

# Buckingham Park Water District Water System Financial Analysis



**RCAC**

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**April, 2019**

RCAC is an equal opportunity provider and employer.



April 5, 2019

Ahimsah Wonderwheel, General Manager  
Buckingham Park Water District  
2880 Eastlake Drive  
Kelseyville, CA 95451

Subject: Buckingham Park Water District Water Rate Study

Dear Ahimsah:

Enclosed please find the printed final report of the Buckingham Park Water District water rate analysis.

If you have any additional questions, feel free to contact me at (442) 257-0030 or Mary Fleming at (916) 549-6338.

Sincerely,

Jennifer Hazard  
Regional Manager  
Community & Environmental Services

Enclosure: Buckingham Park Water District Rate Study

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## Purpose and Objective

The Buckingham Park Water District (BPWD) was established in 1978 as a California Water District to provide clean, safe drinking water to the 449 residents and six commercial connections in the district. BPWD is located in Lake County and is governed by a Board of Directors elected by the district.

BPWD requested that Rural Community Assistance Corporation (RCAC) provide technical assistance to help it build adequate financial sustainability in terms of adequate operating and reserve funds. A financial analysis, including a review of user rates, operating costs and reserve funding was conducted. This document contains recommendations based on a comparison of projected costs to projected rate revenue.

An accurate and useful financial analysis not only identifies the total annual revenue a utility requires 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 objective of 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.

### *DISCLAIMER*

*The recommendations contained in this financial analysis are based on financial information provided to RCAC by BPWD. 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

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 income sources of 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, meter deposits, 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 BPWD anticipates nominal growth, only revenues from water service have been taken into consideration in this analysis.

## Operating Expenses

This is the first cost category that is considered when developing a financial plan. Operating and maintenance costs include the day-to-day expenses of providing drinking water to customers. 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 five areas: operating reserve, capital improvement, emergency, short-lived asset 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 during a period of five to 10 years. BPWD had two outstanding debts at the time of this analysis, both were incurred for infrastructure improvements. In March 2015, a zero percent loan was issued from the State of California Revolving Fund (SRFCA) in the amount of \$198,000 to supplement a state grant for a 2014 water plant upgrade. The upgrade project included temporary clearwell and piping, demolition of an existing 30,000 gallon clearwell, supply and installment of a new 200,000 gallon welded steel clearwell with baffle wall and aeration system, supply and installation of two GAC filters, emergency backup generators at the treatment plant and zone 1 tank site, backwash recycle basin and piping, and an emergency overflow system for the clearwell. The loan was for a term of 30 years with an annual repayment in the amount of \$6,600. No debt service reserve is required on that loan. The second loan was issued in February 2016, by U.S. Department of Agriculture, Rural Development (USDA) in the amount of \$1,163,000 for water tank repairs, waterline replacement and fire hydrant installations. The USDA loan has a term of 40 years at 1.875 percent interest. The annual repayment amount is approximately \$45,113 and debt service reserves are required to be funded over a 10-year period. Debt service reserve for this loan is fully funded from cash in bank balances at June 30, 2018.

## Short-Lived Asset Reserve

Often lenders will require a Short-Lived Asset Reserve account be funded annually in the funder designated amount. While this reserve must be funded annually, the utility is allowed to use these



funds as necessary for repairs and/or replacement of major system assets. The USDA loan requires an annual deposit of at least \$19,150 into a Short-Lived Asset Reserve.

### 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 for systems that bill monthly. 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 (12.5%) of their annual cash operation and maintenance expenses in an operating reserve to mitigate potential cash flow problems. The statement of financial position at June 30, 2018, indicated the water system had \$246,762 cash in bank. A five-year budget projection was completed assuming a 3 percent annual inflation rate. The budget includes operating reserves of \$62,534 for the fiscal year end 2020 have already been funded from existing cash in bank. BPWD should verify each year that an amount equal to 45 days of operating costs is held in operating reserves.

**TABLE 1: Operating Reserve Funding**

Operating Reserve Funding					
FYE	Annual Operating Costs	Daily Operating Costs	45 Days	Amount to Reserve	Balance in Operating Reserves
6/30/2019	Balance Forward				\$ 62,534
6/30/2020	\$ 500,272	\$ 1,390	\$ 62,534	\$ -	\$ 62,534
6/30/2021	\$ 513,927	\$ 1,428	\$ 64,241	\$ 1,707	\$ 64,241
6/30/2022	\$ 527,980	\$ 1,467	\$ 65,998	\$ 1,757	\$ 65,998
6/30/2023	\$ 541,942	\$ 1,505	\$ 67,743	\$ 1,745	\$ 67,743
6/30/2024	\$ 556,747	\$ 1,547	\$ 69,593	\$ 1,851	\$ 69,593

### 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 utility’s size, 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 is based on emergency reserve funds in the amount of \$100,000 having already been fully funded.

### 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 this capital reserve. 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 million and a service life of 100 years should, in theory, be depreciated at \$10,000 per year. However, reserving the original cost of \$1 million would

not be expected to fully fund the replacement of the infrastructure when it wears out 100 years later.

To initiate a capital improvement plan (CIP), a small water or sewer system will start with an assets list that includes the service life expectancy 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 that are struggling to keep rates reasonable.

Because BPWD's water system serves only 455 connections and attempting to set aside a large annual reserve would be a hardship on the community, funding CIP reserves in the amount of 20 percent of the replacement costs less the \$19,150 required annual Short-Lived Asset Reserves has been used for this analysis. This is an amount of \$130,173 to be funded annually.

**TABLE 2: 2020 Reserve Funding Cost per Connection**

Per Connection Reserve Funding			
Reserve Type	2020 Reserve Funding	2020 Annual Cost Per Connection	2020 Monthly Cost Per Connection
USDA Debt Service Reserve (Assumes Reserves Fully Funded at 6/30/2019)	0	0	0
Short Lived Asset Reserve (Per USDA)	\$ 19,150	\$ 42	\$ 4
Capital Improvement Plan (CIP) Reserve (Assumes funding 20% of Replacement Costs Less Short-Lived Asset Reserve)	\$ 130,173	\$ 286	\$ 24
Emergency Reserve (Assumes \$100,000 Fully Funded at 6/30/2019)	\$ -	\$ -	\$ -
Operating Reserve (Assumes \$62,534 Fully Funded at 6/30/2019)	\$ -		\$ -
<b>Total Reserves</b>	<b>\$ 149,323</b>	<b>\$ 328</b>	<b>\$ 27</b>

The Statement of Financial Position at Sept. 30, 2018, indicated cash in bank of \$784,163 total of all accounts.



**TABLE 3: Statement of Financial Position**

<b>Buckingham Park Water District</b>		
<b>Statement of Financial Position</b>		
	<b>6/30/2018</b>	<b>9/30/2018</b>
<b>Assets:</b>		
Current Assets		
Checking/Savings		
110 - Umpqua Bank 7106	\$ 246,762	\$ 74,541
115 - Umpqua Bank 1586	\$ 1,114	\$ 118,180
120 - LAIF	\$ 588,648	\$ 591,442
130 - Petty Cash	\$ 95	\$ 2
<b>Total Checking/Savings</b>	<b>\$ 836,619</b>	<b>\$ 784,165</b>
Accounts Receivable		
200-20 Delinquent Accounts Receivable	\$ 781	\$ 781
200-30 Utility Bill Receivable	\$ 6,239	\$ 8,271
200-50 Prop 50 Grant Receivable	\$ 142,189	\$ 106,938
<b>Total Accounts Receivable</b>	<b>\$ 149,209</b>	<b>\$ 115,991</b>
Other Current Assets		
300-10 Prepaid Expenses	\$ (2,561)	\$ 7,941
<b>Total Current Assets</b>	<b>\$ 983,267</b>	<b>\$ 908,097</b>
Fixed Assets		
Land		
Office Building	\$ 168,464	\$ 168,464
Equipment	\$ 1,596,118	\$ 1,599,520
Tools	\$ 116,721	\$ 116,721
Office Equipment	\$ 10,929	\$ 10,929
Water System	\$ 4,716,121	\$ 4,716,121
Accumulated Depreciation	\$ (2,508,514)	\$ (2,511,848)
<b>Total Fixed Assets</b>	<b>\$ 4,424,925</b>	<b>\$ 4,424,994</b>
Other Assets		
GMAC Bond Assessment Receivable	\$ 51,184	\$ 46,644
<b>Total Assets</b>	<b>\$ 5,459,377</b>	<b>\$ 5,379,735</b>
<b>Liabilities &amp; Equity</b>		
Current Liabilities		
Account Payable	\$ (6,078)	\$ 13,113
Loan - Bond Assessment	\$ 59,500	\$ 59,500
Payroll Liabilities	\$ 5,425	\$ 4,485
Suspense	\$ (1,069)	\$ (1,069)
2600 Loan SRF Zero Interest	\$ 188,100	\$ 188,100
<b>Total Current Liabilities</b>	<b>\$ 245,878</b>	<b>\$ 264,128</b>
Long Term Liabilities		
GMAC Bond Assessment payable	\$ 70,000	\$ 6,875
USDA Loan	\$ 965,117	\$ 913,822
<b>Total Long Term Liabilities</b>	<b>\$ 1,035,117</b>	<b>\$ 920,697</b>
<b>Total Liabilities</b>	<b>\$ 1,280,995</b>	<b>\$ 1,184,825</b>
<b>Equity</b>		
Investment in Fixed Assets, Net		
Restricted	\$ 310,469	\$ 271,021
Emergency Reserves (\$7)	\$ 15,814	\$ 25,348
Expansion Fees (\$9k)	\$ (22,239)	\$ (22,239)
Unrestricted	\$ (23,606)	\$ (23,606)
Retained Earnings	\$ 1,035,281	\$ 1,131,931
Net Income	\$ 68,509	\$ 18,300
<b>Total Equity</b>	<b>\$ 4,178,381</b>	<b>\$ 4,194,909</b>
<b>Total Liabilities &amp; Equity</b>	<b>\$ 5,459,377</b>	<b>\$ 5,379,735</b>

Based on the beginning cash in bank and the assumption that the largest expenditures were incurred in the first half of 2018, while only half of the revenue had been earned, RCAC projected an increase in cash of \$226 by Dec. 31, 2018. Assuming a rate increase beginning Jan. 1, 2019, a net increase in cash of \$26,462 is projected for the five year period ending Dec. 31, 2023. Recommended allocation of the funds is indicated in Table 4.

**TABLE 4: Recommend Allocation of Cash in Bank**

Recommended Allocation of Cash in Bank					
Assumes Rate Increase Beginning 7/01/2019	FYE 6/30/2020	FYE 6/30/2021	FYE 6/30/2022	FYE 6/30/2023	FYE 6/30/2024
Beginning Cash in Bank (Assumed)	\$ 675,000	\$ 805,173	\$ 935,346	\$ 1,065,519	\$ 1,195,692
Collected From New Rates for Short-Lived Asset Reserves	\$ 19,150	\$ 19,150	\$ 19,150	\$ 19,150	\$ 19,150
Collected From New Rates for CIP Reserves	\$ 130,173	\$ 130,173	\$ 130,173	\$ 130,173	\$ 130,173
Net Income After Rate Adjustment	\$ -	\$ -	\$ -	\$ -	\$ -
Capital Repairs/Replacements (Assumes S/L Asset Reserves will be Expended Annually)	\$ (19,150)	\$ (19,150)	\$ (19,150)	\$ (19,150)	\$ (19,150)
<b>Ending Cash in Bank</b>	<b>\$ 805,173</b>	<b>\$ 935,346</b>	<b>\$1,065,519</b>	<b>\$1,195,692</b>	<b>\$ 1,325,865</b>
<b>Allocation:</b>					
CIP Reserves (Assumes Beginning Balance of \$310,500)	\$ 440,673	\$ 570,846	\$ 701,019	\$ 831,192	\$ 961,365
Operating Reserves 45 Days	\$ 62,534	\$ 64,241	\$ 65,997	\$ 67,743	\$ 69,593
Emergency Reserves	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
Short-Lived Asset Reserves	\$ 19,150	\$ 19,150	\$ 19,150	\$ 19,150	\$ 19,150
Debt Reserves	\$ 45,113	\$ 45,113	\$ 45,113	\$ 45,113	\$ 45,113
Operating Account	\$ 137,703	\$ 135,996	\$ 134,240	\$ 132,494	\$ 130,644
<b>Total Cash in Bank</b>	<b>\$ 805,173</b>	<b>\$ 935,346</b>	<b>\$1,065,519</b>	<b>\$1,195,692</b>	<b>\$ 1,325,865</b>

### 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 percent before approving grant money to low-income communities. The MHI for the residents served by BPWD was not available. The General Manager said the State Water Resources Control Board (SWRCB) stated the MHI for the BPWD service area is \$62,577. That is the amount used in this analysis.

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



## Rate Basics

### Rate Structures

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

- **Uniform Flat Rate:** Customers pay the same amount, regardless of the quantity of water used. This rate type 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 customer is in direct proportion to the amount of use.
- **Inclining or Increasing Block Rate:** This rate is designed to address the need to accommodate peak water usage. The price increases as the amount of usage increases. BPWD currently charges an increasing block rate. In accordance with Proposition 218 regulations, the levels directly relate to the cost of providing service at each usage level.

### 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 BPWD 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. For example, a percentage of wages and fringe benefits for time spent in reading each meter and preparing each customer's bill.

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 her/his usage level. 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, commercial, etc.) or by meter size (3/4-inch, 1-inch, etc.).

For small systems with fewer customers, spreading these costs among its customers, 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-third to two-thirds of the system's total operating costs and may run even higher for very small systems. Upon review of the budget with BPWD, it was determined that 90 percent of the utility's costs are 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 the amount of water customers use. 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 6 on page 9 details the break out of fixed vs. variable costs.

## Customer Water Demands

When analyzing water rates, it is important to understand existing consumption patterns 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. TABLE 5 shows usage for calendar years 2014 through 2018. Detailed review of the 2018 usage indicated that 51 percent of the residential connections are using 500 cubic feet or less per month, 26 percent are using 501 –1,000 cubic fee per month, 11 percent are using 1,001 – 1,500 cubic feet per month and 12 percent are using more than 1,500 cubic feet per month.

**TABLE 5: Five Years Annual Usage – Cubic Feet**

Month	2014	2015	2016	2017	2018	Total 5 Year Usage	5 Year Average Usage
January	245,449	148,119	245,592	205,528	189,752	1,034,440	206,888
February	155,975	138,447	155,939	258,278	205,761	914,400	182,880
March	177,661	229,207	155,528	183,446	146,525	892,367	178,473
April	277,610	295,235	317,504	196,293	202,400	1,289,042	257,808
May	129,942	292,859	272,002	354,611	389,545	1,438,959	287,792
June	450,368	342,242	499,190	514,162	391,306	2,197,268	439,454
July	592,507	502,259	479,326	527,323	535,442	2,636,857	527,371
August	317,315	405,659	631,480	554,211	583,634	2,492,299	498,460
September	462,831	470,894	426,386	427,612	431,891	2,219,614	443,923
October	385,270	339,139	305,856	379,370	398,277	1,807,912	361,582
November	245,817	218,040	289,554	252,710	348,596	1,354,717	270,943
December	259,849	219,020	359,696	175,642	256,502	1,270,709	254,142
<b>Total</b>	<b>3,700,594</b>	<b>3,601,120</b>	<b>4,138,053</b>	<b>4,029,186</b>	<b>4,079,631</b>	<b>19,548,584</b>	<b>3,909,717</b>

## Water Financial Analysis

The BPWD provided the activities statement for the fiscal year ended June 30, 2018 and the detailed budget for the year ended June 30, 2020. The budget projections indicate a 9.9 percent increase in costs in the two year period. An inflation rate of 3 percent was used to project costs for fiscal years 2021 through 2024. A breakdown of fixed and variable operating costs are presented in Table 6 on the next page. As would be expected of a system this size, the fixed costs are much higher than would be seen in a system with a larger number of connections.



**TABLE 6: 2020 Fixed/Variable Budget**

	Budget 2019/2020	Estimated % Fixed Costs	Fixed costs	Variable costs
<b>ADMINISTRATIVE &amp; GENERAL</b>				
561.10 · Wages	\$ 113,005	100%	\$113,005	\$0
561.20 · Paid Time Off	\$ 13,000	100%	\$13,000	\$0
561.25 · Sick Pay	\$ 4,515	100%	\$4,515	\$0
561.30 · Holiday Pay	\$ 9,030	100%	\$9,030	\$0
561.35 · Bereavement	\$ 1,800	100%	\$1,800	\$0
561.40 · Admin& General O.T. Wages	\$ 5,450	100%	\$5,450	\$0
561.45 · Standby Stipend	\$ 10,950	100%	\$10,950	\$0
561.50 · Call Back Pay	\$ 2,300	85%	\$1,955	\$345
562.10 · PG&E/Utilities	\$ 2,000	100%	\$2,000	\$0
562.15 · Telephone	\$ 3,600	100%	\$3,600	\$0
562.20 · Internet	\$ 1,560	100%	\$1,560	\$0
562.25 · Cell Phone	\$ 1,300	100%	\$1,300	\$0
562.30 · Pest Control	\$ 1,000	100%	\$1,000	\$0
562.40 · Garbage	\$ 500	100%	\$500	\$0
562.45 · Alarm	\$ 400	100%	\$400	\$0
562.50 · Postage	\$ 3,000	100%	\$3,000	\$0
562.55 · Office Supplies	\$ 3,000	100%	\$3,000	\$0
562.60 · Copy Equipment & Supplies	\$ 4,360	100%	\$4,360	\$0
562.65 · Office Equipment	\$ 200	100%	\$200	\$0
562.70 · Dues,Subscriptions, Memberships	\$ 3,800	100%	\$3,800	\$0
562.75 · Lien Filing & Recording Fees	\$ 50	100%	\$50	\$0
562.80 · Software License and Support	\$ 2,300	100%	\$2,300	\$0
562.85 · Bank Service Charges	\$ 3,402	100%	\$3,402	\$0
563.10 · Auditor	\$ 8,500	100%	\$8,500	\$0
563.20 · County Counsel	\$ 2,000	100%	\$2,000	\$0
563.40 · LAFCO	\$ 1,350	100%	\$1,350	\$0
563.50 · County of Lake Collection Svcs	\$ 1,250	100%	\$1,250	\$0
564.10 · Liability Insurance	\$ 9,702	100%	\$9,702	\$0
565.10 · Employees' Medical	\$ 35,000	100%	\$35,000	\$0
565.20 · Employees' IRA	\$ 7,045	100%	\$7,045	\$0
565.31 · FICA (Federal Ins.Contribution)	\$ 17,965	100%	\$17,965	\$0
565.32 · SUI (State Unemployment Ins)	\$ 1,736	100%	\$1,736	\$0
565.40 · Workers Comp Insurance	\$ 4,032	100%	\$4,032	\$0
568.10 · Supplies	\$ 1,500	100%	\$1,500	\$0
569.10 · Employee Uniforms	\$ 300	100%	\$300	\$0
569.20 · Seminar/Training Registration	\$ 500	100%	\$500	\$0
569.30 · Training-lodging,meals& mileage	\$ 600	100%	\$600	\$0
569.40 · Mileage Expense	\$ 100	100%	\$100	\$0
569.45 · Outside Services	\$ 2,500	100%	\$2,500	\$0
<b>CUSTOMER ACCOUNTS</b>				
551.10 · Wages	\$ 3,650	100%	\$3,650	\$0

Budget continued on next page.

<b>PUMPING</b>				
521.10 · Wages	\$ 240	100%	\$240	\$0
521.20 · PG&E / Electricity	\$ 17,500	0%	\$0	\$17,500
522.20 · Supplies	\$ 100	65%	\$65	\$35
<b>SOURCE OF SUPPLY</b>				
511.10 · Wages	\$ 240	100%	\$240	\$0
511.20 · PG&E / Electricity	\$ 6,000	0%	\$0	\$6,000
512.40 · Testing	\$ 4,300	100%	\$4,300	\$0
512.20 · Supplies	\$ 100	65%	\$65	\$35
<b>TRANSMISSION &amp; DISTRIBUTION</b>				
541.10 · Wages	\$ 17,455	100%	\$17,455	\$0
541.20 · PG&E / Electricity	\$ 5,000	0%	\$0	\$5,000
541.40 · Safety & Security	\$ 500	100%	\$500	\$0
541.50 · State Water Board Licensing	\$ 1,500	100%	\$1,500	\$0
541.60 · Mileage Expense	\$ 2,400	100%	\$2,400	\$0
541.70 · Testing	\$ 2,700	100%	\$2,700	\$0
541.75 · Propane	\$ 200	100%	\$200	\$0
<b>542.00 · MAINTENANCE,STRUCTURES &amp; IMPROV</b>				
542.10 · Outside Services	\$ 500	95%	\$475	\$25
542.20 · Supplies	\$ 200	95%	\$190	\$10
542.30 · Tools	\$ 1,800	95%	\$1,710	\$90
542.40 · Equipment Rental	\$ 300	95%	\$285	\$15
<b>WATER TREATMENT</b>				
531.10 · Wages	\$ 71,950	100%	\$71,950	\$0
531.15 · PG&E / Electricity	\$ 3,000	0%	\$0	\$3,000
531.20 · Chemicals-PreChlor Sodium Hypo	\$ 4,600	25%	\$1,150	\$3,450
531.25 · Chemicals-PostChlor Sodium Hypo	\$ 2,000	25%	\$500	\$1,500
531.30 · Chemicals - Coagulent	\$ 10,000	25%	\$2,500	\$7,500
531.35 · Chemicals - Coagulent Aid	\$ 600	25%	\$150	\$450
531.40 · Testing - Lab	\$ 2,200	100%	\$2,200	\$0
531.45 · In Plant Test	\$ 2,000	100%	\$2,000	\$0
531.55 · State Water Board Licensing	\$ 1,500	100%	\$1,500	\$0
531.60 · CUPA Permit & other permits	\$ 1,300	100%	\$1,300	\$0
531.70 · Alarm	\$ 300	100%	\$300	\$0
531.75 · Propane	\$ 200	100%	\$200	\$0
<b>532.00 · MAINTENANCE,STRUCTURES &amp; IMPROV</b>				
532.10 · Outside Services	\$ 500	95%	\$475	\$25
532.20 · Supplies	\$ 1,500	95%	\$1,425	\$75
532.30 · Tools	\$ 600	95%	\$570	\$30
532.40 · Equipment Rental	\$ 100	95%	\$95	\$5
<b>Total Operating Costs</b>	<b>\$ 451,637</b>		<b>406,547</b>	<b>45,090</b>
<b>Debt Service</b>	<b>\$ 48,635</b>			
Total Operating Costs Plus Debt Service	\$ 500,272			
Emergency/Short Lived Asset Reserves	\$ 19,150			
Operating Reserves	\$ -			
Debt Reserves				
CIP Reserves	\$ 130,173			
Total Reserves	\$ 149,323			
Total Budget	\$ 649,595			

Funder Required  
Assumes OR's fully funded at 12.5% of Annual Budget  
Assumes DR's fully funded at 1 Annual Payment  
Assumes Funding 20%/10% of Replacements



## Current Rate Structure

Under the current rate structure, revenues are not projected to cover costs. TABLE 7 illustrates the shortfall.

**TABLE 7: Current Rate against Projected Costs**

Buckingham Park Water District Current Rate against Projected Costs	# Connections	Monthly Rate	Average Monthly Revenue	Average Annual Base Revenue			
Residential	449	\$ 55.19	\$ 24,780	\$ 297,364			
Commercial	6	\$ 55.19	\$ 331	\$ 3,974			
Standby/Availability Charges				\$ 6,270			
Total Base Revenue	455		\$ 25,111	\$ 307,607			
CIP Reserve/Compliance Project Fee	455	\$ 10.00	\$ 4,550	\$ 54,600			
Emergency Reserve Fee	455	\$ 7.00	\$ 3,185	\$ 38,220			
Total Reserves Fees		\$ 17.00	\$ 7,735	\$ 92,820			
Commodity Charge	Rate Per CF	Residential Average Usage	Commercial Average Usage	Total Usage	Residential Usage Revenue	Commercial Usage Revenue	Total Usage Revenue
Tier 1 (0 - 1,000 CF)	\$ 0.0241	2,797,994	55,715	2,853,709	\$ 67,432	\$ 1,343	\$ 68,774
Tier 2 (1,001 - 1,500 CF)	\$ 0.0464	468,289	6,000	474,289	\$ 21,729	\$ 278	\$ 22,007
Tier 3 (over 1,500 CF)	\$ 0.0639	745,236	6,397	751,633	\$ 47,621	\$ 409	\$ 48,029
Total Usage/Commodity Charges		4,011,519	68,112	4,079,631	\$ 136,781	\$ 2,030	\$ 138,811
Budget Assuming 3% Inflation per year	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024		
Total Monthly Required Reserves Fund	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444		
Total yearly required reserve fund	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323		
Debt Service	\$ 48,635	\$ 48,741	\$ 48,838	\$ 48,426	\$ 48,426		
Fixed Budget	\$ 406,547	\$ 418,743	\$ 431,306	\$ 444,245	\$ 457,572		
Variable Budget	\$ 45,090	\$ 46,443	\$ 47,836	\$ 49,271	\$ 50,749		
Total Operating Budget	\$ 649,595	\$ 663,250	\$ 677,303	\$ 691,265	\$ 706,070		
	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024		
Estimated Annual Revenue From Base Rate	\$ 307,607	\$ 307,607	\$ 307,607	\$ 307,607	\$ 307,607		
Estimated Annual Revenue - Usage Charges	\$ 138,811	\$ 138,811	\$ 138,811	\$ 138,811	\$ 138,811		
Total Operating Revenue	\$ 446,418	\$ 446,418	\$ 446,418	\$ 446,418	\$ 446,418		
Net Operating Revenue Over/(under) Operating	\$ (203,177)	\$ (216,832)	\$ (230,884)	\$ (244,847)	\$ (259,652)		
Reserve Revenue	\$ 92,820	\$ 92,820	\$ 92,820	\$ 92,820	\$ 92,820		
Net Profit/Loss	\$ (110,357)	\$ (124,012)	\$ (138,064)	\$ (152,027)	\$ (166,832)		

**TABLE 8: Current Rate Affordability Index**

BPWD Current Rate Affordability Index										
FYE	Monthly Base Fee	Monthly Reserve Payments	Total Monthly Flat Fees	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage Fee Assuming 3,000 CFs Monthly	Total Monthly Bill	MHI	Affordability Index
2019	\$ 55.19	\$ 17.00	\$ 72.19	\$ 24.10				\$ 96.29	\$62,577.00	1.85%
2019	\$ 55.19	\$ 17.00	\$ 72.19	\$ 24.10	\$ 23.20			\$ 119.49	\$62,577.00	2.29%
2019	\$ 55.19	\$ 17.00	\$ 72.19	\$ 24.10	\$ 23.20	\$ 31.95		\$ 151.44	\$62,577.00	2.90%
2019	\$ 55.19	\$ 17.00	\$ 72.19	\$ 24.10	\$ 23.20	\$ 31.95	\$ 63.90	\$ 215.34	\$62,577.00	4.13%

## Rate Adjustment Option #1

Several options were examined to determine a rate schedule that would recover all the operating costs as well as service the debt and fund reserve accounts. In all options, the usage is based on 2018 usage being reduced to the five year average usage of approximately 3,909,717 cubic feet. In rate adjustment option #1, a 30 percent increase is applied to the monthly service fee, the compliance project fee and the emergency reserve fee. That results in a monthly service fee of \$71.75 plus the other two fees of \$22.10 for a total monthly base fee of \$93.85 or an increase of \$21.66 per month. In option #1 the leveled rates are eliminated and the cost per cubic foot of water is set at \$.03374. Subsequent annual increases determined by the Consumer Price Index will be implemented. In this analysis, a 2.05 percent increase in base and usage rates is used.

**TABLE 9: Rate Adjustment Option #1**

Rate Adjustment Option #1 Against Projected Costs	# Connections	Monthly Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Base Revenue	
			30.00%				
Residential	449	\$ 55.19	\$ 16.56	\$ 71.75	\$ 32,214	\$ 386,573	
Commercial	6.5	\$ 55.19	\$ 16.56	\$ 71.75	\$ 466	\$ 5,596	
Standby/Availability Charges						\$ 6,270	
<b>Total Base Revenue</b>	<b>456</b>				<b>\$ 32,681</b>	<b>\$ 398,439</b>	
CIP Reserve/Compliance Project Fee	456	\$ 10.00	\$ 3.00	\$ 13.00	\$ 5,922	\$ 71,058	
Emergency Reserve Fee	456	\$ 7.00	\$ 2.10	\$ 9.10	\$ 4,145	\$ 49,741	
<b>Total Monthly Reserve Funding</b>		<b>\$ 17.00</b>	<b>\$ 5.10</b>	<b>\$ 22.10</b>	<b>\$ 10,067</b>	<b>\$ 120,799</b>	
<b>Total;</b>							
Commodity Charge	Rate Per CF	Adjustment	Adjusted Rate	Total Annual Usage	Anticipated Reduced Usage	Adjusted Annual Usage	Total Usage Revenue
		40%			\$ (0)		
All Usage	\$ 0.0241	\$ 0.0096	\$ 0.03374	4,079,631	\$ (169,917)	\$ 3,909,714	\$ 131,914
<b>Total Usage/Commodity Charges</b>				<b>4,079,631</b>	<b>\$ (169,917)</b>	<b>\$ 3,909,714</b>	<b>\$ 131,914</b>
<b>Budget Assuming 3% Inflation per year</b>	<b>6/30/2020</b>	<b>6/30/2021</b>	<b>6/30/2022</b>	<b>6/30/2023</b>	<b>6/30/2024</b>	<b>Five Year Total</b>	
Total Monthly Required Reserves Fund	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444		
Total yearly required reserve fund	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323	\$ 746,614	
Debt Service	\$ 48,635	\$ 48,741	\$ 48,838	\$ 48,426	\$ 48,426	\$ 243,066	
Fixed Budget	\$ 406,547	\$ 418,743	\$ 431,306	\$ 444,245	\$ 457,572		
Variable Budget	\$ 45,090	\$ 46,443	\$ 47,836	\$ 49,271	\$ 50,749		
<b>Total Operating Budget</b>	<b>\$ 649,595</b>	<b>\$ 663,250</b>	<b>\$ 677,303</b>	<b>\$ 691,265</b>	<b>\$ 706,070</b>		
	<b>6/30/2020</b>	<b>6/30/2021</b>	<b>6/30/2022</b>	<b>6/30/2023</b>	<b>6/30/2024</b>		
Estimated Annual Revenue From Base Rate (annual 2.05% Increase)	\$ 398,439	\$ 406,607	\$ 414,943	\$ 423,449	\$ 432,130		
Estimated Annual Revenue - Usage Charges (Annual 2.05% Increase)	\$ 131,914	\$ 134,618	\$ 137,378	\$ 140,194	\$ 143,068		
<b>Total Operating Revenue</b>	<b>\$ 530,352.86</b>	<b>\$ 541,225</b>	<b>\$ 552,320</b>	<b>\$ 563,643</b>	<b>\$ 575,197</b>		
Net Operating Revenue Over/(under) Operating Costs	\$ (119,242)	\$ (122,025)	\$ (124,982)	\$ (127,622)	\$ (130,873)		
Reserve Revenue (Annual 2.05% Increase)	\$ 120,799	\$ 123,274.97	\$ 125,802.11	\$ 128,381.05	\$ 131,012.86		
	\$ 1,557	\$ 1,250	\$ 820	\$ 759	\$ 140		



**TABLE 10: Rate Adjustment Option #1 Affordability Index**

BPWD Option #1 Rate Affordability Index										
FYE	Monthly Base Fee	Monthly Reserve Payments	Total Monthly Flat Fees	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage Fee Assuming 3,000 CFs Monthly	Total Monthly Bill	MHI	Affordability Index
2019	\$ 71.75	\$ 22.10	\$ 93.85	\$ 33.74				\$ 127.59	\$62,577.00	2.45%
2019	\$ 71.75	\$ 22.10	\$ 93.85	\$ 33.74	\$ 16.87			\$ 144.46	\$62,577.00	2.77%
2019	\$ 71.75	\$ 22.10	\$ 93.85	\$ 33.74	\$ 16.87	\$ 16.87		\$ 161.33	\$62,577.00	3.09%
2019	\$ 71.75	\$ 22.10	\$ 93.85	\$ 33.74	\$ 16.87	\$ 16.87	\$ 33.74	\$ 195.07	\$62,577.00	3.74%

**Peak, Partial Peak and Off Peak Power Usage and Increased Costs**

In addition to a \$4.60 per day base rate for each of the distribution system and treatment plant accounts, PG&E charges usage based on kilowatt hours (kWh) used. The usage charges are established by Peak, Partial Peak and Off Peak usage, with each level charged at a higher rate per kWh. Additionally, the incremental increases in hourly rate of use results in an increased rate of demand which includes ancillary costs such as labor, pumping, and other associated costs as well as increased wear on the water system infrastructure. The increased wear reduces the typical useful life expectancy of the mechanical infrastructure and leads to accelerated replacement of the plumbing infrastructure.

Rate Adjustment Option #2 and Option #3 follows BPWD’s three levels of usage rates based on the PG&E electric charges. Because PG&E does not track usage from the beginning of the month until the end of the month, as BPWD tracks water usage, water usage estimates for the period of July 17 through July 31, 2018, were used. To estimate how much water usage would fall into each level of kWh charges, RCAC calculated the percentage of each level of kWh usage that was in each level PG&E charges for the period of July 18 through Aug. 31, 2018. That percentage was applied to the estimated water usage for the same period to determine how many cubic feet per connection would be included in peak, partial peak and nonpeak charges.

**TABLE 11: Peak, Partial Peak and Off Peak Usage**

<b>Buckingham Park Water District PG&amp;E Kwh Charges</b>				
<b>Distribution System</b>				
	<b>7/18 - 8/16/2018</b>	<b>8/17 - 8/31/2018</b>	<b>Total</b>	<b>Percentage</b>
Off-Peak KWH	506.2160	296.1630	802.3790	65.36%
Part Peak KWH	173.4630	93.9710	267.4340	21.79%
Peak KWH	111.2740	46.4940	157.7680	12.85%
<b>Total Distribution System</b>	<b>790.9530</b>	<b>436.6280</b>	<b>1,227.5810</b>	<b>100.00%</b>
<b>Treatment Plant</b>				
	<b>7/18 - 8/16/2018</b>	<b>8/17 - 8/31/2018</b>	<b>Total</b>	<b>Percentage</b>
Off-Peak KWH	9,183.2730	4,849.5000	14,032.7730	60.96%
Part Peak KWH	3,296.9280	1,823.8200	5,120.7480	22.25%
Peak KWH	2,627.0980	1,238.8820	3,865.9800	16.79%
<b>Total Treatment Plant</b>	<b>15,107.2990</b>	<b>7,912.2020</b>	<b>23,019.5010</b>	<b>100.00%</b>
<b>Distribution System and Treatment Plant Combined</b>				
	<b>7/18 - 8/16/2018</b>	<b>8/17 - 8/31/2018</b>	<b>Total</b>	<b>Percentage</b>
Off-Peak KWH	9,689.4890	5,145.6630	14,835.1520	61.18%
Part Peak KWH	3,470.3910	1,917.7910	5,388.1820	22.22%
Peak KWH	2,738.3720	1,285.3760	4,023.7480	16.59%
<b>Total Treatment &amp; Distribution</b>	<b>15,898.2520</b>	<b>8,348.8300</b>	<b>24,247.0820</b>	<b>100.00%</b>
<b>Average Cubic Feet Used in Each PG&amp;E Tier</b>				
				<b>Per Connection (Based on 455 Connections)</b>
Average Water Usage (Cubic Feet)	559,640.00	291,877.00	851,517.00	
Off-Peak KWH	342,405.9219	178,579.8250	520,986	1,145.02
Part Peak KWH	124,363.0955	64,860.8520	189,224	415.88
Peak KWH	92,870.9826	48,436.3230	141,307	310.57
<b>Total Average Usage</b>	<b>559,640</b>	<b>291,877</b>	<b>851,517</b>	<b>1,871</b>

## Rate Adjustment Option #2

Rate Adjustment Option#2 includes a 30 percent increase to the water service base fees and no increase to the reserve fees. That increases the fees to \$71.75 and \$17.00, for total base fees of \$88.75 monthly. For the usage fees, three levels are implemented. The charge for each level is increased by 28.75 percent over the current usage rates. Level 1 is for usage up to 1,145 cubic feet at a cost of \$0.0310 per cubic foot. Level 2 is for usage between 1,146 and 1,560 cubic feet at \$0.0597 per cubic foot. And, Level 3 is for all usage more than 1,560 cubic feet at \$0.0823 per cubic foot. The water service base rate (\$71.75) and usage rates will be increased annually at an estimated amount of 2.5 percent or the Consumer Price Index amount. Table 12 illustrates option #2 rate adjustment.



**TABLE 12: Rate Adjustment Option #2**

Rate Adjustment Option #2 Against Projected Costs	# Connections	Monthly Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Base Revenue	
			30.00%				
Residential	449	\$ 55.19	\$ 16.56	\$ 71.75	\$ 32,214.40	\$ 386,572.84	
Commercial	6.0	\$ 55.19	\$ 16.56	\$ 71.75	\$ 430.48	\$ 5,165.78	
Standby/Availability Charges						\$ 6,270.00	
Total Base Revenue	455				\$ 32,644.89	\$ 398,008.62	
CIP Reserve/Compliance Project Fee	455	\$ 10.00		\$ 10.00	\$ 4,550.00	\$ 54,600.00	
Emergency Reserve Fee	455	\$ 7.00		\$ 7.00	\$ 3,185.00	\$ 38,220.00	
Total Reserves Fees		\$ 72.19		\$ 17.00	\$ 7,735.00	\$ 92,820.00	
Commodity Charge	Rate Per CF	Adjustment	Adjusted Rate	Total Annual Usage	Reduced Usage	Adjusted Usage	Total Usage Revenue
		28.75%			-23.82%		
Tier 1 up to 1,145 CF	\$ 0.0241	\$ 0.0069	\$ 0.0310	3,022,130		3,022,130	\$ 93,772.92
Tier 2 (1,146 - 1,560 CF)	\$ 0.0464	\$ 0.0133	\$ 0.0597	344,256		344,256	\$ 20,565.85
Tier 3 (over 1,560 CF)	\$ 0.0639	\$ 0.0184	\$ 0.0823	713,245	(169,912.79)	543,332.21	\$ 44,700.62
Total Usage/Commodity Charges				4,079,631		3,909,718	\$159,039.39
Budget Assuming 3% Inflation per year	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024		
Total Monthly Required Reserves Fund	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444		
Total yearly required reserve fund	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323		
Debt Service	\$ 48,635	\$ 48,741	\$ 48,838	\$ 48,426	\$ 48,426		
Fixed Budget	\$ 406,547	\$ 418,743	\$ 431,306	\$ 444,245	\$ 457,572		
Variable Budget	\$ 45,090	\$ 46,443	\$ 47,836	\$ 49,271	\$ 50,749		
Total Operating Budget	\$ 649,595	\$ 663,250	\$ 677,303	\$ 691,265	\$ 706,070		
	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024		
Estimated Annual Revenue From Base Rate (annual CPI Increase After First Year - Estimated at 2.5%)	\$ 398,009	\$ 407,959	\$ 418,158	\$ 428,612	\$ 439,327		
Estimated Annual Revenue - Usage Charges	\$ 159,039	\$ 163,015	\$ 167,091	\$ 171,268	\$ 175,550		
Total Operating Revenue	\$ 557,048.01	\$ 570,974	\$ 585,249	\$ 599,880	\$ 614,877		
Net Operating Revenue Over/(under) Operating Costs	\$ (92,547)	\$ (92,276)	\$ (92,054)	\$ (91,385)	\$ (91,193)		
Reserve Revenue	\$ 92,820	\$ 92,820.00	\$ 92,820.00	\$ 92,820.00	\$ 92,820.00		
Net Profit/(Loss)	\$ 273	\$ 544	\$ 766	\$ 1,435	\$ 1,627		

**TABLE 13: Option #2 Affordability Index**

BPWD Option #2 Rate Affordability Index										
FYE	Monthly Base Fee	Monthly Reserve Payments	Total Monthly Flat Fees	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage Fee Assuming 3,000 CFs Monthly	Total Monthly Bill	MHI	Affordability Index
2019	\$ 71.75	\$ 17.00	\$ 88.75	\$ 31.03				\$ 119.78	\$62,577.00	2.30%
2019	\$ 71.75	\$ 17.00	\$ 88.75	\$ 31.03	\$ 25.71			\$ 145.48	\$62,577.00	2.79%
2019	\$ 71.75	\$ 17.00	\$ 88.75	\$ 31.03	\$ 25.71	\$ 39.78		\$ 185.27	\$62,577.00	3.55%
2019	\$ 71.75	\$ 17.00	\$ 88.75	\$ 31.03	\$ 25.71	\$ 39.78	\$ 82.27	\$ 267.54	\$62,577.00	5.13%

### Rate Adjustment Option #3

Rate Adjustment Option#3 eliminates the CIP Reserve/Compliance Project Fee and the Emergency Reserve Fee. Capital improvement and short lived asset reserves will be appropriately funded through the flow rates. The base rate is increased to \$82.22 per month to cover fixed costs. The flow charges are set to recover the variable costs and replacement reserves in the amount of \$194,605 in the first year. The three levels are in direct proportion to PG&E kWh percentages of increases for non-peak, partial peak and peak usage. The charge for each level is increased by 28.75 percent over the current usage rates. Level 1 is for usage up to 1,145 cubic feet at a cost of \$0.046 per cubic foot. Level 2 is for usage between 1,146 and 1,560 cubic feet at \$0.0616 per cubic foot. And, Level 3 is for all usage more than 1,560 cubic feet at \$0.0633 per cubic foot. Again, both the base rate and that portion of the usage rate that recovers variable costs will be increased annually at an estimated amount of 3 percent or the Consumer Price Index amount. The reserve funding will remain at \$149,323 through the entire five year period. Table 14 illustrates option #3 rate adjustment.

**TABLE 14: Rate Adjustment Option #3**

Rate Adjustment Option #3 Against Projected Costs	# Connections	Current Monthly Rate	Adjustment	Adjusted Rate	Average Monthly Revenue	Average Annual Base Revenue	
Residential	449	\$ 55.19	\$ 27.03	\$ 82.22	\$ 36,916.78	\$ 443,001.36	
Commercial	6.0	\$ 55.19	\$ 27.03	\$ 82.22	\$ 493.32	\$ 5,919.84	
Standby/Availability Charges						\$ 6,270.00	
<b>Total Base Revenue</b>	<b>455</b>				<b>\$ 37,410.10</b>	<b>\$ 455,191.20</b>	
CIP Reserve/Compliance Project Fee	455	\$ 10.00	\$ (10.00)	\$ -	\$ -	\$ -	
Emergency Reserve Fee	455	\$ 7.00	\$ (7.00)	\$ -	\$ -	\$ -	
<b>Total Reserves Fees</b>		<b>\$ 72.19</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
Commodity Charge	Current Rate Per CF	Adjustment	Adjusted Rate per CCF	Total Annual Usage	Reduced Usage	Adjusted Usage	Total Usage Revenue
					-23.82%		
Tier 1 up to 1,145 CF	\$ 0.0241	\$ 0.0219	\$ 0.0460	3,022,130		3,022,130	\$ 139,017.98
Tier 2 (1,146 - 1,560 CF)	\$ 0.0464	\$ 0.0152	\$ 0.0616	344,256		344,256	\$ 21,208.85
Tier 3 (over 1,560 CF)	\$ 0.0639	\$ (0.0006)	\$ 0.0633	713,245	(169,912.79)	543,332.21	\$ 34,377.94
<b>Total Usage/Commodity Charges</b>				<b>4,079,631</b>		<b>3,909,718</b>	<b>\$194,604.78</b>
<b>Budget Assuming 3% Inflation per year</b>	<b>6/30/2020</b>	<b>6/30/2021</b>	<b>6/30/2022</b>	<b>6/30/2023</b>	<b>6/30/2024</b>		
Total Monthly Required Reserves Fund	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444	\$ 12,444		
Total yearly required reserve fund	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323	\$ 149,323		
Debt Service	\$ 48,635	\$ 48,741	\$ 48,838	\$ 48,426	\$ 48,426		
Fixed Budget	\$ 406,547	\$ 418,743	\$ 431,306	\$ 444,245	\$ 457,572		
Variable Budget	\$ 45,090	\$ 46,443	\$ 47,836	\$ 49,271	\$ 50,749		
<b>Total Operating Budget</b>	<b>\$ 649,595</b>	<b>\$ 663,250</b>	<b>\$ 677,303</b>	<b>\$ 691,265</b>	<b>\$ 706,070</b>		
	<b>6/30/2020</b>	<b>6/30/2021</b>	<b>6/30/2022</b>	<b>6/30/2023</b>	<b>6/30/2024</b>		
Estimated Annual Revenue From Base Rate	\$ 455,191	\$ 468,847	\$ 482,912	\$ 497,400	\$ 512,322		
Estimated Annual Revenue - Usage Charges	\$ 194,605	\$ 195,766	\$ 197,159	\$ 198,594	\$ 200,072		
<b>Total Operating Revenue</b>	<b>\$ 649,795.98</b>	<b>\$ 664,612.48</b>	<b>\$ 680,071.17</b>	<b>\$ 695,993.62</b>	<b>\$ 712,393.74</b>		
<b>Net Operating Revenue Over/(under) Operating Costs</b>	<b>\$ 201</b>	<b>\$ 1,363</b>	<b>\$ 2,769</b>	<b>\$ 4,729</b>	<b>\$ 6,323</b>		
Reserve Revenue	\$ -	\$ -	\$ -	\$ -	\$ -		
<b>Net Profit/(Loss)</b>	<b>\$ 201</b>	<b>\$ 1,363</b>	<b>\$ 2,769</b>	<b>\$ 4,729</b>	<b>\$ 6,323</b>	<b>\$ 15,385</b>	



**TABLE 15: Option #3 Affordability Index**

BPWD Option #3 Rate Affordability Index										
FYE	Monthly Base Fee	Monthly Reserve Payments	Total Monthly Flat Fees	Usage Fee Assuming 1,000 CFs Monthly	Usage Fee Assuming 1,500 CFs Monthly	Usage Fee Assuming 2,000 CFs Monthly	Usage Fee Assuming 3,000 CFs Monthly	Total Monthly Bill	MHI	Affordability Index
2019	\$ 82.22	\$ -	\$ 82.22	\$ 46.00				\$ 128.22	\$62,577.00	2.46%
2019	\$ 82.22	\$ -	\$ 82.22	\$ 46.00	\$ 28.54			\$ 156.76	\$62,577.00	3.01%
2019	\$ 82.22	\$ -	\$ 82.22	\$ 46.00	\$ 28.54	\$ 31.54		\$ 188.30	\$62,577.00	3.61%
2019	\$ 82.22	\$ -	\$ 82.22	\$ 46.00	\$ 28.54	\$ 31.54	\$ 63.27	\$ 251.57	\$62,577.00	4.82%

**Impact of Delaying Rate Adjustment**

Often, the governing bodies of water utilities believe they are doing the rate payers a service by maintaining artificially low rates. In reality, delaying necessary rate increases results in ultimately higher rates. Not only do the delayed increases have to cover current costs, they must recover losses from prior years. To recover the same amount of revenue over a five year period, delayed increases result in substantially higher rates later on. Table 14 demonstrates the impact on rates of delaying increases. Note that the total accumulated dollars collected remains the same at the end of the five year period.

**TABLE 16: Impact of Delaying Rate Adjustment**

Impact of Delaying Rate Adjustment							
	Current Rate	Year 1	Year 2	Year 3	Year 4	Year 5	Accumulated Dollars Collected
<b>Implementing Rate Increase Immediately - 26.9% Increase From Current Year to Year 5</b>							
Rate	\$ 60.00	\$ 69.00	\$ 70.73	\$ 72.49	\$ 74.31	\$ 76.16	\$ 422.69
<b>Waiting 1 Year to Increase Rates - 37.7% Increase from Current Year to Year 5</b>							
Rate	\$ 60.00	\$ 60.00	\$ 69.00	\$ 73.27	\$ 77.80	\$ 82.62	\$ 422.69
<b>Waiting 2 Years to Increase Rates - 55.68% Increase from Current Year to Year 5</b>							
Rate	\$ 60.00	\$ 60.00	\$ 60.00	\$ 69.00	\$ 80.28	\$ 93.41	\$ 422.69
<b>Waiting 3 Years to Increase Rates - 72.96% Increase from Current Year to Year 5</b>							
Rate	\$ 60.00	\$ 60.00	\$ 60.00	\$ 60.00	\$ 78.91	\$ 103.78	\$ 422.69
<b>Waiting 4 Years to Increase Rates - 104.48% Increase from Current Year to Year 5</b>							
Rate	\$ 60.00	\$ 60.00	\$ 60.00	\$ 60.00	\$ 60.00	\$ 122.69	\$ 422.69

## 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, BPWD 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 current rate structure to generate adequate revenue will depend on maintaining a vigorous collection and shut-off policy to keep delinquent accounts at a minimum.
- In order to achieve and maintain long-term viability, the water system should review its rates annually, or no less than a minimum of every two years. Keeping track of customer seasonal and annual water demands will help determine operations needs and budget forecasts and rate adjustments.
- BPWD should raise rates to provide sufficient revenues for funding future operations and to adequately fund reserves.
- BPWD should establish policies for reserve accounts as recommended above and distribute existing cash in bank accordingly. While it is not necessary to hold reserves in a separate bank account, they should be identified individually on the financial statements. If potential earned interest would be greater than the costs of holding a separate interest bearing account, CIP reserves should be moved to and maintained in the highest interest bearing account available to offset inflation.
- BPWD should begin the process of increasing fees to the recommended rates above to be implemented by July 1, 2019, or sooner.



## 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.

