

Foresthill Public Utility District

Water Rate Study



March 2014

Foresthill PUD Water Rate Study

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Section 1

Introduction and Summary of Findings

1.1 BACKGROUND

The Foresthill Public Utility District (the District) currently provides treated water to 1,966 metered customers (see table below), of which approximately 96% (1,895) are residential and 4% (71) are non-residential customers. The District serves the unincorporated community of Foresthill, California, including commercial areas and various residential developments. Foresthill is located on the ridge between the North Fork and Middle Fork of the American River, commonly referred to as the Foresthill Divide.

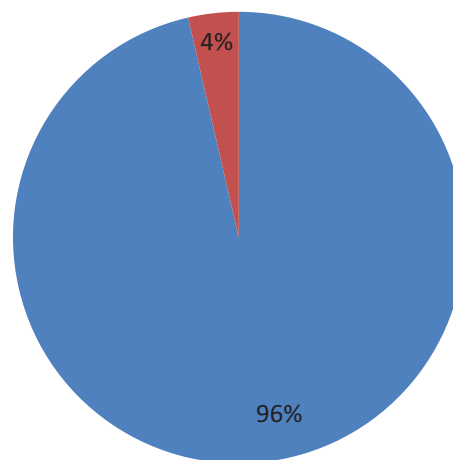
The District's service territory covers approximately 13,000 acres with a population of around 6,076 based on the 2010 census report.

Table 3 – Customers by Type Meter Size (see Appendix A for detailed information)

Residential (01)	Accounts
Inactive	43
3/4" Meter	500
5/8" Meter	1272
1" - 1.5" Meter	8
Multiple Service	9
2X Meter	29
Various Dual/Triple/Limited Income	34
Subtotal	1895
Commercial (02)	Accounts
Inactive	3
3/4" Meter	7
5/8" Meter	32
1" - 8" Meter	12
2X Meter	5
Various Dual/Triple Service	3
Accumulate Meter	4
Subtotal	66
Industrial/AG (03)	Accounts
Industrial/Agri 1.5" - 2" Service	5
Subtotal	5
Total Metered Customers	1966

Foresthill Public Utility District

■ Residential ■ Commercial/Industrial



Residential customers are 96% of the consumer ratepayer base for the Foresthill Public Utility District.

1.2 PURPOSE OF THE REPORT

The purpose of this report is to update the June 2010 Water Rate Study prepared by ECO: LOGIC with information and calculated water rates necessary over the next five years or more for the District to maintain sustainability. The rates have been calculated based on the requirements of XIIC et. seq. of the California Constitution, commonly known as Proposition 218. Proposition 218 mandates the fee or charge imposed corresponds with the benefit received by those paying the fee.

1.3 SUMMARY OF FINDINGS

The current water rates will not provide adequate revenues to maintain the District’s aging system. The water rates need to cover the current budgeted operating expenses and projected on-going maintenance, capital costs and depreciation.

Governmental Accounting Standards Board Rule 34 (GASB 34) requires public agencies to either include depreciation in their budgeting and rate setting methodology or develop a highly detailed *asset management plan*. The district at this time does not have a detailed *asset management plan* in place. The current asset value of the pipes, saddles, laterals and fire hydrants is approximately \$13 million. When these assets are depreciated over 30 years, the annual cost exceeds \$400,000 per year. The analysis, therefore, reflects the appropriate funding of \$400,000/year for depreciation as part of the calculations.

Extracts of **Table 1A** through **Table 1E** (see Appendix A for detailed information) show recommended water rate calculations beginning Fiscal Year 2014 to start funding the necessary reserves on an annual basis.

	Base [2]	Sugar Pine	Repair & Replacement	General Reserve	TOTAL FIXED
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Current Rate Charges – Table 2

Under 1"	\$ 36.18	\$ 8.32	\$ 13.28	\$ 1.83	\$ 59.61
Dual (2/1 parcel)	\$ 72.35	\$ 16.64	\$ 26.56	\$ 3.66	\$ 119.21
Triple (3/1 parcel)	\$ 108.53	\$ 24.96	\$ 39.84	\$ 5.49	\$ 178.82
1"	\$ 84.09	\$ 8.32	\$ 13.28	\$ 1.83	\$ 107.52
1.5"	\$ 191.21	\$ 8.32	\$ 13.28	\$ 1.83	\$ 214.64
2"	\$ 395.38	\$ 8.32	\$ 13.28	\$ 1.83	\$ 418.81
Over 2"	\$ 1,005.69	\$ 8.32	\$ 13.28	\$ 1.83	\$ 1,029.12
Multiple Service	\$ 33.72	\$ 8.32	\$ 13.28	\$ 1.83	\$ 57.15

Phase I Fiscal Year 2014-2015 - Table 1A

Under 1"	\$ 45.55	\$ 7.24	\$ 14.37	\$ 1.62	\$ 68.78
Dual (2/1 parcel)	\$ 91.10	\$ 14.49	\$ 28.74	\$ 3.24	\$ 137.57
Triple (3/1 parcel)	\$ 136.65	\$ 21.73	\$ 43.11	\$ 4.86	\$ 206.35
1"	\$ 82.44	\$ 13.11	\$ 26.01	\$ 2.93	\$ 124.49
1.5"	\$ 165.35	\$ 26.30	\$ 52.17	\$ 5.88	\$ 249.70
2"	\$ 323.56	\$ 51.46	\$ 102.09	\$ 11.51	\$ 488.61
Over 2"	\$ 795.52	\$ 126.52	\$ 251.00	\$ 28.30	\$ 1,201.34
Multiple Service	\$ 45.55	\$ 7.24	\$ 14.37	\$ 1.62	\$ 68.78

The rates reflected on the next page are intended to respond to increases in costs due to inflation and regulatory compliance.

Table 1A through Table 1E (continued)

	Base [2]	Sugar Pine	Repair & Replacement	General Reserve	TOTAL FIXED
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Phase II (12 - 18 months) - Table 1B

Under 1"	\$ 48.61	\$ 7.24	\$ 15.28	\$ 1.78	\$ 72.91
Dual (2/1 parcel)	\$ 97.22	\$ 14.49	\$ 30.56	\$ 3.56	\$ 145.83
Triple (3/1 parcel)	\$ 145.82	\$ 21.73	\$ 45.84	\$ 5.35	\$ 218.74
1"	\$ 87.98	\$ 13.11	\$ 27.65	\$ 3.23	\$ 131.97
1.5"	\$ 176.45	\$ 26.30	\$ 55.47	\$ 6.47	\$ 264.69
2"	\$ 345.29	\$ 51.46	\$ 108.54	\$ 12.66	\$ 517.95
Over 2"	\$ 848.95	\$ 126.52	\$ 266.86	\$ 31.13	\$ 1,273.47
Multiple Service	\$ 48.61	\$ 7.24	\$ 15.28	\$ 1.78	\$ 72.91

Phase III (12 - 18 months) - Table 1C

Under 1"	\$ 54.88	\$ 7.24	\$ 16.25	\$ 1.96	\$ 80.33
Dual (2/1 parcel)	\$ 109.75	\$ 14.49	\$ 32.50	\$ 3.92	\$ 160.66
Triple (3/1 parcel)	\$ 164.62	\$ 21.73	\$ 48.75	\$ 5.88	\$ 240.99
1"	\$ 99.32	\$ 13.11	\$ 29.41	\$ 3.55	\$ 145.39
1.5"	\$ 199.20	\$ 26.30	\$ 58.99	\$ 7.12	\$ 291.60
2"	\$ 389.80	\$ 51.46	\$ 115.42	\$ 13.93	\$ 570.61
Over 2"	\$ 958.40	\$ 126.52	\$ 283.79	\$ 34.24	\$ 1,402.96
Multiple Service	\$ 54.87	\$ 7.24	\$ 16.25	\$ 1.96	\$ 80.33

Phase IV (12 - 18 months) - Table 1D

Under 1"	\$ 58.58	\$ 7.24	\$ 17.28	\$ 2.16	\$ 85.26
Dual (2/1 parcel)	\$ 117.16	\$ 14.49	\$ 34.57	\$ 4.31	\$ 170.53
Triple (3/1 parcel)	\$ 175.74	\$ 21.73	\$ 51.85	\$ 6.47	\$ 255.79
1"	\$ 106.02	\$ 13.11	\$ 31.28	\$ 3.90	\$ 154.32
1.5"	\$ 212.65	\$ 26.30	\$ 62.74	\$ 7.83	\$ 309.51
2"	\$ 416.12	\$ 51.46	\$ 122.77	\$ 15.32	\$ 605.67
Over 2"	\$ 1,023.11	\$ 126.52	\$ 301.85	\$ 37.67	\$ 1,489.15
Multiple Service	\$ 58.58	\$ 7.24	\$ 17.28	\$ 2.16	\$ 85.26

Phase V (12 - 18 months) - Table 1E

Under 1"	\$ 62.54	\$ 7.24	\$ 18.39	\$ 2.37	\$ 90.54
Dual (2/1 parcel)	\$ 125.08	\$ 14.49	\$ 36.77	\$ 4.74	\$ 181.09
Triple (3/1 parcel)	\$ 187.62	\$ 21.73	\$ 55.16	\$ 7.12	\$ 271.63
1"	\$ 123.20	\$ 13.11	\$ 36.22	\$ 4.67	\$ 163.87
1.5"	\$ 259.54	\$ 26.30	\$ 76.30	\$ 9.85	\$ 328.68
2"	\$ 519.71	\$ 51.46	\$ 152.79	\$ 19.71	\$ 643.17
Over 2"	\$ 1,295.82	\$ 126.52	\$ 380.96	\$ 49.15	\$ 1,581.35
Multiple Service	\$ 62.54	\$ 7.24	\$ 18.39	\$ 2.37	\$ 90.54

1.4 ORGANIZATION OF THE REPORT

This report is separated into five sections as follows:

- Section 2 addresses the Water System and Customer Summary.
- Section 3 covers the Projected Annual Revenue Requirements.
- Section 4 explains the Water Rate Analysis.
- Section 5 provides the Findings and Recommendations.

There were assumptions made in this update to the June 2010 Water Rate Study. Those assumptions are as follows:

- A. The same customer base was used throughout the analysis.
- B. The annual gallonage remained the same in the commodity category.
- C. No additional Federal and State increases or requirements were known or considered.
- D. The same allocated percentages determined for fiscal year 2014/2015 (Phase I) were applied to water costs for the remaining phases.

Section 2

Water System and Customer Summary

This section gives a short description of the District's water system with highlights of the District's customer base, current billing structure, and the changes anticipated.

2.1 WATER SYSTEM INFRASTRUCTURE

The District's primary water supply comes from North Shirrtail Creek. The Bureau of Reclamation (the Bureau) constructed a dam on North Shirrtail Creek in the 1980's known as Sugar Pine Dam. The area behind the dam is referred to as Sugar Pine Reservoir which provides recreational opportunities in addition to water storage. The District acquired Sugar Pine Dam from the Bureau in 2003. Raw water from Sugar Pine Dam flows into a 40-acre foot pond before entering the water treatment plant.

The water treatment plant is a direct filtration system. Raw water flows through two dual media pressure filters for treatment before it's discharged to the three onsite storage tanks. The maximum flow based on filter load rates is 2,184 gallons per minute (gpm) or 3 million gallons per day (gpd). The water flows through the distribution system first by transmission mains then by smaller distribution pipelines to customers via service laterals to their meters. The system is primarily gravity fed.

2.2 CUSTOMER RATE STRUCTURE

The District's current water rate structure includes a fixed charge for a base allotment of 10,000 gallons per month with a commodity rate charge for each 1,000 gallons used over the base amount. A typical single family residence uses a 5/8 or 3/4 inch meter. Customers with greater water demands need larger meters. Larger meters are more expensive to maintain and replace so they are typically charged a higher monthly service charge.

Table 2 reflects the current water rates for fiscal year ending 6/30/2014 for various meter sizes.

Table 2 – Current Water Rate Charges (see Appendix A for detailed information)

	Base [2]	Sugar Pine	Repair & Replacement	General Reserve	TOTAL FIXED
Under 1"	\$ 36.18	\$ 8.32	\$ 13.28	\$ 1.83	\$ 59.61
Dual (2/1 parcel)	\$ 72.35	\$ 16.64	\$ 26.56	\$ 3.66	\$ 119.21
Triple (3/1 parcel)	\$ 108.53	\$ 24.96	\$ 39.84	\$ 5.49	\$ 178.82
1"	\$ 84.09	\$ 8.32	\$ 13.28	\$ 1.83	\$ 107.52
1.5"	\$ 191.21	\$ 8.32	\$ 13.28	\$ 1.83	\$ 214.64
2"	\$ 395.38	\$ 8.32	\$ 13.28	\$ 1.83	\$ 418.81
Over 2"	\$ 1,005.69	\$ 8.32	\$ 13.28	\$ 1.83	\$ 1,029.12
Multiple Service	\$ 33.72	\$ 8.32	\$ 13.28	\$ 1.83	\$ 57.15

Table 3 provides the breakdown of customers based on meter size and dwelling units.

Table 3 – Customers by Type and Meter Size (see Appendix A for detailed information)

	5/8" & 3/4"	EDUs	1"	1.5"	2"	Over 2"
Residential (01)						
Inactive	43					
3/4" Meter	500					
5/8" Meter	1272					
1" - 1.5" Meter			7	1		
Multiple Service		319				
2X Meter	29					
Various Dual/Triple/Limited Income	34					
Subtotal	1878	319	7	1	0	0
Commercial (02)						
Inactive	3					
3/4" Meter	7					
5/8" Meter	32					
1" - 8" Meter			4	2	4	2
2X Meter	5					
Various Dual/Triple/Accumulate	7					
Subtotal	54	0	4	2	4	2
Industrial/AG (03)						
Ind/Ag 1.5" - 2" Meter	2		1	1	1	
Total	1934	319	12	4	5	2

***Total Meters including Dwelling Units = 2276*

This update to the water rate study, although similar, now proposes a two tiered commodity (usage) rate based on gallons of water consumed. The first tier accommodates the current base allocation with a credit given to the water ratepayer for each 1,000 gallons not consumed. The second tier charges the

water ratepayer for any excess (overage) over the base allocation. This tiered pricing allows customers the opportunity to control a portion of their costs and practice conservation of water resources in the future.

Fixed costs are needed to cover basic operational expenses and provide funding for current and future maintenance and replacement costs of infrastructure. All customers will be participating in funding the necessary infrastructure and operational costs.

Section 3

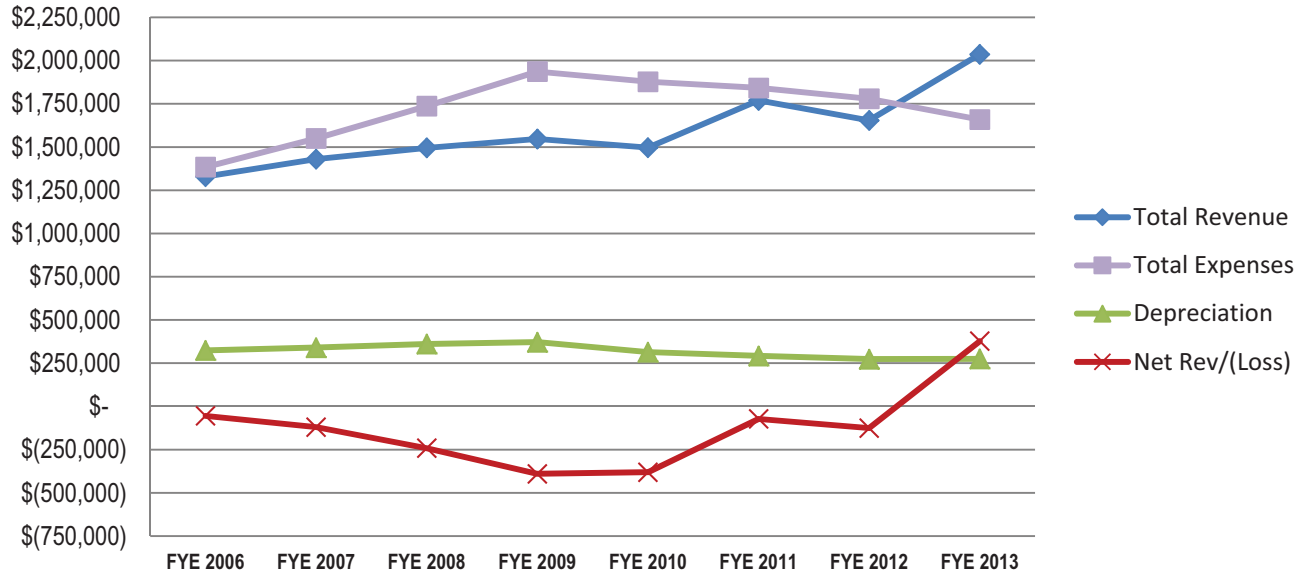
Projected Annual Revenue Requirements

The first step in updating a rate analysis study is to re-analyze the District's revenue requirements to provide sustainable service to its customers. It involves reviewing the historical operating revenue and expenses and then determining how those operations might have impacted the condition of the infrastructure. Finally, adjustments are made to increase or decrease projected revenues and/or expenditures in an effort to maintain the system while providing the necessary services expected from the District's ratepayers.

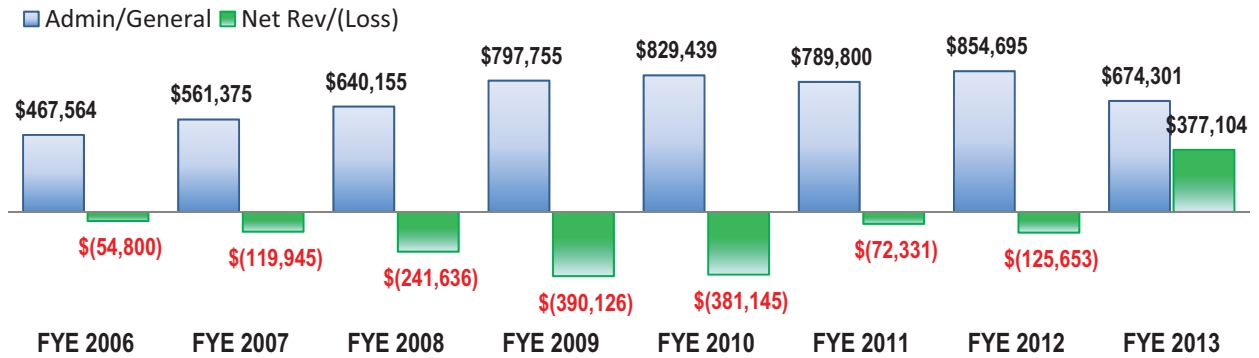
3.1 HISTORICAL REVENUE AND EXPENSES

The District's updated historical revenues and expenses are summarized in **Table 4** (see Appendix A). The changes in Water Charges, Total Revenues, Operating Expenses and Total Expenses as expressed in percentages from FYE 2006 to FYE 2013 appear reasonable. Further analysis of years FYE 2009 and FYE 2010 prove to be critical years with Net Losses inadequate to cover Depreciation expenses. These losses in excess of Depreciation expenses are real cash losses. The Administrative and General Expenses for FYE 2011 and FYE 2013 dropped significantly due to staff cutbacks in an effort to halt negative cash outflows. The impact in FYE 2012 reflects a reduction in Operating Expenses to offset a surge in the Administrative and General Expenses. The ultimate effect of this financial volatility suggests that a reduced staff with inadequate reserves couldn't provide the necessary repairs and replacements for the system.

Total Revenue & Expenses, Depreciation and Net Revenue/(Loss)



Net Revenue Impact Based on Staff Cutbacks



3.2 PROJECTED REVENUE REQUIREMENTS

The projected revenue requirements are directly related to the projected expenses. To operate and maintain the system, the District requires adequate staffing and appropriate funding. Table 5 allocates resources to maximize staffing and minimize costs for approximately the next three years. Phase I for fiscal year 2014/2015 increases one office staff position from part-time to full time, adds one field staff position, upgrades or possibly adds another part-time field staff position and recognizes earned step increases. Phase II would do much the same thing but not until it's necessary.

Table 5 – Additional Staffing Requirements (see Appendix A for detailed information)

Additional Personnel Costs - Phase I Estimate				
	Current	Additional	Annual Salary	Additional
	FTEs	FTEs	Including Benefits	Salary Req.
			[1]	
Operational Supervisor	0	0.25	\$87,750	\$21,938
Utility Operator III	0	1	\$54,080	\$54,080
Customer Service Rep	0.75	0.25	\$54,080	\$13,520
Step-increases	0	0.05	\$279,029	\$13,951
Total				\$103,489

Additional Personnel Costs - Phase II Estimate				
	Current	Additional	Annual Salary	Additional
	FTEs	FTEs	Including Benefits	Salary Req.
			[1]	
Utility Operator IV	0	1	\$65,000	\$65,000
Office Staffing	0	0.5	\$47,320	\$23,660
Total				\$88,660

[1] Benefits are assumed at 30% of Salary

Table 6 projects expenses for the next five years or more. The cost Adjustment Factor partially reflects the trend noted in the historical increases from Table 4 and is capped at 7%. This cap is similar to public industry indices for water and sanitation. The previous growth rate for the operating reserve has not been adequate. Currently, the monthly revenues are slightly more than the expenses which doesn't allow for accumulation of enough reserves to cover unexpected emergencies. The District needs to accumulate three to six months of operating revenues as reserves to meet unexpected costs.

Table 6 – Projected Expenses (see Appendix A for detailed information)

	Budget 2013-2014	Adj. Factor	Projected Expenses				
			2014-15	Phase II	Phase III	Phase IV	Phase V
1. Operating & Maintenance Expenses							
Source of Supply	\$ 81,299	2%	\$ 82,925	\$ 84,583	\$ 86,275	\$ 88,001	\$ 89,761
Pumping	\$ 16,591	5%	\$ 17,421	\$ 18,292	\$ 19,206	\$ 20,166	\$ 21,175
Water Treatment	\$ 143,206	7%	\$ 153,230	\$ 163,957	\$ 175,434	\$ 187,714	\$ 200,854
Transmission and Distribution	\$ 181,686	7%	\$ 194,404	\$ 208,012	\$ 222,573	\$ 238,153	\$ 254,824
Customer Accounts	\$ 8,287	2%	\$ 8,453	\$ 8,622	\$ 8,794	\$ 8,970	\$ 9,150
Administrative & General	\$ 750,883	7%	\$ 803,445	\$ 859,686	\$ 919,864	\$ 984,254	\$ 1,053,152
Additional Staffing [1]	\$ -	7%	\$ 103,489	\$ 110,733	\$ 207,145	\$ 221,645	\$ 237,160
Subtotal	\$1,181,952		\$1,363,366	\$1,453,885	\$1,639,291	\$1,748,903	\$1,866,075
2. Debt Service							
2003 COPs - Sugar Pine Project	\$ 214,338		\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338
Assessment 2 Assistance	\$ 100,094		\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094
3. CIP/R&R (depreciation)							
Depreciation (reserve growth)	\$ 70,000	3%	\$ 72,100	\$ 74,263	\$ 76,491	\$ 78,786	\$ 81,149
Annual CIP/R&R expenditures	\$ 330,000	7%	\$ 353,100	\$ 377,817	\$ 404,264	\$ 432,563	\$ 462,842
Subtotal	\$ 400,000		\$ 425,200	\$ 452,080	\$ 480,755	\$ 511,348	\$ 543,991
4. Operating Reserve	\$ 43,582	10%	\$ 47,940	\$ 52,734	\$ 58,008	\$ 63,808	\$ 70,189
Total Expenses	\$1,939,966		\$2,150,939	\$2,273,131	\$2,492,485	\$2,638,492	\$2,794,687
Percent Increase			11%	6%	10%	6%	6%

Table 7 modifies the required projected revenue by eliminating the income from Other Sources and then calculates the revenue attributable to water sales for the rate determination. The reallocation is necessary in order to make the appropriate adjustments in calculating Cost of Service described in the Water Rate Analysis (Section 4).

Table 7 – Revenue Allocated to Water Sales (see Appendix A for detailed information)

	2013-14	2014-15
Revenue Requirements		
O & M Expense	\$ 1,181,952	\$ 1,363,366
<i>Less Revenues Met from Other Sources</i>		
Service Connections	\$ (15,750)	\$ (15,750)
Other Revenue	\$ (27,500)	\$ (27,500)
Interest Income	\$ (1,600)	\$ (1,600)
Property Taxes	\$ (70,962)	\$ (70,962)
Subtotal	\$ 1,066,140	\$ 1,247,554
Reallocated Other Source Revenue		
Source of Supply	\$ 73,333	\$ 75,881
Pumping	\$ 14,965	\$ 15,941
Water Treatment	\$ 129,174	\$ 140,214
Transmission and Distribution	\$ 163,884	\$ 177,890
Customer Accounts	\$ 7,475	\$ 7,735
Administrative & General	\$ 677,309	\$ 735,196
Additional Staffing	\$ -	\$ 94,698
Subtotal	\$ 1,066,140	\$ 1,247,554
Assessment 2 Assistance	\$ 100,094	\$ 100,094
Debt Service	\$ 214,338	\$ 214,338
CIP/Repair & Replacement	\$ 400,000	\$ 425,200
Operating Reserve	\$ 43,582	\$ 47,940
Revenue Allocated to Water Sales	\$ 1,824,154	\$ 2,035,127

Section 4

Water Rate Analysis

This section covers the development of the water rate calculations based on the District's classifications.

4.1 COST OF SERVICE

The annual water rate revenue requirement is based on the cost allocation method. This method is the cost for providing treated water service to customers. The costs are allocated to each customer based on cost categories that reflect the demand placed on the system by the size of the meter.

Customer Costs (fixed costs) - These costs are directly impacted by the number of customers and not the meter size, i.e. meter reading, billing, customer service, etc. For example it takes X amount of time to read Y number of meters. More meters mean more time spent by staff reading meters. The same theory applies to printing, stuffing, and sending billing statements. These costs are proportionately allocated to the customer.

Capacity Costs (fixed costs) - Capacity costs vary based on the demand of the water system which directly relates to meter size. It would be similar to wanting the capacity to download data off the internet at a very rapid speed yet paying more per month to have that ability. Basically, the demand that each customer could potentially place on the water system is reflected by the size and hydraulic capacity of the water meter. These costs include repair and replacement in addition to the majority of operating and maintenance expenses. They are allocated based on the number of equivalent meter units determined by the hydraulic capacity of the meter size relative to a ¾ inch meter. A hydraulic peaking factor (see Table 10 in Appendix A) has been used for this update.

Commodity Costs (variable costs) - Commodity costs (i.e. usage) are based on the amount of actual water consumption. The expense categories of Source of Supply, Pumping, Water Treatment and to some extent Transmission and Distribution would fall under the Commodity Cost category. This update has used the allocation of 70% and 30% between Capacity and Commodity, respectively, for the first three categories. The Transmission and Distribution expense was allocated 30%, 60% and 10% between Customer, Capacity and Commodity respectively. In the past a base water rate was charged as a Commodity (usage) cost for the excess consumption over the base minimum. This report gives a credit for unused base allocation and continues to charge a higher rate for excess usage over the base allocation. (See Table 1A through Table 1E for further information.)

Table 8 projects the line item allocation to each of the three categories for expenses in the FYE 2015. The fixed (customer and capacity) charges equal 95.7% of costs. The variable (commodity) charges of 4.3% comprise the balance. This allocation was applied to each subsequent phase.

Table 8 – Water Costs Allocated to Categories

	FYE 2015 Table 7	Customer	Capacity	Commodity
Operating Expenses				
Source of Supply [1]	\$ 75,881	\$ -	\$ 53,117	\$ 22,764
Pumping [1]	\$ 15,941	\$ -	\$ 11,159	\$ 4,782
Water Treatment [1]	\$ 140,214	\$ -	\$ 98,150	\$ 42,064
Transmission and Distribution [2]	\$ 177,890	\$ 53,367	\$ 106,734	\$ 17,789
Customer Accounts	\$ 7,735	\$ 7,735	\$ -	\$ -
Administrative & General [3]	\$ 735,196	\$ 220,559	\$ 514,637	\$ -
Additional Staffing [3]	\$ 94,698	\$ 28,409	\$ 66,289	\$ -
Debt Service				
2003 COPs - Sugar Pine Project	\$ 214,338	\$ -	\$ 214,338	\$ -
Assessment 2 Assistance	\$ 100,094	\$ -	\$ 100,094	\$ -
CIP/R&R				
Depreciation (reserve growth)	\$ 72,100	\$ -	\$ 72,100	\$ -
Annual CIP/R&R expenditures	\$ 353,100	\$ -	\$ 353,100	\$ -
Operating Reserve	\$ 47,940	\$ -	\$ 47,940	\$ -
Totals	\$ 2,035,126	\$ 310,070	\$ 1,637,657	\$ 87,400
Allocation Percent		15.2%	80.5%	4.3%

[1] Used 70% capacity/base commodity and 30% commodity

[2] Used 30% customer, 60% capacity, and 10% commodity

[3] Used 30% customer and 70% capacity

Table 9 projects the revenue requirements allocated to each of the three cost categories for five fiscal years based on the percentage determined in **Table 8**.

Table 9 – Projected Revenues per Cost of Service Allocation (see Appendix A)

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	
Revenue Requirement							
Allocated to Water Sales (Table 7)	\$ 1,824,154	\$ 2,035,127	\$ 2,157,319	\$ 2,376,673	\$ 2,522,680	\$ 2,678,875	
Allocation of Costs (Table 8)							
Customer	15.2%	\$ 277,926	\$ 310,070	\$ 328,687	\$ 362,108	\$ 384,353	\$ 408,151
Capacity	80.5%	\$ 1,467,888	\$ 1,637,657	\$ 1,735,985	\$ 1,912,498	\$ 2,029,989	\$ 2,155,678
Commodity	4.3%	\$ 78,339	\$ 87,400	\$ 92,647	\$ 102,068	\$ 108,338	\$ 115,046
	100%	\$ 1,824,154	\$ 2,035,127	\$ 2,157,319	\$ 2,376,673	\$ 2,522,680	\$ 2,678,875

Table 10 (see Appendix A) uses the Customer and Capacity costs from Table 9 to calculate the fixed base rate for each meter size. The first Commodity rate is calculated based on total gallons consumed and Commodity costs in FYE 2012. The second Commodity rate is based on average gallons and Commodity costs for the same year. These rate calculations are reflected in **Table 1A** through **Table 1E**.

Section 5

Findings and Recommendations

This update to the June 2010 Water Rate Study was initiated because the District became aware that current rates were inadequate to sustain daily operations while making progress on repair and replacement of aging infrastructure.

The prior study recommended that the District move forward towards fully funding depreciation. If depreciation is not fully funded, then the District will need to incur debt for funding projects needed to improve the reliability of the water system.

This study takes a small step in the direction of additional funding for depreciation and increasing repair and replacement reserves by reasonably and responsibly increasing revenues.

The rate proposals meet the requirements of Proposition 218 and its required calculation of proposed rates. Each customer will pay a monthly charge based on their proportionate share of the Cost of Service.

Table Index - Appendix A

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Table 1A
Water Rate Charges - Fiscal Year 2014/2015 (Phase I)

Fiscal Year 2014-2015 - Charges per Month [1]

Meter Size	Base [2]	Sugar Pine	Repair & Replacement		General Reserve	TOTAL FIXED	Base Allotment	Base Credit [3]	Overage Charge	System Rehab
Residential/Commercial										
Under 1"	\$ 45.55	\$ 7.24	\$ 14.37	\$ 1.62	\$ 68.78	10,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	\$ 4.00
Dual (2/1 parcel)	\$ 91.10	\$ 14.49	\$ 28.74	\$ 3.24	\$ 137.57	20,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	\$ 8.00
Triple (3/1 parcel)	\$ 136.65	\$ 21.73	\$ 43.11	\$ 4.86	\$ 206.35	30,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	
1"	\$ 82.44	\$ 13.11	\$ 26.01	\$ 2.93	\$ 124.49	18,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	
1.5"	\$ 165.35	\$ 26.30	\$ 52.17	\$ 5.88	\$ 249.70	35,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	
2"	\$ 323.56	\$ 51.46	\$ 102.09	\$ 11.51	\$ 488.61	60,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	
Over 2"	\$ 795.52	\$ 126.52	\$ 251.00	\$ 28.30	\$ 1,201.34	175,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	
Multiple Service	\$ 45.55	\$ 7.24	\$ 14.37	\$ 1.62	\$ 68.78	10,000 gallons	\$ (0.32)	\$ 1.18	per 1000 Gallons	\$ 4.00

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.
Each single parcel was/is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUD subsidizes \$100,000 annually towards the full assessment.)

[3] Credit available at \$.32/1000 gallons for Base Allotment not used.

Phase II (12 - 18 months) - Charges per Month [1]

Meter Size	Base [2]		Sugar Pine		Repair & Replacement		General Reserve		TOTAL FIXED	Base Allotment	Base Credit [3]	Overage Charge	System Rehab
Residential/Commercial													
Under 1"	\$ 48.61	\$ 7.24	\$ 15.28	\$ 1.78	\$ 72.91	10,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons	\$ 4.00		
Dual (2/1 parcel)	\$ 97.22	\$ 14.49	\$ 30.56	\$ 3.56	\$ 145.83	20,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons	\$ 8.00		
Triple (3/1 parcel)	\$ 145.82	\$ 21.73	\$ 45.84	\$ 5.35	\$ 218.74	30,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons			
1"	\$ 87.98	\$ 13.11	\$ 27.65	\$ 3.23	\$ 131.97	18,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons			
1.5"	\$ 176.45	\$ 26.30	\$ 55.47	\$ 6.47	\$ 264.69	35,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons			
2"	\$ 345.29	\$ 51.46	\$ 108.54	\$ 12.66	\$ 517.95	60,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons			
Over 2"	\$ 848.95	\$ 126.52	\$ 266.86	\$ 31.13	\$ 1,273.47	175,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons			
Multiple Service	\$ 48.61	\$ 7.24	\$ 15.28	\$ 1.78	\$ 72.91	10,000	gallons	\$ (0.34)	\$ 1.25	per 1000 Gallons	\$ 4.00		

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.
 Each single parcel was/is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUUD subsidizes \$100,000 annually towards the full assessment.)

[3] Credit available at \$.34/1000 gallons for Base Allotment not used.

Phase III (12 - 18 months) - Charges per Month [1]

Meter Size	Base [2]	Repair & Replacement		General Reserve		TOTAL FIXED	Base Allotment	Base Credit [3]	Overage Charge	System Rehab
		Sugar Pine	Sugar Pine	Reserve	Reserve					
Residential/Commercial										
Under 1"	\$ 54.88	\$ 7.24	\$ 16.25	\$ 1.96	\$ 80.33	10,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	\$ 4.00
Dual (2/1 parcel)	\$ 109.76	\$ 14.49	\$ 32.50	\$ 3.92	\$ 160.67	20,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	\$ 8.00
Triple (3/1 parcel)	\$ 164.64	\$ 21.73	\$ 48.75	\$ 5.88	\$ 241.00	30,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	
1"	\$ 99.32	\$ 13.11	\$ 29.41	\$ 3.55	\$ 145.39	18,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	
1.5"	\$ 199.21	\$ 26.30	\$ 58.98	\$ 7.12	\$ 291.60	35,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	
2"	\$ 389.81	\$ 51.46	\$ 115.42	\$ 13.93	\$ 570.61	60,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	
Over 2"	\$ 958.43	\$ 126.52	\$ 283.77	\$ 34.24	\$ 1,402.96	175,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	
Multiple Service	\$ 54.88	\$ 7.24	\$ 16.25	\$ 1.96	\$ 80.33	10,000 gallons	\$ (0.38)	\$ 1.37	per 1000 Gallons	\$ 4.00

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.

Each single parcel was/is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUD subsidizes \$100,000 annually towards the full assessment.)

[3] Credit available at \$.38/1000 gallons for Base Allotment not used.

Phase IV (12 - 18 months) - Charges per Month [1]

Meter Size	Base [2]		Sugar Pine		Repair & Replacement		General Reserve		TOTAL FIXED	Base Allotment	Base Credit [3]	Overage Charge	System Rehab
Residential/Commercial													
Under 1"	\$ 58.58	\$ 7.24	\$ 17.28	\$ 2.16	\$ 85.26	10,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons	\$ 4.00		
Dual (2/1 parcel)	\$ 117.16	\$ 14.49	\$ 34.57	\$ 4.31	\$ 170.53	20,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons	\$ 8.00		
Triple (3/1 parcel)	\$ 175.74	\$ 21.73	\$ 51.85	\$ 6.47	\$ 255.79	30,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons			
1"	\$ 106.02	\$ 13.11	\$ 31.28	\$ 3.90	\$ 154.32	18,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons			
1.5"	\$ 212.65	\$ 26.30	\$ 62.74	\$ 7.83	\$ 309.51	35,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons			
2"	\$ 416.12	\$ 51.46	\$ 122.77	\$ 15.32	\$ 605.67	60,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons			
Over 2"	\$ 1,023.10	\$ 126.52	\$ 301.85	\$ 37.67	\$ 1,489.15	175,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons			
Multiple Service	\$ 58.58	\$ 7.24	\$ 17.28	\$ 2.16	\$ 85.26	10,000	gallons	\$ (0.40)	\$ 1.46	per 1000 Gallons	\$ 4.00		

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.
Each single parcel was/is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUUD subsidizes \$100,000 annually towards the full assessment.)

[3] Credit available at \$.40/1000 gallons for Base Allotment not used.

Phase V (12 - 18 months) - Charges per Month [1]

Meter Size	Base [2]	Repair & Replacement			General Reserve		TOTAL FIXED	Base Allotment	Base Credit [3]	Overage Charge	System Rehab
		Sugar Pine	Base	Reserve	Reserve						
Residential/Commercial											
Under 1"	\$ 62.54	\$ 7.24	\$ 18.39	\$ 2.37	\$ 90.54	10,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons	\$ 4.00	
Dual (2/1 parcel)	\$ 125.08	\$ 14.49	\$ 36.77	\$ 4.74	\$ 181.09	20,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons	\$ 8.00	
Triple (3/1 parcel)	\$ 187.62	\$ 21.73	\$ 55.16	\$ 7.12	\$ 271.63	30,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons		
1"	\$ 113.19	\$ 13.11	\$ 33.28	\$ 4.29	\$ 163.87	18,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons		
1.5"	\$ 227.03	\$ 26.30	\$ 66.74	\$ 8.61	\$ 328.68	35,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons		
2"	\$ 444.25	\$ 51.46	\$ 130.61	\$ 16.85	\$ 643.17	60,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons		
Over 2"	\$ 1,092.27	\$ 126.52	\$ 321.12	\$ 41.43	\$ 1,581.35	175,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons		
Multiple Service	\$ 62.54	\$ 7.24	\$ 18.39	\$ 2.37	\$ 90.54	10,000 gallons	\$ (0.42)	\$ 1.55	per 1000 Gallons	\$ 4.00	

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.
 Each single parcel was/is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUUD subsidizes \$100,000 annually towards the full assessment.)

[3] Credit available at \$.42/1000 gallons for Base Allotment not used.

Table 2
Current Water Rate Charges

Current Rate Charges per Month [1]

Meter Size	Repair & Replacement					Reserve	TOTAL FIXED	Quantity Charge Per Month	Amount included in Fixed Base Charge	System Rehab
	Base [2]	Sugar Pine	Replacement	Reserve	TOTAL FIXED					
Residential/Commercial										
Under 1"	\$ 36.18	\$ 8.32	\$ 13.28	\$ 1.83	\$ 59.61	\$ 1.85	per 1000 Gallons	10,000 gallons		
Dual (2/1 parcel)	\$ 72.35	\$ 16.64	\$ 26.56	\$ 3.66	\$ 119.21	\$ 1.85	per 1000 Gallons	20,000 gallons	\$ 4.00	
Triple (3/1 parcel)	\$ 108.53	\$ 24.96	\$ 39.84	\$ 5.49	\$ 178.82	\$ 1.85	per 1000 Gallons	30,000 gallons	\$ 8.00	
1"	\$ 84.09	\$ 8.32	\$ 13.28	\$ 1.83	\$ 107.52	\$ 1.85	per 1000 Gallons	18,000 gallons		
1.5"	\$ 191.21	\$ 8.32	\$ 13.28	\$ 1.83	\$ 214.64	\$ 1.85	per 1000 Gallons	35,000 gallons		
2"	\$ 395.38	\$ 8.32	\$ 13.28	\$ 1.83	\$ 418.81	\$ 1.85	per 1000 Gallons	60,000 gallons		
Over 2"	\$ 1,005.69	\$ 8.32	\$ 13.28	\$ 1.83	\$ 1,029.12	\$ 1.85	per 1000 Gallons	175,000 gallons		
Multiple Service	\$ 33.72	\$ 8.32	\$ 13.28	\$ 1.83	\$ 57.15	\$ 1.85	per 1000 Gallons	10,000 gallons	\$ 4.00	

Source: Foresthill PUD

[1] Does not include System Rehab.

As of 6/30/2013 there were 398 units charged \$4.00 for System Rehab not covered in the property assessment.

Each single parcel is charged through property tax for the System Rehab.

[2] Base includes charge for Assessment 2 in the amount of \$3.61/month. (Note: FPUUD subsidizes \$100,000 annually towards the full assessment.)

Table 3
Customers by Type and Meter Size

Table Index - Appendix A	Code	Accounts	EDUs [1]	5/8" & 3/4"	EDUs [1]	1"	1.5"	2"	Over 2"
Residential (01)									
Inactive	01	43		43					
3/4" Meter	34	500		500					
5/8" Meter	58	1272		1272					
1" Meter	1M	7				7			
1.5" Meter	15	1					1		
Multiple Service [2]	**	9	319		319				
2X Meter	2X	29		29					
Dual Service 3/4"	D3	9		9					
Triple Service	S3	3		3					
Triple Service	T3	2		2					
Limited Income	59	17		17					
Dual Service w/Ltd	DL	3		3					
Subtotal		1895		1878	319	7	1	0	0
Commercial (02)									
Inactive	1	3		3					
3/4" Meter	34	7		7					
5/8" Meter	58	32		32					
1" Meter	1M	4				4			
1.5" Meter	15	2					2		
2" Meter	2	4						4	
4" Meter	4M	1							1
6" Meter	6M	1							1
8" Meter	8M	0							0
2X Meter	2X	5		5					
Dual Service 3/4"	D3	0		0					
Triple Service	S3	2		2					
Triple Service	T3	1		1					
Accumulate Meter	CM	4		4					
Subtotal		66		54	0	4	2	4	2
Industrial/AG (03)									
Industrial Meter	34	1				1			
Ag Meter 01	36	2		2					
1.5 Agri-business 02	5A	1					1		
2" Agri-business	2A	1						1	
Total		1966	319	1934	319	12	4	5	2

Accts less Meter w/Multiple DUs plus Dwellings Units = 2276

Metered services including Dwelling Units = 2276

Source: June 26, 2013 FPUD water usage report for billing.

Note: In October changes were noticed with overall decreases of 11 in 02/03 and 7 units within multiples. The above changes were made to the table.

[1] EDU - Equivalent Dwelling Unit

[2] Multiple Service - Apartment complex, mobile home parks, etc.

Table 4A
Historical Revenue and Expense Comparison

Table Index - Appendix A

Fiscal Year Ending

Revenues	2006		2007		2008		2009		2010		2011		2012		2013		% Change 2006-2013
	Actual		Actual		Actual		Actual		Actual		Actual		Actual		Actual		
Water Charges	839,998	\$	956,065	\$	1,023,696	\$	1,095,299	\$	1,052,827	\$	1,149,401	\$	1,091,230	\$	1,226,167	\$	5.75%
Service Connections	26,875	\$	11,250	\$	22,982	\$	6,205	\$	10,603	\$	52,307	\$	38,562	\$	51,557	\$	
Sugar Pine Surcharge	173,514	\$	175,597	\$	176,719	\$	176,455	\$	180,362	\$	228,576	\$	226,123	\$	223,640	\$	
Repair/Replacement Surcharges																	
Other Revenues	43,781	\$	65,049	\$	55,532	\$	124,929	\$	160,233	\$	31,120	\$	20,521	\$	92,345	\$	
Subtotal Operating Income																	
Will Serve/CIP	173,000	\$	74,300	\$	85,171	\$	24,035	\$	14,421	\$	36,858	\$	30,682	\$	66,661	\$	
Interest Income	47,326	\$	69,574	\$	48,402	\$	40,744	\$	4,229	\$	2,671	\$	5,850	\$	7,339	\$	
Property Taxes	24,631	\$	78,112	\$	82,697	\$	78,625	\$	73,809	\$	63,814	\$	61,710	\$	77,814	\$	
Total Revenues	1,329,125	\$	1,429,947	\$	1,495,199	\$	1,546,292	\$	1,496,484	\$	1,769,512	\$	1,653,726	\$	2,035,937	\$	6.65%
Operating Expenses																	
Operating (w/o payroll)	350,828	\$	403,471	\$	494,481	\$	526,513	\$	499,683	\$	538,889	\$	423,102	\$	492,215	\$	
Administrative & General	467,564	\$	561,375	\$	640,155	\$	797,755	\$	829,439	\$	789,800	\$	854,695	\$	674,301	\$	11.83%
Depreciation	323,454	\$	339,976	\$	360,709	\$	371,184	\$	313,839	\$	291,817	\$	273,188	\$	274,646	\$	
Subtotal Operating Expenses	1,141,846	\$	1,304,822	\$	1,495,345	\$	1,695,452	\$	1,642,961	\$	1,620,506	\$	1,550,985	\$	1,441,162	\$	5.12%
Non-Operating Expenses																	
Assessment 2	100,000	\$	100,000	\$	100,000	\$	100,000	\$	100,000	\$	100,000	\$	100,000	\$	100,000	\$	
Interest Expense [1]	142,079	\$	145,070	\$	141,490	\$	140,966	\$	134,668	\$	121,337	\$	128,394	\$	117,671	\$	
Total Expenses	1,383,925	\$	1,549,892	\$	1,736,835	\$	1,936,418	\$	1,877,629	\$	1,841,843	\$	1,779,379	\$	1,658,833	\$	4.08%
Net Revenue/(Loss)	(\$54,800)	\$	(119,945)	\$	(241,636)	\$	(390,126)	\$	(381,145)	\$	(72,331)	\$	(125,653)	\$	377,104	\$	

[1] See Balance Sheet for principal payment.

Table Index - Appendix A

	Budgets	
	FYE 2013	FYE 2014
Operating Revenues		
Water Charges	\$ 1,024,742	\$ 986,994
Water Overage	\$ 168,975	\$ 180,696
Total Sales	\$ 1,193,717	\$ 1,167,690
Service Connections	\$ 4,228	\$ 15,750
Other Revenues	\$ 35,565	\$ 27,500
Subtotal Operating Revenues	\$ 1,233,510	\$ 1,210,940
Interest Income	\$ 2,000	\$ 1,600
Property Taxes	\$ 70,000 [1]	\$ 70,962
Subtotal General Fund Revenues	\$ 1,305,510	\$ 1,283,502
Will Serve/CIP	\$ 49,458	\$ 18,776
Sugar Pine Surcharge	\$ 227,535	\$ 226,637
Repair and Rehab Surcharges	\$ 272,386	\$ 361,747
General Fund Reserves	\$ 54,131	\$ 49,304
Total Revenues	\$ 1,909,020	\$ 1,939,966
Operating Expenses		
Operating (w/o payroll)	\$ 447,664	\$ 431,069
Administrative & General	\$ 693,666	\$ 750,883
Depreciation	\$ 270,000	\$ 274,068 [2]
Subtotal Operating Expenses	\$ 1,411,330	\$ 1,456,020
Assessment 2 Assistance	\$ 100,094	\$ 100,094
2003 COPs - Sugar Pine Project	\$ 218,025 [3]	\$ 214,338
Capital & Repair & Replacement	\$ -	\$ 125,932
Total Expenses	\$ 1,729,449	\$ 1,896,384
Net Revenue/(Loss)	\$ 179,571	\$ 43,582

[1] Auditor's Page 26 shows \$100 less than the passed budget.

[2] Added Depreciation for consistency and for rate determination purposes.

[3] Principal Debt shown for consistency (\$100,000)

Table Index - Appendix A

Additional Personnel Costs - Phase I Estimate

	Current FTEs	Additional FTEs	Annual Salary Including Benefits [1]	Additional Salary Req.
Operational Supervisor	0	0.25	\$87,750	\$21,938
Utility Operator III	0	1	\$54,080	\$54,080
Customer Service Rep	0.75	0.25	\$54,080	\$13,520
Step-increases		0.05	279,029	\$13,951
Total				\$103,489

Additional Personnel Costs - Phase II Estimate

	Current FTEs	Additional FTEs	Annual Salary Including Benefits [1]	Additional Salary Req.
Utility Operator IV	0	1	\$65,000	\$65,000
Office Staffing	0	0.5	\$47,320	\$23,660
Total				\$88,660

[1] Benefits are assumed at 30% of Salary

Table 6
Projected Expenses

Table Index - Appendix A	Budget		Projected Expenses				Cost Category	
	2013-2014	Adj. Factor	2014-15	Phase II	Phase III	Phase IV		Phase V
1. Operating & Maintenance Expenses								
Source of Supply	\$ 81,299	2%	\$ 82,925	\$ 84,583	\$ 86,275	\$ 88,001	\$ 89,761	0/30/70
Pumping	\$ 16,591	5%	\$ 17,421	\$ 18,292	\$ 19,206	\$ 20,166	\$ 21,175	0/30/70
Water Treatment	\$ 143,206	7%	\$ 153,230	\$ 163,957	\$ 175,434	\$ 187,714	\$ 200,854	0/30/70
Transmission and Distribution	\$ 181,686	7%	\$ 194,404	\$ 208,012	\$ 222,573	\$ 238,153	\$ 254,824	30/60/10
Customer Accounts	\$ 8,287	2%	\$ 8,453	\$ 8,622	\$ 8,794	\$ 8,970	\$ 9,150	customer
Administrative & General	\$ 750,883	7%	\$ 803,445	\$ 859,686	\$ 919,864	\$ 984,254	\$ 1,053,152	30/70/0
Additional Staffing [1]	\$ -	7%	\$ 103,489	\$ 110,733	\$ 207,145	\$ 221,645	\$ 237,160	30/60/10
Subtotal	\$ 1,181,952		\$ 1,363,366	\$ 1,453,885	\$ 1,639,291	\$ 1,748,903	\$ 1,866,075	
2. Debt Service								
2003 COPs - Sugar Pine Project	\$ 214,338		\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338	capacity
Assessment 2 Assistance	\$ 100,094		\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094	capacity
3. CIP/R&R (depreciation)								
Depreciation (reserve growth)	\$ 70,000	3%	\$ 72,100	\$ 74,263	\$ 76,491	\$ 78,786	\$ 81,149	capacity
Annual CIP/R&R expenditures	\$ 330,000	7%	\$ 353,100	\$ 377,817	\$ 404,264	\$ 432,563	\$ 462,842	capacity
Subtotal	\$ 400,000		\$ 425,200	\$ 452,080	\$ 480,755	\$ 511,348	\$ 543,991	
4. Operating Reserve								
	\$ 43,582	10%	\$ 47,940	\$ 52,734	\$ 58,008	\$ 63,808	\$ 70,189	capacity
Total Expenses	\$ 1,939,966		\$ 2,150,939	\$ 2,273,131	\$ 2,492,485	\$ 2,638,492	\$ 2,794,687	

[1] Table 5

Goals: (1) Increase operating reserves to cover six months operating expenses.

(2) Increase Repair/Replacement Reserves to provide funds for "on long over due" projects.

Table 7
Revenue Allocated To Water Sales

Table Index - Appendix A
Costs Allocated to Water Sales (User Charges) for Fiscal Years:

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Revenue Requirements						
O & M Expense (see Table 6)	\$ 1,181,952	\$ 1,363,366	\$ 1,453,885	\$ 1,639,291	\$ 1,748,903	\$ 1,866,075
<i>Less Revenues Met from Other Sources [1]</i>						
Service Connections	\$ (15,750)	\$ (15,750)	\$ (15,750)	\$ (15,750)	\$ (15,750)	\$ (15,750)
Other Revenue	\$ (27,500)	\$ (27,500)	\$ (27,500)	\$ (27,500)	\$ (27,500)	\$ (27,500)
Interest Income	\$ (1,600)	\$ (1,600)	\$ (1,600)	\$ (1,600)	\$ (1,600)	\$ (1,600)
Property Taxes	\$ (70,962)	\$ (70,962)	\$ (70,962)	\$ (70,962)	\$ (70,962)	\$ (70,962)
Subtotal	\$ 1,066,140	\$ 1,247,554	\$ 1,338,073	\$ 1,523,479	\$ 1,633,091	\$ 1,750,263
Reallocated Other Source Revenue						
Source of Supply	\$ 73,333	\$ 75,881	\$ 77,846	\$ 80,180	\$ 82,173	\$ 84,190
Pumping	\$ 14,965	\$ 15,941	\$ 16,835	\$ 17,849	\$ 18,831	\$ 19,861
Water Treatment	\$ 129,174	\$ 140,214	\$ 150,896	\$ 163,040	\$ 175,283	\$ 188,388
Transmission and Distribution	\$ 163,884	\$ 177,890	\$ 191,443	\$ 206,849	\$ 222,383	\$ 239,009
Customer Accounts	\$ 7,475	\$ 7,735	\$ 7,935	\$ 8,173	\$ 8,376	\$ 8,582
Administrative & General	\$ 677,309	\$ 735,196	\$ 791,206	\$ 854,878	\$ 919,077	\$ 987,792
Additional Staffing	\$ -	\$ 94,698	\$ 101,913	\$ 192,510	\$ 206,967	\$ 222,441
Subtotal	\$ 1,066,140	\$ 1,247,554	\$ 1,338,073	\$ 1,523,479	\$ 1,633,091	\$ 1,750,263
Assessment 2 Assistance [1]	\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094	\$ 100,094
Debt Service [1]	\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338	\$ 214,338
CIP/Repair & Replacement [2]	\$ 400,000	\$ 425,200	\$ 452,080	\$ 480,755	\$ 511,348	\$ 543,991
Operating Reserve [2]	\$ 43,582	\$ 47,940	\$ 52,734	\$ 58,008	\$ 63,808	\$ 70,189
Revenue Allocated to Water Sales	\$ 1,824,154	\$ 2,035,127	\$ 2,157,319	\$ 2,376,673	\$ 2,522,680	\$ 2,678,875
Percent Increase	11.6%	6.0%	10.2%	6.1%	6.2%	

[1] Table 4B

[2] Table 6

Table 8
Water Expenses Allocated to Costs Categories

Table Index - Appendix A

FYE 2015 Table 7	Customer	Capacity	Commodity

Operating Expenses

Source of Supply [1]	\$ 75,881	\$ -	\$ 53,117	\$ 22,764
Pumping [1]	\$ 15,941	\$ -	\$ 11,159	\$ 4,782
Water Treatment [1]	\$ 140,214	\$ -	\$ 98,150	\$ 42,064
Transmission and Distribution [2]	\$ 177,890	\$ 53,367	\$ 106,734	\$ 17,789
Customer Accounts	\$ 7,735	\$ 7,735	\$ -	\$ -
Administrative & General [3]	\$ 735,196	\$ 220,559	\$ 514,637	\$ -
Additional Staffing [3]	\$ 94,698	\$ 28,409	\$ 66,289	\$ -

Debt Service

2003 COPs - Sugar Pine Project	\$ 214,338	\$ -	\$ 214,338	\$ -
Assessment 2 Assistance	\$ 100,094	\$ -	\$ 100,094	\$ -

CIP/R&R

Depreciation (reserve growth)	\$ 72,100	\$ -	\$ 72,100	\$ -
Annual CIP/R&R expenditures	\$ 353,100	\$ -	\$ 353,100	\$ -

Operating Reserve

\$ 47,940	\$ -	\$ 47,940	\$ -
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Totals	\$ 2,035,127	\$ 310,070	\$ 1,637,657	\$ 87,400
<i>Allocation Percent</i>		15.2%	80.5%	4.3%

[1] Used 70% capacity/base commodity and 30% commodity

[2] Used 30% customer, 60% capacity, and 10% commodity

[3] Used 30% customer and 70% capacity

Table Index - Appendix A

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
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Revenue Requirement

Allocated to Water Sales (Table 7)	\$ 1,824,154	\$ 2,035,127	\$ 2,157,319	\$ 2,376,673	\$ 2,522,680	\$ 2,678,875
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Allocation of Costs (Table 8)

		2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Customer	15.2%	\$ 277,926	\$ 310,070	\$ 328,687	\$ 362,108	\$ 384,353	\$ 408,151
Capacity	80.5%	\$ 1,467,888	\$ 1,637,657	\$ 1,735,984	\$ 1,912,498	\$ 2,029,989	\$ 2,155,678
Commodity	4.3%	\$ 78,339	\$ 87,400	\$ 92,647	\$ 102,068	\$ 108,338	\$ 115,046
	100%	\$ 1,824,154	\$ 2,035,127	\$ 2,157,319	\$ 2,376,673	\$ 2,522,680	\$ 2,678,875

Customer Costs (fixed) These costs generally include meter reading, billing, and customer service. They are considered fixed costs that tend to vary with number of customers.

Capacity Costs (fixed) Capacity costs are also considered fixed costs, but vary based on the capacity of the water system. Customers that place greater demand on the system should pay a proportionally higher cost of service. This can be reflected by the size of the meter. The associated costs include fixed water system Operating and Maintenance and Repair and replacements.

Commodity Costs (variable) Commodity costs vary with the amount of actual water consumption. Treatment and pumping costs fall into this category. For our district Source of supply would fall into this group. However, not all costs in those are variable. The previous study used a 30 percent and 70 percent split between categories Capacity and Commodity, respectively. However, over 62% of the water usage is part of the base allocation allowed to the rate payors in their basic charge. The average charges run about 37% of total consumption.

Source: FPUD Water Rate Study June 2010 - Section 4.1

Table 10
Calculation of Customer, Capacity Commodity Charges

	Number of Chargeable Meters	Hydraulic Peaking Factor	Number of Equivalent Meters	2013-14			2014-15		
				Customer	Capacity	Total	Customer	Capacity	Total
Customer & Capacity Cost Allocation (fixed)				\$ 277,926	\$ 1,467,888		\$ 310,070	\$ 1,637,657	
5/8" & 3/4"	1,934	1.00	1,934.00	\$ 10.18	\$ 51.48	\$ 61.65	\$ 11.35	\$ 57.43	\$ 68.78
Multi-units	319	1.00	319.00	\$ 10.18	\$ 51.48	\$ 61.65	\$ 11.35	\$ 57.43	\$ 68.78
1"	12	1.97	23.64	\$ 10.18	\$ 101.41	\$ 111.59	\$ 11.35	\$ 113.14	\$ 124.49
1 1/2"	4	4.15	16.60	\$ 10.18	\$ 213.63	\$ 223.81	\$ 11.35	\$ 238.34	\$ 249.70
2"	5	8.31	41.55	\$ 10.18	\$ 427.78	\$ 437.96	\$ 11.35	\$ 477.26	\$ 488.61
Over 2"	2	20.72	41.44	\$ 10.18	\$ 1,066.63	\$ 1,076.80	\$ 11.35	\$ 1,189.99	\$ 1,201.34
Total	2,276		2,376.23						
Commodity Cost Allocation (variable)				Commodity			Commodity		
Tier 1 - Credit for usage less than allocation				\$ 78,339			\$ 87,400		
Tier 2 - Overage charge with credit make-up				\$ 0.29	per 1,000 gallons		\$ 0.32	per 1,000 gallons	
Note: 2012 - Total gallons billed				\$ 0.76	per 1,000 gallons		\$ 0.85	per 1,000 gallons	
2012 - Overage gallons billed									
271,096,300									
102,474,401									

Table 10
Calculation of Customer, Capacity Commodity Charges

	2015-16			2016-17		
	Customer	Capacity	Total	Customer	Capacity	Total
Customer & Capacity Cost Allocation (fixed)	\$ 328,687	\$ 1,735,984		\$ 362,108	\$ 1,912,498	
5/8" & 3/4"	\$ 12.03	\$ 60.88	\$ 72.91	\$ 13.26	\$ 67.07	\$ 80.33
Multi-units	\$ 12.03	\$ 60.88	\$ 72.91	\$ 13.26	\$ 67.07	\$ 80.33
1"	\$ 12.03	\$ 119.93	\$ 131.97	\$ 13.26	\$ 132.13	\$ 145.39
1 1/2"	\$ 12.03	\$ 252.65	\$ 264.69	\$ 13.26	\$ 278.34	\$ 291.60
2"	\$ 12.03	\$ 505.91	\$ 517.95	\$ 13.26	\$ 557.36	\$ 570.61
Over 2"	\$ 12.03	\$ 1,261.44	\$ 1,273.47	\$ 13.26	\$ 1,389.70	\$ 1,402.96
Total	2,276		2,376.23			
Commodity Cost Allocation (variable)	Commodity					
Tier 1 - Credit for usage less than allocation	\$ 92,647			\$ 102,068		
Tier 2 - Overage charge with credit make-up	\$ 0.34	per 1,000 gallons		\$ 0.38	per 1,000 gallons	
	\$ 0.90	per 1,000 gallons		\$ 1.00	per 1,000 gallons	
Note: 2012 - Total gallons billed	271,096,300					
2012 - Overage gallons billed	102,474,401					

Table 10
Calculation of Customer, Capacity Commodity Charges

	2017-18			2018-19		
	Customer	Capacity	Total	Customer	Capacity	Total
Customer & Capacity Cost Allocation (fixed)	\$ 384,353	\$ 2,029,989		\$ 408,151	\$ 2,155,678	
5/8" & 3/4"	\$ 14.07	\$ 71.19	\$ 85.26	\$ 14.94	\$ 75.60	\$ 90.54
Multi-units	\$ 14.07	\$ 71.19	\$ 85.26	\$ 14.94	\$ 75.60	\$ 90.54
1"	\$ 14.07	\$ 140.25	\$ 154.32	\$ 14.94	\$ 148.93	\$ 163.87
1 1/2"	\$ 14.07	\$ 295.44	\$ 309.51	\$ 14.94	\$ 313.73	\$ 328.68
2"	\$ 14.07	\$ 591.60	\$ 605.67	\$ 14.94	\$ 628.23	\$ 643.17
Over 2"	\$ 14.07	\$ 1,475.07	\$ 1,489.15	\$ 14.94	\$ 1,566.40	\$ 1,581.35
Total	2,276	2,376.23				
Commodity Cost Allocation (variable)	Commodity					
Tier 1 - Credit for usage less than allocation	\$ 108,338			\$ 115,046		
Tier 2 - Overage charge with credit make-up	\$ 0.40	per 1,000 gallons		\$ 0.42	per 1,000 gallons	
	\$ 1.06	per 1,000 gallons		\$ 1.12	per 1,000 gallons	
Note: 2012 - Total gallons billed	271,096,300					
2012 - Overage gallons billed	102,474,401					