



Victorville Water District
Water Rate Study
Final Report

May 2016

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SECTION 1. PURPOSE AND OVERVIEW OF THE STUDY

A. PURPOSE

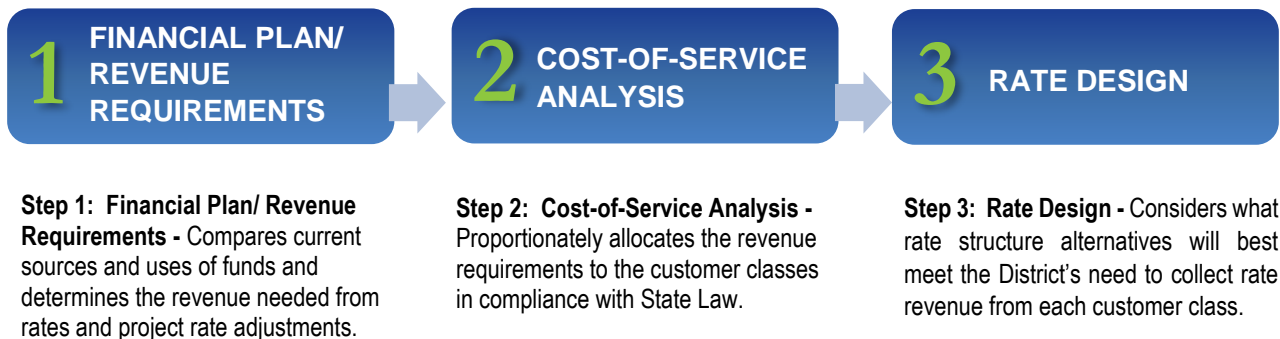
Victorville Water District (District) retained NBS in January 2015 to conduct a comprehensive water rate study for a number of reasons, including meeting long-term revenue requirements, providing revenue stability and adequate funding for capital improvements, and complying with certain legal requirements, including Proposition 218 (Prop 218). The rates developed in this study meet basic Prop 218 requirements and were developed a manner that is consistent with industry standards, including recent court rulings affecting how the cost basis for water rates should be established. The purpose of this memo is to summarize the results of the Water Rate Study that NBS prepared for the District.

In developing proposed water rates, NBS worked cooperatively with District staff and the Board of Directors in developing rate study alternatives and results. Findings focus on strategies and alternatives for meeting the District's revenue requirements in order to fund the forecasted operational and planned capital improvement expenditures in a manner that is fiscally sustainable and complies with industry standard cost-of-service principles.

B. OVERVIEW OF THE STUDY

Comprehensive rate studies such as this one typically include three components: (1) preparation of a financial plan which identifies the net revenue requirements for the utility; (2) analysis of the cost to serve each customer class, and; (3) the rate structure design. These steps are shown in **Figure 1** and are intended to follow industry standards and reflect the fundamental principles of cost-of-service rate making embodied in the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges¹, also referred to as the Manual M1. They also address requirements under Prop 218 California Constitution article XIII D, section 6 (commonly referred to as Proposition 218) that rates not exceed the cost of providing the service and be proportionate to the cost of service for all customers.

Figure 1. Primary Components of a Rate Study



In terms of the chronology of the Study, these three steps represent the order in which they are generally performed.

As a part of this Study, NBS projected revenues and expenditures, developed net revenue requirements, performed cost-of-service rate analyses, and prepared new water rates. Rate increases, or more accurately, increases in the total revenue collected from water rates are recommended for the utility. The following sections in this Study present an overview of the methodologies, assumptions, and data used

¹ *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, sixth edition, 2012.*

along with the financial plans and rates developed during this Study; more detailed tables and figures documenting the development of proposed rates are provided in the Technical Appendix.

Rate Design Criteria – It is important for the water utility to send proper price signals to its customers about the actual cost of their water usage. This objective is typically addressed through both the magnitude of the rates and the rate structure design. In other words, both the amount of revenue collected and the way in which the revenue is collected from customers are important.

Several criteria are typically considered in setting rates and developing sound rate structures. The fundamentals of this process have been documented in a number of rate-setting manuals, such as the AWWA Manual M1. The foundation for evaluating rate structures is generally credited to James C. Bonbright in the *Principles of Public Utility Rates*² which outlines pricing policies, theories, and economic concepts along with various rate designs. The following is a simplified list of the attributes of a sound rate structure:

- Rates should be easy to understand from the customer's perspective.
- Rates should be easy to administer from the utility's perspective.
- Rates should promote the efficient allocation of the resource.
- Rates should be equitable and non-discriminating (i.e., cost based).
- There should be continuity in the rate making philosophy over time.
- Addressing other utility policies (e.g., encouraging conservation & economic development).
- Rates should provide month-to-month and year-to-year revenue stability.

The following section covers basic rate design criteria that NBS and District staff considered as a part of their review of the rate structure alternatives.

Rate Structure Issues – The starting point in considering rate structures is the relationship between fixed costs and variable costs. Fixed costs typically do not vary with the amount of water consumed. Debt service and District personnel are examples of fixed costs. In contrast, variable costs such as the cost of purchased water, chemicals and electricity tend to change with the quantity of water sold. The vast majority of rate structures contain a fixed or minimum charge in combination with a volumetric charge.

Although other objectives may be considered, it does not alleviate the District from the obligation to meet the requirements of Prop 218. The following discussion provides the broader context for general industry rate-study practices in California, within which the recommended rates were developed.

Fixed Charges – Fixed charges can be called base charges, minimum monthly charges, customer charges, fixed meter charges, etc. Fixed charges for water utilities are typically based on meter size. For example, a customer with a 2" meter may have a fixed meter charge that is four to five times greater than a 3/4" meter charge based on the meter's safe operating capacity³. Because a large portion of water utilities' costs are typically related to meeting capacity requirements, reflecting individual demands for capacity are an important factor in establishing rates for customers. The District's rate structure was evaluated in this study, with the intent of re-structuring it to be more consistent with industry standards. The new fixed monthly charge is based on meter size, which will provide greater revenue stability for the Utility.

Volumetric (Consumption-Based) Charges – In contrast, variable costs such as purchased water and the cost of electricity used in pumping water and chemicals for treatment tend to change with the quantity of water produced. For a water utility, variable charges are generally based on metered consumption and charged on a dollar-per-unit cost (e.g., per 100 cubic feet, or hcf).

² James C. Bonbright; Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utility Rates*, (Arlington, VA: Public Utilities Report, Inc., Second Edition, 1988), p. 383-384.

³ American Water Works Association, "Principles of Water Rates, Fees and Charges" – M1 Manual, p. 202.

Uniform (Single-Tier) Water Rates – There are significant variations in the basic philosophy of variable charge rate structure alternatives. Under a uniform (single tier) rate structure, the cost per unit does not change with consumption, and provides a simple and straightforward approach from the perspective of customer understanding and rate administration/billing.

Multi-Tiered Water Rates – In contrast, an inclining block rate structure indirectly sends a price signal to customers that their consumption costs more as more water is consumed, and is generally considered to be a more conservation-oriented rate structure. Tiered water rates are encouraged by state law and regulatory mandates, but are also intended to proportionately allocate the higher costs of serving those customers whose higher water usage places proportionately greater demands and burdens on an agency's water system and water supplies, and therefore generate higher costs to the utility. The types of higher costs reflected, for example in the highest tier rate, may include:

- Conservation program costs –programs intended to encourage customers to eliminate inefficient and wasteful water use, and otherwise reduce consumption during peak periods.
- Capital Improvement program costs –infrastructure improvements, such as those related to irrigation and landscaping, that are designed to reduce water consumption on District-owned property.
- Energy costs – during summer months, the District may pay more in electric charges, and have a higher percentage of its energy bill in higher electricity “tiers”.
- Higher maintenance costs – peak periods tend to have higher numbers of service calls and system maintenance issues when the water system is running at peak demand.
- Sources of supply – additional sources of supply may need to be produced or acquired to serve higher demand and certain sources of supply may cost more to purchase, produce, treat, deliver, and/or supply.

A number of volumetric rate alternatives were also developed and evaluated, including tiered and uniform volumetric alternatives. Given its cost profile, NBS believes the proposed uniform volumetric rate per hcf is the best suited volumetric rate structure for the District.

Drought and Water Conservation – On January 17, 2014, Governor Jerry Brown declared a State of Emergency throughout California due to severe drought conditions. On April 1, 2015 Governor Jerry Brown issued Executive Order B-29-15 mandating statewide water conservation of 25%. The specific conservation mandate for each community in California varies from 4% - 36%. Victorville Water District was mandated to reduce water consumption by 28% beginning in April 2015. Current and projected future consumption levels were closely evaluated, and incorporated into this study.

Long-Term Conservation – The assumptions and recommendations contained in this study are not a short term response to the drought. They assume that water supplies will continue to be limited in the future and that, in the long run, customers will reduce consumption accordingly. Therefore, the drought rates developed in this study will allow the District to meet its annual revenue requirements at various stages of conservation, even if drought conditions worsen over the next five years.

Key Financial Assumptions – The following are the key financial assumptions used in the water rate analyses:

- **Funding of Water Utility Capital Projects** – The District will fund all planned capital costs using existing reserves and rate revenues. The capital projects listed in the financial plan are from the District’s projection of costs through Fiscal Year 2023/24.
- **Reserve Targets** – Reserves for operations and capital needs are set at target levels that are consistent with industry standards for utility fund management. Reserve targets used in the analysis are as follows:
 - ✓ Operating & Maintenance Reserve – 90 days of operating and maintenance expenses.
 - ✓ Capital Rehabilitation and Replacement Reserve – approximately 3% of net assets.
- **Water Conservation** – The District is currently meeting the State’s 28% conservation requirement, and the assumptions and recommendations contained in this Study are not a short term response to the drought. They assume that water supplies will continue to be limited in the future and that, in the long run, customers will continue to conserve and that consumption will remain at this 28% reduction level, for the five-year period.
- **Inflation and Growth Projections:**
 - ✓ Customer growth is approximately 0.6% per year over the next five years.
 - ✓ Labor costs are inflated at 2% annually, except in FY 2016/17 full-time wages and payroll taxes are inflated by 10% to account for staff returning to a 40-hour work week.
 - ✓ Fuel Costs are inflated at 9% annually.
 - ✓ Electricity costs are inflated at 5.2% annually.
 - ✓ The cost of purchased water from Mojave Water Agency is inflated at 6.5% annually.
 - ✓ Groundwater replenishment and makeup obligation costs paid to Mojave Water Agency are inflated at 8% annually.
 - ✓ Groundwater assessment costs paid to Mojave Water Agency are inflated at 2% annually.
 - ✓ Meter service change outs are inflated by 3% annually.
 - ✓ Vehicle expenses other than fuel costs are inflated by 4% annually.
 - ✓ Natural gas and other utilities costs are inflated by 6% annually.
 - ✓ Other general operations and maintenance costs are inflated at 2% annually.

SECTION 2. WATER RATE STUDY

A. KEY WATER RATE STUDY ISSUES

The District's water rate analysis was undertaken with a few specific objectives, including:

- Generating additional revenue needed to meet projected funding requirements.
- Improving revenue stability.
- Updating fixed meter charges to reflect AWWA hydraulic capacity factors.
- Reflecting water conservation levels in response to the Statewide conservation mandate.
- Developing drought rates to ensure the District will continue to meet its revenue requirements in the future, if drought conditions worsen.

NBS developed various water rate alternatives as requested by District staff over the course of this Study. All rate structure alternatives relied on industry standards, cost-of-service principles, and the requirements of Prop 218. The new rates that will be implemented is ultimately the decision of the Board of Directors.

B. WATER UTILITY REVENUE REQUIREMENTS

It is important for municipal utilities to maintain reasonable reserves in order to handle emergencies, fund working capital, maintain a good credit rating, and generally follow sound financial management practices. Rate increases are governed by the need to meet operating and capital costs, fund Other Post-Employment Benefits (OPEB) requirements, and maintain sufficient reserve funds. The current condition of the District's water utility, with regard to these objectives is as follows:

- **Meeting Net Revenue Requirements⁴:** The water utility is projected to run a deficit in the current fiscal year of \$1.3 million, largely due to the State mandated conservation measures. If the planned capital projects are funded and no rate increases are implemented, the utility will spend down all reserves and have a negative fund balance by the end of FY 2020/21. For Fiscal Year 2016/17 through 2020/21, the projected net revenue requirement (i.e., total annual expenses plus rate-funded capital costs, less non-rate revenues) ranges from approximately \$17.5 million to \$22 million. New water rates have been developed for the next five years that will allow the utility to adequately fund operating and planned capital expenditures, along with reserving money to meet OPEB requirements.
- **Building and Maintaining Reserve Funds:** The District should maintain sufficient reserves for the Water Utility. NBS recommends that the District adopt and maintain reserve levels in order to meet the following minimum reserve fund target balances. At times, the amount in reserves can fall below or exceed the minimum reserve targets, due to the timing of capital expenditures that will inevitably vary from year to year.
 - ✓ **Operating Reserve** - should normally equal 90 days of the Utility's budgeted annual operating expenses, which is equal to a three-month (or 25%) cash reserve for normal operations, or \$5.6 million in FY 2015/16. An Operating Reserve is intended to promote financial viability in the event of any short-term fluctuation in revenues and/or expenditures, such as those caused by weather patterns, the natural inflow and outflow of cash during billing cycles, natural variability in demand-based revenue streams (e.g., volumetric charges), and – particularly in periods of economic distress – changes or trends in age of receivables.
 - ✓ **Capital Rehabilitation & Replacement Reserve** - should typically be equal to a minimum of 3% of net depreciable capital assets, which equates to a 33-year replacement cycle for capital assets,

⁴ A more detailed breakdown of the revenue requirements is provided in Tables 1 and 2 of the Technical Appendix.

or \$5.3 million in FY 2015/16. This target serves simply as a starting point for addressing long-term capital system replacement needs.

The District has several reserve funds that are restricted for specific purposes. The money held in these reserve funds are not available to be used for the utility's operating or capital expenditures. These reserve funds were evaluated as part of this study, but are held separate from the operating and capital reserves described above:

- ✓ **Debt Reserve** - Has a target ending balance of approximately \$1 million to comply with the bond covenants for the outstanding 1998 and 2006 Certificates of Participation for Water Improvement District 2. Currently, the District is holding approximately \$1.95 million in this fund, because the tentative plan is to use the surplus to pay off a portion of the debt early.
- ✓ **Reserve for Debt Service** – The District has approximately \$3.7 million held in a reserve that is used to pay debt service on outstanding bonds. The tentative plan is to use these funds to pay off a portion of the 1998 Certificates of Participation early.
- ✓ **OPEB Reserve** - The District is required to contribute funds to an OPEB reserve to fund retiree health care costs. Per the City of Victorville's Finance Department, the target balance in the OPEB reserve is \$4.76 million. It is assumed in the rate analysis that \$1 million will be transferred each year to the OPEB reserve fund in FY 2015/16 through 2019/20, and by the end of the 5-year period, the reserve will be fully funded.
- ✓ **Connection Fee and Alternate Water Source Reserve** – The District has approximately \$6 million in the Connection Fee and Alternate Water Source reserve, which is designated for specific capital and source of supply projects. It is assumed in the rate analysis that these funds will be set aside for their designated purpose, and will not be used for general operations and capital improvements.
- **Funding Capital Improvement Projects:** The District must also be able to fund necessary capital improvements for the Utility in order to maintain current service levels. District staff has identified roughly \$55.6 million (future year cost⁵) in capital improvements for the District's water system for the next ten years. With the rate increases recommended in this study, the District is expected to postpone \$6.1 million of those projects beyond the ten-year period. Without rate increases, the District would only be able to fund approximately half of the planned capital improvements, prior to expending all cash reserves by the end of Fiscal Year 2019/20.

Figure 2 summarizes the sources and uses of funds, net revenue requirements, and the recommended annual percentage increases in total rate revenue recommended for the next five years. As this figure shows, if the District implements the recommended increases, the projected deficits for the next five years will be eliminated.⁶

⁵ Future year cost includes cost inflation of 3.0% per year (10-year average change in construction costs from 2005 to 2015), per the Engineering News Record estimate of construction cost inflation from 2016 values.

⁶ With the exception of a small annual deficit in FY 2019/20, which is not material to the five-year financial plan.

Figure 2. Summary of Water Revenue Requirements

Summary of Sources and Uses of Funds and Net Revenue Requirements	Budget	Projected				
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Sources of Water Funds						
Rate Revenue Under Prevailing Rates	\$ 18,014,800	\$ 18,122,889	\$ 18,231,626	\$ 18,341,016	\$ 18,451,062	\$ 18,451,062
Non-Rate Revenues	3,067,770	1,586,500	1,618,200	1,650,500	1,683,500	1,717,100
Interest Earnings	35,000	108,784	93,871	91,467	81,866	129,449
Total Sources of Funds	\$ 21,117,570	\$ 19,818,173	\$ 19,943,697	\$ 20,082,983	\$ 20,216,428	\$ 20,297,611
Uses of Water Funds						
Operating Expenses	\$ 22,479,754	\$ 19,172,890	\$ 19,727,054	\$ 20,303,022	\$ 19,776,937	\$ 19,496,001
Debt Service	-	-	-	-	-	-
Rate-Funded Capital Expenses	-	-	-	3,520,047	995,968	4,267,842
Total Use of Funds	\$ 22,479,754	\$ 19,172,890	\$ 19,727,054	\$ 23,823,069	\$ 20,772,904	\$ 23,763,844
Surplus (Deficiency) before Rate Increase	\$ (1,362,184)	\$ 645,283	\$ 216,643	\$ (3,740,086)	\$ (556,476)	\$ (3,466,233)
Additional Revenue from Rate Increases ¹	-	-	1,139,477	2,364,272	3,680,302	5,063,512
Surplus (Deficiency) after Rate Increase	\$ (1,362,184)	\$ 645,283	\$ 1,356,119	\$ (1,375,814)	\$ 3,123,826	\$ 1,597,280
Projected Annual Rate Increase	0.00%	0.00%	6.25%	6.25%	6.25%	6.25%
Cumulative Rate Increases	0.00%	0.00%	6.25%	12.89%	19.95%	27.44%
Net Revenue Requirement²	\$ 19,376,984	\$ 17,477,606	\$ 18,014,983	\$ 22,081,102	\$ 19,007,538	\$ 21,917,295

1. Assumes new rates are implemented July 1st of each year beginning in 2016.

2. Total Use of Funds less non-rate revenues and interest earnings. This is the annual amount needed from water rates.

Figure 3 summarizes the sources of funding that will be used to fund the District's Capital Improvement Program. As this figure shows, the District is planning to fully cash fund the planned capital expenditures with a combination of rate revenue and funds held in reserves. As agreed upon at the February 16, 2016 workshop with the Board of Directors, this financial plan will not be able to fully fund the District's planned capital improvements, and will leave approximately \$6.1 million unfunded at the end of the five-year period.

Figure 3. Summary of Water Reserve Funds

Capital Funding Summary	Budget	Projected				
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Sources of Capital Funding						
Capital Rehabilitation & Replacement Reserve	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 221,586	\$ 43,200	\$ -
Rate Revenue	-	-	-	3,520,047	995,968	4,267,842
Total: Sources of Capital Funding	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 1,039,168	\$ 4,267,842
Uses of Capital Funding Sources						
Planned Capital Expenditures	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 3,965,491	\$ 7,455,846
Total: Uses of Capital Funding	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 3,965,491	\$ 7,455,846
Surplus / (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ (2,926,323)	\$ (3,188,004)

Figure 4 and Figure 5 summarize the projected reserve fund balances and reserve targets for the next 5 years. Figure 4 indicates that the unrestricted reserve funds will be spent down over the next two years on capital improvement projects, and by the end of the five-year period, reserves will be sufficient to meet the minimum reserve target.⁷ As noted previously, the restricted reserve fund balances shown in Figure 5 are restricted for specific purposes and cannot be used to fund water utility operations or capital projects. It is assumed in the analysis that these funds will be held and used for their specific purpose, and will not be used for general water utility operations or capital improvements.

⁷ A more detailed breakdown of the reserve funds is provided in Tables 2 & 3 of the Technical Appendix.

Figure 4. Summary of Unrestricted Reserve Funds

Beginning Reserve Fund Balances and Recommended Reserve Targets	Budget	Projected				
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Unrestricted Reserves						
Operating Reserve						
Ending Balance	\$ 3,637,816	\$ 3,283,099	\$ 3,639,219	\$ 1,263,404	\$ 3,387,230	\$ 4,874,000
<i>Recommended Minimum Target</i>	<i>5,620,000</i>	<i>4,793,000</i>	<i>4,932,000</i>	<i>5,076,000</i>	<i>4,944,000</i>	<i>4,874,000</i>
Capital Rehabilitation & Replacement Reserve						
Ending Balance	\$ 18,118,985	\$ 9,233,028	\$ 5,507,486	\$ 5,285,900	\$ 5,242,700	\$ 5,353,210
<i>Recommended Minimum Target</i>	<i>5,290,600</i>	<i>5,390,500</i>	<i>5,337,200</i>	<i>5,285,900</i>	<i>5,242,700</i>	<i>5,302,400</i>
Total Ending Balance (Un-Restricted Reserves)	\$ 21,756,801	\$ 12,516,127	\$ 9,146,705	\$ 6,549,304	\$ 8,629,930	\$ 10,227,210
<i>Total Recommended Minimum Target</i>	<i>\$ 10,910,600</i>	<i>\$ 10,183,500</i>	<i>\$ 10,269,200</i>	<i>\$ 10,361,900</i>	<i>\$ 10,186,700</i>	<i>\$ 10,176,400</i>

Figure 5. Summary of Restricted Reserve Funds

Beginning Reserve Fund Balances and Recommended Reserve Targets	Budget	Projected				
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Restricted Reserves						
Connection Fee & Alternate Water Source Reserve						
Ending Balance	\$ 5,915,504	\$ 6,624,131	\$ 7,356,936	\$ 8,117,729	\$ 8,910,547	\$ 9,735,551
<i>Recommended Minimum Target</i>	-	-	-	-	-	-
Debt Reserve						
Ending Balance	\$ 1,954,374	\$ 1,964,146	\$ 1,978,877	\$ 1,998,665	\$ 2,023,649	\$ 2,054,004
<i>Recommended Minimum Target</i>	<i>1,000,680</i>	<i>999,945</i>	<i>999,945</i>	<i>999,945</i>	<i>996,570</i>	<i>996,570</i>
Reserve for Debt Service (Early Debt Payoff)						
Ending Balance	\$ 3,705,438	\$ 3,723,966	\$ 3,751,895	\$ 3,789,414	\$ 3,836,782	\$ 3,894,334
<i>Recommended Minimum Target</i>	-	-	-	-	-	-
OPEB Reserve						
Ending Balance	\$ 1,000,000	\$ 2,005,000	\$ 3,020,038	\$ 4,050,238	\$ 5,100,866	\$ 5,177,379
<i>Recommended Minimum Target</i>	<i>4,766,000</i>	<i>4,766,000</i>	<i>4,766,000</i>	<i>4,766,000</i>	<i>4,766,000</i>	<i>4,766,000</i>
Total Ending Balance (Restricted Reserves)	\$ 12,575,316	\$ 14,317,242	\$ 16,107,746	\$ 17,956,047	\$ 19,871,844	\$ 20,861,268
<i>Total Recommended Minimum Target</i>	<i>\$ 5,766,680</i>	<i>\$ 5,765,945</i>	<i>\$ 5,765,945</i>	<i>\$ 5,765,945</i>	<i>\$ 5,762,570</i>	<i>\$ 5,762,570</i>

C. CAPITAL IMPROVEMENT PROGRAM

The District has a Capital Improvement Program with approximately \$55.6 million (future value) in planned capital projects for the District's water system for Fiscal Years 2015/16 – 2023/24. **Figure 6** shows the list of capital projects that the District has planned, the year each project will be completed and the cost of each project⁸. The District is planning to cash-fund these projects with a combination of rate revenue and funds held in reserves. The capital improvement projects included in the rate program are designed to keep existing infrastructure in good repair and maintain current service levels.

As noted previously in Section 2-B of this report, with the planned rate increases, the District will not be able to fully-fund the planned capital projects. It is projected in the analysis that approximately \$6.1 million in capital projects will need to be postponed beyond the 10-year period, or additional rate increases can be implemented after the initial 5-year period to fund all planned capital projects within the planning period.

Figure 6. Capital Improvement Program, FY 2015/16 – 2023/24

Project Description	Year Scheduled for Completion	Planned Cost	% of Total CIP Costs
Backhoes	2017, 2020	\$ 649,476	1%
Booster Pumping Stations	2017	\$ 1,846,100	3%
Demonstration Gardens/Low Water Use Conversions	2016	\$ 145,000	0%
Facilities Improvements	2017	\$ 466,500	1%
Fiber Optic Upgrade	2016	\$ 85,000	0%
GIS Mapping	2017	\$ 154,500	0%
IVR Telephone System Enhancements, Phase II	2016	\$ 81,500	0%
Master Plan - Update	2017, 2022	\$ 410,858	1%
Meter Replacements	Annual	\$ 1,011,000	2%
Ph Analyzer	2016	\$ 5,000	0%
Phone System Upgrade	2016	\$ 16,009	0%
Pipelines	Annual	\$ 43,063,989	77%
PRV Stations	2021	\$ 347,782	1%
Pump to Waste	2017	\$ 426,600	1%
Right of Way Relocations	Annual	\$ 2,330,000	4%
SCADA - Replace PX	2016	\$ 12,000	0%
Instruments and Machines	2018	\$ 194,771	0%
Truck/Vehicle/Equipment Replacement	Annual	\$ 3,612,591	6%
Urban Water Management Plan Update	2016, 2021	\$ 107,964	0%
Vulnerability Assessment Update	2016	\$ 20,000	0%
Well Re-equip	2016	\$ 450,000	1%
Work Order System	2016	\$ 207,000	0%
Subtotal: Planned Capital Improvement Program Costs		\$ 55,643,640	100%
Amount Un-Funded	TBD ¹	\$ (6,114,327)	-
Total: Funded Capital Improvement Program Costs		\$ 49,529,313	--

1. The capital projects that are unfunded as part of this financial plan will be determined by District Staff.

As mentioned previously, a number of financial plan alternatives were evaluated in this study, in order to develop the best options for the District to consider. One option that was considered was eliminating all capital improvement program costs; if that option was selected for adoption by the Board of Directors, no rate increase would be needed and rates set at current levels would be sufficient to absorb the reduction in rate revenue due to water conservation. However, NBS does not support or recommend this option, as

⁸ See Table 14 in the Technical Appendix for the detailed capital projects costs which include projected cost inflation and Table 15 for the cost inflation factors applied to the project costs.

eliminating necessary funding for capital improvements is not consistent with standard industry best practices, and has the potential to put the water system at risk for system failures and interruptions in water service.

D. CHARACTERISTICS OF WATER CUSTOMERS BY CLASS

Both consumption and the number of meters by customer class are used in allocating costs as a part of the cost-of-service analysis. The District's most recent consumption data is summarized in **Figure 7**, peaking factors by customer class are summarized in **Figure 8**⁹, and **Figure 9** compares the total number of meters by customer class.

Figure 7. Water Consumption by Customer Class¹⁰

Development of the BASE CAPACITY Allocation Factor				
Customer Class	FY 2013/14 Volume (hcf) ¹	% Adjustment for Conservation ²	Estimated Volume Adjusted for Conservation	Percent of Total Volume
<i>Treated Water:</i>				
Single Family Residential	5,920,728	28%	4,262,924.16	65.1%
Multi-Family Residential	828,615	28%	596,603	9.1%
Commercial	964,394	28%	694,364	10.6%
Irrigation	97,773	28%	70,397	1.1%
Municipal Irrigation	441,482	28%	317,867	4.9%
Fire	-	28%	-	0.0%
Other	841,648	28%	605,987	9.3%
Total: Recurring Consumption	9,094,640	--	6,548,141	100%
<i>Other Non-Recurring Consumption</i>				
Commercial Flow Meter	51,619	28%	37,166	0.6%
Municipal Flow Meter	3,414	28%	2,458	0.0%
Intertie	134,101	28%	96,553	1.4%
Total Non-Recurring Consumption	189,134	--	136,176	2.0%

1. Consumption data is based on the City of Victorville's FY 2013/14 customer data. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the State Water Resources Control Board.

⁹ System capacity is the system's ability to supply water to all delivery points at the time when demanded. Capacity is the combination of plant and service related activities required to provide the amount of service requested/demanded by customers. Use of system capacity is typically defined as the maximum demand for the specific period of time (e.g., maximum day or maximum month demand). The relationship of a customer class's average use to its peak use is expressed as a "peaking factor." Both operating costs and capital infrastructure costs incurred to accommodate peak system capacity events are generally allocated to each customer class based on the class's contribution to peak capacity event.

¹⁰ Due to drought conditions, it is assumed in the analysis that water consumption will remain at the 28% reduction level, as required by the State's mandate and that this is essentially the "new normal" for water consumption levels in the District.

Figure 8. Peaking Factors by Customer Class

Development of the CAPACITY (MAX MONTH) Allocation Factors				
Customer Class	Average Monthly Use (hcf)	Peak Monthly Use ¹ (hcf)	Peak Month Factor	Max Month Capacity Factor
<i>Treated Water:</i>				
Single Family Residential	493,394	725,081	1.47	64.0%
Multi-Family Residential	69,051	94,792	1.37	8.4%
Commercial	80,366	114,114	1.42	10.1%
Irrigation	8,148	15,123	1.86	1.3%
Municipal Irrigation	36,790	74,758	2.03	6.6%
Fire	0	0	0.00	0.0%
Other	70,137	109,836	1.57	9.7%
Total: Recurring Consumption	757,887	1,133,704	1.50	100%
<i>Other Non-Recurring Consumption</i>				
Commercial Flow Meter	4,302	9,240	2.15	0.7%
Municipal Flow Meter	285	616	2.17	0.0%
Intertie	11,175	129,962	11.63	10.2%
Total Non-Recurring Consumption	15,761	139,818	8.87	11.0%

1. Based on peak monthly data (peak day data not available).

Figure 9. Number of Meters by Customer Class

Development of the Customer Allocation Factor		
Customer Class	Number of Meters ¹	Percent of Total
<i>Treated Water:</i>		
Single Family Residential	32,862	93.61%
Multi-Family Residential	596	1.70%
Commercial	781	2.22%
Irrigation	58	0.17%
Municipal Irrigation	200	0.57%
Fire ²	325	0.93%
Other ³	282	0.80%
Total: Recurring Consumption	35,104	100.00%
<i>Other Non-Recurring Consumption⁴</i>		
Commercial Flow Meter	36	0.10%
Municipal Flow Meter	19	0.05%
Intertie ⁵	3	0.01%
Total: Non-Recurring Meters	58	0.16%

1. Meter by Class and Size are based on June 2014 customer data. Victorville bills monthly. File: VWD14 Revenue Model Meter.xls.

2. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

3. Other customers consists primarily of governmental customers (the City, special districts, other agencies) and churches.

4. Commercial and Municipal Flow meters and Intertie connections are excluded from allocations of meter counts.

5. Intertie meter count set to 3 as it is the most meters billed at any point during FY 2013/14 (for September 2013).

E. COST OF SERVICE ANALYSIS

Once the revenue requirements are determined as described in Section 2-B of this Study, the cost of service analysis distributes those revenue requirements to each component of the water rate by allocating costs through the functionalization and classification process. This process is described as follows:

Functionalization, Classification and Allocations

Most costs are not typically allocated 100% to fixed or variable categories and, therefore, are allocated to multiple functions of water service. The classification (i.e., functionalization) of costs provides the basis for allocating the classified costs to the following cost causation components:

- **Base Commodity** related costs are those costs associated with the total consumption of water over a specified period of time (e.g., annual).
- **Capacity** related costs are those costs associated with the maximum demand required at one point in time or the maximum size of facilities required to meet this demand.
- **Customer** related costs are costs associated with having a customer on the water system, such as meter reading, postage and billing.
- **Fire Protection** costs are those costs associated with providing sufficient capacity in the system for fire meters and other operations and maintenance costs of providing water to properties for private fire service protection.

Once costs have been organized in the District's budget categories, they are allocated to these cost causation components that are used as the basis for establishing new water rates and translate to fixed and variable charges. Tables 16-21 in the Technical Appendix, show how the District's expenses were classified and allocated to these cost causation components.

Variable costs are those that change as the volume of water produced and delivered changes. These commonly include the cost of chemicals used in the treatment process, energy related to pumping for transmission and distribution, and source of supply.

Fixed costs generally consist of costs that a utility incurs to serve customers irrespective of the amount of water they use¹¹. These include (1) the infrastructure (capacity-related facilities) required to provide service to customers, (2) costs associated with the peaking requirements, or maximum demand which affects the maximum size and operations and maintenance costs of water supply, treatment and delivery system, and (3) administrative and billing costs associated with meter reading, postage and billing.

For financial stability, in general, utilities should recover all of their fixed costs from fixed charges and all of their variable costs from volumetric charges; when this is the case, fluctuations in water sales revenues would be directly offset by reductions or increases in variable expenses. Because of this, this type of rate design provides greater net revenue stability. However, other factors are often considered when designing water rates such as community values, water conservation goals, ease of understanding, and ease of administration.¹²

This analysis resulted in a cost distribution that is 77% fixed and 23% variable (volumetric)¹³. However, given a number of factors such as the District's current rate design and source of supply cost profile, NBS recommends the rate structure collect 37% of revenue from fixed meter charges and 63% of revenue from volumetric charges in FY 2016/17. This allocation helps minimize the effect of transitioning from a volumetric based meter charge to a fixed charge that is based on meter size. In addition, differing from the

¹¹ American Water Works Association, "Principles of Water Rates, Fees and Charges" – M1 Manual, p. 137-139.

¹² Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, American Water Works Association, Sixth Edition, see pp. 5 and 96.

¹³ This analysis is presented in Tables 16-20 of the Technical Appendix.

general case, such a percentage split between fixed and variable charges provides the District with more net revenue stability than using a higher percentage of fixed revenue. This is discussed in Section 2-F below.

Figure 10 shows how costs are distributed to each component of the water rate. Commodity related costs, are distributed to customers based on the amount of water consumed (previously shown in Figure 7). Capacity and Customer related costs are distributed to customers based on the number of meters by size and is shown later in this report in Figure 16 and Figure 17¹⁴. A direct allocation is made in the functionalization and classification process to commercial fire which reflects their share of system-wide costs.

Figure 10. FY 2016/17 Cost Distribution

Classification Components	FY 2016/17 Cost Distribution	Percentage of Total
Commodity-Related Costs	\$ 11,451,774	63.2%
Capacity-Related Costs	\$ 5,798,040	32.0%
Customer-Related Costs	\$ 655,725	3.6%
Fire Protection-Related Costs	\$ 217,350	1.2%
Total	\$ 18,122,889	100.0%

F. CURRENT VS. PROPOSED WATER RATE STRUCTURE

The process of evaluating the water rate structure provides the opportunity to incorporate a number of rate-design objectives and policies, including revenue stability, equity among customer classes, and water conservation. One of the District’s main objectives in this study was to develop a defensible rate structure that is consistent with industry standards and Proposition 218 requirements. The rates developed in this study are described in the following sections.

Volumetric Rates

Currently, the District charges all customers a uniform commodity rate for all water consumed. Commodity or volumetric rates are charged per unit of water, or hundred cubic feet (hcf). The rate differs between standard domestic, public benefit use (i.e. municipal irrigation) and construction flow/intertie customers.

NBS recommends that the District continue using a uniform (i.e., single-tier) volumetric rate for all customers, with some modifications to how these rates are developed. The use of a uniform volumetric rate better conforms to the requirements of Proposition 218 given the District’s cost profile, particularly the more stringent cost-basis required by the recent San Juan Capistrano decision, which requires tiered rates to identify the actual costs associated with water used in each tier.

In addition, because of the significant differences in typical water use of commercial customers (e.g., laundromat vs. restaurants vs. office space), uniform commodity charges are a commonly used rate structure for these types of customers, and is the primary reason why tiered rates typically aren’t used for commercial customers.

In order to develop the volumetric rates, the District’s production costs, particularly those paid to Mojave Water Agency for groundwater replenishment and purchased water, were carefully evaluated. The new volumetric rate is set to the marginal cost of water, meaning that changes in consumption would cause matching changes in revenue and expenses. The District has a “Free Production Allowance,” which is the

¹⁴ The development of fixed charges by meter size is shown in Tables 37-38, 40-41, 43-44, 46-47, and 49-50 of the Technical Appendix for Fiscal Years 2016/17 through 2020/21 respectively.

amount of water that can be pumped out of the groundwater basin, without incurring charges. However, when the District exceeds the Free Production Allowance, a groundwater replenishment charge is incurred based on the amount of water pumped out of the groundwater basin and Mojave Water Agency's costs per acre foot of water.

In developing the volumetric rate for the District, costs that change based on the amount of water consumed (i.e. groundwater replenishment, purchased water and production power) were used to develop the unit cost of water.

Figure 11 shows the groundwater replenishment and purchased water costs per acre foot and hcf that are used in the rate calculation, and **Figure 12** shows the marginal cost of production power. **Figure 13** shows how these costs are accumulated and projected forward, in order to develop the per-unit cost of water for the next five years. Fiscal Year 2015/16 costs are used as the basis for the projection.

Figure 11. Marginal Cost of Water Production

Fiscal Year	Description	Cost Per Acre Foot	Cost Per HCF
Groundwater Replenishment Costs¹:			
2015-16	Mojave Basin Area Watermaster	\$484	\$1.111
2016-17	Mojave Basin Area Watermaster	\$522	\$1.198
Purchased Water Costs²:			
2015-16	Mojave Basin Area Watermaster	\$125	\$0.287

1. Acre Foot Costs from the March 30, 2015 Mojave Basin Area Watermaster Memorandum

Re: Adoption of Watermaster's Administrative Budget and Assessment Rates for Water Year 2015-16.

2. Per Acre Foot Cost is \$125 and represent delivery costs, per District Staff.

Figure 12. Marginal Cost of Production Power

Fiscal Year	Description	Net Change in Cost
Production Power Costs¹:		
2015-16	Budget Adjustment Utilities-Production Power ²	\$130,500
2015-16	Consumption Change ³	<u>2,599,457</u>
2015-16	Per HCF Cost	\$0.050

1. Net change in budget figure from VWD Conservation Adjustments.xlsx

2. Per VWD Conservation Adjustments.xlsx file provided 11/23/2015.

3. Reduction in consumption (28%) due to State conservation mandate.

Figure 13. Marginal Cost of Water for the Five-Year Period (Up to 35% Conservation)

Cost Description	Inflation	Base Year Costs (FY '15/16)	Marginal Cost of Water				
			FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Groundwater Replenishment	8.00%	\$1.111	\$1.198	\$1.294	\$1.398	\$1.510	\$1.630
Purchased Water	6.50%	\$0.287	\$0.306	\$0.325	\$0.347	\$0.369	\$0.393
Utilities-Production Power	5.20%	<u>\$0.050</u>	<u>\$0.053</u>	<u>\$0.056</u>	<u>\$0.058</u>	<u>\$0.061</u>	<u>\$0.065</u>
Marginal Cost Per HCF - Production		\$1.448	\$1.557	\$1.675	\$1.803	\$1.940	\$2.088
Adjustment for System Loss ¹	N/A	<u>\$0.179</u>	<u>\$0.192</u>	<u>\$0.207</u>	<u>\$0.222</u>	<u>\$0.239</u>	<u>\$0.258</u>
Marginal Cost Per HCF - Consumption		\$1.627	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346

1. System loss is approximately 12.3% of production.

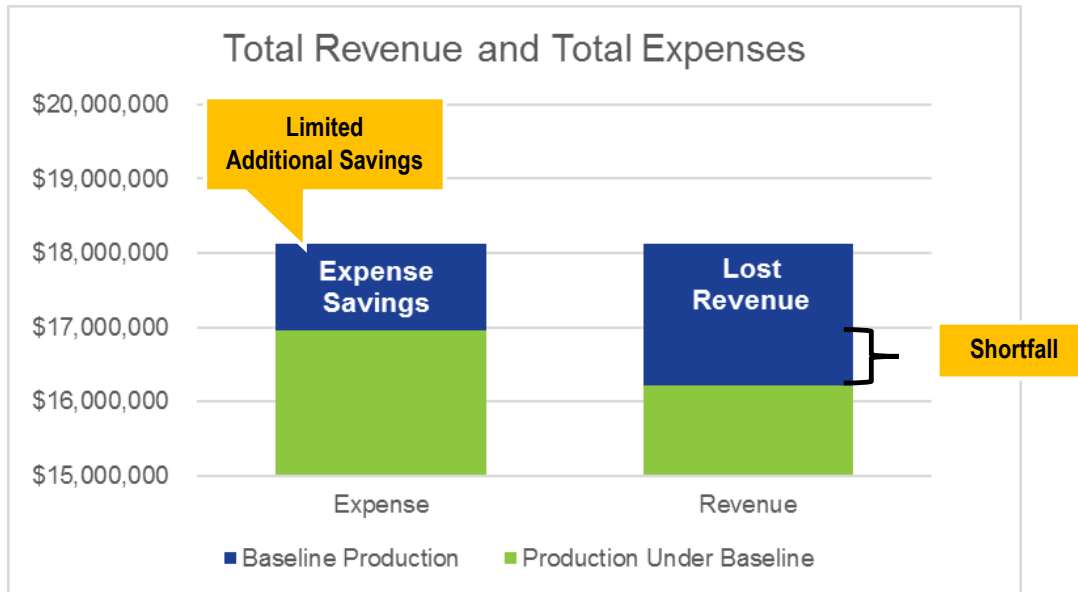
Because the marginal cost of water represents the cost per unit to the District to provide each unit of water sold, volumetric rates set at the values shown in Figure 13 will collect sufficient revenue to cover costs regardless of consumption¹⁵ in the next five years. That is, since the marginal cost matches the volumetric

¹⁵ Provided conservation remains at or below 35% compared to FY 2013/14 consumption.

rate, as consumption changes, changes in expenses for the District are matched by the changes in revenue recovered by the District.

If the drought worsens and the District exceeds 35% conservation, the District's entire production is within the Free Production allowance, which means the costs shown in Figure 11 no longer apply. At the point where conservation exceeds 35%, the marginal cost changes, because only production power costs are saved. Revenue will decline as less water is sold, and the loss of variable revenue is greater than the cost savings, therefore drought rates are needed to recover the shortfall. **Figure 14** demonstrates revenues and expenses change when the District achieves 40% conservation.

Figure 14. 40% Conservation Compared to FY 2013/14 Level



Drought rates were developed that the District can implement for 40% through 60% conservation levels, in 5% increments as shown in **Figure 15**.

Figure 15. Drought Rates

Drought Rate Schedule	Current Rates	Proposed Rates				
		FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		0.00%	6.25%	6.25%	6.25%	6.25%
Rates for Standard Domestic & Public Benefit Use Water Consumed (per hcf)¹						
Conservation Level Compared to FY 2013/14						
40%	N.A.	\$1.885	\$2.029	\$2.183	\$2.350	\$2.529
45%	N.A.	\$2.052	\$2.207	\$2.376	\$2.557	\$2.752
50%	N.A.	\$2.251	\$2.422	\$2.607	\$2.806	\$3.020
55%	N.A.	\$2.495	\$2.684	\$2.889	\$3.110	\$3.348
60%	N.A.	\$2.799	\$3.011	\$3.242	\$3.490	\$3.757
Rates for Construction Flow Meter/Filler Spout Water/Inertie (per hcf)¹						
Conservation Level Compared to FY 2013/14						
40%	N.A.	\$3.108	\$3.299	\$3.502	\$3.718	\$3.922
45%	N.A.	\$3.385	\$3.593	\$3.815	\$4.050	\$4.271
50%	N.A.	\$3.718	\$3.946	\$4.189	\$4.447	\$4.691
55%	N.A.	\$4.125	\$4.378	\$4.647	\$4.934	\$5.204
60%	N.A.	\$4.633	\$4.917	\$5.220	\$5.542	\$5.845

1. Drought surcharges will apply to all consumption, if conservation is at or above 40% from FY 2013/14 baseline consumption levels.

Given that the variable rate has been set to match the calculated marginal cost of water, **Figure 16** and **Figure 17** summarize how costs are allocated to each classification component and used to establish new water rates. For example, in FY 2016/17, 63% of costs will be collected from commodity charges. This is \$11.4 million. When divided by total expected consumption, the allocation results in a uniform variable rate of \$1.749, matching the marginal cost of water.

The remaining 37% of rate revenue will be collected from fixed monthly service charges and is categorized into capacity-related costs that represent 32% of total costs, customer-related costs that represent 4% of total costs and fire protection-related costs that represent 1% of total costs.

Figure 16. Allocated Percentage Net Revenue Requirements

Classification Components	Cost-of-Service Split	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Commodity-Related Costs	23%	63%	64%	65%	66%	67%
Capacity-Related Costs	68%	32%	31%	31%	30%	29%
Customer-Related Costs	8%	4%	4%	3%	3%	3%
Fire Protection-Related Costs	1%	1%	1%	1%	1%	1%
Net Revenue Requirement	100%	100%	100%	100%	100%	100%

Figure 17. Allocated Net Revenue Requirements

Classification Components	Cost-of-Service Split	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Commodity-Related Costs	\$ 4,186,507	\$ 11,451,774	\$ 12,397,256	\$ 13,421,443	\$ 14,530,932	\$ 15,732,875
Capacity-Related Costs	\$ 12,325,131	\$ 5,798,040	\$ 6,056,565	\$ 6,320,690	\$ 6,589,746	\$ 6,737,692
Customer-Related Costs	\$ 1,393,901	\$ 655,725	\$ 684,962	\$ 714,833	\$ 745,262	\$ 761,994
Fire Protection-Related Costs	\$ 217,350	\$ 217,350	\$ 232,320	\$ 248,321	\$ 265,424	\$ 282,013
Target Rate Revenue	\$ 18,122,889	18,122,889	19,371,103	20,705,287	22,131,364	23,514,574

Fixed Charges

Currently, the District charges all customer classes a volumetric-based monthly meter charge¹⁶ based on average daily use for the month, and fire meters are charged a flat fee of \$10/month. In the proposed rate structure, meter sizes will have different fixed monthly charges that are based on meter size, which reflects the capacity requirements of each size meter connected to the system. This is because larger meters have the potential to use more of the system's capacity, or said differently, they have higher peaking factors compared to smaller meters. The potential capacity demanded (peaking) is proportional to the maximum hydraulic flow through each meter size as established by the AWWA hydraulic capacity ratios¹⁷.

As an example, a 2-inch meter has a greater capacity, or potential peak demand than a 3/4-inch meter; therefore the fixed charge for a 2-inch meter is larger than a 3/4-inch meter based on their proportionate capacity requirements¹⁸. A "hydraulic capacity factor" is calculated by dividing the maximum capacity or flow of large meters by the capacity of the base meter size, which is typically the most common residential meter size (in this case a 3/4-inch meter)¹⁹.

The actual number of meters by size is multiplied by the corresponding capacity ratios to calculate the total number of equivalent meters. The number of equivalent meters is used as a proxy for the potential demand that each customer can place on the water system (which dictates the sizing of the system's maximum

¹⁶ The current monthly meter charge is based on average daily water use and ranges from a minimum of \$17.25 to a maximum of \$130.50 per month, for each meter.

¹⁷ See: American Water Works Association, *Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1*, 326, (6th ed. 2012) and American Water Works Association, *Water Meters – Selection, Installation, Testing and Maintenance M6*, 65 (5th ed. 2012).

¹⁸ This is reflected in the fixed charge calculations by using the AWWA hydraulic capacity factors to represent the maximum volume each meter size is capable of delivering.

¹⁹ Hydraulic capacity factors for all meter sizes are shown in Table 35 of the Technical Appendix.

capacity). A significant portion of a water system's peak capacity, and in turn, the utility's fixed operating and capital costs, are related to meeting system capacity requirements.

Fire service customers will still be subject to a different set of fixed charges than the other customer classes because fire service customers differ from other water service customers, since their service is more of a standby nature, where a readiness-to-serve charge is appropriate. Except in the event of a fire, these users are not intended to use water on a regular basis. However, the District still needs to provide sufficient capacity for fire meters and recover other operations and maintenance costs of providing water to such properties for private fire service protection. Based on the cost of service analysis and the standby nature of fire meters, the overall cost to serve these users is less than that of a standard service; therefore, the fixed charges are less.

For FY 2016/17 **Figure 18** shows how fixed monthly service charges were calculated for standard water meters and **Figure 19** shows the same for private fire meters²⁰. The customer component of the rate is \$1.56 per meter, and does not vary by meter size because it represents costs to the utility for having connections to the water system. Capacity costs vary by meter size and are based on their hydraulic capacity.

Figure 18. Calculation of FY 2016/17 Standard Fixed Meter Charges

Meter Size	Hydraulic Capacity Factor	Number of Meters	Total Equivalent Meters	Fixed Meter Charge		Total Fixed Meter Charge
				Customer Component	Capacity Component	
3/4 inch	1.00	31,941	31,941	\$1.56	\$10.22	\$11.78
1 inch	1.67	1,700	2,833	\$1.56	\$17.03	\$18.59
1.5 inch	3.33	437	1,457	\$1.56	\$34.06	\$35.62
2 inch	5.33	454	2,421	\$1.56	\$54.50	\$56.06
3 inch	10.67	93	992	\$1.56	\$109.00	\$110.56
4 inch	16.67	63	1,050	\$1.56	\$170.32	\$171.88
6 inch	33.33	38	1,267	\$1.56	\$340.64	\$342.19
8 inch	93.33	45	4,200	\$1.56	\$953.78	\$955.34
10 inch	140.00	8	1,120	\$1.56	\$1,430.68	\$1,432.23

Figure 19. Calculation of FY 2016/17 Fire Meter Charges

Meter Size	Hydraulic Capacity Factor	Number of Meters	Total Equivalent Meters	Fixed Meter Charge		Total Fixed Meter Charge
				Customer Component	Capacity Component	
3 inch	11.67	6	70	\$1.56	\$7.95	\$9.50
4 inch	23.33	31	723	\$1.56	\$15.89	\$17.45
6 inch	53.33	79	4,213	\$1.56	\$36.32	\$37.88
8 inch	93.33	170	15,867	\$1.56	\$63.57	\$65.13
10 inch	146.67	39	5,720	\$1.56	\$99.89	\$101.45

²⁰ The calculations of fixed charges for the FY2016/17 through FY2021/22 are shown in Tables 37-38, 40-41, 43-44, 46-47, and 49-50 of the Technical Appendix.

Current and Proposed Water Rates

Figure 20 provides a comparison of the current and proposed rates for Fiscal Year 2016/17 through 2020/21. Rate adjustments are scheduled to be effective July 1st of each fiscal year.

Figure 20. Current and Proposed Water Rates

Water Rate Schedule	Current Rates	Proposed Rates				
		FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		0.00%	6.25%	6.25%	6.25%	6.25%
Fixed Service Charge						
Fixed Periodic Service Charge (Average Daily Use in HCF):						
0.00 - 0.26	\$17.25	N.A.	N.A.	N.A.	N.A.	N.A.
0.27 - 1.17	\$18.25	N.A.	N.A.	N.A.	N.A.	N.A.
1.18 - 6.60	\$36.50	N.A.	N.A.	N.A.	N.A.	N.A.
6.61 and above	\$130.50	N.A.	N.A.	N.A.	N.A.	N.A.
Fixed Service Charges						
3/4 inch	N.A.	\$11.78	\$12.23	\$12.68	\$13.15	\$13.36
1 inch	N.A.	\$18.59	\$19.30	\$20.02	\$20.75	\$21.09
1.5 inch	N.A.	\$35.62	\$36.99	\$38.37	\$39.76	\$40.41
2 inch	N.A.	\$56.06	\$58.21	\$60.39	\$62.58	\$63.60
3 inch	N.A.	\$110.56	\$114.80	\$119.09	\$123.42	\$125.44
4 inch	N.A.	\$171.88	\$178.47	\$185.14	\$191.87	\$195.01
6 inch	N.A.	\$342.19	\$355.32	\$368.60	\$382.00	\$388.25
8 inch	N.A.	\$955.34	\$991.99	\$1,029.07	\$1,066.48	\$1,083.92
10 inch	N.A.	\$1,432.23	\$1,487.17	\$1,542.77	\$1,598.85	\$1,624.99
Fire Fixed Service Charges:						
3 inch	\$10.00	\$9.50	\$10.06	\$10.65	\$11.27	\$11.83
4 inch	\$10.00	\$17.45	\$18.50	\$19.62	\$20.80	\$21.90
6 inch	\$10.00	\$37.88	\$40.21	\$42.68	\$45.31	\$47.78
8 inch	\$10.00	\$65.13	\$69.16	\$73.44	\$77.99	\$82.30
10 inch	\$10.00	\$101.45	\$107.75	\$114.45	\$121.56	\$128.31
Commodity Charges for All Water Consumed (per hcf)						
Rate Per hcf of Water Consumed:						
Standard Domestic Water	\$1.530	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346
Public Benefit Use Water (Municipal Irrigation)	\$0.610	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346
Construction Flow Meter/Filler Spout Water/Intertie	\$2.470	\$2.768	\$2.941	\$3.124	\$3.320	\$3.506

The percentage increases in rate revenue shown above in Figure 20, will be accomplished by implementing the proposed water rates. The hydraulic capacity factors that are used to calculate the fixed monthly service charges were updated to be consistent with industry standards as described in this report, and shown previously in Figures 15 and 16. **Figure 21** shows projected rate revenue from proposed water rates for FY 2016/17, to show how much revenue the District will collect from proposed rates in the first year new rates are effective.

Figure 21. Projected FY 2016/17 Revenue from Proposed Rates

Revenue from Fixed Charges:	Number of Meters	Estimated Revenue
Revenue from Standard Fixed Service Charges		
3/4 inch	31,941	\$ 4,513,547
1 inch	1,700	\$ 379,205
1.5 inch	437	\$ 186,793
2 inch	454	\$ 305,407
3 inch	93	\$ 123,386
4 inch	63	\$ 129,938
6 inch	38	\$ 156,040
8 inch	45	\$ 515,884
10 inch	8	\$ 137,494
Subtotal	34,779	\$ 6,447,694
Revenue from Fire Meter Fixed Service Charges:		
3 inch	6	\$ 684
4 inch	31	\$ 6,491
6 inch	79	\$ 35,912
8 inch	170	\$ 132,855
10 inch	39	\$ 47,479
Subtotal	325	\$ 223,420
Total: Revenue from Fixed Charges	35,104	\$ 6,671,115
Revenue from Volumetric Rates:	Estimated Consumption	Estimated Revenue
Standard Domestic and Municipal Irrigation	6,548,141	\$ 11,451,774
Construction Flow Meter/Filler Spout Water/Intertie	136,176	\$ 376,887
Total: Revenue from Volumetric Rates	6,684,317	\$ 11,828,661
Total Estimated Rate Revenue		\$ 18,499,776

G. COMPARISON OF CURRENT AND PROPOSED WATER BILLS

Figure 22 and Figure 23 compare the monthly water bills for the current and proposed water rates as a result of the first year rate adjustment for single-family residential (SFR) and commercial customers. These monthly bills are based on typical meter sizes. The seasonal average consumption levels for each customer class are highlighted.

Figure 22. Monthly Water Bill Comparison for Single-Family Customers

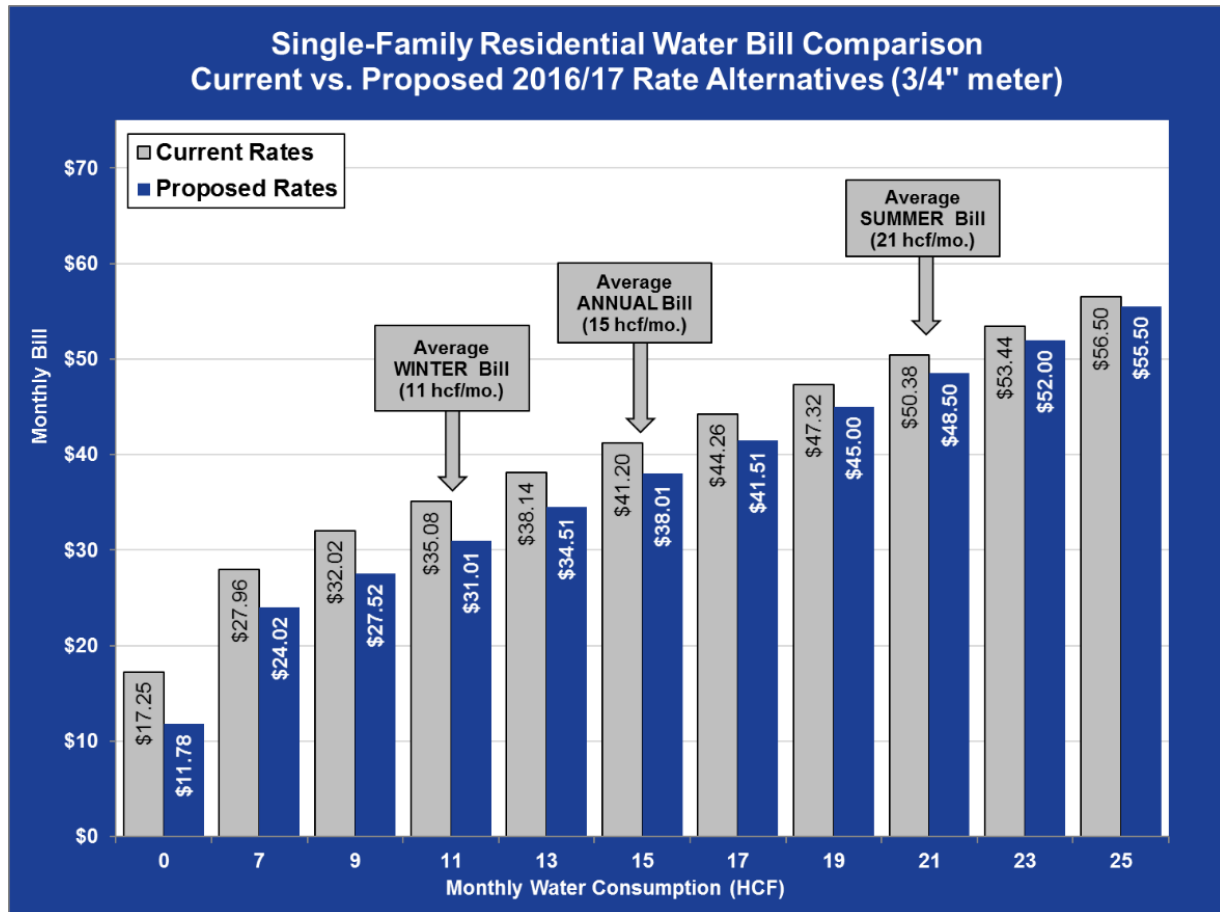
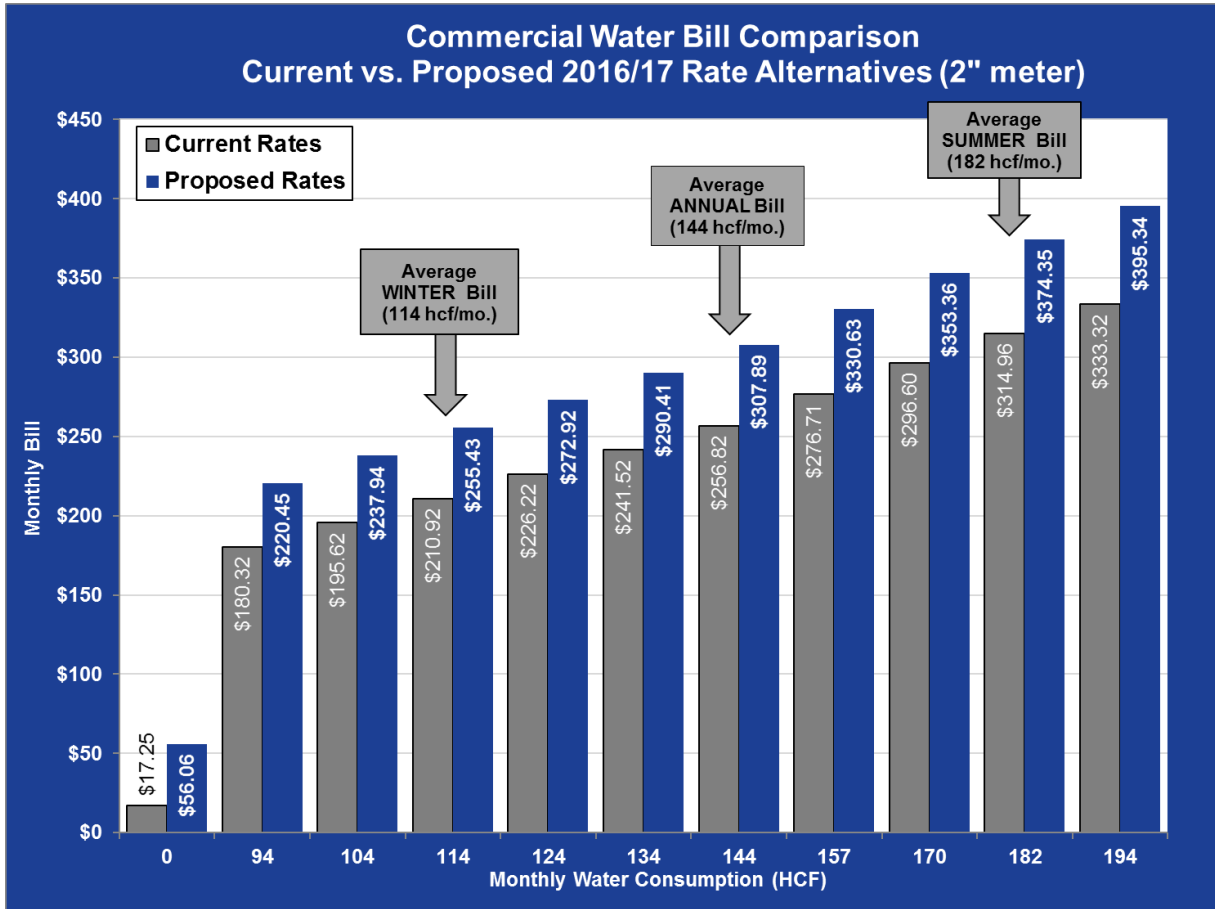


Figure 23. Monthly Water Bill Comparison for Commercial Customers



SECTION 3. RECOMMENDATIONS AND NEXT STEPS

A. CONSULTANT RECOMMENDATIONS

NBS recommends Victorville Water District take the following actions:

- **Accept This Study Report:** NBS recommends the Board of Directors formally accept this report and adopt its recommendations, and proceed with implementing the recommended rate structure. This will provide documentation of the rate study analyses and the basis for analyzing potential changes to future rates.
- **Implement Recommended Levels of Rate Increases and Proposed Rates:** Based on successfully meeting the Proposition 218 procedural requirements, the Board of Directors should proceed with implementing the five-years of recommended rates (including drought rates) and rate increases previously shown in Figure 15 and Figure 20. This will help ensure the continued financial health of the water utility.
- **Adopt Reserve Fund Targets:** NBS recommends the Board of Directors adopt the recommended reserve fund targets described in this Study for the water utility. The District should periodically evaluate reserve fund levels and attempt to maintain the recommended levels for the Operating and Capital Rehabilitation and Replacement Reserves.

B. NEXT STEPS

- **Annually Review Rates and Revenue** – Any time an agency adopts new utility rates or rate structures, those new rates should be closely monitored over the next several years to ensure the revenue generated is sufficient to meet the annual revenue requirements. Changing economic and water consumption patterns underscore the need for this review, as well as potential and unseen changing revenue requirements, particularly those related to environmental regulations that can significantly affect capital improvements and repair and replacement costs.

Note: The attached Technical Appendix provides more detailed information on the analysis of the water revenue requirements, cost-of-service analysis and cost allocations, and the rate design analyses that have been summarized in this report.

C. NBS' PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this Study and the opinions and recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, conditions and events that may occur in the future. This information and assumptions, including the District's budgets, capital improvement costs, and information from District staff were provided by sources we believe to be reliable, although NBS has not independently verified this data.

While we believe NBS' use of such information and assumptions is reasonable for the purpose of this Study and its recommendations, some assumptions will invariably not materialize as stated herein and may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others.

TECHNICAL APPENDIX

Detailed Water Rate Study Tables and Figures

TABLE 1
FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY	Budget								
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Sources of Water Funds									
<i>Water Rate Revenue Under Prevailing Rates (1):</i>									
Water Sales Revenue (2)	\$ 10,010,800	\$ 10,070,865	\$ 10,131,290	\$ 10,192,078	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230
Readiness to Serve Revenue (2)	8,004,000	8,052,024	8,100,336	8,148,938	8,197,832	8,197,832	8,197,832	8,197,832	8,197,832
Other, Non-Rate Revenues (3)	3,067,770	1,586,500	1,618,200	1,650,500	1,683,500	1,717,100	1,751,300	1,786,500	1,822,400
Interest Earnings (in Operating & Capital Reserves) (4)	35,000	108,784	93,871	91,467	81,866	129,449	178,976	153,191	153,161
Total Sources of Funds	\$ 21,117,570	\$ 19,818,173	\$ 19,943,697	\$ 20,082,983	\$ 20,216,428	\$ 20,297,611	\$ 20,381,338	\$ 20,390,753	\$ 20,426,623
Uses of Water Funds									
<i>Operating Expenses (1):</i>									
Water Purchases	\$ 5,141,200	\$ 1,130,900	\$ 1,212,557	\$ 1,300,378	\$ 1,394,838	\$ 1,496,446	\$ 1,605,753	\$ 1,723,350	\$ 1,849,875
Makeup Obligation	308,300	151,500	163,620	176,710	190,846	206,114	222,603	240,411	259,644
Production Power	1,867,900	1,965,031	2,067,212	2,174,707	2,287,792	2,406,757	2,531,909	2,663,568	2,802,074
Supply Services	2,323,024	2,451,220	2,504,836	2,559,906	2,616,493	2,674,663	2,734,487	2,796,040	2,859,405
SCADA Services	302,934	320,237	327,065	334,066	341,245	348,611	356,170	363,931	371,902
Quality Services	476,898	491,750	501,915	512,311	522,945	533,823	544,954	556,345	568,006
Field Services	2,258,813	2,396,724	2,451,118	2,507,117	2,564,799	2,624,243	2,685,539	2,748,779	2,814,064
Engineering Services	904,513	971,022	991,347	1,012,156	1,033,463	1,055,287	1,077,645	1,100,557	1,124,044
Environmental Programs	402,360	430,632	439,619	448,813	458,221	467,848	477,704	487,793	498,126
Customer Services	2,000,441	2,124,402	2,166,140	2,208,732	2,252,196	2,296,008	2,340,728	2,386,374	2,432,967
Meter Services	2,997,122	3,123,990	3,210,788	3,300,246	2,267,443	1,458,988	1,496,176	1,534,620	1,574,385
Administrative Services	3,496,249	3,615,481	3,690,837	3,767,880	3,846,656	3,927,212	4,009,595	4,093,856	4,180,047
Capital Purchases	-	-	-	-	-	-	-	-	-
Subtotal: Operating Expenses	\$ 22,479,754	\$ 19,172,890	\$ 19,727,054	\$ 20,303,022	\$ 19,776,937	\$ 19,496,001	\$ 20,083,262	\$ 20,695,626	\$ 21,334,538
<i>Other Expenditures:</i>									
Existing Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Debt Service	-	-	-	-	-	-	-	-	-
Rate-Funded Capital Expenses	-	-	-	3,520,047	995,968	4,267,842	9,340,126	7,666,542	4,378,708
Subtotal: Other Expenditures	\$ -	\$ -	\$ -	\$ 3,520,047	\$ 995,968	\$ 4,267,842	\$ 9,340,126	\$ 7,666,542	\$ 4,378,708
Total Uses of Water Funds	\$ 22,479,754	\$ 19,172,890	\$ 19,727,054	\$ 23,823,069	\$ 20,772,904	\$ 23,763,844	\$ 29,423,388	\$ 28,362,167	\$ 25,713,246
plus: Revenue from Rate Increases (5)	-	-	1,139,477	2,364,272	3,680,302	5,063,512	6,474,387	7,969,914	8,498,333
Annual Surplus/(Deficit)	\$ (1,362,184)	\$ 645,283	\$ 1,356,119	\$ (1,375,814)	\$ 3,123,826	\$ 1,597,280	\$ (2,567,663)	\$ (1,501)	\$ 3,211,710
Net Revenue Req. (Total Uses less Non-Rate Revenue)	\$ 19,376,984	\$ 17,477,606	\$ 18,014,983	\$ 22,081,102	\$ 19,007,538	\$ 21,917,295	\$ 27,493,111	\$ 26,422,477	\$ 23,737,685
Total Rate Revenue After Rate Increases	\$ 18,014,800	\$ 18,122,889	\$ 19,371,103	\$ 20,705,287	\$ 22,131,364	\$ 23,514,574	\$ 24,925,449	\$ 26,420,976	\$ 26,949,395
Projected Annual Rate Revenue Increase	0.00%	0.00%	6.25%	6.25%	6.25%	6.25%	6.00%	6.00%	2.00%
<i>Cumulative Increase from Annual Revenue Increases</i>	0.00%	0.00%	6.25%	12.89%	19.95%	27.44%	35.09%	43.19%	46.06%
<i>Debt Coverage After Rate Increase (6)</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Reduction in Rate Revenue Due to Water Conservation (7)	-13%								

- Revenue and expenses for FY 2014/15 and FY 2015/16 were provided by District Staff on 9/8/2015. Revenue and expenses for FY 2016/17 through FY 2023/24 were provided by District Staff on 5/18/2015.
- Per District Staff, FY 2014/15 revenue includes the 4% rate increase implemented for FY 2014/15.
- Includes revenue of \$1,512,270 in FY 2015/16 for the sale of property, the Administration Building for Victorville Water District.
(source: Memorandum 11/17/2015 Subject Close of Escrow - 17185 Yuma Road, File: SRDA-315111712020)
- Interest income is per the District's budget for FY 2014/15 - 2015/16, and calculated here for all future years.
- Assumes new rates are implemented July 1, 2016 and subsequent increase are effecting each following July 1st.
- Debt coverage after rate increase is shown as "N/A" because outstanding debt is not funded by water rate revenue.
- Assumes the District will achieve a 19% reduction in water use in 2015/16 to meet the 28% Conservation target. The District's Financial Statements indicate a 9% reduction in water use occurred in 2014/15. Total reduction in rate revenue was 4% in FY 2014/15, and 13% is planned for FY 2015/16.

TABLE 2
RESERVE FUND SUMMARY, UN-RESTRICTED RESERVES

SUMMARY OF CASH ACTIVITY GENERAL WATER FUND RESERVES	Budget								
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Total Beginning Cash (1)	\$ 41,475,913								
Un-Restricted Reserves:									
Operating Reserve									
Beginning Reserve Balance (2)	\$ 6,000,000	\$ 3,637,816	\$ 3,283,099	\$ 3,639,219	\$ 1,263,404	\$ 3,387,230	\$ 4,874,000	\$ 2,306,337	\$ 2,304,837
Plus: Net Cash Flow (After Rate Increases)	(1,362,184)	645,283	1,356,119	(1,375,814)	3,123,826	1,597,280	(2,567,663)	(1,501)	3,211,710
Plus: Transfer of Debt Reserve Surplus	-	-	-	-	-	-	-	-	-
Less: Transfer Out to OPEB Reserve Fund	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	(1,000,000)	-	-	-	-
Less: Transfer Out to Capital Replacement Reserve	-	-	-	-	-	(110,510)	-	-	(182,547)
Ending Operating Reserve Balance	\$ 3,637,816	\$ 3,283,099	\$ 3,639,219	\$ 1,263,404	\$ 3,387,230	\$ 4,874,000	\$ 2,306,337	\$ 2,304,837	\$ 5,334,000
Target Ending Balance (90-days of O&M)	\$ 5,620,000	\$ 4,793,000	\$ 4,932,000	\$ 5,076,000	\$ 4,944,000	\$ 4,874,000	\$ 5,021,000	\$ 5,174,000	\$ 5,334,000
Capital Rehabilitation & Replacement Reserve									
Beginning Reserve Balance (2)	\$ 24,602,780	\$ 18,118,985	\$ 9,233,028	\$ 5,507,486	\$ 5,285,900	\$ 5,242,700	\$ 5,353,210	\$ 5,353,210	\$ 5,353,210
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-
Plus: Transfer of Operating Reserve Surplus	-	-	-	-	-	110,510	-	-	182,547
Less: Use of Reserves for Capital Projects	(6,483,795)	(8,885,957)	(3,725,542)	(221,586)	(43,200)	-	-	-	-
Ending Capital Rehab & Replacement Reserve Balance	\$ 18,118,985	\$ 9,233,028	\$ 5,507,486	\$ 5,285,900	\$ 5,242,700	\$ 5,353,210	\$ 5,353,210	\$ 5,353,210	\$ 5,535,757
Target Ending Balance (3% of Assets) (3)	\$ 5,290,600	\$ 5,390,500	\$ 5,337,200	\$ 5,285,900	\$ 5,242,700	\$ 5,302,400	\$ 5,415,200	\$ 5,475,800	\$ 5,438,900
Ending Balance - Excludes Restricted Reserves	\$ 21,756,801	\$ 12,516,127	\$ 9,146,705	\$ 6,549,304	\$ 8,629,930	\$ 10,227,210	\$ 7,659,547	\$ 7,658,046	\$ 10,869,757
Minimum Target Ending Balance - Excludes Restricted Reser	\$ 10,910,600	\$ 10,183,500	\$ 10,269,200	\$ 10,361,900	\$ 10,186,700	\$ 10,176,400	\$ 10,436,200	\$ 10,649,800	\$ 10,772,900
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 10,846,201	\$ 2,332,627	\$ (1,122,495)	\$ (3,812,596)	\$ (1,556,770)	\$ 50,810	\$ (2,776,653)	\$ (2,991,754)	\$ 96,857
Annual Interest Earnings Rate (4)	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.00%

(1) Total beginning cash balances for FY 2014/15 and 2015/16 were provided by District Staff on 2/8/2016 (File: *Water cash balance 1-8-16.xlsx*, and the 2015 VWD Financial Statements).

(2) For purposes of this analysis, Unrestricted Cash (from file: *Water cash balance 1-8-16.xlsx*), is split between the Operating and Capital Reserves.

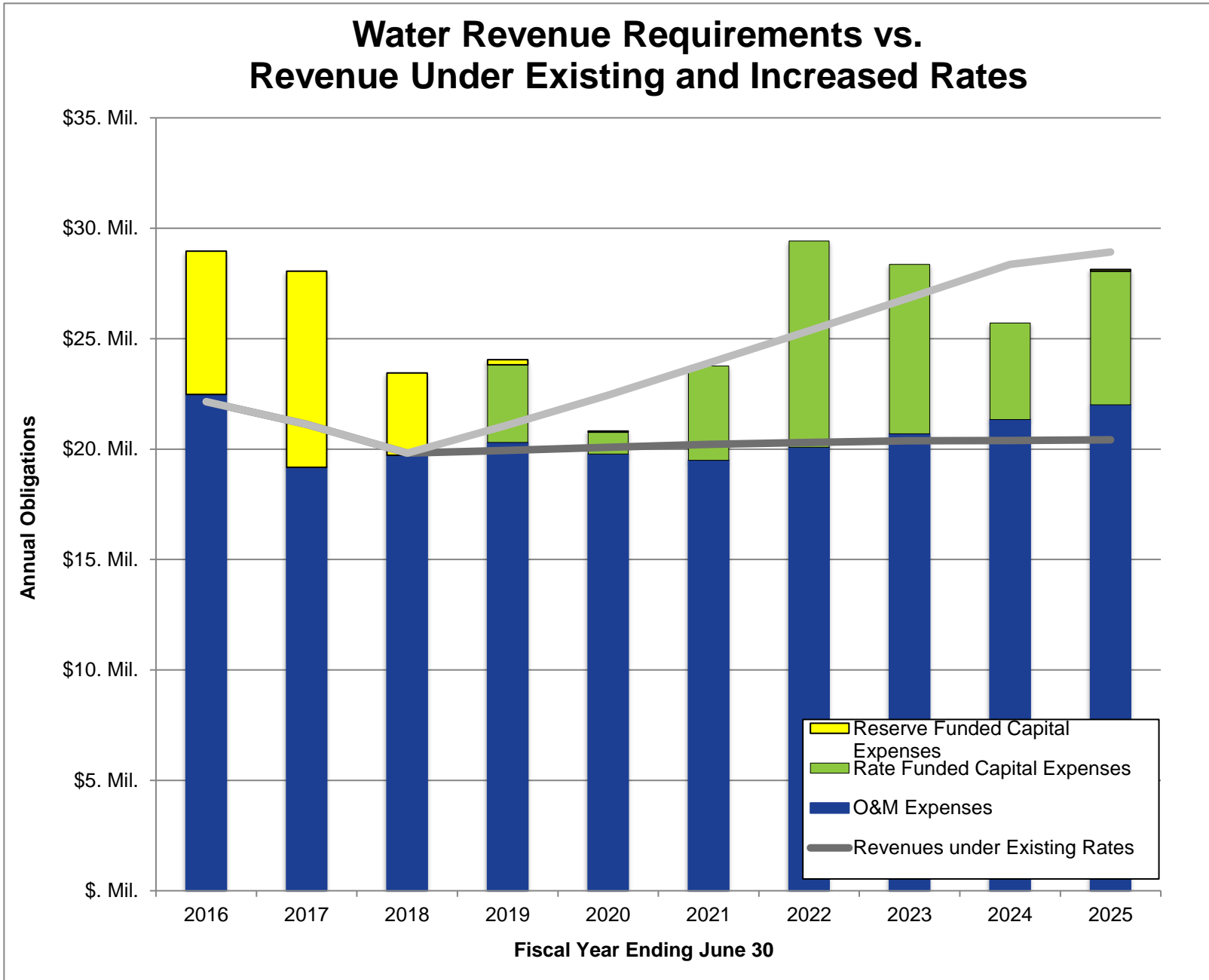
(3) The Capital Rehabilitation & Replacement Reserve target is set to 3% of net assets. This is based on a net capital asset value of \$178.2 million, per VWD 2015 Financial Statements, plus the addition of planned assets in the District's CIP.

(4) Historical interest earning rates were referenced on the CA Treasurer's Office website for funds invested in LAIF. Future years earnings were conservatively estimated through 2021 and phase into the historical 10 year average interest earnin

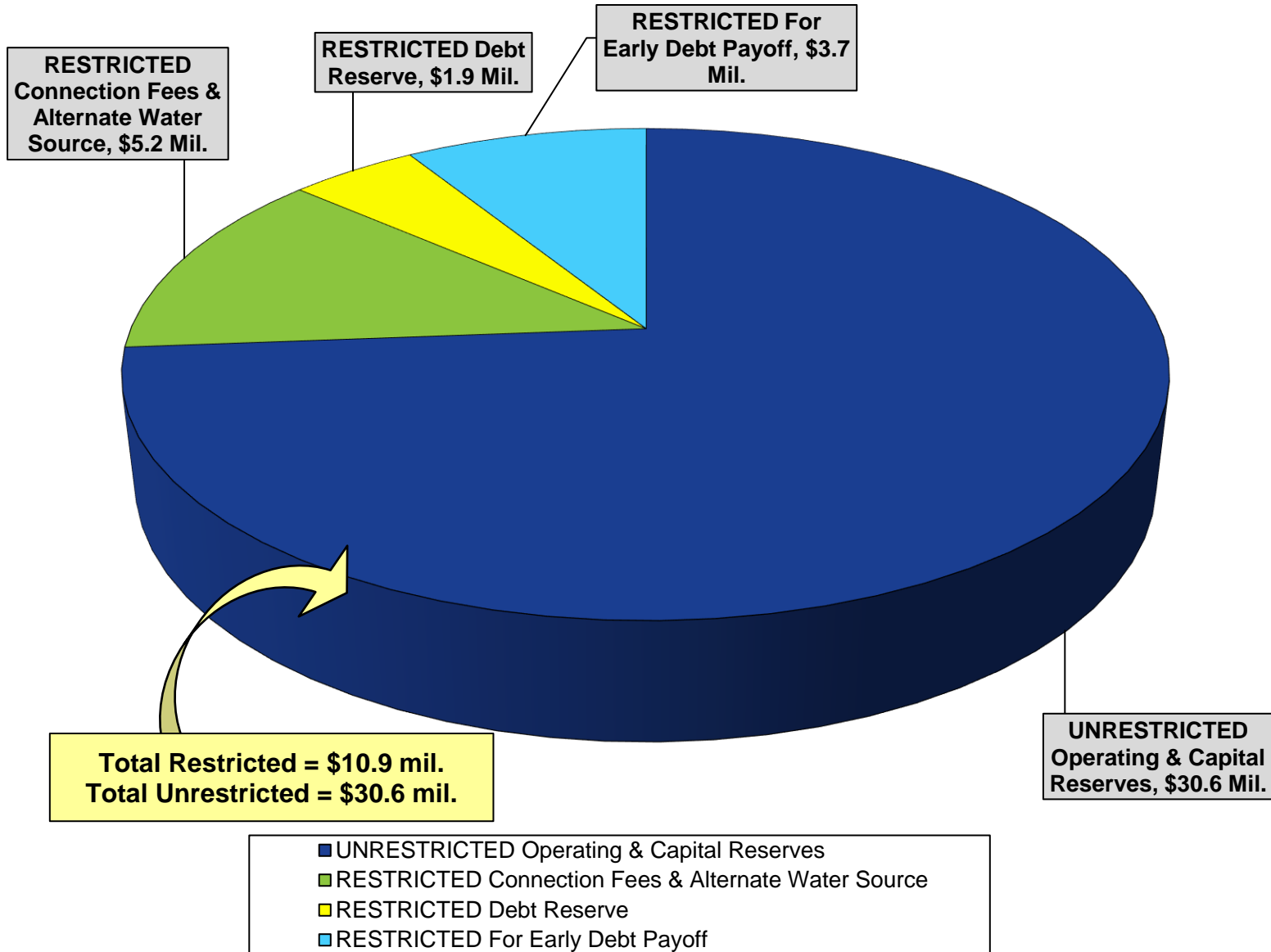
TABLE 3
RESERVE FUND SUMMARY, RESTRICTED RESERVES

SUMMARY OF CASH ACTIVITY, continued RESTRICTED WATER FUND RESERVES	Budget								
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Restricted Reserves:									
Connection Fee & Alternate Water Source Reserve									
Beginning Reserve Balance (1)	\$ 5,227,435	\$ 5,915,504	\$ 6,624,131	\$ 7,356,936	\$ 8,117,729	\$ 8,910,547	\$ 9,735,551	\$ 10,597,270	\$ 11,500,562
Plus: Interest Earnings	13,069	29,578	49,681	73,569	101,472	133,658	170,372	211,945	230,011
Plus: Capacity Fee Revenue	675,000	679,050	683,124	687,223	691,346	691,346	691,346	691,346	691,346
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-
Ending Connection Fee Fund Balance	\$ 5,915,504	\$ 6,624,131	\$ 7,356,936	\$ 8,117,729	\$ 8,910,547	\$ 9,735,551	\$ 10,597,270	\$ 11,500,562	\$ 12,421,919
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Debt Reserve									
Beginning Reserve Balance (2)	\$ 1,949,500	\$ 1,954,374	\$ 1,964,146	\$ 1,978,877	\$ 1,998,665	\$ 2,023,649	\$ 2,054,004	\$ 2,089,949	\$ 2,131,748
Plus: Reserve Funding from New Debt Obligations	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings	4,874	9,772	14,731	19,789	24,983	30,355	35,945	41,799	42,635
Less: Transfer of Surplus to Operating Reserve	-	-	-	-	-	-	-	-	-
Ending Debt Reserve Balance	\$ 1,954,374	\$ 1,964,146	\$ 1,978,877	\$ 1,998,665	\$ 2,023,649	\$ 2,054,004	\$ 2,089,949	\$ 2,131,748	\$ 2,174,383
Target Ending Balance	\$ 1,000,680	\$ 999,945	\$ 999,945	\$ 999,945	\$ 996,570	\$ 996,570	\$ 995,778	\$ 993,763	\$ 991,886
Reserve for Debt Service (Early Debt Payoff)									
Beginning Reserve Balance (3)	\$ 3,696,198	\$ 3,705,438	\$ 3,723,966	\$ 3,751,895	\$ 3,789,414	\$ 3,836,782	\$ 3,894,334	\$ 3,962,485	\$ 4,041,734
Plus: Reserve Funding from New Debt Obligations	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings	9,240	18,527	27,930	37,519	47,368	57,552	68,151	79,250	80,835
Less: Transfer of Surplus to Operating Reserve	-	-	-	-	-	-	-	-	-
Ending Reserve for Debt Service Balance	\$ 3,705,438	\$ 3,723,966	\$ 3,751,895	\$ 3,789,414	\$ 3,836,782	\$ 3,894,334	\$ 3,962,485	\$ 4,041,734	\$ 4,122,569
Target Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPEB Reserve Fund									
Beginning Reserve Balance (4)	\$ -	\$ 1,000,000	\$ 2,005,000	\$ 3,020,038	\$ 4,050,238	\$ 5,100,866	\$ 5,177,379	\$ 5,267,983	\$ 5,373,343
Plus: Annual Contributions	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	-	-	-	-
Plus: Interest Earnings	-	5,000	15,038	30,200	50,628	76,513	90,604	105,360	107,467
Less: Use of Reserve	-	-	-	-	-	-	-	-	-
Ending OPEB Reserve Balance	\$ 1,000,000	\$ 2,005,000	\$ 3,020,038	\$ 4,050,238	\$ 5,100,866	\$ 5,177,379	\$ 5,267,983	\$ 5,373,343	\$ 5,480,809
Target Ending Balance (5)	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000	\$ 4,766,000
Ending Balance - Restricted Reserves	\$ 12,575,316	\$ 14,317,242	\$ 16,107,746	\$ 17,956,047	\$ 19,871,844	\$ 20,861,268	\$ 21,917,686	\$ 23,047,386	\$ 24,199,680
Minimum Target Ending Balance - Restricted Reserves	\$ 5,766,680	\$ 5,765,945	\$ 5,765,945	\$ 5,765,945	\$ 5,762,570	\$ 5,762,570	\$ 5,761,778	\$ 5,759,763	\$ 5,757,886
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 6,808,636	\$ 8,551,297	\$ 10,341,801	\$ 12,190,102	\$ 14,109,274	\$ 15,098,698	\$ 16,155,909	\$ 17,287,624	\$ 18,441,794
Annual Interest Earnings Rate (6)	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.00%

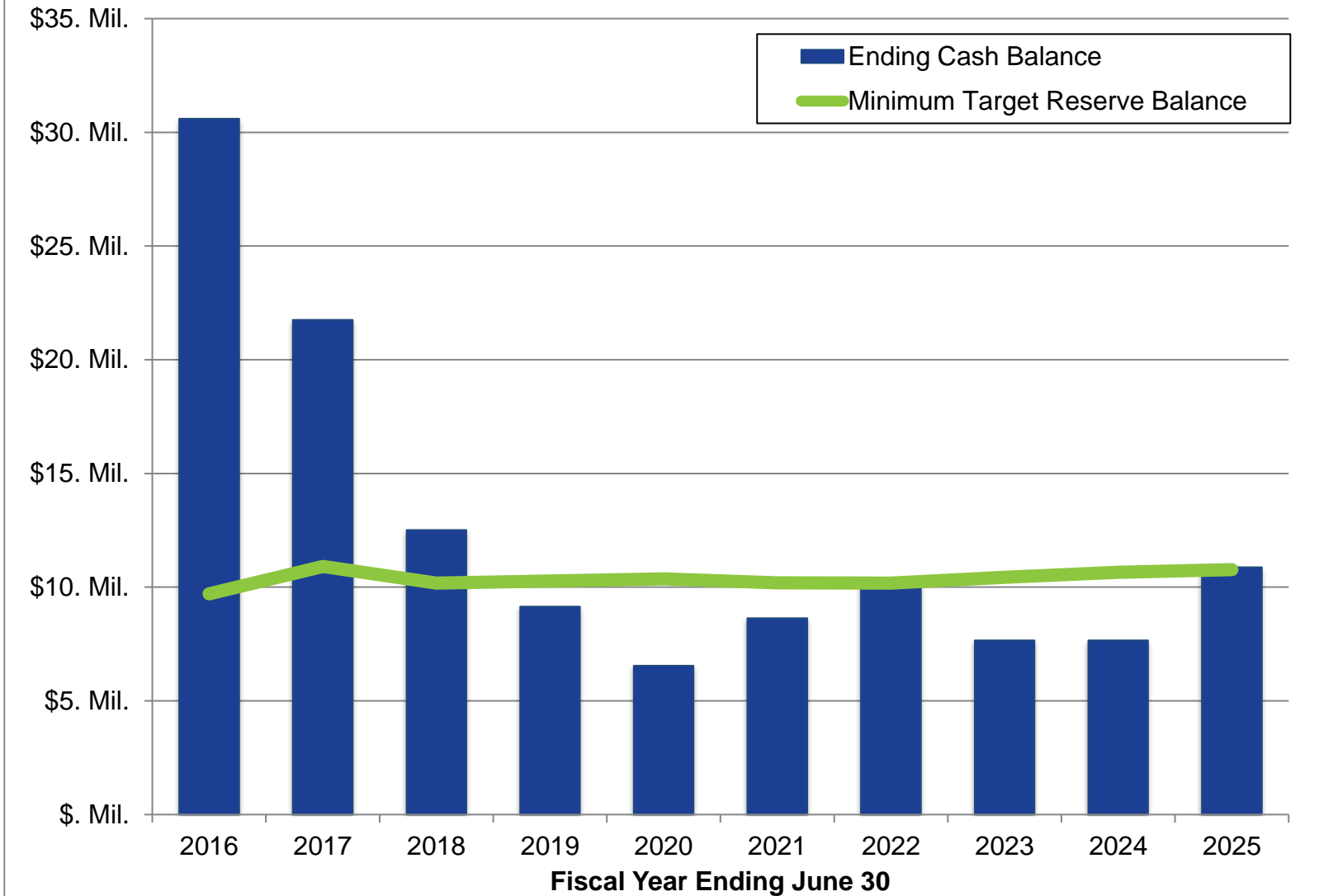
- (1) The beginning cash balance is the 2015 actual balance in the Connection Fee Fund, from the source file: Water cash balance 1-8-16.xlsx.
- (2) Beginning debt reserve balance is the "Fund with Fiscal Agents", per cash balances as of 1/8/2016.
- (3) Beginning Reserve for Debt Service balance is the "Reserved for Debt Service", per cash balances as of 1/8/2016. These funds will tentatively be used to pay off the 1998 COP's early.
- (4) Total beginning OPEB reserve cash balance is per source file: Water cash balance 1-8-16.xlsx.
- (5) The target ending balance for the OPEB reserve is set to the funding target of \$4.76 million, per Finance Department Staff.
- (6) Historical interest earning rates were referenced on the CA Treasurer's Office website for funds invested in LAIF. Future years earnings were conservatively estimated through 2021 and phase into the historical 10 year average interest earnings rate.

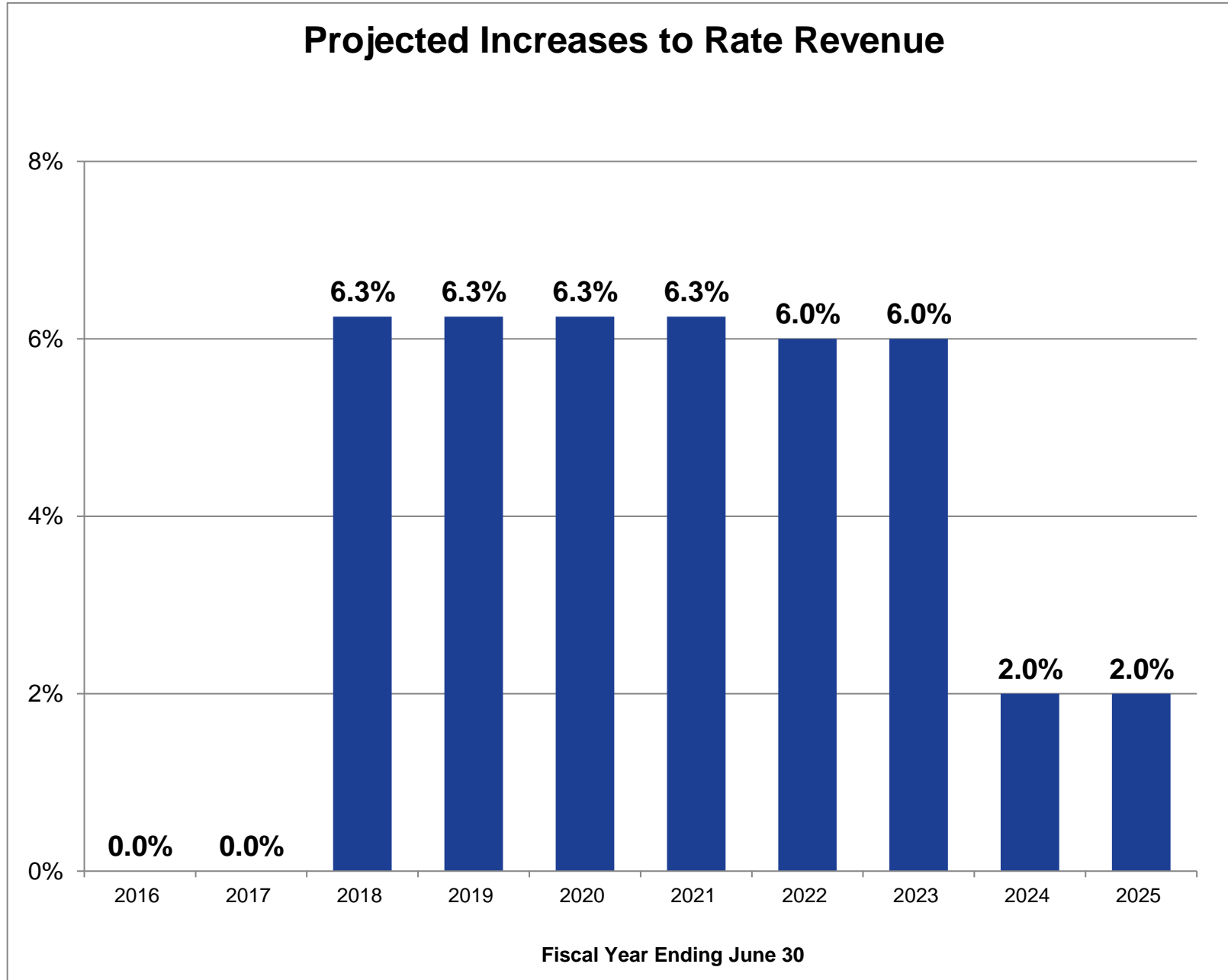


Water Fund - Beginning Cash Balances *Fiscal Year 2015/16*



Ending Cash Balances vs. Recommended Reserve Targets *Water Fund - Un-Restricted Reserves*





VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 4
REVENUE FORECAST (1,2)

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Sales Revenue:												
4100010	44830	Water Sales-Residential (3)	1	\$ 7,897,500	\$ 7,944,885	\$ 7,992,554	\$ 8,040,510	\$ 8,088,753	\$ 8,088,753	\$ 8,088,753	\$ 8,088,753	\$ 8,088,753
4100010	44840	Water Sales-Other (3)	1	\$ 699,000	\$ 703,194	\$ 707,413	\$ 711,658	\$ 715,928	\$ 715,928	\$ 715,928	\$ 715,928	\$ 715,928
4100010	44850	Water Sales-Business (3)	1	\$ 1,414,300	\$ 1,422,786	\$ 1,431,323	\$ 1,439,910	\$ 1,448,550	\$ 1,448,550	\$ 1,448,550	\$ 1,448,550	\$ 1,448,550
Readiness to Serve Revenue:												
4100010	44860	Water Service Availability (3)	1	\$ 7,934,000	\$ 7,981,604	\$ 8,029,494	\$ 8,077,671	\$ 8,126,137	\$ 8,126,137	\$ 8,126,137	\$ 8,126,137	\$ 8,126,137
4100010	44880	Fire Service availability	1	\$ 70,000	\$ 70,420	\$ 70,843	\$ 71,268	\$ 71,695	\$ 71,695	\$ 71,695	\$ 71,695	\$ 71,695
Other Revenue:												
4100010	41280	Water Permit	1	\$ 20,400	\$ 20,800	\$ 21,200	\$ 21,600	\$ 22,000	\$ 22,400	\$ 22,800	\$ 23,300	\$ 23,800
4100010	42150	Penalty/Late Fees	1	\$ 341,700	\$ 348,500	\$ 355,500	\$ 362,600	\$ 369,900	\$ 377,300	\$ 384,800	\$ 392,500	\$ 400,400
4100010	44300	Plan Check Fees	1	\$ 25,500	\$ 26,000	\$ 26,500	\$ 27,000	\$ 27,500	\$ 28,100	\$ 28,700	\$ 29,300	\$ 29,900
4100010	44890	Water Service Fees	1	\$ 612,000	\$ 624,200	\$ 636,700	\$ 649,400	\$ 662,400	\$ 675,600	\$ 689,100	\$ 702,900	\$ 717,000
4100010	44900	Meter Installation Fees	1	\$ 56,100	\$ 57,200	\$ 58,300	\$ 59,500	\$ 60,700	\$ 61,900	\$ 63,100	\$ 64,400	\$ 65,700
4100010	44910	Service Call Fees	1	\$ 408,000	\$ 416,200	\$ 424,500	\$ 433,000	\$ 441,700	\$ 450,500	\$ 459,500	\$ 468,700	\$ 478,100
4100010	44940	Standby Fees	1	\$ 91,800	\$ 93,600	\$ 95,500	\$ 97,400	\$ 99,300	\$ 101,300	\$ 103,300	\$ 105,400	\$ 107,500
4100010	47230	Reimb-Other (4)	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100020	44920	Connection Fees	1	\$ 500,000	\$ 503,000	\$ 506,018	\$ 509,054	\$ 512,108	\$ 512,108	\$ 512,108	\$ 512,108	\$ 512,108
4100020	44930	WATER SOURCE FEES	1	\$ 175,000	\$ 176,050	\$ 177,106	\$ 178,169	\$ 179,238	\$ 179,238	\$ 179,238	\$ 179,238	\$ 179,238
4100020	47100	PASS THROUGH (5)	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100020	47400	MISCELLANEOUS REVENUE		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100020	45110	INTEREST INCOME (6)	See FP	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100010	45100	INTEREST INCOME (6)	See FP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
--	--	Revenue from Property Sale (7)	14	\$ 1,512,270	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL: REVENUE				\$ 21,792,570	\$ 20,388,439	\$ 20,532,950	\$ 20,678,739	\$ 20,825,908	\$ 20,859,508	\$ 20,893,708	\$ 20,928,908	\$ 20,964,808

TABLE 5
REVENUE SUMMARY:

RATE REVENUE:										
WATER SALES RATE REVENUE (Variable Charges)	\$ 10,010,800	\$ 10,070,865	\$ 10,131,290	\$ 10,192,078	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230	\$ 10,253,230
READINESS TO SERVE (Fixed Charges)	\$ 8,004,000	\$ 8,052,024	\$ 8,100,336	\$ 8,148,938	\$ 8,197,832	\$ 8,197,832	\$ 8,197,832	\$ 8,197,832	\$ 8,197,832	\$ 8,197,832
OTHER REVENUE:										
CONNECTION & ALTERNATE WATER SOURCE FEES	\$ 675,000	\$ 679,050	\$ 683,124	\$ 687,223	\$ 691,346	\$ 691,346	\$ 691,346	\$ 691,346	\$ 691,346	\$ 691,346
INTEREST INCOME	\$ 35,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ALL OTHER OPERATING REVENUE	\$ 3,067,770	\$ 1,586,500	\$ 1,618,200	\$ 1,650,500	\$ 1,683,500	\$ 1,717,100	\$ 1,751,300	\$ 1,786,500	\$ 1,822,400	\$ 1,822,400
TOTAL REVENUE	\$ 21,792,570	\$ 20,388,439	\$ 20,532,950	\$ 20,678,739	\$ 20,825,908	\$ 20,859,508	\$ 20,893,708	\$ 20,928,908	\$ 20,964,808	\$ 20,964,808

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 6
OPERATING EXPENSE FORECAST (1,2):

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
WATER PURCHASES												
4100500	53030	Purchased Water (8,12)	7	\$ 996,600	\$ 283,300	\$ 301,715	\$ 321,326	\$ 342,212	\$ 364,456	\$ 388,146	\$ 413,375	\$ 440,244
4100500	53040	Groundwater Assessment (9,12)	10	\$ 105,900	\$ 76,100	\$ 77,622	\$ 79,174	\$ 80,758	\$ 82,373	\$ 84,021	\$ 85,701	\$ 87,415
4100500	53050	Groundwater Replenishment (10,12)	8	\$ 4,038,700	\$ 771,500	\$ 833,220	\$ 899,878	\$ 971,868	\$ 1,049,617	\$ 1,133,587	\$ 1,224,274	\$ 1,322,215
SUBTOTAL: WATER PURCHASES				\$ 5,141,200	\$ 1,130,900	\$ 1,212,557	\$ 1,300,378	\$ 1,394,838	\$ 1,496,446	\$ 1,605,753	\$ 1,723,350	\$ 1,849,875
MAKEUP OBLIGATION												
4100500	53060	Makeup Obligation (11,12)	9	\$ 308,300	\$ 151,500	\$ 163,620	\$ 176,710	\$ 190,846	\$ 206,114	\$ 222,603	\$ 240,411	\$ 259,644
SUBTOTAL: MAKEUP OBLIGATION				\$ 308,300	\$ 151,500	\$ 163,620	\$ 176,710	\$ 190,846	\$ 206,114	\$ 222,603	\$ 240,411	\$ 259,644
PRODUCTION POWER												
4100500	52050	Utilities-Production Power (12)	6	\$ 1,867,900	\$ 1,965,031	\$ 2,067,212	\$ 2,174,707	\$ 2,287,792	\$ 2,406,757	\$ 2,531,909	\$ 2,663,568	\$ 2,802,074
SUBTOTAL: PRODUCTION POWER				\$ 1,867,900	\$ 1,965,031	\$ 2,067,212	\$ 2,174,707	\$ 2,287,792	\$ 2,406,757	\$ 2,531,909	\$ 2,663,568	\$ 2,802,074
SUPPLY SERVICES												
4100500	51100	Full Time Wages	3	\$ 944,603	\$ 1,039,063	\$ 1,059,845	\$ 1,081,041	\$ 1,102,662	\$ 1,124,716	\$ 1,147,210	\$ 1,170,154	\$ 1,193,557
4100500	51110	Overtime Wages	4	\$ 78,028	\$ 79,589	\$ 81,180	\$ 82,804	\$ 84,460	\$ 86,149	\$ 87,872	\$ 89,630	\$ 91,422
4100500	51200	Fringe Benefits	4	\$ 366,306	\$ 373,632	\$ 381,105	\$ 388,727	\$ 396,501	\$ 404,431	\$ 412,520	\$ 420,770	\$ 429,186
4100500	51300	Payroll Taxes	3	\$ 24,087	\$ 26,496	\$ 27,026	\$ 27,566	\$ 28,117	\$ 28,680	\$ 29,253	\$ 29,838	\$ 30,435
4100500	52060	Telephone	2	\$ 11,000	\$ 11,220	\$ 11,444	\$ 11,673	\$ 11,907	\$ 12,145	\$ 12,388	\$ 12,636	\$ 12,888
4100500	52110	Supplies	2	\$ 16,300	\$ 16,626	\$ 16,959	\$ 17,298	\$ 17,644	\$ 17,997	\$ 18,356	\$ 18,724	\$ 19,098
4100500	52140	Training & Education	2	\$ 7,700	\$ 7,854	\$ 8,011	\$ 8,171	\$ 8,335	\$ 8,501	\$ 8,671	\$ 8,845	\$ 9,022
4100500	52201	Fuel	5	\$ 52,000	\$ 56,680	\$ 61,781	\$ 67,342	\$ 73,402	\$ 80,008	\$ 87,209	\$ 95,058	\$ 103,613
4100500	52230	Vehicle Expense	12	\$ 30,000	\$ 31,200	\$ 32,448	\$ 33,746	\$ 35,096	\$ 36,500	\$ 37,960	\$ 39,478	\$ 41,057
4100500	52240	Furniture & Small Tools <\$5000	2	\$ 10,000	\$ 10,200	\$ 10,404	\$ 10,612	\$ 10,824	\$ 11,041	\$ 11,262	\$ 11,487	\$ 11,717
4100500	52260	Computer Related Equip <\$5000	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100500	52300	Contract Services	2	\$ 600,000	\$ 612,000	\$ 624,240	\$ 636,725	\$ 649,459	\$ 662,448	\$ 675,697	\$ 689,211	\$ 702,996
4100500	52420	Grounds Maintenance	2	\$ 53,000	\$ 54,060	\$ 55,141	\$ 56,244	\$ 57,369	\$ 58,516	\$ 59,687	\$ 60,880	\$ 62,098
4100500	52440	Infrastructure Repairs	2	\$ 130,000	\$ 132,600	\$ 135,252	\$ 137,957	\$ 140,716	\$ 143,531	\$ 146,401	\$ 149,329	\$ 152,316
SUBTOTAL: SUPPLY SERVICES				\$ 2,323,024	\$ 2,451,220	\$ 2,504,836	\$ 2,559,906	\$ 2,616,493	\$ 2,674,663	\$ 2,734,487	\$ 2,796,040	\$ 2,859,405
SCADA SERVICES												
4100505	51100	Full Time Wages	3	\$ 132,310	\$ 145,541	\$ 148,452	\$ 151,421	\$ 154,449	\$ 157,538	\$ 160,689	\$ 163,903	\$ 167,181
4100505	51110	Overtime Wages	4	\$ 2,125	\$ 2,168	\$ 2,211	\$ 2,255	\$ 2,300	\$ 2,346	\$ 2,393	\$ 2,441	\$ 2,490
4100505	51200	Fringe Benefits	4	\$ 40,125	\$ 40,928	\$ 41,746	\$ 42,581	\$ 43,433	\$ 44,301	\$ 45,187	\$ 46,091	\$ 47,013
4100505	51220	Retiree Expense	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100505	51300	Payroll Taxes	3	\$ 3,374	\$ 3,711	\$ 3,786	\$ 3,861	\$ 3,939	\$ 4,017	\$ 4,098	\$ 4,180	\$ 4,263
4100505	52060	Telephone	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100505	52110	Supplies	2	\$ 3,000	\$ 3,060	\$ 3,121	\$ 3,184	\$ 3,247	\$ 3,312	\$ 3,378	\$ 3,446	\$ 3,515
4100505	52130	Subs, Publications & Memberships	2	\$ 18,500	\$ 18,870	\$ 19,247	\$ 19,632	\$ 20,025	\$ 20,425	\$ 20,834	\$ 21,251	\$ 21,676
4100505	52140	Training & Education	2	\$ 6,000	\$ 6,120	\$ 6,242	\$ 6,367	\$ 6,495	\$ 6,624	\$ 6,757	\$ 6,892	\$ 7,030
4100505	52201	Fuel	5	\$ 5,000	\$ 5,450	\$ 5,941	\$ 6,475	\$ 7,058	\$ 7,693	\$ 8,386	\$ 9,140	\$ 9,963
4100505	52230	Vehicle Expense	12	\$ 2,000	\$ 2,080	\$ 2,163	\$ 2,250	\$ 2,340	\$ 2,433	\$ 2,531	\$ 2,632	\$ 2,737
4100505	52240	Furniture & Small Tools <\$5000	2	\$ 15,000	\$ 15,300	\$ 15,606	\$ 15,918	\$ 16,236	\$ 16,561	\$ 16,892	\$ 17,230	\$ 17,575
4100505	52300	Contract Services	2	\$ 6,000	\$ 6,120	\$ 6,242	\$ 6,367	\$ 6,495	\$ 6,624	\$ 6,757	\$ 6,892	\$ 7,030
4100505	52440	Infrastructure Repairs	2	\$ 69,500	\$ 70,890	\$ 72,308	\$ 73,754	\$ 75,229	\$ 76,734	\$ 78,268	\$ 79,834	\$ 81,430
SUBTOTAL: SCADA SERVICES				\$ 302,934	\$ 320,237	\$ 327,065	\$ 334,066	\$ 341,245	\$ 348,611	\$ 356,170	\$ 363,931	\$ 371,902

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 7
OPERATING EXPENSE FORECAST, continued (1,2):

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
QUALITY SERVICES												
4100515	51100	Full Time Wages	3	\$ 61,059	\$ 67,165	\$ 68,508	\$ 69,878	\$ 71,276	\$ 72,701	\$ 74,155	\$ 75,639	\$ 77,151
4100515	51110	Overtime Wages	4	\$ 6,542	\$ 6,673	\$ 6,806	\$ 6,942	\$ 7,081	\$ 7,223	\$ 7,367	\$ 7,515	\$ 7,665
4100515	51200	Fringe Benefits	4	\$ 23,740	\$ 24,215	\$ 24,699	\$ 25,193	\$ 25,697	\$ 26,211	\$ 26,735	\$ 27,270	\$ 27,815
4100515	51300	Payroll Taxes	3	\$ 1,557	\$ 1,713	\$ 1,747	\$ 1,782	\$ 1,818	\$ 1,854	\$ 1,891	\$ 1,929	\$ 1,967
4100515	52060	Telephone	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100515	52110	Supplies (12)	2	\$ 144,000	\$ 146,880	\$ 149,818	\$ 152,814	\$ 155,870	\$ 158,988	\$ 162,167	\$ 165,411	\$ 168,719
4100515	52140	Training & Education	2	\$ 500	\$ 510	\$ 520	\$ 531	\$ 541	\$ 552	\$ 563	\$ 574	\$ 586
4100515	52201	Fuel	5	\$ 3,700	\$ 4,033	\$ 4,396	\$ 4,792	\$ 5,223	\$ 5,693	\$ 6,205	\$ 6,764	\$ 7,372
4100515	52230	Vehicle Expense	12	\$ 2,300	\$ 2,392	\$ 2,488	\$ 2,587	\$ 2,691	\$ 2,798	\$ 2,910	\$ 3,027	\$ 3,148
4100515	52240	Furniture & Small Tools <\$5000	2	\$ 500	\$ 510	\$ 520	\$ 531	\$ 541	\$ 552	\$ 563	\$ 574	\$ 586
4100515	52300	Contract Services	2	\$ 191,000	\$ 194,820	\$ 198,716	\$ 202,691	\$ 206,745	\$ 210,879	\$ 215,097	\$ 219,399	\$ 223,787
4100515	52360	Federal, State & Local Fees	2	\$ 22,000	\$ 22,440	\$ 22,889	\$ 23,347	\$ 23,814	\$ 24,290	\$ 24,776	\$ 25,271	\$ 25,777
4100515	52440	Infrastructure Repairs	2	\$ 20,000	\$ 20,400	\$ 20,808	\$ 21,224	\$ 21,649	\$ 22,082	\$ 22,523	\$ 22,974	\$ 23,433
SUBTOTAL: QUALITY SERVICES				\$ 476,898	\$ 491,750	\$ 501,915	\$ 512,311	\$ 522,945	\$ 533,823	\$ 544,954	\$ 556,345	\$ 568,006
FIELD SERVICES												
4100535	51100	Full Time Wages	3	\$ 1,057,448	\$ 1,163,193	\$ 1,186,457	\$ 1,210,186	\$ 1,234,390	\$ 1,259,077	\$ 1,284,259	\$ 1,309,944	\$ 1,336,143
4100535	51110	Overtime Wages	4	\$ 94,543	\$ 96,434	\$ 98,363	\$ 100,330	\$ 102,336	\$ 104,383	\$ 106,471	\$ 108,600	\$ 110,772
4100535	51120	Part Time Wages	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100535	51200	Fringe Benefits	4	\$ 434,457	\$ 443,146	\$ 452,009	\$ 461,049	\$ 470,270	\$ 479,676	\$ 489,269	\$ 499,055	\$ 509,036
4100535	51300	Payroll Taxes	3	\$ 26,965	\$ 29,662	\$ 30,255	\$ 30,860	\$ 31,477	\$ 32,107	\$ 32,749	\$ 33,404	\$ 34,072
4100535	52060	Telephone	2	\$ 6,300	\$ 6,426	\$ 6,555	\$ 6,686	\$ 6,819	\$ 6,956	\$ 7,095	\$ 7,237	\$ 7,381
4100535	52110	Supplies	2	\$ 16,000	\$ 16,320	\$ 16,646	\$ 16,979	\$ 17,319	\$ 17,665	\$ 18,019	\$ 18,379	\$ 18,747
4100535	52140	Training & Education	2	\$ 4,000	\$ 4,080	\$ 4,162	\$ 4,245	\$ 4,330	\$ 4,416	\$ 4,505	\$ 4,595	\$ 4,687
4100535	52201	Fuel	5	\$ 68,000	\$ 74,120	\$ 80,791	\$ 88,062	\$ 95,988	\$ 104,626	\$ 114,043	\$ 124,307	\$ 135,494
4100535	52220	Equipment	2	\$ 56,000	\$ 57,120	\$ 58,262	\$ 59,428	\$ 60,616	\$ 61,829	\$ 63,065	\$ 64,326	\$ 65,613
4100535	52230	Vehicle Expense	12	\$ 61,100	\$ 63,544	\$ 66,086	\$ 68,729	\$ 71,478	\$ 74,337	\$ 77,311	\$ 80,403	\$ 83,620
4100535	52240	Furniture & Small Tools <\$5000	2	\$ 25,000	\$ 25,500	\$ 26,010	\$ 26,530	\$ 27,061	\$ 27,602	\$ 28,154	\$ 28,717	\$ 29,291
4100535	52260	Computer Related Equip < \$5000	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100535	52300	Contract Services	2	\$ 14,000	\$ 14,280	\$ 14,566	\$ 14,857	\$ 15,154	\$ 15,457	\$ 15,766	\$ 16,082	\$ 16,403
4100535	52440	Infrastructure Repairs	2	\$ 395,000	\$ 402,900	\$ 410,958	\$ 419,177	\$ 427,561	\$ 436,112	\$ 444,834	\$ 453,731	\$ 462,805
SUBTOTAL: FIELD SERVICES				\$ 2,258,813	\$ 2,396,724	\$ 2,451,118	\$ 2,507,117	\$ 2,564,799	\$ 2,624,243	\$ 2,685,539	\$ 2,748,779	\$ 2,814,064
ENGINEERING SERVICES												
4104500	51100	Full Time Wages	3	\$ 580,003	\$ 638,003	\$ 650,763	\$ 663,779	\$ 677,054	\$ 690,595	\$ 704,407	\$ 718,495	\$ 732,865
4104500	51110	Overtime Wages	4	\$ 22,807	\$ 23,263	\$ 23,728	\$ 24,203	\$ 24,687	\$ 25,181	\$ 25,684	\$ 26,198	\$ 26,722
4104500	51200	Fringe Benefits	4	\$ 181,913	\$ 185,551	\$ 189,262	\$ 193,048	\$ 196,908	\$ 200,847	\$ 204,864	\$ 208,961	\$ 213,140
4104500	51300	Payroll Taxes	3	\$ 14,790	\$ 16,269	\$ 16,594	\$ 16,926	\$ 17,265	\$ 17,610	\$ 17,962	\$ 18,322	\$ 18,688
4104500	52110	Supplies	2	\$ 6,000	\$ 6,120	\$ 6,242	\$ 6,367	\$ 6,495	\$ 6,624	\$ 6,757	\$ 6,892	\$ 7,030
4104500	52140	Training & Education	2	\$ 1,000	\$ 1,020	\$ 1,040	\$ 1,061	\$ 1,082	\$ 1,104	\$ 1,126	\$ 1,149	\$ 1,172
4104500	52201	Fuel	5	\$ 10,500	\$ 11,445	\$ 12,475	\$ 13,598	\$ 14,822	\$ 16,156	\$ 17,610	\$ 19,194	\$ 20,922
4104500	52230	Vehicle Expense	12	\$ 5,000	\$ 5,200	\$ 5,408	\$ 5,624	\$ 5,849	\$ 6,083	\$ 6,327	\$ 6,580	\$ 6,843
4104500	52240	Furniture & Small Tools <\$5000	2	\$ 500	\$ 510	\$ 520	\$ 531	\$ 541	\$ 552	\$ 563	\$ 574	\$ 586
4104500	52300	Contract Services	2	\$ 72,000	\$ 73,440	\$ 74,909	\$ 76,407	\$ 77,935	\$ 79,494	\$ 81,084	\$ 82,705	\$ 84,359
4104500	52440	Infrastructure Repairs	2	\$ 10,000	\$ 10,200	\$ 10,404	\$ 10,612	\$ 10,824	\$ 11,041	\$ 11,262	\$ 11,487	\$ 11,717
SUBTOTAL: ENGINEERING SERVICES				\$ 904,513	\$ 971,022	\$ 991,347	\$ 1,012,156	\$ 1,033,463	\$ 1,055,287	\$ 1,077,645	\$ 1,100,557	\$ 1,124,044

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 8
OPERATING EXPENSE FORECAST, continued (1,2):

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
ENVIRONMENTAL PROGRAMS												
4100525	51100	Full Time Wages	3	\$ 242,283	\$ 266,511	\$ 271,842	\$ 277,278	\$ 282,824	\$ 288,480	\$ 294,250	\$ 300,135	\$ 306,138
4100525	51110	Overtime Wages	4	\$ 3,827	\$ 3,904	\$ 3,982	\$ 4,061	\$ 4,142	\$ 4,225	\$ 4,310	\$ 4,396	\$ 4,484
4100525	51200	Fringe Benefits	4	\$ 84,697	\$ 86,391	\$ 88,119	\$ 89,881	\$ 91,679	\$ 93,512	\$ 95,383	\$ 97,290	\$ 99,236
4100525	51300	Payroll Taxes	3	\$ 6,178	\$ 6,796	\$ 6,932	\$ 7,070	\$ 7,212	\$ 7,356	\$ 7,503	\$ 7,653	\$ 7,806
4100525	52010	Utilities-Electricity	6	\$ 2,225	\$ 2,341	\$ 2,462	\$ 2,590	\$ 2,725	\$ 2,867	\$ 3,016	\$ 3,173	\$ 3,338
4100525	52020	Utilities-Water Usage	13	\$ 135	\$ 143	\$ 152	\$ 161	\$ 170	\$ 181	\$ 192	\$ 203	\$ 215
4100525	52030	Utilities-Natural Gas	13	\$ 195	\$ 207	\$ 219	\$ 232	\$ 246	\$ 261	\$ 277	\$ 293	\$ 311
4100525	52060	Telephone	2	\$ 400	\$ 408	\$ 416	\$ 424	\$ 433	\$ 442	\$ 450	\$ 459	\$ 469
4100525	52110	Supplies	2	\$ 4,600	\$ 4,692	\$ 4,786	\$ 4,882	\$ 4,979	\$ 5,079	\$ 5,180	\$ 5,284	\$ 5,390
4100525	52140	Training & Education	2	\$ 1,200	\$ 1,224	\$ 1,248	\$ 1,273	\$ 1,299	\$ 1,325	\$ 1,351	\$ 1,378	\$ 1,406
4100525	52160	Conservation Programs	2	\$ 43,670	\$ 44,543	\$ 45,434	\$ 46,343	\$ 47,270	\$ 48,215	\$ 49,180	\$ 50,163	\$ 51,166
4100525	52201	Fuel	5	\$ 3,000	\$ 3,270	\$ 3,564	\$ 3,885	\$ 4,235	\$ 4,616	\$ 5,031	\$ 5,484	\$ 5,978
4100525	52230	Vehicle Expense	12	\$ 2,700	\$ 2,808	\$ 2,920	\$ 3,037	\$ 3,159	\$ 3,285	\$ 3,416	\$ 3,553	\$ 3,695
4100525	52240	Furniture & Small Tools <\$5000	2	\$ 500	\$ 510	\$ 520	\$ 531	\$ 541	\$ 552	\$ 563	\$ 574	\$ 586
4100525	52260	Computer Related Equip < \$5000	2	\$ 3,600	\$ 3,672	\$ 3,745	\$ 3,820	\$ 3,897	\$ 3,975	\$ 4,054	\$ 4,135	\$ 4,218
4100525	52300	Contract Services	2	\$ 3,150	\$ 3,213	\$ 3,277	\$ 3,343	\$ 3,410	\$ 3,478	\$ 3,547	\$ 3,618	\$ 3,691
SUBTOTAL: ENVIRONMENTAL PROGRAMS				\$ 402,360	\$ 430,632	\$ 439,619	\$ 448,813	\$ 458,221	\$ 467,848	\$ 477,704	\$ 487,793	\$ 498,126
CUSTOMER SERVICES												
4100545	51100	Full Time Wages	3	\$ 1,032,661	\$ 1,135,927	\$ 1,158,646	\$ 1,181,819	\$ 1,205,455	\$ 1,229,564	\$ 1,254,155	\$ 1,279,238	\$ 1,304,823
4100545	51110	Overtime Wages	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100545	51120	Part Time Wages	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100545	51200	Fringe Benefits	4	\$ 355,952	\$ 363,071	\$ 370,332	\$ 377,739	\$ 385,294	\$ 393,000	\$ 400,860	\$ 408,877	\$ 417,054
4100545	51300	Payroll Taxes	3	\$ 26,333	\$ 28,966	\$ 29,546	\$ 30,137	\$ 30,739	\$ 31,354	\$ 31,981	\$ 32,621	\$ 33,273
4100545	52010	Utilities-Electricity	6	\$ 12,326	\$ 12,967	\$ 13,641	\$ 14,351	\$ 15,097	\$ 15,882	\$ 16,708	\$ 17,576	\$ 18,490
4100545	52020	Utilities-Water Usage	13	\$ 746	\$ 791	\$ 838	\$ 888	\$ 942	\$ 998	\$ 1,058	\$ 1,122	\$ 1,189
4100545	52030	Utilities-Natural Gas	13	\$ 1,080	\$ 1,145	\$ 1,213	\$ 1,286	\$ 1,363	\$ 1,445	\$ 1,532	\$ 1,624	\$ 1,721
4100545	52060	Telephone	2	\$ 300	\$ 306	\$ 312	\$ 318	\$ 325	\$ 331	\$ 338	\$ 345	\$ 351
4100545	52110	Supplies	2	\$ 141,782	\$ 144,618	\$ 147,510	\$ 150,460	\$ 153,469	\$ 156,539	\$ 159,670	\$ 162,863	\$ 166,120
4100545	52140	Training & Education	2	\$ 7,788	\$ 7,944	\$ 8,103	\$ 8,265	\$ 8,430	\$ 8,599	\$ 8,771	\$ 8,946	\$ 9,125
4100545	52150	Travel & Meetings	2	\$ 5,250	\$ 5,355	\$ 5,462	\$ 5,571	\$ 5,683	\$ 5,796	\$ 5,912	\$ 6,031	\$ 6,151
4100545	52240	Furniture & Small Tools <\$5000	2	\$ 2,400	\$ 2,448	\$ 2,497	\$ 2,547	\$ 2,598	\$ 2,650	\$ 2,703	\$ 2,757	\$ 2,812
4100545	52300	Contract Services	2	\$ 317,623	\$ 323,975	\$ 330,455	\$ 337,064	\$ 343,805	\$ 350,681	\$ 357,695	\$ 364,849	\$ 372,146
4100545	52350	Cust-Legal	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100545	52360	Federal, State & Local Fees	2	\$ 8,000	\$ 8,160	\$ 8,323	\$ 8,490	\$ 8,659	\$ 8,833	\$ 9,009	\$ 9,189	\$ 9,373
4100545	52410	Building Maintenance	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100545	54050	Uncollectable Write-Offs (12)	1	\$ 88,200	\$ 88,729	\$ 89,262	\$ 89,797	\$ 90,336	\$ 90,336	\$ 90,336	\$ 90,336	\$ 90,336
SUBTOTAL: CUSTOMER SERVICES				\$ 2,000,441	\$ 2,124,402	\$ 2,166,140	\$ 2,208,732	\$ 2,252,196	\$ 2,296,008	\$ 2,340,728	\$ 2,386,374	\$ 2,432,967

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 9
OPERATING EXPENSE FORECAST, continued (1,2):

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
METER SERVICES												
4100530	51100	Full Time Wages	3	\$ 530,087	\$ 583,096	\$ 594,758	\$ 606,653	\$ 618,786	\$ 631,162	\$ 643,785	\$ 656,660	\$ 669,794
4100530	51110	Overtime Wages	4	\$ 76,141	\$ 77,664	\$ 79,217	\$ 80,801	\$ 82,417	\$ 84,066	\$ 85,747	\$ 87,462	\$ 89,211
4100530	51120	Part Time Wages	4	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100530	51200	Fringe Benefits	4	\$ 208,877	\$ 213,055	\$ 217,316	\$ 221,662	\$ 226,095	\$ 230,617	\$ 235,229	\$ 239,934	\$ 244,733
4100530	51300	Payroll Taxes	3	\$ 13,517	\$ 14,869	\$ 15,166	\$ 15,469	\$ 15,779	\$ 16,094	\$ 16,416	\$ 16,745	\$ 17,079
4100530	52060	Telephone	2	\$ 2,400	\$ 2,448	\$ 2,497	\$ 2,547	\$ 2,598	\$ 2,650	\$ 2,703	\$ 2,757	\$ 2,812
4100530	52110	Supplies	2	\$ 4,000	\$ 4,080	\$ 4,162	\$ 4,245	\$ 4,330	\$ 4,416	\$ 4,505	\$ 4,595	\$ 4,687
4100530	52140	Training & Education	2	\$ 2,000	\$ 2,040	\$ 2,081	\$ 2,122	\$ 2,165	\$ 2,208	\$ 2,252	\$ 2,297	\$ 2,343
4100530	52201	Fuel	5	\$ 41,100	\$ 44,799	\$ 48,831	\$ 53,226	\$ 58,016	\$ 63,237	\$ 68,929	\$ 75,132	\$ 81,894
4100530	52220	Equipment	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100530	52230	Vehicle Expense	12	\$ 28,000	\$ 29,120	\$ 30,285	\$ 31,496	\$ 32,756	\$ 34,066	\$ 35,429	\$ 36,846	\$ 38,320
4100530	52240	Furniture & Small Tools <\$5000	2	\$ 15,000	\$ 15,300	\$ 15,606	\$ 15,918	\$ 16,236	\$ 16,561	\$ 16,892	\$ 17,230	\$ 17,575
4100530	52300	Contract Services	2	\$ 10,000	\$ 10,200	\$ 10,404	\$ 10,612	\$ 10,824	\$ 11,041	\$ 11,262	\$ 11,487	\$ 11,717
4100530	52440	Infrastructure Repairs	2	\$ 35,000	\$ 35,700	\$ 36,414	\$ 37,142	\$ 37,885	\$ 38,643	\$ 39,416	\$ 40,204	\$ 41,008
4100530	52445	Meter Service Installations	2	\$ 31,000	\$ 31,620	\$ 32,252	\$ 32,897	\$ 33,555	\$ 34,227	\$ 34,911	\$ 35,609	\$ 36,321
4100530	52446	Meter Service Change outs	11	\$ 2,000,000	\$ 2,060,000	\$ 2,121,800	\$ 2,185,454	\$ 1,126,000	\$ 290,000	\$ 298,700	\$ 307,661	\$ 316,891
SUBTOTAL: METER SERVICES				\$ 2,997,122	\$ 3,123,990	\$ 3,210,788	\$ 3,300,246	\$ 2,267,443	\$ 1,458,988	\$ 1,496,176	\$ 1,534,620	\$ 1,574,385
ADMINISTRATIVE SERVICES												
4100030	51100	Full Time Wages	3	\$ 565,963	\$ 622,559	\$ 635,010	\$ 647,711	\$ 660,665	\$ 673,878	\$ 687,356	\$ 701,103	\$ 715,125
4100030	51110	Overtime Wages	4	\$ 145,192	\$ 148,096	\$ 151,058	\$ 154,079	\$ 157,160	\$ 160,304	\$ 163,510	\$ 166,780	\$ 170,116
4100030	51200	Fringe Benefits	4	\$ 162,533	\$ 165,784	\$ 169,099	\$ 172,481	\$ 175,931	\$ 179,450	\$ 183,039	\$ 186,699	\$ 190,433
4100030	51220	Retiree Health Care	4	\$ 357,000	\$ 364,140	\$ 371,423	\$ 378,851	\$ 386,428	\$ 394,157	\$ 402,040	\$ 410,081	\$ 418,282
4100030	51300	Payroll Taxes	3	\$ 14,432	\$ 15,875	\$ 16,193	\$ 16,517	\$ 16,847	\$ 17,184	\$ 17,528	\$ 17,878	\$ 18,236
4100030	52010	Utilities-Electricity	6	\$ 48,300	\$ 50,812	\$ 53,454	\$ 56,233	\$ 59,158	\$ 62,234	\$ 65,470	\$ 68,874	\$ 72,456
4100030	52020	Utilities-Water Usage	13	\$ 10,100	\$ 10,706	\$ 11,348	\$ 12,029	\$ 12,751	\$ 13,516	\$ 14,327	\$ 15,187	\$ 16,098
4100030	52030	Utilities-Natural Gas	13	\$ 5,100	\$ 5,406	\$ 5,730	\$ 6,074	\$ 6,439	\$ 6,825	\$ 7,234	\$ 7,669	\$ 8,129
4100030	52040	Utilities-Sanitation	13	\$ 8,800	\$ 9,328	\$ 9,888	\$ 10,481	\$ 11,110	\$ 11,776	\$ 12,483	\$ 13,232	\$ 14,026
4100030	52060	Telephone	2	\$ 26,000	\$ 26,520	\$ 27,050	\$ 27,591	\$ 28,143	\$ 28,706	\$ 29,280	\$ 29,866	\$ 30,463
4100030	52110	Supplies	2	\$ 9,000	\$ 9,180	\$ 9,364	\$ 9,551	\$ 9,742	\$ 9,937	\$ 10,135	\$ 10,338	\$ 10,545
4100030	52130	Subs, Publications & Memberships	2	\$ 24,000	\$ 24,480	\$ 24,970	\$ 25,469	\$ 25,978	\$ 26,498	\$ 27,028	\$ 27,568	\$ 28,120
4100030	52140	Training & Education	2	\$ 3,000	\$ 3,060	\$ 3,121	\$ 3,184	\$ 3,247	\$ 3,312	\$ 3,378	\$ 3,446	\$ 3,515
4100030	52150	Travel & Meetings	2	\$ 500	\$ 510	\$ 520	\$ 531	\$ 541	\$ 552	\$ 563	\$ 574	\$ 586
4100030	52160	Marketing Promotions	2	\$ 62,500	\$ 63,750	\$ 65,025	\$ 66,326	\$ 67,652	\$ 69,005	\$ 70,385	\$ 71,793	\$ 73,229
4100030	52170	Legal Notices	2	\$ 3,000	\$ 3,060	\$ 3,121	\$ 3,184	\$ 3,247	\$ 3,312	\$ 3,378	\$ 3,446	\$ 3,515
4100030	52201	Fuel	5	\$ 5,000	\$ 5,450	\$ 5,941	\$ 6,475	\$ 7,058	\$ 7,693	\$ 8,386	\$ 9,140	\$ 9,963
4100030	52230	Vehicle Expense	12	\$ 1,000	\$ 1,040	\$ 1,082	\$ 1,125	\$ 1,170	\$ 1,217	\$ 1,265	\$ 1,316	\$ 1,369
4100030	52240	Furniture & Small Tools <\$5000	2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
4100030	52260	Computer Related Equip <\$5000	2	\$ 45,000	\$ 45,900	\$ 46,818	\$ 47,754	\$ 48,709	\$ 49,684	\$ 50,677	\$ 51,691	\$ 52,725
4100030	52300	Contract Services	2	\$ 112,500	\$ 114,750	\$ 117,045	\$ 119,386	\$ 121,774	\$ 124,209	\$ 126,693	\$ 129,227	\$ 131,812
4100030	52340	Insurance	2	\$ 235,000	\$ 239,700	\$ 244,494	\$ 249,384	\$ 254,372	\$ 259,459	\$ 264,648	\$ 269,941	\$ 275,340
4100030	52350	Legal	2	\$ 260,000	\$ 265,200	\$ 270,504	\$ 275,914	\$ 281,432	\$ 287,061	\$ 292,802	\$ 298,658	\$ 304,631
4100030	52360	Federal, State & Local Fees	2	\$ 37,000	\$ 37,740	\$ 38,495	\$ 39,265	\$ 40,050	\$ 40,851	\$ 41,668	\$ 42,501	\$ 43,351
4100030	52410	Building Maintenance	2	\$ 15,000	\$ 15,300	\$ 15,606	\$ 15,918	\$ 16,236	\$ 16,561	\$ 16,892	\$ 17,230	\$ 17,575
4100030	52450	Vandalism	2	\$ 10,000	\$ 10,200	\$ 10,404	\$ 10,612	\$ 10,824	\$ 11,041	\$ 11,262	\$ 11,487	\$ 11,717
4100030	54020	Cost Allocations Paid	2	\$ 1,312,129	\$ 1,338,372	\$ 1,365,139	\$ 1,392,442	\$ 1,420,291	\$ 1,448,696	\$ 1,477,670	\$ 1,507,224	\$ 1,537,368
4101515	52300	Contract Services (12)	2	\$ 18,200	\$ 18,564	\$ 18,935	\$ 19,314	\$ 19,700	\$ 20,094	\$ 20,496	\$ 20,906	\$ 21,324
SUBTOTAL: ADMINISTRATIVE SERVICES				\$ 3,496,249	\$ 3,615,481	\$ 3,690,837	\$ 3,767,880	\$ 3,846,656	\$ 3,927,212	\$ 4,009,595	\$ 4,093,856	\$ 4,180,047
CAPITAL PURCHASES												
4100010	52460	Capital Purchases (13)	13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SUBTOTAL: CAPITAL PURCHASES				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GRAND TOTAL: WATER OPERATING EXPENSES				\$ 22,479,754	\$ 19,172,890	\$ 19,727,054	\$ 20,303,022	\$ 19,776,937	\$ 19,496,001	\$ 20,083,262	\$ 20,695,626	\$ 21,334,538

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 10
NON-CASH ITEMS, EXCLUDED FROM ABOVE:

ORG.	OBJECT	DESCRIPTION	CPI	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEPRECIATION												
4100010	52460	Depreciation Expense	12	\$ 7,438,000	\$ 7,382,000	\$ 6,888,000	\$ 6,698,000	\$ 6,761,000	\$ 7,155,000	\$ 7,195,000	\$ 7,322,000	\$ 7,484,000
SUBTOTAL: DEPRECIATION				\$ 7,438,000	\$ 7,382,000	\$ 6,888,000	\$ 6,698,000	\$ 6,761,000	\$ 7,155,000	\$ 7,195,000	\$ 7,322,000	\$ 7,484,000

TABLE 11
FORECASTING ASSUMPTIONS:

COST INFLATION FACTORS (14)	2016	2017	2018	2019	2020	2021	2022	2023	2024
1 Customer Growth (15)	0.60%	0.60%	0.60%	0.60%	0.60%	0.00%	0.00%	0.00%	0.00%
2 General Cost Inflation (prior 5-year average)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
3 Full Time Wages & Payroll Taxes Cost Inflation (16)	2.00%	10.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
4 All Other Labor Cost Inflation (prior 5-year average)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
5 Fuel Cost Inflation (prior 5-year average)	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
6 Production Power / Electricity	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%	5.20%
7 Purchased Water Cost Inflation (MWA forecast)	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%
8 Groundwater Replenishment Cost Inflation (MWA forecast)	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
9 Makeup Obligation Cost Inflation (MWA forecast)	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
10 Groundwater Assessment Cost Inflation (MWA forecast)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
11 Meter Service Change Outs	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
12 Transportation Inflation	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
13 Natural Gas / Other Utilities	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
14 No Cost Inflation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

- (1) Revenue and expenses for FY 2014/15 and FY 2015/16 were provided by District Staff on 9/8/2015 and updated 11/23/2015. (Source File: *Water cash balance 9-8-15.xlsx and updated with VWD Conservation Adjustments.xlsx*)
- (2) Revenue and expenses for FY 2016/17 were provided by District Staff on 5/18/2015 and updated 11/23/2015.
(File: *VWD Rate Analysis 05-18-2015.xls, and updated with VWD Conservation Adjustments.xlsx*). Per District Staff, rate revenue excludes arsenic treatment charges.
- (3) Rate revenue projection in 2015/16 accounts for a loss in revenue due to anticipated conservation. Updated projections from staff email 11/23/15.
It is assumed that the District will meet its 28% conservation target; therefore, an additional 19% reduction in water sales in 2016 would occur.
- (4) The one-time reimbursement from CalTrans for an I-15 widening project was zeroed out, per staff email 11/23/2015. Per District Staff, the offsetting capital cost is not included in this analysis.
- (5) Budgeted pass-through revenue from SCLA is zeroed out in this analysis because it should not be considered revenue for the utility, per Finance Department Staff. Original budget amounts are \$198,328 for 2015/16, and \$175,000 for
- (6) Interest income is per the District's budget for FY 2014/15 - 2015/16, and calculated in the Financial Plan for all future years.
- (7) One time sale of Administration Building for Victorville Water District. (source: Memorandum 11/17/2015 Subject Close of Escrow - 17185 Yuma Road, File: SRDA-315111712020)
- (8) Purchased Water cost is the cost Victorville Water District pays to the Mojave Water Agency for R³ water, in order to pump water to Victorville; it's a pumping cost, similar to production power.
The cost is \$125/AF and is variable based on the cost of power and changes each year.
- (9) Groundwater Assessment is the Mojave Water Agency's cost of testing the water, to ensure quality standards.
- (10) Groundwater Replenishment is the additional cost of groundwater, over the Free Production Allowance (FPA). Currently, Base Annual Production (BAP) is 25,952 AF, and FPA is 60% of BAP, or 15,572 AF.
- (11) Per District Staff, the Makeup Obligation is related to the annual flow down the Mojave River, which is very difficult to predict and is a cost of water similar to the replacement obligation. As the drought lengthens, the prospect of Maker
- (12) Updated per client email from 11/23/2015 to account for 28% conservation.
- (13) Budgeted Capital Purchases are included in Exhibit 2 of this model.
- (14) Cost inflation and customer growth factors from Technical Memo provided to staff 11/23/2015. (File: *VWD_NBS Inflation Factors for Waster Study 11-23-15.pdf*)
- (15) Customer growth is estimated to be approximately 0.6% through 2020, per Planning Department Staff (email dated 10/7/2015).
- (16) Per Finance Department Staff, Full Time Wages and Payroll Taxes are projected to increase 10% in FY 2016/17, for going back to a 40-hour work week.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 12
CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Budget								
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24
Funding Sources:									
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Capacity Fee Reserves	-	-	-	-	-	-	-	-	-
SRF Loan Funding	-	-	-	-	-	-	-	-	-
Use of New Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	6,483,795	8,885,957	3,725,542	221,586	43,200	-	-	-	-
Rate Revenue	-	-	-	3,520,047	995,968	4,267,842	9,340,126	7,666,542	4,378,708
Total Sources of Capital Funds	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 1,039,168	\$ 4,267,842	\$ 9,340,126	\$ 7,666,542	\$ 4,378,708
Uses of Capital Funds:									
Total Project Costs	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 3,965,491	\$ 7,455,846	\$ 9,340,126	\$ 7,666,542	\$ 4,378,708
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ (2,926,323)	\$ (3,188,004)	\$ -	\$ -	\$ -
SRF Loan Funding	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Revenue Bond Proceeds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CAPITAL IMPROVEMENT PROGRAM

TABLE 13
Capital Improvement Program Costs (1):

Project Description	2016	2017	2018	2019	2020	2021	2022	2023	2024
Backhoes	\$ 120,000	\$ 372,000	\$ -	\$ -	\$ 130,000	\$ -	\$ -	\$ -	\$ -
Booster Pumping Stations	\$ 229,000	\$ 1,570,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Demonstration Gardens/Low Water Use Conversions	\$ 145,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facilities Improvements	\$ 209,000	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fiber Optic Upgrade	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GIS Mapping	\$ -	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Information Technology	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IVR Telephone System Enhancements, Phase II	\$ 81,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Master Plan - Update	\$ -	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ 150,000	\$ -	\$ -
Meter Replacements	\$ 100,000	\$ 103,000	\$ 106,000	\$ 109,000	\$ 112,000	\$ 115,000	\$ 118,000	\$ 122,000	\$ 126,000
Percolation Pond Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ph Analyzer	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Phone System Upgrade	\$ 16,009	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pipelines	\$ 2,798,086	\$ 4,939,100	\$ 3,110,400	\$ 2,704,800	\$ 3,007,200	\$ 5,371,200	\$ 6,933,600	\$ 5,940,000	\$ 2,942,400
PRV Stations	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ -
Pump to Waste	\$ 200,000	\$ 220,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Right of Way Relocations	\$ 1,185,000	\$ 129,000	\$ 133,000	\$ 137,000	\$ 141,000	\$ 145,000	\$ 149,000	\$ 153,000	\$ 158,000
SCADA - Replace PX	\$ 12,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Instruments and Machines	\$ 14,500	\$ 140,000	\$ 34,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Truck/Vehicle/Equipment Replacement	\$ 556,700	\$ 535,800	\$ 142,000	\$ 494,200	\$ 161,300	\$ 486,000	\$ 515,000	\$ 70,000	\$ 290,000
Urban Water Management Plan Update	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ -	\$ -	\$ -
Vulnerability Assessment Update	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Well Re-equip	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Work Order System	\$ 207,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unfunded Capital	\$ -	\$ -	\$ -	\$ -	\$ (2,600,000)	\$ (2,750,000)	\$ -	\$ -	\$ -
Placeholder for Future Year Capital Projects (3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total: CIP Program Costs	\$ 6,483,795	\$ 8,633,900	\$ 3,525,400	\$ 3,445,000	\$ 951,500	\$ 3,717,200	\$ 7,865,600	\$ 6,285,000	\$ 3,516,400

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Capital Improvement Plan Expenditures

EXHIBIT 2

TABLE 14
Capital Improvement Program Costs (in Future-Year Dollars) (2):

Project Description	2016	2017	2018	2019	2020	2021	2022	2023	2024
Backhoes	\$ 120,000	\$ 383,160	\$ -	\$ -	\$ 146,316	\$ -	\$ -	\$ -	\$ -
Booster Pumping Stations	\$ 229,000	\$ 1,617,100	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Demonstration Gardens/Low Water Use Conversions	\$ 145,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facilities Improvements	\$ 209,000	\$ 257,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fiber Optic Upgrade	\$ 85,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
GIS Mapping	\$ -	\$ 154,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Information Technology	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
IVR Telephone System Enhancements, Phase II	\$ 81,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Master Plan - Update	\$ -	\$ 231,750	\$ -	\$ -	\$ -	\$ -	\$ 179,108	\$ -	\$ -
Meter Replacements	\$ 100,000	\$ 103,000	\$ 106,000	\$ 109,000	\$ 112,000	\$ 115,000	\$ 118,000	\$ 122,000	\$ 126,000
Percolation Pond Modifications	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ph Analyzer	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Phone System Upgrade	\$ 16,009	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pipelines	\$ 2,798,086	\$ 5,087,273	\$ 3,299,823	\$ 2,955,608	\$ 3,384,630	\$ 6,226,693	\$ 8,279,081	\$ 7,305,451	\$ 3,727,344
PRV Stations	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 347,782	\$ -	\$ -	\$ -
Pump to Waste	\$ 200,000	\$ 226,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Right of Way Relocations	\$ 1,185,000	\$ 129,000	\$ 133,000	\$ 137,000	\$ 141,000	\$ 145,000	\$ 149,000	\$ 153,000	\$ 158,000
SCADA - Replace PX	\$ 12,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Instruments and Machines	\$ 14,500	\$ 144,200	\$ 36,071	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Truck/Vehicle/Equipment Replacement	\$ 556,700	\$ 551,874	\$ 150,648	\$ 540,026	\$ 181,545	\$ 563,407	\$ 614,937	\$ 86,091	\$ 367,363
Urban Water Management Plan Update	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 57,964	\$ -	\$ -	\$ -
Vulnerability Assessment Update	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Well Re-equip	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Work Order System	\$ 207,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Unfunded Capital	\$ -	\$ -	\$ -	\$ -	\$ (2,926,323)	\$ (3,188,004)	\$ -	\$ -	\$ -
Placeholder for Future Year Capital Projects (3)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total: Capital Improvement Program Costs (Future-Year Dollar)	\$ 6,483,795	\$ 8,885,957	\$ 3,725,542	\$ 3,741,634	\$ 1,039,168	\$ 4,267,842	\$ 9,340,126	\$ 7,666,542	\$ 4,378,708

TABLE 15
FORECASTING ASSUMPTIONS:

Economic Variables	2016	2017	2018	2019	2020	2021	2022	2023	2024
Annual Construction Cost Inflation, Per Engineering News Record (2)	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2015	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27

(1) Capital project costs for were provided by District Staff on February 8, 2016 (file: CIP wtn cost inflation edited.xlsx).

(2) Project costs are inflated by 3% per year, Engineering News Record estimates of construction cost inflation from 2016 values. The average change from 2005 to 2015 was used in this analysis.

Meter Replacement and Right of Way Relocation costs are not inflated, as the cost estimates include inflation, per District Staff 2/4/2016.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Cost of Service Analysis

TABLE 16

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2016/17	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
4100500 - WATER PURCHASES									
Purchased Water	\$ 283,300	\$ 283,300	\$ -	\$ -	\$ -	100%	0%	0%	0%
Groundwater Assessment	\$ 76,100	\$ 76,100	\$ -	\$ -	\$ -	100%	0%	0%	0%
Groundwater Replenishment	\$ 771,500	\$ 771,500	\$ -	\$ -	\$ -	100%	0%	0%	0%
SUBTOTAL: WATER PURCHASES	\$ 1,130,900	\$ 1,130,900	\$ -	\$ -	\$ -	100%	0%	0%	0%
4100500 - MAKEUP OBLIGATION									
Makeup Obligation	\$ 151,500	\$ 151,500	\$ -	\$ -	\$ -	100%	0%	0%	0%
SUBTOTAL: MAKEUP OBLIGATION	\$ 151,500	\$ 151,500	\$ -	\$ -	\$ -	100%	0%	0%	0%
4100500 - PRODUCTION POWER									
Utilities-Production Power	\$ 1,965,031	\$ 1,965,031	\$ -	\$ -	\$ -	100%	0%	0%	0%
SUBTOTAL: PRODUCTION POWER	\$ 1,965,031	\$ 1,965,031	\$ -	\$ -	\$ -	100%	0%	0%	0%
4100500 - SUPPLY SERVICES									
Full Time Wages	\$ 1,039,063	\$ -	\$ 1,018,674	\$ -	\$ 20,389	0%	98%	0%	2%
Overtime Wages	\$ 79,589	\$ -	\$ 78,027	\$ -	\$ 1,562	0%	98%	0%	2%
Fringe Benefits	\$ 373,632	\$ -	\$ 366,301	\$ -	\$ 7,332	0%	98%	0%	2%
Payroll Taxes	\$ 26,496	\$ -	\$ 25,976	\$ -	\$ 520	0%	98%	0%	2%
Telephone	\$ 11,220	\$ 5,502	\$ 5,498	\$ -	\$ 220	49%	49%	0%	2%
Supplies	\$ 16,626	\$ 8,153	\$ 8,147	\$ -	\$ 326	49%	49%	0%	2%
Training & Education	\$ 7,854	\$ -	\$ 7,700	\$ -	\$ 154	0%	98%	0%	2%
Fuel	\$ 56,680	\$ 27,795	\$ 27,773	\$ -	\$ 1,112	49%	49%	0%	2%
Vehicle Expense	\$ 31,200	\$ 15,300	\$ 15,288	\$ -	\$ 612	49%	49%	0%	2%
Furniture & Small Tools <\$5000	\$ 10,200	\$ 5,002	\$ 4,998	\$ -	\$ 200	49%	49%	0%	2%
Computer Related Equip <\$5000	\$ -	\$ -	\$ -	\$ -	\$ -	49%	49%	0%	2%
Contract Services	\$ 612,000	\$ 300,111	\$ 299,880	\$ -	\$ 12,009	49%	49%	0%	2%
Grounds Maintenance	\$ 54,060	\$ 26,510	\$ 26,489	\$ -	\$ 1,061	49%	49%	0%	2%
Infrastructure Repairs	\$ 132,600	\$ 65,024	\$ 64,974	\$ -	\$ 2,602	49%	49%	0%	2%
SUBTOTAL: SUPPLY SERVICES	\$ 2,451,220	\$ 453,396	\$ 1,949,724	\$ -	\$ 48,099	18%	80%	0%	2%
4100505 - SCADA SERVICES									
Full Time Wages	\$ 145,541	\$ -	\$ 144,194	\$ -	\$ 1,347	0%	99%	0%	1%
Overtime Wages	\$ 2,168	\$ -	\$ 2,147	\$ -	\$ 20	0%	99%	0%	1%
Fringe Benefits	\$ 40,928	\$ -	\$ 40,549	\$ -	\$ 379	0%	99%	0%	1%
Retiree Expense	\$ -	\$ -	\$ -	\$ -	\$ -	0%	99%	0%	1%
Payroll Taxes	\$ 3,711	\$ -	\$ 3,677	\$ -	\$ 34	0%	99%	0%	1%
Telephone	\$ -	\$ -	\$ -	\$ -	\$ -	0%	99%	0%	1%
Supplies	\$ 3,060	\$ -	\$ 3,032	\$ -	\$ 28	0%	99%	0%	1%
Subs, Publications & Memberships	\$ 18,870	\$ -	\$ 18,695	\$ -	\$ 175	0%	99%	0%	1%
Training & Education	\$ 6,120	\$ -	\$ 6,063	\$ -	\$ 57	0%	99%	0%	1%
Fuel	\$ 5,450	\$ -	\$ 5,400	\$ -	\$ 50	0%	99%	0%	1%
Vehicle Expense	\$ 2,080	\$ -	\$ 2,061	\$ -	\$ 19	0%	99%	0%	1%
Furniture & Small Tools <\$5000	\$ 15,300	\$ -	\$ 15,158	\$ -	\$ 142	0%	99%	0%	1%
Contract Services	\$ 6,120	\$ -	\$ 6,063	\$ -	\$ 57	0%	99%	0%	1%
Infrastructure Repairs	\$ 70,890	\$ -	\$ 70,234	\$ -	\$ 656	0%	99%	0%	1%
SUBTOTAL: SCADA SERVICES	\$ 320,237	\$ -	\$ 317,273	\$ -	\$ 2,965	0%	99%	0%	1%
4100515 - QUALITY SERVICES (Treatment)									
Full Time Wages	\$ 67,165	\$ -	\$ 65,847	\$ -	\$ 1,318	0%	98%	0%	2%
Overtime Wages	\$ 6,673	\$ -	\$ 6,542	\$ -	\$ 131	0%	98%	0%	2%
Fringe Benefits	\$ 24,215	\$ -	\$ 23,740	\$ -	\$ 475	0%	98%	0%	2%
Payroll Taxes	\$ 1,713	\$ -	\$ 1,679	\$ -	\$ 34	0%	98%	0%	2%
Telephone	\$ -	\$ -	\$ -	\$ -	\$ -	49%	49%	0%	2%
Supplies	\$ 146,880	\$ 143,998	\$ -	\$ -	\$ 2,882	98%	0%	0%	2%
Training & Education	\$ 510	\$ 250	\$ 250	\$ -	\$ 10	49%	49%	0%	2%
Fuel	\$ 4,033	\$ 1,978	\$ 1,976	\$ -	\$ 79	49%	49%	0%	2%
Vehicle Expense	\$ 2,392	\$ 1,173	\$ 1,172	\$ -	\$ 47	49%	49%	0%	2%
Furniture & Small Tools <\$5000	\$ 510	\$ 250	\$ 250	\$ -	\$ 10	49%	49%	0%	2%
Contract Services	\$ 194,820	\$ 190,997	\$ -	\$ -	\$ 3,823	98%	0%	0%	2%
Federal, State & Local Fees	\$ 22,440	\$ 11,004	\$ 10,996	\$ -	\$ 440	49%	49%	0%	2%
Infrastructure Repairs	\$ 20,400	\$ 10,004	\$ 9,996	\$ -	\$ 400	49%	49%	0%	2%
SUBTOTAL: QUALITY SERVICES	\$ 491,750	\$ 359,654	\$ 122,447	\$ -	\$ 9,649	73%	25%	0%	2%

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Cost of Service Analysis

TABLE 17

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity (COM)	Capacity (CAP)	Customer (CA)	Fire Protection (FP)	Basis of Classification			
	FY 2016/17					(COM)	(CAP)	(CA)	(FP)
4100535 - FIELD SERVICES									
Full Time Wages	\$ 1,163,193	\$ -	\$ 1,105,896	\$ 46,528	\$ 10,769	0%	95%	4%	1%
Overtime Wages	\$ 96,434	\$ -	\$ 91,684	\$ 3,857	\$ 893	0%	95%	4%	1%
Part Time Wages	\$ -	\$ -	\$ -	\$ -	\$ -	0%	95%	4%	1%
Fringe Benefits	\$ 443,146	\$ -	\$ 421,318	\$ 17,726	\$ 4,103	0%	95%	4%	1%
Payroll Taxes	\$ 29,662	\$ -	\$ 28,200	\$ 1,186	\$ 275	0%	95%	4%	1%
Telephone	\$ 6,426	\$ -	\$ 6,109	\$ 257	\$ 59	0%	95%	4%	1%
Supplies	\$ 16,320	\$ -	\$ 15,516	\$ 653	\$ 151	0%	95%	4%	1%
Training & Education	\$ 4,080	\$ -	\$ 3,879	\$ 163	\$ 38	0%	95%	4%	1%
Fuel	\$ 74,120	\$ -	\$ 70,469	\$ 2,965	\$ 686	0%	95%	4%	1%
Equipment	\$ 57,120	\$ -	\$ 54,306	\$ 2,285	\$ 529	0%	95%	4%	1%
Vehicle Expense	\$ 63,544	\$ -	\$ 60,414	\$ 2,542	\$ 588	0%	95%	4%	1%
Furniture & Small Tools <\$5000	\$ 25,500	\$ -	\$ 24,244	\$ 1,020	\$ 236	0%	95%	4%	1%
Computer Related Equip <\$5000	\$ -	\$ -	\$ -	\$ -	\$ -	0%	95%	4%	1%
Contract Services	\$ 14,280	\$ -	\$ 13,577	\$ 571	\$ 132	0%	95%	4%	1%
Infrastructure Repairs	\$ 402,900	\$ -	\$ 383,054	\$ 16,116	\$ 3,730	0%	95%	4%	1%
SUBTOTAL: FIELD SERVICES	\$ 2,396,724	\$ -	\$ 2,278,666	\$ 95,869	\$ 22,189	0%	95%	4%	1%
4104500 - ENGINEERING SERVICES									
Full Time Wages	\$ 638,003	\$ -	\$ 599,964	\$ 25,520	\$ 12,519	0%	94%	4%	2%
Overtime Wages	\$ 23,263	\$ -	\$ 21,876	\$ 931	\$ 456	0%	94%	4%	2%
Fringe Benefits	\$ 185,551	\$ -	\$ 174,488	\$ 7,422	\$ 3,641	0%	94%	4%	2%
Payroll Taxes	\$ 16,269	\$ -	\$ 15,299	\$ 651	\$ 319	0%	94%	4%	2%
Supplies	\$ 6,120	\$ -	\$ 5,755	\$ 245	\$ 120	0%	94%	4%	2%
Training & Education	\$ 1,020	\$ -	\$ 959	\$ 41	\$ 20	0%	94%	4%	2%
Fuel	\$ 11,445	\$ -	\$ 10,763	\$ 458	\$ 225	0%	94%	4%	2%
Vehicle Expense	\$ 5,200	\$ -	\$ 4,890	\$ 208	\$ 102	0%	94%	4%	2%
Furniture & Small Tools <\$5000	\$ 510	\$ -	\$ 480	\$ 20	\$ 10	0%	94%	4%	2%
Contract Services	\$ 73,440	\$ -	\$ 69,061	\$ 2,938	\$ 1,441	0%	94%	4%	2%
Infrastructure Repairs	\$ 10,200	\$ -	\$ 9,592	\$ 408	\$ 200	0%	94%	4%	2%
SUBTOTAL: ENGINEERING SERVICES	\$ 971,022	\$ -	\$ 913,127	\$ 38,841	\$ 19,054	0%	94%	4%	2%
4100525 - ENVIRONMENTAL PROGRAMS									
Full Time Wages	\$ 266,511	\$ -	\$ 250,621	\$ 10,660	\$ 5,230	0%	94%	4%	2%
Overtime Wages	\$ 3,904	\$ -	\$ 3,671	\$ 156	\$ 77	0%	94%	4%	2%
Fringe Benefits	\$ 86,391	\$ -	\$ 81,240	\$ 3,456	\$ 1,695	0%	94%	4%	2%
Payroll Taxes	\$ 6,796	\$ -	\$ 6,391	\$ 272	\$ 133	0%	94%	4%	2%
Utilities-Electricity	\$ 2,341	\$ -	\$ 2,201	\$ 94	\$ 46	0%	94%	4%	2%
Utilities-Water Usage	\$ 143	\$ -	\$ 135	\$ 6	\$ 3	0%	94%	4%	2%
Utilities-Natural Gas	\$ 207	\$ -	\$ 194	\$ 8	\$ 4	0%	94%	4%	2%
Telephone	\$ 408	\$ -	\$ 384	\$ 16	\$ 8	0%	94%	4%	2%
Supplies	\$ 4,692	\$ -	\$ 4,412	\$ 188	\$ 92	0%	94%	4%	2%
Training & Education	\$ 1,224	\$ -	\$ 1,151	\$ 49	\$ 24	0%	94%	4%	2%
Conservation Programs	\$ 44,543	\$ -	\$ 41,888	\$ 1,782	\$ 874	0%	94%	4%	2%
Fuel	\$ 3,270	\$ -	\$ 3,075	\$ 131	\$ 64	0%	94%	4%	2%
Vehicle Expense	\$ 2,808	\$ -	\$ 2,641	\$ 112	\$ 55	0%	94%	4%	2%
Furniture & Small Tools <\$5000	\$ 510	\$ -	\$ 480	\$ 20	\$ 10	0%	94%	4%	2%
Computer Related Equip <\$5000	\$ 3,672	\$ -	\$ 3,453	\$ 147	\$ 72	0%	94%	4%	2%
Contract Services	\$ 3,213	\$ -	\$ 3,021	\$ 129	\$ 63	0%	94%	4%	2%
SUBTOTAL: ENVIRONMENTAL PROGRAMS	\$ 430,632	\$ -	\$ 404,957	\$ 17,225	\$ 8,450	0%	94%	4%	2%

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Cost of Service Analysis

TABLE 18

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2016/17	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
4100545 - CUSTOMER SERVICES									
Full Time Wages	\$ 1,135,927	\$ -	\$ -	\$ 1,125,410	\$ 10,517	0%	0%	99%	1%
Overtime Wages	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	99%	1%
Part Time Wages	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	99%	1%
Fringe Benefits	\$ 363,071	\$ -	\$ -	\$ 359,710	\$ 3,361	0%	0%	99%	1%
Payroll Taxes	\$ 28,966	\$ -	\$ -	\$ 28,698	\$ 268	0%	0%	99%	1%
Utilities-Electricity	\$ 12,967	\$ -	\$ -	\$ 12,847	\$ 120	0%	0%	99%	1%
Utilities-Water Usage	\$ 791	\$ -	\$ -	\$ 783	\$ 7	0%	0%	99%	1%
Utilities-Natural Gas	\$ 1,145	\$ -	\$ -	\$ 1,134	\$ 11	0%	0%	99%	1%
Telephone	\$ 306	\$ -	\$ -	\$ 303	\$ 3	0%	0%	99%	1%
Supplies	\$ 144,618	\$ -	\$ -	\$ 143,279	\$ 1,339	0%	0%	99%	1%
Training & Education	\$ 7,944	\$ -	\$ -	\$ 7,870	\$ 74	0%	0%	99%	1%
Travel & Meetings	\$ 5,355	\$ -	\$ -	\$ 5,305	\$ 50	0%	0%	99%	1%
Furniture & Small Tools <\$5000	\$ 2,448	\$ -	\$ -	\$ 2,425	\$ 23	0%	0%	99%	1%
Contract Services	\$ 323,975	\$ -	\$ -	\$ 320,976	\$ 2,999	0%	0%	99%	1%
Cust-Legal	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	99%	1%
Federal, State & Local Fees	\$ 8,160	\$ -	\$ -	\$ 8,084	\$ 76	0%	0%	99%	1%
Building Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	99%	1%
Uncollectable Write-Offs	\$ 88,729	\$ -	\$ -	\$ 87,908	\$ 821	0%	0%	99%	1%
SUBTOTAL: CUSTOMER SERVICES	\$ 2,124,402	\$ -	\$ -	\$ 2,104,734	\$ 19,668	0%	0%	99%	1%
4100530 - METER SERVICES									
Full Time Wages	\$ 583,096	\$ -	\$ 288,849	\$ 288,849	\$ 5,398	0%	50%	50%	1%
Overtime Wages	\$ 77,664	\$ -	\$ 38,472	\$ 38,472	\$ 719	0%	50%	50%	1%
Part Time Wages	\$ -	\$ -	\$ -	\$ -	\$ -	0%	50%	50%	1%
Fringe Benefits	\$ 213,055	\$ -	\$ 105,541	\$ 105,541	\$ 1,973	0%	50%	50%	1%
Payroll Taxes	\$ 14,869	\$ -	\$ 7,366	\$ 7,366	\$ 138	0%	50%	50%	1%
Telephone	\$ 2,448	\$ -	\$ 1,213	\$ 1,213	\$ 23	0%	50%	50%	1%
Supplies	\$ 4,080	\$ -	\$ 2,021	\$ 2,021	\$ 38	0%	50%	50%	1%
Training & Education	\$ 2,040	\$ -	\$ 1,011	\$ 1,011	\$ 19	0%	50%	50%	1%
Fuel	\$ 44,799	\$ -	\$ 22,192	\$ 22,192	\$ 415	0%	50%	50%	1%
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	0%	50%	50%	1%
Vehicle Expense	\$ 29,120	\$ -	\$ 14,425	\$ 14,425	\$ 270	0%	50%	50%	1%
Furniture & Small Tools <\$5000	\$ 15,300	\$ -	\$ 7,579	\$ 7,579	\$ 142	0%	50%	50%	1%
Contract Services	\$ 10,200	\$ -	\$ 5,053	\$ 5,053	\$ 94	0%	50%	50%	1%
Infrastructure Repairs	\$ 35,700	\$ -	\$ 17,685	\$ 17,685	\$ 331	0%	50%	50%	1%
Meter Service Installations	\$ 31,620	\$ -	\$ 15,664	\$ 15,664	\$ 293	0%	50%	50%	1%
Meter Service Change outs	\$ 2,060,000	\$ -	\$ 2,040,928	\$ -	\$ 19,072	0%	99%	0%	1%
SUBTOTAL: METER SERVICES	\$ 3,123,990	\$ -	\$ 2,567,998	\$ 527,070	\$ 28,923	0%	82%	17%	1%

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Cost of Service Analysis

TABLE 19

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2016/17	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
4100030 - ADMINISTRATIVE SERVICES									
Full Time Wages	\$ 622,559	\$ -	\$ 585,441	\$ 24,902	\$ 12,216	0%	94%	4%	2%
Overtime Wages	\$ 148,096	\$ -	\$ 139,266	\$ 5,924	\$ 2,906	0%	94%	4%	2%
Fringe Benefits	\$ 165,784	\$ -	\$ 155,899	\$ 6,631	\$ 3,253	0%	94%	4%	2%
Retiree Health Care	\$ 364,140	\$ -	\$ 342,429	\$ 14,566	\$ 7,145	0%	94%	4%	2%
Payroll Taxes	\$ 15,875	\$ -	\$ 14,929	\$ 635	\$ 312	0%	94%	4%	2%
Utilities-Electricity	\$ 50,812	\$ -	\$ 47,782	\$ 2,032	\$ 997	0%	94%	4%	2%
Utilities-Water Usage	\$ 10,706	\$ -	\$ 10,068	\$ 428	\$ 210	0%	94%	4%	2%
Utilities-Natural Gas	\$ 5,406	\$ -	\$ 5,084	\$ 216	\$ 106	0%	94%	4%	2%
Utilities-Sanitation	\$ 9,328	\$ -	\$ 8,772	\$ 373	\$ 183	0%	94%	4%	2%
Telephone	\$ 26,520	\$ -	\$ 24,939	\$ 1,061	\$ 520	0%	94%	4%	2%
Supplies	\$ 9,180	\$ -	\$ 8,633	\$ 367	\$ 180	0%	94%	4%	2%
Subs, Publications & Memberships	\$ 24,480	\$ -	\$ 23,020	\$ 979	\$ 480	0%	94%	4%	2%
Training & Education	\$ 3,060	\$ -	\$ 2,878	\$ 122	\$ 60	0%	94%	4%	2%
Travel & Meetings	\$ 510	\$ -	\$ 480	\$ 20	\$ 10	0%	94%	4%	2%
Marketing Promotions	\$ 63,750	\$ -	\$ 59,949	\$ 2,550	\$ 1,251	0%	94%	4%	2%
Legal Notices	\$ 3,060	\$ -	\$ 2,878	\$ 122	\$ 60	0%	94%	4%	2%
Fuel	\$ 5,450	\$ -	\$ 5,125	\$ 218	\$ 107	0%	94%	4%	2%
Vehicle Expense	\$ 1,040	\$ -	\$ 978	\$ 42	\$ 20	0%	94%	4%	2%
Furniture & Small Tools <\$5000	\$ -	\$ -	\$ -	\$ -	\$ -	0%	94%	4%	2%
Computer Related Equip <\$5000	\$ 45,900	\$ -	\$ 43,163	\$ 1,836	\$ 901	0%	94%	4%	2%
Contract Services	\$ 114,750	\$ -	\$ 107,908	\$ 4,590	\$ 2,252	0%	94%	4%	2%
Insurance	\$ 239,700	\$ -	\$ 225,408	\$ 9,588	\$ 4,704	0%	94%	4%	2%
Legal	\$ 265,200	\$ -	\$ 249,388	\$ 10,608	\$ 5,204	0%	94%	4%	2%
Federal, State & Local Fees	\$ 37,740	\$ -	\$ 35,490	\$ 1,510	\$ 741	0%	94%	4%	2%
Building Maintenance	\$ 15,300	\$ -	\$ 14,388	\$ 612	\$ 300	0%	94%	4%	2%
Vandalism	\$ 10,200	\$ -	\$ 9,592	\$ 408	\$ 200	0%	94%	4%	2%
Cost Allocations Paid	\$ 1,338,372	\$ -	\$ 1,258,574	\$ 53,535	\$ 26,262	0%	94%	4%	2%
Contract Services	\$ 18,564	\$ -	\$ 17,457	\$ 743	\$ 364	0%	94%	4%	2%
SUBTOTAL: ADMINISTRATIVE SERVICES	\$ 3,615,481	\$ -	\$ 3,399,917	\$ 144,619	\$ 70,945	0%	94%	4%	2%
4100010 - CAPITAL PURCHASES									
Capital Purchases	\$ -	\$ -	\$ -	\$ -	\$ -	0%	100%	0%	0%
SUBTOTAL: CAPITAL PURCHASES	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
TOTAL OPERATING EXPENSES	\$ 19,172,890	\$ 4,060,481	\$ 11,954,109	\$ 2,928,358	\$ 229,942	21%	62%	15%	1%

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Cost of Service Analysis

TABLE 20

Classification of Expenses, continued									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2016/17	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
Debt Service Payments									
Outstanding Debt	\$ -	\$ -	\$ -	\$ -	\$ -	0%	100%	0%	0%
New Debt Issue - SRF Loan	\$ -	\$ -	\$ -	\$ -	\$ -	0%	100%	0%	0%
New Debt Issue - Revenue Bond	\$ -	\$ -	\$ -	\$ -	\$ -	0%	100%	0%	0%
Total Debt Service Payments	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
Capital Expenditures									
Rate Funded Capital Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	0%	98%	0%	2%
TOTAL REVENUE REQUIREMENTS	\$ 19,172,890	\$ 4,060,481	\$ 11,954,109	\$ 2,928,358	\$ 229,942	21%	62%	15%	1%
Less: Non-Rate Revenues									
Water Permit	\$ (20,800)	\$ -	\$ -	\$ (20,551)	\$ (249)	0%	0%	99%	1%
Penalty/Late Fees	\$ (348,500)	\$ -	\$ -	\$ (344,320)	\$ (4,180)	0%	0%	99%	1%
Plan Check Fees	\$ (26,000)	\$ -	\$ -	\$ (25,688)	\$ (312)	0%	0%	99%	1%
Water Service Fees	\$ (624,200)	\$ -	\$ -	\$ (616,714)	\$ (7,486)	0%	0%	99%	1%
Meter Installation Fees	\$ (57,200)	\$ -	\$ -	\$ (56,514)	\$ (686)	0%	0%	99%	1%
Service Call Fees	\$ (416,200)	\$ -	\$ -	\$ (411,208)	\$ (4,992)	0%	0%	99%	1%
Standby Fees	\$ (93,600)	\$ -	\$ -	\$ (92,477)	\$ (1,123)	0%	0%	99%	1%
Reimb-Other (4)	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
Connection Fees	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
WATER SOURCE FEES	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
PASS THROUGH (5)	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
MISCELLANEOUS REVENUE	\$ -	\$ -	\$ -	\$ -	\$ -	0%	0%	0%	0%
INTEREST INCOME (6)	\$ (108,784)	\$ (23,039)	\$ (67,826)	\$ (16,615)	\$ (1,305)	21%	62%	15%	1%
INTEREST INCOME (6)	\$ -	\$ -	\$ -	\$ -	\$ -	21%	62%	15%	1%
Revenue from Property Sale (7)	\$ -	\$ -	\$ -	\$ -	\$ -	21%	62%	15%	1%
NET REVENUE REQUIREMENTS	\$ 17,477,606	\$ 4,037,442	\$ 11,886,283	\$ 1,344,270	\$ 209,611				
<i>Allocation of Revenue Requirements</i>	<i>100.0%</i>	<i>23.1%</i>	<i>68.0%</i>	<i>7.7%</i>	<i>1.2%</i>				

TABLE 21

Classification of Expenses, continued					
Adjustments to Classification of Expenses					
Adjustment to Current Rate Level:	Total	(COM)	(CAP)	(CA)	(FP)
FY 2016/17 Target Rate Rev. After Rate Increases	\$18,122,889				
Projected Rate Revenue at Current Rates	\$18,122,889				
FY 2016/17 Projected Rate Increase	0.0%				
Adjusted Net Revenue Req'ts	\$ 18,122,889	\$ 4,186,507	\$ 12,325,131	\$ 1,393,901	\$ 217,350
<i>Percent of Revenue</i>		<i>23.1%</i>	<i>68.0%</i>	<i>7.7%</i>	<i>1.2%</i>

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis

TABLE 22

Development of the BASE CAPACITY Allocation Factor				
Customer Class	FY 2013/14 Volume (hcf) ¹	% Adjustment for Conservation ²	Estimated Volume Adjusted for Conservation	Percent of Total Volume
<i>Treated Water:</i>				
Single Family Residential	5,920,728	28%	4,262,924.16	65.1%
Multi-Family Residential	828,615	28%	596,603	9.1%
Commercial	964,394	28%	694,364	10.6%
Irrigation	97,773	28%	70,397	1.1%
Municipal Irrigation	441,482	28%	317,867	4.9%
Fire	-	28%	-	0.0%
Other	841,648	28%	605,987	9.3%
Total: Recurring Consumption	9,094,640	--	6,548,141	100%
<i>Other Non-Recurring Consumption</i>				
Commercial Flow Meter	51,619	28%	37,166	0.6%
Municipal Flow Meter	3,414	28%	2,458	0.0%
Intertie	134,101	28%	96,553	1.4%
Total Non-Recurring Consumption	189,134	--	136,176	2.0%

1. Consumption data is based on the City of Victorville's FY 2013/14 customer data. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the State Water Resources Control Board.

Commodity Related Costs: These costs are associated with the total consumption (flow) of water over a specified period of time (e.g. annual).

TABLE 23

Development of the CAPACITY (MAX MONTH) Allocation Factors				
Customer Class	Average Monthly Use (hcf)	Peak Monthly Use ¹ (hcf)	Peak Month Factor	Max Month Capacity Factor
<i>Treated Water:</i>				
Single Family Residential	493,394	725,081	1.47	64.0%
Multi-Family Residential	69,051	94,792	1.37	8.4%
Commercial	80,366	114,114	1.42	10.1%
Irrigation	8,148	15,123	1.86	1.3%
Municipal Irrigation	36,790	74,758	2.03	6.6%
Fire	0	0	0.00	0.0%
Other	70,137	109,836	1.57	9.7%
Total: Recurring Consumption	757,887	1,133,704	1.50	100%
<i>Other Non-Recurring Consumption</i>				
Commercial Flow Meter	4,302	9,240	2.15	0.7%
Municipal Flow Meter	285	616	2.17	0.0%
Intertie	11,175	129,962	11.63	10.2%
Total Non-Recurring Consumption	15,761	139,818	8.87	11.0%

1. Based on peak monthly data (peak day data not available).

Capacity Related Costs: Costs associated with the maximum demand required at one point in time or the maximum size of facilities required to meet this demand.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis

TABLE 24

Development of the Customer Allocation Factor		
Customer Class	Number of Meters ¹	Percent of Total
<i>Treated Water:</i>		
Single Family Residential	32,862	93.61%
Multi-Family Residential	596	1.70%
Commercial	781	2.22%
Irrigation	58	0.17%
Municipal Irrigation	200	0.57%
Fire ²	325	0.93%
Other ³	282	0.80%
Total: Recurring Consumption	35,104	100.00%
<i>Other Non-Recurring Consumption⁴</i>		
Commercial Flow Meter	36	0.10%
Municipal Flow Meter	19	0.05%
Intertie ⁵	3	0.01%
Total: Non-Recurring Meters	58	0.16%

1. Meter by Class and Size are based on June 2014 customer data. Victorville bills monthly. File: VWD14 Revenue Model Meter.xls.
2. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)
3. Other customers consists primarily of governmental customers (the City, special districts, other agencies) and churches.
4. Commercial and Municipal Flow meters and Intertie connections are excluded from allocations of meter counts.
5. Intertie meter count set to 3 as it is the most meters billed at any point during FY 2013/14 (for September 2013).

Customer Related Costs : Costs associated with having a customer on the water system. These costs vary with the addition or deletion of customers on the system. Examples: Meter-reading, Postage and billing.

TABLE 25

Development of the Water Production Allocation Factor - Step 1			
Current Water Production Estimates ¹	Amount (AF)	Amount (ccf)	Amt./User/ Month (hcf)
Free Production Allowance ²	15,572	6,783,163	16.08
Total Production ³	21,476	9,354,946	22.17

TABLE 26

Development of the Water Production Allocation Factor - Step 2	Free Production Allowance	Additional Supply Required	Total
Estimated Total Production (AF)	15,572	5,904	21,476
Estimated Total Production (ccf)	6,783,163	2,571,782	9,354,946
Water Production Allocation Factor	73%	27%	100%

1. Provided via teleconference with District Staff on 8/3/2015.
2. Free Production Allowance is established annually by the court.
3. Updated total production amount was provided by District Staff on 8/3/2015.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 27

Free Production Allowance Analysis	
Description	HCF
FY 2013-14 Production ¹	10,435,697
Free Production Allowance	<u>6,783,163</u>
Excess Production	3,652,534
Conservation Equivalent ²	35%

1. Per District's Production Data history.

2. If conservation exceeds 35%, this analysis will no longer accurately assess the marginal cost of production as no groundwater replenishment will be required.

TABLE 28

Development of the Marginal Cost of Groundwater Replenishment ¹			
Fiscal Year	Description	Acre Foot Cost	HCF Cost
2015-16	Mojave Basin Area Watermaster	\$484	\$1.111
2016-17	Mojave Basin Area Watermaster	\$522	\$1.198

TABLE 29

Development of the Marginal Cost Of Purchased Water ²			
Fiscal Year	Description	Acre Foot Cost	HCF Cost
2015-16	Mojave Basin Area Watermaster	\$125	\$0.287

TABLE 30

Development of the Marginal Cost Of Utilities-Production Power ³		
Fiscal Year	Description	Net Change
2015-16	Budget Adjustment Utilities-Production Power ⁴	\$130,500
2015-16	Consumption Change	<u>2,599,457</u>
2015-16	Per HCF Cost	\$0.050

1. Acre Foot Costs from the March 30, 2015 Mojave Basin Area Watermaster Memorandum

Re: Adoption of Watermaster's Administrative Budget and Assessment Rates for Water Year 2015-16.

2. Per Acre Foot Cost is \$125 and represent delivery costs, per District Staff.

3. Net change in budget figure from VWD Conservation Adjustments.xlsx

4. Per VWD Conservation Adjustments.xlsx file provided 11/23/2015.

TABLE 31

OBJECT	DESCRIPTION	CPI Factor	2016	2017	2018	2019	2020	2021
53050	Groundwater Replenishment	8	\$1.111	\$1.198	\$1.294	\$1.398	\$1.510	\$1.630
53030	Purchased Water	7	\$0.287	\$0.306	\$0.325	\$0.347	\$0.369	\$0.393
52050	Utilities-Production Power	6	\$0.050	\$0.053	\$0.056	\$0.058	\$0.061	\$0.065
	Marginal Cost Per HCF - Production		\$1.448	\$1.557	\$1.675	\$1.803	\$1.940	\$2.088
	Adjustment for Non-revenued Water (System Loss)	12.3%	\$0.18	\$0.192	\$0.207	\$0.222	\$0.239	\$0.258
	Marginal Cost Per HCF - Consumption		\$1.627	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

ALLOCATION OF WATER REVENUE REQUIREMENTS:

Fixed vs. Variable Split, Five Year Transition:

TABLE 32

Fixed-Variable %'s for Five-Year Period	COSA Split FY 2016/17	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Fixed	77%	37%	36%	35%	34%	33%
Variable	23%	63%	64%	65%	66%	67%
Total	100%	100%	100%	100%	100%	100%

TABLE 33

Classification Components	Cost-of-Service Split	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Commodity-Related Costs	23%	63%	64%	65%	66%	67%
Capacity-Related Costs	68%	32%	31%	31%	30%	29%
Customer-Related Costs	8%	4%	4%	3%	3%	3%
Fire Protection-Related Costs	1%	1%	1%	1%	1%	1%
Net Revenue Requirement	100%	100%	100%	100%	100%	100%

TABLE 34

Allocation of Target Rate Revenue - FY 2016/17 thru FY 2020/21:

Classification Components	Cost-of-Service Split	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
Commodity-Related Costs	\$ 4,186,507	\$ 11,451,774	\$ 12,397,256	\$ 13,421,443	\$ 14,530,932	\$ 15,732,875
Capacity-Related Costs	\$ 12,325,131	\$ 5,798,040	\$ 6,056,565	\$ 6,320,690	\$ 6,589,746	\$ 6,737,692
Customer-Related Costs	\$ 1,393,901	\$ 655,725	\$ 684,962	\$ 714,833	\$ 745,262	\$ 761,994
Fire Protection-Related Costs	\$ 217,350	\$ 217,350	\$ 232,320	\$ 248,321	\$ 265,424	\$ 282,013
Target Rate Revenue	\$ 18,122,889	18,122,889	19,371,103	20,705,287	22,131,364	23,514,574

TABLE 35

Meter Equivalency Factors Used in Fixed Charge Calculation:

Meter Size	Standard Meters		Fire Service Meters	
	Meter Capacity (gpm) ¹	Equivalency to 3/4-inch	Meter Capacity (gpm)	Equivalency to 3/4-inch
	<i>Displacement</i>		<i>Displacement¹</i>	
3/4 inch	30	1.00	30	1.00
1 inch	50	1.67	50	1.67
1.5 inch	100	3.33	100	3.33
2 inch	160	5.33	160	5.33
	<i>Compound Type Class I</i>		<i>Fire Service Type I & II²</i>	
3 inch	320	10.67	350	11.67
4 inch	500	16.67	700	23.33
6 inch	1,000	33.33	1,600	53.33
	<i>Turbine Class II</i>			
8 inch	2,800	93.33	2,800	93.33
10 inch	4,200	140.00	4,400	146.67

1. Per AWWA M-1 Table VI.2-5.

2. Capacity factors are for Fire Service Type I and II meters, from AWWA M-6 Table 5-3.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 36
Allocation of Net Revenue Requirements - FY 2016/17

Net Revenue Requirements (37% Fixed / 63% Variable)						
Customer Classes	Classification Components				Cost of Service Net Rev. Reqts	% of COS Net Revenue Reqts
	Commodity-Related Costs	Capacity-Related Costs	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 7,455,253	\$ 3,708,242	\$ 613,845	\$ -	\$ 11,777,340	65.0%
Multi-Family Residential	\$ 1,043,374	\$ 484,790	\$ 11,133	\$ -	\$ 1,539,297	8.5%
Commercial	\$ 1,214,344	\$ 583,607	\$ 14,589	\$ -	\$ 1,812,540	10.0%
Irrigation	\$ 123,114	\$ 77,343	\$ 1,083	\$ -	\$ 201,540	1.1%
Municipal Irrigation	\$ 555,905	\$ 382,331	\$ 3,736	\$ -	\$ 941,971	5.2%
Fire	\$ -	\$ -	\$ 6,071	\$ 217,350	\$ 223,420	1.2%
Other	\$ 1,059,785	\$ 561,728	\$ 5,268	\$ -	\$ 1,626,781	9.0%
Total Net Revenue Requirement	\$ 11,451,774	\$ 5,798,040	\$ 655,725	\$ 217,350	\$ 18,122,889	100%

TABLE 37
CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2016/17

Number of Meters by Class and Size ¹	FY 2016/17									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Single Family Residential	31,493	1,369	-	-	-	-	-	-	-	32,862
Multi-Family Residential	122	109	154	113	35	17	27	17	2	596
Commercial	223	155	149	198	23	15	2	12	4	781
Irrigation	9	5	9	25	6	4	-	-	-	58
Municipal Irrigation	20	25	86	53	3	6	4	3	-	200
Other	74	37	39	65	26	21	5	13	2	282
Total Meters/Accounts	31,941	1,700	437	454	93	63	38	45	8	34,779
<i>Hydraulic Capacity Factor²</i>	<i>1.00</i>	<i>1.67</i>	<i>3.33</i>	<i>5.33</i>	<i>10.67</i>	<i>16.67</i>	<i>33.33</i>	<i>93.33</i>	<i>140.00</i>	
Total Equivalent Meters	31,941	2,833	1,457	2,421	992	1,050	1,267	4,200	1,120	47,281
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	
Capacity Costs (\$/Acct/month) ⁴	\$10.22	\$17.03	\$34.06	\$54.50	\$109.00	\$170.32	\$340.64	\$953.78	\$1,430.68	
Total Monthly Meter Charge	\$11.78	\$18.59	\$35.62	\$56.06	\$110.56	\$171.88	\$342.19	\$955.34	\$1,432.23	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 649,654									
Capacity Costs	5,798,040									
Total Fixed Meter Costs	\$ 6,447,694									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ 596,642	\$ 31,755	\$ 8,163	\$ 8,480	\$ 1,737	\$ 1,177	\$ 710	\$ 841	\$ 149	\$ 649,654
Capacity Charges	3,916,905	347,450	178,630	296,927	121,648	128,761	155,331	515,043	137,345	5,798,040
Total Revenue from Monthly Meter Charges	\$ 4,513,547	\$ 379,205	\$ 186,793	\$ 305,407	\$ 123,386	\$ 129,938	\$ 156,040	\$ 515,884	\$ 137,494	\$ 6,447,694

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 38

CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2016/17

Net Revenue Requirements (37% Fixed / 63% Variable)

Number of Meters by Class and Size ⁵	FY 2016/17									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Fire	-	-	-	-	6	31	79	170	39	325
Total Meters/Accounts	-	-	-	-	6	31	79	170	39	325
Hydraulic Capacity Factor ²	1.00	1.67	3.33	5.33	11.67	23.33	53.33	93.33	146.67	
Total Equivalent Meters	-	-	-	-	70	723	4,213	15,867	5,720	26,593
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56	\$1.56
Capacity Costs (\$/Acct/month) ⁴	\$0.68	\$1.14	\$2.27	\$3.63	7.95	15.89	36.32	63.57	99.89	
Total Monthly Meter Charge	\$2.24	\$2.69	\$3.83	\$5.19	\$9.50	\$17.45	\$37.88	\$65.13	\$101.45	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 6,071									
Capacity & Fire Protection Costs	217,350									
Total Fixed Meter Costs	\$ 223,420									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ -	\$ -	\$ -	\$ -	\$ 112	\$ 579	\$ 1,476	\$ 3,176	\$ 729	\$ 6,071
Capacity Charges	-	-	-	-	572	5,912	34,436	129,680	46,750	217,350
Total Revenue from Monthly Meter Charges	\$ -	\$ -	\$ -	\$ -	\$ 684	\$ 6,491	\$ 35,912	\$ 132,855	\$ 47,479	\$ 223,420

1. Number of meters by Class and Size are based on June 2014 customer data. File: VWD14 Revenue Model Meter.xls. Excludes Municipal Well customer, Flow meters and Intertie Connections.

2. Source: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table VI.2-5.

Assumes displacement meters for 3/4 - 2 inch meters, compound meters for 3 - 6 inch and turbine class II meters for 8 and 10 inch meters.

3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.

4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

5. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 39
Allocation of Net Revenue Requirements - FY 2017/18

Net Revenue Requirements (36% Fixed / 64% Variable)						
Customer Classes	Classification Components				Cost of Service Net Rev. Reqts	% of COS Net Revenue Reqts
	Commodity-Related Costs	Capacity-Related Costs	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 8,070,774	\$ 3,873,586	\$ 641,216	\$ -	\$ 12,585,575	65.0%
Multi-Family Residential	\$ 1,129,517	\$ 506,405	\$ 11,629	\$ -	\$ 1,647,552	8.5%
Commercial	\$ 1,314,603	\$ 609,629	\$ 15,239	\$ -	\$ 1,939,471	10.0%
Irrigation	\$ 133,278	\$ 80,791	\$ 1,132	\$ -	\$ 215,201	1.1%
Municipal Irrigation	\$ 601,801	\$ 399,378	\$ 3,902	\$ -	\$ 1,005,082	5.2%
Fire	\$ -	\$ -	\$ 6,342	\$ 232,320	\$ 238,661	1.2%
Other	\$ 1,147,283	\$ 586,775	\$ 5,502	\$ -	\$ 1,739,560	9.0%
Total Net Revenue Requirement	\$ 12,397,256	\$ 6,056,565	\$ 684,962	\$ 232,320	\$ 19,371,103	100%

TABLE 40
CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2017/18

Number of Meters by Class and Size ¹	FY 2017/18									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Single Family Residential	31,682	1,377	-	-	-	-	-	-	-	33,059
Multi-Family Residential	123	110	155	114	35	17	27	17	2	600
Commercial	224	156	150	199	23	15	2	12	4	786
Irrigation	9	5	9	25	6	4	-	-	-	58
Municipal Irrigation	20	25	87	53	3	6	4	3	-	201
Other	74	37	39	65	26	21	5	13	2	284
Total Meters/Accounts	32,133	1,710	440	457	94	63	38	45	8	34,988
<i>Hydraulic Capacity Factor²</i>	1.00	1.67	3.33	5.33	10.67	16.67	33.33	93.33	140.00	
Total Equivalent Meters	32,133	2,850	1,465	2,436	998	1,056	1,274	4,225	1,127	47,565
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	
Capacity Costs (\$/Acct/month) ⁴	\$10.61	\$17.69	\$35.37	\$56.59	\$113.19	\$176.85	\$353.70	\$990.37	\$1,485.55	
Total Monthly Meter Charge	\$12.23	\$19.30	\$36.99	\$58.21	\$114.80	\$178.47	\$355.32	\$991.99	\$1,487.17	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 678,621									
Capacity Costs	6,056,565									
Total Fixed Meter Costs	\$ 6,735,186									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ 623,245	\$ 33,171	\$ 8,527	\$ 8,859	\$ 1,815	\$ 1,229	\$ 741	\$ 878	\$ 156	\$ 678,621
Capacity Charges	4,091,553	362,942	186,595	310,166	127,072	134,502	162,256	538,008	143,469	6,056,565
Total Revenue from Monthly Meter Charges	\$ 4,714,798	\$ 396,113	\$ 195,122	\$ 319,025	\$ 128,887	\$ 135,731	\$ 162,998	\$ 538,886	\$ 143,625	\$ 6,735,186

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 41

CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2017/18

Net Revenue Requirements (36% Fixed / 64% Variable)

Number of Meters by Class and Size ⁵	FY 2017/18									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Fire	-	-	-	-	6	31	79	171	39	327
Total Meters/Accounts	-	-	-	-	6	31	79	171	39	327
Hydraulic Capacity Factor ²	1.00	1.67	3.33	5.33	11.67	23.33	53.33	93.33	146.67	
Total Equivalent Meters	-	-	-	-	70	728	4,239	15,962	5,754	26,753
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	\$1.62	
Capacity Costs (\$/Acct/month) ⁴	\$0.72	\$1.21	\$2.41	\$3.86	8.44	16.89	38.60	67.54	106.14	
Total Monthly Meter Charge	\$2.34	\$2.82	\$4.03	\$5.48	\$10.06	\$18.50	\$40.21	\$69.16	\$107.75	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 6,342									
Capacity & Fire Protection Costs	232,320									
Total Fixed Meter Costs	\$ 238,661									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ -	\$ -	\$ -	\$ -	\$ 117	\$ 605	\$ 1,541	\$ 3,317	\$ 761	\$ 6,342
Capacity Charges	-	-	-	-	612	6,319	36,808	138,611	49,970	232,320
Total Revenue from Monthly Meter Charges	\$ -	\$ -	\$ -	\$ -	\$ 729	\$ 6,924	\$ 38,349	\$ 141,928	\$ 50,731	\$ 238,661

1. Number of meters by Class and Size are based on June 2014 customer data. File: VWD14 Revenue Model Meter.xls. Excludes Municipal Well customer, Flow meters and Intertie Connections.

2. Source: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table VI.2-5.

Assumes displacement meters for 3/4 - 2 inch meters, compound meters for 3 - 6 inch and turbine class II meters for 8 and 10 inch meters.

3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.

4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

5. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 42
Allocation of Net Revenue Requirements - FY 2018/19

Net Revenue Requirements (35% Fixed / 65% Variable)						
Customer Classes	Classification Components				Cost of Service Net Rev. Reqts	% of COS Net Revenue Reqts
	Commodity-Related Costs	Capacity-Related Costs	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 8,737,533	\$ 4,042,512	\$ 669,179	\$ -	\$ 13,449,224	65.0%
Multi-Family Residential	\$ 1,222,831	\$ 528,490	\$ 12,137	\$ -	\$ 1,763,457	8.5%
Commercial	\$ 1,423,207	\$ 636,215	\$ 15,904	\$ -	\$ 2,075,326	10.0%
Irrigation	\$ 144,289	\$ 84,315	\$ 1,181	\$ -	\$ 229,784	1.1%
Municipal Irrigation	\$ 651,518	\$ 416,795	\$ 4,073	\$ -	\$ 1,072,386	5.2%
Fire	\$ -	\$ -	\$ 6,618	\$ 248,321	\$ 254,939	1.2%
Other	\$ 1,242,065	\$ 612,364	\$ 5,742	\$ -	\$ 1,860,171	9.0%
Total Net Revenue Requirement	\$ 13,421,443	\$ 6,320,690	\$ 714,833	\$ 248,321	\$ 20,705,287	100%

TABLE 43
CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2018/19 Net Revenue Requirements (35% Fixed / 65% Variable)

Number of Meters by Class and Size ¹	FY 2018/19									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Single Family Residential	31,872	1,385	-	-	-	-	-	-	-	33,258
Multi-Family Residential	123	110	156	114	35	17	27	17	2	603
Commercial	226	157	151	200	23	15	2	12	4	790
Irrigation	9	5	9	25	6	4	-	-	-	59
Municipal Irrigation	20	25	87	54	3	6	4	3	-	202
Other	75	37	39	66	26	21	5	13	2	285
Total Meters/Accounts	32,325	1,720	442	459	94	64	38	46	8	35,198
<i>Hydraulic Capacity Factor²</i>	<i>1.00</i>	<i>1.67</i>	<i>3.33</i>	<i>5.33</i>	<i>10.67</i>	<i>16.67</i>	<i>33.33</i>	<i>93.33</i>	<i>140.00</i>	
Total Equivalent Meters	32,325	2,867	1,474	2,450	1,004	1,063	1,282	4,251	1,133	47,850
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	
Capacity Costs (\$/Acct/month) ⁴	\$11.01	\$18.35	\$36.69	\$58.71	117.42	183.46	366.93	1,027.39	1,541.09	
Total Monthly Meter Charge	\$12.68	\$20.02	\$38.37	\$60.39	\$119.09	\$185.14	\$368.60	\$1,029.07	\$1,542.77	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 708,215									
Capacity Costs	6,320,690									
Total Fixed Meter Costs	\$ 7,028,905									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ 650,424	\$ 34,618	\$ 8,899	\$ 9,245	\$ 1,894	\$ 1,283	\$ 774	\$ 916	\$ 163	\$ 708,215
Capacity Charges	4,269,985	378,770	194,732	323,692	132,614	140,368	169,332	561,471	149,726	6,320,690
Total Revenue from Monthly Meter Charges	\$ 4,920,409	\$ 413,388	\$ 203,631	\$ 332,937	\$ 134,508	\$ 141,651	\$ 170,106	\$ 562,387	\$ 149,888	\$ 7,028,905

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 44

CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2018/19

Net Revenue Requirements (35% Fixed / 65% Variable)

Number of Meters by Class and Size ⁵	FY 2018/19									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Fire	-	-	-	-	6	31	80	172	39	329
Total Meters/Accounts	-	-	-	-	6	31	80	172	39	329
Hydraulic Capacity Factor ²	1.00	1.67	3.33	5.33	11.67	23.33	53.33	93.33	146.67	
Total Equivalent Meters	-	-	-	-	71	732	4,264	16,058	5,789	26,913
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68	\$1.68
Capacity Costs (\$/Acct/month) ⁴	\$0.77	\$1.28	\$2.56	\$4.10	8.97	17.94	41.01	71.76	112.77	
Total Monthly Meter Charge	\$2.45	\$2.96	\$4.24	\$5.78	\$10.65	\$19.62	\$42.68	\$73.44	\$114.45	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 6,618									
Capacity & Fire Protection Costs	248,321									
Total Fixed Meter Costs	\$ 254,939									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ -	\$ -	\$ -	\$ -	\$ 122	\$ 631	\$ 1,609	\$ 3,462	\$ 794	\$ 6,618
Capacity Charges	-	-	-	-	654	6,754	39,343	148,158	53,412	248,321
Total Revenue from Monthly Meter Charges	\$ -	\$ -	\$ -	\$ -	\$ 776	\$ 7,386	\$ 40,952	\$ 151,620	\$ 54,206	\$ 254,939

1. Number of meters by Class and Size are based on June 2014 customer data. File: VWD14 Revenue Model Meter.xls. Excludes Municipal Well customer, Flow meters and Intertie Connections.

2. Source: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table VI.2-5.

Assumes displacement meters for 3/4 - 2 inch meters, compound meters for 3 - 6 inch and turbine class II meters for 8 and 10 inch meters.

3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.

4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

5. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 45
Allocation of Net Revenue Requirements - FY 2019/20

Net Revenue Requirements (34% Fixed / 66% Variable)						
Customer Classes	Classification Components				Cost of Service Net Rev. Reqts	% of COS Net Revenue Reqts
	Commodity-Related Costs	Capacity-Related Costs	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 9,459,824	\$ 4,214,592	\$ 697,664	\$ -	\$ 14,372,080	64.9%
Multi-Family Residential	\$ 1,323,917	\$ 550,986	\$ 12,653	\$ -	\$ 1,887,556	8.5%
Commercial	\$ 1,540,857	\$ 663,297	\$ 16,581	\$ -	\$ 2,220,735	10.0%
Irrigation	\$ 156,217	\$ 87,904	\$ 1,231	\$ -	\$ 245,352	1.1%
Municipal Irrigation	\$ 705,376	\$ 434,537	\$ 4,246	\$ -	\$ 1,144,159	5.2%
Fire	\$ -	\$ -	\$ 6,900	\$ 265,424	\$ 272,323	1.2%
Other	\$ 1,344,740	\$ 638,431	\$ 5,987	\$ -	\$ 1,989,158	9.0%
Total Net Revenue Requirement	\$ 14,530,932	\$ 6,589,746	\$ 745,262	\$ 265,424	\$ 22,131,364	100%

TABLE 46
CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2019/20

Number of Meters by Class and Size ¹	FY 2019/20									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Single Family Residential	32,063	1,394	-	-	-	-	-	-	-	33,457
Multi-Family Residential	124	111	157	115	36	17	27	17	2	607
Commercial	227	158	152	202	23	15	2	12	4	795
Irrigation	9	5	9	25	6	4	-	-	-	59
Municipal Irrigation	20	25	88	54	3	6	4	3	-	204
Other	75	38	40	66	26	21	5	13	2	287
Total Meters/Accounts	32,519	1,731	445	462	95	64	39	46	8	35,409
<i>Hydraulic Capacity Factor²</i>	1.00	1.67	3.33	5.33	10.67	16.67	33.33	93.33	140.00	
Total Equivalent Meters	32,519	2,885	1,483	2,465	1,010	1,069	1,290	4,276	1,140	48,137
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	
Capacity Costs (\$/Acct/month) ⁴	\$11.41	\$19.01	\$38.03	\$60.84	\$121.68	\$190.13	\$380.26	\$1,064.74	\$1,597.11	
Total Monthly Meter Charge	\$13.15	\$20.75	\$39.76	\$62.58	\$123.42	\$191.87	\$382.00	\$1,066.48	\$1,598.85	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 738,362									
Capacity Costs	6,589,746									
Total Fixed Meter Costs	\$ 7,328,108									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ 678,111	\$ 36,091	\$ 9,278	\$ 9,638	\$ 1,974	\$ 1,337	\$ 807	\$ 955	\$ 170	\$ 738,362
Capacity Charges	4,451,748	394,893	203,022	337,471	138,259	146,343	176,541	585,371	156,099	6,589,746
Total Revenue from Monthly Meter Charges	\$ 5,129,859	\$ 430,984	\$ 212,299	\$ 347,110	\$ 140,233	\$ 147,680	\$ 177,347	\$ 586,326	\$ 156,269	\$ 7,328,108

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 47

CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2019/20

Net Revenue Requirements (34% Fixed / 66% Variable)

Number of Meters by Class and Size ⁵	FY 2019/20									Total						
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch							
Fire	-	-	-	-	6	32	80	173	40	331						
Total Meters/Accounts	-	-	-	-	6	32	80	173	40	331						
Hydraulic Capacity Factor ²	1.00	1.67	3.33	5.33	11.67	23.33	53.33	93.33	146.67							
Total Equivalent Meters	-	-	-	-	71	736	4,290	16,154	5,824	27,075						
Monthly Fixed Service Charges																
Customer Costs (\$/Acct/month) ³	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74	\$1.74							
Capacity Costs (\$/Acct/month) ⁴	\$0.82	\$1.36	\$2.72	\$4.36	9.53	19.06	43.57	76.25	119.82							
Total Monthly Meter Charge	\$2.55	\$3.10	\$4.46	\$6.09	\$11.27	\$20.80	\$45.31	\$77.99	\$121.56							
Annual Fixed Costs Allocated to Monthly Meter Charges																
Customer Costs	\$	6,900														
Capacity & Fire Protection Costs		265,424														
Total Fixed Meter Costs	\$	272,323														
Annual Revenue from Monthly Meter Charges																
Customer Charges	\$	-	\$	-	\$	127	\$	658	\$	1,677	\$	3,609	\$	828	\$	6,900
Capacity Charges		-		-		699		7,219		42,053		158,363		57,090		265,424
Total Revenue from Monthly Meter Charges	\$	-	\$	-	\$	826	\$	7,878	\$	43,730	\$	161,972	\$	57,918	\$	272,323

1. Number of meters by Class and Size are based on June 2014 customer data. File: VWD14 Revenue Model Meter.xls. Excludes Municipal Well customer, Flow meters and Intertie Connections.

2. Source: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table VI.2-5.

Assumes displacement meters for 3/4 - 2 inch meters, compound meters for 3 - 6 inch and turbine class II meters for 8 and 10 inch meters.

3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.

4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

5. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 48
Allocation of Net Revenue Requirements - FY 2020/21

Net Revenue Requirements (33% Fixed / 67% Variable)						
Customer Classes	Classification Components				Cost of Service Net Rev. Reqts	% of COS Net Revenue Reqts
	Commodity-Related Costs	Capacity-Related Costs	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 10,242,305	\$ 4,309,214	\$ 713,327	\$ -	\$ 15,264,846	64.9%
Multi-Family Residential	\$ 1,433,426	\$ 563,356	\$ 12,937	\$ -	\$ 2,009,720	8.5%
Commercial	\$ 1,668,311	\$ 678,189	\$ 16,953	\$ -	\$ 2,363,453	10.1%
Irrigation	\$ 169,138	\$ 89,877	\$ 1,259	\$ -	\$ 260,274	1.1%
Municipal Irrigation	\$ 763,723	\$ 444,293	\$ 4,341	\$ -	\$ 1,212,357	5.2%
Fire	\$ -	\$ -	\$ 7,055	\$ 282,013	\$ 289,067	1.2%
Other	\$ 1,455,972	\$ 652,764	\$ 6,121	\$ -	\$ 2,114,858	9.0%
Total Net Revenue Requirement	\$ 15,732,875	\$ 6,737,692	\$ 761,994	\$ 282,013	\$ 23,514,574	100%

TABLE 49
CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2020/21

Number of Meters by Class and Size ¹	FY 2020/21									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Single Family Residential	32,256	1,402	-	-	-	-	-	-	-	33,658
Multi-Family Residential	125	112	158	116	36	17	28	17	2	610
Commercial	228	159	153	203	24	15	2	12	4	800
Irrigation	9	5	9	26	6	4	-	-	-	59
Municipal Irrigation	20	26	88	54	3	6	4	3	-	205
Other	76	38	40	67	27	22	5	13	2	289
Total Meters/Accounts	32,715	1,741	448	465	95	65	39	46	8	35,621
<i>Hydraulic Capacity Factor²</i>	<i>1.00</i>	<i>1.67</i>	<i>3.33</i>	<i>5.33</i>	<i>10.67</i>	<i>16.67</i>	<i>33.33</i>	<i>93.33</i>	<i>140.00</i>	
Total Equivalent Meters	32,715	2,902	1,492	2,480	1,016	1,075	1,297	4,302	1,147	48,426
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	
Capacity Costs (\$/Acct/month) ⁴	\$11.59	\$19.32	\$38.65	\$61.84	\$123.67	\$193.24	\$386.48	\$1,082.15	\$1,623.23	
Total Monthly Meter Charge	\$13.36	\$21.09	\$40.41	\$63.60	\$125.44	\$195.01	\$388.25	\$1,083.92	\$1,624.99	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 754,939									
Capacity Costs	6,737,692									
Total Fixed Meter Costs	\$ 7,492,632									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ 693,336	\$ 36,901	\$ 9,486	\$ 9,855	\$ 2,019	\$ 1,368	\$ 825	\$ 977	\$ 174	\$ 754,939
Capacity Charges	4,551,694	403,759	207,580	345,048	141,363	149,628	180,504	598,513	159,604	6,737,692
Total Revenue from Monthly Meter Charges	\$ 5,245,029	\$ 440,660	\$ 217,065	\$ 354,903	\$ 143,382	\$ 150,996	\$ 181,329	\$ 599,490	\$ 159,777	\$ 7,492,632

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 50

CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES FOR FY FY 2020/21

Net Revenue Requirements (33% Fixed / 67% Variable)

Number of Meters by Class and Size ⁵	FY 2020/21									Total
	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Fire	-	-	-	-	6	32	81	174	40	333
Total Meters/Accounts	-	-	-	-	6	32	81	174	40	333
Hydraulic Capacity Factor ²	1.00	1.67	3.33	5.33	11.67	23.33	53.33	93.33	146.67	
Total Equivalent Meters	-	-	-	-	72	741	4,315	16,251	5,859	27,237
Monthly Fixed Service Charges										
Customer Costs (\$/Acct/month) ³	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	\$1.77	
Capacity Costs (\$/Acct/month) ⁴	\$0.86	\$1.44	\$2.88	\$4.60	10.07	20.13	46.02	80.53	126.55	
Total Monthly Meter Charge	\$2.63	\$3.20	\$4.64	\$6.37	\$11.83	\$21.90	\$47.78	\$82.30	\$128.31	
Annual Fixed Costs Allocated to Monthly Meter Charges										
Customer Costs	\$ 7,055									
Capacity & Fire Protection Costs	282,013									
Total Fixed Meter Costs	\$ 289,067									
Annual Revenue from Monthly Meter Charges										
Customer Charges	\$ -	\$ -	\$ -	\$ -	\$ 130	\$ 673	\$ 1,715	\$ 3,690	\$ 847	\$ 7,055
Capacity Charges	-	-	-	-	742	7,671	44,681	168,260	60,659	282,013
Total Revenue from Monthly Meter Charges	\$ -	\$ -	\$ -	\$ -	\$ 873	\$ 8,344	\$ 46,396	\$ 171,950	\$ 61,505	\$ 289,067

1. Number of meters by Class and Size are based on June 2014 customer data. File: VWD14 Revenue Model Meter.xls. Excludes Municipal Well customer, Flow meters and Intertie Connections.

2. Source: AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table VI.2-5.

Assumes displacement meters for 3/4 - 2 inch meters, compound meters for 3 - 6 inch and turbine class II meters for 8 and 10 inch meters.

3. Customer costs are allocated to each customer by dividing the total customer costs by the total number of customers.

4. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

5. Number of fire meters by size were provided by District Staff on 8/3/2015 (file: VWD Rate Analysis 08-03-2015.xlsx.)

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 51
PROPOSED VOLUMETRIC CHARGES FOR FY 2016/17

Net Revenue Requirements (37% Fixed / 63% Variable)

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
<i>Treated Water:</i>						
Single Family Residential	32,862	4,262,924	\$ 7,455,253	41%	\$1.749	Uniform
Multi-Family Residential	596	596,603	\$ 1,043,374	6%	\$1.749	Uniform
Commercial	781	694,364	\$ 1,214,344	7%	\$1.749	Uniform
Irrigation	58	70,397	\$ 123,114	1%	\$1.749	Uniform
Municipal Irrigation	200	317,867	\$ 555,905	3%	\$1.749	Uniform
Fire	325	0	\$ -	0%	\$1.749	Uniform
Other	282	605,987	\$ 1,059,785	6%	\$1.749	Uniform
Total	35,104	6,548,141	\$ 11,451,774	63%		

TABLE 52
Net Revenue Requirements (37% Fixed / 63% Variable), continued

Calculated Rate for Non-Recurring (Commercial & Municipal Flow and Intertie) Users:

Calculated Rate for Flow Meters and Intertie Connections	Water Consumption (hcf/yr.) ²	Total Target Rev. Req't.	Average Cost Per Unit (\$/hcf)
All Treated Water	6,548,141	\$ 18,122,889	\$2.768

TABLE 53
Estimated Revenue from Flow Meters and Intertie Connections, Based on FY 2013/14 Consumption:

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Estimated Rate Revenue FY 2016/17
Commercial Flow Meter	36	37,166	\$ 102,861
Municipal Flow Meter	19	2,458	\$ 6,803
Intertie ³	3	96,553	\$ 267,223
Total	58	136,176	\$ 376,887

1. Number of meters is based on the number of customers billed a fixed and/or variable charge in June 2014, except for intertie customers. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the SWRCB.
3. Number of meters is based on September 2013 customer data, which is the most meters connected at any point during FY 2013/14.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 54
PROPOSED VOLUMETRIC CHARGES FOR FY 2017/18

Net Revenue Requirements (36% Fixed / 64% Variable)

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
<i>Treated Water:</i>						
Single Family Residential	33,059	4,288,502	\$ 8,070,774	42%	\$1.882	Uniform
Multi-Family Residential	600	600,182	\$ 1,129,517	6%	\$1.882	Uniform
Commercial	786	698,530	\$ 1,314,603	7%	\$1.882	Uniform
Irrigation	58	70,819	\$ 133,278	1%	\$1.882	Uniform
Municipal Irrigation	201	319,774	\$ 601,801	3%	\$1.882	Uniform
Fire	327	0	\$ -	0%	\$1.882	Uniform
Other	284	609,622	\$ 1,147,283	6%	\$1.882	Uniform
Total	35,315	6,587,430	\$ 12,397,256	64%		

TABLE 55

Net Revenue Requirements (36% Fixed / 64% Variable), continued

Calculated Rate for Non-Recurring (Commercial & Municipal Flow and Intertie) Users:

Calculated Rate for Flow Meters and Intertie Connections	Water Consumption (hcf/yr.) ²	Total Target Rev. Req't.	Average Cost Per Unit (\$/hcf)
All Treated Water	6,587,430	\$ 19,371,103	\$2.941

TABLE 56

Estimated Revenue from Flow Meters and Intertie Connections, Based on FY 2013/14 Consumption:

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Estimated Rate Revenue FY 2017/18
Commercial Flow Meter	36	37,166	\$ 109,290
Municipal Flow Meter	19	2,458	\$ 7,228
Intertie ³	3	96,553	\$ 283,924
Total	58	136,176	\$ 400,443

1. Number of meters is based on the number of customers billed a fixed and/or variable charge in June 2014, except for intertie customers. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the SWRCB.
3. Number of meters is based on September 2013 customer data, which is the most meters connected at any point during FY 2013/14.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 57
PROPOSED VOLUMETRIC CHARGES FOR FY 2018/19

Net Revenue Requirements (35% Fixed / 65% Variable)						
Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
<i>Treated Water:</i>						
Single Family Residential	33,258	4,314,233	\$ 8,737,533	42%	\$2.025	Uniform
Multi-Family Residential	603	603,784	\$ 1,222,831	6%	\$2.025	Uniform
Commercial	790	702,721	\$ 1,423,207	7%	\$2.025	Uniform
Irrigation	59	71,244	\$ 144,289	1%	\$2.025	Uniform
Municipal Irrigation	202	321,693	\$ 651,518	3%	\$2.025	Uniform
Fire	329	0	\$ -	0%	\$2.025	Uniform
Other	285	613,280	\$ 1,242,065	6%	\$2.025	Uniform
Total	35,527	6,626,954	\$ 13,421,443	65%		

TABLE 58
Net Revenue Requirements (35% Fixed / 65% Variable), continued

Calculated Rate for Non-Recurring (Commercial & Municipal Flow and Intertie) Users:

Calculated Rate for Flow Meters and Intertie Connections	Water Consumption (hcf/yr.) ²	Total Target Rev. Req't.	Average Cost Per Unit (\$/hcf)
All Treated Water	6,626,954	\$ 20,705,287	\$3.124

TABLE 59
Estimated Revenue from Flow Meters and Intertie Connections, Based on FY 2013/14 Consumption:

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Estimated Rate Revenue FY 2018/19
Commercial Flow Meter	36	37,166	\$ 116,121
Municipal Flow Meter	19	2,458	\$ 7,680
Intertie ³	3	96,553	\$ 301,670
Total	58	136,176	\$ 425,470

1. Number of meters is based on the number of customers billed a fixed and/or variable charge in June 2014, except for intertie customers. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the SWRCB.
3. Number of meters is based on September 2013 customer data, which is the most meters connected at any point during FY 2013/14.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 60
PROPOSED VOLUMETRIC CHARGES FOR FY 2019/20

Net Revenue Requirements (34% Fixed / 66% Variable)

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
<i>Treated Water:</i>						
Single Family Residential	33,457	4,340,118	\$ 9,459,824	43%	\$2.180	Uniform
Multi-Family Residential	607	607,406	\$ 1,323,917	6%	\$2.180	Uniform
Commercial	795	706,937	\$ 1,540,857	7%	\$2.180	Uniform
Irrigation	59	71,671	\$ 156,217	1%	\$2.180	Uniform
Municipal Irrigation	204	323,623	\$ 705,376	3%	\$2.180	Uniform
Fire	331	0	\$ -	0%	\$2.180	Uniform
Other	287	616,960	\$ 1,344,740	6%	\$2.180	Uniform
Total	35,740	6,666,716	\$ 14,530,932	66%		

TABLE 61
Net Revenue Requirements (34% Fixed / 66% Variable), continued

Calculated Rate for Non-Recurring (Commercial & Municipal Flow and Intertie) Users:

Calculated Rate for Flow Meters and Intertie Connections	Water Consumption (hcf/yr.) ²	Total Target Rev. Req't.	Average Cost Per Unit (\$/hcf)
All Treated Water	6,666,716	\$ 22,131,364	\$3.320

TABLE 62
Estimated Revenue from Flow Meters and Intertie Connections, Based on FY 2013/14 Consumption:

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Estimated Rate Revenue FY 2019/20
Commercial Flow Meter	36	37,166	\$ 123,378
Municipal Flow Meter	19	2,458	\$ 8,160
Intertie ³	3	96,553	\$ 320,524
Total	58	136,176	\$ 452,062

1. Number of meters is based on the number of customers billed a fixed and/or variable charge in June 2014, except for intertie customers. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the SWRCB.
3. Number of meters is based on September 2013 customer data, which is the most meters connected at any point during FY 2013/14.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 63
PROPOSED VOLUMETRIC CHARGES FOR FY 2020/21

Net Revenue Requirements (33% Fixed / 67% Variable)

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
<i>Treated Water:</i>						
Single Family Residential	33,658	4,366,159	\$ 10,242,305	44%	\$2.346	Uniform
Multi-Family Residential	610	611,051	\$ 1,433,426	6%	\$2.346	Uniform
Commercial	800	711,179	\$ 1,668,311	7%	\$2.346	Uniform
Irrigation	59	72,101	\$ 169,138	1%	\$2.346	Uniform
Municipal Irrigation	205	325,565	\$ 763,723	3%	\$2.346	Uniform
Fire	333	0	\$ -	0%	\$2.346	Uniform
Other	289	620,662	\$ 1,455,972	6%	\$2.346	Uniform
Total	35,954	6,706,716	\$ 15,732,875	67%		

TABLE 64
Net Revenue Requirements (33% Fixed / 67% Variable), continued

Calculated Rate for Non-Recurring (Commercial & Municipal Flow and Intertie) Users:

Calculated Rate for Flow Meters and Intertie Connections	Water Consumption (hcf/yr.) ²	Total Target Rev. Req't.	Average Cost Per Unit (\$/hcf)
All Treated Water	6,706,716	\$ 23,514,574	\$3.506

TABLE 65
Estimated Revenue from Flow Meters and Intertie Connections, Based on FY 2013/14 Consumption:

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr.) ²	Estimated Rate Revenue FY 2020/21
Commercial Flow Meter	36	37,166	\$ 130,307
Municipal Flow Meter	19	2,458	\$ 8,618
Intertie ³	3	96,553	\$ 338,526
Total	58	136,176	\$ 477,452

1. Number of meters is based on the number of customers billed a fixed and/or variable charge in June 2014, except for intertie customers. File: VWD14 Revenue Model Meter.xls.
2. Assumes the District will meet the 28% conservation mandate from the State of CA, as noted in the draft usage analysis released 4/28/2015 by the SWRCB.
3. Number of meters is based on September 2013 customer data, which is the most meters connected at any point during FY 2013/14.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 66
Projected Revenue Check from Rates Using Marginal Water Cost, FY 2016/17:

Conservation to FY 2013/14 Level	Fiscal Year 2016/17 Estimates									
	Production	Net Revenue Requirement	Marginal Water Cost Adjustment	Total Revenue Requirement	Consumption	Fixed Revenue	Variable Revenue	Total Revenue	Excess/ (Shortfall)	Percent of Total Revenue
-10%	11,479,267	\$ 18,122,889	\$ 6,173,486	\$ 24,296,375	10,004,104	\$ 6,671,115	\$ 17,495,766	\$ 24,166,881	\$ (129,494)	-0.5%
0%	10,435,697	\$ 18,122,889	\$ 4,548,884	\$ 22,671,773	9,094,640	\$ 6,671,115	\$ 15,905,242	\$ 22,576,356	\$ (95,417)	-0.4%
10%	9,392,127	\$ 18,122,889	\$ 2,924,283	\$ 21,047,172	8,185,176	\$ 6,671,115	\$ 14,314,717	\$ 20,985,832	\$ (61,339)	-0.3%
20%	8,348,558	\$ 18,122,889	\$ 1,299,681	\$ 19,422,570	7,275,712	\$ 6,671,115	\$ 12,724,193	\$ 19,395,308	\$ (27,262)	-0.1%
28%	7,513,702	\$ 18,122,889	\$ -	\$ 18,122,889	6,548,141	\$ 6,671,115	\$ 11,451,774	\$ 18,122,889	\$ -	0.0%
35%	6,783,203	\$ 18,122,889	\$ (1,137,221)	\$ 16,985,668	5,911,516	\$ 6,671,115	\$ 10,338,407	\$ 17,009,522	\$ 23,854	0.1%
40%	6,261,418	\$ 18,122,889	\$ (1,163,416)	\$ 16,959,473	5,456,784	\$ 6,671,115	\$ 9,543,145	\$ 16,214,260	\$ (745,213)	-4.6%
45%	5,739,633	\$ 18,122,889	\$ (1,189,611)	\$ 16,933,278	5,002,052	\$ 6,671,115	\$ 8,747,883	\$ 15,418,998	\$ (1,514,280)	-9.8%
50%	5,217,849	\$ 18,122,889	\$ (1,215,806)	\$ 16,907,083	4,547,320	\$ 6,671,115	\$ 7,952,621	\$ 14,623,736	\$ (2,283,347)	-15.6%
55%	4,696,064	\$ 18,122,889	\$ (1,242,001)	\$ 16,880,887	4,092,588	\$ 6,671,115	\$ 7,157,359	\$ 13,828,474	\$ (3,052,414)	-22.1%
60%	4,174,279	\$ 18,122,889	\$ (1,268,196)	\$ 16,854,692	3,637,856	\$ 6,671,115	\$ 6,362,097	\$ 13,033,211	\$ (3,821,481)	-29.3%

TABLE 67
Calculation of Drought Surcharges in FY 2016/17:

Conservation to FY 2013/14 Level	Consumption	Costs to Recover	Drought Surcharge (\$/hcf)	Estimated Rate + Drought Surcharge Revenue				Total Revenue Requirement	Excess/ (Shortfall)
				Fixed Revenue	Variable Revenue	Drought Surcharge Revenue	Total Revenue		
40%	5,456,784	\$ 745,213	\$0.137	\$ 6,671,115	\$ 9,543,145	\$ 745,213	\$ 16,959,473	\$ 16,959,473	\$ -
45%	5,002,052	\$ 1,514,280	\$0.303	\$ 6,671,115	\$ 8,747,883	\$ 1,514,280	\$ 16,933,278	\$ 16,933,278	\$ -
50%	4,547,320	\$ 2,283,347	\$0.502	\$ 6,671,115	\$ 7,952,621	\$ 2,283,347	\$ 16,907,083	\$ 16,907,083	\$ -
55%	4,092,588	\$ 3,052,414	\$0.746	\$ 6,671,115	\$ 7,157,359	\$ 3,052,414	\$ 16,880,887	\$ 16,880,887	\$ -
60%	3,637,856	\$ 3,821,481	\$1.050	\$ 6,671,115	\$ 6,362,097	\$ 3,821,481	\$ 16,854,692	\$ 16,854,692	\$ -

TABLE 68
FY 2016/17 Drought Surcharges for Construction Flow Meter/Filler Spout Water/Intertie:

Conservation to FY 2013/14 Level	Total Revenue Requirement	Consumption	Water Rate in Drought	Standard Rate	Drought Surcharge
40%	\$ 16,959,473	5,456,784	\$3.108	\$2.768	\$0.340
45%	\$ 16,933,278	5,002,052	\$3.385	\$2.768	\$0.618
50%	\$ 16,907,083	4,547,320	\$3.718	\$2.768	\$0.950
55%	\$ 16,880,887	4,092,588	\$4.125	\$2.768	\$1.357
60%	\$ 16,854,692	3,637,856	\$4.633	\$2.768	\$1.866

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 69

Projected Revenue Check from Rates Using Marginal Water Cost, FY 2017/18:

Conservation to FY 2013/14 Level	Fiscal Year 2017/18 Estimates									
	Production (1)	Net Revenue Requirement	Marginal Water Cost Adjustment	Total Revenue Requirement	Consumption (1)	Fixed Revenue	Variable Revenue	Total Revenue	Excess/ (Shortfall)	Percent of Total Revenue
-10%	11,548,142	\$ 19,371,103	\$ 6,683,182	\$ 26,054,284	10,064,129	\$ 6,973,847	\$ 18,940,252	\$ 25,914,099	\$ (140,185)	-0.5%
0%	10,498,311	\$ 19,371,103	\$ 4,924,450	\$ 24,295,552	9,149,208	\$ 6,973,847	\$ 17,218,411	\$ 24,192,258	\$ (103,294)	-0.4%
10%	9,448,480	\$ 19,371,103	\$ 3,165,718	\$ 22,536,820	8,234,287	\$ 6,973,847	\$ 15,496,570	\$ 22,470,417	\$ (66,404)	-0.3%
20%	8,398,649	\$ 19,371,103	\$ 1,406,986	\$ 20,778,088	7,319,366	\$ 6,973,847	\$ 13,774,729	\$ 20,748,576	\$ (29,513)	-0.1%
28%	7,558,784	\$ 19,371,103	\$ -	\$ 19,371,103	6,587,430	\$ 6,973,847	\$ 12,397,256	\$ 19,371,103	\$ -	0.0%
35%	6,823,902	\$ 19,371,103	\$ (1,231,112)	\$ 18,139,990	5,946,985	\$ 6,973,847	\$ 11,191,967	\$ 18,165,814	\$ 25,824	0.1%
40%	6,298,987	\$ 19,371,103	\$ (1,260,277)	\$ 18,110,826	5,489,525	\$ 6,973,847	\$ 10,331,047	\$ 17,304,893	\$ (805,933)	-4.7%
45%	5,774,071	\$ 19,371,103	\$ (1,289,441)	\$ 18,081,662	5,032,064	\$ 6,973,847	\$ 9,470,126	\$ 16,443,973	\$ (1,637,689)	-10.0%
50%	5,249,156	\$ 19,371,103	\$ (1,318,605)	\$ 18,052,498	4,574,604	\$ 6,973,847	\$ 8,609,206	\$ 15,583,052	\$ (2,469,446)	-15.8%
55%	4,724,240	\$ 19,371,103	\$ (1,347,769)	\$ 18,023,334	4,117,144	\$ 6,973,847	\$ 7,748,285	\$ 14,722,132	\$ (3,301,202)	-22.4%
60%	4,199,324	\$ 19,371,103	\$ (1,376,933)	\$ 17,994,170	3,659,683	\$ 6,973,847	\$ 6,887,364	\$ 13,861,211	\$ (4,132,959)	-29.8%

TABLE 70

Calculation of Drought Surcharges in FY 2017/18:

Conservation to FY 2013/14 Level	Consumption	Costs to Recover	Drought Surcharge (\$/hcf)	Estimated Rate + Drought Surcharge Revenue				Total Revenue Requirement	Excess/ (Shortfall)
				Fixed Revenue	Variable Revenue	Drought Surcharge Revenue	Total Revenue		
40%	5,489,525	\$ 805,933	\$0.147	\$ 6,973,847	\$ 10,331,047	\$ 805,933	\$ 18,110,826	\$ 18,110,826	\$ -
45%	5,032,064	\$ 1,637,689	\$0.325	\$ 6,973,847	\$ 9,470,126	\$ 1,637,689	\$ 18,081,662	\$ 18,081,662	\$ -
50%	4,574,604	\$ 2,469,446	\$0.540	\$ 6,973,847	\$ 8,609,206	\$ 2,469,446	\$ 18,052,498	\$ 18,052,498	\$ -
55%	4,117,144	\$ 3,301,202	\$0.802	\$ 6,973,847	\$ 7,748,285	\$ 3,301,202	\$ 18,023,334	\$ 18,023,334	\$ -
60%	3,659,683	\$ 4,132,959	\$1.129	\$ 6,973,847	\$ 6,887,364	\$ 4,132,959	\$ 17,994,170	\$ 17,994,170	\$ -

TABLE 71

FY 2017/18 Drought Surcharges for Construction Flow Meter/Filler Spout Water/Intertie:

Conservation to FY 2013/14 Level	Total Revenue Requirement	Consumption	Water Rate in Drought	Standard Rate	Drought Surcharge
40%	\$ 18,110,826	5,489,525	\$3.299	\$2.941	\$0.359
45%	\$ 18,081,662	5,032,064	\$3.593	\$2.941	\$0.653
50%	\$ 18,052,498	4,574,604	\$3.946	\$2.941	\$1.006
55%	\$ 18,023,334	4,117,144	\$4.378	\$2.941	\$1.437
60%	\$ 17,994,170	3,659,683	\$4.917	\$2.941	\$1.976

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 72
Projected Revenue Check from Rates Using Marginal Water Cost, FY 2018/19:

Conservation to FY 2013/14 Level	Fiscal Year 2018/19 Estimates									
	Production (1)	Net Revenue Requirement	Marginal Water Cost Adjustment	Total Revenue Requirement	Consumption (1)	Fixed Revenue	Variable Revenue	Total Revenue	Excess/ (Shortfall)	Percent of Total Revenue
-10%	11,617,431	\$20,705,287	\$ 7,235,306	\$27,940,594	10,124,513	\$ 7,283,844	\$20,504,983	\$27,788,827	\$ (151,767)	-0.5%
0%	10,561,301	\$20,705,287	\$ 5,331,278	\$26,036,566	9,204,103	\$ 7,283,844	\$18,640,894	\$25,924,738	\$ (111,828)	-0.4%
10%	9,505,171	\$20,705,287	\$ 3,427,250	\$24,132,538	8,283,693	\$ 7,283,844	\$16,776,804	\$24,060,648	\$ (71,889)	-0.3%
20%	8,449,041	\$20,705,287	\$ 1,523,222	\$22,228,510	7,363,282	\$ 7,283,844	\$14,912,715	\$22,196,559	\$ (31,951)	-0.1%
28%	7,604,137	\$20,705,287	\$ -	\$20,705,287	6,626,954	\$ 7,283,844	\$13,421,443	\$20,705,287	\$ -	0.0%
35%	6,864,846	\$20,705,287	\$ (1,332,820)	\$19,372,468	5,982,667	\$ 7,283,844	\$12,116,581	\$19,400,425	\$ 27,957	0.1%
40%	6,336,781	\$20,705,287	\$ (1,363,684)	\$19,341,603	5,522,462	\$ 7,283,844	\$11,184,536	\$18,468,380	\$ (873,223)	-4.7%
45%	5,808,716	\$20,705,287	\$ (1,394,549)	\$19,310,738	5,062,257	\$ 7,283,844	\$10,252,491	\$17,536,336	\$ (1,774,403)	-10.1%
50%	5,280,651	\$20,705,287	\$ (1,425,414)	\$19,279,874	4,602,052	\$ 7,283,844	\$ 9,320,447	\$16,604,291	\$ (2,675,583)	-16.1%
55%	4,752,585	\$20,705,287	\$ (1,456,279)	\$19,249,009	4,141,846	\$ 7,283,844	\$ 8,388,402	\$15,672,246	\$ (3,576,763)	-22.8%
60%	4,224,520	\$20,705,287	\$ (1,487,143)	\$19,218,144	3,681,641	\$ 7,283,844	\$ 7,456,357	\$14,740,202	\$ (4,477,943)	-30.4%

1. Adjusted to Account for Growth.

TABLE 73
Calculation of Drought Surcharges in FY 2018/19:

Conservation to FY 2013/14 Level	Consumption	Costs to Recover	Drought Surcharge (\$/hcf)	Estimated Rate + Drought Surcharge Revenue				Total Revenue Requirement	Excess/ (Shortfall)
				Fixed Revenue	Variable Revenue	Drought Surcharge Revenue	Total Revenue		
40%	5,522,462	\$ 873,223	\$0.158	\$ 7,283,844	\$ 11,184,536	\$ 873,223	\$19,341,603	\$19,341,603	\$ -
45%	5,062,257	\$ 1,774,403	\$0.351	\$ 7,283,844	\$ 10,252,491	\$ 1,774,403	\$19,310,738	\$19,310,738	\$ -
50%	4,602,052	\$ 2,675,583	\$0.581	\$ 7,283,844	\$ 9,320,447	\$ 2,675,583	\$19,279,874	\$19,279,874	\$ -
55%	4,141,846	\$ 3,576,763	\$0.864	\$ 7,283,844	\$ 8,388,402	\$ 3,576,763	\$19,249,009	\$19,249,009	\$ -
60%	3,681,641	\$ 4,477,943	\$1.216	\$ 7,283,844	\$ 7,456,357	\$ 4,477,943	\$19,218,144	\$19,218,144	\$ -

TABLE 74
FY 2018/19 Drought Surcharges for Construction Flow Meter/Filler Spout Water/Intertie:

Conservation to FY 2013/14 Level	Total Revenue Requirement	Consumption	Water Rate in Drought	Standard Rate	Drought Surcharge
40%	\$19,341,603	5,522,462	\$3.502	\$3.124	\$0.378
45%	\$19,310,738	5,062,257	\$3.815	\$3.124	\$0.690
50%	\$19,279,874	4,602,052	\$4.189	\$3.124	\$1.065
55%	\$19,249,009	4,141,846	\$4.647	\$3.124	\$1.523
60%	\$19,218,144	3,681,641	\$5.220	\$3.124	\$2.096

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 75
Projected Revenue Check from Rates Using Marginal Water Cost, FY 2019/20:

Conservation to FY 2013/14 Level	Fiscal Year 2019/20 Estimates									
	Production (1)	Net Revenue Requirement	Marginal Water Cost Adjustment	Total Revenue Requirement	Consumption (1)	Fixed Revenue	Variable Revenue	Total Revenue	Excess/ (Shortfall)	Percent of Total Revenue
-10%	11,687,136	\$22,131,364	\$ 7,833,416	\$29,964,780	10,185,260	\$ 7,600,432	\$22,200,036	\$29,800,467	\$ (164,313)	-0.6%
0%	10,624,669	\$22,131,364	\$ 5,771,991	\$27,903,355	9,259,328	\$ 7,600,432	\$20,181,851	\$27,782,282	\$ (121,072)	-0.4%
10%	9,562,202	\$22,131,364	\$ 3,710,565	\$25,841,929	8,333,395	\$ 7,600,432	\$18,163,665	\$25,764,097	\$ (77,832)	-0.3%
20%	8,499,735	\$22,131,364	\$ 1,649,140	\$23,780,504	7,407,462	\$ 7,600,432	\$16,145,480	\$23,745,912	\$ (34,592)	-0.1%
28%	7,649,762	\$22,131,364	\$ -	\$22,131,364	6,666,716	\$ 7,600,432	\$14,530,932	\$22,131,364	\$ -	0.0%
35%	6,906,035	\$22,131,364	\$ (1,442,998)	\$20,688,367	6,018,563	\$ 7,600,432	\$13,118,203	\$20,718,635	\$ 30,268	0.1%
40%	6,374,801	\$22,131,364	\$ (1,475,662)	\$20,655,702	5,555,597	\$ 7,600,432	\$12,109,110	\$19,709,542	\$ (946,160)	-4.8%
45%	5,843,568	\$22,131,364	\$ (1,508,327)	\$20,623,037	5,092,630	\$ 7,600,432	\$11,100,018	\$18,700,450	\$ (1,922,588)	-10.3%
50%	5,312,334	\$22,131,364	\$ (1,540,991)	\$20,590,373	4,629,664	\$ 7,600,432	\$10,090,925	\$17,691,357	\$ (2,899,016)	-16.4%
55%	4,781,101	\$22,131,364	\$ (1,573,656)	\$20,557,708	4,166,697	\$ 7,600,432	\$ 9,081,833	\$16,682,265	\$ (3,875,444)	-23.2%
60%	4,249,868	\$22,131,364	\$ (1,606,320)	\$20,525,044	3,703,731	\$ 7,600,432	\$ 8,072,740	\$15,673,172	\$ (4,851,872)	-31.0%

1. Adjusted to Account for Growth.

TABLE 76
Calculation of Drought Surcharges in FY 2019/20:

Conservation to FY 2013/14 Level	Consumption	Costs to Recover	Drought Surcharge (\$/hcf)	Estimated Rate + Drought Surcharge Revenue				Total Revenue Requirement	Excess/ (Shortfall)
				Fixed Revenue	Variable Revenue	Drought Surcharge Revenue	Total Revenue		
40%	5,555,597	\$ 946,160	\$0.170	\$ 7,600,432	\$12,109,110	\$ 946,160	\$20,655,702	\$20,655,702	\$ -
45%	5,092,630	\$ 1,922,588	\$0.378	\$ 7,600,432	\$11,100,018	\$ 1,922,588	\$20,623,037	\$20,623,037	\$ -
50%	4,629,664	\$ 2,899,016	\$0.626	\$ 7,600,432	\$10,090,925	\$ 2,899,016	\$20,590,373	\$20,590,373	\$ -
55%	4,166,697	\$ 3,875,444	\$0.930	\$ 7,600,432	\$ 9,081,833	\$ 3,875,444	\$20,557,708	\$20,557,708	\$ -
60%	3,703,731	\$ 4,851,872	\$1.310	\$ 7,600,432	\$ 8,072,740	\$ 4,851,872	\$20,525,044	\$20,525,044	\$ -

TABLE 77
FY 2019/20 Drought Surcharges for Construction Flow Meter/Filler Spout Water/Intertie:

Conservation to FY 2013/14 Level	Total Revenue Requirement	Consumption	Water Rate in Drought	Standard Rate	Drought Surcharge
40%	\$20,655,702	5,555,597	\$3.718	\$3.320	\$0.398
45%	\$20,623,037	5,092,630	\$4.050	\$3.320	\$0.730
50%	\$20,590,373	4,629,664	\$4.447	\$3.320	\$1.128
55%	\$20,557,708	4,166,697	\$4.934	\$3.320	\$1.614
60%	\$20,525,044	3,703,731	\$5.542	\$3.320	\$2.222

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 78

Projected Revenue Check from Rates Using Marginal Water Cost, FY 2020/21:

Conservation to FY 2013/14 Level	Fiscal Year 2020/21 Estimates									
	Production (1)	Net Revenue Requirement	Marginal Water Cost Adjustment	Total Revenue Requirement	Consumption (1)	Fixed Revenue	Variable Revenue	Total Revenue	Excess/ (Shortfall)	Percent of Total Revenue
-10%	11,757,259	\$23,514,574	\$ 8,481,366	\$31,995,940	10,246,372	\$ 7,781,699	\$24,036,337	\$31,818,036	\$ (177,904)	-0.6%
0%	10,688,417	\$23,514,574	\$ 6,249,427	\$29,764,002	9,314,884	\$ 7,781,699	\$21,851,216	\$29,632,915	\$ (131,087)	-0.4%
10%	9,619,575	\$23,514,574	\$ 4,017,489	\$27,532,063	8,383,395	\$ 7,781,699	\$19,666,094	\$27,447,793	\$ (84,270)	-0.3%
20%	8,550,733	\$23,514,574	\$ 1,785,551	\$25,300,125	7,451,907	\$ 7,781,699	\$17,480,973	\$25,262,672	\$ (37,453)	-0.1%
28%	7,695,660	\$23,514,574	\$ -	\$23,514,574	6,706,716	\$ 7,781,699	\$15,732,875	\$23,514,574	\$ -	0.0%
35%	6,947,471	\$23,514,574	\$ (1,562,357)	\$21,952,218	6,054,674	\$ 7,781,699	\$14,203,290	\$21,984,989	\$ 32,772	0.1%
40%	6,413,050	\$23,514,574	\$ (1,596,926)	\$21,917,648	5,588,930	\$ 7,781,699	\$13,110,729	\$20,892,429	\$ (1,025,220)	-4.9%
45%	5,878,629	\$23,514,574	\$ (1,631,495)	\$21,883,079	5,123,186	\$ 7,781,699	\$12,018,169	\$19,799,868	\$ (2,083,211)	-10.5%
50%	5,344,208	\$23,514,574	\$ (1,666,065)	\$21,848,510	4,657,442	\$ 7,781,699	\$10,925,608	\$18,707,307	\$ (3,141,203)	-16.8%
55%	4,809,788	\$23,514,574	\$ (1,700,634)	\$21,813,941	4,191,698	\$ 7,781,699	\$ 9,833,047	\$17,614,746	\$ (4,199,194)	-23.8%
60%	4,275,367	\$23,514,574	\$ (1,735,203)	\$21,779,371	3,725,953	\$ 7,781,699	\$ 8,740,486	\$16,522,185	\$ (5,257,186)	-31.8%

1. Adjusted to Account for Growth.

TABLE 79

Calculation of Drought Surcharges in FY 2020/21:

Conservation to FY 2013/14 Level	Consumption	Costs to Recover	Drought Surcharge (\$/hcf)	Estimated Rate + Drought Surcharge Revenue				Total Revenue Requirement	Excess/ (Shortfall)
				Fixed Revenue	Variable Revenue	Drought Surcharge Revenue	Total Revenue		
40%	5,588,930	\$ 1,025,220	\$0.183	\$ 7,781,699	\$13,110,729	\$ 1,025,220	\$21,917,648	\$21,917,648	\$ -
45%	5,123,186	\$ 2,083,211	\$0.407	\$ 7,781,699	\$12,018,169	\$ 2,083,211	\$21,883,079	\$21,883,079	\$ -
50%	4,657,442	\$ 3,141,203	\$0.674	\$ 7,781,699	\$10,925,608	\$ 3,141,203	\$21,848,510	\$21,848,510	\$ -
55%	4,191,698	\$ 4,199,194	\$1.002	\$ 7,781,699	\$ 9,833,047	\$ 4,199,194	\$21,813,941	\$21,813,941	\$ -
60%	3,725,953	\$ 5,257,186	\$1.411	\$ 7,781,699	\$ 8,740,486	\$ 5,257,186	\$21,779,371	\$21,779,371	\$ -

TABLE 80

FY 2020/21 Drought Surcharges for Construction Flow Meter/Filler Spout Water/Intertie:

Conservation to FY 2013/14 Level	Total Revenue Requirement	Consumption	Water Rate in Drought	Standard Rate	Drought Surcharge
40%	\$21,917,648	5,588,930	\$3.922	\$3.506	\$0.415
45%	\$21,883,079	5,123,186	\$4.271	\$3.506	\$0.765
50%	\$21,848,510	4,657,442	\$4.691	\$3.506	\$1.185
55%	\$21,813,941	4,191,698	\$5.204	\$3.506	\$1.698
60%	\$21,779,371	3,725,953	\$5.845	\$3.506	\$2.339

1. Production and Consumption in FY 2017/18 and beyond assumes 0.6% growth in water consumption per year, to account for customer growth.

VICTORVILLE WATER DISTRICT
WATER RATE STUDY
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TABLE 81
CURRENT VS. PROPOSED WATER RATES:

Water Rate Schedule	Current Rates	Proposed Rates				
		FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		0.00%	6.25%	6.25%	6.25%	6.25%
Fixed Service Charge						
Fixed Periodic Service Charge (Average Daily Use in HCF):						
0.00 - 0.26	\$17.25	N.A.	N.A.	N.A.	N.A.	N.A.
0.27 - 1.17	\$18.25	N.A.	N.A.	N.A.	N.A.	N.A.
1.18 - 6.60	\$36.50	N.A.	N.A.	N.A.	N.A.	N.A.
6.61 and above	\$130.50	N.A.	N.A.	N.A.	N.A.	N.A.
Fixed Service Charges						
3/4 inch	N.A.	\$11.78	\$12.23	\$12.68	\$13.15	\$13.36
1 inch	N.A.	\$18.59	\$19.30	\$20.02	\$20.75	\$21.09
1.5 inch	N.A.	\$35.62	\$36.99	\$38.37	\$39.76	\$40.41
2 inch	N.A.	\$56.06	\$58.21	\$60.39	\$62.58	\$63.60
3 inch	N.A.	\$110.56	\$114.80	\$119.09	\$123.42	\$125.44
4 inch	N.A.	\$171.88	\$178.47	\$185.14	\$191.87	\$195.01
6 inch	N.A.	\$342.19	\$355.32	\$368.60	\$382.00	\$388.25
8 inch	N.A.	\$955.34	\$991.99	\$1,029.07	\$1,066.48	\$1,083.92
10 inch	N.A.	\$1,432.23	\$1,487.17	\$1,542.77	\$1,598.85	\$1,624.99
Fire Fixed Service Charges:						
3 inch	\$10.00	\$9.50	\$10.06	\$10.65	\$11.27	\$11.83
4 inch	\$10.00	\$17.45	\$18.50	\$19.62	\$20.80	\$21.90
6 inch	\$10.00	\$37.88	\$40.21	\$42.68	\$45.31	\$47.78
8 inch	\$10.00	\$65.13	\$69.16	\$73.44	\$77.99	\$82.30
10 inch	\$10.00	\$101.45	\$107.75	\$114.45	\$121.56	\$128.31
Commodity Charges for All Water Consumed (per hcf)						
Rate Per hcf of Water Consumed:						
Standard Domestic Water	\$1.530	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346
Public Benefit Use Water (Municipal Irrigation)	\$0.610	\$1.749	\$1.882	\$2.025	\$2.180	\$2.346
Construction Flow Meter/Filler Spout Water/Intertie	\$2.470	\$2.768	\$2.941	\$3.124	\$3.320	\$3.506

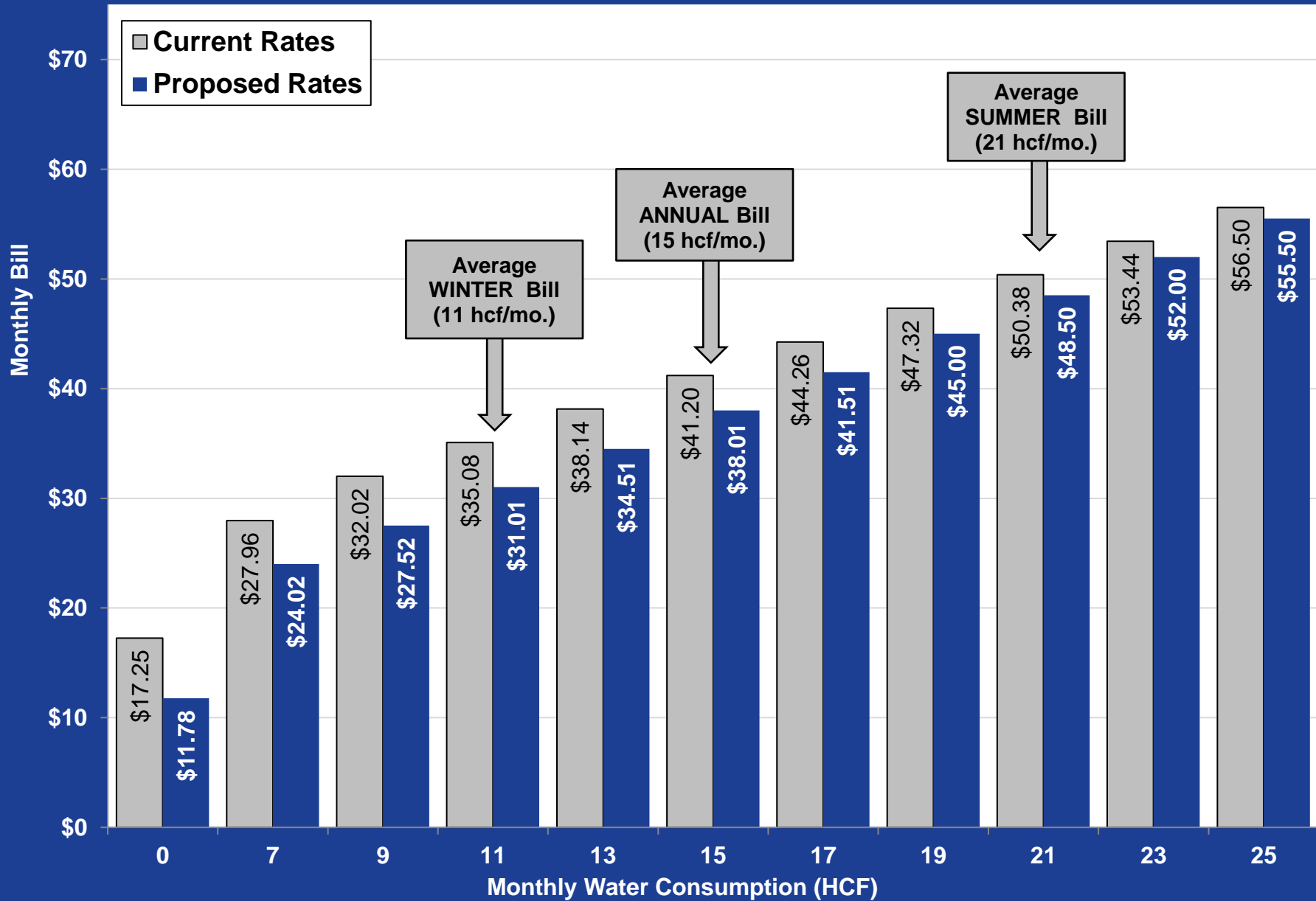
VICTORVILLE WATER DISTRICT
WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 82
PROPOSED DROUGHT RATES:

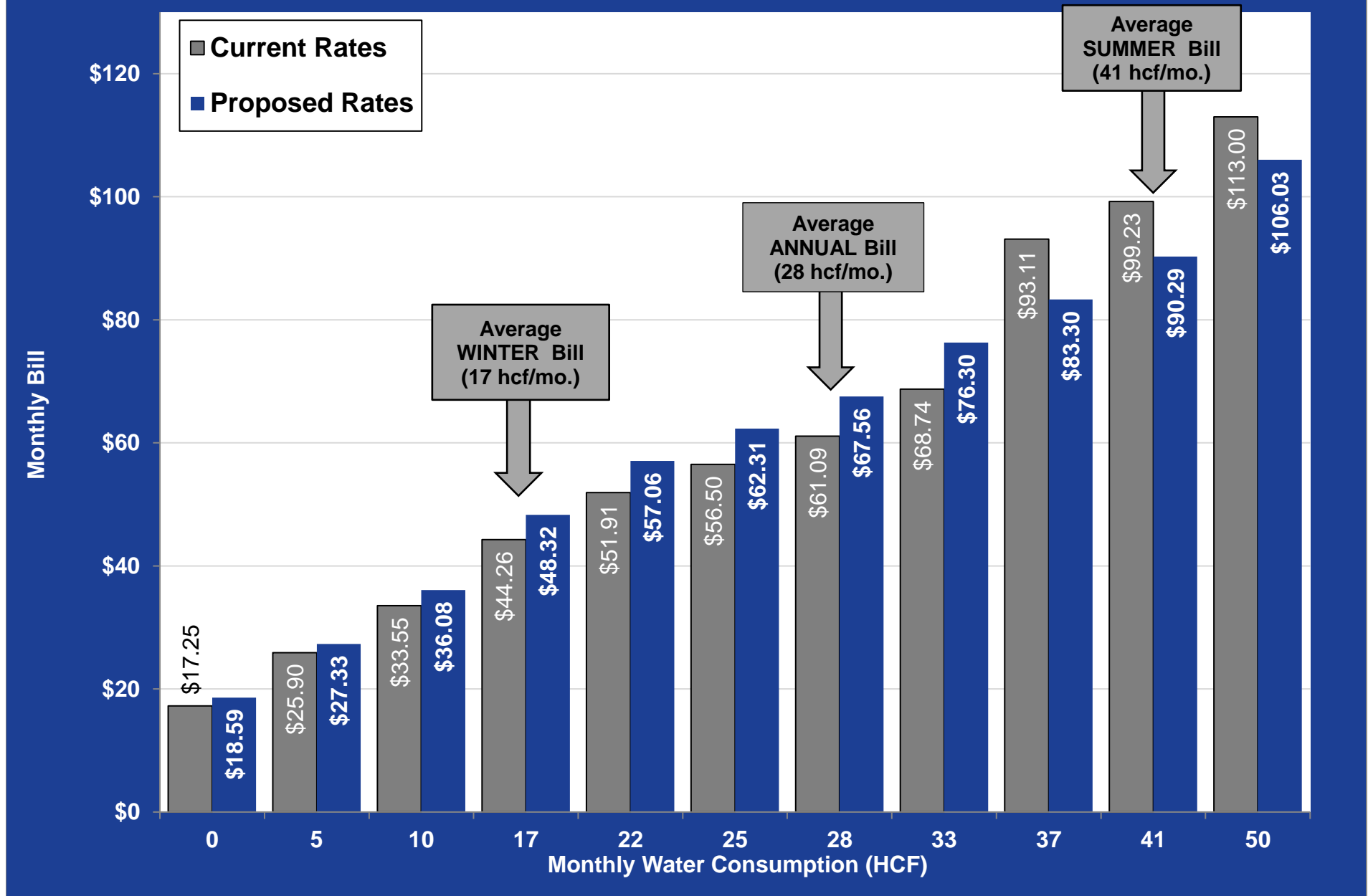
Drought Rate Schedule	Current Rates	Proposed Rates				
		FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		0.00%	6.25%	6.25%	6.25%	6.25%
Rates for Standard Domestic & Public Benefit Use Water Consumed (per hcf) ¹						
Conservation Level Compared to FY 2013/14						
40%	N.A.	\$1.885	\$2.029	\$2.183	\$2.350	\$2.529
45%	N.A.	\$2.052	\$2.207	\$2.376	\$2.557	\$2.752
50%	N.A.	\$2.251	\$2.422	\$2.607	\$2.806	\$3.020
55%	N.A.	\$2.495	\$2.684	\$2.889	\$3.110	\$3.348
60%	N.A.	\$2.799	\$3.011	\$3.242	\$3.490	\$3.757
Rates for Construction Flow Meter/Filler Spout Water/Inertie (per hcf) ¹						
Conservation Level Compared to FY 2013/14						
40%	N.A.	\$3.108	\$3.299	\$3.502	\$3.718	\$3.922
45%	N.A.	\$3.385	\$3.593	\$3.815	\$4.050	\$4.271
50%	N.A.	\$3.718	\$3.946	\$4.189	\$4.447	\$4.691
55%	N.A.	\$4.125	\$4.378	\$4.647	\$4.934	\$5.204
60%	N.A.	\$4.633	\$4.917	\$5.220	\$5.542	\$5.845

1. Drought surcharges will apply to all consumption, if conservation is at or above 40% from FY 2013/14 baseline consumption levels.

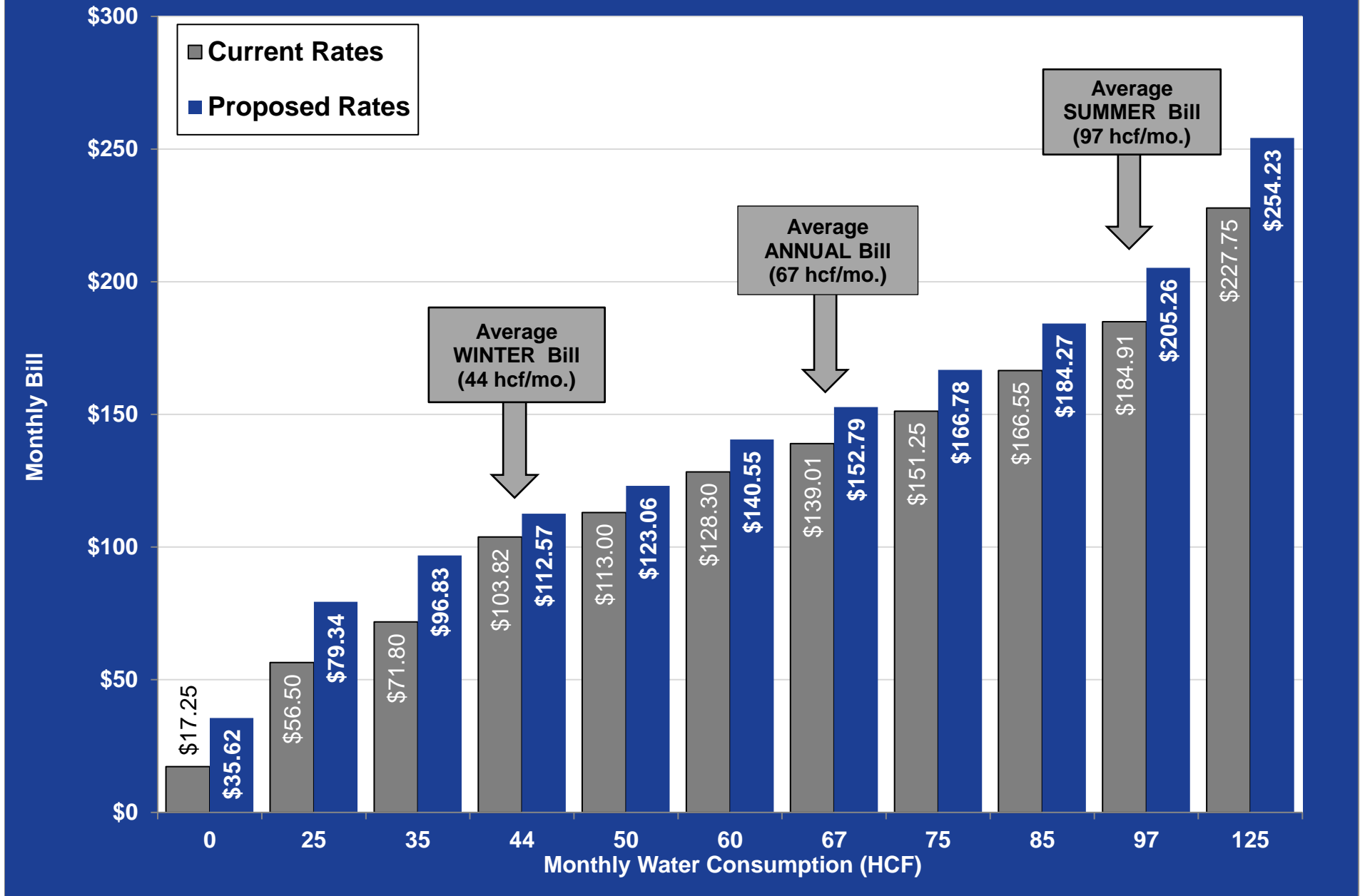
Single-Family Residential Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (3/4" meter)



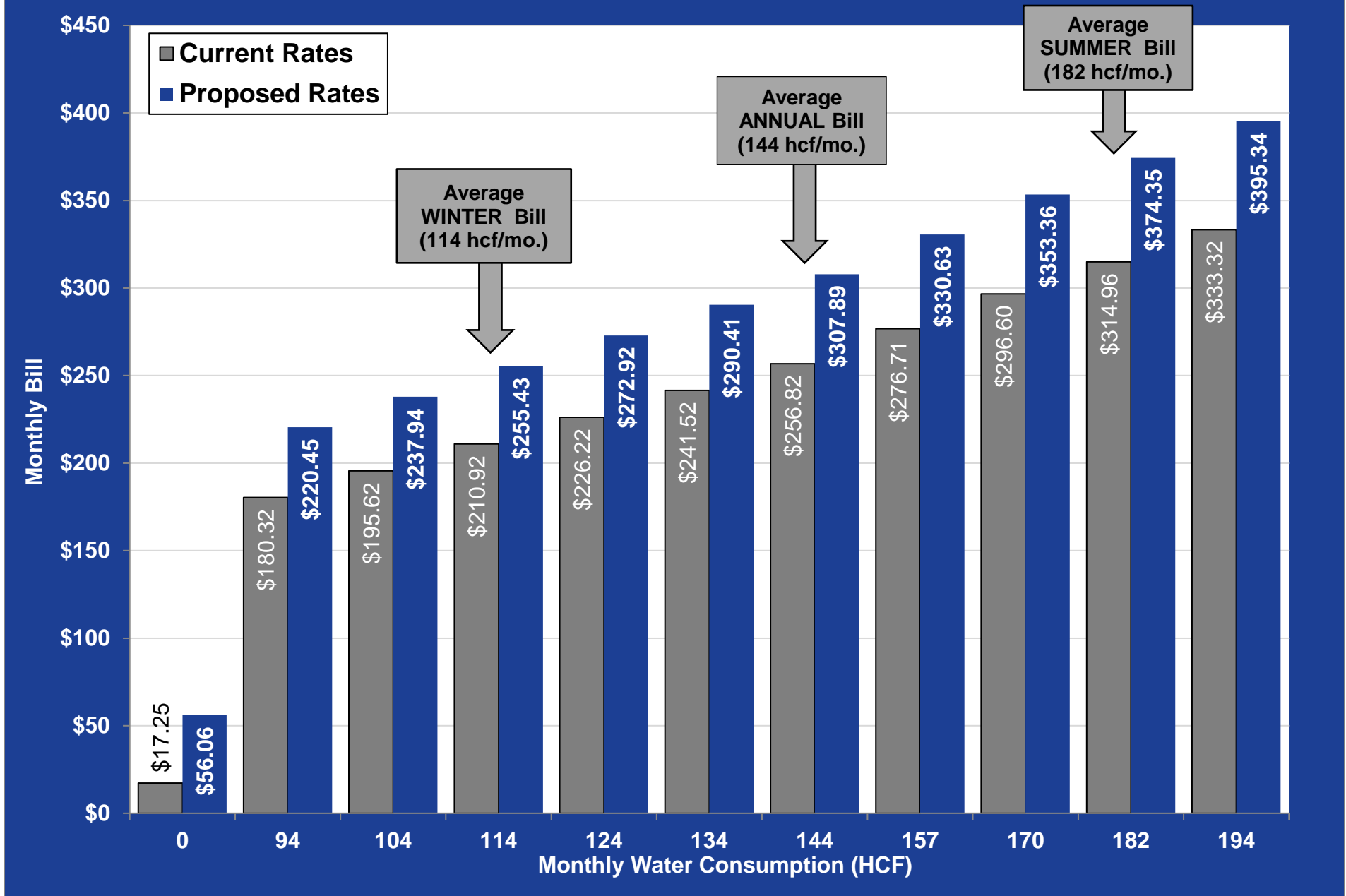
Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (1" meter)



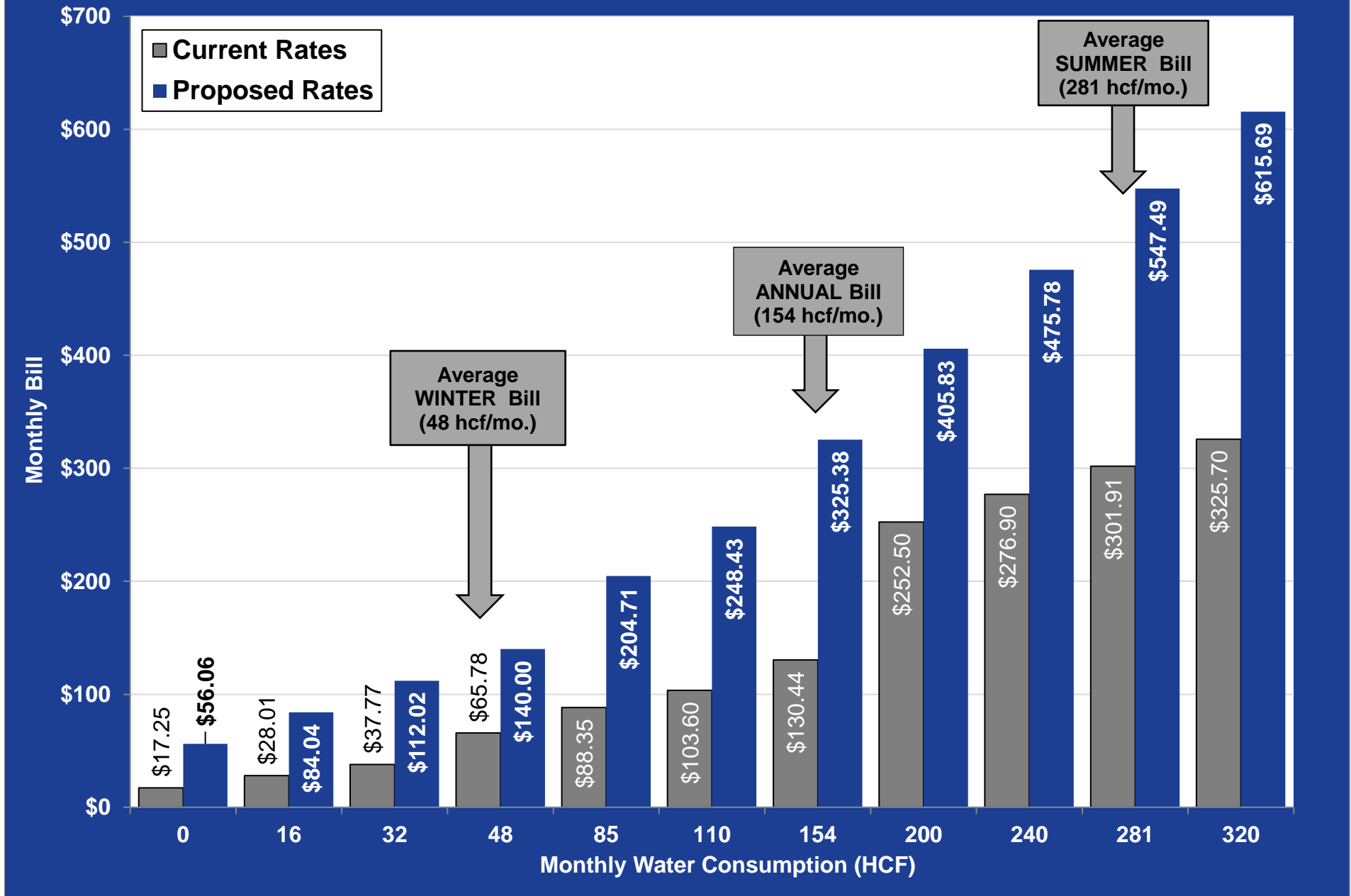
Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (1.5" meter)



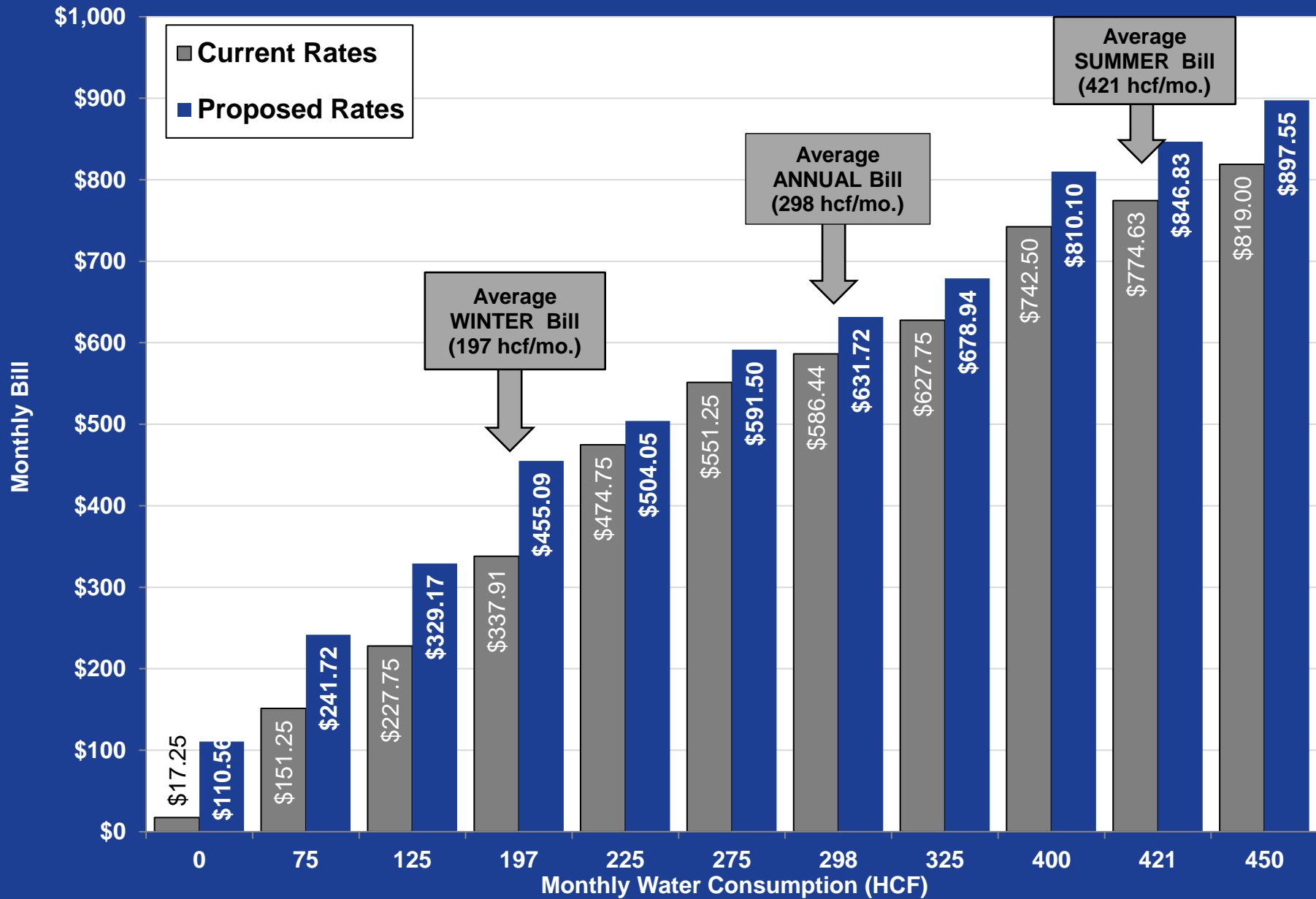
Commercial Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (2" meter)



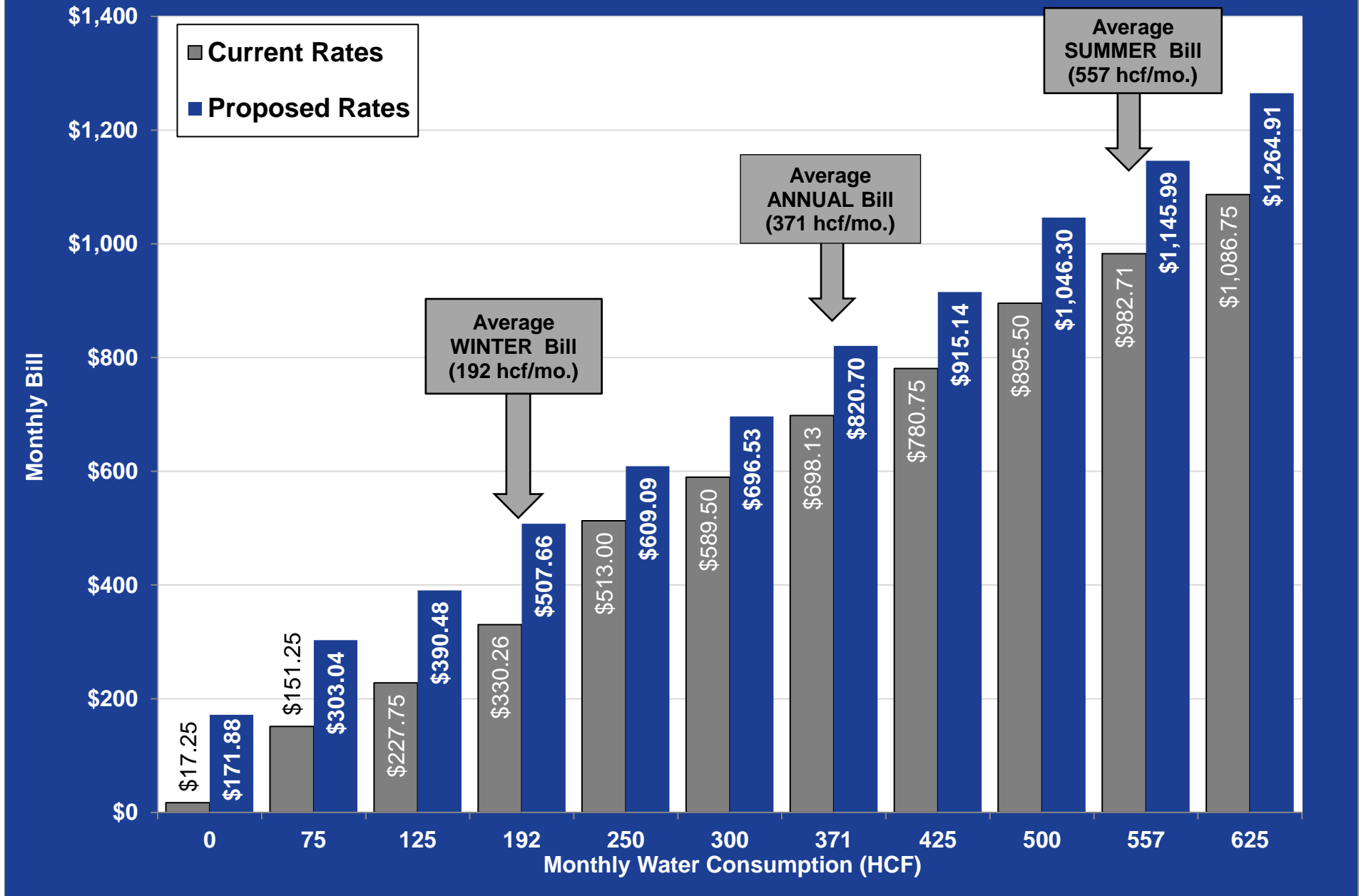
Municipal Irrigation Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (2" meter)



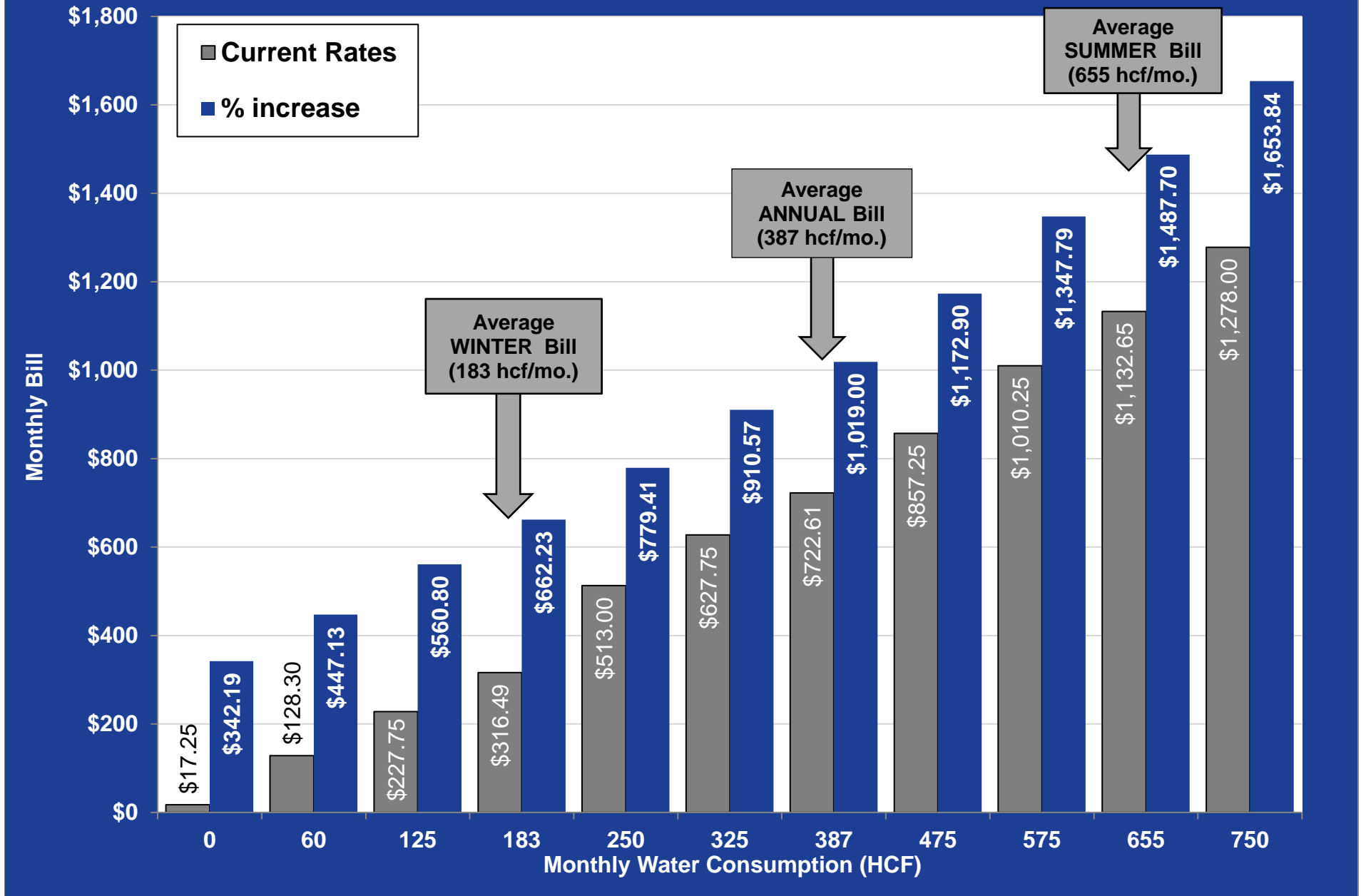
Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (3" meter)



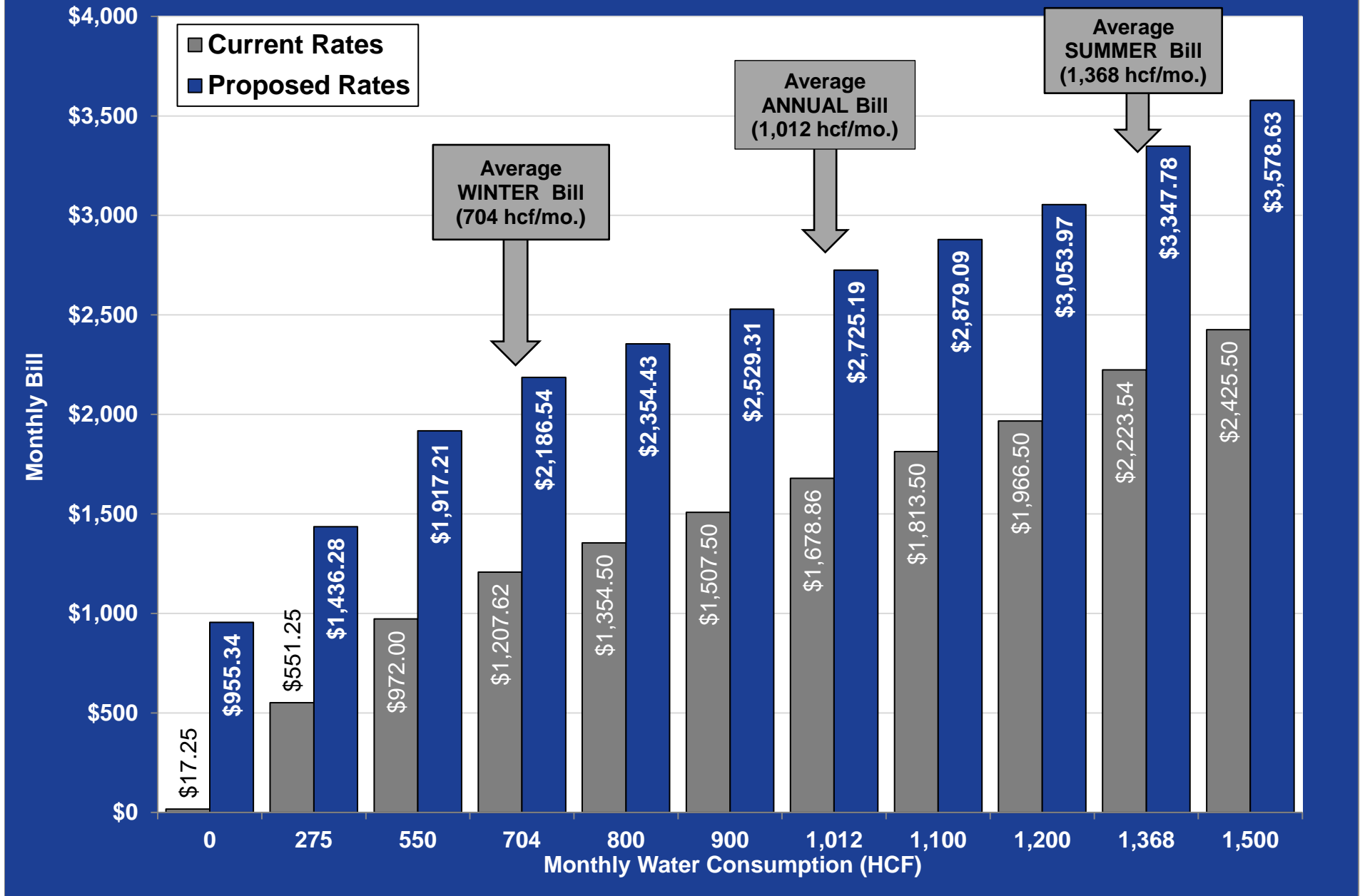
Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (4" meter)



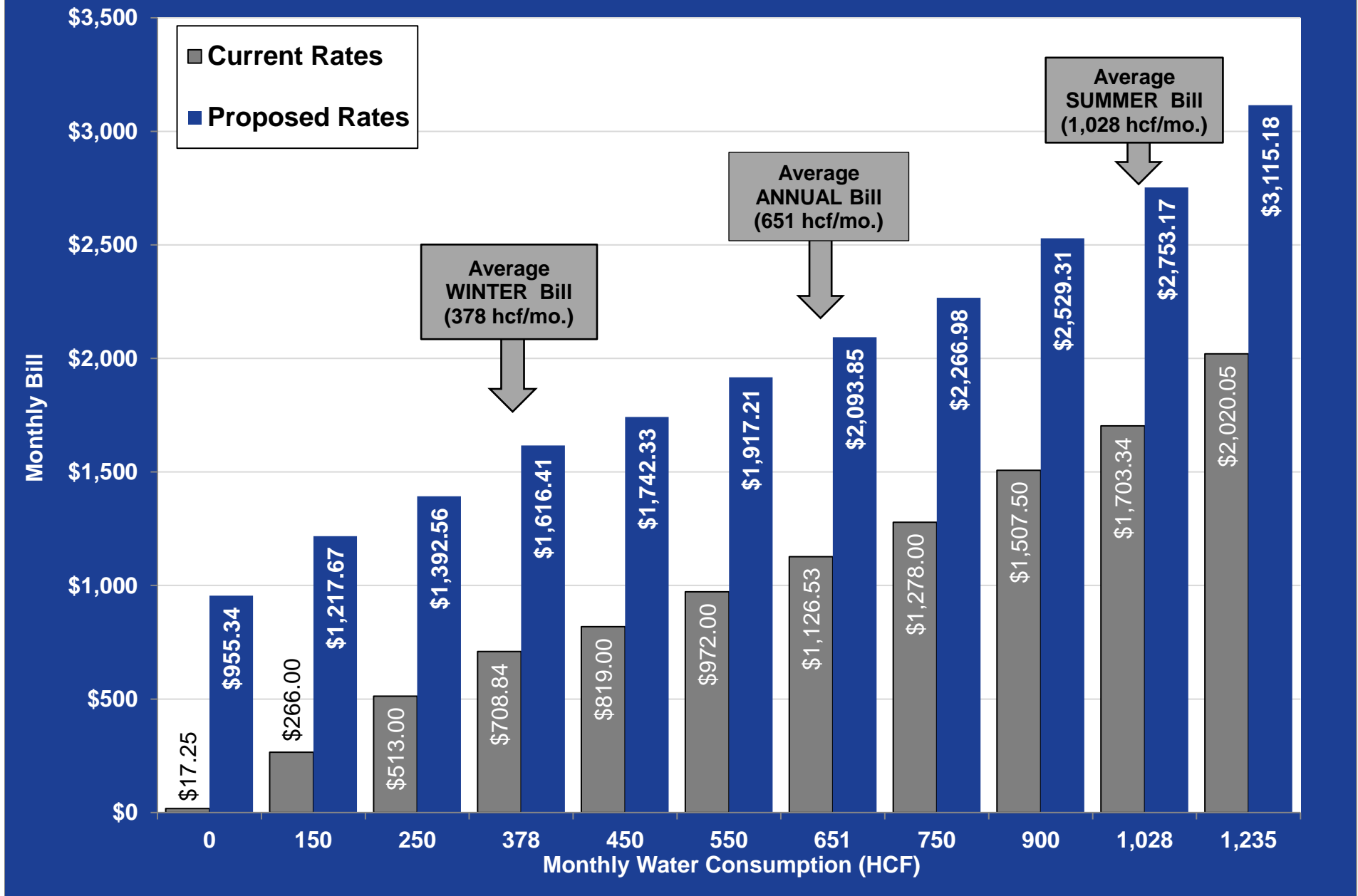
Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (6" meter)



Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (8" meter)



Multi-Family Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (8" meter)



Commercial Water Bill Comparison Current vs. Proposed 2016/17 Rate Alternatives (10" meter)

