McKINLEYVILLE COMMUNITY SERVICE DISTRICT

Water & Wastewater Rate Study

SEPTEMBER
2018

WILLDAN

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Introduction

In 2018, McKinleyville Community Services District ("MCSD" or the "District") commissioned Willdan Financial Services ("Willdan") to perform a water and wastewater rate analysis and financial plan. This analysis provides financial recommendations that focus on two key objectives consisting of: 1) short and long-run financial health and stability for MCSD water and wastewater operations; and, 2) equitable cost-of-service rates that reflect the benefit provided while maintaining Proposition 218 compliance.

Based on the analyses performed for this study, MCSD's existing rates will not generate sufficient revenue to fund existing and projected expenditures (operations, maintenance, and capital) and reserve targets (e.g. the $1 million annual capital reserve transfer for each system). While MCSD currently maintains moderate reserve levels, the existing rates are not sustainable as both utilities are not generating sufficient revenues and are subsequently running net losses.

MCSD purchases its wholesale water supply from the Humboldt Bay Municipal Water MCSD, which diverts water from its million-gallon tank on Essex Hill, under the Mad River, to MCSD's Grant A. Ramey Pump Station at North Bank and Azalea Roads. Water is then pumped to storage tanks at McCluski Hill, Cochran Road and Norton Road; MCSD's six storage tanks have a combined capacity of 5.25 million gallons, approximately a 36-hour supply for its 6,705 customers.

All sewage for MCSD's customers is treated at the wastewater Management Facility at Hiller Park. MCSD maintains approximately 65 miles of wastewater mains. MCSD recycles treated wastewater for agricultural irrigation at the Fischer Irrigation Site and at Hiller Park. MCSD is committed to maintaining its sewage collection, treatment and disposal systems as a model for other communities.

This report details the methodology, approach, and results of this analysis. Based on discussion with MCSD staff, guidance and direction from the MCSD Board throughout the process, this report presents the recommended revenue adjustments and the corresponding rate impacts.

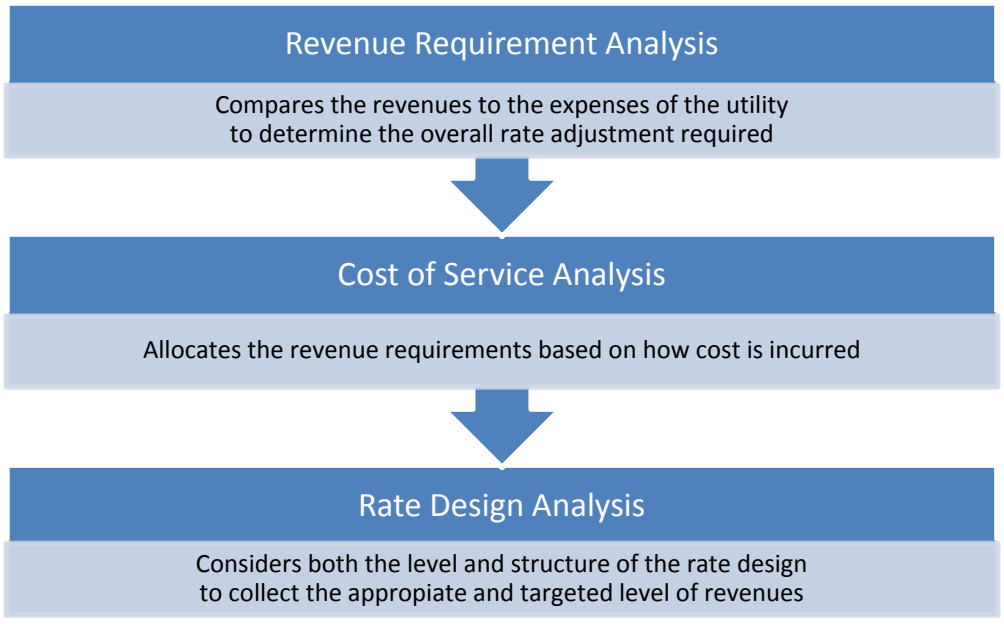
Overview of the Rate Setting Process

The scope of this study included the development of cost-based water and wastewater user charges through a comprehensive cost of service and rate design analysis. Utility rates must be set at a level where a utility's operating and capital expenses are met with the revenues received from customers. This is a significant point, as failure to achieve this level could lead to a situation where insufficient funds are available to adequately maintain the system. A comprehensive rate study typically consists of following three interrelated analyses.

I. ***Financial Planning/Revenue Requirement Analysis***: Creation of a five-year plan to support a financially prudent program of on-going maintenance and operating costs, capital improvement and replacement activities, debt financing, and retirement of any outstanding debt. In addition, the long-term plan should fund and maintain reserve balances to adequate levels based on industry standards and MCSD fiscal policies.

II. ***Cost of Service Analysis***: Identifies and apportions annual revenue requirements to customers based on their demand on the utility system.

III. ***Rate Design:*** Develops an equitable and proportionate fixed/variable schedule of rates to recover the costs of the utilities. This is also where other policy objectives can be achieved, such as discouraging wasteful water use. The policy objectives are harmonized with cost of service objectives to achieve the delicate balance of equity, financial stability and resource conservation goals.



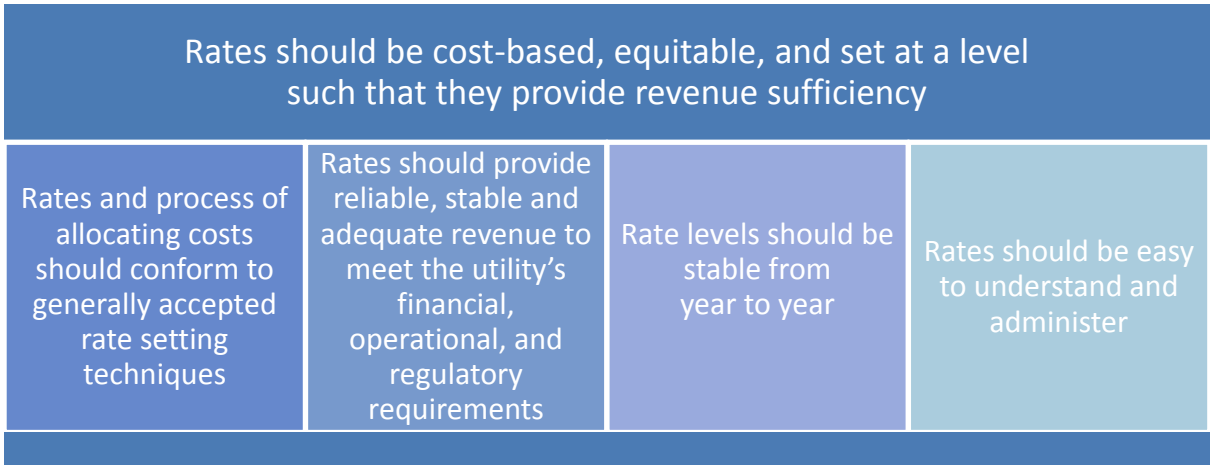
Rate Setting Principles

The primary objective when conducting this comprehensive rate and financial analysis was to determine the adequacy of the existing rates (pricing, structure, and revenue sufficiency) and provide the basis for any necessary adjustments to meet the MCSD's operating and capital needs and policy objectives. MCSD desires a rate structure that fully funds operations, maintenance, and capital costs while providing long term funding of reserves.

Financial Management, Policies and Rates

A financial plan revolves around the development of a proper long and short-term balance of revenues and expenditures. The following provides an outline of MCSD's financial targets and policies, and the financial foundation of the cost of service and rate analysis. Over the past years, many generally accepted principles or guidelines have been established to assist in developing utility rates. The purpose of this section of the report is to provide a general background of the methodology and guidelines used for setting cost-based utility rates, in order to provide a higher-level understanding of the rate setting approach detailed later in this report.

As a practical matter, there should be a general set of principles used to guide the development of water and wastewater rates. For water rates, the American Water Works Association (AWWA) establishes these principles in the M1 Manual – *Principles of Water Rates, Fees and Charges.* For wastewater rate setting, the Water Environment Federation (WEF) establishes similar guidelines. These guiding principles help to ensure there is a consistent global approach that is employed by all utilities in the development of their rates (water and water-related utilities, including wastewater and reclaimed water). Below is a summary listing the established guidelines, which public utilities should consider when setting their rates. These closely reflect MCSD's specified objectives.



These guidelines, along with the MCSD's objectives, have been utilized within this study as a framework to help develop utility rates that are cost-based and equitable.

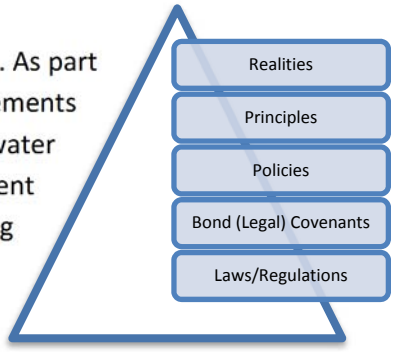
Overview of Rate Setting Environment, Objectives & Process

Rate analyses are typically performed every five years to ensure that revenues from rates are adequately funding utility operations, maintenance, and future capital needs. In California, rate analyses also require compliance with the cost-of-service principles imposed by Proposition 218 to ensure that rates correlate to how costs are incurred. Beyond the laws, regulations, and guiding principles, the rates ultimately need to be approved and implemented by the MCSD Board.

Considerations in Setting Revenue Requirements

There are a multitude of considerations, ranging from financial to political to legal, which must be analyzed or discussed during the revenue requirements process of a rate analysis. This section, along with the accompanying graphic, provides an overview of the considerations that are reviewed during this process.

Capital Budgeting and Financing



Capital needs are defined by MCSD's Capital Improvement Plan ("CIP"). As part of its budget and planning process, MCSD identifies capital improvements that are necessary for the continued delivery of clean, safe, drinking water and treatment of wastewater in accordance with increasingly stringent wastewater standards. The CIP is funded by a variety of sources including water and wastewater rates, connection (impact) fees, and capital reserves. Recent economic realities, including slower than anticipated growth and usage, have reduced funding and/or delayed funding of critical system improvements.

Capital Funding: Debt vs. PAYGO

The selection of the most appropriate funding strategy for capital projects is primarily a policy decision between use of cash ("Pay-as-you-go financing" aka PAYGO), the issuance of debt (bonding), or a combination thereof. PAYGO is the use or build-up of cash to fund capital improvements. With debt financing, capital improvements are paid for with borrowed funds (usually through the issuance of bonds) with the obligation of repayment, typically with interest, in future years. Each funding mechanism has a different impact on water rates in the short and long run, different net present values, risks, and legal obligations. Due to the borrowing costs associated with debt, cash funding can be cheaper; however, debt typically ensures greater generational equity for larger and longer lasting capital projects.

Willdan's review of MCSD's CIP revealed that the utility system does not have sufficient funds on hand to meet its planned capital investments without an increase to rates.

Our recommendation, which is consistent with the MCSD funding policy of MCSD, is that MCSD continues to balance the use of all financing options by using debt in the near-term to mitigate the impact on rates, and cash funding in the long-term for ongoing replacement projects.

Revenue Requirements

The method used by most public utilities to establish their revenue requirements is called the "cash basis" approach of setting rates. As the name implies, a public utility combines its cash expenditures over a period to determine their required revenues from rates and other forms of income. Figure 1-1 below presents the "cash basis" methodology.

Figure 1: Overview of the "Cash Basis" Design

+ Operation and Maintenance Expenses
+ Debt Service (Principal and Interest)
+ Capital Additions Funded with Rate Revenue
= Total Revenue Requirements

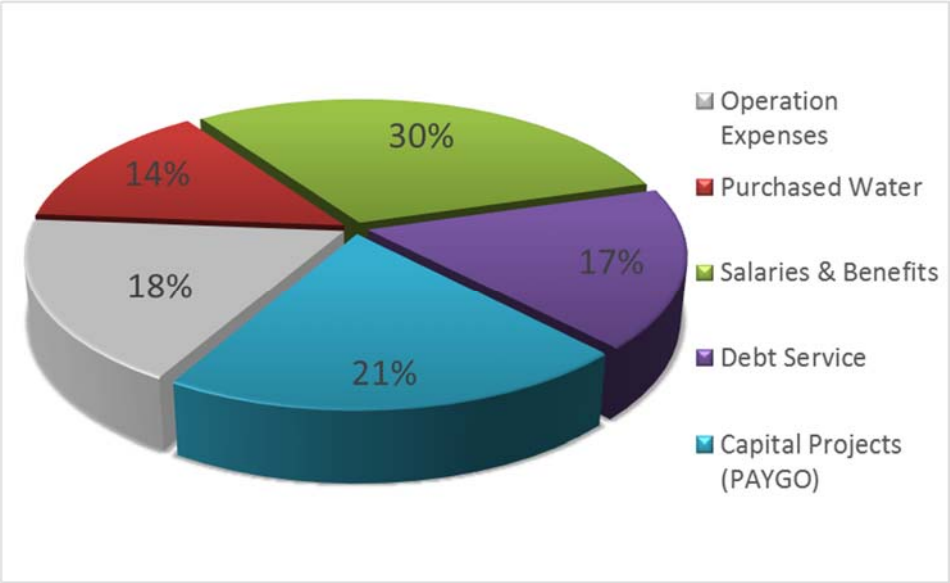
Based on the revenue requirement analysis, the utility can determine the level of revenues needed to meet the overall expenditures.

MCSD Expenditures – Water & Wastewater

To achieve long-term financial health, a utility's revenues must be sufficient to meet total expenditures or cash-flow obligations. This "required revenue" includes all incurred costs related to operation and maintenance, capital improvement programs, and principal and interest payments on existing or anticipated debt.

As demonstrated in Figure 2, Water & Wastewater Fund expenditures were categorized into five major classifications: (1) Operation; (2) Purchased Water; (3) Salaries & Benefits; (4) Debt Service; (5) Capital Projects (PAYGO). The pie chart below demonstrates the relative size of the various expense categories for the study test year of FY 2019.

Figure 2: Water & Wastewater Fund - Cost Distribution by Expenditure Classification



Through the study period, debt service (principal and interest) represents a large percentage of the total expenditures (21%). Revenues must be targeted to ensure MCSD meets its debt service coverage requirements of 1.25 times on its existing and future debt service.

In addition, in an effort to establish a reserve fund specifically for funding ongoing renewal and replacement (R&R) projects, MCSD has set a goal to reserve transfer of $1 million per year for each utility system. This reserve will be utilized to support PAGO funded capital as well as long-term Repair and Replacement (R&R).

Financial Planning

In the development of the revenue requirements, certain assumptions are utilized to project future expenditures, growth in customers and consumption, and necessary revenue adjustments. MCSD's budget documents are used as the baseline and are then projected over a five-year planning period to account for assumed changes in costs from year to year, as well as adjustments to debt service payments.

Reasonable growth assumptions and prudent financial planning are fundamental in rates that will generate adequate rate revenue to meet the needs of the system. The developed financial model considers the MCSD's existing debt service coverage ratio and operating cash balances (cash on hand). In addition, as part of the financial planning, municipal bond financing is incorporated into the model to fund necessary capital improvements. As debt is redeemed, additional bonds may be utilized to fund additional capital improvements required due to aging infrastructure.

Rate Setting Principles Summary

In meeting the objectives of MCSD, the rate design must also conform to the State Constitution and the State's Water Code. More specifically, Proposition 218 requires that property related fees and charges, such as water and wastewater rates, not exceed the reasonable cost of providing the service associated with the fee or charge and shall also not exceed the proportional cost of the service attributable to the parcel that is subject to the fee or charge.

In conjunction with Proposition 218, Article X (2) of the State Constitution institutes the need to preserve the State's water supplies and discourage the wasteful or unreasonable use of water by encouraging conservation. Article X (2) is broad in its declarations; however, the Water Code provides guidance to its application for developing water rates. Section 106 declares that the highest use of water is for domestic purposes, and irrigation is secondary. In connection with meeting the objectives of Article X, Water Code Sections 370 (AB2882) and 375 authorize a water purveyor to utilize its water rate design to incentivize the efficient use of water; or stated differently, to encourage conservation.

Although incentives to conserve water could be provided by implementing a higher rate for water as consumption increases, a nexus between rates and cost incurred to provide water at those rates must be developed to achieve compliance with Proposition 218. Therefore, in our analysis, when developing a tiered rate structure, we analyzed the consumption and peaking characteristics of each defined tier to determine the proportional share of cost incurred by each tier. The cost is then divided by consumption to derive a rate per unit of water for each tier. Doing so synchronizes the objectives of Article X (2) and Article XIIID (6) in developing a cost of service tiered rate structure.

Besides ensuring compliance with State law, another key principle for a comprehensive rate study is found in economic theory, which suggests that the price of a commodity must roughly equal its cost or value if equity among customers is to be maintained – i.e. cost-based. For example, capacity-related costs are usually incurred by a water utility to meet peak use requirements. Consequently, the customers causing peak demands should pay for the demand-related facilities in proportion to their contribution to maximum demands.

Through refinement of costing and pricing techniques, consumers of a product are given a more accurate price point, representative of what the commodity costs to produce and deliver, to meet their needs, in this case, for water use. The above fundamentals have considerable foundation in economic literature and correlate to the cost of service principles of Proposition 218. This "price-equals-cost" theory provides the basis for much of the subsequent analysis and comment. This theory is particularly important as the proposed rate structure has been developed to encourage the efficient use of water while maintaining economic and cost of service principles.

Rate Design

The final element, the rate design process, applies the results from the revenue requirements to develop rates that achieve the general guidelines, policies and objectives of MCSD, and compliance with the provisions of law. These objectives are achieved through the development of cost-based rates but may also account for adjustments to expenditures or the level of cash reserves to balance rate shock, continuity of past rate philosophy, conservation objectives, ease of administration, and legal requirements. This section of the report incorporates the general principles, techniques, and economic theory used to set utility rates. These principles, techniques, and economic theory were the starting point for this rate study and the groundwork used to meet MCSD's key objectives in analyzing and redesigning their utility rates.

This rate study is performed to allocate the costs of providing service to users with rates that are equitable and in compliance with Proposition 218 requirements. The total cost of serving MCSD customers is determined by distributing each of the utility cost components based upon the service demands placed on the MCSD by its customers. Therefore, a cost of service rate study enables a utility to adopt rates based on the costs incurred to serve its customers and corresponding accounts. The purposes of this cost of service study include defining the proportional allocation of the costs of service to users and deriving unit costs to support the development of rates.

Water Rate Analysis

Water Consumption and User Characteristics

Willdan examined multiple years of historical billing data to identify various customer classes and applicable growth trends within each class. Based on the data, MCSD currently provides water to approximately 7,140 customer accounts. The billing data was used to determine seasonal demand patterns and overall consumption characteristics. The consumption analysis revealed that MCSD customers have a lower than average use of water, when compared to similar California agencies, which is likely due to its coastal climate.

Existing Water Revenues

The water utility derives revenue from a variety of sources. Annually, MCSD expects nearly 92% of the Water Fund's revenue to be generated from rate revenues (monthly user rates). In Fiscal Year 2017-2018, MCSD generated nearly $3.3 million in operating rate revenue, compared with $280 thousand in non-operating revenue, such as miscellaneous service charges, interest income and capacity fees.

Existing Water Expenditures

To achieve long-term financial health, a utility's revenues must be sufficient to meet total expenditures or cash obligations. All incurred costs related to operation and maintenance, debt service, and capital costs must be funded. MSCD estimates approximately $3.8 million in total system expenditures.

Figures 3 provides the Baseline Scenario for the Water Funds. This represents current and projected financial conditions of the water utility excluding any rate/revenue adjustments over the next 5 years. As the figure illustrates, existing revenue levels are not sufficient to meet the projected expenditures.

Figure 3: Water Fund - Baseline Financial Scenario

Description	Existing Rates	Projected For Fiscal Year Ending June 30:				
		2019	2020	2021	2022	2023
Revenues:						
User Rate Revenues	$ 3,301,951	$ 3,309,788	$ 3,388,683	$ 3,474,574	$ 3,562,649	$ 3,654,076
Other Revenues	280,758	280,758	294,493	308,856	324,077	339,989
Total Revenues	$ 3,582,709	$ 3,590,546	$ 3,683,176	$ 3,783,430	$ 3,886,726	$ 3,994,065
Percentage Rate Adjustment		0.00%	0.00%	0.00%	0.00%	0.00%
System Expenditures:						
O&M Costs	$ 2,459,940	$ 2,459,940	$ 2,577,596	$ 2,693,922	$ 2,821,799	$ 2,957,276
Debt Service (P&I)	263,724	263,724	486,928	686,122	740,245	812,927
R&R Transfer	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Operating & Non-Operating	$ 3,723,664	$ 3,723,664	$ 4,064,524	$ 4,380,044	$ 4,562,043	$ 4,770,203
Revenue Excess (Deficiency)	$ (140,955)	$ (133,118)	$ (381,348)	$ (596,614)	$ (675,317)	$ (776,138)
Debt Service Coverage	4.26	4.29	2.27	1.59	1.44	1.28

Projected Operating Results

Given the existing financial condition of the utility, without near term revenue adjustments, MCSD's water fund will not be able to meet its targeted objectives without rate adjustments. As such, Willdan worked with MCSD staff for the development of a financial plan and rate structure that provides gradual adjustment to provide continued financial stability throughout the study period. Numerous financial scenarios were analyzed and presented over the course of the study. The results and recommendations provided in the analysis were presented in August 2018 and account holders were subsequently mailed a Proposition 218 Noticed in September. The recommended financial scenario was developed and analyzed to achieve a positive net income within the five-year study period and to maintain compliance with the MCSD's Debt Coverage Ratio.

Figure 4 provides a summary of the projected operating results for the water system and the corresponding impact of the proposed rate adjustments.

Figure 4: Water - Projected Operating Results

Description	Projected For Fiscal Year Ending June 30:				
	2019	2020	2021	2022	2023
Revenues:					
User Rate Revenues	$ 3,394,078	$ 3,650,743	$ 3,917,744	$ 4,190,549	$ 4,434,226
Other Revenues	295,758	310,243	325,393	341,442	358,222
Total Revenues	$ 3,689,836	$ 3,960,986	$ 4,243,137	$ 4,531,990	$ 4,792,447
Percentage Rate Adjustment	**7.00%**	**7.00%**	**6.00%**	**6.00%**	**3.00%**
System Expenditures:					
O&M Costs	$ 2,459,940	$ 2,577,596	$ 2,693,922	$ 2,821,799	$ 2,957,276
Debt Service (P&I)	263,724	486,928	686,122	740,245	812,927
R&R Transfer	960,000	890,000	860,000	960,000	1,000,000
Total Operating & Non-Operating	$ 3,683,664	$ 3,954,524	$ 4,240,044	$ 4,522,043	$ 4,770,203
Revenue Excess (Deficiency)	**$ 6,172**	**$ 6,462**	**$ 3,094**	**$ 9,947**	**$ 22,244**
Debt Service Coverage	**4.66**	**2.84**	**2.26**	**2.31**	**2.26**

Cost of Service Analysis

Following the consumption and revenue requirement analysis, the next stage was to distribute costs (revenue requirements) to functional components, and ultimately, to customers. The cost of service analysis is a systematic process by which revenue requirements are allocated by function to generate a classification of equitable costs in proportion to the service received by each account. The cost of services analysis combines the Water Consumption and Usage Characteristics analysis with the Revenue Requirements and expenditure analyses. This section of the report discusses the methodology of allocating expenditures to the functional cost components.

Cost Allocation by Function

To equitably allocate the cost to customers in proportion to their usage and peaking demands, costs first need to be allocated to functional cost components. The cost of service allocation completed in this study is established on the base-extra capacity method endorsed by the American Water Works Association (AWWA). Under the base-extra capacity method, revenue requirements are allocated based on the demand placed on the water system. Allocations to functional cost components are established on average day (base) usage, maximum day (peak) usage, meters and services, and billing and collection. Use of this methodology results in an AWWA-accepted cost distribution to customers and a means of calculating and designing rates to proportionately recover those costs.

A water system COS analysis is a detailed study that allocates the Revenue Requirements of the system to individual customer classes. This process involves four basic steps as follows:

- ***Revenue Requirement*** - The revenue requirement determines the costs to be supported by monthly user rates. The amount is developed based on a projection of expenses for FY 2019 (the Test Year) as developed by utility staff. Sources for the financial projections include the currently budgeted expenditures for operations and capital improvements. Projections for customer growth, operation and maintenance costs, and capital paid from current earnings are based on information provided by MCSD.

- ***Cost Functionalization*** - The cost functionalization process categorizes the revenue requirement by basic utility function and service. In this analysis, the water costs separated into Supply/Treatment, Transmission, Distribution, Administration and Customer functions.

- ***Classification*** - Once functionalized, the costs are classified into the fundamental cost categories that directly influence the nature and type of cost. For MCSD, costs are classified into based demand-related (fixed costs), systemwide max-day, distribution specific max-day and customer-related costs.

- ***Allocation*** - Based on these cost classifications, costs are then allocated to the individual customer classes based on their usage characteristics. For example, since the max-day costs are variable in nature, they are allocated to the various customer classes based on billable flows.

Current Budget and Revenue

The determination of the monthly user rates and charges to be applied to water customers is based upon the estimated revenue requirements of the system. Revenue requirements consist of the operating, maintenance, debt service, capital and other monetary expenditures necessary to provide, maintain and perpetuate quality services to meet the goals and objectives of the utility system.

Methodology

The rate analysis performed herein utilizes the projected water system budget for fiscal year 2018/19 (the "Water Budget" for fiscal year ending June 30, 2019) as the basis for developing the revenue requirements to be recovered from user rates. The Water Budget, as prepared by MCSD, has certain expenditures that are allocated between identifiable functional 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 (e.g. debt service, capital reserves, general fund transfer, etc.).

Classification of Costs

The allocation of functionalized water system costs to service characteristics follows the base-extra capacity cost allocation method included in AWWA Manual M-1. Applying this methodology, costs are classified into the following categories:

Base 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.

Max Day (Extra Capacity) 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 purpose of this analysis, the max/extra capacity costs are further separated into systemwide facilities and distribution facilities. Such a separation is done to provide a basis to exclude the allocation of distribution costs from wholesale customers that operate their own distribution facilities for their customers.

Humboldt Bay Municipal Water MCSD costs which are attributable to the direct and indirect costs of purchased water.

Customer Service costs include those related to the maintenance and servicing of customer accounts, and meter service related costs. Customer account costs are uniform to all customers and include such costs as meter reading, billing, accounting, and administration. Meter service costs include maintenance and capital costs associated with meters and services related costs.

Figure 5 shows a summary distribution of the utility's expenditures for the test year of the study period. To generate this data, MCSD's budget was analyzed line-item by line-item and expenditures were distributed based on a variety of demand factors: average day (base), maximum day (peak) usage, meters and services, and customer accounts.

Figure 5: Distribution of Expenditure by Function

Description	Costs 2019	Projected Revenues	Difference	
			$ Amount	Percent
Total Cost of Service:				
Base	$ 926,235			
Max Day/Extra Capacity	672,263			
Sub-Total Non Customer	$ 1,598,498			
Customer	981,499			
Total	$ 2,579,997			
EXISTING RATES				
Customer Class:				
Residential	$ 1,776,493	$ 1,641,030	$ (135,463)	-8%
Multifamily	495,357	537,280	41,923	8%
Nonresidential	308,148	245,200	(62,948)	-20%
Total	$ 2,579,998	$ 2,423,510	$ (156,488)	-6%
PROPOSED RATES				
Customer Class:				
Residential	$ 1,773,678	$ 1,699,940	$ (73,738)	-4%
Multifamily	493,410	556,050	62,640	13%
Nonresidential	312,909	257,650	(55,259)	-18%
Total	$ 2,579,997	$ 2,513,640	$ (66,357)	-3%

Once the system cost causation analysis is complete, the next step is to design the most equitable and appropriate rate structure to recover those revenues.

Rate Design Analysis

In an effort to meet the objectives of establishing rates that are administratively efficient, equitable and based upon the cost of service provided, the analysis developed herein includes a review of the existing rate structure. In reviewing the rate structure, primary consideration is given to the overall equity of the rate structure as it applies to various customers and customer classes. Consideration is also given to administrative efficiency, water conservation goals, the comparativeness of the rate structure with other regional utility systems, as well as common industry standards for water utility rates. Upon review, certain rate structure modifications are proposed. A general description of the proposed rate structure revisions is provided in the following discussions.

Criteria and Considerations

In determining the appropriate rate level and structure, Willdan, in conjunction with MCSD staff, analyzed various generated financial scenarios concerning the proposed adjustments and the implications attributed to those decisions.

A simplified list of some of the rate design considerations that were reviewed is listed:

- Clear and understandable
- Easily administered
- Cost of service principles
- Revenue stability
- Prudent financial planning
- Capital Funding Options
- Equity
- Comply with legal and regulatory requirements

Every consideration has merit and plays an important role in a comprehensive rate study. When developing MCSD's proposed rates, all the criteria were taken into consideration, in addition to the objective of minimizing rate shock. Determining the appropriate balance is crucial, as some of the criteria sometimes conflict with one another, i.e. the conservation measures and cost-based. In designing rates, there will always be a goal of achieving balance between the various objectives as well as policy decisions made by the MCSD Board.

Existing Rate Structure

The existing rate structure has a two-tier rate structure for residential and non-residential customers. The structure is comprised of the following cost components.

Base Charge: Charge is per month and is based on the size of water meter. This component of the water rate reflects the cost of metering support, customer service, and maintaining the account.

Commodity Charge: Charge is $1.47 for the first 800 cubic feet (CF) used per month; $3.66 for anything over 800 CF. This supports the variable cost of the system that brings the water to homes or businesses.

Humboldt Bay Pass-through: The pass-through rate recovers cost increases outside the control of MCSD, such as increased cost of purchased water, pursuant to Government Code Section 53756. The current pass-through rate is $1.40 per 100 CF.

Proposed Rate Structure

Since the existing rates are not expected to generate adequate revenue to support the MCSDs expenditure needs, Willdan recommends certain modifications to the existing rates and rate structure. Below are the proposed components of the recommended rate structure.

Base Charge: Although MCSD applies a practice of incrementing the base monthly charges for larger connections, the incrementing equivalency factors are not consistent with industry standards. As such, it is proposed that MCSD revise the current methodology related to the equivalency factors for the various meter sizes. The proposed methodology for incrementing the monthly availability charge is based upon standardized meter/capacity criteria established by the American Water Works Association (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 Equivalent Residential Unit (ERU). Based upon the established standards, an ERU is equal to one single-family residential connection with a 5/8x3/4-inch water meter. 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 wastewater 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. Similar to the current practice utilized by MCSD, the AWWA equivalency factors can be applied to the monthly base charge for a 5/8x3/4-inch meter in order to calculate the applicable base charges for each meter size.

Commodity Charge: Charge is applied to all units of water used per month and split between two tiers. Starting in January 2019, all users will be charge $1.57 cents for the first 800 CF and $3.93 for anything over 800 CF.

Humboldt Bay Pass-through: The pass-through rate will be adjusted annually to reflect and recover cost increases outside the control of MCSD, such as increased cost of purchased water, pursuant to Government Code Section 53756. This will ensure appropriate cost recovery without the possibility of overcharging customers for assumed increases. The water adjustment charge will be calculated as necessary to reflect cost increases implemented by HBMWD. The pass-through rate starting in January 2019 will be $1.58 per 100 CF.

Recommended Water Charges

The proposed revenue adjustments as a percentage do not equal or necessary correlate to an equivalent percentage increase to rates or monthly bills. The results of the cost-of-service analysis and rate redesign will affect users differently, based on meter size and water consumed.

Base Charge

In accordance with the existing rate structure, the base charges are applied by the size of the water meter for residential and nonresidential customers. For multi-family customers, the base charges are billed by the number of dwelling units. Figure 6 provides a breakdown of the projected water customer accounts/units by customer class.

Figure 6: Total Water Accounts/Units

Description	Estimated 2018	Projected For Fiscal Year Ending June 30:				
		2019	2020	2021	2022	2023
WATER SYSTEM						
Accounts - Inside:						
Residential	4,860	4,872	4,884	4,897	4,910	4,924
Multi-Family	1,965	1,971	1,977	1,983	1,989	1,998
Nonresidential	295	295	295	295	295	295
Subtotal	7,120	7,138	7,156	7,175	7,194	7,217
Accounts - Outside:						
Residential	6	6	6	6	6	6
Multi-Family	0	0	0	0	0	0
Nonresidential	20	20	20	20	20	20
Subtotal	26	26	26	26	26	26
Accounts - Combined:						
Residential	4,866	4,878	4,890	4,903	4,916	4,930
Multi-Family	1,965	1,971	1,977	1,983	1,989	1,998
Nonresidential	315	315	315	315	315	315
Total	7,146	7,164	7,182	7,201	7,220	7,243

The projected base charge revenue related is approximately $1.4 million dollars for fiscal year 2019. Figure 7 provides the projected base charge revenue by customer class for the projection period.

Figure 7: Projected Base Charge Revenue

Description	Proposed Rates 2019	Projected For Fiscal Year Ending June 30: 2020	2021	2022	2023
WATER REVENUES					
Monthly Base Charges - Inside:					
Residential	$ 951,760	$ 1,024,280	$ 1,097,410	$ 1,170,670	$ 1,230,520
Multi-Family	376,790	404,380	431,910	459,220	481,800
Nonresidential	84,040	96,600	109,970	124,150	137,330
Total	$ 1,412,590	$ 1,525,260	$ 1,639,290	$ 1,754,040	$ 1,849,650
Monthly Base Charges - Outside:					
Residential	$ 1,580	$ 1,750	$ 1,930	$ 2,100	$ 2,260
Multi-Family	0	0	0	0	0
Nonresidential	9,910	11,370	12,930	14,570	16,090
Total	$ 11,490	$ 13,120	$ 14,860	$ 16,670	$ 18,350
Monthly Base Charges - Combined:					
Residential	$ 953,340	$ 1,026,030	$ 1,099,340	$ 1,172,770	$ 1,232,780
Multi-Family	376,790	404,380	431,910	459,220	481,800
Nonresidential	93,950	107,970	122,900	138,720	153,420
Total	$ 1,424,080	$ 1,538,380	$ 1,654,150	$ 1,770,710	$ 1,868,000

Rates related to Meters and Services are distributed on an equivalent meter factor, as endorsed by the AWWA. Larger meters place a higher demand on the utility due to a higher capacity and total flow rate, which in turn cause higher maintenance costs.

Estimated revenue related to the volumetric charges is approximately around $1.9 million dollars for fiscal year ending 2019. Figure 8, highlights volumetric, pass-through and bulk water rate revenue through 2024.

Figure 8: Projected Volumetric Revenues

Description	Proposed Rates 2019	Projected For Fiscal Year Ending June 30: 2020	2021	2022	2023
WATER REVENUES					
Volumetric Rates - Inside:					
Residential	$ 742,100	$ 810,770	$ 881,330	$ 954,880	$ 1,020,640
Multi-Family	179,260	192,220	205,170	218,220	229,270
Nonresidential	155,160	166,180	176,840	187,690	196,490
Pass-through Charge	855,990	902,960	957,010	1,012,640	1,070,290
Bulk Water	17,528	19,103	20,914	22,859	24,946
Total	$ 1,950,038	$ 2,091,233	$ 2,241,264	$ 2,396,289	$ 2,541,636
Volumetric Rates - Outside:					
Residential	$ 4,500	$ 4,820	$ 5,130	$ 5,440	$ 5,700
Multi-Family	0	0	0	0	0
Nonresidential	8,540	9,140	9,720	10,320	10,800
Pass-through Charge	6,920	7,170	7,480	7,790	8,090
Total	$ 19,960	$ 21,130	$ 22,330	$ 23,550	$ 24,590
Total Volumetric Combined:					
Residential	$ 746,600	$ 815,590	$ 886,460	$ 960,320	$ 1,026,340
Multi-Family	179,260	192,220	205,170	218,220	229,270
Nonresidential	163,700	175,320	186,560	198,010	207,290
Pass-through Charge	862,910	910,130	964,490	1,020,430	1,078,380
Bulk Water	17,528	19,103	20,914	22,859	24,946
Total	$ 1,969,998	$ 2,112,363	$ 2,263,594	$ 2,419,839	$ 2,566,226

Figure 9 provides the proposed base charges, volumetric rates and pass-through rate. The pass through will be adjusted as necessary to reflect the adjustments in the wholesale water charges established by HBWMD. This mechanism enables MCSD to only pass-through the actual costs of purchased water; while providing an increase in financial stability and certainty to MCSD.

Figure 9: Proposed Rates

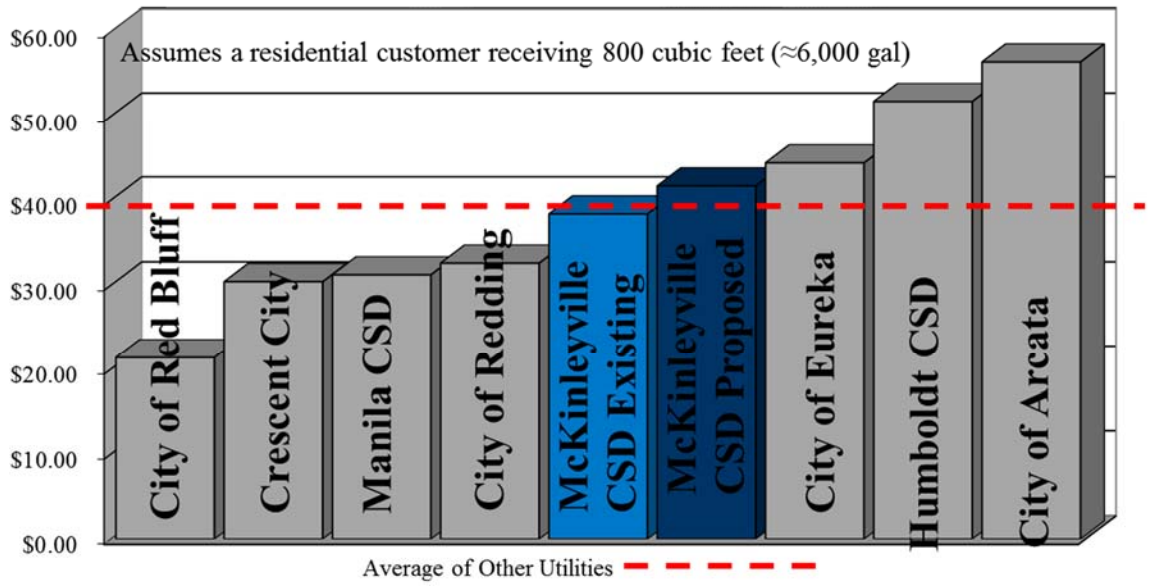
TABLE 1
PROPOSED RATES - WATER

Description	Year 2019	Year 2020	Year 2021	Year 2022	Year 2023
Monthly Base Charge:					
5/8 Inch	$ 16.47	$ 17.62	$ 18.68	$ 19.80	$ 20.39
3/4 Inch	$ 22.23	$ 24.49	$ 26.71	$ 29.11	$ 30.59
1.0 Inch	$ 33.60	$ 38.06	$ 42.59	$ 47.52	$ 50.98
1.5 Inch	$ 62.09	$ 71.89	$ 82.01	$ 93.06	$ 101.95
2.0 Inch	$ 96.35	$ 112.59	$ 129.45	$ 147.91	$ 163.12
3.0 Inch	$ 179.52	$ 214.61	$ 251.43	$ 291.85	$ 326.24
4.0 Inch	$ 290.53	$ 343.59	$ 399.00	$ 459.76	$ 509.75
6.0 Inch	$ 575.46	$ 682.07	$ 793.53	$ 915.75	$ 1,019.50
8.0 Inch	$ 917.71	$ 1,088.92	$ 1,268.00	$ 1,464.41	$ 1,631.20
Volumetric Per 100 CF:					
Block 1 - 0 to 8 CCF	$ 1.57	$ 1.68	$ 1.78	$ 1.89	$ 1.95
Block 2 - All Over 8 CCF	$ 3.93	$ 4.20	$ 4.45	$ 4.73	$ 4.88
Pass-through Charge (P/HCF)	$ 1.58	$ 1.64	$ 1.71	$ 1.78	$ 1.85

Rate Comparison

While the cost structure and facilities vary greatly between water utilities, rate comparisons provide stakeholders a barometer of its rates in relation to surrounding communities. For increased application, the figure below compares agencies where HBMWD is the wholesale service provider. Figure 10 provides the estimated monthly bill for a typical residential customer (800 CF). As the figure demonstrates, holding rates level, the Proposed FY 2018-19 rates will still be among the average in the region.

Figure 10: Single Family Regional Rate Comparison (800 Cubic Feet)



Wastewater Rate Analysis

The wastewater utility is in a similar financial position when compared to the water fund. Although starting with higher reserves, the Wastewater Fund is facing significant future capital expenditures and increased costs related to operations and a need to repair and replace aging infrastructure. This section of the report outlines the details of the analysis and the approach to developing the recommendations.

Wastewater Discharge and User Characteristics

As wastewater usage (discharge) is not metered, an examination of seasonal water consumption plays a critical role in ensuring equitable and revenue sufficient rates. Willdan examined multiple years of historical billing data to identify various customer classes and applicable growth trends within each class. Furthermore, billing data was analyzed to determine seasonal demand patterns and overall consumption characteristics. These discharge assumptions were cross-analyzed against treatment plant information (gallons treated) to confirm the appropriateness of the user discharge analysis.

Customer Statistics

During the Fiscal Year 2017, an analysis of the wastewater data identified service to an estimated 6,253 accounts across 26 different customer land use classifications and discharging an estimated 429,000 CF of wastewater. A projection of customers and flows is necessary in the development of rates.

Existing Wastewater Revenues

Like water, the Wastewater Fund receives a majority of its revenues from rates. In Fiscal Year ending 2017, the Wastewater Fund yielded $3.3 million in operating rate revenue, compared with $196 thousand in non-operating revenue.

Existing Wastewater Expenditures

To achieve long-term financial health, a utility's revenues must be sufficient to meet total expenditures or cash obligations. This "required revenue" includes all incurred costs related to operation and maintenance, debt service, and capital costs. MSCD estimates approximately $3.8 million in total system expenditures.

Figures 12 demonstrates the Baseline Scenario for the Wastewater Fund. This represents current and projected financial conditions of the water utility excluding any revenue adjustment (increases) over the next 5 years.

Figure 12: Wastewater Fund - Baseline Financial Scenario

Description	Existing Rates	Projected For Fiscal Year Ending June 30: 2019	2020	2021	2022	2023
Revenues:						
User Rate Revenues	$ 3,303,500	$ 3,303,390	$ 3,348,770	$ 3,394,720	$ 3,443,480	$ 3,492,970
Other Revenues	181,164	181,164	187,686	194,443	201,443	208,695
Total Revenues	$ 3,484,664	$ 3,484,554	$ 3,536,456	$ 3,589,163	$ 3,644,923	$ 3,701,665
Percentage Rate Adjustment		0.00%	0.00%	0.00%	0.00%	0.00%
System Expenditures:						
O&M Costs	$ 1,858,870	$ 1,858,870	$ 1,935,682	$ 2,009,794	$ 2,087,439	$ 2,171,401
Debt Service (P&I)	947,439	947,439	1,233,749	1,266,129	1,262,129	1,256,023
R&R Transfer	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Operating & Non-Operating	$ 3,806,309	$ 3,806,309	$ 4,169,431	$ 4,275,923	$ 4,349,568	$ 4,427,424
Revenue Excess (Deficiency)	**$ (321,645)**	**$ (321,755)**	**$ (632,975)**	**$ (686,761)**	**$ (704,645)**	**$ (725,760)**
Debt Service Coverage	**1.72**	**1.72**	**1.30**	**1.25**	**1.23**	**1.22**

Projected Operating Results

Given the existing financial condition of the utility, without near term revenue adjustments, MCSD's water fund will not be able to meet its targeted objectives without increases in the future. As such, Willdan worked with MCSD staff to seek input for the development a financial plan and rate structure that provides gradual adjustment to provide continued financial stability throughout the study period. Numerous financial scenarios were analyzed and presented over the course of the study. The results and recommendations provided in the analysis were presented in August 2018 and stakeholders were subsequently mailed a Proposition 218 Noticed in September. The recommended financial scenario was structured and analyzed to achieve a positive net income within the five-year study period and to maintain be incompliance with the MCSD's Debt Coverage Ratio.

Figure 13 provides a summary of the projected operating results for the wastewater system and the corresponding impact of the proposed rate adjustments.

Figure 13: Wastewater - Projected Operating Results

Description	Existing Rates	Projected For Fiscal Year Ending June 30: 2019	2020	2021	2022	2023
Revenues:						
User Rate Revenues	$ 3,303,500	$ 3,419,690	$ 3,835,860	$ 4,004,460	$ 4,181,750	$ 4,371,210
Other Revenues	196,164	196,164	203,226	210,542	218,122	225,974
Total Revenues	$ 3,499,664	$ 3,615,854	$ 4,039,086	$ 4,215,002	$ 4,399,872	$ 4,597,184
Percentage Rate Adjustment		7.00%	7.00%	3.00%	3.00%	3.00%
System Expenditures:						
O&M Costs	$ 1,858,870	$ 1,858,870	$ 1,935,682	$ 2,009,794	$ 2,087,439	$ 2,171,401
Debt Service (P&I)	947,439	947,439	1,233,749	1,266,129	1,262,129	1,256,023
R&R Transfer	800,000	800,000	860,000	930,000	1,000,000	1,000,000
Total Operating & Non-Operating	$ 3,606,309	$ 3,606,309	$ 4,029,431	$ 4,205,923	$ 4,349,568	$ 4,427,424
Revenue Excess (Deficiency)	**$ (106,645)**	**$ 9,545**	**$ 9,655**	**$ 9,079**	**$ 50,304**	**$ 169,760**
Debt Service Coverage	**1.73**	**1.85**	**1.70**	**1.74**	**1.83**	**1.93**

*Note revenue projections may slightly increase assuming the "Brewery" land use class is implemented.

Cost of Service Analysis

Following the discharge and revenue requirement analysis, the next stage is to distribute costs (revenue requirements) to functional components, and ultimately, to each customer class. The cost of service analysis is a systematic process by which revenue requirements are allocated by function to generate a classification of equitable costs in proportion to the service received for each user class.

This section of the report discusses the allocation of operating and capital costs to the applicable Flow, parameters, the determination of unit rates, and the calculation of user class cost responsibility. Similar to water, a wastewater system COS analysis is a detailed study that allocates the Revenue Requirements of the system to individual customer classes. This process involves three basic steps as follows:

- ***Revenue Requirement*** - The revenue requirement determines the costs to be supported by monthly user rates. The amount is developed based on a projection of expenses for FY 2019 (the Test Year). Sources for the financial projections include the currently budgeted expenditures for operations and capital improvements. Projections for customer growth, operation and maintenance costs, and capital paid from current earnings are based on information provided by MCSD.

- ***Cost Functionalization*** - The cost functionalization process categorizes the revenue requirement by basic utility function and service. In this analysis, the wastewater costs separated into Treatment, Collection, Administration and Customer functions.

- ***Allocation*** - Based on these cost functionalization, costs are then allocated to the individual customer classes based on their usage characteristics.

Current Budget and Revenue

The determination of the monthly user rates and charges to be applied to wastewater customers is based upon the estimated revenue requirements of the system. Revenue requirements consist of the operating, maintenance, debt service, capital and other monetary expenditures necessary to provide, maintain and perpetuate quality services to meet the goals and objectives of the utility system.

Methodology

The rate analysis performed herein utilizes the projected wastewater system budget for fiscal year 2018/19 (the "Wastewater Budget" for fiscal year ending June 30, 2019) as the basis for developing the revenue requirements to be recovered from user rates. The Wastewater Budget, as prepared by MCSD, has certain expenditures that are allocated between identifiable functional 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 (e.g. debt service, capital reserves, general fund transfer, etc.).

Cost Allocation by Function

The cost of service allocation conducted in this study is established on the flow and strength characteristics method, which is endorsed by the Water Environmental Federation (WEF). Under this method, revenue requirements are allocated to the different user classes proportionate to their use of the wastewater system. Allocations are based on customers and flow volume, and components of treatment, collection, administration and customer costs. Use of this methodology results in a generally accepted cost distribution among customer classes and a means of calculating and designing rates to proportionately recover those costs.

Figure 14 presents the allocated costs by function and customer class. This analysis is important in order to determine an equitable means of allocating costs to utility demand.

Figure 14: Distribution of Expenditure by Function

Description	Costs 2019	Projected Revenues	Difference $ Amount	Difference Percent
Total Cost of Service:				
Treatment	$ 1,151,281			
Collection	825,547			
Sub-Total Non Customer	$ 1,976,828			
Customer	1,613,318			
Total	$ 3,590,146			
PROPOSED RATES				
Customer Class:				
2 sewer Units/Commercial	$ 2,663	$ 2,810	$ 147	5.52%
Apartment/Multi Unit (Each)	804,258	816,700	12,442	1.55%
Bakery	3,157	2,030	(1,127)	-35.70%
Barber/Beauty Shop	3,034	3,020	(14)	-0.46%
Car Wash	3,883	3,100	(783)	-20.16%
Church & Residence	894	950	56	6.26%
Churches	11,581	9,820	(1,761)	-15.21%
Coast Guard Station/Airport	40,169	25,150	(15,019)	-37.39%
Dialysis Clinic	9,997	6,050	(3,947)	-39.48%
Fire Station/School	9,791	7,380	(2,411)	-24.62%
Gas Stations (No Market)	4,084	4,090	6	0.15%
Laundromats	15,241	10,220	(5,021)	-32.94%
Market	43,986	26,620	(17,366)	-39.48%
Metered Septage Vault	20,190	12,880	(7,310)	-36.21%
Moblie Homes (Each)	19,360	18,400	(960)	-4.96%
Motels/Hotels	30,626	18,790	(11,836)	-38.65%
Office Building/Post Office	42,059	46,900	4,841	11.51%
Restaurant/Tavern	135,590	82,540	(53,050)	-39.13%
Retail/Banks/Theater/Other	43,436	34,920	(8,516)	-19.61%
Round Table/Market	5,276	3,540	(1,736)	-32.90%
Sewer Only Accounts	11,182	15,560	4,378	39.15%
Sewer Units - Commercial	819	900	81	9.89%
Single Family Residential	2,322,809	2,261,240	(61,569)	-2.65%
Two Sewer Units/Business	4,947	5,000	53	1.07%
Two Sewer Units/Daycare	1,115	1,080	(35)	-3.14%
Total	$ 3,590,147	$ 3,419,690	$ (170,457)	-4.75%

The separation of costs into these functional components provides the means for further allocation to the customer classes based upon their respective demand of each function. The resulting distribution percentages are utilized to allocate annual required revenue to each customer class based on the class' respective demand on the system

Once the system cost causation analysis is complete, the next step is to design an equitable rate structure to recover the revenues.

Rate Design Analysis

The final step of the rate study is the design of the wastewater rates to collect the desired level of revenue determined in the revenue requirement analysis. During this analysis, consideration is given to the levels of the rates. This section reviews the proposed wastewater rate design for the MCSD.

Criteria and Considerations

In determining the appropriate rate level and structure, Willdan, in conjunction with MCSD staff, analyzed various generated financial scenarios concerning the proposed adjustments and the implications attributed to those decisions.

Listed below is a simplified list of the design considerations that were reviewed:

- Consideration of the customer's ability to pay
- Clear and understandable rates
- Easily administered
- Outdoor water usage
- Revenue stability
- Efficient allocation of resources
- Capital Funding Options
- Equity
- Comply with legal and regulatory requirements

When developing the proposed rates all of the criteria were taken into consideration. Determining the appropriate balance is crucial, as some of the criteria occasionally conflict with one another, i.e. the customer's ability to pay and cost-based rates. In designing rates, there will always be concessions between the various objectives; however, the proposed rates meet all of the leading objectives of MCSD as discussed with staff and the Board.

Existing Rate Structure

The existing rate structure is a three-tiered rate structure for residential and two-tier rate structure for non-residential classes, both of which, also includes a base monthly rate. The structure is comprised of the following cost components.

> ***Base Charge*** is per month and is of the same for each customer class regardless of connection size. This component of the wastewater rate reflects a portion of operations, customer service, and maintaining the accounts.

Commodity Charge This charge reflects the cost of service related to the projected discharge and discharge characteristics for all remaining classes.

Proposed Rate Structure

Willdan recommends that some components of the rate structure be modified to reflect the current analysis and allocation of the costs incurred. Below are the proposed components of the recommended rate structure – while each customer class' rate(s) is comprised of these charges, the specific rates may differ based on land use category.

Base Charge: A fixed and uniform rate, applied per month, regardless of customer class or connection size. This component of the wastewater rate reflects a portion of operations, customer service, and maintaining the account.

Commodity Charge: Charge has been updated to reflect the cost of service related to discharge strengths based on land use category. The proposed rate for the Single Family Residential land use class is $2.55 per 100 CF. The rates for all other identified land use categories are based on loading standards developed by the California State Water Resources Control Board.

Recommended Wastewater Charges

The proposed revenue adjustments as a percentage do not equal or necessarily correlate to an equivalent percentage increase to rates or monthly bills. The results of the cost-of-service analysis and rate redesign will affect users differently, at both the customer class and account level.

Base Charge

In accordance with the existing rate structure, the base charges are the same for all land use classes. Figure 15 provides a breakdown of the projected wastewater customer accounts by land use category.

Figure 15: Total Wastewater Accounts

Description	Estimated 2018	Projected For Fiscal Year Ending June 30: 2019	2020	2021	2022	2023
WASTEWATER SYSTEM						
Accounts:						
2 sewer Units/Commercial	6	6	6	6	6	6
Apartment/Multi Unit (Each)	1,652	1,672	1,692	1,712	1,736	1,760
Bakery	1	1	1	1	1	1
Barber/Beauty Shop	6	6	6	6	6	6
Car Wash	3	3	3	3	3	3
Church & Residence	2	2	2	2	2	2
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	7	7	7	7	7	7
Gas Stations (No Market)	8	8	8	8	8	8
Laundromats	5	5	5	5	5	5
Market	3	3	3	3	3	3
Metered Septage Vault	1	1	1	1	1	1
Moblie Homes (Each)	34	34	34	34	34	34
Motels/Hotels	2	2	2	2	2	2
Office Building/Post Office	108	108	108	108	108	108
Restaurant/Tavern	20	20	20	20	20	20
Retail/Banks/Theater/Other	43	43	43	43	43	43
Round Table/Market	2	2	2	2	2	2
Sewer Only Accounts	44	44	44	44	44	44
Sewer Units - Commercial	2	2	2	2	2	2
Single Family Residential	4,273	4,348	4,424	4,501	4,580	4,660
Two Sewer Units/Business	10	10	10	10	10	10
Two Sewer Units/Daycare	2	2	2	2	2	2
Subtotal	6,253	6,348	6,444	6,541	6,644	6,748

The projected base charge revenue related is approximately $2.2 million dollars for fiscal year 2019. Figure 16, provides the projected base charge revenue for the projection period.

Figure 16: Projected Wastewater Base Charge Revenue

Description	Proposed Rates 2019	Projected For Fiscal Year Ending June 30: 2020	2021	2022	2023
WASTEWATER REVENUES					
Monthly Base Charges:					
2 sewer Units/Commercial	$ 2,120	$ 2,350	$ 2,420	$ 2,490	$ 2,570
Apartment/Multi Unit (Each)	591,390	661,910	689,870	720,580	752,510
Bakery	350	390	400	420	430
Barber/Beauty Shop	2,120	2,350	2,420	2,490	2,570
Car Wash	1,060	1,170	1,210	1,250	1,280
Church & Residence	710	780	810	830	860
Churches	4,950	5,480	5,640	5,810	5,990
Coast Guard Station/Airport	1,410	1,560	1,610	1,660	1,710
Dialysis Clinic	350	390	400	420	430
Fire Station/School	2,480	2,740	2,820	2,910	2,990
Gas Stations (No Market)	2,830	3,130	3,220	3,320	3,420
Laundromats	1,770	1,960	2,010	2,080	2,140
Market	1,060	1,170	1,210	1,250	1,280
Metered Septage Vault	350	390	400	420	430
Moblie Homes (Each)	12,030	13,300	13,700	14,110	14,540
Motels/Hotels	710	780	810	830	860
Office Building/Post Office	38,200	42,250	43,520	44,830	46,180
Restaurant/Tavern	7,070	7,820	8,060	8,300	8,550
Retail/Banks/Theater/Other	15,210	16,820	17,330	17,850	18,390
Round Table/Market	710	780	810	830	860
Sewer Only Accounts	15,560	17,210	17,730	18,260	18,810
Sewer Units - Commercial	710	780	810	830	860
Single Family Residential	1,537,890	1,730,670	1,813,720	1,901,070	1,992,430
Two Sewer Units/Business	3,540	3,910	4,030	4,150	4,280
Two Sewer Units/Daycare	710	780	810	830	860
Total	$ 2,245,290	$ 2,520,870	$ 2,635,770	$ 2,757,820	$ 2,885,230

*Note projected revenues do not account for the proposed “Brewery” land use class. Additional revenue for the “Brewery” class will be minimal.

The projected revenue from volumetric rates is approximately $1.1 million dollars for fiscal year 2019. Figure 17, provides the projected wastewater volumetric rate revenue for the projection period.

Figure 17: Projected Wastewater Volumetric Rate Revenues

Description	Proposed Rates 2019	Projected For Fiscal Year Ending June 30: 2020	2021	2022	2023
WASTEWATER REVENUES					
Volumetric Rates:					
2 sewer Units/Commercial	$ 690	$ 730	$ 730	$ 730	$ 730
Apartment/Multi Unit (Each)	225,310	249,640	257,030	264,990	273,860
Bakery	1,680	2,020	2,190	2,360	2,550
Barber/Beauty Shop	900	980	1,000	1,020	1,050
Car Wash	2,040	1,630	1,230	800	360
Church & Residence	240	230	210	180	160
Churches	4,870	5,060	4,980	4,880	4,800
Coast Guard Station/Airport	23,740	24,690	24,290	23,820	23,430
Dialysis Clinic	5,700	6,690	7,170	7,610	7,990
Fire Station/School	4,900	4,950	4,770	4,580	4,510
Gas Stations (No Market)	1,260	1,240	1,170	1,100	1,030
Laundromats	8,450	8,840	8,700	8,550	8,430
Market	25,560	28,640	29,710	30,720	31,670
Metered Septage Vault	12,530	11,590	10,360	9,050	8,320
Moblie Homes (Each)	6,370	7,050	7,260	7,460	7,700
Motels/Hotels	18,080	20,020	20,790	21,600	22,560
Office Building/Post Office	8,700	9,500	9,710	9,880	10,190
Restaurant/Tavern	75,470	90,650	98,340	106,190	114,570
Retail/Banks/Theater/Other	19,710	20,500	20,170	19,780	19,450
Round Table/Market	2,830	3,140	3,230	3,320	3,420
Sewer Only Accounts	0	0	0	0	0
Sewer Units - Commercial	190	190	180	170	160
Single Family Residential	723,350	815,110	853,600	893,310	937,220
Two Sewer Units/Business	1,460	1,520	1,490	1,460	1,440
Two Sewer Units/Daycare	370	380	380	370	380
Total	$ 1,174,400	$ 1,314,990	$ 1,368,690	$ 1,423,930	$ 1,485,980

*Note projected revenues do not account for the proposed “Brewery” land use class. Additional revenue for the “Brewery” class will be minimal.

Figure 18 provides the proposed base charges, volumetric rates based on land use class for the wastewater system.

Figure 18: Proposed Wastewater Rates

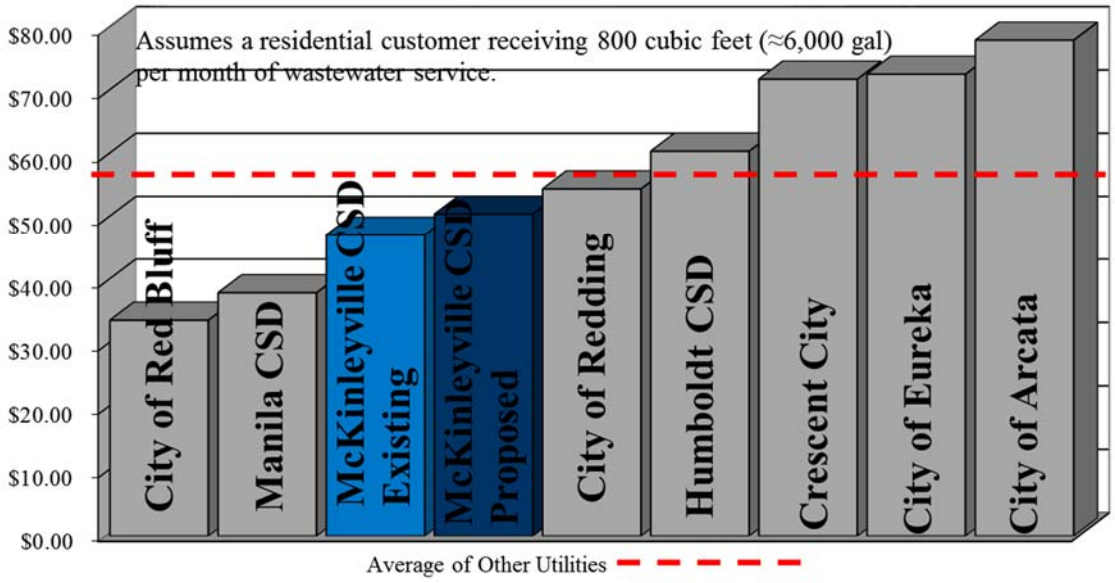
TABLE 2
PROPOSED RATES - WASTEWATER

Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Monthly Base Charge:					
All Customers	$ 30.47	$ 32.60	$ 33.58	$ 34.59	$ 35.63
Volumetric Per 100 CF:					
2 sewer Units/Commercial	$ 3.06	$ 3.14	$ 3.09	$ 3.03	$ 2.98
Apartment/Multi Unit (Each)	$ 2.55	$ 2.73	$ 2.81	$ 2.89	$ 2.98
Bakery	$ 10.43	$ 11.79	$ 12.79	$ 13.81	$ 14.90
Barber/Beauty Shop	$ 2.63	$ 2.78	$ 2.84	$ 2.89	$ 2.98
Car Wash	$ 1.58	$ 1.34	$ 1.01	$ 0.66	$ 0.30
Church & Residence	$ 4.39	$ 4.20	$ 3.82	$ 3.41	$ 2.98
Churches	$ 3.06	$ 3.14	$ 3.09	$ 3.03	$ 2.98
Coast Guard Station/Airport	$ 3.06	$ 3.14	$ 3.09	$ 3.03	$ 2.98
Coming Attractions	$ 2.63	$ 2.78	$ 2.84	$ 2.89	$ 2.98
Dialysis Clinic	$ 2.98	$ 3.28	$ 3.46	$ 3.61	$ 3.73
Fire Station/School	$ 2.12	$ 2.13	$ 2.05	$ 1.97	$ 1.94
Gas Stations (No Market)	$ 3.29	$ 3.25	$ 3.06	$ 2.86	$ 2.68
Laundromats	$ 2.32	$ 2.38	$ 2.33	$ 2.28	$ 2.24
Market	$ 10.00	$ 10.78	$ 11.18	$ 11.56	$ 11.92
Metered Septage Vault	$ 4.39	$ 4.15	$ 3.71	$ 3.24	$ 2.98
Moblie Homes (Each)	$ 2.55	$ 2.73	$ 2.81	$ 2.89	$ 2.98
Motels/Hotels	$ 6.96	$ 7.29	$ 7.33	$ 7.37	$ 7.45
Office Building/Post Office	$ 2.63	$ 2.78	$ 2.84	$ 2.89	$ 2.98
Restaurant/Tavern	$ 10.43	$ 11.79	$ 12.79	$ 13.81	$ 14.90
Retail/Banks/Theater/Other	$ 3.06	$ 3.14	$ 3.09	$ 3.03	$ 2.98
Round Table/Market	$ 8.52	$ 9.12	$ 9.39	$ 9.65	$ 9.95
Sewer Only Accounts	$ 0.00	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Sewer Units - Commercial	$ 3.29	$ 3.25	$ 3.06	$ 2.86	$ 2.68
Single Family Residential	$ 2.55	$ 2.73	$ 2.81	$ 2.89	$ 2.98
Two Sewer Units/Business	$ 3.06	$ 3.14	$ 3.09	$ 3.03	$ 2.98
Two Sewer Units/Daycare	$ 2.96	$ 3.03	$ 2.98	$ 2.92	$ 2.98
Brewery	$ 5.10	$ 10.92	$ 16.86	$ 23.12	$ 29.80

Rate Comparison

While the cost structure and facilities vary greatly between wastewater utilities, rate comparisons provide stakeholders a barometer of the MCSD rates in relation to surrounding or similar communities. Figure 19 provides the estimated monthly bill for a typical single-family customer (800 CF).

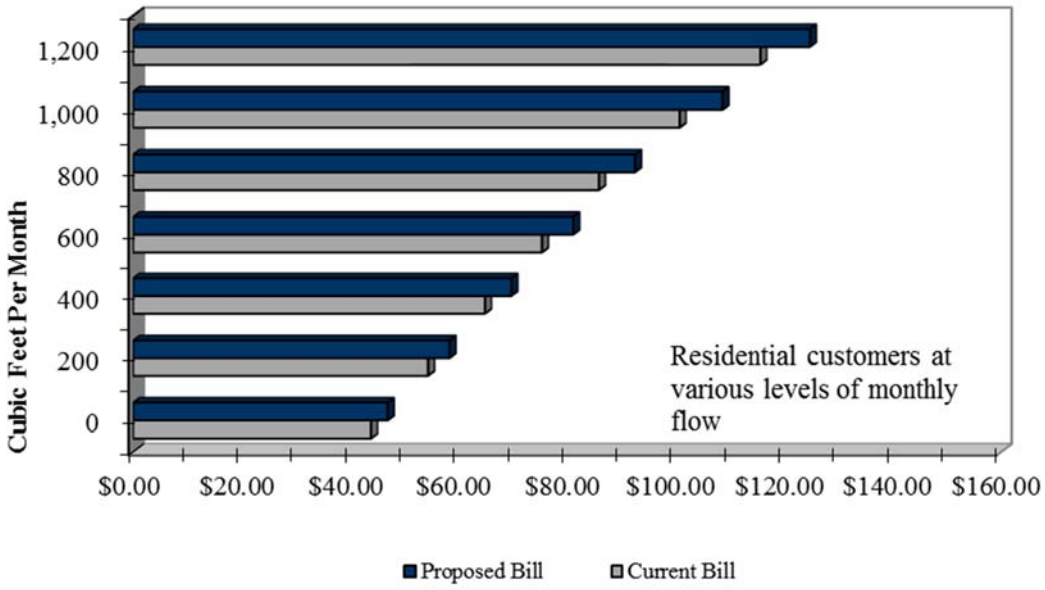
Figure 19: Single-Family Regional Wastewater Rate Comparison



Customer Impacts

The proposed rates will provide MCSD with the necessary revenue to provide continue quality service without a significant impact on the average ratepayer. The figure below provides a combined water and wastewater sample bill for a variety of single-family consumption levels.

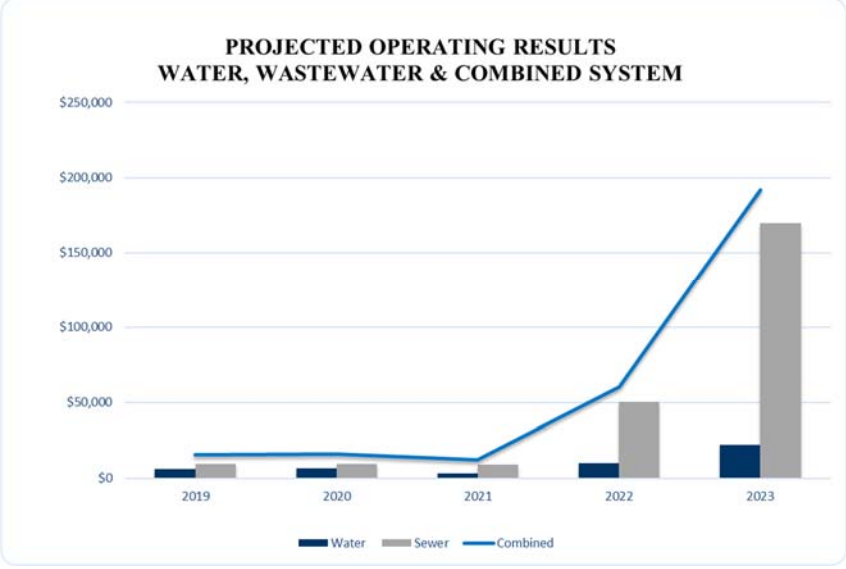
Figure 20: Single-Family Monthly Bill Comparison



Operating Results

The projection of the combined operating results for both water & wastewater trend positive from the base year 2019 through the analysis year of 2023. Figure 21 provides a graphical illustration of the projected operating results and trends for both enterprises, as well as for the combined enterprise system.

Figure 21: Projected Operating Results



Conclusions and Recommendations

Conclusions

- Projected operating revenues and operating expenses for the forecast period are developed by, and/or in consultation with, MCSD staff, and are based upon applicable assumptions;
- The projected CIP costs have been developed by MCSD staff to address the water and wastewater system renewal and replacement needs;
- Willdan is of the opinion that the financial projections presented here demonstrate the Utility's ability to meet its obligations with regard to:
    - Operating expenses;
    - Non-operating expenses (including debt service);
    - Capital project costs; and
    - Key financial policies, including debt service coverage and maintenance of at least 6 months of operating fund reserve balances.
- The proposed rates presented here are in conformance with industry standard rate-making practices, Proposition 218 and/or MCSD's rate policies with respect to:
    - The equitable recovery of costs through its water and wastewater rates;
    - Setting rates based upon the proportionate cost of providing utility services; and
    - Generating sufficient revenue to fully recover system expenditure and reserve requirements.

Recommendations

- It is recommended that MCSD implement the proposed rates presented in this Report for FY 2018-19 through FY 2022-23.
- It is recommended that MCSD update the Revenue Sufficiency Analysis portion of this study each year to ensure projected revenues are sufficient to fund projected expenses going forward as assumptions made during this analysis may change and have a material impact upon the analysis.