



Mariposa Public Utility District

2020 Water and Wastewater Rate Cost of Service Study

Revised October 2020



BARTLE WELLS ASSOCIATES
Independent Public Finance Consultants
1889 Alcatraz Avenue
Berkeley, California 94703
www.bartlewells.com
Tel: 510/653-3399

Contents

Section 1: Introduction	3
Executive Summary.....	3
Background	5
Water Supply.....	5
Water Distribution	5
Wastewater Treatment.....	5
Wastewater Collection.....	6
Water Quality Lab	6
Section 2: Legal Requirements	7
Constitutional Rate Requirements.....	7
Article 10, Section 2	7
Article 13D, Section 6.....	7
Use of Generally Accepted Rate-Making Principles	8
Section 3: Water Rates	9
Historical & Current Water Rates	9
Water Cash Flow Projection	11
Cost Allocation to Billing Components	14
Volumetric Rate Calculation	15
Meter Charges	17
Water Bill Impacts.....	18
Section 4: Wastewater Rates	19
Current Wastewater Rates	19
Cash Flow Projection.....	20
Cost Allocation	23
Appendix A: Water Cost Categories	24
Appendix B: Demand Factors	25

SECTION 1: INTRODUCTION

Executive Summary

The Mariposa Public Utility District (“the District”) retained Bartle Wells Associates (“BWA”) to develop a financial plan and cost of service study for the District’s water and wastewater rates to ensure financial stability over the next five years (FY 2020/21 to FY 2024/25). The District last increased rates in 2018. **Table 1** shows the current and proposed monthly wastewater rates and **Table 2** shows the current and proposed water rates resulting from this study.

Table 1
Mariposa Public Utility District
Current and Proposed Wastewater Rates

Proposed Wastewater Rates	Current	2020/21	2021/22	2022/23	2023/24	2024/25
Residential Per Unit	\$48.50	\$52.72	\$57.30	\$62.28	\$67.70	\$73.58
Multi-Family Residence Per Unit	\$39.00	\$39.63	\$40.26	\$40.91	\$41.57	\$42.23
Commercial #A	\$48.50	\$50.84	\$53.29	\$55.87	\$58.56	\$61.39
Commercial #B	\$116.50	\$122.00	\$127.76	\$133.78	\$140.10	\$146.71
Commercial #C	\$316.50	\$354.59	\$397.27	\$445.08	\$498.64	\$558.65
Commercial #D	\$369.50	\$402.53	\$438.52	\$477.72	\$520.43	\$566.95
Commercial #E	\$785.00	\$828.43	\$874.26	\$922.62	\$973.66	\$1,027.52
Motels Per Unit	\$32.50	\$34.82	\$37.31	\$39.97	\$42.83	\$45.89
Hospital	\$1,121.00	\$1,156.27	\$1,192.65	\$1,230.17	\$1,268.87	\$1,308.80
Institutional	\$1,055.00	\$1,104.84	\$1,157.04	\$1,211.70	\$1,268.94	\$1,328.89

Table 2
Mariposa Public Utility District
Current & Proposed Water Rates

A. RESIDENTIAL- BASE AND METERED RATE						
	CURRENT MONTHLY BASE RATE	1-5,000 Gallons	5,001-10,000 Gallons	10,001-15,000 Gallons	15,001-20,000 Gallons	20,001+ Gallons
Current	\$31.80	\$2.55	\$2.85	\$3.75	\$5.25	\$6.10
		Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal

	PROPOSED MONTHLY BASE	1-5,000 Gallons	5,001-10,000 Gallons	10,001-20,000 Gallons	20,001+ Gallons
Proposed	\$29.05	\$3.49	\$4.17	\$4.36	\$6.76
		Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal

B. COMMERCIAL BASE RATES	
CUSTOMER CLASS	CURRENT MONTHLY BASE RATE
Multi-Small Business*	\$23.85
CDF Baptist Church **	\$109.40
Elem School **	\$159.00
High School**	\$556.50
Class 1 Commercial *	\$69.65
Class 2 Commercial *	\$99.55
Jail**	\$159.00
Court House Gov't Center**	\$79.50
Parks & Recreation**	\$109.40
History Center Library**	\$59.80
Hospital **	\$109.40

*Add commercial metered rate.

**Add residential metered rate.

B. PROPOSED COMMERCIAL BASE RATE	
METER SIZE	PROPOSED MONTHLY RATE
Commercial 3/4"	\$29.05
Commercial 1"	\$48.42
Commercial 2"	\$154.95
Commercial 4"	\$484.21
Commercial 6"	\$968.42

C. COMMERCIAL METERED RATE MULTI-SMALL BUSINESS, COMMERCIAL CLASS 1 AND 2 ONLY		C. PROPOSED COMMERCIAL
METER PER 1,000 GALLONS	CURRENT USAGE RATES	PROPOSED, ALL USE PER 1,000 GALLONS
1-10,000	\$3.05	\$4.25
10,001-15,000	\$4.15	
15,001-20,000	\$5.25	
20,001-25,000	\$6.10	
25,001 +	\$6.95	

D. COMMERCIAL (MOTEL)					
	MONTHLY BASE RATE PER UNIT	1-3,000 Gallons	3,001-6,000 Gallons	6,001-9,000 Gallons	9,001 + Gallons
Current	\$7.95	\$3.40	\$4.70	\$6.55	\$9.40
		Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal
	PROPOSED BASE RATE PER UNIT	All Use			
Proposed	\$7.26	\$4.25			
		Per 1,000 Gal			

E. UNTREATED IRRIGATION		
	MONTHLY BASE RATE	ALL USE
Current	\$69.65	\$1.90
		Per 1,000 Gal
Proposed	Based on Meter Size	\$2.11
		Per 1,000 Gal

Background

The District has a population of approximately 2,000 and provides public water, wastewater, and fire protection services for the Town of Mariposa. The utility provides service for approximately 722 residential customers, 183 commercial customers, and 359 motel units. The cost for operating both water and sewer includes operating costs, capital expenses, and debt service.

Water Supply

Stockton Creek Reservoir, a 440-acre foot reservoir about one mile from the town of Mariposa, is the District's primary water supply. Additionally, the District owns and operates a pump station on the Merced River near Saxon Creek and a water treatment facility which draws water from the reservoir. In the event of low run-off in the Stockton Creek watershed, the District can divert water from the Saxon Creek Water Project to the Stockton Creek Reservoir. Finally, the District has four water wells connected to the water distribution system which supply various pressure zones.

The District completed construction of a replacement surface water treatment facility in August 2013 to treat surface water. The design capacity of the treatment plant is 1 million gallons per day.

Water Distribution

The District's water distribution system consists of four pressure zones. Pressure zone 1 is supplied by a one-million gallon water storage tank. Zones 2 and 4 are supplied from zone 1 via two pump stations. These pump stations pump water to a one-million gallon water storage tank approximately one mile north of the hospital. Zone 3 is supplied by two wells that pump to a 72,000 gallon water storage tank. While most of zone 2 and zone 4 is relatively new and designed to American Water Works Association (AWWA) standards, zone 3 was constructed in 1976 using PVC pipe and does not meet AWWA standards.

Wastewater Treatment

The current wastewater treatment facility was constructed in 1984 and discharges treated wastewater to Mariposa Creek. The facility operates under a National Pollutant Discharge Elimination System permit issued by the California Regional Water Quality Control Board. The permit was last renewed in 2014, however the permit includes discharge limitations that are not attainable with the existing facility. To meet permit standards, the District began construction on improvements on August 30th, 2018. The District received \$9,030,000 in funding from the Clean Water State Revolving Fund, including a \$3,030,000 loan and \$6,000,000 grant. The District's project contribution is \$838,500. Debt service for the project is \$131,000 per year beginning in FY 2020/21.

Wastewater Collection

The District maintains 73,000 feet of public wastewater collection mains. MPUD implements a routine collection main cleaning schedule to avoid sewer overflows which must be reported to the State Water Resources Control Board.

Water Quality Lab

The District operates a State Water Resources Control Board certified water quality laboratory at the wastewater treatment facility. MPUD must perform daily, weekly, and monthly water quality monitoring for the public water and wastewater system.

SECTION 2: LEGAL REQUIREMENTS

Constitutional Rate Requirements

The California Constitution includes two key articles that directly govern or impact the District's water and wastewater rates: Article 10 and Article 13D. The rates developed in this study were designed to comply with both constitutional mandates as well as various provisions of the California Water Code and Government Code that support and add further guidance for implementing these constitutional requirements. In accordance with the constitutional provisions, the proposed rates are designed to a) recover the District's cost of providing water and wastewater service; b) allocate costs in proportion to the cost for serving each customer class; and c) promote conservation and discourage waste.

Article 10, Section 2

Article 10, Section 2 of the California Constitution was established by voter-approval in 1976 and requires public agencies to maximize the beneficial use of water, prevent waste, and encourage conservation. Section 2 states that:

It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.

Article 13D, Section 6

Proposition 218 was adopted by California voters in 1996 and added Articles 13C and 13D to the California Constitution. Article 13D, Section 6 governs property-related charges, which the California Supreme Court subsequently ruled includes ongoing utility service charges such as water, sewer, and garbage rates. Article 13D, Section 6 establishes a) procedural requirements for imposing or increasing property-related charges, and b) substantive requirements for those charges. Article 13D also requires voter approval for new or increased property-related charges but exempts from this voting requirement rates for water, sewer, and garbage service.

The substantive requirements of Article 13D, Section 6 require the District's water and wastewater rates to meet the following conditions:

- 1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
- 2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- 4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question.

Use of Generally Accepted Rate-Making Principles

The rates developed in this report use a straightforward methodology to establish an equitable system of fixed and variable charges that recover the cost of providing service and fairly apportion costs to each rate component. The rates were developed using generally accepted cost-based principles and methodologies for establishing water rates, charges, and fees contained and discussed in the AWWA M1 Manual. In developing water rates, it is important to know that there is no “one-size-fits-all” approach for establishing cost-based water rates, “the (M1 Manual) is aimed at outlining the basic elements involved in water rates and suggesting alternative rules of procedure for formulating rates, thus permitting the exercise of judgment and preference to meet local conditions and requirements.”¹

¹ AWWA Manual M1 Manual, Principles of Water Rates, Fees, and Charges, Sixth Edition, 2012, page 5.

SECTION 3: WATER RATES

Historical & Current Water Rates

Table 3 shows the District's historical and current water rates. The adopted rates were the result of a rate study completed in 2014, which recommended overall rate increases through July 1st, 2018.

The current rate structure for residential includes a monthly service charge plus a volumetric rate per 1,000 gallons. Residential use is charged based on a 5-tier increasing block rate structure.

Commercial customers are charged fixed monthly rates based on customer category plus a volumetric rate. Depending on the customer category, commercial customers either pay the residential tiered rates or commercial tiered rates based on a 5-tier increasing block rate structure. The commercial tiered rates have higher tier breakpoints than residential users and unique rates for each tier.

Motel customers pay a fixed monthly rate per motel unit plus a volumetric rate based on a 4-tier increasing block rate structure. The motel tiered rates have lower tier breakpoints than residential and unique rates for each tier.

Untreated irrigation customers pay a flat monthly rate plus a volumetric rate per 1,000 gallons.

Table 3
Mariposa Public Utility District
Historical & Current Water Rates

A. RESIDENTIAL- BASE AND METERED RATE						
	BASE RATE	<i>1-5,000 Gallons</i>	<i>5,001-10,000 Gallons</i>	<i>10,001-15,000 Gallons</i>	<i>15,001-20,000 Gallons</i>	<i>20,001+ Gallons</i>
		Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal
Oct. 15, 2014	\$26.65	\$1.65	\$1.85	\$2.45	\$3.40	\$ 3.95
July 1, 2015	\$29.60	\$2.30	\$2.55	\$3.40	\$4.80	\$5.55
July 1, 2016	\$30.40	\$2.40	\$2.65	\$3.55	\$4.95	\$5.75
July 1, 2017	\$31.15	\$2.45	\$2.75	\$3.65	\$5.10	\$ 5.90
July 1, 2018	\$31.80	\$2.55	\$2.85	\$3.75	\$5.25	\$6.10

B. COMMERCIAL BASE RATES						
		Oct. 15, 2014	July 1, 2015	July 1, 2016	July 1, 2017	July 1, 2018
Multi-Small Business*	\$12.00	\$20.00	\$22.20	\$22.80	\$23.40	\$23.85
CDF	\$55.00	\$91.70	\$101.85	\$104.60	\$107.20	\$109.40
Baptist Church **						
Elem School **	\$80.00	\$133.25	\$148.00	\$152.00	\$155.75	\$159.00
High School**	\$280.00	\$466.40	\$518.00	\$532.00	\$545.15	\$556.50
Class 1 Commercial *	\$35.00	\$58.40	\$64.85	\$66.60	\$68.25	\$69.65
Class 2 Commercial *	\$50 .00	\$83.45	\$92.65	\$95.15	\$97.50	\$99.55
Jail**	\$80.00	\$133.25	\$148.00	\$152.00	\$155.75	\$159.00
Court House Govt Center**	\$40.00	\$66.65	\$74.00	\$76.00	\$77.90	\$79.50
Parks & Recreation**	\$55.00	\$91.70	\$101.85	\$104.60	\$107.20	\$109.40
History Center Library**	\$30.00	\$50.10	\$55.65	\$57.15	\$58.60	\$59.80
Hospital **	\$55.00	\$91.70	\$101.85	\$104.60	\$107.20	\$109.40

*Add commercial metered rate.

**Add residential metered rate.

C. COMMERCIAL METERED RATE						
MULTI-SMALL BUSINESS, COMMERCIAL CLASS 1 AND 2 ONLY						
METER (GAL) Per 1,000 gallons	BASE RATE	Oct. 15, 2014	July 1, 2015	July 1, 2016	July 1, 2017	July 1, 2018
1-10,000	\$1.60	\$1.95	\$2.75	\$2.85	\$2.95	\$3.05
10,001-15,000	\$2.20	\$2.70	\$3.75	\$3.90	\$4.00	\$4.15
15,001-20,000	\$2.80	\$3.40	\$4.80	\$4.95	\$5.10	\$5.25
20,001-25,000	\$3.24	\$3.95	\$5.55	\$5.75	\$5.90	\$6.10
25,001 +	\$3.70	\$4.50	\$6.30	\$6.55	\$6.75	\$6.95

D. COMMERCIAL (MOTEL)					
	BASE RATE	<i>1-3,000 Gallons</i>	<i>3,001-6,000 Gallons</i>	<i>6,001-9,000 Gallons</i>	<i>9,001 + Gallons</i>
		Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal	Per 1,000 Gal
Oct. 15, 2014	\$6.70	\$2.20	\$3.05	\$4.25	\$6.10
July 1, 2015	\$7.40	\$3.10	\$4.30	\$6.00	\$8.55
July 1, 2016	\$7.60	\$3.20	\$4.40	\$6.20	\$8.85
July 1, 2017	\$7.80	\$3.30	\$4.55	\$6.35	\$9.10
July 1, 2018	\$7.95	\$3.40	\$4.70	\$6.55	\$9.40

E. UNTREATED IRRIGATION		
	BASE RATE	<i>All Use</i>
		Per 1,000 Gal
Oct. 15, 2014	\$58.40	\$1.20
July 1, 2015	\$64.85	\$1.60
July 1, 2016	\$66.60	\$1.70
July 1, 2017	\$68.25	\$1.80
July 1, 2018	\$69.65	\$1.90

Water Cash Flow Projection

Table 4 shows the water enterprise 5-year cash flow projection. BWA determined that the District's revenues are adequate given the revenue requirements of the District. As shown graphically in **Chart A**, the District is projected to build up a beneficial fund balance which can be used for future capital projects and to help phase in future rate increases beyond the 5-year projection period. Revenues are projected to cover expenditures over the next 5 years.

Cash Flow Assumptions:

Operating expenses: The District provided estimated operating expense projections. Operating expenses are projected to increase by an average rate of 4.6% per year, with much of the increase driven by estimated source of supply costs and water plant operating costs.

Growth: BWA projects that the customer base will remain flat through the projection period due to the growth trends of the Town of Mariposa.

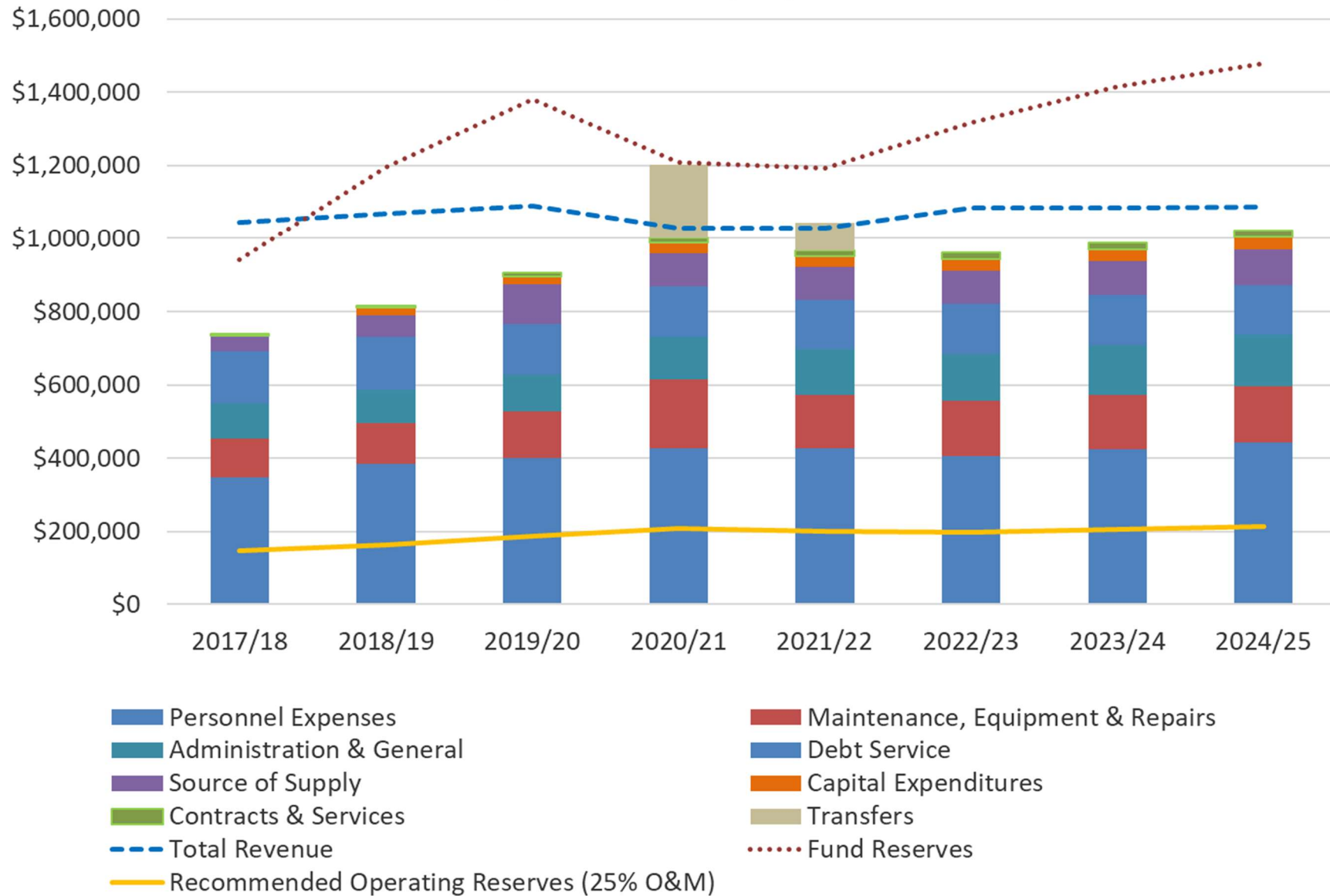
Capital Expenditures: The District projects estimated repairs and replacements of \$30,000 per year.

Wastewater Interfund Loan: BWA projects an interfund loan from water to wastewater will be required of \$200,000 in FY 2020/21 and \$75,000 in FY 2021/22 to keep the wastewater enterprise solvent. The loan is projected to be repaid over 5 years beginning in FY 2022/23.

Table 4								
Mariposa Public Utility District								
Water Cash Flow Projection								
			Projected					
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
% Rate Revenue Increase				0.0%	0.0%	0.0%	0.0%	0.0%
Growth - %				0.00%	0.00%	0.00%	0.00%	0.00%
REVENUES								
Operating Revenue								
Service Charges	\$785,000	\$802,648	\$805,000	\$805,000	\$805,000	\$805,000	\$805,000	\$805,000
Other Water Sales	57,187	45,536	30,000	30,000	30,000	30,000	30,000	30,000
Late Charges	1,762	1,888	1,500	1,500	1,500	2,000	2,000	2,000
Other	5,361	65	6,500	2,000	2,000	2,000	2,000	2,000
Total Operating Revenues	\$853,322	\$865,818	\$848,000	\$838,500	\$838,500	\$839,000	\$839,000	\$839,000
Non Operating Revenues								
Proceeds from SRF /Prop-SO grants	\$0	\$0	\$49,779	\$0	\$0	\$0	\$0	\$0
WW Loan Repayment	0	0	0	0	0	55,000	55,000	55,000
Proceeds from Assessment Districts	143,077	145,079	145,000	141,000	141,000	141,000	141,000	141,000
Capacity Charges	7,740	15,480	5,000	5,000	5,000	5,000	5,000	5,000
Tax Increment	40,421	43,255	43,000	44,000	44,000	44,800	45,500	46,400
Total Non Operating Revenues	\$191,238	\$203,814	\$242,779	\$190,000	\$190,000	\$245,800	\$246,500	\$247,400
TOTAL REVENUES	\$1,044,560	\$1,069,632	\$1,090,779	\$1,028,500	\$1,028,500	\$1,084,800	\$1,085,500	\$1,086,400
EXPENSES								
Operating Expenses								
Salaries	\$225,735	\$247,810	\$250,000	\$258,500	\$256,000	\$238,500	\$254,000	\$266,500
Soc. Sec.	19,861	21,288	19,000	20,000	20,000	18,500	19,500	20,500
Emp. Benefits	69,021	83,809	95,000	108,000	110,000	108,500	110,500	112,500
PERS	32,670	30,475	35,500	40,000	40,500	40,000	41,500	43,000
Mobile Equip.	8,096	6,937	8,000	12,000	13,000	14,000	15,500	16,500
Training	2,160	562	2,000	5,000	5,000	5,000	6,000	6,500
Prof. Services	4,330	5,481	10,000	14,000	16,000	18,000	20,000	20,000
Office	14,046	14,008	16,000	20,000	21,000	22,000	23,000	24,000
Insurance/Bonds	37,062	39,965	42,000	44,000	46,000	48,000	50,000	52,000
Source of Supply	42,001	58,173	110,000	90,000	90,000	92,000	95,000	96,000
Fees/Permits	24,448	27,853	30,000	32,000	34,000	35,000	36,000	37,000
Water Plant	73,369	79,256	90,000	140,000	95,000	96,000	98,000	102,000
Dist/Maintenance	24,157	27,197	29,000	36,000	38,000	40,000	33,500	34,000
Customer Accounts Including Refund	2,877	1,645	4,000	7,000	7,500	8,500	9,500	10,000
Water Quality Monitoring	6,828	5,488	7,000	8,500	8,800	9,000	9,500	10,000
Dues and Subscriptions	9,168	225	500	500	500	700	800	1,000
Administrative Expense	185	325	500	500	500	500	500	500
Total Operating Expenses	\$596,014	\$650,497	\$748,500	\$836,000	\$801,800	\$794,200	\$822,800	\$852,000
NET REVENUES	\$448,546	\$419,135	\$342,279	\$192,500	\$226,700	\$290,600	\$262,700	\$234,400
Non Operating Expenses								
Other Construction/Engineering	\$0	\$22,000	\$5,000	\$0	\$0	\$0	\$0	\$0
WW Loan	0	0	0	200,000	75,000	0	0	0
Replacement & Additions to Existing	0	899	15,000	30,000	30,000	30,000	30,000	35,000
Debt Service Water Agency (Water Tank)	2,265	3,020	0	0	0	0	0	0
<u>Debt Service Assessment Bonds</u>	<u>140,029</u>	<u>140,074</u>	<u>136,000</u>	<u>136,000</u>	<u>136,000</u>	<u>136,000</u>	<u>136,000</u>	<u>136,000</u>
Total Non Operating Expenses	\$142,294	\$165,993	\$156,000	\$366,000	\$241,000	\$166,000	\$166,000	\$171,000
TOTAL EXPENSES	\$738,308	\$816,490	\$904,500	\$1,202,000	\$1,042,800	\$960,200	\$988,800	\$1,023,000
NET INCOME	\$306,252	\$253,142	\$186,279	(\$173,500)	(\$14,300)	\$124,600	\$96,700	\$63,400
Ending Fund Balance	\$941,506	\$1,194,648	\$1,380,927	\$1,207,427	\$1,193,127	\$1,317,727	\$1,414,427	\$1,477,827
Total Unrestricted Fund								
Target (25% O&M)	\$149,004	\$162,624	\$187,125	\$209,000	\$200,450	\$198,550	\$205,700	\$213,000
Target Met	yes	yes	yes	yes	yes	yes	yes	yes
Debt Service Coverage (Min. 1.25x)	3.15	2.93	2.52	1.42	1.67	2.14	1.93	1.72
Target Met	yes	yes	yes	yes	yes	yes	yes	yes

Chart A

Water Projected Revenue, Expenses & Reserves



Cost Allocation to Billing Components

In **Table 5** BWA allocated the District's costs to various components including fixed, all volume, and water supplies including: base, average summer, and peak. **Appendix A** details how District costs were allocated to each cost category. Water Treatment and Water Distribution System Operations are allocated to Base, Average, Summer and Peak based of each water supplies contribution total peak use, as calculated in **Appendix B**.

Table 5
Mariposa Public Utility District
Functional Allocation

Allocation Category	Allocation Amount	Fixed	All Volume	Base	Average	Summer	Peak	Total
1. Source of Supply	\$90,000	21%	79%					100%
2. Water Treatment	\$159,000			39%	26%	29%	6%	100%
3. Water Distribution System Operations	\$48,000			39%	26%	29%	6%	100%
4. Maintenance of Water Meters	\$7,000	100%						100%
5. Water Utility Administration	\$532,000	65%	35%					100%
Non Operating Expenses	\$166,000	100%						100%
Less Non Operating Revenue	-\$190,000	75%	25%					100%
Plus Net Income	\$26,500	100%						100%
Functional Allocation \$	\$838,500	\$421,872	\$209,628	\$80,062	\$53,374	\$60,758	\$12,806	\$838,500
Functional Allocation %		50%	25%	10%	6%	7%	2%	100%

Volumetric Rate Calculation

In **Table 6**, BWA calculated the volumetric rates for residential, commercial, and untreated use. Costs allocated to all volume are allocated to each unit of water (99,438 kgals). Treated volume (96,587 kgals) is allocated to each water supply based on the annual demand allocation in **Appendix B**. Costs allocated to each water supply are divided by total water units to determine a unit cost for each water supply.

Residential usage is allocated to each water supply based on the annual demand allocation in **Appendix B**. **Table 6** shows how residential customers utilize each of the water supplies in each tier, with Tier 1 included only base supplies, and Tier 5 including a mix of average, summer and peak.

Supply rates for each tier are calculated by divided the revenue requirement for each tier by the tier demand. Adding the supply rates to the all volume rate for each tier gives the total residential tiered rate.

Commercial rates are derive based on the average supply rate for each unit of water plus the all volume rate, totaling \$4.25/unit. Untreated customers are proposed to pay the supply unit only, totaling \$2.11/unit. The untreated rate excludes water treatment and distribution system operations costs.

Table 6
Mariposa Public Utility District
2020/21 Tiered Rate Derivation

Allocation Units	All Volume	Treated Volume	Base	Average	Summer	Peak
	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>
Allocation %			60.0%	24.5%	13.9%	1.6%
Allocation Units	99,438	96,587	57,952	23,663	13,427	1,545
Revenue Requirement	<u>\$209,628</u>		<u>\$80,062</u>	<u>\$53,374</u>	<u>\$60,758</u>	<u>\$12,806</u>
Unit Cost	\$2.11		\$1.38	\$2.26	\$4.53	\$8.29

Residential	All Volume	Base	Average	Summer	Peak
	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>	<i>1k Gallons</i>
Allocation %		60.0%	24.5%	13.9%	1.6%
Allocation Units	51,789	31,073	12,688	7,199	828
Revenue Requirement		\$42,928	\$28,619	\$32,578	\$6,867

Residential Rate Structure	Tier Demand	Tier Demand	Base	Average	Summer	Peak
Tier 1	56.1%	29,057	29,057	0	0	0
Tier 2	17.3%	8,941	2,017	6,924	0	0
Tier 3	6.4%	3,313	0	3,313	0	0
Tier 4	3.0%	1,570	0	1,570	0	0
Tier 5	17.2%	8,909	0	881	7,199	828

Residential Rate Structure	Tier Demand (1k gallons)	Revenue Requirement	Supply Rate	All Volume Rate	Total Rate	Final Rate
Tier 1	29,057	\$40,142	\$1.38	\$2.11	\$3.49	\$3.49
Tier 2	8,941	\$18,404	\$2.06	\$2.11	\$4.17	\$4.17
Tier 3	3,313	\$7,473	\$2.26	\$2.11	\$4.36	\$4.36
Tier 4	1,570	\$3,542	\$2.26	\$2.11	\$4.36	\$4.36
Tier 5	8,909	\$41,431	\$4.65	\$2.11	\$6.76	\$6.76

Rate Structure	Demand (1k gallons)	Revenue Requirement	Supply Rate	All Volume Rate	Final Rate
All Potable Use	44,798	\$190,449	\$2.14	\$2.11	\$4.25
All Untreated Use	2,851	\$6,010	\$0.00	\$2.11	\$2.11

Meter Charges

Table 7 shows the derivation of the meter charge. The total fixed revenue requirement of \$421,872 from **Table 5** is divided by AWWA equivalent 3/4" meters totaling 1,210 to determine a charge of \$29.05 per equivalent meter.

Table 7
Mariposa Public Utility District
Proposed Rate Schedule by Meter Size

Fixed Revenue Requirement	\$421,872
Meter Equivalents	1,210
Monthly Charge	\$29.05

<u>Meter Size</u>	<u>Proposed Ratios</u>	<u>Proposed Monthly Meter Charge</u>	<u>Estimated Customer Count</u>	<u>Estimated Revenue</u>
Residential	1	\$29.05	722	\$251,711
Commercial 3/4"	1	\$29.05	140	\$48,808
Commercial 1"	1.67	\$48.42	9	\$5,229
Commercial 2"	5.33	\$154.95	30	\$55,781
Commercial 4"	16.67	\$484.21	3	\$17,432
Commercial 6"	33.33	\$968.42	1	\$11,621
Motel (per Unit)	0.25	\$7.26	359	\$31,290
				<u>\$421,872</u>

Water Bill Impacts

Table 8 shows the bill impacts of the proposed water rates based on five varying levels of water usage.

Table 8
Mariposa Public Utility District
Projected Water Rate Impacts

Proposed Rates		Current Rates	Proposed FY 2020/21
Monthly fixed charge		\$31.80	\$29.05
\$ Change			(\$2.75)
Residential			
Monthly Tiers			
Tier 1: 0 to 5kgal		\$2.55	\$3.49
Tier 2: 5kgal - 10kgal		\$2.85	\$4.17
Tier 3: 10kgal - 15kgal		\$3.75	\$4.36
Tier 4: 15kgal - 20kgal		\$5.25	\$4.36
Tier 5: over 20kgal		\$6.10	\$6.76
<u>Water Use Level</u>	<u>Monthly Use (kgal)</u>		<u>Monthly Bill</u>
Water Usage 0-3,000 gallons	3	\$39.45	\$39.52
<i>\$ Increase</i>			<i>\$0.07</i>
Water Usage 0-5,000 gallons	5	\$44.55	\$46.50
<i>\$ Increase</i>			<i>\$1.95</i>
Water Usage 0-10,000 gallon:	10	\$58.80	\$67.33
<i>\$ Increase</i>			<i>\$8.53</i>
Water Usage 0-20,000 gallon:	20	\$103.80	\$110.97
<i>\$ Increase</i>			<i>\$7.17</i>
Water Usage 0-40,000 gallon:	40	\$225.80	\$246.15
<i>\$ Increase</i>			<i>\$20.35</i>

SECTION 4: WASTEWATER RATES

Current Wastewater Rates

Table 9 shows the District's historical and current wastewater rates.

Table 9
Mariposa Public Utility District
Wastewater Historical & Current Rates

MONTHLY WASTEWATER RATES						
		Oct. 15, 2014	July 1, 2015	July 1, 2016	July 1, 2017	July 1, 2018
Residential Per Unit	\$21.00	\$29.00	\$40.00	\$46.00	\$47.50	\$48.50
Multi-Family Residence Per Unit	\$17.00	\$23.00	\$32.00	\$37.00	\$38.00	\$39.00
Residential Mobile Home	\$17.50	\$29.00	\$40.00	\$46.00	\$47.50	\$48.50
Commercial Unassigned	\$12.00	\$29.00	\$40.00	\$46.00	\$47.50	\$48.50
Commercial #A	\$12.00	\$29.00	\$40.00	\$46.00	\$47.50	\$48.50
Commercial #B	\$12.00	\$69.00	\$95.50	\$111.00	\$113.50	\$116.50
Commercial #C	\$49.00	\$188.00	\$260.50	\$302.00	\$309.50	\$316.50
Commercial #D	\$120.00	\$219.00	\$304.00	\$352.00	\$361.00	\$369.50
Commercial #E	\$350.00	\$465.00	\$645.50	\$748.00	\$767.00	\$785.00
Motels Per Unit	\$14.00	\$19.50	\$27.00	\$31.00	\$32.00	\$32.50
Hospital	\$450.00	\$664.50	\$922.00	\$1,068.50	\$1,095.00	\$1,121.00
Institutional	\$180.00	\$625.50	\$867.50	\$1,005.50	\$1,031.00	\$1,055.00

Commercial Rate #A:

Structure occupancies, with no commercial kitchen, including retail space, office space, automotive repair, medical office, and public use gyms. Structure area is less than 3,000 sq. ft. Warehouses less than 10,000 sq. ft.

Commercial Rate #B:

Structure occupancies, with no commercial kitchen, that include retail space, office space, automotive repair, medical office, and public use gyms. Structure area is between 3,000 sq. ft. and 7,000 sq. ft.

Commercial Rate #C:

Structure occupancies, that include retail space, office space, automotive repair, medical office, public use gyms. Structure area is between 7,001 sq. ft. and 12,000 sq. ft. and restaurants less than 7,000 sq. ft.

Commercial Rate #D:

Structure occupancies, that include retail space, office space, automotive repair, medical office, public use gyms. Structure area is between 12,001 sq. ft. and 24,000 sq. ft. Restaurants over 7,000 sq. ft.

Commercial Rate #E:

Structure occupancies, with no commercial kitchen, that include retail space, office space, automotive repair, medical office, and public use gyms. Structure area is over 24,001 sq. ft. and Laundromats.

Cash Flow Projection

Table 10 shows the wastewater enterprise 5-year cash flow projection. BWA determined that the District needs to raise rate revenue by 7.25% per year for the next 5 years to meet the goal of funding the District's operating and capital needs. **Chart B** shows the financial position of the sewer enterprise graphically.

Cash Flow Assumptions:

Operating expenses: The District provided estimated operating expense projections. Operating expenses are projected to increase by an average rate of 5% per year, with much of the increase driven by estimated wastewater treatment facility operating costs.

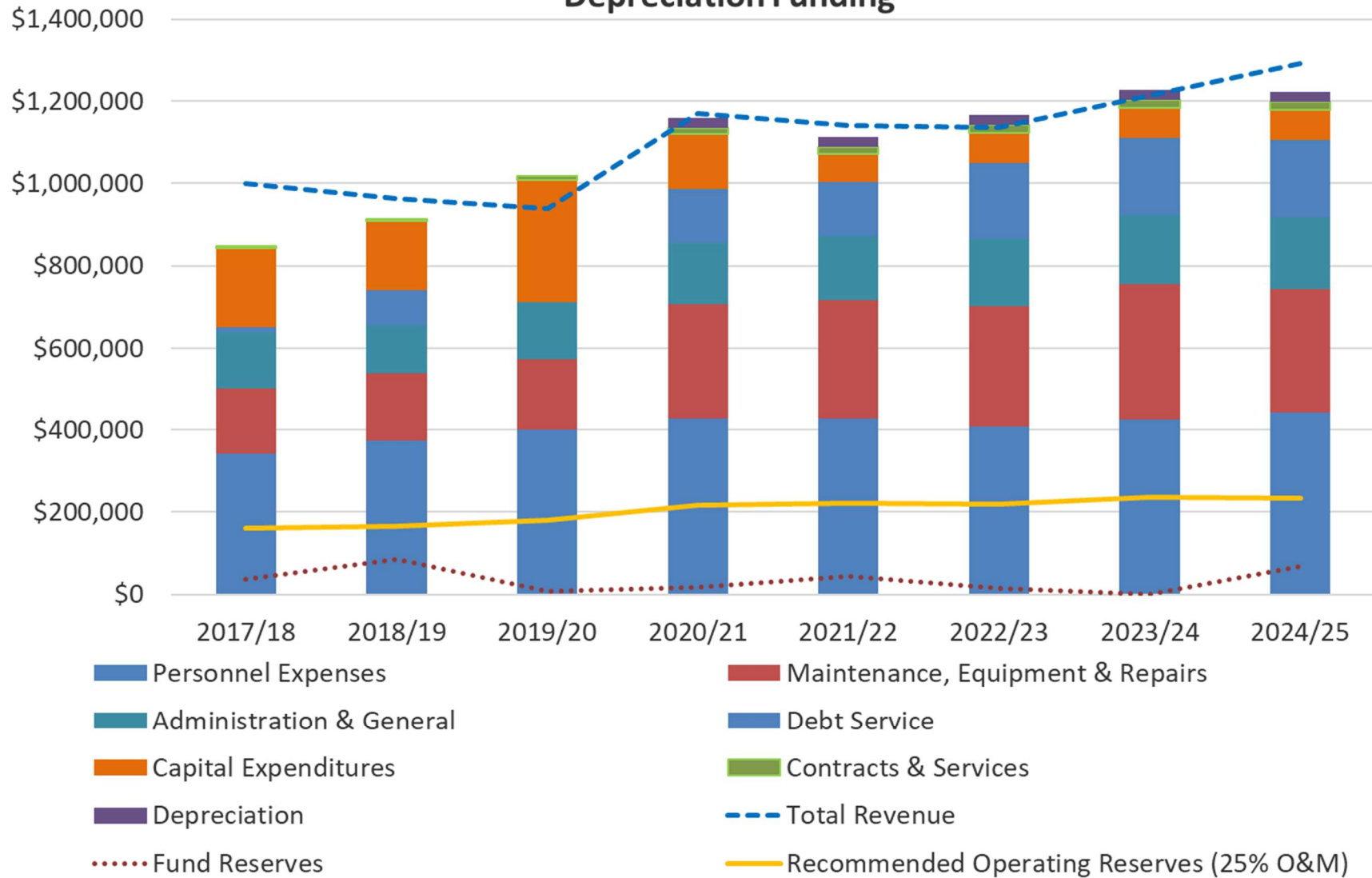
Growth: BWA projects that the customer base will remain flat through the projection period due to the growth trends of the Town of Mariposa.

Capital Expenditures: The District projects estimated repairs and replacements of \$20k-\$25k per year, major repairs of \$48,225 per year, and \$25,000 per year for depreciation.

Debt Service: Rates are designed to meet debt service coverage on the District's SWRCB SRF Loan and projected interfund loan. Payments for the SWRCB SRF Loan are \$131,000 per year. BWA projects interfund loan debt service of \$55,000 per year beginning in FY 2022/23 payable from the wastewater enterprise to the water enterprise.

Table 10								
Mariposa Public Utility District								
Wastewater Cash Flow Projection								
					Projected			
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
% Rate Revenue Increase				7.25%	7.25%	7.25%	7.25%	7.25%
Growth - %				0.00%	0.00%	0.00%	0.00%	0.00%
REVENUES								
Operating Revenue								
Service Charges	\$809,997	\$843,962	\$840,000	\$870,450	\$966,215	\$1,036,266	\$1,111,395	\$1,191,971
Water Enterprise Loan			0	200,000	75,000	0	0	0
Late Charges	2,024	2,395	2,000	2,000	2,000	2,000	2,000	2,000
Water Quality Analysis	34,936	36,620	35,000	35,000	36,000	36,000	36,000	36,000
Other Income	9,750	14,871	1,000	1,000	0	0	0	0
Total Operating Revenues	\$860,559	\$897,848	\$878,000	\$1,108,450	\$1,079,215	\$1,074,266	\$1,149,395	\$1,229,971
Non Operating Revenues								
Proceeds from Assessment Districts	\$11,438	\$12,709	\$12,700	\$12,700	\$12,700	\$12,700	\$12,700	\$12,700
Other	83,905	0	0	0	0	0	0	0
Tax Increment	40,932	43,255	43,000	44,000	44,000	44,800	45,500	43,400
Connection Fees	2,100	9,450	5,000	5,000	5,000	5,000	5,000	5,000
Total Non Operating Revenues	\$138,375	\$65,414	\$60,700	\$61,700	\$61,700	\$62,500	\$63,200	\$61,100
TOTAL REVENUES	\$998,934	\$963,262	\$938,700	\$1,170,150	\$1,140,915	\$1,136,766	\$1,212,595	\$1,291,071
EXPENSES								
Operating Expenses								
Salaries	\$220,424	\$244,932	\$250,000	\$258,160	\$256,000	\$239,000	\$254,000	\$267,000
Soc. Sec.	20,192	21,290	20,000	20,000	20,000	18,500	19,500	21,000
Emp. Benefits	69,022	77,033	95,000	108,000	110,000	110,000	110,000	112,000
PERS	32,670	30,475	36,000	40,000	41,000	41,000	42,000	43,000
Mobile Equip.	8,870	6,937	8,000	12,000	13,000	14,000	15,500	16,500
Training	2,554	1,434	4,000	5,000	5,000	5,000	6,000	6,500
Prof. Svc.	4,792	5,820	10,000	14,000	16,000	18,000	20,000	20,000
Office	13,850	14,603	16,000	20,000	21,000	22,000	23,000	24,000
Insurance/Bonds	33,957	23,177	42,000	44,000	46,000	48,000	49,000	52,000
Wastewater Treatment Facility	143,564	153,597	160,000	252,000	260,000	262,000	298,000	266,000
Water Quality Monitoring	35,005	18,766	18,000	18,000	20,000	21,000	21,500	22,000
Laboratory	23,566	19,203	24,000	26,000	27,000	27,500	28,000	29,000
Sewer Collection	4,948	3,780	5,000	16,000	16,000	16,500	17,000	18,000
Fees/Permits	13,500	13,695	17,000	17,500	18,000	18,500	19,000	20,000
Biosolids Disposal	15,806	24,726	15,000	18,000	18,500	19,000	19,500	20,000
Administrative/Litigation expense	0	0	0	0	0	0	0	0
Administrative Expenses	235	217	500	500	500	500	500	500
Dues and Subscriptions	1,312	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Total Operating Expenses	\$644,267	\$660,685	\$721,500	\$870,160	\$889,000	\$881,500	\$943,500	\$938,500
NET REVENUES FOR DEBT SERVICE	\$354,667	\$302,577	\$217,200	\$299,990	\$251,915	\$255,266	\$269,095	\$352,571
Non Operating Expenses								
Engineering WWTF Improvements /Local)	\$118,280	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Local Cost share WWTF Improvements	0	114,691	286,224	0	0	0	0	0
Consent Decree FMC Vs MPUD	0	0	0	0	0	0	0	0
Replacement, Depreciation & Additions	0	15,000	10,000	85,000	20,000	25,000	25,000	25,000
Debt Service Assessment Bonds 89-1	10,397	87,040	0	0	0	0	0	0
Debt Service SWRCB SRF Loan	0	0	0	131,000	131,000	131,000	131,000	131,000
Water Enterprise Loan Repayment (5 Years)			0	0	0	55,000	55,000	55,000
Depreciation	0	0	0	25,000	25,000	25,000	25,000	25,000
Other Major Repair	75,740	36,627	0	48,225	48,225	48,225	48,225	48,225
Total Non Operating Expenses	\$204,417	\$253,358	\$296,224	\$289,225	\$224,225	\$284,225	\$284,225	\$284,225
TOTAL EXPENSES	\$848,684	\$914,043	\$1,017,724	\$1,159,385	\$1,113,225	\$1,165,725	\$1,227,725	\$1,222,725
NET INCOME	\$150,250	\$49,219	(\$79,024)	\$10,765	\$27,690	(\$28,959)	(\$15,130)	\$68,346
Ending Fund Balance	\$36,622	\$85,841	\$6,817	\$17,582	\$45,272	\$16,313	\$1,183	\$69,529
Total Unrestricted Fund Target (25% O&M)	\$161,067	\$165,171	\$180,375	\$217,540	\$222,250	\$220,375	\$235,875	\$234,625
Target Met	no	no	no	no	no	no	no	no
Debt Service Coverage (Min. 1.1x)	34.11	3.48	N/A	2.29	1.92	1.37	1.45	1.90

Chart B
Wastewater Projected Revenue, Expenses & Reserves
Depreciation Funding



Cost Allocation

In **Table 11** BWA calculated the current revenue requirements for each customer class based on current estimates of sewer flow.

Table 11
Mariposa Public Utility District
Revenue Requirements - Wastewater Customers

Customer Category	# of Units	Current Estimated Annual Revenue	Revenue Req. Based on Flow	Difference
Residential Per Unit	517	\$300,894	\$322,655	\$21,761
Multi-Family Residence Per Unit	270	\$126,360	\$96,714	(\$29,646)
Commercial #A	77	\$44,814	\$40,093	(\$4,721)
Commercial #B	24	\$33,552	\$29,864	(\$3,688)
Commercial #C	24	\$91,152	\$113,718	\$22,566
Commercial #D	7	\$31,038	\$33,660	\$2,622
Commercial #E	1	\$9,420	\$8,715	(\$705)
Motels Per Unit	362	\$141,180	\$140,898	(\$282)
Hospital	1	\$13,452	\$11,101	(\$2,351)
Institutional	4	\$50,640	\$45,084	(\$5,556)
	1,287	\$842,502	\$842,502	\$0

Table 12 shows the current and proposed sewer rates, with the rates realigned based on flow and increased each year meet revenue requirements. Proposed rate changes are phased in over 5 years.

Table 12
Mariposa Public Utility District
Current and Proposed Wastewater Rates

	Current	2020/21	2021/22	2022/23	2023/24	2024/25
Residential Per Unit	\$48.50	\$52.72	\$57.30	\$62.28	\$67.70	\$73.58
Multi-Family Residence Per Unit	\$39.00	\$39.63	\$40.26	\$40.91	\$41.57	\$42.23
Commercial #A	\$48.50	\$50.84	\$53.29	\$55.87	\$58.56	\$61.39
Commercial #B	\$116.50	\$122.00	\$127.76	\$133.78	\$140.10	\$146.71
Commercial #C	\$316.50	\$354.59	\$397.27	\$445.08	\$498.64	\$558.65
Commercial #D	\$369.50	\$402.53	\$438.52	\$477.72	\$520.43	\$566.95
Commercial #E	\$785.00	\$828.43	\$874.26	\$922.62	\$973.66	\$1,027.52
Motels Per Unit	\$32.50	\$34.82	\$37.31	\$39.97	\$42.83	\$45.89
Hospital	\$1,121.00	\$1,156.27	\$1,192.65	\$1,230.17	\$1,268.87	\$1,308.80
Institutional	\$1,055.00	\$1,104.84	\$1,157.04	\$1,211.70	\$1,268.94	\$1,328.89

APPENDIX A: WATER COST CATEGORIES

Table 1						
Mariposa Public Utility District						
Water Costs by Category						
Water Utility Itemized Expenditures and Revenue	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
1. Source of Supply	\$110,000	\$90,000	\$90,000	\$92,000	\$95,000	\$96,000
2. Water Treatment						
A. Treatment Facility	\$90,000	\$140,000	\$95,000	\$96,000	\$98,000	\$102,000
B. Professional Services	\$10,000	\$14,000	\$16,000	\$18,000	\$20,000	\$20,000
C. Training	\$2,000	\$5,000	\$5,000	\$5,000	\$6,000	\$6,500
D. Replacement of Existing Equipment	\$0	\$0	\$0	\$0	\$0	\$0
E. Total Water Treatment	\$102,000	\$159,000	\$116,000	\$119,000	\$124,000	\$128,500
3. Water Distribution System Operations						
A. Water Distribution System Operations/Maintenance	\$29,000	\$36,000	\$38,000	\$40,000	\$33,500	\$34,000
B. Mobile Equipment	\$8,000	\$12,000	\$13,000	\$14,000	\$15,500	\$16,500
C. Replacement of Existing Equipment	\$0	\$0	\$0	\$0	\$0	\$0
D. Total Water Distribution System Operations	\$37,000	\$48,000	\$51,000	\$54,000	\$49,000	\$50,500
4. Maintenance of Water Meters						
A. Customer Accounts	\$4,000	\$7,000	\$7,500	\$8,500	\$9,500	\$10,000
5. Water Utility Administration						
A. Salaries	\$250,000	\$258,500	\$256,000	\$238,500	\$254,000	\$266,500
B. Social Security	\$19,000	\$20,000	\$20,000	\$18,500	\$19,500	\$20,500
C. Employee Benefits	\$95,000	\$108,000	\$110,000	\$108,500	\$110,500	\$112,500
D. P.E.R.S.	\$35,500	\$40,000	\$40,500	\$40,000	\$41,500	\$43,000
E. Office	\$16,000	\$20,000	\$21,000	\$22,000	\$23,000	\$24,000
F. Insurance/Bonds	\$42,000	\$44,000	\$46,000	\$48,000	\$50,000	\$52,000
G. Regulatory Fees/Permits	\$30,000	\$32,000	\$34,000	\$35,000	\$36,000	\$37,000
H. Water Quality Monitoring	\$7,000	\$8,500	\$8,800	\$9,000	\$9,500	\$10,000
I. Misc	\$1,000	\$1,000	\$1,000	\$1,200	\$1,300	\$1,500
J. Total Water Utility Administration	\$495,500	\$532,000	\$537,300	\$520,700	\$545,300	\$567,000
6. Total Estimated Disbursements	\$748,500	\$836,000	\$801,800	\$794,200	\$822,800	\$852,000
7. None Rate Revenue						
A. Interest	\$5,000	\$0	\$0	\$0	\$0	\$0
B. Late Charges	\$1,500	\$1,500	\$1,500	\$2,000	\$2,000	\$2,000
C. Tax Inciment	\$43,000	\$44,000	\$44,000	\$44,800	\$45,500	\$46,400
D. Other Revenues	\$6,500	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
E. Total Estimated Non-Rate Revenues	\$56,000	\$47,500	\$47,500	\$48,800	\$49,500	\$50,400

APPENDIX B: DEMAND FACTORS

Table 1
Mariposa Public Utility District
Demand Allocation Factors

Monthly Billed Demand

Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	<i>1k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>Gallons</i>
CY 19	5,825	4,547	4,310	6,551	7,491	8,265	12,375	11,924	13,063	9,112	7,573	5,442	96,478
CY 18	5,857	4,663	4,854	6,477	8,289	9,555	14,160	12,673	11,024	11,606	6,902	5,223	101,283
Average	5,841	4,605	4,582	6,514	7,890	8,910	13,268	12,298	12,043	10,359	7,238	5,332	98,881

Bi-Monthly Billed Demand

Calendar Year	Jan/Feb	Mar/Apr	May/Jun	July/Aug	Sept/Oct	Nov/Dec	Total
	<i>1k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>Gallons</i>
CY 19	10,373	10,862	15,756	24,299	22,174	13,015	96,478
CY 18	10,520	11,331	17,844	26,833	22,630	12,125	101,283
Average	10,446	11,096	16,800	25,566	22,402	12,570	98,881

Billed Demand Allocation Factor (Average CY 18 - CY 19)

Category	Category Definition	Category Amount	Incremental Peak Demand	Incremental Peak Demand
		<i>1k Gallons</i>	<i>1k Gallons</i>	<i>%</i>
Base	60% of Avg	9,888	9,888	39%
Average	Annual	16,480	6,592	26%
Summer	July - Oct	23,984	7,504	29%
Peak	Max	25,566	1,582	6%

Annual Demand Allocation

Category	Category Amount	Jan/Feb	Mar/Apr	May/Jun	July/Aug	Sept/Oct	Nov/Dec	Total	Total
		<i>1k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>'k Gallons</i>	<i>Gallons</i>	<i>%</i>
Base	9,888	9,888	9,888	9,888	9,888	9,888	9,888	59,328	60.0%
Average	16,480	558	1,208	6,592	6,592	6,592	2,682	24,225	24.5%
Summer	23,984	0	0	320	7,504	5,922	0	13,746	13.9%
Peak	25,566	0	0	0	1,582	0	0	1,582	1.6%
Total		10,446	11,096	16,800	25,566	22,402	12,570	98,881	100%