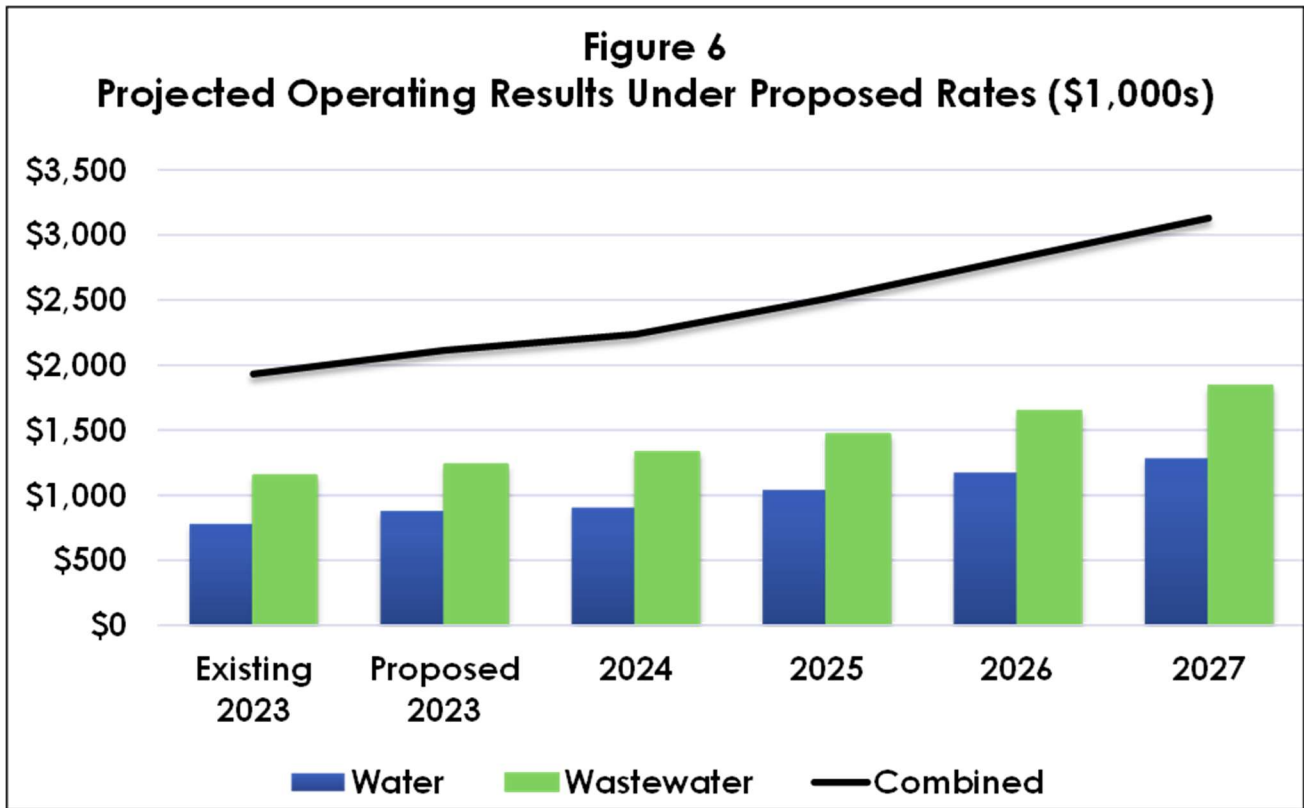
Table 33 – Sewer System Projected Operating Results

| Description | Projected for Fiscal Year Ending June 30, (\$1,000s) | | | | | |
|---|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Existing 2023 | Proposed 2023 | 2024 | 2025 | 2026 | 2027 |
| Revenues: | | | | | | |
| Wastewater Sales | \$ 4,186 | \$ 4,271 | \$ 4,383 | \$ 4,603 | \$ 4,864 | \$ 5,139 |
| Other Revenues | 407 | 407 | 421 | 437 | 452 | 469 |
| Total Revenues | \$ 4,593 | \$ 4,678 | \$ 4,805 | \$ 5,040 | \$ 5,316 | \$ 5,608 |
| O&M Expenses | (2,402) | (2,402) | (2,502) | (2,597) | (2,696) | (2,797) |
| Net Income For Debt | \$ 2,191 | \$ 2,275 | \$ 2,303 | \$ 2,442 | \$ 2,620 | \$ 2,811 |
| Debt Service: | | | | | | |
| Existing | \$ 1,039 | \$ 1,039 | \$ 970 | \$ 973 | \$ 972 | \$ 966 |
| Future | - | - | - | - | - | - |
| Total Debt Service | \$ 1,039 | \$ 1,039 | \$ 970 | \$ 973 | \$ 972 | \$ 966 |
| Balance After Debt | \$ 1,151 | \$ 1,236 | \$ 1,333 | \$ 1,469 | \$ 1,648 | \$ 1,845 |
| Other Expenditures & Transfers: | | | | | | |
| Capital Outlay | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Transfers In | - | - | - | - | - | - |
| Transfers Out | - | - | - | - | - | - |
| Total Other Expenditures & Transfers | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Results | \$ 1,151 | \$ 1,236 | \$ 1,333 | \$ 1,469 | \$ 1,648 | \$ 1,845 |
| Fund Balance Activity: | | | | | | |
| Operating Fund | | | | | | |
| Beginning Balance | \$ 6,257 | \$ 6,257 | \$ 5,497 | \$ 3,304 | \$ 1,551 | \$ 1,809 |
| Deposit/(Withdrawal) from Operations | 1,151 | 1,236 | 1,333 | 1,469 | 1,648 | 1,845 |
| Cash Funded Capital Projects | (1,996) | (1,996) | (3,526) | (3,223) | (1,390) | (1,438) |
| Total Operating Fund Balance | 5,412 | 5,497 | 3,304 | 1,551 | 1,809 | 2,216 |
| Ending Fund Balance | \$ 5,412 | \$ 5,497 | \$ 3,304 | \$ 1,551 | \$ 1,809 | \$ 2,216 |
| Debt Coverage | 2.11 | 2.19 | 2.37 | 2.51 | 2.70 | 2.91 |



Table 34 – Combined System Projected Operating Results

| Description | Projected for Fiscal Year Ending June 30, (\$1,000s) | | | | | |
|---|--|------------------|-----------------|------------------|------------------|------------------|
| | Existing 2023 | Proposed 2023 | 2024 | 2025 | 2026 | 2027 |
| Revenues: | | | | | | |
| Water Sales | \$ 4,274 | \$ 4,373 | \$ 4,513 | \$ 4,778 | \$ 5,046 | \$ 5,285 |
| Wastewater Sales | 4,186 | 4,271 | 4,383 | 4,603 | 4,864 | 5,139 |
| Combined | \$ 8,460 | \$ 8,644 | \$ 8,897 | \$ 9,382 | \$ 9,910 | \$ 10,424 |
| Other Revenues | 748 | 748 | 780 | 813 | 848 | 884 |
| Total Revenues | \$ 9,208 | \$ 9,392 | \$ 9,677 | \$ 10,195 | \$ 10,758 | \$ 11,308 |
| O&M Expenses | (5,783) | (5,783) | (6,013) | (6,255) | (6,506) | (6,758) |
| Net Income For Debt | \$ 3,426 | \$ 3,609 | \$ 3,663 | \$ 3,940 | \$ 4,251 | \$ 4,550 |
| Debt Service: | | | | | | |
| Existing | \$ 1,495 | \$ 1,495 | \$ 1,426 | \$ 1,430 | \$ 1,430 | \$ 1,419 |
| Future | - | - | - | - | - | - |
| Total Debt Service | \$ 1,495 | \$ 1,495 | \$ 1,426 | \$ 1,430 | \$ 1,430 | \$ 1,419 |
| Balance After Debt | \$ 1,931 | \$ 2,115 | \$ 2,237 | \$ 2,510 | \$ 2,821 | \$ 3,131 |
| Other Expenditures & Transfers: | | | | | | |
| Capital Outlay | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Transfers In | - | - | - | - | - | - |
| Transfers Out | - | - | - | - | - | - |
| Total Other Expenditures & Transfers | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| Net Results | \$ 1,931 | \$ 2,115 | \$ 2,237 | \$ 2,510 | \$ 2,821 | \$ 3,131 |
| Fund Balance Activity: | | | | | | |
| Operating Fund | | | | | | |
| Beginning Balance | \$ 12,382 | \$ 12,382 | \$ 10,627 | \$ 6,661 | \$ 3,638 | \$ 3,908 |
| Deposit/(Withdrawal) from Operations | 1,931 | 2,115 | 2,237 | 2,510 | 2,821 | 3,131 |
| Cash Funded Capital Projects | (3,870) | (3,870) | (6,203) | (5,533) | (2,551) | (2,271) |
| Total Operating Fund Balance | 10,443 | 10,627 | 6,661 | 3,638 | 3,908 | 4,768 |
| Ending Fund Balance | \$ 10,443 | \$ 10,627 | \$ 6,661 | \$ 3,638 | \$ 3,908 | \$ 4,768 |
| Debt Coverage | 2.29 | 2.41 | 2.57 | 2.76 | 2.97 | 3.21 |



Section 6 – Drought Surcharge

6.1 General

In accordance with the American Water Works Association (AWWA) Manual M1, a rate surcharge is a separate charge added to the existing rate structure to collect either:

- A targeted amount of revenue; or
- To assess an appropriate charge for usage characteristics outside of those covered in the basic charge for service.

Surcharges are often separate from the basic rate structure and are labeled for a specific purpose for which the funds will be used, or they are connected directly to the event that caused the need for the surcharge. Drought rates are a specific form of a surcharge rate.

6.2 Purpose of a Drought Surcharge

Drought surcharges are a specific form of a surcharge used during a drought that are intended to reduce water demand as a precautionary or emergency response to a limitation in water supplies. They are also implemented to ensure that revenue collected during a period when water sales are reduced as a result of drought and mandated water use restrictions will still meet the financial requirements of the utility. The reduction in water demand is usually achieved by multiple actions such as:

- Appealing to customers to voluntarily reduce water demands;
- Placing mandatory restrictions on discretionary water usage often related to outdoor usage (irrigation, filling pools, pressure washing, car washing, etc.); and
- Increasing water rates or adding surcharges such as a drought surcharge to incentivize reduced water demand.

The goal is to reduce water demand to better align with limited water supply that is a result of drought conditions.

When water demand is reduced, there may be a negative impact on the utility's revenues. Because less water is sold, there is a corresponding reduction in variable water rate revenue. This can result in the water utility not being able to generate sufficient revenue to cover the water system's revenue requirements (and costs). To address this situation, a drought surcharge can be enacted to help prevent a revenue shortfall and ensure that the water system's revenue requirements are met. If a revenue shortfall occurs, this can result in the water utility having to draw down on available cash reserves, which are designated for other purposes, or cause the water utility to not generate enough revenues to meet current financial obligations.



6.2.1 The District's Water Shortage Contingency Plan

The District adopted a Water Shortage Contingency Plan (WSCP) that is designed to prepare for and respond to water shortages. This WSCP complies with California Water Code (CWC) Section 10632, which requires that every urban water supplier shall prepare and adopt a WSCP as part of its Urban Water Management Plan (UWMP).

The provisions of the WSCP shall take effect upon a declaration of a water shortage made by a resolution of the District Board of Directors (the Board). Recommendation for the implementation of the WSCP shall be brought to the Board of Directors whenever the District General Manager, upon engineering analysis of District water supplies, information received from the wholesale water provider, Humboldt Bay Municipal Water District (HBMWD), or due to regulatory requirements, notices, or orders, finds and determines that a water shortage emergency exists or is imminent within the MCSD water service area. The WSCP shall remain in effect for the duration of the water shortage or until rescinded by the Board.

The WSCP establishes water use restrictions and prohibitions to be implemented during times of declared water shortages or declared water shortage emergencies. It establishes six stages of response actions to be implemented in times of shortage, with increasing restrictions on water use in response to worsening drought conditions or decreasing available supplies. The MCSD Board of Directors, upon recommendation by the General Manager, shall determine and declare by resolution the stage of response action necessary.

6.3 Proposed Drought Surcharge Rates

The analysis and proposed drought surcharge water rates herein assume that a Stage 3 water shortage response action will be implemented. Under the Stage 3 water shortage response action (or Stages 4 through 6, as approved by Board Resolution), a mandatory 10% reduction in water demand will go into effect. More detail relating to the water drought surcharge cost of service approach can be found in **Appendix D**. The proposed Stage 3 drought surcharge rates and a comparison of the basic water rates to the Stage 3 drought surcharge rates can be found in **Tables 35** and **36**, respectively.

Table 35 – Proposed Drought Surcharge Rates

| Description | Rate |
|---|-------------|
| Monthly Base Charge by Meter Size: | |
| General Service | |
| 5/8 Inch | \$ 20.45 |
| 3/4 Inch | \$ 28.39 |
| 1.0 Inch | \$ 44.28 |
| 1.5 Inch | \$ 83.98 |
| 2.0 Inch | \$ 131.63 |
| 3.0 Inch | \$ 242.81 |
| 4.0 Inch | \$ 401.63 |
| 6.0 Inch | \$ 798.69 |
| 8.0 Inch | \$ 1,275.17 |
| | |
| Volumetric Rates Per 100 Cubic Feet: | |
| 0 - 800 Cubic Feet | \$ 2.94 |
| Over 800 Cubic Feet | \$ 3.89 |
| HBMWD Pass Through ^[1] | \$ 1.76 |
| Notes: | |
| [1] All customers pay an additional pass-through charge per 100 cubic feet of flow used by Humboldt Bay Municipal Water District. | |

Table 36 – Comparison of Basic Water Rates and Drought Surcharge Rates

| Description | 2023 Basic Water Rates | 2023 Drought Rates ^[1] | Difference (\$) |
|---|------------------------|-----------------------------------|-----------------|
| Monthly Base Charge by Meter Size: | | | |
| General Service | | | |
| 5/8 Inch | \$ 20.45 | \$ 20.45 | \$ - |
| 3/4 Inch | \$ 28.39 | \$ 28.39 | \$ - |
| 1.0 Inch | \$ 44.28 | \$ 44.28 | \$ - |
| 1.5 Inch | \$ 83.98 | \$ 83.98 | \$ - |
| 2.0 Inch | \$ 131.63 | \$ 131.63 | \$ - |
| 3.0 Inch | \$ 242.81 | \$ 242.81 | \$ - |
| 4.0 Inch | \$ 401.63 | \$ 401.63 | \$ - |
| 6.0 Inch | \$ 798.69 | \$ 798.69 | \$ - |
| 8.0 Inch | \$ 1,275.17 | \$ 1,275.17 | \$ - |
| | | | |
| Volumetric Rates Per 100 Cubic Feet: | | | |
| Tier 1 | \$ 2.47 | \$ 2.94 | \$ 0.47 |
| Tier 2 | \$ 3.32 | \$ 3.89 | \$ 0.57 |
| HBMWD Pass Through ^[2] | \$ 1.76 | \$ 1.76 | \$ - |
| Notes: | | | |
| [1] Drought rates are based on the "Stage 3 - Mandatory Conservation" water demand reduction goal of 10% as stated in the McKinleyville Community Service District Water Shortage Contingency Plan. | | | |
| [2] All customers pay an additional pass-through charge per 100 cubic feet of flow used by Humboldt Bay Municipal Water District. | | | |

As demonstrated above in **Table 36**, only the volumetric rates increase when the drought surcharge goes into effect. As stated previously in **Section 3** of the report, this is because of the functional unbundling of the revenue requirements (costs). When the drought surcharge rates go into effect due to a water supply shortage, there is less water demand (customer usage) to recover the same revenue requirements allocated to the volumetric rate component. Therefore, volumetric rates need to go up to recover the same amount of revenue requirements needed while the base charge remains unchanged. The difference in units and unit costs between the basic water and drought surcharge analysis is provided in **Table 37**. The breakout of the drought surcharge proposed volumetric rates compared to the basic water rates is provided in **Table 38**.



Table 37 – Basic Water Rate vs Drought Surcharge Unit Costs

| Description | Base | Max Day | Max Hour | Meters & Services | Billing & Collection | Total |
|--------------------------------|----------------|------------------|------------------|-------------------|----------------------|--------------------|
| Basic Water Rates | | | | | | |
| Total Revenue Requirement | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$4,372,639 |
| Units of Service | 543,770 | 706 | 1,271 | 98,088 | 88,956 | |
| | CCF | CCF/Day | CCF/Day | ERUs/Year | Bills/Year | |
| Cost Per Unit | \$ 3.78 | \$ 175.69 | \$ 180.32 | \$ 15.88 | \$ 4.57 | |
| | CCF | CCF/Day | CCF/Day | ERU | Bill | |
| Drought Surcharge Rates | | | | | | |
| Total Revenue Requirement | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$4,372,639 |
| Units of Service | 489,392 | 635 | 1,144 | 98,088 | 88,956 | |
| | CCF | CCF/Day | CCF/Day | ERUs/Year | Bills/Year | |
| Cost Per Unit | \$ 4.20 | \$ 195.21 | \$ 200.36 | \$ 15.88 | \$ 4.57 | |
| | CCF | CCF/Day | CCF/Day | ERU | Bill | |

Table 38 – Proposed Volumetric Rate Breakout

| Meter Size | Base | Peaking | Proposed Rate (\$/CCF) [1] | Tier Differential |
|--|---------|---------|----------------------------|-------------------|
| Basic Water Rates - All Customers | | | | |
| Tier 1 | \$ 3.78 | \$ 0.45 | \$ 4.23 | 1.00 |
| Tier 2 | \$ 3.78 | \$ 1.30 | \$ 5.08 | 1.20 |
| Drought Surcharge Rates - All Customers | | | | |
| Tier 1 | \$ 4.20 | \$ 0.50 | \$ 4.70 | 1.00 |
| Tier 2 | \$ 4.20 | \$ 1.45 | \$ 5.65 | 1.20 |

Notes:

[1] The proposed rate per CCF for each tier includes the \$1.76 HBMWD passthrough charge.

Section 7 – Conclusions and Recommendations

7.1 General Disclaimer

In the development of the proposed user rates and charges, certain historical reviews and analyses have been performed, together with the application of assumptions based on prudent financial, operational and ratemaking relationships. The cost criteria and customer usage characteristics associated with general ratemaking procedures are representative of averages and are not intended as indicators of any individual customer.

In the preparation of the rate study, certain assumptions have been made with respect to conditions that may occur in the future. While it is believed that these assumptions are reasonable for the purpose of this update, they are dependent upon future events and actual conditions may differ from those assumed. In addition, the study has used and relied upon certain information that was provided by other parties not associated with Willdan. Such information includes, among other things, the District's audited financial statements, annual operating budgets, periodic reports, and other information and data provided by the District, its independent auditors, and other sources. While the sources are believed to be reliable, there has been no independent verification of the information and no assurances are offered with respect thereto. To the extent that future conditions differ from those assumed herein or provided by others, the actual results may vary from those projected.

7.2 Conclusions

As previously addressed, the purpose of this study is to provide a review of the District's existing utility rates to determine if rate adjustments are necessary to meet the budgeted and/or projected financial needs in future years. This Report is the result of the collaborative efforts of representatives from both the District and Willdan. District staff was diligent and cooperative in their efforts to ensure the availability and quality of source data on financial and operating matters. Based on the reviews, analyses and assumptions discussed herein, it is concluded that:

1. The proposed user rates and charges are anticipated to generate sufficient revenues to meet the revenue requirements of the system based upon the projected expenditures, transfers, customers and billable flows estimated for the Test Year. The proposed rates are based on an assumed implementation date of January 1, 2023 (or other such date as determined by the District). To the extent that the implementation date is postponed, additional rate adjustments and/or appropriations from existing reserves may be necessary.
2. The estimated revenues and resulting rate adjustments for the remaining years of the Projection Period beyond the Test Year are developed based on the

customer growth assumptions generated from the historical analyses and discussions with District staff. If the customer growth projections are not realized, additional rate adjustments may be necessary.

3. Customer account growth for the water and sewer systems is projected based on historical customer account data as provided by the District as well as discussions with the District staff regarding developer activity and anticipated construction. The customer information indicates that the utility system has experienced limited new growth during recent years. As such, for the purpose of the analyses developed herein, it is assumed that minimal growth will be realized during the Projection Period. If it turns out that this assumption is too conservative and additional customers connect to the system, the resulting revenues could be higher than projected.
4. The projection of billable water and sewer flows are based on historical trends with regard to the average flow per user for each customer class. The average water and sewer flows per account are developed from historical customer data and are assumed to remain relatively constant for the Projection Period. The historical billing data provided by the District was utilized to identify the average flow statistics for system customers. For the analyses developed herein, it is assumed that the average usage statistics for the Projection Period will be consistent with recent historical average usage levels as realized in recent years, or as otherwise assumed based on discussions with staff. When applying the estimated average usage statistics, it is assumed that the water and sewer sales will increase with the estimated growth in customers. However, it is important to note that annual variations in rainfall and other climatological factors may influence the level of future water demands and the accompanying billable sewer flows for the District.
5. Future capital improvement projects are assumed to occur as reported by the District in its CIP. To the extent that the timing of such projects may change from that estimated herein, the cost of such projects and resulting impact on future rates and charges may vary from those indicated.
6. The proposed rates and rate structure are consistent with industry standards for rate-setting practices, comply with Proposition 218 and conform to the District's financial policies with respect to:
 - a. Equitably recovering costs;
 - b. Being based upon the proportionate cost of providing services; and
 - c. Generating sufficient revenue to recover system revenue requirements, fund capital needs and meet reserve requirements.



7.3 Recommendations

Based on the reviews, analyses and assumptions addressed herein, as well as the resulting conclusions provided above, it is respectfully recommended that the District:

1. Adopt the proposed water and sewer rates.
2. Adopt the proposed drought surcharge rates.
3. Enact the proposed rates to become effective as of January 1, 2023 (or other such date as determined by the District). Based on the timing of the project and the required public hearing notice procedures, it is expected that the effective date will occur at the recommended date.
4. Readdress the cost-of-service analysis portion of this study every three to five years to ensure costs are recovered consistent with cost-of-service principles and customer characteristics.

We appreciate the opportunity to be of service to the District in this engagement. In addition, we would like to thank District staff for the valuable assistance provided during the completion of the rate study.

Respectfully Yours,

WILLDAN FINANCIAL SERVICES

APPENDIX

COST OF SERVICE DETAIL FOR THE WATER & SEWER RATE STUDY



**WATER & SEWER RATE STUDY FOR THE
McKINLEYVILLE COMMUNITY SERVICES DISTRICT, CALIFORNIA**

Prepared by Willdan Financial Services



APPENDIX - A
MCKINLEYVILLE CSD, CA
Development of Rate Revenue Requirements

| Line No: | | A | | B | | C | | | |
|----------|--|---------------------|-----------|------------|-------|------------|-------|-----------|-----------|
| | | Test Year for Rate | | % to Water | Water | % to Sewer | Sewer | | |
| | | Revenue Requirement | | | | | | | |
| | | FY 2023 | | | | | | | |
| 1 | Total Operating Revenue Requirement | \$ | 9,391,826 | | \$ | 4,714,205 | \$ | 4,677,621 | |
| | Less: | | | | | | | | |
| | <u>Other Operating Revenues</u> | | | | | | | | |
| 2 | Water Base Chg | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 3 | Mtr. Water Sale | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 4 | New Svc. Fees | \$ | 25,000 | 100% | \$ | 25,000 | 0% | \$ | - |
| 5 | Service Install | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 6 | Pl. Ck. Fee Dep | \$ | 1,000 | 100% | \$ | 1,000 | 0% | \$ | - |
| 7 | Swr Const Prmt | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 8 | Permit Fees | \$ | 1,000 | 100% | \$ | 1,000 | 0% | \$ | - |
| 9 | Conn. Fees Wtr. Cap. Impr. | \$ | 150,000 | 100% | \$ | 150,000 | 0% | \$ | - |
| 10 | Proc. Fees | \$ | 15,000 | 100% | \$ | 15,000 | 0% | \$ | - |
| 11 | Bad Check Fees | \$ | 500 | 100% | \$ | 500 | 0% | \$ | - |
| 12 | Reconn. Fees | \$ | 3,000 | 100% | \$ | 3,000 | 0% | \$ | - |
| 13 | Dcv Inspection | \$ | 22,000 | 100% | \$ | 22,000 | 0% | \$ | - |
| 14 | Refunds/Rebates | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 15 | Rec. Bad Debts | \$ | 900 | 100% | \$ | 900 | 0% | \$ | - |
| 16 | Cell Tower Rev. | \$ | 17,000 | 100% | \$ | 17,000 | 0% | \$ | - |
| 17 | Other Op. Rev. | \$ | 15,000 | 100% | \$ | 15,000 | 0% | \$ | - |
| 18 | Lease Revenue | \$ | 3,600 | 100% | \$ | 3,600 | 0% | \$ | - |
| 19 | Paving Fees | \$ | 3,000 | 100% | \$ | 3,000 | 0% | \$ | - |
| 20 | Svc Upgrade | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 21 | After Hrs Chgs | \$ | 500 | 100% | \$ | 500 | 0% | \$ | - |
| 22 | St. Light Chgs | \$ | 450 | 100% | \$ | 450 | 0% | \$ | - |
| 23 | Sale Of Scrap | \$ | 350 | 100% | \$ | 350 | 0% | \$ | - |
| 24 | Ins. Reimburse. | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 25 | Int. Revenue | \$ | 50,000 | 100% | \$ | 50,000 | 0% | \$ | - |
| 26 | Int. Revenue Admin./General | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 27 | Late Charges | \$ | 12,500 | 100% | \$ | 12,500 | 0% | \$ | - |
| 28 | Contrib. Const. | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 29 | Other Income | \$ | 1,000 | 100% | \$ | 1,000 | 0% | \$ | - |
| 30 | State/Other Grants | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 31 | Loss(Gain) Disp | \$ | 4,000 | 100% | \$ | 4,000 | 0% | \$ | - |
| 32 | Unrealized Gain/Loss - Water | \$ | - | 100% | \$ | - | 0% | \$ | - |
| 33 | Swr Svc Chgs. | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 34 | Storm Water Fee | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 35 | Storm Wtr Fee Open Space Main | \$ | 350 | 0% | \$ | - | 100% | \$ | 350 |
| 36 | New Svc. Fees | \$ | 30,000 | 0% | \$ | - | 100% | \$ | 30,000 |
| 37 | Pl. Ck. Fee Dep | \$ | 1,000 | 0% | \$ | - | 100% | \$ | 1,000 |
| 38 | Swr Const Prmt | \$ | 2,500 | 0% | \$ | - | 100% | \$ | 2,500 |
| 39 | Permit Fees | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 40 | Conn. Fees Capital Imp | \$ | 200,000 | 0% | \$ | - | 100% | \$ | 200,000 |
| 41 | Bad Check Fees | \$ | 300 | 0% | \$ | - | 100% | \$ | 300 |
| 42 | Reconn. Fees | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 43 | Refunds/Rebates | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 44 | Rec. Bad Debts | \$ | 900 | 0% | \$ | - | 100% | \$ | 900 |
| 45 | Cell Tower Rev. | \$ | 17,000 | 0% | \$ | - | 100% | \$ | 17,000 |
| 46 | Other Op. Rev. | \$ | 6,500 | 0% | \$ | - | 100% | \$ | 6,500 |
| 47 | Lease Revenue | \$ | 64,392 | 0% | \$ | - | 100% | \$ | 64,392 |
| 48 | Paving Fees | \$ | 1,000 | 0% | \$ | - | 100% | \$ | 1,000 |
| 49 | After Hrs Chgs | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 50 | Sale Of Scrap | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 51 | Insurance Reimb | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 52 | Int. Revenue | \$ | 50,000 | 0% | \$ | - | 100% | \$ | 50,000 |
| 53 | Int. Revenue Admin./General | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 54 | Late Charges | \$ | 13,000 | 0% | \$ | - | 100% | \$ | 13,000 |
| 55 | Contrib. Const. | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 56 | Other Income | \$ | 2,000 | 0% | \$ | - | 100% | \$ | 2,000 |
| 57 | State/Fema Grants | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 58 | Loss (Gain) Disp | \$ | 4,000 | 0% | \$ | - | 100% | \$ | 4,000 |
| 59 | Unrealized Gain/Loss | \$ | - | 0% | \$ | - | 100% | \$ | - |
| 60 | Increase/(Decrease) in Revenues | \$ | 29,549 | | \$ | 15,766 | | \$ | 13,783 |
| 61 | Total Other Operating Revenues | \$ | 748,291 | | \$ | 341,566 | | \$ | 406,725 |
| 62 | Total Rate Revenue Requirement | \$ | 8,643,535 | 51% | \$ | 4,372,639 | 49% | \$ | 4,270,896 |

APPENDIX - B

MCKINLEYVILLE CSD, CA

Water Max Day/Hour Allocation Factors - Test Year FY 2023

| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] |
|--------------------------------------|-----------------------|------------------------------------|-------------------------------------|------------------------|---------------------------|--|--|--------------------------------|---|---|
| Line No: | Description | Flow | Peak Month (CCF) | Average Month (CCF) | Max Day/Avg Day Factor | Max Day Total Capacity (CCF/Day) | Max Day Extra Capacity (CCF/Day) | Max Hour Capacity Factor | Max Hour Total Capacity (CCF/Day) | Max Hour Extra Capacity (CCF/Day) |
| Operating Statistics: | | MGD | Factor | | | | | | | |
| 1 | Avg Day Flow (MGD) | 1.40 | 1.00 | | | | | | | |
| 2 | Max Day Flow (MGD) | 1.88 | 1.34 | | | | | | | |
| 3 | Max Hour Flow (MGD) | 2.97 | 2.12 | | | | | | | |
| Cost Allocation Factors: | | Base | Max Day | Max Hour | | | | | | |
| 4 | Base/Max Day | 74.47% | 25.53% | 0.00% | | | | | | |
| 5 | Base/Max Day/Max Hour | 47.17% | 16.17% | 36.66% | | | | | | |
| Peaking Factors: | | | | | [B] / [C] | [D] * [B3 / B2] | | | | |
| All Customers | | | | | | | | | | |
| 6 | Tier 1 | 43,265 | 35,552 | 1.22 | 1.92 | | | | | |
| 7 | Tier 2 | 27,648 | 11,900 | 2.32 | 3.67 | | | | | |
| | | | | | | Maximum Day | Maximum Hour | | | |
| | | | | | | [D] x [B] | [E] - [B] | [G] x [B] | | [H] - [E] |
| Estimated Max Day/Hour Flows: | | Total Annual Flow (CCF) | Average Daily Flow (CCF) | Peaking Factor | Total Capacity | Extra Capacity | Peaking Factor | Total Capacity | Extra Capacity | |
| All Customers | | | | | | | | | | |
| 8 | Tier 1 | 417,571 | 1,144 | 1.22 | 1,392 | 248 | 1.92 | 2,198 | 806 | |
| 9 | Tier 2 | 126,199 | 346 | 2.32 | 803 | 458 | 3.67 | 1,268 | 465 | |
| 10 | Total | 543,770 | 1,490 | | 2,196 | 706 | | 3,466 | 1,271 | |

APPENDIX - B

MCKINLEYVILLE CSD, CA

Water Units of Service by Cost Component - Test Year FY 2023

| | | [A] | [B] | [C] | [D] | [E] |
|----------|----------------------|-------|----------------|------------|----------------------|-----------------------|
| Line No: | Description | ERUs | Accounts/Units | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) |
| 1 | All Customers | 8,174 | 7,413 | 543,770 | 706 | 1,271 |
| 2 | Tier 1 | | | 417,571 | 248 | 806 |
| 3 | Tier 2 | | | 126,199 | 458 | 465 |
| 4 | Total | 8,174 | 7,413 | 543,770 | 706 | 1,271 |

APPENDIX - B

MCKINLEYVILLE CSD, CA

Allocation of Water Costs - Test Year FY 2023

| Line No: | Description | Water Costs | Extra Capacity | | | Meters & Services | Billing & Collection | Total |
|-----------------------------|-----------------------------|---------------------|---------------------|--------------------|--------------------|---------------------|----------------------|---------------------|
| | | | Base | Max Day | Max Hour | | | |
| Allocation Factors: | | | | | | | | |
| 1 | Treatment | | 74.47% | 25.53% | 0.00% | 0.00% | 0.00% | 100.00% |
| 2 | Transmission & Distribution | | 47.17% | 16.17% | 36.66% | 0.00% | 0.00% | 100.00% |
| 3 | Pumping | | 74.47% | 25.53% | 0.00% | 0.00% | 0.00% | 100.00% |
| 4 | Customer Service | | 0.00% | 0.00% | 0.00% | 52.44% | 47.56% | 100.00% |
| 5 | Admin | | 0.00% | 0.00% | 0.00% | 52.44% | 47.56% | 100.00% |
| 6 | Source of Supply | | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 7 | Transfers | | 75.00% | 0.00% | 0.00% | 25.00% | 0.00% | 100.00% |
| 8 | Existing Bond DS | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| 9 | New Bond DS | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| 10 | CIP | | 47.00% | 0.00% | 0.00% | 53.00% | 0.00% | 100.00% |
| 11 | Capital Outlay | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| Allocation of Costs: | | | | | | | | |
| 12 | Treatment | - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 13 | Transmission & Distribution | 816,179 | 384,990 | 131,997 | 299,192 | - | - | 816,179 |
| 14 | Pumping | 117,171 | 87,255 | 29,916 | - | - | - | 117,171 |
| 15 | Customer Service | 58,300 | - | - | - | 30,573 | 27,727 | 58,300 |
| 16 | Admin | 1,058,082 | - | - | - | 554,870 | 503,212 | 1,058,082 |
| 17 | Source of Supply | 1,330,462 | 1,330,462 | - | - | - | - | 1,330,462 |
| 18 | Transfers | - | - | - | - | - | - | - |
| 19 | Existing Bond DS | 455,627 | - | - | - | 455,627 | - | 455,627 |
| 20 | New Bond DS | - | - | - | - | - | - | - |
| 21 | CIP | 1,874,000 | 880,780 | - | - | 993,220 | - | 1,874,000 |
| 22 | Capital Outlay | - | - | - | - | - | - | - |
| 23 | Non-Rate Rev & Fund Bal | (1,337,182) | (628,445) | (37,918) | (70,068) | (476,410) | (124,341) | (1,337,182) |
| 24 | Total | \$ 4,372,639 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$ 4,372,639 |
| Units of Service | | | 543,770.00 | 705.77 | 1,270.62 | 98,088.00 | 88,956.00 | |
| | | | CCF | CCF/Day | CCF/Day | ERUs/Year | Bills/Year | |
| Cost Per Unit | | | \$ 3.7792 | \$ 175.6870 | \$ 180.3249 | \$ 15.8825 | \$ 4.5708 | |
| | | | CCF | CCF/Day | CCF/Day | ERU | Bill | |

APPENDIX - B

MCKINLEYVILLE CSD, CA

Water Cost of Service by Cost Component and Customer Class - Test Year FY 2023

| | [A] | [B] | [C] | [D] | [E] | [F] | |
|----------|----------------------|--------------|------------|--------------|----------------------|-----------------------|--------------|
| Line No: | Description | ERUs | Accounts | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) | Total |
| 1 | All Customers | \$ 1,557,880 | \$ 406,598 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 4,372,639 |
| 2 | Tier 1 | | | \$ 1,578,105 | \$ 43,608 | \$ 145,292 | |
| 3 | Tier 2 | | | \$ 476,937 | \$ 80,387 | \$ 83,832 | |
| 4 | Total | \$ 1,557,880 | \$ 406,598 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 4,372,639 |

APPENDIX - B

MCKINLEYVILLE CSD, CA

Water Rate Calculation - Test Year FY 2023

| | [A] | [B] | [C] | [D] | [E] | [F] | |
|------------------------|-------------|----------------|--------------|-----------------|-----------------|-----------------|-------------|
| Line No: | Description | Capacity Ratio | Meter Charge | Customer Charge | Proposed Charge | Existing Charge | Difference |
| General Service | | | | | | | |
| 1 | 5/8 Inch | 1.00 | \$ 15.88 | \$ 4.57 | \$ 20.45 | \$ 19.80 | \$ 0.65 |
| 2 | 3/4 Inch | 1.50 | \$ 23.82 | \$ 4.57 | \$ 28.39 | \$ 29.11 | \$ (0.72) |
| 3 | 1.0 Inch | 2.50 | \$ 39.71 | \$ 4.57 | \$ 44.28 | \$ 47.52 | \$ (3.24) |
| 4 | 1.5 Inch | 5.00 | \$ 79.41 | \$ 4.57 | \$ 83.98 | \$ 93.06 | \$ (9.08) |
| 5 | 2.0 Inch | 8.00 | \$ 127.06 | \$ 4.57 | \$ 131.63 | \$ 147.91 | \$ (16.28) |
| 6 | 3.0 Inch | 15.00 | \$ 238.24 | \$ 4.57 | \$ 242.81 | \$ 291.85 | \$ (49.04) |
| 7 | 4.0 Inch | 25.00 | \$ 397.06 | \$ 4.57 | \$ 401.63 | \$ 459.76 | \$ (58.13) |
| 8 | 6.0 Inch | 50.00 | \$ 794.12 | \$ 4.57 | \$ 798.69 | \$ 915.75 | \$ (117.06) |
| 9 | 8.0 Inch | 80.00 | \$ 1,270.60 | \$ 4.57 | \$ 1,275.17 | \$ 1,464.41 | \$ (189.24) |
| 10 | 10.0 Inch | 115.00 | \$ 1,826.48 | \$ 4.57 | \$ 1,831.06 | \$ 1,464.41 | \$ 366.65 |

| Line No: | Customer Class | Base | Peaking | Proposed Rate (\$/CCF) | Existing Rate (\$/CCF) | Difference | Tier Differential |
|----------------------|----------------|---------|---------|------------------------|------------------------|------------|-------------------|
| All Customers | | | | | | | |
| 1 | Tier 1 | \$ 3.78 | \$ 0.45 | \$ 4.23 | \$ 3.65 | \$ 0.58 | 1.00 |
| 2 | Tier 2 | \$ 3.78 | \$ 1.30 | \$ 5.08 | \$ 6.49 | \$ (1.41) | 1.20 |

| Line No: | Customer Class | Annual Use (CCF) | Peaking Costs | Peaking Unit Cost |
|----------------------|----------------|------------------|-------------------|-------------------|
| All Customers | | | | |
| 1 | Tier 1 | 417,571 | \$ 188,900 | \$ 0.45 |
| 2 | Tier 2 | 126,199 | \$ 164,219 | \$ 1.30 |
| 3 | Total | 543,770 | \$ 353,119 | |

APPENDIX - C
MCKINLEYVILLE CSD, CA
Allocation of Sewer Costs FY - 2023

Allocation to Volume and Customer Service - Sewer FY 2023

| | | Sewer Costs | Volume | Capacity | Strength - SS | Strength - BOD | Pretreatment & Inspection | Readiness to Serve | | Total |
|---------------------|------------------|-------------|--------|----------|---------------|----------------|---------------------------|----------------------|------------------|---------|
| Allocation Factors: | | | | | | | | Billing & Collection | Customer Service | |
| 1 | Treatment | | 10.00% | 10.00% | 40.00% | 40.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 2 | Collection | | 50.00% | 50.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 3 | Admin | | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 50.00% | 50.00% | 100.00% |
| 4 | Pumping | | 50.00% | 50.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 5 | Customer Service | | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 50.00% | 50.00% | 100.00% |
| 6 | Transfers | | 75.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 25.00% | 100.00% |
| 7 | CIP | | 25.00% | 25.00% | 0.00% | 0.00% | 0.00% | 25.00% | 25.00% | 100.00% |
| 8 | Capital Outlay | | 50.00% | 50.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 9 | Existing DS | | 16.00% | 16.00% | 0.00% | 0.00% | 0.00% | 34.00% | 34.00% | 100.00% |
| 10 | New Bond DS | | 50.00% | 50.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |

Allocation of Costs:

| | | | | | | | | | | |
|----|-------------------------|---------------------|-------------------|-------------------|------------------|------------------|-------------|---------------------|---------------------|---------------------|
| 11 | Treatment | \$ 304,000 | \$ 30,400 | \$ 30,400 | \$ 121,600 | \$ 121,600 | \$ - | \$ - | \$ - | \$ 304,000 |
| 12 | Collection | 87,500 | 43,750 | 43,750 | - | - | - | - | - | 87,500 |
| 13 | Administration | 1,893,026 | - | - | - | - | - | 946,513 | 946,513 | 1,893,026 |
| 14 | Pumping | 78,500 | 39,250 | 39,250 | - | - | - | - | - | 78,500 |
| 15 | Customer Service | 39,300 | - | - | - | - | - | 19,650 | 19,650 | 39,300 |
| 16 | Transfers | - | - | - | - | - | - | - | - | - |
| 17 | CIP | 1,996,000 | 499,000 | 499,000 | - | - | - | 499,000 | 499,000 | 1,996,000 |
| 18 | Capital Outlay | - | - | - | - | - | - | - | - | - |
| 19 | Existing Debt | 1,039,140 | 166,262 | 166,262 | - | - | - | 353,308 | 353,308 | 1,039,140 |
| 20 | New Debt | - | - | - | - | - | - | - | - | - |
| 21 | Non-Rate Rev & Fund Bal | (1,166,570) | (167,057) | (167,057) | (26,088) | (26,088) | - | (390,140) | (390,140) | (1,166,570) |
| 22 | Total | \$ 4,270,896 | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | \$ - | \$ 1,428,331 | \$ 1,428,331 | \$ 4,270,896 |
| 23 | Fixed Charge Component | | \$ - | \$ - | \$ - | \$ - | \$ - | \$ 1,428,331 | \$ 1,428,331 | \$ 2,856,661 |
| 24 | Flow Charge Component | | 611,606 | 611,606 | 95,512 | 95,512 | - | - | - | 1,414,235 |
| 25 | Total | | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | \$ - | \$ 1,428,331 | \$ 1,428,331 | \$ 4,270,896 |

Allocation to Customer Class - Sewer - Annual Basis

| Customer Class | Total Annual | Total Monthly | Total Flow (CCF) | Strength - SS | Strength - BOD |
|----------------|-----------------------------|---------------|------------------|----------------|----------------|
| | Bills | Units | | | |
| 26 | Single Family Residential | 52,920 | 4,410 | 301,638 | 376,343 |
| 27 | Apartment/Multi Unit (Each) | 20,760 | 1,730 | 79,715 | 99,458 |
| 28 | 2 sewer Units/Commercial | 72 | 6 | 251 | 313 |
| 29 | Bakery | 12 | 1 | 122 | 457 |
| 30 | Barber/Beauty Shop | 84 | 7 | 488 | 609 |
| 31 | Car Wash | 36 | 3 | 1,728 | 1,617 |
| 32 | Church & Residence | 24 | 2 | 288 | 359 |
| 33 | Churches | 204 | 17 | 1,469 | 1,833 |
| 34 | Coast Guard Station/Airport | 48 | 4 | 7,707 | 9,616 |
| 35 | Dialysis Clinic | 12 | 1 | 2,035 | 1,269 |
| 36 | Fire Station/School | 60 | 5 | 1,482 | 925 |
| 37 | Gas Stations (No Market) | 108 | 9 | 409 | 714 |
| 38 | Laundromats | 72 | 6 | 4,000 | 2,745 |
| 39 | Market | 72 | 6 | 3,358 | 16,759 |
| 40 | Metered Septage Vault | 12 | 1 | 5,036 | 17,593 |
| 41 | Mobile Homes (Each) | 348 | 29 | 2,033 | 2,537 |
| 42 | Motels/Hotels | 24 | 2 | 2,317 | 8,673 |
| 43 | Office Building/Post Office | 1,416 | 118 | 3,406 | 4,250 |
| 44 | Restaurant/Tavern | 240 | 20 | 5,900 | 22,084 |
| 45 | Retail/Banks/Theater/Other | 576 | 48 | 6,900 | 8,609 |
| 46 | Round Table/Market | 24 | 2 | 291 | 1,234 |
| 47 | Sewer Only Accounts | 480 | 40 | - | - |
| 48 | Sewer Units - Commercial | 2,496 | 208 | 11,990 | 20,943 |
| 49 | Two Sewer Units/Business | 60 | 5 | 835 | 1,042 |
| 50 | Two Sewer Units/Daycare | - | - | - | - |
| 51 | Brewery | 12 | 1 | 1,152 | 21,560 |
| 52 | Total | 80,172 | 6,681 | 444,550 | 621,539 |

APPENDIX - C
MCKINLEYVILLE CSD, CA
Allocation of Sewer Costs FY - 2023

| | | | | | | | |
|--------------------------|-----------------|-----------------|-------------------|-------------------|--------------------|----------------|---------------------|
| | <i>Cost/CCF</i> | <i>Cost/CCF</i> | <i>Cost/pound</i> | <i>Cost/pound</i> | | <i>Billing</i> | <i>Cust Service</i> |
| Total Cost All Customers | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | | \$ 1,428,331 | \$ 1,428,331 |
| Total CCF/pounds | 444,550 | 444,550 | 621,539 | 641,909 | Equiv Meters/Bills | 6,681 | 6,681 |
| Cost CCF/pounds | \$1.38 | \$1.38 | \$0.15 | \$0.15 | Cost/Bill | 213.79 | 213.79 |
| | | | | | | 17.82 | 17.82 |

| | Total Annual Flow (CCF) | Volume Cost | Capacity Cost | Strength - SS Cost | Strength - BOD Cost | Pretreatment & Inspection | Billing & Collection | Customer Service | Total Costs Allocated to Customer Class |
|----|--------------------------------|--------------------|----------------------|---------------------------|----------------------------|--------------------------------------|---------------------------------|-------------------------|--|
| 53 | Single Family Residential | 301,638 | \$ 414,989 | \$ 414,989 | \$ 57,832 | \$ 55,997 | \$ - | \$ 942,814 | \$ 2,829,436 |
| 54 | Apartment/Multi Unit (Each) | 79,715 | 109,671 | 109,671 | 15,284 | 14,799 | - | 369,857 | 989,137 |
| 55 | 2 sewer Units/Commercial | 251 | 345 | 345 | 48 | 47 | - | 1,283 | 3,351 |
| 56 | Bakery | 122 | 168 | 168 | 70 | 113 | - | 214 | 947 |
| 57 | Barber/Beauty Shop | 488 | 671 | 671 | 94 | 91 | - | 1,497 | 4,520 |
| 58 | Car Wash | 1,728 | 2,377 | 2,377 | 248 | 32 | - | 641 | 6,318 |
| 59 | Church & Residence | 288 | 396 | 396 | 55 | 53 | - | 428 | 1,756 |
| 60 | Churches | 1,469 | 2,021 | 2,021 | 282 | 273 | - | 3,634 | 11,865 |
| 61 | Coast Guard Station/Airport | 7,707 | 10,603 | 10,603 | 1,478 | 1,431 | - | 855 | 25,825 |
| 62 | Dialysis Clinic | 2,035 | 2,800 | 2,800 | 195 | 472 | - | 214 | 6,694 |
| 63 | Fire Station/School | 1,482 | 2,039 | 2,039 | 142 | 179 | - | 1,069 | 6,537 |
| 64 | Gas Stations (No Market) | 409 | 563 | 563 | 110 | 68 | - | 1,924 | 5,152 |
| 65 | Laundromats | 4,000 | 5,503 | 5,503 | 422 | 557 | - | 1,283 | 14,551 |
| 66 | Market | 3,358 | 4,620 | 4,620 | 2,575 | 2,494 | - | 1,283 | 16,874 |
| 67 | Metered Septage Vault | 5,036 | 6,928 | 6,928 | 2,704 | 1,309 | - | 214 | 18,297 |
| 68 | Moblie Homes (Each) | 2,033 | 2,797 | 2,797 | 390 | 377 | - | 6,200 | 18,761 |
| 69 | Motels/Hotels | 2,317 | 3,188 | 3,188 | 1,333 | 1,075 | - | 428 | 9,639 |
| 70 | Office Building/Post Office | 3,406 | 4,686 | 4,686 | 653 | 632 | - | 25,227 | 61,112 |
| 71 | Restaurant/Tavern | 5,900 | 8,117 | 8,117 | 3,394 | 5,476 | - | 4,276 | 33,656 |
| 72 | Retail/Banks/Theater/Other | 6,900 | 9,493 | 9,493 | 1,323 | 1,281 | - | 10,262 | 42,114 |
| 73 | Round Table/Market | 291 | 400 | 400 | 190 | 181 | - | 428 | 2,027 |
| 74 | Sewer Only Accounts | - | - | - | - | - | - | 8,552 | 17,103 |
| 75 | Sewer Units - Commercial | 11,990 | 16,496 | 16,496 | 3,218 | 2,003 | - | 44,468 | 127,150 |
| 76 | Two Sewer Units/Business | 835 | 1,149 | 1,149 | 160 | 155 | - | 1,069 | 4,751 |
| 77 | Two Sewer Units/Daycare | - | - | - | - | - | - | - | 0 |
| 78 | Brewery | 1,152 | 1,585 | 1,585 | 3,313 | 6,416 | - | 214 | 13,326 |
| 79 | Total | 444,550 | \$ 611,606 | \$ 611,606 | \$ 95,512 | \$ 95,512 | \$ - | \$ 1,428,331 | \$ 4,270,896 |

APPENDIX - D

MCKINLEYVILLE CSD, CA

Water Max Day/Hour Allocation Factors - Test Year FY 2023

| | | [A] | [B] | [C] | [D] | [E] | [F] | [G] | [H] | [I] |
|--------------------------------------|-----------------------|------------------------------------|-------------------------------------|------------------------|---------------------------|--|--|--------------------------------|---|---|
| Line No: | Description | Flow | Peak Month (CCF) | Average Month (CCF) | Max Day/Avg Day Factor | Max Day Total Capacity (CCF/Day) | Max Day Extra Capacity (CCF/Day) | Max Hour Capacity Factor | Max Hour Total Capacity (CCF/Day) | Max Hour Extra Capacity (CCF/Day) |
| Operating Statistics: | | MGD | Factor | | | | | | | |
| 1 | Avg Day Flow (MGD) | 1.40 | 1.00 | | | | | | | |
| 2 | Max Day Flow (MGD) | 1.88 | 1.34 | | | | | | | |
| 3 | Max Hour Flow (MGD) | 2.97 | 2.12 | | | | | | | |
| Cost Allocation Factors: | | Base | Max Day | Max Hour | | | | | | |
| 4 | Base/Max Day | 74.47% | 25.53% | 0.00% | | | | | | |
| 5 | Base/Max Day/Max Hour | 47.17% | 16.17% | 36.66% | | | | | | |
| Peaking Factors: | | | | | [B] / [C] | [D] * [B3 / B2] | | | | |
| All Customers | | | | | | | | | | |
| 6 | Tier 1 | | 43,265 | 35,552 | 1.22 | | | 1.92 | | |
| 7 | Tier 2 | | 27,648 | 11,900 | 2.32 | | | 3.67 | | |
| | | | | | | Maximum Day | Maximum Hour | | | |
| | | | | | | [D] x [B] | [E] - [B] | [G] x [B] | | [H] - [E] |
| Estimated Max Day/Hour Flows: | | Total Annual Flow (CCF) | Average Daily Flow (CCF) | Peaking Factor | Total Capacity | Extra Capacity | Peaking Factor | Total Capacity | Extra Capacity | |
| All Customers | | | | | | | | | | |
| 8 | Tier 1 | 375,811 | 1,030 | 1.22 | 1,253 | 223 | 1.92 | 1,978 | 725 | |
| 9 | Tier 2 | 113,581 | 311 | 2.32 | 723 | 412 | 3.67 | 1,141 | 418 | |
| 10 | Total | 489,392 | 1,341 | | 1,976 | 635 | | 3,120 | 1,144 | |

APPENDIX - D

MCKINLEYVILLE CSD, CA

Water Units of Service by Cost Component - Test Year FY 2023

| | [A] | [B] | [C] | [D] | [E] | |
|----------|----------------------|--------------|----------------|----------------|----------------------|-----------------------|
| Line No: | Description | ERUs | Accounts/Units | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) |
| 1 | All Customers | 8,174 | 7,413 | 489,392 | 635 | 1,144 |
| 2 | Tier 1 | | | 375,811 | 223 | 725 |
| 3 | Tier 2 | | | 113,581 | 412 | 418 |
| 4 | Total | 8,174 | 7,413 | 489,392 | 635 | 1,144 |

APPENDIX - D

MCKINLEYVILLE CSD, CA

Allocation of Water Costs - Test Year FY 2023

| | | Extra Capacity | | | | Meters & Services | Billing & Collection | Total |
|-----------------------------|-----------------------------|---------------------|---------------------|--------------------|--------------------|---------------------|----------------------|---------------------|
| Line No: | Description | Water Costs | Base | Max Day | Max Hour | | | |
| Allocation Factors: | | | | | | | | |
| 1 | Treatment | | 74.47% | 25.53% | 0.00% | 0.00% | 0.00% | 100.00% |
| 2 | Transmission & Distribution | | 47.17% | 16.17% | 36.66% | 0.00% | 0.00% | 100.00% |
| 3 | Pumping | | 74.47% | 25.53% | 0.00% | 0.00% | 0.00% | 100.00% |
| 4 | Customer Service | | 0.00% | 0.00% | 0.00% | 52.44% | 47.56% | 100.00% |
| 5 | Admin | | 0.00% | 0.00% | 0.00% | 52.44% | 47.56% | 100.00% |
| 6 | Source of Supply | | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% |
| 7 | Transfers | | 75.00% | 0.00% | 0.00% | 25.00% | 0.00% | 100.00% |
| 8 | Existing Bond DS | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| 9 | New Bond DS | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| 10 | CIP | | 47.00% | 0.00% | 0.00% | 53.00% | 0.00% | 100.00% |
| 11 | Capital Outlay | | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 100.00% |
| Allocation of Costs: | | | | | | | | |
| 12 | Treatment | - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - |
| 13 | Transmission & Distribution | 816,179 | 384,990 | 131,997 | 299,192 | - | - | 816,179 |
| 14 | Pumping | 117,171 | 87,255 | 29,916 | - | - | - | 117,171 |
| 15 | Customer Service | 58,300 | - | - | - | 30,573 | 27,727 | 58,300 |
| 16 | Admin | 1,058,082 | - | - | - | 554,870 | 503,212 | 1,058,082 |
| 17 | Source of Supply | 1,330,462 | 1,330,462 | - | - | - | - | 1,330,462 |
| 18 | Transfers | - | - | - | - | - | - | - |
| 19 | Existing Bond DS | 455,627 | - | - | - | 455,627 | - | 455,627 |
| 20 | New Bond DS | - | - | - | - | - | - | - |
| 21 | CIP | 1,874,000 | 880,780 | - | - | 993,220 | - | 1,874,000 |
| 22 | Capital Outlay | - | - | - | - | - | - | - |
| 23 | Non-Rate Rev & Fund Bal | (1,337,182) | (628,445) | (37,918) | (70,068) | (476,410) | (124,341) | (1,337,182) |
| 24 | Total | \$ 4,372,639 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 1,557,880 | \$ 406,598 | \$ 4,372,639 |
| Units of Service | | | 489,392.00 | 635.20 | 1,143.56 | 98,088.00 | 88,956.00 | |
| | | | CCF | CCF/Day | CCF/Day | ERUs/Year | Bills/Year | |
| Cost Per Unit | | | \$ 4.1992 | \$ 195.2062 | \$ 200.3607 | \$ 15.8825 | \$ 4.5708 | |
| | | | CCF | CCF/Day | CCF/Day | ERU | Bill | |

APPENDIX - D

MCKINLEYVILLE CSD, CA

Water Cost of Service by Cost Component and Customer Class - Test Year FY 2023

| | [A] | [B] | [C] | [D] | [E] | [F] | |
|----------|----------------------|--------------|------------|--------------|----------------------|-----------------------|--------------|
| Line No: | Description | ERUs | Accounts | Base (CCF) | Max Day (CCF/Day) | Max Hour (CCF/Day) | Total |
| 1 | All Customers | \$ 1,557,880 | \$ 406,598 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 4,372,639 |
| 2 | Tier 1 | | | \$ 1,578,096 | \$ 43,607 | \$ 145,291 | |
| 3 | Tier 2 | | | \$ 476,946 | \$ 80,388 | \$ 83,833 | |
| 4 | Total | \$ 1,557,880 | \$ 406,598 | \$ 2,055,042 | \$ 123,995 | \$ 229,124 | \$ 4,372,639 |

APPENDIX - D

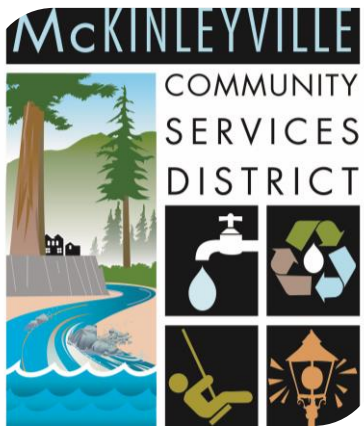
MCKINLEYVILLE CSD, CA

Water Rate Calculation - Test Year FY 2023

| | [A] | [B] | [C] | [D] | [E] | [F] | |
|------------------------|-------------|----------------|--------------|-----------------|-----------------|-----------------|-------------|
| Line No: | Description | Capacity Ratio | Meter Charge | Customer Charge | Proposed Charge | Existing Charge | Difference |
| General Service | | | | | | | |
| 1 | 5/8 Inch | 1.00 | \$ 15.88 | \$ 4.57 | \$ 20.45 | \$ 19.80 | \$ 0.65 |
| 2 | 3/4 Inch | 1.50 | \$ 23.82 | \$ 4.57 | \$ 28.39 | \$ 29.11 | \$ (0.72) |
| 3 | 1.0 Inch | 2.50 | \$ 39.71 | \$ 4.57 | \$ 44.28 | \$ 47.52 | \$ (3.24) |
| 4 | 1.5 Inch | 5.00 | \$ 79.41 | \$ 4.57 | \$ 83.98 | \$ 93.06 | \$ (9.08) |
| 5 | 2.0 Inch | 8.00 | \$ 127.06 | \$ 4.57 | \$ 131.63 | \$ 147.91 | \$ (16.28) |
| 6 | 3.0 Inch | 15.00 | \$ 238.24 | \$ 4.57 | \$ 242.81 | \$ 291.85 | \$ (49.04) |
| 7 | 4.0 Inch | 25.00 | \$ 397.06 | \$ 4.57 | \$ 401.63 | \$ 459.76 | \$ (58.13) |
| 8 | 6.0 Inch | 50.00 | \$ 794.12 | \$ 4.57 | \$ 798.69 | \$ 915.75 | \$ (117.06) |
| 9 | 8.0 Inch | 80.00 | \$ 1,270.60 | \$ 4.57 | \$ 1,275.17 | \$ 1,464.41 | \$ (189.24) |
| 10 | 10.0 Inch | 115.00 | \$ 1,826.48 | \$ 4.57 | \$ 1,831.06 | \$ 1,464.41 | \$ 366.65 |

| Line No: | Customer Class | Base | Peaking | Proposed Rate (\$/CCF) | Existing Rate (\$/CCF) | Difference | Tier Differential |
|----------------------|----------------|---------|---------|------------------------|------------------------|------------|-------------------|
| All Customers | | | | | | | |
| 1 | Tier 1 | \$ 4.20 | \$ 0.50 | \$ 4.70 | \$ 3.65 | \$ 1.05 | 1.00 |
| 2 | Tier 2 | \$ 4.20 | \$ 1.45 | \$ 5.65 | \$ 6.49 | \$ (0.84) | 1.20 |

| Line No: | Customer Class | Annual Use (CCF) | Peaking Costs | Peaking Unit Cost |
|----------------------|----------------|------------------|-------------------|-------------------|
| All Customers | | | | |
| 1 | Tier 1 | 375,811 | \$ 188,898 | \$ 0.50 |
| 2 | Tier 2 | 113,581 | \$ 164,221 | \$ 1.45 |
| 3 | Total | 489,392 | \$ 353,119 | |



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