



Western Hills Water District Water Rate Study



December 4, 2015
Draft Report



HF&H Consultants, LLC

DRAFT

WESTERN HILLS WATER DISTRICT

9501 Morton Davis Drive
Patterson, CA 95363

WATER RATE STUDY

December 4, 2015

HF&H CONSULTANTS, LLC

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December 4, 2015

Mr. Charles Smith
Controller
Western Hills Water District
9501 Morton Davis Drive
Patterson, CA 95363

Subject: Water Rate Study

Dear Mr. Smith:

HF&H Consultants, LLC, is pleased to submit this Water Rate Study. The report summarizes the projected cost of service and the related revenue requirements over a five-year financial planning period from FY 2015-16 to FY 2019-20, updates the cost of service allocation among the customer classes (residential, non-residential, and raw water customers), and provides a detailed schedule of updates in the District's fixed meter charge and usage charges, through FY 2019-20.

This report is organized into four main sections:

- **Executive Summary** - A summary of the Findings and Recommendations of the proposed water rates and modifications based on the cost of service analysis.
- **Revenue Requirement Projections** - The estimated costs that must be covered by rates.
- **Cost of Service Analysis** - The allocation of the revenue requirement to the residential, non-residential customers, and raw water customers.
- **Rate Design** - A description of the application of the cost of service adjustments and the required rate changes to the District's current service charges and usage charges.

Very truly yours,
HF&H CONSULTANTS, LLC

John W. Farnkopf, P.E., Senior Vice President
Rick Simonson, CMC, Vice President

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ACKNOWLEDGEMENTS

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LIMITATIONS

This document was prepared solely for Union Sanitary District in accordance with the contract between the District and HF&H and is not intended for use by any other party for any other purpose.

In preparing this analysis, we relied on information and instructions from the District, which we consider to be accurate and reliable and did not independently verify.

Rounding differences caused by stored values in electronic format may exist.

This document addresses relevant laws, regulations, and court decisions but should not be relied upon as legal advice. Questions concerning the interpretation of legal authorities referenced in this document should be referred to a qualified attorney.

SECTION 1. EXECUTIVE SUMMARY

The Western Hills Water District (District) provides water, wastewater, and storm drain services to residents and businesses located within the Diablo Grande community. The purpose of this report is to document the water rate study HF&H Consultants (HF&H) conducted in 2014 and 2015.

The process of updating the District's water rates began in October 2014 with a meeting with Staff to discuss rate-making objectives, recent developments that should be reflected in the analysis, data collection, and model development. Preliminary results were presented to District Staff for review and revision in early 2015. Presentations were made to the District's customers at two Town Hall meetings on May 20, 2015 and September 27, 2015. Final revisions were made and presented to the District's Board on November 4, 2015.

1.1 Current Rates

The District provides treated water service to more than 400 residential and non-residential (e.g., District office, developer office, fire station, etc.) customers and non-treated (raw) water service to the Diablo Grande Golf Course, through a system of booster pumps and distribution pipelines; all of the customers are metered.

The District currently charges residential households monthly bills that are the sum of a base service charge plus a usage charge based on metered water use during the month. The current residential service charge is \$89.56 per month and the usage charge is \$1.32 per 750 gallons. The District currently charges other treated water customers (e.g., Home Owners' Association irrigation meters, District office, etc.) and raw water customers monthly bills based solely on metered usage during the month, no service charge, which results in usage charges greater than the residential household usage charge of \$1.32 per 750 gallons. The current rates are summarized in **Figure 1-1**.

Figure 1-1. Current Rates

Customer Type	Monthly Service Charge	Usage Charge per 750 gals
Treated Water		
Residential Households	\$89.56	\$1.32
HOA Irrigation Meters	\$0.00	\$5.22
Non-residential	\$0.00	\$5.22
Raw Water	\$0.00	\$3.58
		= \$1,554.20 per AF*

* AF = acre foot = 325,851 gallons

We observed the following upon review of the District's current rates, rate structure, and annual operating expenses:

1. **Revenue Shortfall.** Projected revenue at current rates is not sufficient to cover the District's FY2015-16 operating expenses. Our five-year revenue requirement projections indicate the need to increase rate revenue as follows:

Figure 1-2. Projected Revenue Increases – Without Contributions to Reserves

FY 2015-16	73.7%
FY 2016-17	2.2%
FY 2017-18	2.2%
FY 2018-19	2.3%
FY 2019-20	2.3%

2. **Service Charges.** The District invested in facilities (e.g., pipelines, pump stations, etc.) to provide capacity to its customers, and these costs must be recovered regardless of the amount of water used during a given period. All customers have been provided capacity in the system; however, the current rate structure does not bill such service charges to non-residential household customers (i.e., raw water customers, developer offices, etc.). All customers should pay a service charge for the capacity they require in the water system. In addition, 80% of total revenue generated by the current service and usage charges comes from the service charge. This is much greater than the industry standard of approximately 30%.
3. **Reserves.** Historically, the District's operating expenses have exceeded rate revenues. The historical revenue shortfalls have been covered by the current developer, World International, LLC (Developer). Consequently, the District has not been able to establish operating or capital reserves. An operating reserve provides working capital for monthly operations and maintenance expenses. A capital reserve is similar in function to the operating reserve, but are used exclusively for capital expenses. Due to the duration of capital projects, a prudent capital reserve balance is set at the ten-year average capital improvement program to cover unexpected increases in capital expenditures. We recommend the District consider including a contribution to reserves. **Figure 1-3** summarizes the necessary revenue increases with and without contributions to reserves. The additional increase assumes an annual contribution to reserves of \$46,500 by current residents.

Figure 1-3. Projected Revenue Increases – With and Without Contributions to Reserves

	w/o Reserve Contribution	w/ Reserve Contribution
FY 2015-16	73.7%	83.0%
FY 2016-17	2.2%	2.2%
FY 2017-18	2.2%	2.2%
FY 2018-19	2.3%	2.3%
FY 2019-20	2.3%	2.3%

1.2 Cost of Service Analysis

Based on our Cost of Service (COS) analysis, the need to increase water revenues by 73.7% (or 83.0% with contributions to reserves), shown in **Figure 1-3**, applies differently to the District's customer classes, as shown in **Figure 1-4** (without contributions to reserves) and **Figure 1-5** (with contributions to reserves). Details of the calculation of each customer classes' cost of service is in **Section 3** of this report.

Figure 1-4. FY 2015-16 Revenue Shortfall by Customer Class
(without contributions to reserves)

Customer Class	FY2015-16 Cost of Service	Estimated Revenue at Current Rates	Revenue Surplus/(Shortfall)	
			\$	% of Est. Revenue
Treated Water				
Residential	\$1,503,209	\$592,590	(\$910,619)	153.7%
Non-Residential	\$294,478	\$26,838	(\$267,640)	997.2%
	\$1,797,687	\$619,428	(\$1,178,259)	190.2%
Raw Water				
	\$1,415,355	\$1,230,473	(\$184,882)	15.0%
Total	\$3,213,042	\$1,849,901	(\$1,363,141)	73.7%

Figure 1-5. FY 2015-16 Revenue Shortfall by Customer Class
(with contributions to reserves)

Customer Class	FY2015-16 Cost of Service	Estimated Revenue at Current Rates	Revenue Surplus/(Shortfall)	
			\$	% of Est. Revenue
Treated Water				
Residential	\$1,588,399	\$592,590	(\$995,809)	168.0%
Non-Residential	\$311,552	\$26,838	(\$284,714)	1060.9%
	\$1,899,951	\$619,428	(\$1,280,523)	206.7%
Raw Water				
	\$1,486,121	\$1,230,473	(\$255,648)	20.8%
Total	\$3,386,072	\$1,849,901	(\$1,536,171)	83.0%

Historically, the revenue shortfalls have been covered by contributions from the Developer.

Of the \$1,363,141 shortfall projected for FY2015-16, **Figure 1-4**, \$910,619 is attributable to residential rates. The current residential rates do not cover the projected costs of providing services, which is a 153.7% variance between the \$1,503,209 cost of providing services to residents and the \$592,590 in revenue at the current rates paid by residents. The residential shortfall is primarily as a result of a water system that was built to support 800 residential accounts and there were only 437 residential accounts at the time of our study. Therefore, it would be unreasonable to burden the current residents with the full cost of service of \$1,503,209 (**Figure 1-4**). **Figure 1-6** allocates the residential cost of service of \$1,503,209 to current residents

and future residents based on their respective share of the water systems designed capacity to accommodate 800 residential accounts. This reduces the revenue shortfall to be borne by current residents from \$910,619 to \$228,162, a 38.5% rate impact (without contributions to reserves). The remaining shortfall of \$682,457 will be borne by the Developer until the growth occurs.

Figure 1-6. Breakdown of Residential Revenue Shortfall
(without contributions to reserves)

Customer Class	Allocate Residential COS		FY2015-16 Cost of Service	Estimated Revenue at Current Rates	Revenue Surplus/(Shortfall)	
	# of Customers	% of Customers			\$	% of Est. Revenue
Total Residential Cost of Service (from Figure 1-4)			\$1,503,209			
Current Residents	437	54.6%	\$820,752	\$592,590	(\$228,162)	38.5%
Residential Growth	363	45.4%	\$682,457	\$0	(\$682,457)	
	800		\$1,503,209	\$592,590	(\$910,619)	153.7%

Figure 1-7. Breakdown of Residential Revenue Shortfall
(with contributions to reserves)

Customer Class	Allocate Residential COS		FY2015-16 Cost of Service	Estimated Revenue at Current Rates	Revenue Surplus/(Shortfall)	
	# of Customers	% of Customers			\$	% of Est. Revenue
Total Residential Cost of Service (from Figure 1-5)			\$1,588,399			
Current Residents	437	54.6%	\$867,266	\$592,590	(\$274,676)	46.4%
Residential Growth	363	45.4%	\$721,133	\$0	(\$721,133)	
	800		\$1,588,399	\$592,590	(\$995,809)	168.0%

1.3 Recommendation

The magnitude of the difference between the residential rate revenue and their proportionate cost of service is significant. As shown in **Figures 1-6** and **1-7**, residential revenues need to increase by 38.5% (without contributions to reserves) or 46.4% (with contributions to reserves).

This misalignment of the cost of services exceeding residential rate revenue has occurred over many years; therefore, instead of correcting for this all in one year with a 38.5% or 46.4% rate increase, we recommend phasing the necessary increases in over the first four years of the five-year planning period, so that hardships are minimized or avoided. The proposed rates in **Figures 1-8** and **1-9**, will generate sufficient revenue to cover the costs by FY 2018-19.

In addition, the proposed rates include reducing the current monthly service charge for residents and establishing a service charge for all customer classes, to bring the District in alignment with industry standards.

Figure 1-8. Proposed Rates (without contributions to reserves)

	Current	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Service Charges (\$ per month)						
1" meter	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
2" meter	\$0.00	\$448.00	\$410.67	\$373.33	\$330.67	\$338.27
Usage Charges (\$ per actual monthly usage)						
<u>Treated Water</u>						
Residential (\$/750 gallons)	\$1.32	\$2.64	\$4.14	\$5.74	\$7.53	\$7.70
Non-residential (\$/750 gallons)	\$5.22	\$2.64	\$4.14	\$5.74	\$7.53	\$7.70
Raw Water (\$/AF)	\$1,554.20	\$1,775.16	\$1,816.12	\$1,858.40	\$1,902.22	\$1,946.19

Figure 1-9. Proposed Rates (with contributions to reserves)

	Current	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Service Charges (\$ per month)						
1" meter	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
2" meter	\$0.00	\$448.00	\$410.67	\$373.33	\$330.67	\$338.27
Usage Charges (\$ per actual monthly usage)						
<u>Treated Water</u>						
Residential (\$/750 gallons)	\$1.32	\$2.76	\$4.41	\$6.19	\$8.19	\$8.36
Non-residential (\$/750 gallons)	\$5.22	\$2.76	\$4.41	\$6.19	\$8.19	\$8.36
Raw Water (\$/AF)	\$1,554.20	\$1,864.59	\$1,905.41	\$1,947.54	\$1,991.21	\$2,034.78

SECTION 2. INTRODUCTION

The report is organized to explain the three analytical steps of the analysis. First, revenue requirements are determined for FY 2015-16. Rates need to be designed to generate the required revenue to cover the District's operating and capital needs. Second, the cost-of-service analysis determines how much of the revenue requirement should be paid by each customer class. Finally, the rates need to be designed for each customer class.

2.1 Study Purpose and Objectives

The purpose of this study is to conduct a comprehensive analysis of the District's water rates, including documentation of the analysis, underlying assumptions, and the rationale for the recommended rates. This study has several key objectives:

- Determine how much revenue is required to meet the District's requirements, including operating and maintenance, capital improvement, and reserve funds.
- Determine the cost of service for each customer class (i.e., treated water customers and non-treated (raw) water customers).
- Evaluate alternative rate structures that will ensure that customers within each class are paying their proportionate shares of the revenue requirements.

These objectives should be met by applying industry standards so that all applicable laws are complied with.

2.2 Methodology

This rate study included three analytic stages for each utility:

- **Revenue Requirement Projections.** The District's expenses and revenues are projected based on expected cost escalation factors and growth rates. The difference between expenses and revenues must be offset by annual revenue increases.
- **Cost of Service Analysis.** The revenue requirement for the coming rate year is allocated to each customer class based on the cost of service attributable to each class.
- **Rate Design.** Rates are designed for each customer class to recover its share of the cost of service. The reasonableness of the rate design is evaluated by comparing bills between customer classes to ensure that proportionality is maintained.

2.3 Rate-Making Objectives

The District has several rate-making objectives that the recommended rates are designed to achieve:

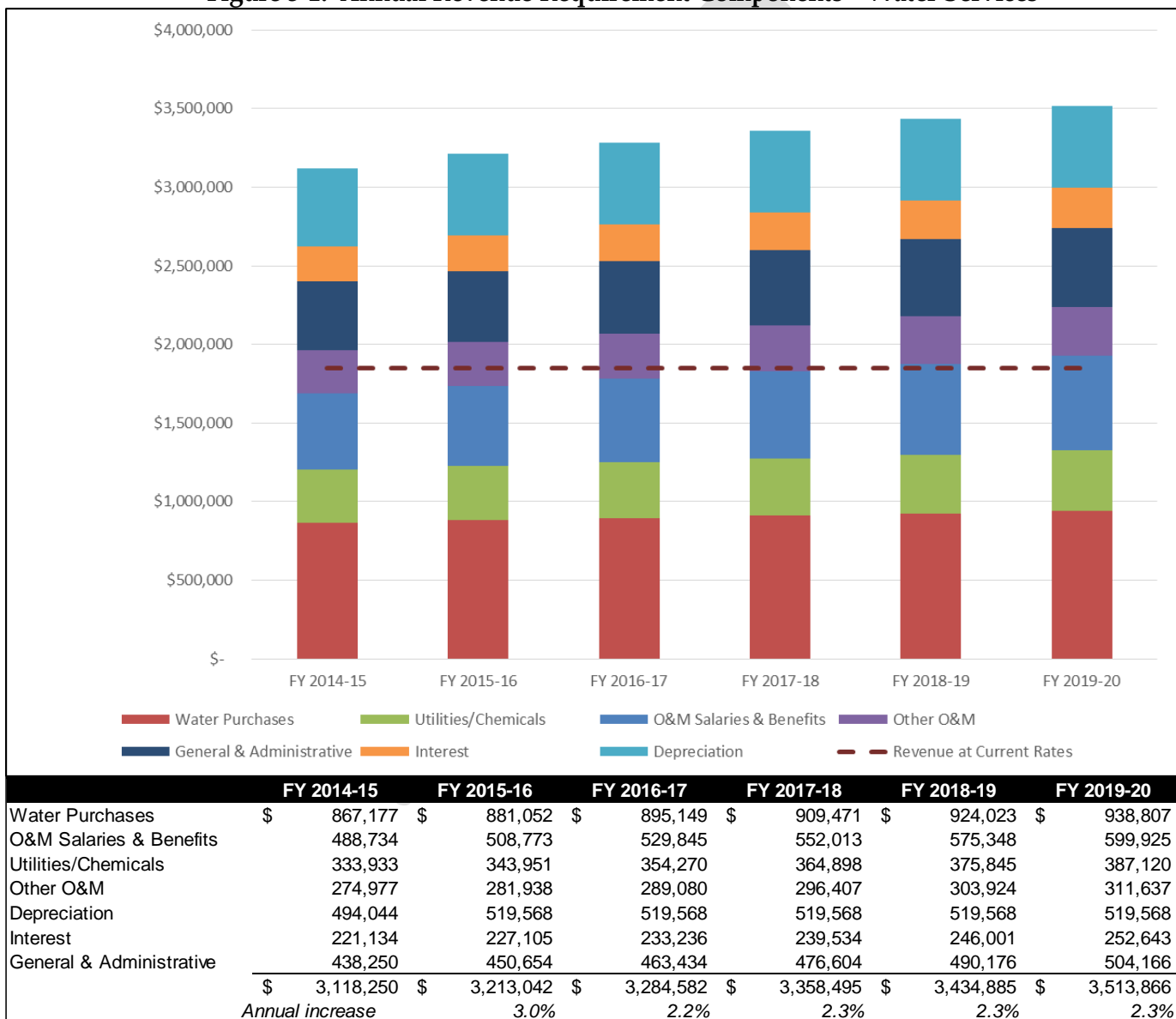
- **Revenue Sufficiency.** Rates need to generate sufficient revenue to fund operating and capital costs and maintain adequate reserves.
- **Revenue Stability.** Rates are designed to balance revenue from fixed and variable charges to stabilize revenue.
- **Affordability.** Rates need to be as affordable as possible while maintaining the District's sound financial position and credit rating.
- **Customer Acceptance.** Rates are designed to be as simple as possible to facilitate customer understanding and acceptance.
- **Fairness.** Rates are designed so that each customer class pays its proportionate share of the required revenue in compliance with legal rate-making requirements.

SECTION 3. REVENUE REQUIREMENT PROJECTION

3.1 General

Rate analysis begins by determining the revenue requirement that must be met by rates. For purposes of this study, a five-year rate projection period was developed using a spreadsheet model. With this model, revenue requirements were projected for FY 2015-16 through FY 2019-20 by using the District’s FY 2014-15 actual expenses as a starting point. **Figure 3-1** summarizes the major categories comprising the revenue requirements, indicating the annual change. **Figure 3-1** indicates a significant gap between expenses and revenues at current rates.

Figure 3-1. Annual Revenue Requirement Components - Water Services



Revenue at Current Rates \$ 1,849,901 \$ 1,849,901 \$ 1,849,901 \$ 1,849,901 \$ 1,849,901 \$ 1,849,901

3.2 Key Assumptions

Purchased Water Expense

The largest operating expense is the cost to purchase water. The District's actual FY 2014-15 expenses served as the starting point for projecting purchased water expenses. Purchased water costs were assumed to increase by 1.6% per year over the five-year planning period, based on the average annual increase in actual expenses from 2001 to 2014.

Operations & Maintenance (O&M) Salaries and Benefits Expense

O&M salaries and benefit expenses are the labor costs incurred to operate and maintain the District's pump stations and water treatment/delivery system. The District's actual FY 2014-15 expenses served as the starting point for projecting O&M wage and benefit expenses. No additional personnel are proposed during the five-year planning period. Salaries and wages were assumed to increase 3.0% annually and benefits were assumed to increase 8.0% annually.

Utilities and Chemicals Expense

Utilities and chemicals expenses are the chemical and power costs incurred to treat and transmit the purchased water to the District's customers for consumption and irrigation. The District's actual FY 2014-15 expenses served as the starting point for projecting the utility and chemical expenses. Annual increases of 3.0% were assumed over the five-year planning period.

Other O&M Expenses

The District's actual operations and maintenance (O&M) expenses (excluding salaries, benefits, and purchased water costs, discussed above) for FY 2014-15 served as the starting point for projecting other operations and maintenance expenses. Generally, these expenses were increased by 2.7% per year to approximate assumed inflationary increases.

Interest

Interest expenses for the five-year planning period were based on the actual annual interest payments due to the Caterpillar Financial Services Corporation for the lease purchase of five Caterpillar generator sets packages.

Depreciation

Depreciation expense is a fixed annual amount based on the acquisition/construction costs assuming an average useful life of 50 years.

General & Administrative Expense

General and Administrative (G&A) expenses are labor and other overhead costs incurred to support the O&M personnel (e.g., District controller, office staff, legal/accounting assistance). The District's actual FY 2014-15 G&A expenses served as the starting point for projecting G&A expenses. No additional G&A personnel are proposed during the five-year planning period. Salaries and wages were assumed to increase 3.0% annually; benefit costs were assumed to increase 8.0% annually; and, other G&A expenses were increased 2.7% per year to approximate assumed inflationary increases.

SECTION 4. COST OF SERVICE ANALYSIS

4.1 General

Figure 3-1 summarized the total revenue requirement for providing water services during the five-year planning period. As part of developing rates that do not exceed the cost of providing service to any one particular customer class, a cost of service analysis was performed to allocate the District's total revenue requirement to each customer class (Residential, Non-Residential, Raw Water) in proportion to each class' burden on the system.

Cost of service analysis is a rate-making technique that is used to derive reasonable rates. Reasonable rates are defined by the courts as not being capricious, arbitrary, or discriminatory. Rates are not capricious if there is a clear rationale supporting the analysis. Rates are not arbitrary if there is a sound basis for choosing among alternatives. Finally, rates are not discriminatory if they allocate costs proportionately.

4.2 Allocation of Costs to Customer Classes

Figure 4-1 presents the proportional allocation of the District's projected FY 2015-16 expenses to each customer class, based on the allocation factors in **Figure 4-2**. As shown in **Figure 4-1**, the District's FY 2015-16 projected expenses to provide water services to its customers is \$3,213,042, the remainder is associated with providing sewer services.

As illustrated in **Figure 4-1**, the District's cost to provide water services to the residential class is \$1,503,209. Typically, residential rates would be set in order to generate revenues equal to the \$1,503,209 cost of providing service; however, the District built the water system to support 800 residential accounts, of which there are 437 residential accounts using the system at the time of our study. It would be unreasonable to burden the current residents with the full cost of service.

Accordingly, we recommend adjusting the cost of service for current residents to reflect their proportionate share of the water systems' designed capacity to accommodate 800 residential accounts. This reduces the residential cost of service from \$1,503,209 to \$820,752 (**Figure 4-3**).

Figure 4-1. FY 2015-16 Allocation of Costs to Customer Classes

	Total FY2015-16 COS	Allocation Type	Cost Allocations					
			Residential	Non- Residential	Raw Water	Water COS Subtotal	Sewer	Total
Operating Costs - Water Purchases	\$ 881,052	see Figure 4-2 1	132,158	26,432	722,462	881,052		881,052
Operating Costs - Pump Stations								
Salaries/Wages	\$ 55,383	1	8,307	\$ 1,661	\$ 45,414	\$ 55,383		55,383
Benefits	20,957	1	3,144	629	17,184	20,957		20,957
Other Payroll-related	15,449	1	2,317	463	12,668	15,449		15,449
Repairs & Maint.	7,889	1	1,183	237	6,469	7,889		7,889
Generator Maint.	1,483	1	222	44	1,216	1,483		1,483
Permits & Fees	3,846	1	577	115	3,154	3,846		3,846
Electricity - Pump Stations	260,209	1	39,031	7,806	213,372	260,209		260,209
Total Pump Station Op Costs	\$ 365,215		\$ 54,782	\$ 10,956	\$ 299,477	\$ 365,215	\$ -	365,215
Operating Costs - Water Treatment								
Salaries/Wages	\$ 251,599	2	\$ 208,827	\$ 42,772		\$ 251,599		251,599
Benefits	95,204	2	79,020	16,185		95,204		95,204
Other Payroll-related	70,182	2	58,251	11,931		70,182		70,182
Repairs & Maintenance	34,255	2	28,432	5,823		34,255		34,255
Small Equipment	7,763	2	6,444	1,320		7,763		7,763
Generator Maint.	2,569	2	2,132	437		2,569		2,569
Pump Repair	20,475	2	16,994	3,481		20,475		20,475
WTP Supplies	4,915	2	4,080	836		4,915		4,915
Chemicals	40,310	2	33,458	6,853		40,310		40,310
Water Filtration Media	18,930	2	15,712	3,218		18,930		18,930
Tank Cleaning	7,240	2	6,009	1,231		7,240		7,240
H2O Sampling/Testing	107,826	2	89,496	18,330		107,826		107,826
Permits & Fees	11,120	2	9,230	1,890		11,120		11,120
Banked Water Used	43,486	2	36,094	7,393		43,486		43,486
Membership Fees	512	2	425	87		512		512
Lab Trailer Rent	5,151	2	4,275	876		5,151		5,151
Water Truck Repair	2,148	2	1,783	365		2,148		2,148
Electricity - Water Treatment	43,432	2	36,048	7,383		43,432		43,432
Transmission, Dist & Lines	1,191	2	989	203		1,191		1,191
Total Water Treatment Costs	\$ 768,311		\$ 637,698	\$ 130,613	\$ -	\$ 768,311	\$ -	\$ 768,311
Marshal Davis Well	\$ 1,137	1	\$ 171	\$ 34	\$ 932	\$ 1,137		\$ 1,137
Waste Water	\$ 282,504	Direct					\$ 282,504	\$ 282,504
Interest Expense	\$ 227,105	1	\$ 34,066	\$ 6,813	\$ 186,226	\$ 227,105		\$ 227,105
Subtotal Operating Costs	\$ 2,525,324		\$ 858,875	\$ 174,848	\$ 1,209,097	\$ 2,242,820	\$ 282,504	2,525,324
Capital Costs								
Marshall Davis Well	\$ 28,035	1	4,205	841	22,989	\$ 28,035		\$ 28,035
Raw Water Pump Sta. #1	55,642	1	8,346	1,669	45,626	55,642		55,642
Raw Water Pump Sta. #2	45,065	1	6,760	1,352	36,953	45,065		45,065
Raw Water Pump Sta. #3	46,619	1	6,993	1,399	38,228	46,619		46,619
Raw Water Pump Sta. #4	27,404	1	4,111	822	22,471	27,404		27,404
Intract Raw Water Lines	38,195	1	5,729	1,146	31,320	38,195		38,195
Water Treatment Plan	112,700	2	93,541	19,159		112,700		112,700
Treated Water Distribution System	165,909	2	137,704	28,205		165,909		165,909
Wastewater	269,179	Direct				-	\$ 269,179	269,179
Total Capital Costs	\$ 788,747		\$ 267,389	\$ 54,592	\$ 197,587	\$ 519,568	\$ 269,179	\$ 788,747
General & Administrative								
Salaries/Wages	\$ 30,749	3	\$ 21,439	\$ 3,699	\$ 493	\$ 25,631	\$ 5,119	\$ 30,749
Benefits	11,636	3	8,112	1,400	187	9,699	1,937	11,636
Contract Labor	21,317	3	14,863	2,564	342	17,769	3,549	21,317
Other Payroll-related	8,577	3	5,980	1,032	138	7,150	1,428	8,577
Attorney	45,167	3	31,490	5,433	724	37,648	7,519	45,167
Engineering	129,743	3	90,457	15,607	2,081	108,145	21,598	129,743
Accounting	24,760	3	17,263	2,978	397	20,638	4,122	24,760
Other G&A	268,706	3	187,342	32,324	4,310	223,975	44,731	268,706
Total G&A	\$ 540,656		\$ 376,945	\$ 65,037	\$ 8,672	\$ 450,654	\$ 90,001	\$ 540,656
Total Cost of Service	\$ 3,854,727		\$ 1,503,209	\$ 294,478	\$ 1,415,355	\$ 3,213,042	\$ 641,685	\$ 3,854,727

Figure 4-2. Allocation Factors

		Customer Classes			Total
		Residential	Non-residential	Raw Water	
1	Total Water Use (gallons)	47,338,978	9,548,658	258,502,826	315,390,462
	<i>% of Total</i>	15.0%	3.0%	82.0%	100.0%
2	Treated Water Use (gallons)	47,338,978	9,548,658	0	56,887,637
	<i>% of Total</i>	83.2%	16.8%	0.0%	100.0%
3	Equivalent Meter Units	463.67	80.00	10.67	554.33
	<i>% of Total</i>	83.6%	14.4%	1.9%	100.0%

Figure 4-3. Residential Cost of Service Adjustment

Customer Class	Allocate Residential COS		FY2015-16
	# of Customers	% of Customers	Cost of Service
Total Residential Cost of Service <i>(from Figure 4-1)</i>			\$1,503,209
Current Residents	437	54.6%	\$820,752
Residential Growth	363	45.4%	\$682,457
	800		\$1,503,209

SECTION 5. RATE DESIGN AND BILL IMPACTS

5.1 Proposed Rates

As discussed above, the significant variance between each customer classes' cost of service and the projected revenue at their respective current rates, necessitates a significant change in the District's current service charges and usage charges.

Service Charges

Service charges are intended to cover approximately 30% of total costs. This fixed charge produces revenue stability and ensures that all customers pay at least a minimum amount even when their water flow is very low. Currently, 80% of the District's total revenues (service charges and usage charges) comes from the service charge. We recommend reducing the service charge over time to bring them more in line with industry standards.

In addition, the District currently only bills residential customers the service charge; therefore, we recommend charging all customers based on the size of their connection (1" or 2" meters). By doing so, all customers will pay for their proportionate shares of the capacity that they require in the water system. This recommendation complies with industry standards.

Usage Charges

The projected revenue from current residents at current rates of \$592,590 is \$228,162 less than their respective cost of service of \$820,752 (**Figure 4-3**). This misalignment of the cost of services exceeding residential rate revenue has occurred over many years; therefore, working with the public, District staff and the District's Board a rate adjustment strategy was developed that realigns the residential water rates with their cost of service over time, instead of all at once with a significant 38.5% rate increase in FY2015-16.

The recommended Service and Usage charges presented in **Figure 5-1** (without contributions to reserves) and **Figure 5-2** (with contributions to reserves) are set to align the residential revenue with the cost of service by FY 2018-19 (the fourth fiscal year in the five-year planning period), as shown in **Figure 5-3**. As a result of the recommendation to phase-in the necessary rate increases, the Developer will have to subsidize the current residents \$207,798 in FY 2015-16, \$117,951 in FY 2016-17, and \$62,491 in FY 2017-18 (**Figure 5-3**); this is in addition to contributions being made by the Developer to cover the cost of service associated with residential growth.

Figure 5-1. Proposed Rates (without contributions to reserves)

	Current	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Service Charges (\$ per month)						
1" meter	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
2" meter	\$0.00	\$448.00	\$410.67	\$373.33	\$330.67	\$338.27
Usage Charges (\$ per actual monthly usage)						
<u>Treated Water</u>						
Residential (\$/750 gallons)	\$1.32	\$2.64	\$4.14	\$5.74	\$7.53	\$7.70
Non-residential (\$/750 gallons)	\$5.22	\$2.64	\$4.14	\$5.74	\$7.53	\$7.70
Raw Water (\$/AF)	\$1,554.20	\$1,775.16	\$1,816.12	\$1,858.40	\$1,902.22	\$1,946.19

Figure 5-2. Proposed Rates (with contributions to reserves)

	Current	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Service Charges (\$ per month)						
1" meter	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
2" meter	\$0.00	\$448.00	\$410.67	\$373.33	\$330.67	\$338.27
Usage Charges (\$ per actual monthly usage)						
<u>Treated Water</u>						
Residential (\$/750 gallons)	\$1.32	\$2.76	\$4.41	\$6.19	\$8.19	\$8.36
Non-residential (\$/750 gallons)	\$5.22	\$2.76	\$4.41	\$6.19	\$8.19	\$8.36
Raw Water (\$/AF)	\$1,554.20	\$1,864.59	\$1,905.41	\$1,947.54	\$1,991.21	\$2,034.78

Figure 5-3. Residential Summary - Current Residents

	Months in 1st FY of rate increase*	Projected				
		FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Revenue from Rates without Rate Increases						
Revenue from Current Rates and Customers		\$592,590	\$592,590	\$592,590	\$592,590	\$592,590
Cost of Service - Current Residents Only		\$820,752	\$839,027	\$857,907	\$877,421	\$897,596
Surplus/(Deficit) before rate increase		(\$228,162)	(\$246,437)	(\$265,317)	(\$284,831)	(\$305,006)
		-38.5%	-41.6%	-44.8%	-48.1%	-51.5%
Revenue from Rates with Rate Increases						
Average Rate Increase		10.3%	10.3%	10.3%	10.3%	2.3%
<i>Cumulative Increase</i>			21.7%	34.2%	48.1%	51.5%
Total Revenue from Existing Rates						
Revenue from Current Rates		\$592,590	\$592,590	\$592,590	\$592,590	\$592,590
Revenue from Rate Increases						
FY15-16 (effective 3/1/16)	4	\$20,365	\$61,094	\$61,094	\$61,094	\$61,094
FY16-17 (effective 7/1/16)	12		\$67,392	\$67,392	\$67,392	\$67,392
FY17-18 (effective 7/1/17)	12			\$74,340	\$74,340	\$74,340
FY18-19 (effective 7/1/18)	12				\$82,004	\$82,004
FY19-20 (effective 7/1/19)	12					\$20,175
Total Revenue after Rate Adjustment		\$612,954	\$721,076	\$795,416	\$877,421	\$897,596
Cost of Service - Current Residents Only		\$820,752	\$839,027	\$857,907	\$877,421	\$897,596
Surplus/(Deficit) after Rate Increase		(\$207,798)	(\$117,951)	(\$62,491)	\$0	\$0
Developer Contribution		\$207,798	\$117,951	\$62,491	(\$0)	(\$0)
Net Surplus/(Deficit)		\$0	\$0	\$0	\$0	\$0

* Estimated # of months of collections in FY in which rate increase takes place

5.2 Bill Impacts

The combination of decreasing the monthly service charge and increasing the usage charges will impact each residential customer differently, depending on their average water use. **Figure 5-4** (without contributions to reserves) and **Figure 5-5** (with contributions to reserves) provide sample monthly bill impacts over the five-year planning at various levels of water use.

Figure 5-4. Sample Residential Bill Impacts - Without Contribution to Reserves

Proposed Rates	Current	FY2015-16	FY2016-17	FY2017-18	FY2018-19	FY2019-20
Service Charge (\$/Month)	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge (\$/750 gals)	\$1.32	\$2.64	\$4.14	\$5.74	\$7.53	\$7.70
Usage Charge (\$/gal)	\$0.00176	\$0.00352	\$0.00552	\$0.00765	\$0.01004	\$0.01027
Sample Bill Impacts (monthly)						
	Current	FY2015-16	FY2016-17	FY2017-18	FY2018-19	FY2018-19
Low Water User - 4,500 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$7.92	\$15.84	\$24.84	\$34.44	\$45.18	\$46.20
Total Monthly Water Bill	\$97.48	\$99.84	\$101.84	\$104.44	\$107.18	\$109.63
\$ incr		\$2.36	\$2.00	\$2.60	\$2.74	\$2.45
% incr		2.4%	2.0%	2.6%	2.6%	2.3%
Med. Water User - 9,750 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$17.16	\$34.32	\$53.82	\$74.62	\$97.89	\$100.10
Total Monthly Water Bill	\$106.72	\$118.32	\$130.82	\$144.62	\$159.89	\$163.53
\$ incr		\$11.60	\$12.50	\$13.80	\$15.27	\$3.64
% incr		10.9%	10.6%	10.5%	10.6%	2.3%
High Water User - 22,500 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$39.60	\$79.20	\$124.20	\$172.20	\$225.90	\$231.00
Total Monthly Water Bill	\$129.16	\$163.20	\$201.20	\$242.20	\$287.90	\$294.43
\$ incr		\$34.04	\$38.00	\$41.00	\$45.70	\$6.53
% incr		26.4%	23.3%	20.4%	18.9%	2.3%

Figure 5-5. Sample Residential Bill Impacts - With Contribution to Reserves

Proposed Rates	Current	FY2015-16	FY2016-17	FY2017-18	FY2018-19	FY2019-20
Service Charge (\$/Month)	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge (\$/750 gals)	\$1.32	\$2.76	\$4.41	\$6.19	\$8.19	\$8.36
Usage Charge (\$/gal)	\$0.00176	\$0.00368	\$0.00588	\$0.00825	\$0.01092	\$0.01115
Sample Bill Impacts (monthly)						
	Current	FY2015-16	FY2016-17	FY2017-18	FY2018-19	FY2018-19
Low Water User - 4,500 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$7.92	\$16.56	\$26.46	\$37.14	\$49.14	\$50.16
Total Monthly Water Bill	\$97.48	\$100.56	\$103.46	\$107.14	\$111.14	\$113.59
\$ incr		\$3.08	\$2.90	\$3.68	\$4.00	\$2.45
% incr		3.2%	2.9%	3.6%	3.7%	2.2%
Med. Water User - 9,750 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$17.16	\$35.88	\$57.33	\$80.47	\$106.47	\$108.68
Total Monthly Water Bill	\$106.72	\$119.88	\$134.33	\$150.47	\$168.47	\$172.11
\$ incr		\$13.16	\$14.45	\$16.14	\$18.00	\$3.64
% incr		12.3%	12.1%	12.0%	12.0%	2.2%
High Water User - 22,500 gal./mo.						
Service Charge	\$89.56	\$84.00	\$77.00	\$70.00	\$62.00	\$63.43
Usage Charge	\$39.60	\$82.80	\$132.30	\$185.70	\$245.70	\$250.80
Total Monthly Water Bill	\$129.16	\$166.80	\$209.30	\$255.70	\$307.70	\$314.23
\$ incr		\$37.64	\$42.50	\$46.40	\$52.00	\$6.53
% incr		29.1%	25.5%	22.2%	20.3%	2.1%