Konocti County Water District
Water Rate Analysis
February 2019

State of California State Water Resources Control Board

Proposition 1 Water Bond
Comprehensive Assistance to Tribal and Small Systems Project Agreement
Number: D1612801
TA Work Plan Number: 5423

Presented by: Rural Community Assistance Corporation (RCAC)

Funded by: State Water Resources Control Board

RCAC
www.rcac.org

California Water Boards

PROP 1
WATER BOND 2014

RCAC
www.rcac.org

February 20, 2019

Andrew Lawrence
State Water Resources Control City Council - Division of Financial
Assistance1001 I St. 16th Floor
PO Box 944212
Sacramento, CA 95814

Subject: Konocti County Water District Water Rate Analysis
Prop 1 Agreement No. D1612801 / TA Work Plan No. 5423

Dear Andrew:

Enclosed please find the printed final report of the Konocti County Water District Water Rate Analysis.

The report has been provided to Konocti County Water District Board of Directors. The date for the Proposition 218 hearing has not yet been set. If you have any additional questions, feel free to contact me at 916/447-9832, Ext 1032 or Mary Fleming at 916/549-6338.

Sincerely,

Ari Neumann

Ari Neumann
RCAC, Director
Community & Environmental Services

Enclosure: Konocti County Water District Water Rate Analysis

CC: Frank Costner,General Manager, Konocti County Water District, 15844 35th Avenue, Clearlake, CA 95422

Paula Gallizioli,Auditor/Board Secretary, Konocti County Water District, 15844 35th Avenue, Clearlake, CA 95422

TABLE OF CONTENTS

Purpose and Objective

Konocti County Water District (KCWD) was organized in 1961 to provide water for the residents of the district. The utility serves an average of 1,800 connections in Clearlake, California. KCWD has received planning funds through Proposition 1 (Project No. 1710006-005P) to address the poor conditions of raw water intake and pump station. Additionally, a water rate study was requested, including Capital Improvement recommendations. The rate analysis was developed using historical water use and financial records provided by KCWD.

DISCLAIMER

The recommendations contained in this financial analysis are based on historical financial information provided to RCAC by KCWD. Although every effort was made to ensure the reliability of this information, no warranty is expressed or implied as to the correctness, accuracy or completeness of the information contained herein.

Financial Planning

An accurate and useful rate analysis not only identifies the total annual revenue required by a utility to conduct its normal day-to-day operations, but it also anticipates and plans for future operating and capital needs. Furthermore, the analysis attempts to determine whether the projected revenue under existing rates will satisfy those needs. The primary consideration in this process is to ensure that the utility has the ability to obtain sufficient funds to develop, construct, operate, maintain and manage its water system on a continuing basis, in full compliance with federal, state and local requirements.

The objective of developing a financial plan for a water system is to determine cash needs, revenue requirements and anticipated timing of utility costs to ensure that adequate funds are available to meet operational and maintenance needs as they occur. Financial planning for a small water system normally includes an examination of:

- Operating revenues
- Operation and maintenance (O&M) expenses
- Debt service (principal and interest payments) on borrowed funds
- Reserve requirements

The financial plan calculates the minimum revenues necessary to maintain viable and self-sustaining enterprises.

Operating Revenues

Revenues are the main sources of income to a utility and are typically thought of as operating and non-operating. Operating revenue is the stable and reliable income that comes from customer rates or user charges. Non-operating revenue, such as interest on checking and reserve accounts, connection fees, late payments, penalties and reconnection fees, may also be considered operating revenue if they are stable and dependable revenue sources. For example, a water system with consistent growth that is expected to continue may consider connection fees as an operating revenue source. Because KCWD's general manager and accountant are confident operating revenue for standby fees ($34,300 annually) and late fees ($50,000 annually) will be consistent and reliable sources of revenue for the five year period projections, those have been taken into

consideration in this rate analysis. That is also the case with non-operating revenue of $76,732 for property taxes and antenna revenue.

Operating Expenses

This is the first cost category that is considered when developing a financial plan. Operating and maintenance (O&M) costs include the day-to-day expenses of providing water service. Operating expenses include labor, insurance, materials, electricity, and chemicals.

Water System Reserves

Reserves are an accepted way to stabilize and support a utility's financial management. Small systems usually fund the operating expenses but don't often consider putting money aside for a specific upcoming financial need or project, or for an amount that can be used to provide rate stabilization in years when revenues are unusually low or expenditures are unusually high. The rationale for maintaining adequate reserve levels is two-fold. First, it helps to ensure that the utility will have adequate funds available to meet its financial obligations in times of varying needs. Secondly, it provides a framework around which financial decisions can be made to determine when reserve balances are inadequate or excessive and what specific actions need to be taken to remedy the situation. Utility reserve levels can be thought of as a savings account. Reserve balances are funds that are set aside for a specific cash flow requirement, financial need, project, task or legal covenant. Common reserve balances are established around the following four areas: **operating reserve, capital improvement, and emergency and debt service reserve.** These balances are maintained in order to meet short-term cash flow requirements, and at the same time, minimize the risk associated with meeting financial obligations and continued operational needs under adverse conditions.

Debt Service Reserve

Water utilities that have issued debt to pay for capital assets will often have required reserves that are specifically defined to meet the legal covenants of the debt. Normally, debt service reserve represents an amount equal to one full annual loan payment and can be accumulated to this level over a period of five to ten years. In January 2017, KCWD borrowed $450,000 from Westamerica Bank. The loan is payable at $8,199 monthly, including 3.5% interest for five years. The loan will mature in January 2022. There is no reserve requirement associated with the debt. If debt is incurred for future replacements or upgrades of the water system, a debt reserve fund should be established and the cost of the reserve funding should be passed along to the ratepayers through a rate adjustment. KCWD has received a commitment from the State Water Resources Control Board for a grant of $5,000,000 and a zero interest, 30-year loan of $3,700,000 for capital improvement. The estimated annual repayment of the loan is expected to begin in the fiscal year ended June 30, 2021 at an amount of $124,000. No debt reserve requirements are expected for this loan.

Operating Reserve

Operating reserves are established to provide the utility with the ability to withstand short-term cash flow fluctuations. There can be a significant length of time between when a system provides a service and when a customer pays for that service. In addition, a system's cash flow can be affected by weather and seasonal demand patterns. A 45-day operating reserve is a frequently used industry norm. Because of potential delays in collecting payment, many utilities attempt to keep an amount of cash equal to at least 45 days or one-eighth (1/8) of their annual cash O&M

expenses in an operating reserve to mitigate potential cash flow problems. Because KCWD bills bi-monthly, it may consider funding an operating reserve equal to 90 days or 25% of its annual budget. The unaudited Statement of Financial Position indicated cash in the General Fund in the amount of $232,102 on June 30, 2018. The rate calculations in this document assume operating reserves are a part of the balance.

Emergency Reserve

In addition to operating reserves, emergency reserves are an important tool for financial sustainability. Emergency reserves are intended to help utilities deal with short-term emergencies which arise from time-to-time, such as main breaks or pump failures. The appropriate amount of emergency reserves will vary greatly with the size of the utility and should depend on major infrastructure assets. An emergency reserve is intended to fund the immediate replacement or reconstruction of the system's single most critical asset; an asset whose failure will result in an immediate water outage or threat to public safety. This analysis was completed on the assumption that funding emergency reserves or short-lived asset reserves in the amount of $30,000 annually will be required by the lender.

Capital Improvement Reserve

A capital improvement reserve (also called a repair and replacement reserve) is intended to be used for replacing system assets that have become worn out or obsolete. Annual depreciation is frequently used to estimate the minimum level of funding for capital reserves. It is important to understand that depreciation expense is an accounting concept for estimating the decline of an asset's useful life and does not represent the current replacement cost of that asset. As an example, a brand new system with a construction cost of $1,000,000 and a service life of 100 years would (in theory) be depreciated at $10,000 per year. However, reserving the original cost of one million dollars would not be expected to fully fund the replacement of the infrastructure when it wears out one hundred years later.

To initiate a capital improvement plan (CIP), a small water system will start with a list of assets that includes the original purchase costs, the expected service life at the time it was put into service, theoretical replacement costs in today's dollars and the remaining service life. It then calculates the monthly and annual reserve that must be collected from each customer to fully capitalize the replacement cost of each asset. In reality, the assets will fail and be replaced gradually, but the replacement cost of water system assets is often a shock to small systems who are struggling to keep rates reasonable.

One alternative method is to set aside an annual amount equal to one-to-two percent of the total original cost of the utility's property. Larger systems often have sufficient non-operating revenue to fund these reserve levels without affecting rates, but smaller systems often do not, leaving them to fund their CIP reserves from rates alone. Another alternative method is to set-aside sufficient reserve funds to cover 100 percent of the cost for replacing short-lived assets, such as well pumps, electronic controls, vehicles, etc.

Because of the impact on rates, many smaller systems find fully funding replacements to be impossible, which explains the large number of small systems that are falling into disrepair. When funding the full replacement cost creates rates that are untenable, a system may opt to fund only 20% assumed to be matching funds for grants and/or loans.

To mitigate the impact on KCWD rates, the following assumptions were made to calculate the annual CIP contribution that should be made for the equipment:

- Future replacement costs will have a 1% inflation factor.
- 80% of the replacement costs for the treatment plant, office buildings, storage tanks, distribution lines and meters will be funded through grants and/or loans.
- 20% of the replacement costs of the above will be funded by CIP reserves.
- 100% of replacement costs for office equipment, SCADA/Plant, vehicles and heavy equipment will be funded by CIP reserves.
- The annual CIP contribution should be $345,445.
- Ideally, at the end of the five year period, KCWD will have $1,727,226 in CIP reserves.
- It should be recognized that as soon as a piece of equipment is put into service, the deterioration begins. When the planned capital improvement project has been completed, KCWD should create a current CIP spreadsheet to determine if the current reserve funding is adequate.

TABLE 1: CIP RESERVE FUNDING ANALYSIS

Konocti CWD Capital Improvement Plan - Summary					
Item	**Original Cost**	**2018 Value with Inflation**	**Future Replacement Cost**	**Amount To Be Reserved**	**Annual CIP Reserves**
Office Equipment	$51,749	$51,749	$51,749	100.0%	$10,350
Treatment Plant	$2,362,276	$3,560,263	$4,211,190	20.0%	$57,883
SCADA/Plant	$225,938	$225,938	$225,938	100.0%	$22,594
Office Buildings	$75,651	$75,651	$75,651	20.0%	$1,513
Storage Tanks	$1,037,362	$1,466,161	$2,121,746	20.0%	$13,918
Distribution Lines & Meters	$7,980,447	$11,226,906	$15,334,961	20.0%	$128,796
Vehicles, Equip, Tools	$187,571	$192,067	$204,401	100.0%	$58,978
Heavy Equipment	$122,515	$135,165	$138,955	100.0%	$51,413
Totals	**$12,043,508**	**$16,933,901**	**$22,364,591**		**$345,445**

TABLE 2: RESERVE COST PER CONNECTION

Recommended Water System Reserves Assumes 1,800 Connections			
Type of Reserve	**Annual Contribution**	**Annual Cost Per Connection**	**Monthly Cost Per Connection**
Debt Reserves	N/A	$0.00	$0.00
CIP Reserves	$345,445.11	$191.91	$15.99
Emergency/Short-Lived Asset Reserves	$30,000.00	$16.67	$1.39
Operating Reserves	Assumes $174k already funded	$0.00	$0.00
Total	**$375,445.11**	**$208.58**	**$17.38**

Financial Indicators

There are several financial indicators, such as Operating Ratio and Affordability Index, which help a utility decide if a rate adjustment is needed. It is important to track the trend of operating and coverage ratios during the year and from one year to the next, to watch for any significant changes. If a ratio is below the minimum or falling, changes will need to be made quickly to avoid serious financial difficulty.

Liquidity Ratios

Liquidity ratios are the measure of the ability of an organization to meet short-term obligations.

The ***Current Ratio*** compares assets expected to be available as cash within the year with current liabilities (those that will become due within the next 12 months). The ratio is mainly used to give an idea of the company's ability to pay back its short-term debt and payables with its short-term assets (cash, inventory, receivables). The higher the current ratio, the more capable the company is of paying its obligations. A ratio under 1 suggests that the company would be unable to pay off its obligations if they came due at that point. While this shows the company is not in good financial health, it does not necessarily mean that it will go bankrupt – as there are many ways to access financing – but it is definitely not a good sign. The current ratio can give a sense of the efficiency of a company's operating cycle or its ability to turn its product into cash. Companies that have trouble getting paid on their receivables can run into liquidity problems because they are unable to alleviate their obligations. A current ratio analysis may be limited because it includes assets that can't be readily converted to cash. KCWD's unaudited Statement of Financial Position at June 30, 2018, indicated a current ratio of 1.15:1 or $1.15 in current assets for every dollar of current liabilities. However, it should be noted that some of the accounts receivable are questionable as to collectability and over $416,000 of current assets are restricted for specific purposes.

The ***Quick Ratio***, sometimes called the acid test ratio, is similar to the Current Ratio but is considered a more reliable indicator of a company's ability to meet its short-term financial obligations with its most liquid assets. The quick ratio is more conservative than the current ratio, a more well-known liquidity measure because it excludes inventory from current assets. Inventory is excluded because some companies have difficulty turning their inventory into cash. In the event that short-term obligations need to be paid off immediately, there are situations in which the current ratio would overestimate a company's short-term financial strength. Potential creditors like to use this ratio because it reveals a company's ability to pay off under the worst possible conditions. The higher the quick ratio is, the better the position of the company. A quick ratio of 1.0:1 means you have a dollar's worth of easily convertible assets for each dollar of your current liabilities. Though acceptable ratios can vary from industry to industry, a ratio of 1.0:1 is generally acceptable to most creditors. Comparing today's quick ratio to quick ratios calculated from previous financial statements can give you a hint of developing trends in your company. While changes in ratios don't automatically spell trouble, uncovering the reasons for changes can help you find ways to nip potential problems in the bud. The unaudited Statement of Financial Position at 6/30/2018 indicated unrestricted cash in the amount of $232,552, assuming LAIF funds are restricted for the net pension liability while the current liabilities (net of deferred grant and net pension liability) was $107,893 for a quick ratio of 2:1.

Leverage Ratios

Leverage ratios are an indication of the organization's long-term financial viability. Are financial obligations met by operations (good) or incurrence of debt (possibly not so good)? The most commonly used leverage ratio is the debt-to-net (equity) ratio. This measures the extent to which the organization's operations are leveraged by debt. An excessive debt-to-net asset ratio may suggest that the organization is over-leveraged. The lower this ratio is the better. The debt-to-equity ratio indicates less dependency on debt-to-finance future operations. Based on the unaudited Statement of Financial Position at June 30, 2018, KCWD had two debts totaling $369,305. While the utility may suffer from cash flow difficulties, with equity of $8,004,497 (all of it invested in equipment and infrastructure), it is not due to being overly leveraged.

Operating Ratio

The ***operating ratio*** measures the amount of operating revenue versus the total amount of operating expenses for a utility system. The minimum standard for an operating ratio for a utility system is 1.0; meaning there is enough operating revenue to cover operating expenses.

A financially healthy utility system needs to maintain an ongoing operating ratio greater than 1; a ratio of less than 1 indicates there is insufficient revenue to meet current expenses. For example, if you had an operating ratio of 0.75, this would mean your revenue is 75 percent of expenses, or in other words, you could only cover 3/4 of your expenses. Based on current rates revenues, the projected operating costs and reserves, KCWD's operating ratio is 94%, a shortfall of 6% of the annual operating costs excluding debt payments and reserve account funding of $75,726.

Operating Ratio = total operating income and operating reserves/total operating costs (no debt).

Affordability Index

The ***affordability index*** measures the burden of costs passed from the water utility to the users against the median household income (MHI) for the area and is used by funding agencies to determine grant and low-interest loan eligibility. Many funding organizations look for an affordability ratio of 1.5% before approving grant money to low-income communities. Rates approaching 3% of MHI can be unaffordable. The 2013 - 2017 American Community Survey (ACS) estimate did not have information regarding the KCWD service area. The estimated MHI for Clearlake was $27,034. That is the assumed MHI used in this analysis. KCWD may consider having an MHI survey conducted of its service area to confirm. With an MHI of $27,034, KCWD's current rates of $30 per month plus $0.03 per cubic foot (cf) of usage, residential connections using 500 cf per month (39.62% of all connections) have a monthly water bill of $45.00 or an affordability index of 2%. Users of 1,000 cf per month (40.66% of all connections) have a monthly bill of $60.00 or an affordability index of 2.66%.

Affordability Index = average annual residential bill for water / annual MHI.

Table 3 on the following page is the Statement of Financial Position June 30, 2013 – June 30, 2018. The Statement of Financial Position is the basis for calculating the liquidity and leverage ratios discussed in the previous pages.

TABLE 3: KCWD STATEMENT OF FINANCIAL POSITION

Knocti County Water District

Statement of Financial Position

	6/30/2018	6/30/2017	6/30/2016	6/30/2015	6/30/2014	6/30/2013
Assets:						
Current Assets:						
Petty Cash	$ 200	$ 200	$ 200	$ 200	$ 200	$ 200
Cash in Til	$ 250	$ 250	$ 250	$ 250	$ 250	$ 200
General Fund	$ 232,102	$ 200,126	$ 243,281	$ 147,267	$ 154,196	$ 100,411
Accounts Receivable	$ 217,629	$ 237,069	$ 203,402	$ 199,326	$ 185,347	$ 192,927
Returned Check Receivable	$ 161	$ 146	$ 70	$ 138	$ -	$ 81
Other Receivable	$ 1,730	$ 13,835	$ 7,621	$ 1,000	$ -	$ -
Local Agency Invest. Fund	$ 281,196	$ 278,552	$ 276,489	$ 275,319	$ 324,565	$ 607,751
Inventory	$ 131,824	$ 131,824	$ 129,423	$ 127,684	$ 87,296	$ 56,867
Prepaid Insurance	$ 26,727	$ 23,112			$ 8,000	$ 4,574
Post Office Deposit	$ 1,000	$ 1,000				
Pension Defered Outflow Cont	$ 31,660	$ 31,660				
Pension Defered Outflow Actuar	$ 112,607	$ 122,607				
Pension Defered Inflow Actuar	$ (9,219)	$ (9,219)				
Total Current Assets	**$ 1,027,867**	**$ 1,031,162**	**$ 860,735**	**$ 751,184**	**$ 759,855**	**$ 963,010**
Fixed Assets:						
Office Equipment	$ 51,749	$ 50,704	$ 44,757	$ 42,031	$ 31,086	$ 25,844
Treatment Plant	$ 2,362,276	$ 2,330,195	$ 2,111,738	$ 2,066,956	$ 2,019,260	$ 2,007,489
SCADASystem/Plant	$ 225,938	$ 225,938	$ 222,682	$ 222,682	$ 222,682	$ 220,804
Office Building	$ 75,651	$ 75,651	$ 75,651	$ 75,651	$ 75,651	$ 75,651
Land	$ 296,027	$ 220,197	$ 220,197	$ 186,197	$ 186,197	$ 177,223
Storage Tanks	$ 1,037,362	$ 935,212	$ 935,212	$ 935,212	$ 935,212	$ 935,212
Distribution Lines & Meters	$ 7,986,493	$ 7,986,493	$ 7,508,304	$ 7,469,430	$ 7,469,430	$ 7,451,886
Vehicles	$ 188,216	$ 188,216	$ 188,216	$ 188,216	$ 156,896	$ 144,626
Heavy Equipment	$ 122,515	$ 122,515	$ 122,515	$ 78,400	$ 78,400	$ 78,400
Accumulated Depreciation	$ (5,091,102)	$ (4,824,144)	$ (4,512,539)	$ (4,299,281)	$ (4,029,668)	$ (3,771,386)
Tools	$ 29,697	$ 28,104	$ 28,104	$ 28,104	$ 6,932	$ 6,932
Work in Progress	$ 904,665	$ 396,215	$ 176,537	$ 169,187	$ 128,067	$ 128,067
Total Fixed Assets	**$ 8,189,486**	**$ 7,735,294**	**$ 7,121,373**	**$ 7,162,783**	**$ 7,280,144**	**$ 7,480,747**
Restricted Assets:						
USDA Det Service WAB 5832						$ 28,739
Total Restricted Assets						**$ 28,739**
Total Assets	**$ 9,217,353**	**$ 8,766,456**	**$ 7,982,108**	**$ 7,913,967**	**$ 8,039,999**	**$ 8,472,496**
Liabilities & Equity						
Current Liabilities:						
Accounts Payable	$ 49,955	$ 43,381	$ 11,861	$ 42,310	$ 41,824	$ 25,676
Meter Deposits	$ 2,350	$ 2,350	$ 2,350	$ 2,350	$ 2,350	$ 2,350
Note Repayment Backhoe	$ 38,808	$ 61,510	$ 83,784			
Deffered Grant	$ 628,162	$ 84,522	$ 5,429			
SUTA Payable	$ (2,399)	$ 136				
Net Pension Liability	$ 156,305	$ 156,305	$ 114,324	$ 116,074		
Public Employee Retirement Fund	$ (4,220)	$ 385			$ (212)	
Other Employee Withholding	$ (12,790)	$ (7,167)	$ (1,492)	$ (2,020)	$ (1,042)	$ 190
Accrued Sick/Vacation	$ 36,188	$ 36,188	$ 32,741	$ 31,541	$ 31,204	$ 28,175
Total Current Liabilities	**$ 892,360**	**$ 377,610**	**$ 248,996**	**$ 190,256**	**$ 74,124**	**$ 56,391**
Long Term Liabilities						
Note Payable - Grant/Loan	$ 330,496	$ 415,474				$ 520,000
Total Long Term Liabilities	**$ 330,496**	**$ 415,474**	**$ -**	**$ -**	**$ -**	**$ 520,000**
Total Liabilities	**$ 1,222,856**	**$ 793,085**	**$ 248,996**	**$ 190,256**	**$ 74,124**	**$ 576,391**
Equity						
Retained Earnings	$ 7,477,471	$ 7,440,178	$ 7,420,609	$ 7,644,531	$ 7,817,805	$ 7,904,499
USDA Loan Reserve						$ 117,430
Capital Improvement Reserve	$ 495,900	$ 391,500	$ 287,100	$ 182,700	$ 78,300	$ -
Net Income	$ 31,126	$ 123,969	$ 123,969	$ (119,522)	$ 69,770	$ (125,825)
Total Equity	**$ 8,004,497**	**$ 7,955,646**	**$ 7,831,678**	**$ 7,707,709**	**$ 7,965,875**	**$ 7,896,105**
Total Liabilities & Equity	**$ 9,227,353**	**$ 8,748,731**	**$ 8,080,673**	**$ 7,897,965**	**$ 8,039,999**	**$ 8,472,496**

Water Rate Basics

Rates should cover the costs of the system to allow it to provide services now and in the foreseeable future. Reliance on state or federal funds should be avoided as much as possible as future funding is uncertain and may become less available. Operational expenses cannot be funded through grants.

Rates should be fair to all ratepayers. No single ratepayer or group of ratepayers should be singled out for different rates to subsidize the rates of other groups. The utility should not charge more for water service than the cost to provide the service, including operations, repairs, interest, loan principal, fines, replacement costs, and all other costs related to the treatment and delivery of water, now and in the foreseeable future. Unreasonably low rates for current customers will require unreasonably high rates for future customers, which should be avoided.

Rate Structures

The following are types of rates structure common to drinking water systems:

Uniform Flat Rate: Customers pay the same amount regardless of the quantity of water used. This type of rate is easiest to administer; however, it is not fair to the lowest water users and can promote high consumption which then may cost the utility more to provide that water.

Single or Uniform Block Rate: Customers are charged a constant price per volume regardless of the amount of water used. The cost per block of water is often added to a minimum charge for having service available. This rate tends to be more equitable to customers as the cost to the customer is in direct proportion to the amount of water used. The recommended rate structure in this analysis is based on a flat fee according to meter size and a uniform block rate for usage.

Inclining or Increasing Block Rate: This rate is designed to promote water use efficiency, as the amount of usage increases the price of water increases. This is KCWD's current water rate structure. KCWD currently charges $30 per month ($60 bi-monthly) plus $0.03 per cubic foot of water used up to 2,000 cf and $0.05 per cf for usage over 2,000 cf. KCWD is cautioned regarding the justification of the increase at 2,000 cf. The analysis in this document assumes a flat rate based on meter size plus a uniform block rate for usage.

Fixed versus Variable Expenses

Water must be available to customers at all times whether the customer is using the water or not. A large share of water system costs are associated with bringing the first drop of water to the customer's meter regardless of whether any water is used. Fixed costs are those that must be recovered by KCWD to ensure that drinking water is available to its customers.

Fixed costs are usually recovered from each customer on an equal basis through the use of a minimum fee (a minimum monthly bill). Fixed costs may cover 100 percent of some expenses in a system's budget, but only a portion of other types of expenses. For example, fixed expenses generally include all debt service expenses on construction loans, financial reserves for emergencies or equipment replacement and overhead costs, like insurance and bonding. Fixed costs should also include a portion of other system operating expenses.

The method for identifying all or part of some expenses as fixed costs involves determining to what extent each of the line item expenses in the budget benefits every customer of the system regardless of their level of usage. This is a determination that each utility must make for itself. Fixed costs should generally be recovered in a system's minimum bill, the minimum monthly fee

charged equally to each customer within each customer classification (residential, multi-residential, commercial, etc.) or by meter size (3/4-inch, 1-inch, etc.). For small systems with fewer customers to spread costs among, the proportion of fixed costs will be higher than larger systems. Many small systems find it impossible to recover all fixed costs in a monthly minimum, so they tend to shift a certain percentage to the variable side. Fixed costs for small systems are usually in the range of one-fourth to one-half of the system's total operating costs. In reviewing KWCD's budget, RCAC estimated 82% of the costs to be fixed.

Variable costs are system expenses that are more directly related to how much water is pumped, treated, stored and distributed. Most costs for electricity, chemicals, and repairs can be classified as variable costs because they are directly related to water consumption by the individual customer. To recover variable expenses, rate structures use a "consumption charge" or "flow charge" per volume, such as per thousand gallons or hundred cubic feet.

Table 4 on the next page illustrates the assumed variable and fixed costs for KCWD's projected costs for the period of February 1, 2019, through January 31, 2020. The actual operating expenses reported in KCWD financial statements for FYE June 30, 2017 and FYE June 30, 2018 were $1,106,507 and $1,102,335 respectively, net of depreciation. Depreciation expense should be included in the Statement of Activities when presented in accordance with generally accepted financial principles (GAAP) but is not taken into consideration in this rate analysis because CIP reserves are used instead.

TABLE 4: FIXED/VARIABLE BUDGET

	Budget 2/01/2019 - 1/31/2020	Estimated % Fixed Costs	Fixed costs	Variable costs
General Manager	$ 90,781.60	100%	$90,782	$0
Auditor/Secretary	$ 57,002.40	100%	$57,002	$0
Salaries - Lead Clerk	$ 40,112.80	100%	$40,113	$0
Account Clerk I	$ 6,191.50	100%	$6,192	$0
Salaries - Lead Oper.	$ 72,477.50	100%	$72,477	$0
Salaries - Operators	$ 209,008.80	100%	$209,009	$0
Salaries - Laborer	$ 38,570.00	100%	$38,570	$0
On Call	$ 9,261.88	100%	$9,262	$0
Over-time Expense	$ 20,300.00	100%	$20,300	$0
Payroll Taxes	$ 47,705.00	100%	$47,705	$0
Workers Comp	$ 14,616.00	100%	$14,616	$0
Advertising	$ 1,218.00	100%	$1,218	$0
Director's Fees	$ 13,195.00	100%	$13,195	$0
Director Education	$ 1,218.00	100%	$1,218	$0
OSHA Assessment	$ 203.00	100%	$203	$0
Computer Software	$ 4,567.50	100%	$4,568	$0
Bank Charges	$ 507.50	100%	$508	$0
Liab. Insurance	$ 25,375.00	100%	$25,375	$0
Director's Insurance	$ 2,740.50	100%	$2,741	$0
Dues & Subscript.	$ 1,827.00	100%	$1,827	$0
Pension Contribution	$ 45,675.00	100%	$45,675	$0
Employee Health Insurance	$ 86,275.00	100%	$86,275	$0
Office Supplies	$ 7,105.00	100%	$7,105	$0
Supplies - Lab	$ 12,180.00	85%	$10,353	$1,827
Supplies - New Services	$ 913.50	100%	$914	$0
Safety Equipment	$ 6,090.00	100%	$6,090	$0
Minor Equipment	$ 5,075.00	85%	$4,314	$761
Copies & Printing	$ 1,015.00	100%	$1,015	$0
Notary Fees	$ 761.25	100%	$761	$0
Lien Fees	$ 507.50	100%	$508	$0
Postage	$ 9,135.00	100%	$9,135	$0
Taxes - Property	$ 203.00	100%	$203	$0
Consulting Fees	$ 507.50	100%	$508	$0
Contractor Fees	$ 507.50	100%	$508	$0
Professional/Legal Fees	$ 1,522.50	100%	$1,523	$0
Audit Fees	$ 7,866.25	100%	$7,866	$0
Grounds Maint.	$ 5,075.00	100%	$5,075	$0
R&M - Water Treatment	$ 131,950.00	65%	$85,768	$46,183
R&M - Distribution	$ 10,150.00	65%	$6,598	$3,553
R&M - Customer Accounts	$ 10,150.00	100%	$10,150	$0
R&M - Administration	$ 10,150.00	100%	$10,150	$0
Vehicle Maint.	$ 5,075.00	100%	$5,075	$0
Gas Expense	$ 6,090.00	100%	$6,090	$0
Backhoe Maintenance	$ 1,522.50	100%	$1,523	$0
Equipment Rental	$ 507.50	100%	$508	$0
Communications	$ 7,206.50	100%	$7,207	$0
Telephone	$ 5,582.50	100%	$5,583	$0
Utilities	$ 137,025.00	5%	$6,851	$130,174
Chemicals - Chlorine	$ 2,537.50	65%	$1,649	$888
Chemicals - ACH	$ 21,315.00	65%	$13,855	$7,460
Chemicals - Other	$ 1,015.00	65%	$660	$355
Chemicals - KMN04	$ 9,135.00	65%	$5,938	$3,197
Chemicals - Diatomaceous	$ 4,161.50	65%	$2,705	$1,457
Chemicals - Salt	$ 4,060.00	65%	$2,639	$1,421
Chemicals - Ortho Phosphate	$ 7,105.00	65%	$4,618	$2,487
Chemicals - Muriatic Acid	$ 4,060.00	65%	$2,639	$1,421
Clothing Allowance	$ 3,298.75	100%	$3,299	$0
Water Analysis	$ 20,300.00	100%	$20,300	$0
Employee Education	$ 2,030.00	100%	$2,030	$0
SWRCB Fees	$ 3,552.50	100%	$3,553	$0
County Fees	$ 1,522.50	100%	$1,523	$0
Water Purchases	$ 33,495.00	0%	$0	$33,495
Mileage	$ 507.50	100%	$508	$0
Bad Debt	$ 507.50	100%	$508	$0
Cash Drawer - Over/Under	$ 50.75	100%	$51	$0
Total Operating Costs	**$ 1,291,355**		**1,056,677**	**234,678**
Debt Service	**$ 122,070**			
Total Operating Costs Plus Debt Servi	**$ 1,413,425**			
Emergency/Short Lived Asset Reserv	$ 30,000			
Operating Reserves		Assumes Operating Reserves Funded in Full		
Debt Reserves	$ -	Assumes No Debt Reserves Required		
CIP Reserves	$ 345,445			
Total Reserves	**$ 375,445**			
Total Budget	**1,758,870**			

Customer Water Demands

When analyzing water rates, it is important to understand existing patterns of consumption among the system's customers. A large portion of customers may use a small percentage of water, and a small portion of customers may use a large percentage.

Understanding how customers use water is important when you are considering seasonal operational needs, infrastructure replacement and water use efficiency to name a few.

KCWD currently provides water services to an average of 1,800 connections. The monthly water use for July 1, 2017, through June 30, 2018, is shown in Table 5. The commercial usage represents four 6" meters serving 80 apartments.

TABLE 5: CUSTOMER WATER DEMANDS

Residential					Commercial					Total Combined				
		KCWD Usage 7/1/2017-6/30/2018					KCWD Usage 7/1/2017-6/30/2018					KCWD Usage 7/1/2017-6/30/2018		
Month	No of Connections	Total Metered Usage CF	Monthly % of Average Usage	Average Monthly Usage Per Connection	Month	No of Connections	Total Metered Usage CF	Monthly % of Average Usage	Average Monthly Usage Per Connection	Month	No of Connections	Total Metered Usage CF	Monthly % of Average Usage	Average Monthly Usage Per Connection
July	853	1,711,328	11.32%	2,006.2	July					July	853	1,711,328	10.65%	2,006
Aug	960	1,849,415	12.23%	1,926.5	Aug	80	201,818	21.12%	2,523	Aug	1040	2,051,233	12.76%	1,972
Sept	853	1,860,187	12.30%	2,180.8	Sept					Sept	853	1,860,187	11.57%	2,181
Oct	957	1,561,879	10.33%	1,632.1	Oct	80	156,595	16.39%	1,957	Oct	1037	1,718,474	10.69%	1,657
Nov	851	1,228,759	8.13%	1,443.9	Nov					Nov	851	1,228,759	7.64%	1,444
Dec	944	1,028,866	6.80%	1,089.9	Dec	80	157,531	16.49%	1,969	Dec	1024	1,186,397	7.38%	1,159
Jan	845	889,240	5.88%	1,052.4	Jan					Jan	845	889,240	5.53%	1,052
Feb	948	860,054	5.69%	907.2	Feb	80	150,753	15.78%	1,884	Feb	1028	1,010,807	6.29%	983
Mar	847	822,424	5.44%	971.0	Mar					Mar	847	822,424	5.12%	971
April	953	981,053	6.49%	1,029.4	April	80	135,672	14.20%	1,696	April	1033	1,116,725	6.95%	1,081
May	842	1,003,452	6.64%	1,191.7	May					May	842	1,003,452	6.24%	1,192
June	952	1,323,479	8.75%	1,390.2	June	80	153,217	16.03%	1,915	June	1032	1,476,696	9.19%	1,431
Total		15,120,136	100.00%	1,401.8	Total		955,586	100.00%	1,991	Total		16,075,722	100.00%	1,427

Water Rate Analysis

The next step in the rate analysis was to calculate the minimum base rate and variable usage rate required to generate the required revenue for current annual operations and maintenance. Because KCWD assesses a commodity charge for all water usage it is able to maintain a base rate that is relatively low. Table 6 compares current rates to projected costs, including annual reserve funding and debt repayment for the period of February 1 through January 31 for years ended 2020 through 2024. Even with late fees and standby fees as well as non-operating revenue taken into consideration, the shortfall is alarming.

TABLE 6: CURRENT RATES AGAINST PROJECTED COSTS

Current Rates against Projected Costs	# Connections	Monthly Rate	Average Monthly Revenue	Average Annual Revenue	
5/8" meter	1,788	$ 30.00	$ 53,640.00	$ 643,680	
3/4" Meter	2	$ 45.00	$ 90.00	$ 1,080	
1" Meter	2	$ 75.00	$ 150.00	$ 1,800	
6" Meter	4	$ 240.00	$ 960.00	$ 11,520	
Total Base Revenue	**1,796**		**54,840**	**$ 658,080**	
Commodity Charge		**Rate Per CF**	**Average Annual Usage**		
Tier1		0.03	14,994,133	$ 449,824	
Tier 2		0.05	1,081,619	$ 54,081	
Total Commodity Charges			16,075,752	**$ 503,905**	

Budget Assuming 3% Inflation per year	**1/31/2020**	**1/31/2021**	**1/31/2022**	**1/31/2023**	**1/31/2024**
Total Monthly Required Reserves Fund	$ 31,287	$ 31,287	$ 31,287	$ 31,287	$ 31,287
Total yearly required reserve fund	$ 375,445	$ 375,445	$ 375,445	$ 375,445	$ 375,445
Debt Service	$ 122,070	$ 122,070	$ 224,364	$ 181,395	$ 124,000
Fixed Budget	$ 1,056,677	$ 1,088,378	$ 1,121,029	$ 1,154,660	$ 1,189,300
Variable Budget	$ 234,678	$ 241,718	$ 248,970	$ 256,439	$ 264,132
Total Operating Budget	**$ 1,788,870**	**$ 1,827,611**	**$ 1,969,808**	**$ 1,967,939**	**$ 1,952,877**
	1/31/2020	**1/31/2021**	**1/31/2022**	**1/31/2023**	**1/31/2024**
Estimated Annual Revenue FromBase Rate	$ 658,080	$ 658,080	$ 658,080	$ 658,080	$ 658,080
Estimated Annual Revenue - Usage Charges	$ 503,905	$ 503,905	$ 503,905	$ 503,905	$ 503,905
Estimated Revenue - Late Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Estimated Revenue - Stand By Fees	$ 34,300	$ 34,300	$ 34,300	$ 34,300	$ 34,300
Total Operating Revenue	$ 1,246,285	$ 1,246,285	$ 1,246,285	$ 1,246,285	$ 1,246,285
Net Operating Revenue/(Loss)	$ (542,585)	$ (581,326)	$ (723,524)	$ (721,654)	$ (706,592)
Non-Operating Revenue:					
Property Tax	$ 40,732	$ 40,732	$ 40,732	$ 40,732	$ 40,732
Antenna Income	$ 36,000	$ 37,080	$ 38,192	$ 39,338	$ 40,518
Total Non-Operating Revenue	$ 76,732	$ 77,812	$ 78,924	$ 80,070	$ 81,250
Net Revenue Over/(under) Costs	$ (465,853)	$ (503,514)	$ (644,599)	$ (641,584)	$ (625,342)

TABLE 7: AFFORDABILITY INDEX – CURRENT RATE

KCWD Current Rate Affordability Index (5/8" Meter)									
Percent of Customers		**39.62%**	**40.66%**	**13.39%**	**3.88%**	**2.46%**	**100.00%**		
FYE	**Monthly Base Fee**	**Usage Fee Assuming 500 CFs**	**Usage Fee Assuming 1,000 CFs Monthly**	**Usage Fee Assuming 1,500 CFs Monthly**	**Usage Fee Assuming 2,000 CFs Monthly**	**Usage over 2,000 CFs Monthly Bill will Vary According to Usage**	**Total Monthly Bill**	**MHI**	**Affordabilty Index**
2019	$ 30.00	$ 15.00					$ 45.00	$27,034.00	2.00%
2019	$ 30.00	$ 15.00	$ 15.00				$ 60.00	$27,034.00	2.66%
2019	$ 30.00	$ 15.00	$ 15.00	$ 15.00			$ 75.00	$27,034.00	3.33%
2019	$ 30.00	$ 15.00	$ 15.00	$ 15.00	$ 15.00		$ 90.00	$27,034.00	3.99%

Rate Adjustment Option #1

Rate adjustment option #1 assumes reserve accounts will be funded at recommended levels. At the end of the five year period, the CIP reserve account would have a balance in the amount of $1,727,226, assuming it is not necessary to use these funds for the designated purposes. This option would require an increase of 50.6% to the base rate in the first year and annual increases of 5% in subsequent years. The commodity charge would be increased from $0.03 to $0.04 per cubic foot.

TABLE 8: OPTION #1 RATE ADJUSTMENT

Rate Adjustment Option #1 - Fully Fund Reserves	# Connections	Current Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Revenue
			50.60%			
5/8" meter	1,788	$ 30.00	$ 15.18	$ 45.18	$ 80,781.84	$ 969,382.08
3/4" Meter	2	$ 45.00	$ 22.77	$ 67.77	$ 135.54	$ 1,626.48
1" Meter	2	$ 75.00	$ 37.95	$ 112.95	$ 225.90	$ 2,710.80
6" Meter	4	$ 240.00	$ 121.44	$ 361.44	$ 1,445.76	$ 17,349.12
Total Base Fee Revenue	1,796				82,589	991,068
Commodity Charge		Rate Per CF	Adjustment	Adjusted Rate	Average Annual Usage	nnual Usage Revenue
Usage Rate		0.03	0.01	0.040	16,075,752	$ 643,030.08
Total Commodity Charges					16,075,752	$ 643,030.08
Budget Assuming 3% Inflation per year	1/31/2020	1/31/2021	1/31/2022	1/31/2023	1/31/2024	
Total Monthly Required Reserves Fund	$ 31,809	$ 31,809	$ 31,809	$ 31,809	$ 31,809	5 Year Total
Total yearly required reserve fund	$ 381,705	$ 393,598	$ 304,544	$ 362,192	$ 435,186	$ 1,877,226
Debt Service	$ 122,070	$ 122,070	$ 224,364	$ 181,395	$ 124,000	$ 773,898
Fixed Budget	$ 1,056,677	$ 1,088,378	$ 1,121,029	$ 1,154,660	$ 1,189,300	$ 5,610,043
Variable Budget	$ 234,678	$ 241,718	$ 248,970	$ 256,439	$ 264,132	$ 1,245,938
Total Operating Budget	$ 1,795,130	$ 1,845,764	$ 1,898,907	$ 1,954,686	$ 2,012,618	$ 9,507,105
	1/31/2020	1/31/2021	1/31/2022	1/31/2023	1/31/2024	
Estimated Annual Revenue FromBase Rate	$ 991,068	$ 1,040,622	$ 1,092,653	$ 1,147,286	$ 1,204,650	
Estimated Annual Revenue - Usage Charges	$ 643,030	$ 643,030	$ 643,030	$ 643,030	$ 643,030	
Estimated Revenue - Late Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	
Estimated Revenue - Stand By Fees	$ 34,300	$ 34,300	$ 34,300	$ 34,300	$ 34,300	
Total Operating Revenue	$ 1,718,399	$ 1,767,952	$ 1,819,983	$ 1,874,616	$ 1,931,980	
Net Operating Revenue/(Loss)	$ (76,732)	$ (77,812)	$ (78,924)	$ (80,070)	$ (80,638)	
Non-Operating Revenue:						
Property Tax	$ 40,732	$ 40,732	$ 40,732	$ 40,732	$ 40,732	
Antenna Income	$ 36,000	$ 37,080	$ 38,192	$ 39,338	$ 40,518	
Total Non-Operating Revenue	$ 76,732	$ 77,812	$ 78,924	$ 80,070	$ 81,250	
Net Revenue Over/(under) Costs	$ 0	$ 0	$ 0	$ (0)	$ 612	

TABLE 9: OPTION #1 AFFORDABILITY INDEX

KCWD Rate Adjustment Option #1 Affordability Index (5/8" Meter) Year 1									
Percent of Customers		39.62%	40.66%	13.39%	3.88%	2.46%	100.00%		
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2019	$ 45.18	$ 20.00					$ 65.18	$27,034.00	2.89%
2019	$ 45.18	$ 20.00	$ 20.00				$ 85.18	$27,034.00	3.78%
2019	$ 45.18	$ 20.00	$ 20.00	$ 20.00			$ 105.18	$27,034.00	4.67%
2019	$ 45.18	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 125.18	$27,034.00	5.56%
Year 2									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2020	$ 47.44	$ 20.00					$ 67.44	$27,034.00	2.99%
2020	$ 47.44	$ 20.00	$ 20.00				$ 87.44	$27,034.00	3.88%
2020	$ 47.44	$ 20.00	$ 20.00	$ 20.00			$ 107.44	$27,034.00	4.77%
2020	$ 47.44	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 127.44	$27,034.00	5.66%
Year 3									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2021	$ 49.81	$ 20.00					$ 69.81	$27,034.00	3.10%
2021	$ 49.81	$ 20.00	$ 20.00				$ 89.81	$27,034.00	3.99%
2021	$ 49.81	$ 20.00	$ 20.00	$ 20.00			$ 109.81	$27,034.00	4.87%
2021	$ 49.81	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 129.81	$27,034.00	5.76%
Year 4									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2022	$ 52.30	$ 20.00					$ 72.30	$27,034.00	3.21%
2022	$ 52.30	$ 20.00	$ 20.00				$ 92.30	$27,034.00	4.10%
2022	$ 52.30	$ 20.00	$ 20.00	$ 20.00			$ 112.30	$27,034.00	4.98%
2022	$ 52.30	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 132.30	$27,034.00	5.87%
Year 5									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2023	$ 54.92	$ 20.00					$ 74.92	$27,034.00	3.33%
2023	$ 54.92	$ 20.00	$ 20.00				$ 94.92	$27,034.00	4.21%
2023	$ 54.92	$ 20.00	$ 20.00	$ 20.00			$ 114.92	$27,034.00	5.10%
2023	$ 54.92	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 134.92	$27,034.00	5.99%

TABLE 10: OPTION #1 FIVE YEAR RATE SCHEDULE

Meter Sze	Base Rate Schedule Option #1					
	Year 1	Year 2	Year 3	Year 4	Year 5	
5/8" meter	$ 45.18	$ 47.44	$ 49.81	$ 52.30	$ 54.92	Reserves Funded by Year #5 = $1,877,226
3/4" Meter	$ 67.77	$ 71.16	$ 74.72	$ 78.45	$ 82.37	
3/4" Meter	$ 112.95	$ 118.60	$ 124.53	$ 130.75	$ 137.29	
6" Meter	$ 361.44	$ 379.51	$ 398.49	$ 418.41	$ 439.33	

Rate Adjustment Option #2

In an effort to ease the burden on the ratepayers, KCWD requested an analysis assuming decreased reserve funding. Rate Adjustment Option #2 provides reserve funding in the amount of $1,000,000 over the five year period. To achieve this, a 29.05% increase to the base rate is necessary as well as increasing the usage rate from $0.03 to $0.04 per cf. An annual base rate increase of 4% will be necessary.

TABLE 11: OPTION #2 RATE ADJUSTMENT

Rate Adjustment Option #2	# Connections	Current Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Revenue
			29.05%			
5/8" meter	1,788	$ 30.00	$ 8.72	$ 38.72	$ 69,222.42	$ 830,669.04
3/4" Meter	2	$ 45.00	$ 13.07	$ 58.07	$ 116.15	$ 1,393.74
1" Meter	2	$ 75.00	$ 21.79	$ 96.79	$ 193.58	$ 2,322.90
6" Meter	4	$ 240.00	$ 69.72	$ 309.72	$ 1,238.88	$ 14,866.56
Total Base Fee Revenue	**1,796**				**70,771**	**849,252**
Commodity Charge		**Rate Per CF**	**Adjustment**	**Adjusted Rate**	**Average Annual Usage**	**Average Annual Usage Revenue**
Usage Rate		0.03	0.01	0.04000	16,075,752	$ 643,030.08
Total Commodity Charges					**16,075,752**	**$ 643,030.08**
Budget Assuming 3% Inflation per year	**1/31/2020**	**1/31/2021**	**1/31/2022**	**1/31/2023**	**1/31/2024**	**5-year total**
Total Monthly Required Reserves Fund	$ 19,991	$ 19,991	$ 19,991	$ 19,991	$ 19,991	**5 Year Total**
Total yearly required reserve fund	$ 239,889	$ 236,199	$ 130,442	$ 170,200	$ 223,270	$ 1,000,000
Debt Service	$ 122,070	$ 122,070	$ 224,364	$ 181,395	$ 124,000	$ 773,898
Fixed Budget	$ 1,056,677	$ 1,088,378	$ 1,121,029	$ 1,154,660	$ 1,189,300	$ 5,610,043
Variable Budget	$ 234,678	$ 241,718	$ 248,970	$ 256,439	$ 264,132	$ 1,245,938
Total Operating Budget	**$ 1,653,314**	**$ 1,688,365**	**$ 1,724,805**	**$ 1,762,694**	**$ 1,800,702**	**$ 8,629,880**
	1/31/2020	**1/31/2021 4% Base Rate Increase over Previous Year**	**1/31/2022 4% Base Rate Increase over Previous Year**	**1/31/2023 4% Base Rate Increase over Previous Year**	**1/31/2024 4% Base Rate Increase over Previous Year**	
Estimated Annual Revenue FromBase Rate	$ 849,252	$ 883,222	$ 918,551	$ 955,293	$ 993,505	
Estimated Annual Revenue - Usage Charges	$ 643,030	$ 643,030	$ 643,030	$ 643,030	$ 643,030	
Estimated Revenue - Late Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	
Estimated Revenue - Stand By Fees	$ 34,300	$ 34,300	$ 34,300	$ 34,300	$ 34,300	
Total Operating Revenue	$ 1,576,582	$ 1,610,552	$ 1,645,881	$ 1,682,623	$ 1,720,835	
Net Operating Revenue/(Loss)	$ (76,732)	$ (77,812)	$ (78,924)	$ (80,070)	$ (79,867)	
Non-Operating Revenue:						
Property Tax	$ 40,732	$ 40,732	$ 40,732	$ 40,732	$ 40,732	
Antenna Income	$ 36,000	$ 37,080	$ 38,192	$ 39,338	$ 40,518	
Total Non-Operating Revenue	$ 76,732	$ 77,812	$ 78,924	$ 80,070	$ 81,250	
Net Revenue Over/(under) Costs	$ 0	$ (0)	$ 0	$ (0)	$ 1,383	

TABLE 12: OPTION #2 AFFORDABILITY INDEX

KCWD Rate Adjustment Option #2 Affordability Index (5/8" Meter)									
Percent of Customers		39.62%	40.66%	13.39%	3.88%	2.46%	100.00%		
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2019	$ 38.72	$ 20.00					$ 58.72	$27,034.00	2.61%
2019	$ 38.72	$ 20.00	$ 20.00				$ 78.72	$27,034.00	3.49%
2019	$ 38.72	$ 20.00	$ 20.00	$ 20.00			$ 98.72	$27,034.00	4.38%
2019	$ 38.72	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 118.72	$27,034.00	5.27%
Year 2									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2020	$ 40.26	$ 20.00					$ 60.26	$27,034.00	2.68%
2020	$ 40.26	$ 20.00	$ 20.00				$ 80.26	$27,034.00	3.56%
2020	$ 40.26	$ 20.00	$ 20.00	$ 20.00			$ 100.26	$27,034.00	4.45%
2020	$ 40.26	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 120.26	$27,034.00	5.34%
Year 3									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2021	$ 41.87	$ 20.00					$ 61.87	$27,034.00	2.75%
2021	$ 41.87	$ 20.00	$ 20.00				$ 81.87	$27,034.00	3.63%
2021	$ 41.87	$ 20.00	$ 20.00	$ 20.00			$ 101.87	$27,034.00	4.52%
2021	$ 41.87	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 121.87	$27,034.00	5.41%
Year 4									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2022	$ 43.55	$ 20.00					$ 63.55	$27,034.00	2.82%
2022	$ 43.55	$ 20.00	$ 20.00				$ 83.55	$27,034.00	3.71%
2022	$ 43.55	$ 20.00	$ 20.00	$ 20.00			$ 103.55	$27,034.00	4.60%
2022	$ 43.55	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 123.55	$27,034.00	5.48%
Year 5									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2023	$ 45.29	$ 20.00					$ 65.29	$27,034.00	2.90%
2023	$ 45.29	$ 20.00	$ 20.00				$ 85.29	$27,034.00	3.79%
2023	$ 45.29	$ 20.00	$ 20.00	$ 20.00			$ 105.29	$27,034.00	4.67%
2023	$ 45.29	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 125.29	$27,034.00	5.56%

TABLE 13: OPTION #2 FIVE YEAR RATE SCHEDULE

Meter Sze	Base Rate Schedule Option #2					
	Year 1	Year 2	Year 3	Year 4	Year 5	
5/8" meter	$ 38.72	$ 40.26	$ 41.87	$ 43.55	$ 45.29	Reserves Funded by Year #5 = $1,000,000
3/4" Meter	$ 58.07	$ 60.40	$ 62.81	$ 65.32	$ 67.94	
1" Meter	$ 96.79	$ 100.66	$ 104.69	$ 108.87	$ 113.23	
6" Meter	$ 309.72	$ 322.11	$ 334.99	$ 348.39	$ 362.33	

Rate Adjustment Option #3

In Option #3 the reserves are reduced the bare-bones amount of $500,000 over the five year period. To achieve this, the base rate would be increased by 15% in the first year with subsequent 4% annual increases. The usage charges would be increased from $0.03 to $0.04 per cubic foot.

TABLE 14: OPTION #3 RATE ADJUSTMENT

Rate Adjustment Option #3	# Connections	Current Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Revenue
			15.00%			
5/8" meter	1,788	$ 30.00	$ 4.50	$ 34.50	$ 61,686	$ 740,232
3/4" Meter	2	$ 45.00	$ 6.75	$ 51.75	$ 104	$ 1,242
1" Meter	2	$ 75.00	$ 11.25	$ 86.25	$ 173	$ 2,070
6" Meter	4	$ 240.00	$ 36.00	$ 276.00	$ 1,104	$ 13,248
Total Base Fee Revenue	**1,796**				**$ 63,066**	**$ 756,792**
Commodity Charge		**Rate Per CF**	**Adjustment**	**Adjusted Rate**	**Average Annual Usage**	
Usage Rate		0.03	0.01	0.040	16,075,752	$ 643,030.08
Total Commodity Charges					**16,075,752**	**$ 643,030.08**
Budget Assuming 3% Inflation per year	**1/31/2020**	**1/31/2021**	**1/31/2022**	**1/31/2023**	**1/31/2024**	
Total Monthly Required Reserves Fund	$ 12,286	$ 12,286	$ 12,286	$ 12,286	$ 12,286	**5 Year Total**
Total yearly required reserve fund	$ 147,429	$ 140,040	$ 30,437	$ 66,195	$ 115,899	$ 500,000
Debt Service	$ 122,070	$ 122,070	$ 224,364	$ 181,395	$ 124,000	$ 773,898
Fixed Budget	$ 1,056,677	$ 1,088,378	$ 1,121,029	$ 1,154,660	$ 1,189,300	$ 5,610,043
Variable Budget	$ 234,678	$ 241,718	$ 248,970	$ 256,439	$ 264,132	$ 1,245,938
Total Operating Budget	**$ 1,560,854**	**$ 1,592,206**	**$ 1,624,800**	**$ 1,658,689**	**$ 1,693,331**	**$ 8,129,880**
	1/31/2020	**1/31/2021 4% Base Rate Increase over Previous Year**	**1/31/2022 4% Base Rate Increase over Previous Year**	**1/31/2023 4% Base Rate Increase over Previous Year**	**1/31/2024 4% Base Rate Increase over Previous Year**	
Estimated Annual Revenue FromBase Rate	$ 756,792	$ 787,064	$ 818,546	$ 851,288	$ 885,340	
Estimated Annual Revenue - Usage Charges	$ 643,030	$ 643,030	$ 643,030	$ 643,030	$ 643,030	
Estimated Revenue - Late Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	
Estimated Revenue - Stand By Fees	$ 34,300	$ 34,300	$ 34,300	$ 34,300	$ 34,300	
Total Operating Revenue	$ 1,484,122	$ 1,514,394	$ 1,545,876	$ 1,578,618	$ 1,612,670	
Net Operating Revenue/(Loss)	$ (76,732)	$ (77,812)	$ (78,924)	$ (80,071)	$ (80,661)	
Non-Operating Revenue:						
Property Tax	$ 40,732	$ 40,732	$ 40,732	$ 40,732	$ 40,732	
Antenna Income	$ 36,000	$ 37,080	$ 38,192	$ 39,338	$ 40,518	
Total Non-Operating Revenue	$ 76,732	$ 77,812	$ 78,924	$ 80,070	$ 81,250	
Net Revenue Over/(under) Costs	**$ 0**	**$ 0**	**$ 0**	**$ (0)**	**$ 589**	

TABLE 15: OPTION #3 AFFORDABILITY INDEX

KCWD Rate Adjustment Option #3 Affordability Index (5/8" Meter) Year 1									
Percent of Customers		39.62%	40.66%	13.39%	3.88%	2.46%	100.00%		
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2019	$ 34.50	$ 20.00					$ 54.50	$27,034.00	2.42%
2019	$ 34.50	$ 20.00	$ 20.00				$ 74.50	$27,034.00	3.31%
2019	$ 34.50	$ 20.00	$ 20.00	$ 20.00			$ 94.50	$27,034.00	4.19%
2019	$ 34.50	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 114.50	$27,034.00	5.08%
Year 2									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2020	$ 35.88	$ 20.00					$ 55.88	$27,034.00	2.48%
2020	$ 35.88	$ 20.00	$ 20.00				$ 75.88	$27,034.00	3.37%
2020	$ 35.88	$ 20.00	$ 20.00	$ 20.00			$ 95.88	$27,034.00	4.26%
2020	$ 35.88	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 115.88	$27,034.00	5.14%
Year 3									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2021	$ 37.32	$ 20.00					$ 57.32	$27,034.00	2.54%
2021	$ 37.32	$ 20.00	$ 20.00				$ 77.32	$27,034.00	3.43%
2021	$ 37.32	$ 20.00	$ 20.00	$ 20.00			$ 97.32	$27,034.00	4.32%
2021	$ 37.32	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 117.32	$27,034.00	5.21%
Year 4									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2022	$ 38.81	$ 20.00					$ 58.81	$27,034.00	2.61%
2022	$ 38.81	$ 20.00	$ 20.00				$ 78.81	$27,034.00	3.50%
2022	$ 38.81	$ 20.00	$ 20.00	$ 20.00			$ 98.81	$27,034.00	4.39%
2022	$ 38.81	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 118.81	$27,034.00	5.27%
Year 5									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2023	$ 40.36	$ 20.00					$ 60.36	$27,034.00	2.68%
2023	$ 40.36	$ 20.00	$ 20.00				$ 80.36	$27,034.00	3.57%
2023	$ 40.36	$ 20.00	$ 20.00	$ 20.00			$ 100.36	$27,034.00	4.45%
2023	$ 40.36	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 120.36	$27,034.00	5.34%

TABLE 16: OPTION #3 FIVE YEAR RATE SCHEDULE

Meter Sze	Base Rate Schedule Option #3					
	Year 1	Year 2	Year 3	Year 4	Year 5	
5/8" meter	$ 34.50	$ 35.88	$ 37.32	$ 38.81	$ 40.36	Reserves Funded by Year #5 = $500,000
3/4" Meter	$ 51.75	$ 53.82	$ 55.97	$ 58.21	$ 60.54	
1" Meter	$ 86.25	$ 89.70	$ 93.29	$ 97.02	$ 100.90	
6" Meter	$ 276.00	$ 287.04	$ 298.52	$ 310.46	$ 322.88	

Rate Adjustment Option #4

An additional Option #4 was calculated using equivalent dwelling units (EDUs) based on meter sizes. In this option residential 5/8" meters were considered one equivalent dwelling unit (EDU). All meters were given an EDU equivalency based on the meter size. The number of EDUs each meter was allotted was based on AWWA maximum flow limit using data from badermete.com (Kent/ABB/AMCO and sensus.com). Because the 6" meters had a history of much less usage that the AWWA schedule below indicates, 10 EDUs were assigned to them. KCWD's current rate schedule charges the 6" meters the equivalent of 8 EDUs. To cover all the costs and fund a total of $500,000 in reserves over the 5 year period would require a 14.5% increase to 5/8", 3/4" and 1" meters and a $103.50 (43%) monthly increase the 6" meters base rate. The usage charges would be increased from $0.03 to $0.04 per cf. Annual 4% increases to the base rates would also be necessary.

TABLE 17: EQUIVALENT DWELLING UNITS BASED ON METER SIZE

EDU's Based on Size of Water Meter Per AWWA		
Meter Size	**Max Flow Limit**	**# EDUs**
5/8"	20 GPM	1.0 EDU
3/4"	30 GPM	1.5 EDU
1"	50 GPM	2.5 EDU
1-1/2"	100 GPM	5.0 EDU
2"	160 GPM	8.0 EDU
3"	350 GPM	17.5 EDU
4"	1000 GPM	50.0 EDU
6"	2000 GPM	100.0 EDU
8"	3500 GPM	175.0 EDU
10"	5500 GPM	275.0 EDU
Meter information based upon AWWA Max. Flow Limit using data from badgermete.com (Kent/ABB/AMCO) and sensus.com		

TABLE 18: OPTION #4 RATE ADJUSTMENT

Rate Adjustment Option #4	# Connections	EDU's Per Connection	Cost Per EDU	Average Monthly Revenue	Average Annual Revenue	
5/8" meter	1,788	1.0	$ 34.35	$ 61,418	$ 737,014	
3/4" Meter	2	1.5	$ 34.35	$ 103	$ 1,237	
1" Meter	2	2.5	$ 34.35	$ 172	$ 2,061	
6" Meter	4	10.0	$ 34.35	$ 1,374	$ 16,488	
Total Base Fee Revenue	**1,796**			**$ 63,067**	**$ 756,799**	
Commodity Charge		**Rate Per CF**	**Adjustment**	**Adjusted Rate**	**Average Annual Usage**	**Average Annual Revenue**
Usage Rate		0.03	0.01	0.040	16,075,752	$ 643,030.08
Total Commodity Charges					**16,075,752**	**$ 643,030.08**
Budget Assuming 3% Inflation per year	**1/31/2020**	**1/31/2021**	**1/31/2022**	**1/31/2023**	**1/31/2024**	
Total Monthly Required Reserves Fund	$ 12,286	$ 12,286	$ 12,286	$ 12,286	$ 12,286	**5 Year Total**
Total yearly required reserve fund	$ 147,436	$ 140,048	$ 30,445	$ 66,203	$ 115,868	$ 500,000
Debt Service	$ 122,070	$ 122,070	$ 224,364	$ 181,395	$ 124,000	$ 773,898
Fixed Budget	$ 1,056,677	$ 1,088,378	$ 1,121,029	$ 1,154,660	$ 1,189,300	$ 5,610,043
Variable Budget	$ 234,678	$ 241,718	$ 248,970	$ 256,439	$ 264,132	$ 1,245,938
Total Operating Budget	**$ 1,560,861**	**$ 1,592,214**	**$ 1,624,808**	**$ 1,658,697**	**$ 1,693,300**	**$ 8,129,880**
	1/31/2020	**1/31/2021 4% Base Rate Increase over Previous Year**	**1/31/2022 4% Base Rate Increase over Previous Year**	**1/31/2023 4% Base Rate Increase over Previous Year**	**1/31/2024 4% Base Rate Increase over Previous Year**	
Estimated Annual Revenue FromBase Rate	$ 756,799	$ 787,071	$ 818,554	$ 851,296	$ 885,348	
Estimated Annual Revenue - Usage Charges	$ 643,030	$ 643,030	$ 643,030	$ 643,030	$ 643,030	
Estimated Revenue - Late Fees	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	
Estimated Revenue - Stand By Fees	$ 34,300	$ 34,300	$ 34,300	$ 34,300	$ 34,300	
Total Operating Revenue	$ 1,484,129	$ 1,514,401	$ 1,545,884	$ 1,578,626	$ 1,612,678	
Net Operating Revenue/(Loss)	$ (76,732)	$ (77,812)	$ (78,924)	$ (80,071)	$ (80,622)	
Non-Operating Revenue:						
Property Tax	$ 40,732	$ 40,732	$ 40,732	$ 40,732	$ 40,732	
Antenna Income	$ 36,000	$ 37,080	$ 38,192	$ 39,338	$ 40,518	
Total Non-Operating Revenue	$ 76,732	$ 77,812	$ 78,924	$ 80,070	$ 81,250	
Net Revenue Over/(under) Costs	**$ 0**	**$ (0)**	**$ 0**	**$ (0)**	**$ 628**	

TABLE 19: OPTION #4 AFFORDABILITY INDEX

KCWD Rate Adjustment Option #4 Affordability Index (5/8" Meter) Year 1									
Percent of Customers		39.62%	40.66%	13.39%	3.88%	2.46%	100.00%		
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2019	$ 34.35	$ 20.00					$ 54.35	$27,034.00	2.41%
2019	$ 34.35	$ 20.00	$ 20.00				$ 74.35	$27,034.00	3.30%
2019	$ 34.35	$ 20.00	$ 20.00	$ 20.00			$ 94.35	$27,034.00	4.19%
2019	$ 34.35	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 114.35	$27,034.00	5.08%
Year 2									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2020	$ 35.72	$ 20.00					$ 55.72	$27,034.00	2.47%
2020	$ 35.72	$ 20.00	$ 20.00				$ 75.72	$27,034.00	3.36%
2020	$ 35.72	$ 20.00	$ 20.00	$ 20.00			$ 95.72	$27,034.00	4.25%
2020	$ 35.72	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 115.72	$27,034.00	5.14%
Year 3									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2021	$ 37.15	$ 20.00					$ 57.15	$27,034.00	2.54%
2021	$ 37.15	$ 20.00	$ 20.00				$ 77.15	$27,034.00	3.42%
2021	$ 37.15	$ 20.00	$ 20.00	$ 20.00			$ 97.15	$27,034.00	4.31%
2021	$ 37.15	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 117.15	$27,034.00	5.20%
Year 4									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2022	$ 38.64	$ 20.00					$ 58.64	$27,034.00	2.60%
2022	$ 38.64	$ 20.00	$ 20.00				$ 78.64	$27,034.00	3.49%
2022	$ 38.64	$ 20.00	$ 20.00	$ 20.00			$ 98.64	$27,034.00	4.38%
2022	$ 38.64	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 118.64	$27,034.00	5.27%
Year 5									
FYE	Monthly Base Fee	Usage Fee Assuming 500 CFs	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage over 2,000 CFs Monthly Bill will Vary According to Usage	Total Monthly Bill	MHI	Affordabilty Index
2023	$ 40.18	$ 20.00					$ 60.18	$27,034.00	2.67%
2023	$ 40.18	$ 20.00	$ 20.00				$ 80.18	$27,034.00	3.56%
2023	$ 40.18	$ 20.00	$ 20.00	$ 20.00			$ 100.18	$27,034.00	4.45%
2023	$ 40.18	$ 20.00	$ 20.00	$ 20.00	$ 20.00		$ 120.18	$27,034.00	5.33%

TABLE 20: OPTION #4 FIVE YEAR BASE RATE SCHEDULE

Meter Sze Rates Based on EDUs	Base Rate Schedule Option #4					Reserves Funded by Year #5 = $500,000
	Year 1	Year 2	Year 3	Year 4	Year 5	
5/8" meter (1 EDU)	$ 34.35	$ 35.72	$ 37.15	$ 38.64	$ 40.18	
3/4" Meter (1.5 EDU)	$ 51.53	$ 53.59	$ 55.73	$ 57.96	$ 60.28	
1" Meter (2.5 EDU)	$ 85.88	$ 89.31	$ 92.88	$ 96.60	$ 100.46	
3" Meter (10 EDU)	$ 343.50	$ 357.24	$ 371.53	$ 386.39	$ 401.85	

CONCLUSIONS AND RECOMMENDATIONS

Key points to remember with any rate adjustment:

- Successful utilities are those that strive to be transparent. In day-to-day operations, the managing entity should strive to promote its services (highlights and the low points), and continuously educate residents on why it is necessary to raise and adjust rates.
- The ability of the recommended rate structure to generate adequate revenue will depend on maintaining a vigorous collection policy to keep delinquent accounts at a minimum.
- In order to achieve and maintain long-term viability, the water systems' rates should be reviewed annually, or no less than a minimum of every two years
- The KCWD Board of Directors should determine which of the options in this document is most suitable for the water enterprise and for the community.
- Rates should be raised as soon as possible to provide sufficient revenues for funding future operations and to adequately fund reserves.
- When an adjusted rate structure has been selected, the Proposition 218 process should begin as soon as possible.
- Policies for reserve accounts as recommended above should be established.
- While it is not necessary to hold each reserve fund in a separate bank account, they should be specifically designated as reserve funds on the financial statements.
- CIP reserves will be the longest held and the largest reserve account and, assuming interest earned would be greater than the costs of maintaining a separate bank account, should be moved to and maintained in the highest interest-bearing accounts available to offset inflation.

PROPOSITION 218

California approved Proposition 218 in 1996 requiring agencies to adopt property fees and charges in accordance with a defined public process found in article XIII D or by associated court decision. Water and water rates are user fees under the definition and must meet the following requirements:

- Revenues derived from the fee or charge must not exceed the funds required to provide the property-related service.
- Revenue from the fee or charge must not be used for any purpose other than that for which the fee or charge is imposed.
- No fee or charge may be imposed for general governmental services, such as police, fire, ambulance, or libraries, where the service is available to the public in substantially the same manner as it is to property owners.
- The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership must not exceed the proportional cost of the service attributable to the parcel.
- The fee or charge may not be imposed for service, unless the service is actually used by, or immediately available to, the owner of the property in question.

Written notice should be given to both the record owners and customers within the area subject to the fee or charge. The notice shall include the following:

- The formula or schedule of charges by which the property owner or customer can easily calculate their own potential charge.
- The basis upon which the amount of the proposed fee or charge is to be imposed on each parcel. An explanation of the costs which the proposed fee will cover and how the costs are allocated among property owners.
- Date, time and location of a public hearing on the rate adjustment. The public hearing must occur 45 or more days after the mailing of the notice.

California's Proposition 218 provides that a customer of the District or owner of record of a parcel or parcels subject to the proposed rate increases may submit a protest against any or all of the proposed rate increases by filing a written protest with the District at or before the time the public hearing has concluded. Only one protest per parcel is counted. If written protests are filed by a majority of the affected parcels, the proposed rate increases will not be imposed.