



HESPERIA WATER DISTRICT

Final Report

Water and Sewer
Rate Study

November 2017

OFFICE LOCATIONS:

Temecula – Corporate Headquarters
32605 Temecula Parkway, Suite 100
Temecula, CA 92592

San Francisco – Regional Office
870 Market Street, Suite 1223
San Francisco, CA 94102

California Satellite Offices
Atascadero, Davis
Huntington Beach,
Joshua Tree, Riverside
Sacramento, San Jose

www.nbsgov.com

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Section 1. PURPOSE AND OVERVIEW OF THE STUDY

A. Purpose

The Hesperia Water District (District) retained NBS to conduct a comprehensive water and sewer rate study for a number of reasons, including meeting revenue requirements, providing greater financial stability for the water enterprise in particular, and complying with certain legal requirements (such as California Constitution article XIII D, section 6, which is commonly referred to as Proposition 218 [Prop 218]). The rates resulting from this study were developed in a manner that is consistent with industry standard cost of service principles. In addition to documenting the rate study methodology, this report is provided with the intent of assisting the District to maintain transparent communications with its residents and businesses.

In developing new water and sewer rates, NBS worked cooperatively with District staff and the District's Board of Directors (Board), in selecting appropriate rate alternatives. Based on input from District staff and the Board, the proposed rates are summarized in this report.

B. Overview of the Study

Comprehensive rate studies such as this one typically include the following three components, as outlined in **Figure 1**:

1. Preparation of a **Financial Plan**, which identifies the net revenue requirements for the utility.
2. **Cost of Service Analysis**, which determines the cost of providing service to each customer class.
3. **Rate Design Analysis**, which evaluates different rate design alternatives.

Figure 1. Primary Components of a Rate Study



These steps 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 M1 Manual. They also address requirements under Proposition 218 that rates not exceed the cost of providing the service, and that they be proportionate to the cost of providing service for all customers. In terms of the chronology of the study, these three steps represent the

¹ *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017.*

order they were performed in this Study. Detailed tables and figures documenting the development of the proposed rates are provided in the Appendices.

FINANCIAL PLAN

As a part of this rate study, NBS projected revenues and expenditures on a cash flow basis for the next twenty years. The amount of rate revenue required, that will allow reserves to be maintained at the recommended levels, is known as the *net revenue requirement*. As current rate revenue falls short of the net revenue requirement, rate adjustments -- or more accurately, adjustments in the total revenue collected from rates for both utilities -- are recommended. This report presents an overview of the methodologies, assumptions, and data used, along with the financial plans and proposed rates developed in this study². For the Sewer utility, staff determined that the current cost allocation and rate design were adequate, so only the Financial Plan analysis was completed for this utility.

WATER RATE DESIGN ANALYSIS

Rate Design is typically the stage in the study where NBS, staff and the Board must work closely together, to develop rate alternatives that will meet the District's objectives. 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 rate adjustments, 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*³, 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 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 (that is, cost based).
- There should be continuity in the ratemaking philosophy over time.
- Rates should address other utility policies (for example, encouraging conservation & economic development).
- Rates should provide month-to-month and year-to-year revenue stability.

The following are the basic rate design criteria that were considered in this study:

Rate Structure Basics –The vast majority of rate structures contain a fixed or minimum charge in combination with a volumetric charge. The revenue requirements for each customer class are collected from both fixed bi-monthly meter charges and variable commodity charges. Based on direction from the

² The complete financial plan is set forth in the Appendices.

³ 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.

Board, the rates proposed in this report are designed to collect 50 percent of rate revenue from the fixed meter charge and 50 percent from the variable commodity charge, in the first year of the rate adjustment, through December 2021. At that point, the rates will collect 55% of rate revenue from the fixed meter charge and 45% from the variable commodity charge⁴.

Fixed Charges – Fixed charges can be called base charges, minimum bi-monthly charges, customer charges, fixed meter charges, etc. Fixed charges for water utilities typically increase by meter size.

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

Uniform (Single-Tier) Water Charges – There are significant variations in the basic philosophy of variable charge rate structures. 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 customers regarding their understanding of the rates, and for the utility’s administration and billing of the rates.

Multi-Tiered Water Charges – In contrast to a uniform tier, an inclining block rate structure attempts to send 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 charges are encouraged by state law and regulatory mandates, but are also intended to represent the higher costs for customers that contribute more to peak summertime usage and place greater demands on the system. The types of higher costs reflected, for example, in the *highest* tier of the rate structure may include:

- Conservation program costs: intended to encourage customers to eliminate inefficient and wasteful water use, and otherwise reduce consumption during peak periods.
- Replacement Water costs: when consumption exceeds the amount of the District’s allocated water rights, the agency incurs additional costs for replacement water in order to meet that increased demand. That replacement water comes at a higher cost.
- Energy costs: during summer months, the District may pay more in electric charges to pump, treat and deliver water, 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, capacity costs, and system maintenance issues when the water system is running at peak demand.

REGULATORY ISSUES

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, the Governor issued Executive Order B-29-15 mandating statewide water conservation of 25 percent. The specific conservation mandate for each community in California varied from 4 to 36 percent. The District was initially required to conserve 32% and that was subsequently reduced to 28%.

⁴ The California Urban Water Conservation Council recommends recovering at least 70 percent of rate revenue through volume-based rates. However, water utilities are allowed to develop their own allocations that accurately reflect their actual cost allocations.

During Fiscal Year 2015/16, the City achieved conservation of 14% to 2014/15 levels and in 2016/17, that number decreased to 8%. While conservation is good from a supply standpoint, it places financial pressure on the utility. Consumption has an impact on both revenue and expenses. For this analysis, consumption from FY 2014/15 is used as the base consumption. This was chosen by staff as it represents the rebound in consumption since the drought mandate was issued, and is assumed to be the “new normal,” with approximately 5,718,422 hundred cubic feet (hcf) or 12,897 AF of billable water consumed. No increase in consumption beyond expected customer growth is assumed over the five-year rate period.

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:

- Avoiding operational deficits and further depletion of reserves.
- Improving revenue stability.
- Generating additional revenue needed to meet projected capital project and reserve funding requirements.
- Continuing to encourage water conservation with a tiered rate structure.

NBS developed various water rate alternatives as requested by District staff and the Board over the course of this Study. All rate structure alternatives relied on industry standards and cost-of-service principles. The rate alternative that will be implemented, is ultimately the decision of the Board. The fixed and volume-based charges were calculated based on the net revenue requirements, number of customer accounts, water consumption, and other District-provided information.

B. Financial Plan

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 adjustments are governed by the need to meet operating and capital costs, maintain adequate debt coverage, and build reasonable reserve funds. The current state of the District, with regard to these objectives, is as follows:

- **Meeting Net Revenue Requirements:** For FY 2017/18 through FY 2021/22, the projected net revenue requirement (that is, total annual expenses plus debt service and rate-funded capital costs, less non-rate revenues) for the District is approximately \$20 million, annually. If no rate adjustments are implemented, the District is projected to average a \$3.7 million deficit each year.
- **Building and Maintaining Reserve Funds:** Reserve funds provide a basis for a utility to cope with fiscal emergencies such as revenue shortfalls, asset failure, and natural disasters, among other events. Reserve policies provide guidelines for sound financial management, with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. The District plans to reach the proposed reserve target by the end of FY 2022/23, one year following the end of the proposed rate increases. The reserve funds for the Utility are considered unrestricted reserves and consist of the following:
 - **The Operating Reserve** should equal approximately 90 days of operating expenses (approximately \$4.6 million for FY 2022/23). An Operating Reserve is intended to promote financial viability in the event of any short-term fluctuation in revenues and/or expenditures. Fluctuations in revenue can be caused by weather patterns, the natural inflow and outflow of cash during billing cycles, natural variability in demand-based revenue streams (such as volumetric charges), and – particularly in periods of economic distress – changes or trends in age of receivables.

- **The Capital Rehabilitation and Replacement Reserve** should equal 3 percent of net capital assets (approximately \$3.3 million by the end of for FY 2022/23), which is set aside to address long-term capital system replacement and rehabilitation needs.
 - **Contamination Mitigation Reserve** has a final target reserve of \$2.5 million and is to be funded at \$500,000 annually until it reaches the target level in FY 2021/22. This reserve is intended for capital projects should any existing wells be deemed inoperable due to contamination.
- **Funding Capital Improvement Projects:** The District must also be able to fund necessary capital improvements in order to maintain current service levels. District staff has identified roughly \$7 million in cash funded expected capital expenditures for FY 2016/17 through 2020/21, which can be funded with the recommended rate adjustments.
- **Fully Funding the Cost Allocation:** The City's Cost Allocation Plan calls for the Water Utility to pay \$2.4 million annually to reimburse the General Fund for overhead expenses. For the current fiscal year, only \$1.95 million is being recovered. This analysis assumes that beginning in FY 2018/19 the full cost allocation cost is charged to the water utility.
- **Purchasing Water Rights:** The District's sole source of water is the adjudicated Mojave Basin Area. The Mojave Water Agency is the appointed Watermaster and limits production on the District's wells by charging an "overage" charge on production (pumping) which exceeds the District's allowance. To avoid paying the "overage" charge, the District leases water from other agencies that have the right to pump in the Basin (including the City of Hesperia). As part of this analysis, it is assumed that the District will purchase sufficient rights to avoid the leasing expense paid to outside agencies⁵, based on current consumption. The water rights purchase will be funded through a debt issuance. This will increase cash expenses in the near term, but will avoid future leasing costs, potentially providing substantial savings to the District in the long term. The following assumptions were made in this analysis:
 - 1,815 Acre Feet Purchased
 - \$5,000 an acre-foot
 - 10 year loan
 - 4.5% annual interest rate
- **Inflation and Growth Projections** – Assumptions regarding cost inflation were made in order to project future revenues and expenses for the study period. The following inflation factors were used in the analysis:
 - Customer growth is expected to be 1.45 percent annually.
 - General cost inflation is 2 percent annually.
 - Salary cost inflation is 4 percent annually, which includes merit step increases.
 - Benefit cost is 5 percent for FY 2018/19 and then 6 percent annually thereafter.
 - Energy cost inflation is 5 percent annually.
 - Chemicals cost inflation is 3 percent annually.
 - Fuel cost inflation is 3 percent annually.
- **Maintaining Adequate Bond Coverage:** The District is required by its bond covenants to maintain a debt service coverage ratio of at least 1.25. Rate adjustments in the last three years of the rate plan will allow the District to exceed this ratio, in addition to meeting all funding requirements described

⁵ The District will still lease water from the City of Hesperia.

previously. The benefit of exceeding the minimum debt coverage ratio is that it strengthens the District's credit rating, which can help lower the interest rates for debt-funded capital projects in the future.

- **Impact of Annual Rate Adjustment Date:** Except for the current fiscal year, the financial plan modelling assumes that rate adjustments occur in December ⁶ of each year. This means that only half of the planned revenue to be collected from the rate adjustment listed for one fiscal year will be collected in that year. For example, there is a 9 percent adjustment in rate revenue planned for FY 2017/18; meaning, the rates are developed to recover \$1.4 million, which is a 9 percent adjustment over the expected \$15.6 million that would be collected without a rate adjustment. However, because of the timing for when the rates will go into effect, the Financial Plan results in only \$700,000 in additional rate revenue for the current fiscal year.

Rate revenue adjustments of 9 percent from FY 2017/18 through 2021/22 (with no increase assumed for FY 2022/23), will be needed in order to fully fund all operating expenses, planned capital projects, debt service obligations and build reserves to the recommended targets by FY 2022/23⁷. **Figure 2** summarizes the sources and uses of funds, net revenue requirements, and the recommended annual percent adjustments in total rate revenue recommended for the next 5 years for the District.

Figure 2. Summary of Water Revenue Requirements

Summary of Sources and Uses of Funds and Net Revenue Requirements	Projected					
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Sources of Water Funds						
Rate Revenue Under Prevailing Rates	\$ 15,612,930	\$ 15,838,933	\$ 16,068,207	\$ 16,300,800	\$ 16,536,760	\$ 16,776,135
Non-Rate Revenues	1,503,698	1,496,663	1,501,905	1,515,763	1,549,304	1,619,131
Interest Earnings	23,544	8,259	5,132	10,499	35,427	96,516
Total Sources of Funds	\$ 17,140,172	\$ 17,343,855	\$ 17,575,244	\$ 17,827,062	\$ 18,121,490	\$ 18,491,782
Uses of Water Funds						
Operating Expenses	\$ 15,570,314	\$ 15,965,745	\$ 16,721,424	\$ 17,397,245	\$ 17,978,574	\$ 18,583,041
Debt Service	1,754,590	2,889,138	2,871,465	2,786,700	2,778,663	2,485,888
Capital Outlay from Operating Budget	830,200	412,000	424,360	437,091	450,204	463,710
Rate-Funded Capital Expenses	3,640,000	1,622,770	742,630	764,909	787,856	3,231,873
Total Use of Funds	\$ 21,795,104	\$ 20,889,653	\$ 20,759,879	\$ 21,385,945	\$ 21,995,297	\$ 24,764,512
Additional Revenue from Rate Increases (1)	702,582	2,331,887	4,024,688	5,917,484	8,031,733	9,036,028
Surplus (Deficiency) after Rate Increase	\$ (3,952,350)	\$ (1,213,911)	\$ 840,053	\$ 2,358,601	\$ 4,157,926	\$ 2,763,299
Projected Annual Rate Revenue Increase	9.00%	9.00%	9.00%	9.00%	9.00%	0.00%
<i>Cumulative Increases</i>	9.00%	18.81%	29.50%	41.16%	53.86%	53.86%
Net Revenue Requirement (2)	\$ 20,291,406	\$ 19,392,990	\$ 19,257,974	\$ 19,870,182	\$ 20,445,993	\$ 23,145,381

1. Assumes new rates are implemented January 1, 2018 and December 1 each year thereafter.

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 Capital Improvement Plan, providing the expected cost and timing of capital projects during the 5-year rate period. The table also includes expected funding sources for each project.

⁶ The first rate adjustment is scheduled for January 1st, 2018 followed by December 1, 2018 and each December 1st thereafter.

⁷ Because of the mid-year adjustment to the rates, the full impact of each year's adjustment does not affect revenue until the following year.

Figure 3. Capital Improvement Project Plan

Proposed Capital Improvement Projects in Estimated Future Values ¹	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	Total
G Av. Waterline Repair at Railroad Crossing -	-	61,800	-	-	-	61,800
Recoat 5.0 MG Reservoir at Plant 22	-	679,800	-	-	-	679,800
Service Line Reconstruction City Wide	250,000	257,500	265,225	273,182	281,377	1,327,284
Pipeline Replacement Program - construct replacement	450,000	463,500	477,405	491,727	506,479	2,389,111
I-15 at Ranchero Interchange - construct new pipelines	2,500,000	-	-	-	-	2,500,000
Sub-Total - Rate Funded Projects	3,200,000	1,462,600	742,630	764,909	787,856	6,957,995
I-15 at Ranchero Interchange Reservoir, Pump Station	\$ -	\$ -	\$ -	\$ 4,644,090	\$ 4,783,412	\$ 9,427,502
Reclaimed Water Distribution System	13,113,331	4,160,170	-	-	-	17,273,501
Total	\$16,313,331	\$ 5,622,770	\$ 742,630	\$ 5,408,999	\$ 5,571,269	\$33,658,998
Funding Sources						
Rate Funded Capital Projects	3,200,000	1,462,600	742,630	764,909	787,856	6,957,995
Use of Developer Fee Revenues	\$ -	\$ -	\$ -	\$ 4,644,090	\$ 4,783,412	\$ 9,427,502
Grants ²	4,726,918	2,000,000	-	-	-	6,726,918
Use of SRF Loan Proceeds ³	7,946,413	2,000,000	-	-	-	9,946,413
Use of Rate Revenue for Reclaimed Water Project	440,000	160,170	-	-	-	600,170
Total	\$16,313,331	\$ 5,622,770	\$ 742,630	\$ 5,408,999	\$ 5,571,269	\$33,658,998

1. Assumes construction cost inflation of 3% per year (per ENR, see Exhibit 2), added to City's cost estimate (provided 8/24/2017).

2. Grant funds will be used to help fund the Reclaimed Water distribution system.

3. SRF Loan proceeds will be used to fund the Reclaimed Water distribution system.

Figure 4 summarizes the projected reserve fund balances and reserve targets. A more detailed version of the proposed 5-year financial plan is included in Tables 1 and 2 of Appendix A. The appendix tables include revenue requirements, reserve funds, revenue sources, proposed rate adjustments, and the District's capital improvement program. As can be seen in Figure 4, given proposed rate adjustments, reserves do not quite meet the minimum target by the end of the five-year rate period; however, it is expected that the District will be well poised to achieve the reserve targets in the following year.

Figure 4. Summary of Reserve Funds

Beginning Reserve Fund Balances and Recommended Reserve Targets	Projected					
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Operating Reserve						
Ending Balance	\$ 806,711	\$ (895,644)	\$ (544,063)	\$ 1,392,253	\$ 4,494,644	\$ 4,645,760
<i>Recommended Minimum Target</i>	<i>3,892,579</i>	<i>3,991,436</i>	<i>4,180,356</i>	<i>4,349,311</i>	<i>4,494,644</i>	<i>4,645,760</i>
Capital Rehabilitation & Replacement Reserve						
Ending Balance	\$ -	\$ -	\$ -	\$ -	\$ 530,609	\$ 3,338,300
<i>Recommended Minimum Target</i>	<i>2,535,100</i>	<i>2,995,200</i>	<i>3,119,400</i>	<i>3,099,400</i>	<i>3,217,400</i>	<i>3,338,300</i>
Contamination Mitigation Reserve						
Ending Balance	\$ 500,000	\$ 1,000,000	\$ 1,500,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000
<i>Recommended Minimum Target</i>	<i>500,000</i>	<i>1,000,000</i>	<i>1,500,000</i>	<i>2,000,000</i>	<i>2,500,000</i>	<i>2,500,000</i>
Debt Reserve						
Ending Balance	\$ 1,766,215	\$ 1,746,400	\$ 1,729,740	\$ 1,641,525	\$ 1,631,025	\$ 1,339,000
<i>Recommended Minimum Target</i>	<i>1,766,215</i>	<i>1,746,400</i>	<i>1,729,740</i>	<i>1,641,525</i>	<i>1,631,025</i>	<i>1,339,000</i>
Total Ending Balance	\$ 3,072,926	\$ 1,850,756	\$ 2,685,677	\$ 5,033,778	\$ 9,156,278	\$ 11,823,060
Total Recommended Minimum Target	\$ 8,693,894	\$ 9,733,036	\$ 10,529,496	\$ 11,090,236	\$ 11,843,069	\$ 11,823,060

C. Cost of Service Analysis

Once the net revenue requirements are determined, the cost of service analysis proportionately distributes the revenue requirements to each of the customer classes. The cost of service analysis consists of two major components: (1) the classification of expenses, and (2) the allocation of costs to customer classes. Costs were classified corresponding to the function they serve. All costs in the District's budget are allocated to each component of the rate structure in proportion to the level of service required by customers. The levels of service are related to volumes of peak and non-peak demand, infrastructure capacity, and customer service. These are based on allocation factors, such as water consumption, peaking factors, and number of accounts by meter size. Ultimately, a cost-of-service analysis is intended to result in rates that are proportional to the cost of providing service to each customer.

CLASSIFICATION OF COSTS

Most costs are not typically allocated 100 percent to fixed or variable categories and, therefore, are allocated to multiple functions of water service. Costs were classified using the commodity-demand method which is found in the AWWA M1 Manual⁸. In accordance with this method, budgeted costs were "classified" into four categories: commodity, capacity, customer and fire protection. The classification process provides the basis for allocating costs to various customer classes based on the cost causation (classification) components described below:

- **Commodity related costs** are those that change as the volume of water produced and delivered changes. These commonly include the costs of water quality testing, energy related to pumping for transmission and distribution, and source of supply.
- **Capacity related costs** are associated with sizing facilities to meet the maximum, or peak demand. This includes both operating costs and capital infrastructure costs incurred to accommodate peak system capacity events.
- **Customer related costs** are associated with having a customer on the water system, such as meter reading, postage and billing.
- **Fire Protection related costs** are 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.

The District's budgeted costs were reviewed and allocated to these cost causation components which are used as the basis for establishing new water rates and translate to fixed and variable charges. Tables 31 through 37 in Appendix A show how the District's expenses were classified and allocated to these cost causation components. Additionally, each cost causation component is considered fixed or variable, as summarized in **Figure 5**.

⁸ *Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 83.*

Figure 5. Cost Classification Summary



Ideally, from a financial stability perspective, 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 are directly offset by reductions or increases in variable expenses. When rates are set in this manner, they provide the greatest revenue stability for the utility. However, other factors are often considered when designing water rates such as community values, water conservation goals, ease of understanding, and ease of administration.

Based on the District's projected costs, the Cost of Service Analysis (COSA) resulted in a distribution that is approximately 70 percent fixed and 30 percent variable. The District's current rate structure collects approximately 45 percent of revenue from fixed charges and 55 percent from variable charges. The Board of Directors has decided that revenue stability is a priority in this rate setting process, and has selected a rate structure that will collect 50 percent of revenue from fixed charges and 50 percent from variable rates for the first four years and then beginning December 2021, 55 percent from fixed, 45 percent from variable. This adjustment moves the District closer to the cost of service analysis results, and will provide more financial stability for the District. However, a share of the District's capacity costs, will need to be collected from the variable rates. Thus, capacity related costs (which are normally considered fixed) will be collected from both fixed and variable rates.

Figure 6 summarizes the allocation of the net revenue requirements to each cost causation component.

Figure 6. Allocation of Water Revenue Requirements

Customer Classes	Proposed Rates 17/18		Proposed Rate 21/22	
	Adjusted Net Revenue Requirements (2017-18) 50% Fixed / 50% Variable		Adjusted Net Revenue Requirements (2021-22) 55% Fixed / 45% Variable	
Variable Costs:				
Commodity - Related Costs	\$ 5,168,274	30.4%	\$ 7,727,118	30.4%
Capacity - Related Costs (volumetric allocation)	\$ 3,340,773	19.6%	\$ 3,722,616	14.6%
Fixed Costs:				
Capacity - Related Costs (fixed allocation)	\$ 6,491,311	38.1%	\$ 10,977,391	43.1%
Customer - Related Costs	\$ 1,970,470	11.6%	\$ 2,946,062	11.6%
Fire Protection - Related Costs	\$ 47,266	0.3%	\$ 70,667	0.3%
Net Revenue Requirement	\$ 17,018,094	100%	\$ 25,443,854	100%

CUSTOMER CLASSES

Customer classes are determined by combining customers with similar demand characteristics and types of use into categories that reflect the cost differentials to serve each type of customer. This process is limited by the desire to not overcomplicate the District's rate structure.

For the District, four customer classes were created: single-family residential, low peaking non-single family⁹, high peaking non-single family¹⁰ and private fire. Single-family residential customers are separated from other customers for the sake of the rate calculation because non-single family customers:

1. Are using more water on average per account.
2. Water usage varies greatly among these customers based on the specific type of customer and meter size.

As shown below in **Figure 7**, consumption by single-family customers of meter size from 5/8 inch to 1 inch are sufficiently similar to consider those meters a single class for the sake of the rate calculation (they will all pay the same fee).

Figure 7. Single Family Meter Size Characteristics

Meter Size	Number of Meters	Average Bi-Monthly Consumption May '16 - April '17	Peak Bi-Monthly Consumption May '16 - April '17	Peaking Factor
5/8 inch	339	33	50	1.52
3/4 inch	23,632	27	36	1.34
1 inch	362	34	48	1.39
1 1/2 inch	1	103	130	1.26
Total	24,334	27	36	1.34

The amount of consumption, the peaking factors and the number of meters by size are used in the cost-of-service analysis to allocate costs to customer classes, and determine the appropriate rate structures for each. The District's most recent consumption is summarized in **Figure 8**, peaking factors in **Figure 9** and **Figure 10**, and number of customers by customer class is shown in **Figure 11**.

Commodity related costs are costs associated with the total annual consumption of water by customer class, as shown in Figure 8. Consumption from FY 2014/15 was used in this analysis, because staff believes it best estimates the expected consumption for FY 2017/18 as customers increase consumption following drought conservation.

⁹ Low peaking non-single family residential consists of Multi-Family, Business and Fire Service.

¹⁰ High peaking non-single family residential consists Public Building, Industry and Irrigation.

Figure 8. Water Consumption by Customer Class

Customer Class	Volume (hcf) ¹	Percent of Total Volume
Single Family Residential ²	4,265,080	75.9%
Low Peaking Non-SFR ³	786,350	14.0%
High Peaking Non-SFR	566,701	10.1%
Total	5,618,131	100.0%

1. Consumption from FY 2014/15.

2. Includes 1.5" SFR meter.

3. Includes Fire Service consumption.

Peaking factors for each customer class are shown in Figure 9. A “peaking factor” is the relationship of each customer class’ average use to peak (generally summer) use.

Figure 9. Peaking Factors by Customer Class

Customer Class	Average Bi-Monthly Use (hcf)	Peak Bi-Monthly Use (hcf)	Peak Bi-Monthly Factor	Peak Capacity Factor
Single Family Residential	710,739	973,893	1.37	75.38%
SFR 1.5"	108	149	1.39	0.01%
Low Peaking Non-SFR	130,934	157,588	1.20	12.20%
High Peaking Non-SFR	94,575	160,184	1.69	12.40%
Fire Service	124	144	1.16	0.01%
Total	936,480	1,291,958		100.00%

Additional capacity factors within the single-family residential class are shown in Figure 10. The “additional capacity factor” represents the cumulative peak consumption in each tier. No additional capacity factor is assigned to Tier 1 water use, as this represents a base level of consumption by customers in the lowest tier, therefore no additional capacity costs would be incurred if all customers stayed within the Tier 1 threshold.

Figure 10. Single-Family Residential Peak Capacity Allocation Factors

Tier	Bi-Monthly Breakpoint ¹	Expected Consumption ²	Percentage of Total SFR Consumption
Tier 1	14 hcf	1,743,487	41%
Tier 2	35 hcf	1,375,265	32%
Tier 3	--	1,146,328	27%
Total		4,265,080	100%

1. Tier 1 break point set to 14 hcf which is expected indoor water consumption.

Tier 2 break point set to 35 hcf which is average summer consumption.

2. Consumption for all SFR customers (including 1.5" meters)

The number of customers for each customer class (also known as customer allocation factors) is shown in Figure 11.

Figure 11. Number of Meters by Customer Class

Customer Class	Number of Meters ¹	Percent of Total
Single Family Residential	24,333	93.2%
SFR 1.5"	1	0.0%
Low Peaking Non-SFR	1,240	4.7%
High Peaking Non-SFR	248	0.9%
Fire Service	294	1.1%
Total	26,116	100.0%

1. Meter Count for April / May 2017. Hesperia bills bi-monthly.

COSTS ALLOCATED TO CUSTOMER CLASSES

Costs are allocated to each customer class based on the customer characteristics of each class in order to reflect the cost differentials to serve each type of customer. **Figure 12** summarizes how the costs for each cost causation component from Figure 6 are allocated to each customer class.

Figure 12. Cost Allocation Methodology

Capacity Related Costs (fixed share)	•Allocated based on peak water consumption by customer class •Then, allocated based on the hydraulic capacity of each meter size
Customer Related Costs	•Allocated based on the total number of meters
Fire Protection Related Costs	•Allocated based on the hydraulic capacity of fire meters
Commodity Related Costs	•Allocated based on water consumption by customer class
Capacity Related Costs (volumetric share)	•Allocated based on peak consumption by customer class

The costs allocated to each causation component are assigned to each customer class using the cost allocation methodology described in Figure 12. This process is shown in the following sections, in Figure 13 through Figure 16.

Capacity Related Costs (fixed share) and Fire Protection

The capacity related costs (fixed share) allocation is summarized in **Figure 13**. Capacity related costs are those costs associated with constructing and operating the water system to ensure there is sufficient capacity in the system to meet the demand of each meter connected. These costs are first allocated to customers classes and then by hydraulic capacity. As noted above, single-family residential customers with meters 5/8 inch to 1 inch are combined. For non-single family residential customers, low and high peaking customer classes are combined and costs are allocated by meter size.

Larger meters have the potential to use more of the system's capacity, compared to smaller meters. The potential capacity demanded is proportional to the maximum safe meter capacity each meter size as established by the AWWA¹¹. The meter capacity factors used in this study are shown in the third column of Figure 13.

A "hydraulic capacity factor" (fourth column in Figure 13, "a") 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). For example, Figure 13 shows the hydraulic capacity of a two-inch meter is 5.33 times that of a 3/4-inch meter and therefore, the capacity component of the fixed meter charge is 5.33 times that of the 3/4 inch meter.

The actual number of meters by size (fifth column in Figure 13, "b") is multiplied by the corresponding capacity ratios to calculate the total number of equivalent meters (column c in Figure 13). The number of equivalent meters is used as a proxy for the potential demand that each customer can place on the water system and the percentage of capacity related costs (fixed share) distributed to each meter size by the Percent of Total Hydraulic Capacity.

The fire protection cost allocation is also summarized in Figure 13. Only Fire Protection meters are allocated this cost component. A direct allocation is made in the functionalization and classification step in the cost of service analysis to represent their share of system capacity and other related operations and maintenance costs and then allocated to Fire Protection meters through Hydraulic Capacity.

Figure 13. Capacity Related Costs (fixed share) & Fire Protection Costs Allocation

Customer Class / Meter Size	Percentage of Peak Capacity	Meter Capacity (gpm) ¹	Hydraulic Capacity Factor	Number of Meters	Total Equivalent Meters	Percent of Total Hydraulic Capacity	Allocated Costs
Single Family Residential	75.39%			24,333			\$4,893,771
All Other Standard Meters ²			a	b	c = a * b		
3/4 inch		30	1.00	656	656.0	18.1%	289,181
1 inch		50	1.67	477	795.0	21.9%	350,456
1 1/2 inch		100	3.33	153	510.0	14.1%	224,821
2 inch		160	5.33	141	752.0	20.8%	331,501
3 inch		320	10.67	39	416.0	11.5%	183,383
4 inch		500	16.67	20	333.3	9.2%	146,942
6 inch		1,000	33.33	2	66.7	1.8%	29,388
8 inch		2,800	93.33	1	93.3	2.6%	41,144
Subtotal Standard Meters	24.60%			1,489	3,622	100%	\$1,596,816
Fire Service Meters			a	b	c = a * b		
2.5 Inch		350	11.67	1	11.7	0.1%	33
4 Inch		700	23.33	95	2,216.7	13.0%	6,257
6 Inch		1,600	53.33	102	5,440.0	32.0%	15,355
8 Inch		2,800	93.33	88	8,213.3	48.3%	23,183
10 Inch		4,200	140.00	8	1,120.0	6.6%	3,161
Subtotal Fire Service	0.01%			294	17,002	100%	\$ 47,989
Total	100.00%			26,116			\$6,538,577

1. Per the Principles of Water Rates, Fees and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 338.

2. Includes both low and high peaking customer classes as well as the 1.5" SFR meter.

¹¹ Principles of Water Rates, Fees, and Charges, Manual of Water Supply Practices, M1, AWWA, seventh edition, 2017, p. 338.

Customer Related Costs

The customer related cost allocation is summarized in **Figure 14**. Customer related costs are comprised of those costs related to reading and maintaining meters, customer billing and collection, and other customer service related costs. The customer service costs do not differ among the various meter sizes, therefore, these costs are spread equally among all meters. Each customer class is allocated customer related costs based upon the percentage of total meters that are in that class.

Figure 14. Customer Related Cost Allocation

Customer Class / Meter Size	Number of Meters	Percent of Total	Allocated Costs
Single Family Residential	24,333	93.2%	\$ 1,835,942
All Other Standard Meters ¹			
3/4 inch	656	2.5%	49,496
1 inch	477	1.8%	35,990
1 1/2 inch	153	0.6%	11,544
2 inch	141	0.5%	10,639
3 inch	39	0.1%	2,943
4 inch	20	0.1%	1,509
6 inch	2	0.0%	151
8 inch	1	0.0%	75
Subtotal Standard Meters	1,489	5.7%	112,346
Fire Service Meters			
2.5 Inch	1	0.0%	75
4 Inch	95	0.4%	7,168
6 Inch	102	0.4%	7,696
8 Inch	88	0.3%	6,640
10 Inch	8	0.0%	604
Subtotal Fire Service	294	1.1%	22,183
Total	26,116	100.0%	\$ 1,970,470

1. Includes both low and high peaking customer classes as well as the 1.5" SFR meter.

Commodity Related Costs

The commodity related cost allocation is summarized in **Figure 15**. Commodity related costs are those costs related to the amount of water sold and commonly include the costs of chemicals used in the treatment process, energy related to pumping for transmission and distribution, and source of supply. Each customer class is allocated commodity related costs based upon the percentage of total consumption by that class.

Figure 15. Commodity Related Costs Allocation

Customer Class	Volume (hcf) ¹	Percent of Total	Allocated Costs
Single Family Residential ²			
Tier 1	1,743,487	31.0%	\$ 1,603,882
Tier 2	1,375,265	24.5%	1,265,144
Tier 3	1,146,328	20.4%	1,054,539
Subtotal SFR	4,265,080	75.9%	\$ 3,923,565
Non-SFR			
Low Peaking ³	786,350	14.0%	723,385
High Peaking	566,701	10.1%	521,324
Total	5,618,131	100.0%	\$ 5,168,274

1. Consumption from FY 2014/15.

2. Includes 1.5" SFR meter.

3. Includes Fire Service consumption.

The District currently has a four-tiered volumetric rate for all customers with meters 1 inch or smaller. NBS recommends that the tiered rate structure be adjusted by reducing the number of tiers to three and setting new breakpoints. In addition to these changes, the proposed tiered volumetric will only apply to single-family residential customers because they are a homogenous customer class, with similar consumption patterns that are used to establish appropriate tier breakpoints. All other customers will be subject to a uniform volumetric charge.

Tier breakpoints were established and expected consumption in each tier was determined. The goals when setting the tier breakpoints were twofold:

1. The breakpoint for the first tier was set to the 14 hcf¹², which is the average winter consumption for a typical single-family residential customer. Given the limited irrigation that occurs in the winter, this approximates average indoor use.
2. The breakpoint for the second tier was set to 35 hcf, which is equal to average summer consumption for a single-family residential customer. Average summer consumption is when water consumption is highest for a two-month billing period.

Capacity Related Costs (variable share)

The capacity related costs allocated to variable rates for each customer class are shown in **Figure 16**. Capacity related costs collected from the volumetric rate are allocated to each customer class based upon their percentage of peak bi-monthly use.

¹² HCF is one hundred cubic feet of water.

Figure 16. Capacity Related Costs (variable share)

Customer Class	Peak Monthly Use (hcf) ¹	Percent of Total	Allocated Costs
Single Family Residential ²	974,042	75.4%	\$ 2,518,979
Non-SFR Customers			
Low Peaking ³	157,583	12.2%	407,527
High Peaking	160,189	12.4%	414,266
Total	1,291,814	100%	\$ 3,340,773

1. Consumption from FY 2014/15.

2. Includes 1.5" SFR meter.

3. Includes Fire Service consumption.

The Capacity Related Costs (variable share) (from Figure 16) within the single-family residential class are further allocated to expected consumption by tier as shown in **Figure 17**. The “additional capacity required” represents the cumulative peak consumption in each tier. No additional capacity factor is assigned to Tier 1 water use, as this represents a base level of consumption by customers in the lowest tier, therefore no additional supply costs would be incurred if all customers stayed within the Tier 1 threshold.

Figure 17. Single Family Residential Capacity Related Costs (variable share)

Customer Class	Peak Monthly Use (hcf) ¹	Additional Capacity Required (hcf) ²	Percent of Total	Allocated Costs
Single Family Residential ²				
Tier 1	340,662	0	0.0%	\$ -
Tier 2	592,868	252,206	39.8%	1,003,034
Tier 3	974,042	381,174	60.2%	1,515,945
Total		633,380	100%	\$ 2,518,979

1. Consumption from FY 2014/15.

2. Includes 1.5" SFR meter.

D. Rate Design Analysis

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. NBS discussed several water rate alternatives and methodologies with District Staff over the course of this study, such as the percentage of revenue collected from fixed vs. variable charges and differentiating rates by customer class. Based on input provided by District staff, the Board of Directors, and the District’s legal counsel, the proposed rates were developed. The following sections describe this process.

NBS recommends that the District make the following modifications to the water rate structure:

1. Update the volumetric rates for Single Family Residential customers as follows:
 - a. Reduce the number of tiers from four to three
 - b. Establish new tier breakpoints based on recent consumption statistics
2. Move all other customers to a uniform volumetric rate that varies based on peaking capacity

FIXED CHARGES

The fixed meter charge recognizes that the water utility incurs fixed costs regardless of whether customers actually use water. There are two components that comprise the fixed meter charge: the customer component and the capacity component, as described in the previous section. Using the costs allocated to each meter size from Figure 13 and Figure 14; **Figure 18** calculates the bi-monthly charge for each meter size.

Figure 18. Fixed Meter Charges FY 2017/18

Customer Class / Meter Size	Number of Meters	Allocated Capacity Costs	Allocated Customer Costs	Allocated Fire Protection Costs	Total Costs	Bi-Monthly Charge
	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = b + c + d</i>	<i>f = e / a / 6</i>
Single Family Residential	24,333	\$4,893,771	\$ 1,835,942	\$ -	\$ 6,729,713	\$46.09
All Other Standard Meters ¹						
3/4 inch	656	289,181	49,496	-	338,677	\$86.05
1 inch	477	350,456	35,990	-	386,446	\$135.03
1 1/2 inch	153	224,821	11,544	-	236,365	\$257.48
2 inch	141	331,501	10,639	-	342,139	\$404.42
3 inch	39	183,383	2,943	-	186,326	\$796.26
4 inch	20	146,942	1,509	-	148,451	\$1,237.09
6 inch	2	29,388	151	-	29,539	\$2,461.60
8 inch	1	41,144	75	-	41,219	\$6,869.86
Fire Service Meters						
2.5 Inch	1	0	75	32	108	\$18.06
4 Inch	95	94	7,168	6,162	13,425	\$23.55
6 Inch	102	232	7,696	15,124	23,051	\$37.67
8 Inch	88	350	6,640	22,834	29,823	\$56.48
10 Inch	8	48	604	3,114	3,765	\$78.44
Total	26,116	\$6,491,311	\$ 1,970,470	\$ 47,266	\$ 8,509,047	

1. Includes both low and high peaking customer classes as well as the 1.5" SFR meter.

VARIABLE CHARGES

NBS' recommendation regarding rate structure is to maintain non-SFR customers on a uniform volumetric rate. This is due to the varying consumption characteristics of these customers; a uniform volumetric rate better represents their cost-of-service.

Using the costs allocated to each customer class in Figure 15 – Figure 17, **Figure 19** calculates the per unit volumetric charge for each customer class and tier.

Figure 19. Calculated Variable Charges for FY 2016/17

Customer Classes / Tier	Volume (hcf/yr) ¹	Allocated Commodity Costs	Allocated Capacity Costs	Total Costs	Charge per Unit Sold (\$/hcf)
	a	b	c	d = b + c	e = d / a
Single Family Residential²					
Tier 1	1,743,487	\$1,603,882	\$ -	\$ 1,603,882	\$0.92
Tier 2	1,375,265	1,265,144	1,003,034	2,268,178	\$1.65
Tier 3	1,146,328	1,054,539	1,515,945	2,570,484	\$2.24
Non-SFR					
Low Peaking ³	786,350	723,385	407,527	1,130,912	\$1.44
High Peaking	566,701	521,324	414,266	935,590	\$1.65
Total	5,618,131	\$5,168,274	\$ 3,340,773	\$ 8,509,047	

1. Consumption from FY 2014/15.

2. Includes 1.5" SFR meter.

3. Includes Fire Service consumption.

CONSTRUCTION RATE - VARIABLE CHARGES

Temporary construction water is charged its own volumetric rate that is equal to the average cost of water plus lease costs. Temporary construction use occurs over and above the consumption assumed for all other customers in the District. Therefore, all construction consumption causes production to exceed budgeted leased water. As a result, as shown in Figure 20, it is assumed that construction water must be leased at the Mojave Water Agency (Watermaster) rate of \$565 an Acre Foot¹³ to meet the needs of these customers.

Figure 20. Construction Rate Calculation

Construction Rate Calculation	Total Target Water Rate Revenue	Expected Lease Cost	Adjusted Target Water Rate Revenue	Total Expected Consumption (hcf)	Rate Excluding Water Purchase	Watermaster Lease Cost Per hcf	Proposed Rate (\$/hcf)
	a	b	c = a - b	d	e = c / d	f	g = e + f
Construction Rate	\$ 17,018,094	\$ 2,567,126	\$ 14,450,968	5,618,131	\$2.57	\$0.80	\$3.37

E. Current and Proposed Water Rates

The Cost of Service analysis is used to establish the rates for FY 2016/17. In the subsequent four years of the rate study, proposed charges are simply adjusted by the proposed adjustment in total rate revenue needed, to meet projected revenue requirements. **Figure 21** provides a comparison of the current and proposed rates for FY 2016/17 through FY 2020/21. More detailed tables on the developed of the proposed charges are documented in the Appendix A.

¹³ The calculation includes an adjustment for 5 percent system loss.

Figure 21. Current and Proposed Water Rates

Water Rate Schedule			Current Rates	Proposed Rates				
				1/1/2018	12/1/2018	12/1/2019	12/1/2020	12/1/2021
Bi-Monthly Fixed Service Charges:								
Single Family Residential								
5/8 inch			\$39.27	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
3/4 inch			\$39.27	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
1 inch			\$58.91	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
All Other Customers:								
3/4 inch			\$39.27	\$86.05	\$93.79	\$102.23	\$111.43	\$135.06
1 inch			\$58.91	\$135.03	\$147.18	\$160.43	\$174.86	\$213.26
1.5 inch			\$157.09	\$257.48	\$280.65	\$305.91	\$333.44	\$408.77
2 inch			\$251.35	\$404.42	\$440.82	\$480.49	\$523.74	\$643.38
3 inch			\$502.70	\$796.26	\$867.93	\$946.04	\$1,031.19	\$1,269.00
4 inch			\$785.47	\$1,237.09	\$1,348.43	\$1,469.79	\$1,602.07	\$1,972.83
6 inch			\$1,570.94	\$2,461.60	\$2,683.15	\$2,924.63	\$3,187.85	\$3,927.91
8 inch			--	\$6,869.86	\$7,488.14	\$8,162.08	\$8,896.66	\$10,966.20
Fire Service Charges:								
2.5 inch			\$10.00	\$18.06	\$19.69	\$21.46	\$23.39	\$25.51
4 inch			\$10.00	\$23.55	\$25.67	\$27.98	\$30.50	\$33.28
6 inch			\$12.00	\$37.67	\$41.05	\$44.75	\$48.78	\$53.24
8 inch			\$14.00	\$56.48	\$61.57	\$67.11	\$73.15	\$79.85
10 inch			\$18.00	\$78.44	\$85.50	\$93.19	\$101.58	\$110.90
Commodity Charges								
Rate per hcf of water consumed:								
Construction Rate			\$3.37	\$3.37	\$3.67	\$4.00	\$4.36	\$4.75
Uniform Potable Rate (MFR, Business, FS)			\$1.68	\$1.44	\$1.57	\$1.71	\$1.86	\$1.84
Uniform Potable Rate (Public Building, Inds. Irr.)			\$1.68	\$1.65	\$1.80	\$1.96	\$2.14	\$2.07
Current Break Proposed Break								
Tiered Rate (SFR Customers)								
Tier 1	10 hcf	14 hcf	\$0.90	\$0.92	\$1.00	\$1.09	\$1.19	\$1.30
Tier 2	40 hcf	35 hcf	\$1.55	\$1.65	\$1.80	\$1.96	\$2.14	\$2.07
Tier 3	80 hcf	35+ hcf	\$1.88	\$2.24	\$2.44	\$2.66	\$2.90	\$2.69
Tier 4	80+ hcf	--	\$2.24	N/A	N/A	N/A	N/A	N/A

F. Comparison of Current and Proposed Water Bills

Figure 22 and **Figure 23** compare a range of bi-monthly water bills for the current and proposed water rates as a result of the initial and fifth year rate adjustments for single-family residential customers (with a 5/8 to 1-inch meter) and business customers (the bill comparison for a commercial customer with a 3/4-inch meter). These bi-monthly bills are based on typical meter sizes, and the average consumption levels for each customer class are highlighted.

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

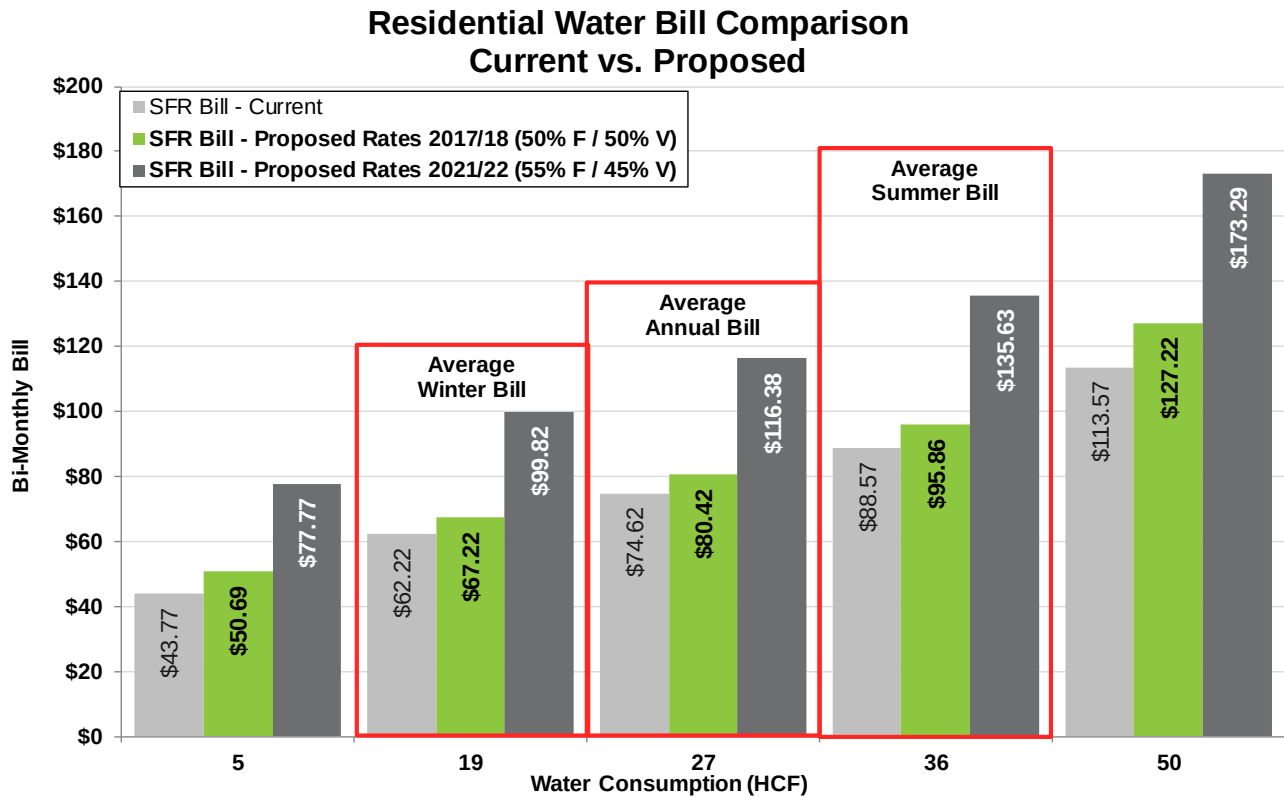
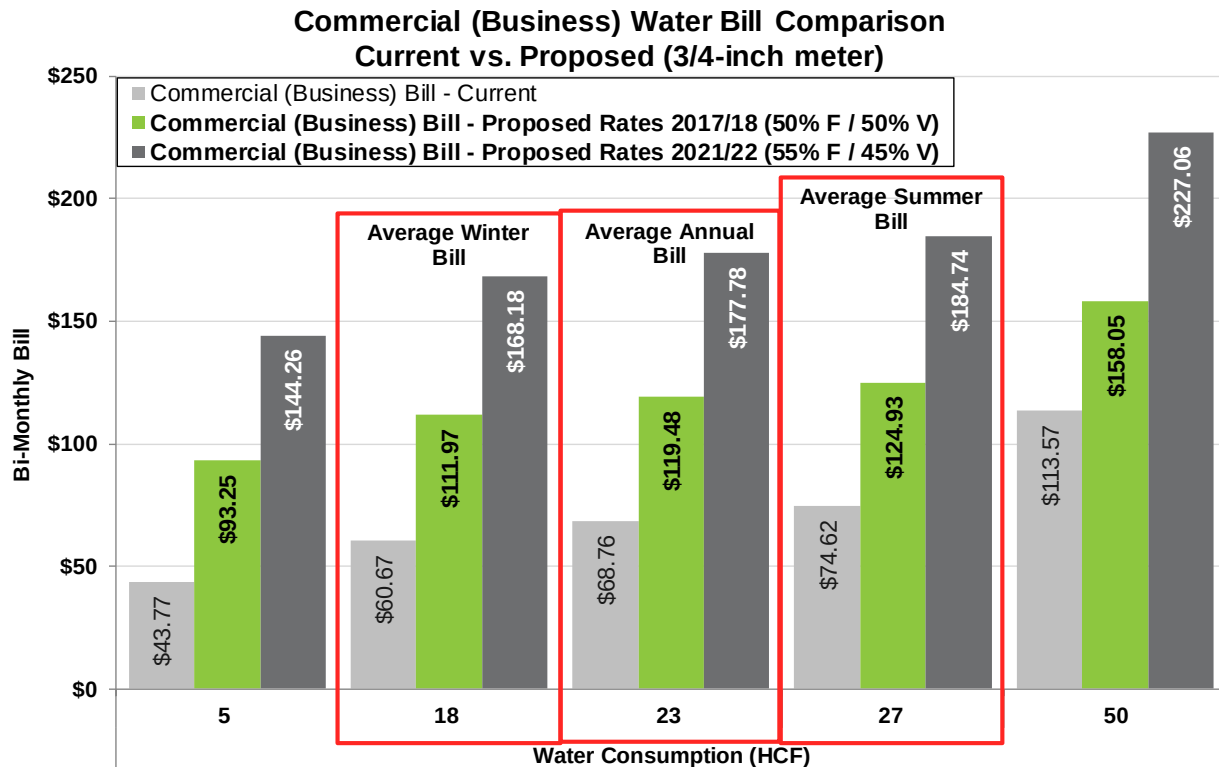


Figure 23. Bi-Monthly Water Bill Comparison for Commercial Customers



Section 3. SEWER RATES

A. Key Sewer Rate Study Issues

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

- Avoiding operational deficits and depletion of reserves beyond the target minimum reserve level.
- Generating additional revenue needed to meet projected funding requirements.

As noted earlier, staff determined that the current cost allocation and rate design were adequate, so only a Financial Plan was completed for the sewer utility. NBS developed various funding alternatives as requested by District staff and the Board over the course of this Study. The rate alternative that will be implemented, is ultimately the decision of the Board. The rates developed in this study are based on the net revenue requirements, number of customer accounts, and other District-provided information.

B. Financial Plan

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, maintain adequate debt coverage, and build reasonable reserve funds. The current state of the District, with regard to these objectives, is as follows:

- **Meeting Net Revenue Requirements:** For FY 2017/18 through FY 2021/22, the projected net revenue requirement (that is, total annual expenses plus debt service and rate-funded capital costs, less non-rate revenues) escalates from \$3.9 million to \$5.7 million. Expected inflation in Victor Valley Wastewater Reclamation Authority (VWVRA) costs¹⁴ are the primary reason for this increase. Additionally, in FY 2017/18, expenses exceed those budgeted as Administration, Utility Billing and Engineering costs previously born fully by the water utility have been appropriately shared with the sewer utility. These costs total an additional \$452,106 for the sewer utility to fund.
- **Building and Maintaining Reserve Funds:** Reserve funds provide a basis for a utility to cope with fiscal emergencies such as revenue shortfalls, asset failure, and natural disasters, among other events. Reserve policies provide guidelines for sound financial management, with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs, and emergencies. The District plans to have approximately \$6 million in reserves by the end of FY 2021/22. The reserve funds for the Utility are considered unrestricted reserves and consist of the following:
 - **The Operating Reserve** should equal approximately 180 days of operating expenses (approximately \$2.9 million for FY 2021/22). An Operating Reserve is intended to promote financial viability in the event of any short-term fluctuation in revenues and/or expenditures. Fluctuations in revenue can be caused by the inflow and outflow of cash during billing cycles, and – particularly in periods of economic distress – changes or trends in age of receivables. This reserve target is higher, as a percentage, than the reserve target

¹⁴ VWVRA costs are expected to rise by 8% annually, based on the historical annual increase in treatment costs for FY 2014/15 - 2017/18.

for the water utility because the District has limited control over its primary expense, which is for treatment by VVWRA.

- **The Capital Rehabilitation and Replacement Reserve** should equal 6 percent of net capital assets (approximately \$0.85 million by the end of FY 2021/22), which is set aside to address long-term capital system replacement and rehabilitation needs. Again, this is higher, as a percentage, than the reserve target for the water utility. In this case, the target is higher because at this time, the system is much smaller, so a larger percentage is needed in reserve.
- **Funding Capital Improvement Projects:** The District must also be able to fund necessary capital improvements in order to maintain current service levels. District staff has identified roughly \$10.1 million in expected capital expenditures for FY 2017/18 through 2021/22. With the recommended rate increases, these expenditures can be accomplished while increasing reserves to the minimum recommended target. Approximately \$6.7 million of this capital will be funded with Capacity fee reserves.
- **Inflation and Growth Projections** – Assumptions regarding cost inflation were made in order to project future revenues and expenses for the study period. The following inflation factors were used in the analysis:
 - Customer growth is expected to be nearly 6 percent for FY 2018/19 and FY 2019/20 followed by 3.48 percent annually thereafter.
 - General cost inflation is 2 percent annually.
 - Salary cost inflation is 4 percent annually, which includes merit step increases.
 - Benefit cost is 5 percent for FY 2018/19 and then 6 percent annually thereafter.
 - VVWRA cost inflation is 8 percent annually (based upon the previous three year average change).
 - Energy cost inflation is 5 percent annually.
 - When customer growth is compounded with VVWRA cost inflation, the annual increase is 14.44 percent for FY 2018/19 and FY 2019/20 followed by 11.75 percent annually thereafter. This compounding is appropriate as VVWRA costs are directly proportional to flow, which will increase as more customers connect.
 - When customer growth is compounded with energy cost inflation, the annual increase is 11.26 percent for FY 2018/19 and FY 2019/20 followed by 8.65 percent annually thereafter. This compounding is appropriate as energy costs are directly proportional to flow, which will increase as more customers connect.
- **Impact of Annual Rate Adjustment Date:** As with the water utility, the financial plan modelling assumes that rate adjustments occur in December of each year except for the initial increase.¹⁵ This means that only about half of the planned revenue to be collected from the rate adjustment listed for one fiscal year will be collected in that year. For example, there is a 6 percent increase in rate revenue planned for FY 2017/18; meaning, the rates are developed to recover \$3.76 million, which is a 6 percent increase over the expected \$3.54 million that would be collected without a rate increase. However, because of the timing for when the rates will go into effect, the Financial Plan results in only \$3.65 million in rate revenue that will be collected for FY 2017/18.

¹⁵ The first rate increase is scheduled for January 1, 2018 followed each December 1st thereafter.

Rate revenue increases of 6 percent annually from FY 2017/18 through 2021/22 will be needed in order to fully fund all operating expenses, planned capital projects and maintain reserves at the recommended targets by FY 2021/22¹⁶. **Figure 24** summarizes the sources and uses of funds, net revenue requirements, and the recommended annual percent increases in total rate revenue recommended for the next 5 years for the District.

Figure 24. Summary of Sewer Revenue Requirements

Summary of Sources and Uses of Funds and Net Revenue Requirements	Projected				
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Sources of Sewer Funds					
Rate Revenue Under Prevailing Rates	\$ 3,548,728	\$ 3,760,422	\$ 3,984,745	\$ 4,123,263	\$ 4,266,596
Non-Rate Revenues	75,215	79,702	84,456	87,392	90,430
Interest Earnings	37,280	30,109	55,741	72,385	70,103
Total Sources of Funds	\$ 3,661,223	\$ 3,870,233	\$ 4,124,943	\$ 4,283,040	\$ 4,427,129
Uses of Sewer Funds					
VVWRA Treatment Costs	\$ 2,425,000	\$ 2,775,233	\$ 3,176,048	\$ 3,549,371	\$ 3,966,574
Other Operating Costs	\$ 1,087,772	\$ 1,129,780	\$ 1,175,306	\$ 1,223,147	\$ 1,273,622
Administration Costs	\$ 104,996	\$ 109,508	\$ 114,542	\$ 119,817	\$ 125,345
Utility Billing Costs	172,800	179,125	186,042	193,257	200,786
Engineering Costs	174,310	181,139	188,689	196,582	204,834
Total Use of Funds	\$ 3,964,878	\$ 4,374,785	\$ 4,840,627	\$ 5,282,174	\$ 5,771,162
Additional Revenue from Rate Increases (1)	106,462	365,137	649,219	959,490	1,308,410
Projected Annual Rate Revenue Increase	6.00%	6.00%	6.00%	6.00%	6.00%
<i>Cumulative Increases</i>	6.00%	12.36%	19.10%	26.25%	33.82%
Net Revenue Requirement (2)	\$ 3,852,383	\$ 4,264,974	\$ 4,700,429	\$ 5,122,397	\$ 5,610,629

1. Assumes new rates are implemented July 1, 2016

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

Figure 25 summarizes the projected reserve fund balances and reserve targets. A more detailed version of the utility's proposed 5-year financial plan is included in Tables 1 and 2 of Appendix B. The appendix tables include revenue requirements, reserve funds, revenue sources, proposed rate increases, and the District's capital improvement program. As can be seen in Figure 25, given proposed rate increases, reserves will be well over the minimum target by the end of the five-year rate period; however, it is expected that the District will continue spending down these reserves until they reach recommended levels in FY 2025/26.

Figure 25. Summary of Reserve Funds

Beginning Reserve Fund Balances and Recommended Reserve Targets	Projected				
	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Operating Reserve					
Ending Balance	\$ 1,982,439	\$ 1,843,024	\$ 1,776,558	\$ 1,736,914	\$ 1,701,291
<i>Recommended Minimum Target</i>	<i>1,982,439</i>	<i>2,187,392</i>	<i>2,420,314</i>	<i>2,641,087</i>	<i>2,885,581</i>
Capital Rehabilitation & Replacement Reserve					
Ending Balance	\$ 7,397,161	\$ 7,397,161	\$ 6,397,874	\$ 4,266,338	\$ 3,934,789
<i>Recommended Minimum Target</i>	<i>566,400</i>	<i>595,200</i>	<i>696,700</i>	<i>826,600</i>	<i>847,600</i>
Total Ending Balance	\$ 9,379,600	\$ 9,240,185	\$ 8,174,433	\$ 6,003,252	\$ 5,636,080
Total Recommended Minimum Target	\$ 2,548,839	\$ 2,782,592	\$ 3,117,014	\$ 3,467,687	\$ 3,733,181

¹⁶ Because of the mid-year adjustment to the rates, the full impact of each year's increase does not affect revenue until the following year.

C. Current and Proposed Sewer Rates

The current rate per Equivalent Dwelling Unit (EDU) is simply increased by the proposed increase in total rate revenue needed, to meet projected revenue requirements. **Figure 26** provides a comparison of the current and proposed rates through FY 2021/22.

Figure 26. Current and Proposed Sewer Rates

Sewer Rate Schedule	Current Rates	Proposed Sewer Rates				
		FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
Rate Per EDU	\$45.97	\$49.97	\$52.97	\$56.15	\$59.52	\$63.09

D. Comparison of Current and Proposed Sewer Bills

Figure 27 and **Figure 28** compare bi-monthly sewer bills for the current and proposed sewer rates as a result of the planned rate adjustment for single-family residential customers and non-single family residential customers. These bi-monthly bills are based on typical assigned EDUs for each customer class.

Figure 27. Bi-Monthly Sewer Bill Comparison for Single Family Customers

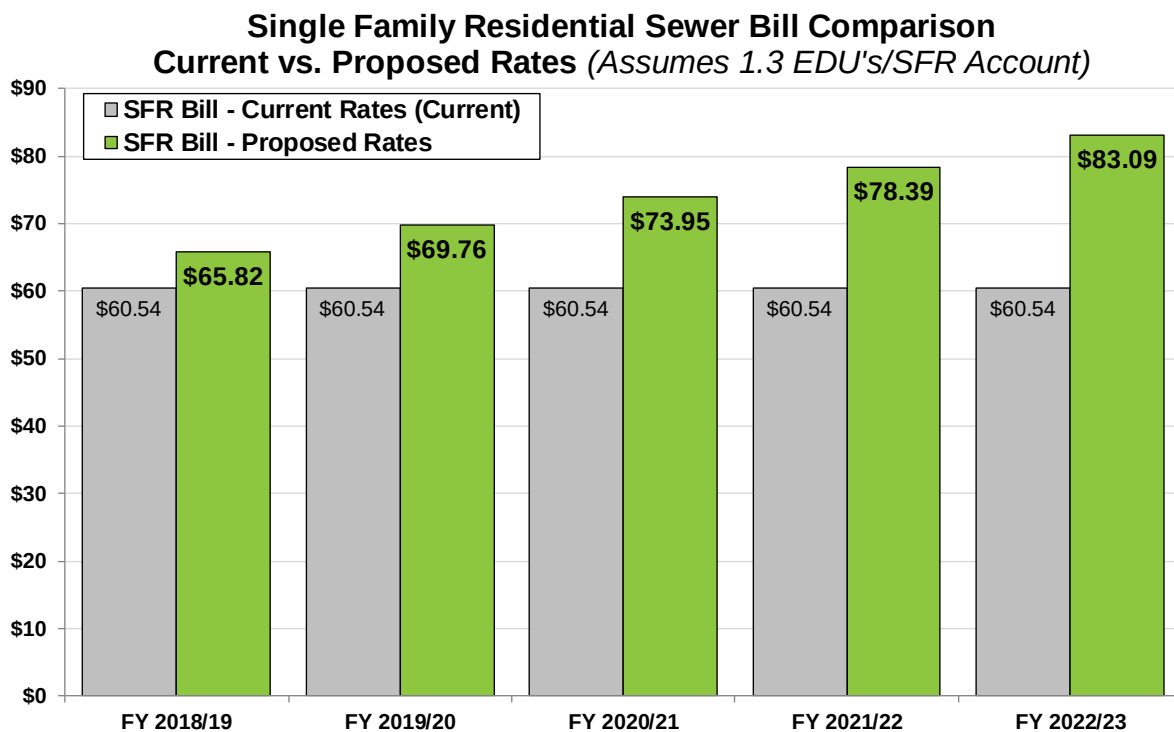
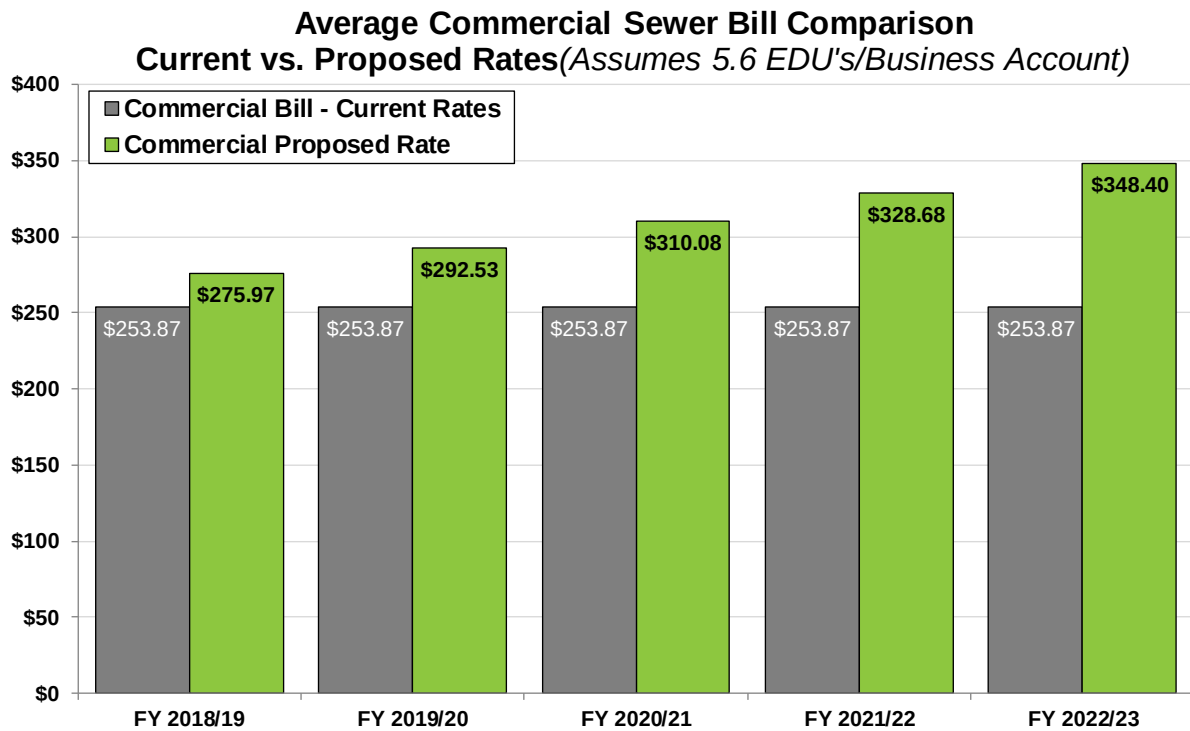


Figure 28. Bi-Monthly Sewer Bill Comparison for Commercial Customers



Section 4. RECOMMENDATIONS AND NEXT STEPS

A. Consultant Recommendations

NBS recommends the District take the following actions:

Approve and accept this Study: NBS recommends the Board of Directors formally approve and adopt this Study and its recommendations, and proceed with the steps required to implement the proposed rates. This will provide documentation of the rate study analyses and the basis for analyzing potential changes to future rates.

Implement Recommended Levels of Rate Adjustments and Proposed Rates: Based on successfully meeting the Proposition 218 procedural requirements, the Board of Directors should proceed with implementing the 5-year schedule of proposed rates and rate adjustments previously shown in Figure 21 and Figure 26. This will help ensure the continued financial health of District's water and sewer utilities.

Create Capacity Charge Funds: NBS recommends creating capacity charge funds pursuant to California Government Code §66013(c) for both the water and sewer utilities. This will allow staff to appropriately track revenue collected from capacity charges from all other District reserves, to ensure the revenue collected is used for the intended purpose.

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 Appendices provide 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 report 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 these assumptions, including 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 report 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.

Appendix A: Detailed Water Study Tables and Figures

TABLE 1 - FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY (1)	Revised	Projected									
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Sources of Water Funds											
Potable Rate Revenue:											
Water Sales Revenue Under Current Rates	\$ 14,986,089	\$ 15,612,930	\$ 15,838,933	\$ 16,068,207	\$ 16,300,800	\$ 16,536,760	\$ 16,776,135	\$ 17,018,975	\$ 17,265,331	\$ 17,515,253	\$ 17,768,792
Revenue from Rate Increases (2)	-	702,582	2,331,887	4,024,688	5,917,484	8,031,733	9,036,028	9,166,828	9,299,521	9,434,135	9,570,697
Subtotal: Rate Revenue After Rate Increases	14,986,089	16,315,512	18,170,820	20,092,895	22,218,284	24,568,492	25,812,163	26,185,803	26,564,852	26,949,388	27,339,489
Non-Rate Revenue:											
Tax Revenue	\$ 333,615	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360
Interest Income	28,387	23,544	8,259	5,132	10,499	35,427	96,516	135,184	138,067	141,968	145,772
Charges for Other Services	966,881	918,453	926,703	935,072	943,563	952,176	960,914	969,778	978,771	987,894	997,149
All Other Revenue	266,068	214,341	214,341	214,341	214,341	214,341	214,341	214,341	214,341	214,341	214,341
Subtotal: Non-Rate Revenue	1,594,951	1,503,698	1,496,663	1,501,905	1,515,763	1,549,304	1,619,131	1,666,664	1,678,539	1,691,563	1,704,622
Total Sources of Funds	\$ 16,581,040	\$ 17,819,210	\$ 19,667,482	\$ 21,594,800	\$ 23,734,047	\$ 26,117,796	\$ 27,431,294	\$ 27,852,467	\$ 28,243,391	\$ 28,640,951	\$ 29,044,112
Uses of Water Funds											
Operating Expenses (3):											
Source Of Supply	\$ 2,381,108	\$ 2,798,646	\$ 2,296,429	\$ 2,345,740	\$ 2,396,199	\$ 2,447,840	\$ 2,500,693	\$ 2,554,794	\$ 2,610,175	\$ 2,666,873	\$ 2,724,924
Production	3,115,116	3,373,471	3,524,836	3,685,315	3,853,481	4,029,713	4,214,408	4,407,984	4,610,878	4,823,550	5,046,484
Distribution System Maintenance	1,165,011	1,232,760	1,279,159	1,330,207	1,383,512	1,439,184	1,497,336	1,558,087	1,621,561	1,687,891	1,757,214
Pipeline Maintenance	1,051,658	1,281,847	1,320,346	1,361,806	1,404,826	1,449,472	1,495,816	1,543,934	1,593,903	1,645,806	1,699,730
Engineering (2)	866,806	822,574	852,435	885,229	919,449	955,162	992,439	1,031,355	1,071,988	1,114,421	1,158,741
Customer Service	1,369,371	1,649,117	1,699,288	1,753,514	1,809,814	1,868,280	1,929,011	1,992,106	2,057,672	2,125,821	2,196,670
Utility Billing (2)	1,020,202	892,982	925,668	961,412	998,701	1,037,608	1,078,209	1,120,583	1,164,815	1,210,992	1,259,209
Administration (2)	2,934,574	3,102,792	3,589,723	3,677,701	3,768,235	3,861,416	3,957,342	4,056,111	4,157,828	4,262,602	4,370,547
Property Management	333,959	416,125	431,822	449,177	467,313	486,269	506,085	526,803	548,467	571,124	594,823
Future Expected Expenses	-	-	46,038	271,324	395,715	403,629	411,702	419,936	428,335	436,901	445,639
Subtotal: Operating Expenses:	\$ 14,237,805	\$ 15,570,314	\$ 15,965,745	\$ 16,721,424	\$ 17,397,245	\$ 17,978,574	\$ 18,583,041	\$ 19,211,690	\$ 19,865,620	\$ 20,545,981	\$ 21,253,981
Other Expenditures:											
Existing Debt Service	\$ 1,756,460	\$ 1,754,590	\$ 1,742,250	\$ 1,724,578	\$ 1,639,813	\$ 1,631,775	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250	\$ -
New Debt Service (4)	-	-	1,146,888	1,146,888	1,146,888	1,146,888	1,146,888	1,146,888	1,146,888	1,146,888	1,146,888
Capital Outlay from Operating Budget	794,489	830,200	412,000	424,360	437,091	450,204	463,710	477,621	491,950	506,708	521,909
Rate-Funded Capital Expenses	236,000	3,640,000	1,622,770	742,630	764,909	787,856	3,231,873	5,487,706	5,151,401	4,873,784	7,153,483
Subtotal: Other Expenditures	\$ 2,786,949	\$ 6,224,790	\$ 4,923,908	\$ 4,038,455	\$ 3,988,700	\$ 4,016,722	\$ 6,181,471	\$ 8,441,964	\$ 8,108,739	\$ 7,832,629	\$ 8,822,281
Total Uses of Water Funds	\$ 17,024,754	\$ 21,795,104	\$ 20,889,653	\$ 20,759,879	\$ 21,385,945	\$ 21,995,297	\$ 24,764,512	\$ 27,653,655	\$ 27,974,359	\$ 28,378,611	\$ 30,076,262
Annual Surplus/(Deficit)	\$ (443,714)	\$ (3,975,894)	\$ (1,222,170)	\$ 834,921	\$ 2,348,101	\$ 4,122,499	\$ 2,666,783	\$ 198,812	\$ 269,032	\$ 262,340	\$ (1,032,150)
Net Revenue Req't. (Total Uses less Non-Rate Revenue)	\$ 15,429,803	\$ 20,291,406	\$ 19,392,990	\$ 19,257,974	\$ 19,870,182	\$ 20,445,993	\$ 23,145,381	\$ 25,986,991	\$ 26,295,820	\$ 26,687,047	\$ 28,371,639
Projected Annual Rate Revenue Adjustment	0.00%	9.00%	9.00%	9.00%	9.00%	9.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Increase from Annual Revenue Increases	0.00%	9.00%	18.81%	29.50%	41.16%	53.86%	53.86%	53.86%	53.86%	53.86%	53.86%
Debt Coverage After Rate Increase	1.33	1.28	1.28	1.70	2.27	2.93	3.56	3.49	3.40	3.30	6.79

- Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf. Budget values have been adjusted as part of the analysis, as detailed in Exhibit 1 (O&M).
- Revenue from rate increases assumes an implementation date of January 1, 2018 and December 1 each year thereafter.
- The FY 2016/17 and FY 2017/18 operating expenses are from the budget. Inflationary factors are applied to these expenses to project costs in FY 2018/19 and beyond.
- New Debt service is for a debt issue to fund the purchase of Water Rights (assumed \$9,075,000 cost, 10 year payoff, 4.5% interest).

TABLE 2 - RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY UN-RESTRICTED RESERVE	Revised	Projected									
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Total Beginning Cash (1, 2, 3)	\$ 7,492,534										
Operating Reserve											
Beginning Reserve Balance (1)	\$ 5,603,646	\$ 5,269,122	\$ 806,711	\$ (895,644)	\$ (544,063)	\$ 1,392,253	\$ 4,494,644	\$ 4,645,760	\$ 4,802,923	\$ 4,966,405	\$ 5,136,495
Plus: Net Cash Flow (After Rate Increases)	(443,714)	(3,975,894)	(1,222,170)	834,921	2,348,101	4,122,499	2,666,783	198,812	269,032	262,340	(1,032,150)
Plus: Transfer of Debt Reserve Surplus	109,191	13,483	19,815	16,660	88,215	10,500	292,025	9,250	11,250	13,250	1,305,250
Less: Transfer Out to Contamination Mitigation	-	(500,000)	(500,000)	(500,000)	(500,000)	(500,000)	-	-	-	-	-
Net: Transfer Out / In to Capital Replacement Reserve	-	-	-	-	-	(530,609)	(2,807,691)	(50,900)	(116,800)	(105,500)	(96,100)
Ending Operating Reserve Balance	\$ 5,269,122	\$ 806,711	\$ (895,644)	\$ (544,063)	\$ 1,392,253	\$ 4,494,644	\$ 4,645,760	\$ 4,802,923	\$ 4,966,405	\$ 5,136,495	\$ 5,313,495
Target Ending Balance (90-days of O&M) (4)	\$ 3,559,451	\$ 3,892,579	\$ 3,991,436	\$ 4,180,356	\$ 4,349,311	\$ 4,494,644	\$ 4,645,760	\$ 4,802,923	\$ 4,966,405	\$ 5,136,495	\$ 5,313,495
Capital Rehabilitation & Replacement Reserve											
Beginning Reserve Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 530,609	\$ 3,338,300	\$ 3,389,200	\$ 3,506,000	\$ 3,611,500
Plus: Transfer of Operating Reserve Surplus	-	-	-	-	-	530,609	2,807,691	50,900	116,800	105,500	96,100
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-	-	-
Ending Capital Rehab & Replacement Reserve Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 530,609	\$ 3,338,300	\$ 3,389,200	\$ 3,506,000	\$ 3,611,500	\$ 3,707,600
Capital R&R Reserve (3.0% of Net Assets)	\$ 2,535,100	\$ 2,535,100	\$ 2,995,200	\$ 3,119,400	\$ 3,099,400	\$ 3,217,400	\$ 3,338,300	\$ 3,389,200	\$ 3,506,000	\$ 3,611,500	\$ 3,707,600
Contamination Mitigation Reserve											
Beginning Reserve Balance	\$ -	\$ -	\$ 500,000	\$ 1,000,000	\$ 1,500,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
Plus: Transfer of Operating Reserve Surplus	-	500,000	500,000	500,000	500,000	500,000	-	-	-	-	-
Ending Capital Rehab & Replacement Reserve Balance	\$ -	\$ 500,000	\$ 1,000,000	\$ 1,500,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
Contamination Mitigation Reserve (\$2.5M) (4)	\$ -	\$ 500,000	\$ 1,000,000	\$ 1,500,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
Ending Balance	\$ 5,269,122	\$ 1,306,711	\$ 104,356	\$ 955,937	\$ 3,392,253	\$ 7,525,253	\$ 10,484,060	\$ 10,692,123	\$ 10,972,405	\$ 11,247,995	\$ 11,521,095
Minimum Target Ending Balance	\$ 6,094,551	\$ 6,927,679	\$ 7,986,636	\$ 8,799,756	\$ 9,448,711	\$ 10,212,044	\$ 10,484,060	\$ 10,692,123	\$ 10,972,405	\$ 11,247,995	\$ 11,521,095
Ending Surplus/(Deficit) Compared to Targets	\$ (825,429)	\$ (5,620,967)	\$ (7,882,280)	\$ (7,843,819)	\$ (6,056,458)	\$ (2,686,791)	\$ -	\$ -	\$ -	\$ -	\$ -
Restricted Reserves:											
Debt Reserve											
Beginning Reserve Balance (2)	\$ 1,888,889	\$ 1,779,698	\$ 1,766,215	\$ 1,746,400	\$ 1,729,740	\$ 1,641,525	\$ 1,631,025	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250
Plus: Reserve Funding from New Debt Obligations	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer of Surplus to Operating Reserve	(109,191)	(13,483)	(19,815)	(16,660)	(88,215)	(10,500)	(292,025)	(9,250)	(11,250)	(13,250)	(1,305,250)
Ending Debt Reserve Balance	\$ 1,779,698	\$ 1,766,215	\$ 1,746,400	\$ 1,729,740	\$ 1,641,525	\$ 1,631,025	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250	\$ -
Target Ending Balance	\$ 1,779,698	\$ 1,766,215	\$ 1,746,400	\$ 1,729,740	\$ 1,641,525	\$ 1,631,025	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250	\$ -
Annual Interest Earnings Rate (5)	0.25%	0.25%	0.32%	0.60%	0.89%	1.17%	1.45%	1.45%	1.45%	1.45%	1.45%

- Sum of Fund 700 Account 1000 (Cash) and 1102 (Cash-Utility Billing) Source: Water Cash Balances at 2016-07-01.xlsx
- Sum of Fund 700 Account 1319, 1320, 1321 Source: Water Cash Balance at 2016-07-01.xlsx
- Reserve (Fund 701 Account 100 Connection fee) currently showing a negative \$12m. This is assumed to be debt owed the operating fund, which is repaid with connection fee revenue over time. Source: Water Cash Balance at 2016-07-01.xlsx
- Contamination Mitigation final reserve target of \$2.5 million represents the estimated cost of replacing one well.
- Interest earnings in FY 2018/19 equal to 5-year LAIF average (2011/12-2015/16). Interest earnings increase to 10-year LAIF average by FY 2022/23.

TABLE 3 - 5 YEAR TARGET CAPITAL PROJECT SUMMARY

Proposed Capital Improvement Projects in Estimated Future Values (1)	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	Total
G Av. Waterline Repair at Railroad Crossing - pipe is leaking	-	-	61,800	-	-	-	-	61,800
Recoat 5.0 MG Reservoir at Plant 22	-	-	679,800	-	-	-	-	679,800
Service Line Reconstruction City Wide	-	250,000	257,500	265,225	273,182	281,377	-	1,327,284
Pipeline Replacement Program - construct replacement pipelines within existing streets at various	-	450,000	463,500	477,405	491,727	506,479	-	2,389,111
I-15 at Rancho Interchange - construct new pipelines and pump station to provide service to	-	2,500,000	-	-	-	-	-	2,500,000
Additional Capital Projects (Alternative #3)	-	-	-	-	-	-	3,231,873	3,231,873
Sub-Total - Rate Funded Projects	-	3,200,000	1,462,600	742,630	764,909	787,856	3,231,873	10,189,868
I-15 at Rancho Interchange Reservoir, Pump Station Upgrade and Pipeline (developer funded)	\$ -	\$ -	\$ -	\$ -	\$ 4,644,090	\$ 4,783,412	\$ -	\$ 9,427,502
Reclaimed Water Distribution System (grant, loan and cash funded)	236,000	13,113,331	4,160,170	-	-	-	-	17,509,501
Total	\$ 236,000	\$ 16,313,331	\$ 5,622,770	\$ 742,630	\$ 5,408,999	\$ 5,571,269	\$ 3,231,873	\$ 37,126,871
Funding Sources								
Rate Funded Capital Projects	-	3,200,000	1,462,600	742,630	764,909	787,856	3,231,873	10,189,868
Use of Developer Fee Revenues	\$ -	\$ -	\$ -	\$ -	\$ 4,644,090	\$ 4,783,412	\$ -	\$ 9,427,502
Grants (2)	-	4,726,918	2,000,000	-	-	-	-	6,726,918
Use of SRF Loan Proceeds (3)	-	7,946,413	2,000,000	-	-	-	-	9,946,413
Use of Rate Revenue for Reclaimed Water Project	236,000	440,000	160,170	-	-	-	-	836,170
Total	\$ 236,000	\$ 16,313,331	\$ 5,622,770	\$ 742,630	\$ 5,408,999	\$ 5,571,269	\$ 3,231,873	\$ 37,126,872
(Shortfall)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

1. Assumes construction cost inflation of 3% per year (per ENR, see Exhibit 2), added to City's cost estimate (provided 8/24/2017).
2. Grant funds will be used to help fund the Reclaimed Water distribution system.
3. SRF Loan proceeds will be used to fund the Reclaimed Water distribution system.

CHART 1

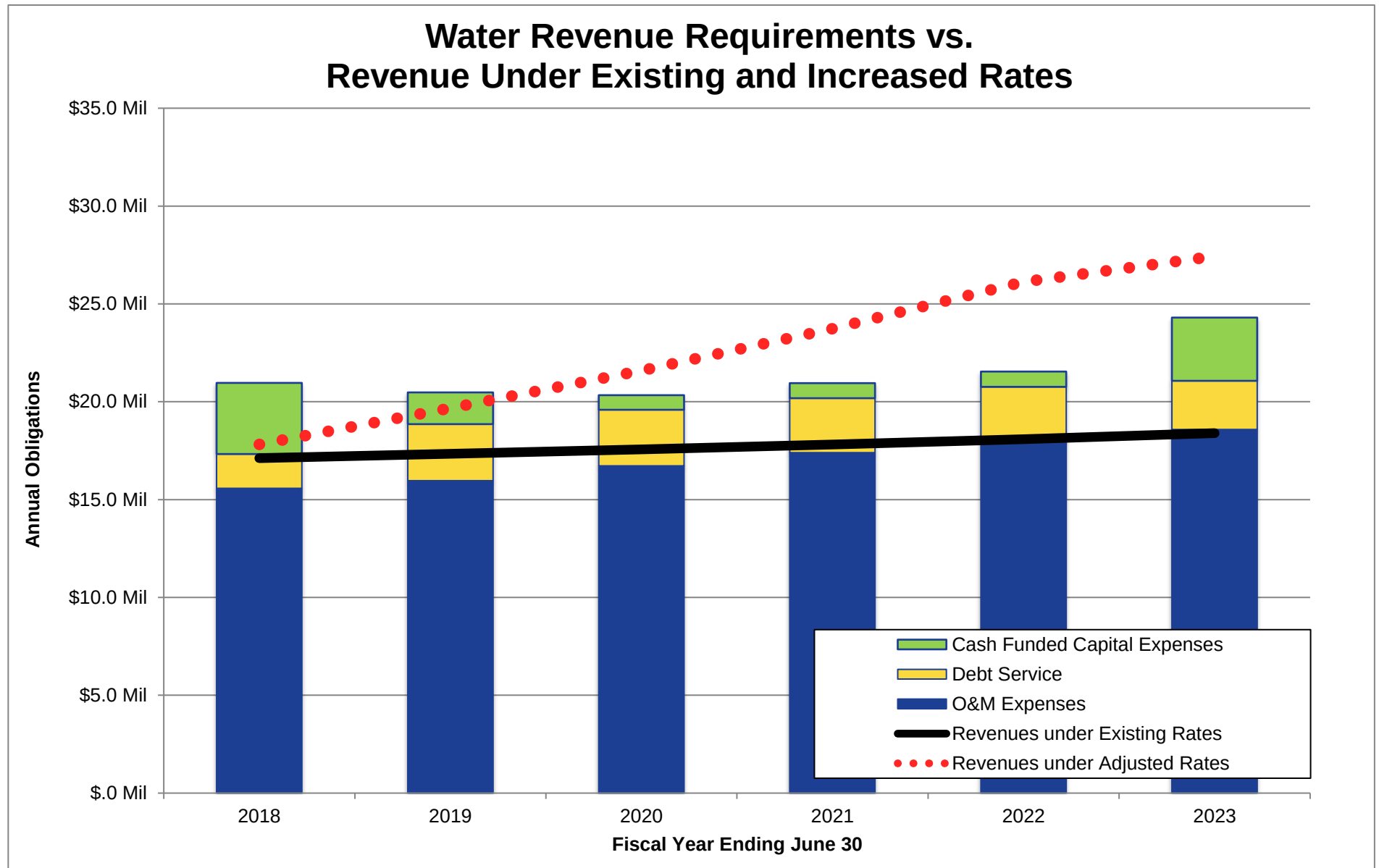


CHART 2

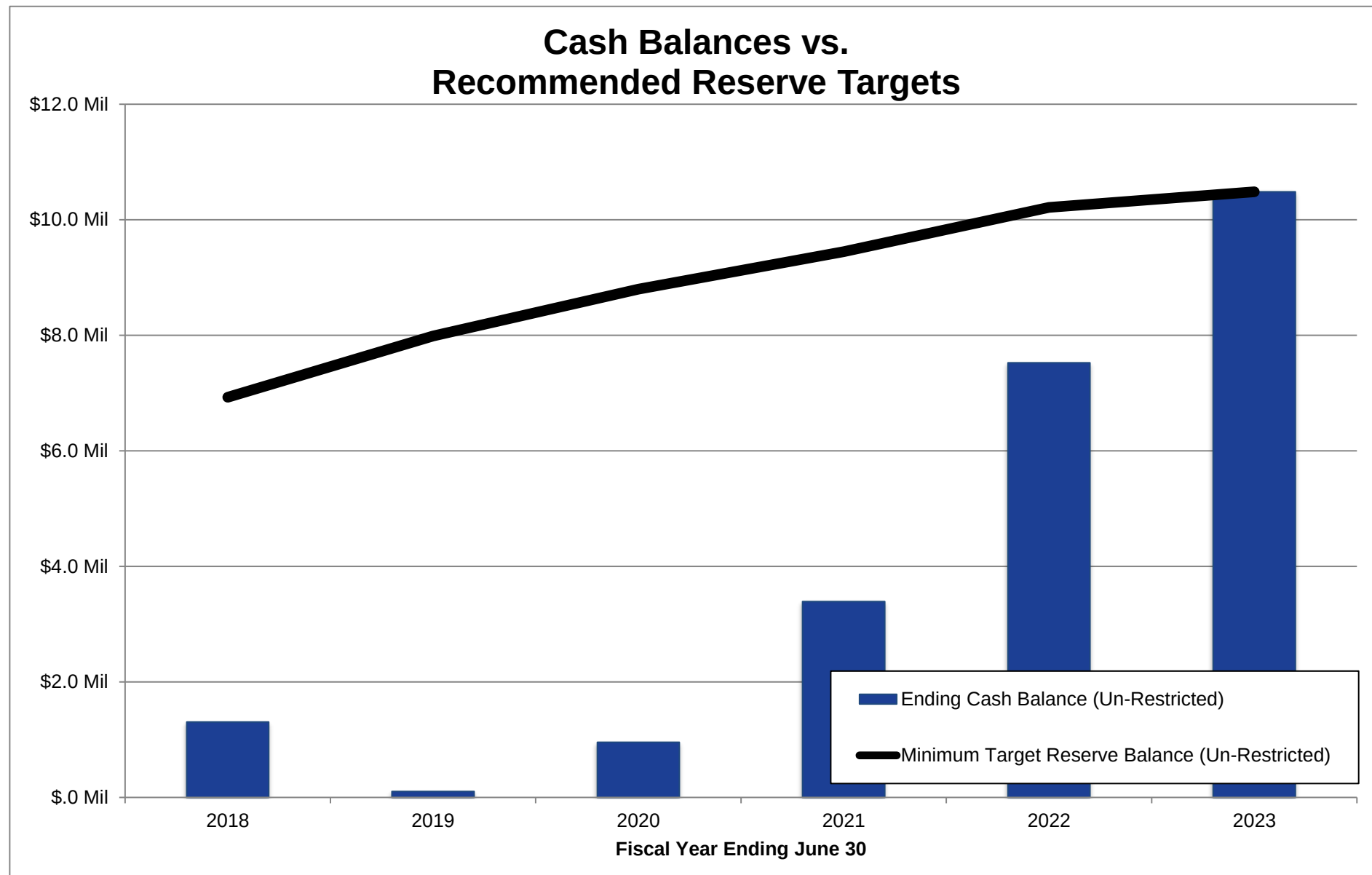


CHART 3

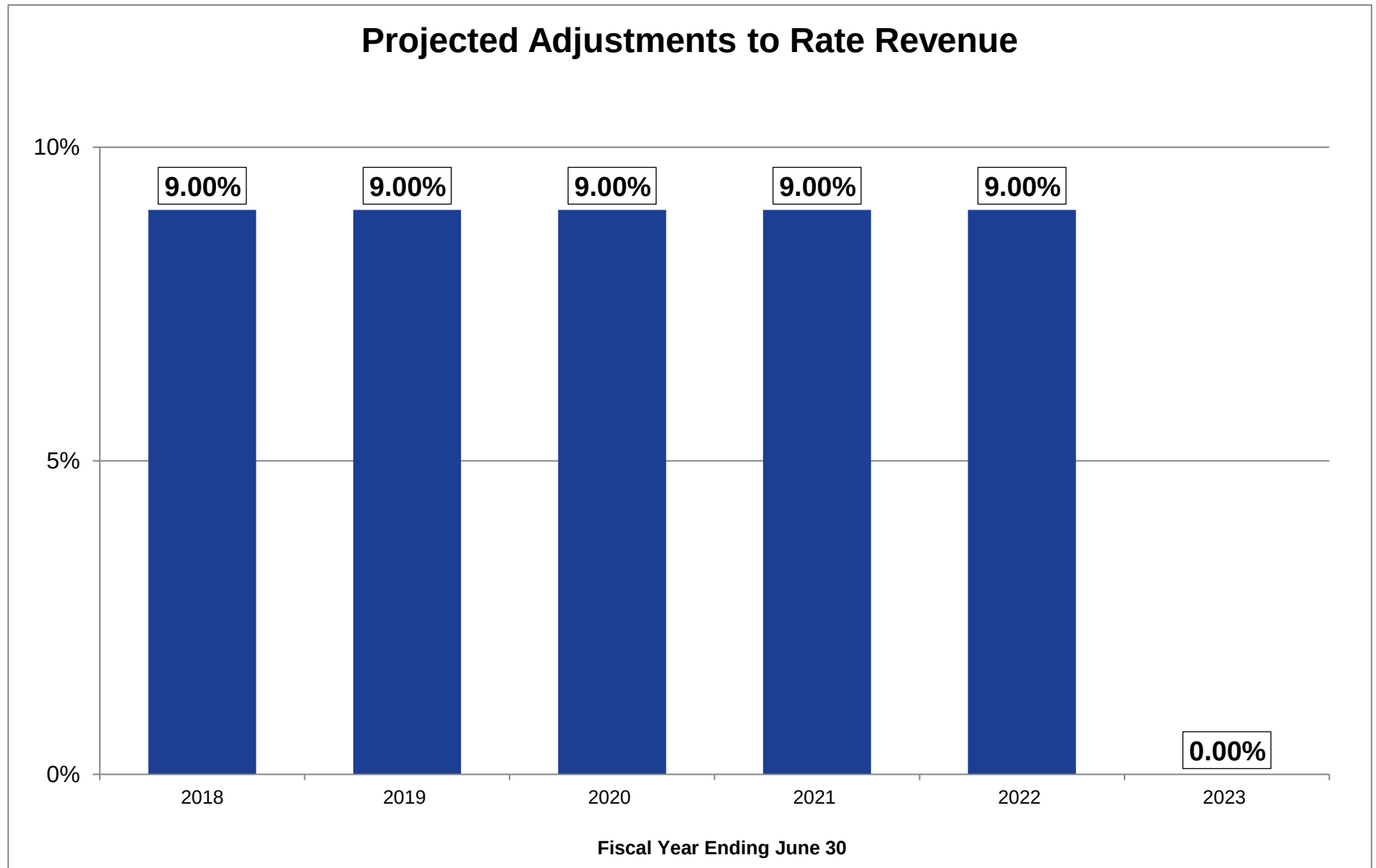
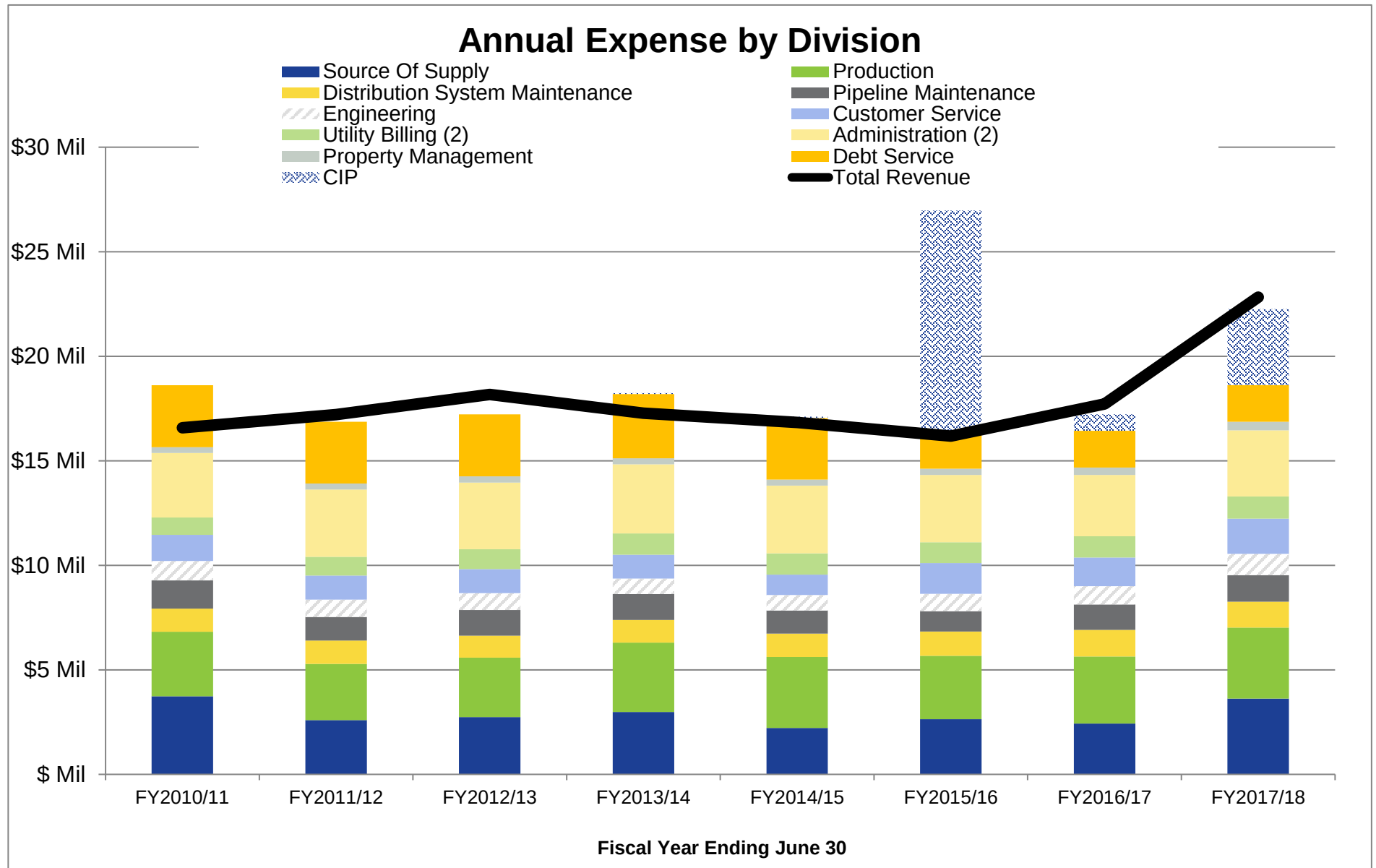


CHART 4



CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

Historical Revenue vs. Expenses

TABLE 4 - HISTORICAL REVENUE

DESCRIPTION	2011	2012	2013	2014	2015	2016	2017	2018
Water Operating Fund								
Taxes- Secured Property Taxes	\$ 250,482	\$ 271,677	\$ 272,256	\$ 263,813	\$ 271,408	\$ 280,678	\$ 289,385	\$ 300,960
Taxes- WEDA Pass Through	\$ 5,389	\$ 5,130	\$ 5,608	\$ 6,552	\$ 8,088	\$ 6,279	\$ 10,310	\$ 10,830
Taxes- Other	\$ 6,711	\$ 6,667	\$ 7,711	\$ 50,358	\$ 7,914	\$ 30,632	\$ 33,920	\$ 35,570
Interest- Income	\$ 14,275	\$ 5,572	\$ 6,970	\$ 6,668	\$ 5,898	\$ 12,337	\$ 28,387	\$ 23,544
Intergovernmental- City Rent Charge	\$ 58,375	\$ 52,537	\$ 52,537	\$ 52,537	\$ 52,537	\$ 52,537	\$ 52,537	\$ 18,064
Charges for Services- WaterSales/Residential	\$ 8,239,080	\$ 7,879,407	\$ 8,185,399	\$ 7,936,001	\$ 7,282,238	\$ 6,386,859	\$ 6,910,669	\$ 7,290,756
Charges for Services- WaterSales/Business	\$ 419,923	\$ 381,053	\$ 447,474	\$ 432,435	\$ 428,124	\$ 421,078	\$ 454,994	\$ 477,744
Charges for Services- WaterSales/Public Building	\$ 171,238	\$ 478,674	\$ 498,500	\$ 495,161	\$ 471,394	\$ 502,470	\$ 605,678	\$ 666,245
Charges for Services- WaterSales/Irrigation	\$ 73,712	\$ 210,405	\$ 263,637	\$ 251,083	\$ 229,077	\$ 194,531	\$ 225,277	\$ 247,804
Charges for Services- WaterSales/Construction	\$ 75,795	\$ 205,918	\$ 312,287	\$ 44,530	\$ 190,952	\$ 67,542	\$ 139,249	\$ 208,873
Charges for Services- WaterSales/Industrial	\$ 240	\$ 2,990	\$ 2,368	\$ 3,888	\$ 7,180	\$ 12,179	\$ 9,071	\$ 13,945
Charges for Services- Water Availability Charge	\$ 6,379,295	\$ 6,445,510	\$ 6,535,900	\$ 6,542,963	\$ 6,620,441	\$ 6,652,644	\$ 6,641,151	\$ 6,707,563
Charges for Services- Water Meter Fees	\$ 5,159	\$ 15,161	\$ 8,582	\$ 32,464	\$ 44,520	\$ 149,014	\$ 280,000	\$ 260,000
Charges for Services- Reconnection Fees	\$ 236,545	\$ 210,731	\$ 196,330	\$ 244,343	\$ 186,332	\$ 200,113	\$ 185,643	\$ 194,925
Charges for Services- Water Inspection	\$ 688	\$ 2,064	\$ 688	\$ 3,652	\$ 7,037	\$ 2,489	\$ 11,009	\$ 10,000
Charges for Services- New Account Setup	\$ 181,120	\$ 177,431	\$ -	\$ 18,019	\$ 118,872	\$ 101,798	\$ 102,500	\$ 105,000
Charges for Services- Rent Eagle Plaza	\$ 52,669	\$ 46,189	\$ 179,349	\$ 159,672	\$ 103,973	\$ 225,802	\$ 228,258	\$ 226,464
Charges for Services- Other	\$ 165,735	\$ 177,260	\$ 49,135	\$ 86,697	\$ 114,003	\$ 106,588	\$ 106,934	\$ 104,000
Grants- MWA Toilet Grant	\$ -	\$ -	\$ -	\$ -	\$ 38,000	\$ -	\$ -	\$ -
Other Operating	\$ 52,113	\$ 323,291	\$ 227,113	\$ 187,694	\$ 194,086	\$ 176,197	\$ 190,597	\$ 189,341
All Other	\$ -	\$ -	\$ 763,906	\$ 123,443	\$ 35,979	\$ 24,177	\$ 75,471	\$ 25,000
Subtotal: Water Operating Fund	\$ 16,388,544	\$ 16,897,667	\$ 18,015,750	\$ 16,941,973	\$ 16,418,053	\$ 15,605,944	\$ 16,581,040	\$ 17,116,628
Water Capital Fund								
Charges for Services- Capital Facility Charges	\$ 187,560	\$ 307,599	\$ 157,211	\$ 306,762	\$ 414,951	\$ 575,453	\$ 1,141,270	\$ 983,880
Charges for Service- Other	\$ 404	\$ -	\$ -	\$ 23,115	\$ -	\$ -	\$ -	\$ -
Charges for Services- Prop 84 Drought Relief Grant	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 419	\$ -	\$ 1,999,559
Charges for Services- Prop 1 State Water Board	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,727,337
Subtotal: Water Capital Fund	\$ 187,964	\$ 307,599	\$ 157,211	\$ 329,877	\$ 414,951	\$ 575,872	\$ 1,141,270	\$ 5,710,776
TOTAL: REVENUE	\$ 16,576,508	\$ 17,205,266	\$ 18,172,961	\$ 17,271,850	\$ 16,833,004	\$ 16,181,816	\$ 17,722,310	\$ 22,827,404

1. Source: <http://www.cityofhesperia.us/452/Financial-Documents> under Adopted Budget for FY 1718, FY 1516 and FY 1314

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

Historical Revenue vs. Expenses

TABLE 5 - HISTORICAL EXPENSES

DESCRIPTION	2011	2012	2013	2014	2015	2016	2017	2018
SOURCE OF SUPPLY								
Salaries	\$ 104,502	\$ 105,764	\$ 91,776	\$ 118,783	\$ 113,323	\$ 116,887	\$ 89,835	\$ 93,339
Benefits	\$ 36,031	\$ 42,227	\$ 31,707	\$ 40,455	\$ 37,481	\$ 34,934	\$ 29,247	\$ 33,765
Materials and Operations	\$ 3,597,770	\$ 2,449,069	\$ 2,611,776	\$ 2,821,396	\$ 2,062,182	\$ 2,379,875	\$ 2,259,451	\$ 2,734,779
Other Operating	\$ 2,357	\$ 1,412	\$ 2,195	\$ 1,231	\$ 2,373	\$ 15,403	\$ 2,575	\$ 2,400
Capital Outlay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 92,000	\$ 51,600	\$ 760,200
Subtotal: Source of Supply	\$ 3,740,660	\$ 2,598,472	\$ 2,737,454	\$ 2,981,865	\$ 2,215,359	\$ 2,639,099	\$ 2,432,708	\$ 3,624,483
PRODUCTION								
Salaries	\$ 440,251	\$ 429,922	\$ 443,356	\$ 449,231	\$ 450,280	\$ 456,316	\$ 436,749	\$ 464,587
Benefits	\$ 147,979	\$ 160,117	\$ 148,707	\$ 156,889	\$ 172,407	\$ 167,057	\$ 152,058	\$ 189,428
Materials and Operations	\$ 2,138,224	\$ 1,943,628	\$ 2,099,500	\$ 2,276,213	\$ 2,492,348	\$ 2,133,120	\$ 2,331,909	\$ 2,461,331
Contractual	\$ 327,360	\$ 112,177	\$ 125,124	\$ 243,504	\$ 103,717	\$ 120,762	\$ 148,100	\$ 205,775
Other Operating	\$ 31,549	\$ 40,331	\$ 32,091	\$ 27,943	\$ 39,963	\$ 40,849	\$ 46,300	\$ 52,350
Capital Outlay	\$ -	\$ -	\$ -	\$ 168,800	\$ 139,404	\$ 116,790	\$ 95,000	\$ 25,000
Subtotal: Source of Supply	\$ 3,085,363	\$ 2,686,175	\$ 2,848,778	\$ 3,322,580	\$ 3,398,119	\$ 3,034,894	\$ 3,210,116	\$ 3,398,471
DISTRIBUTION SYSTEM MAINTENANCE								
Salaries	\$ 609,928	\$ 603,661	\$ 592,981	\$ 610,060	\$ 628,708	\$ 662,242	\$ 647,737	\$ 676,185
Benefits	\$ 217,743	\$ 249,860	\$ 230,511	\$ 226,095	\$ 235,588	\$ 227,522	\$ 207,154	\$ 264,195
Materials and Operations	\$ 237,265	\$ 216,406	\$ 188,002	\$ 195,239	\$ 185,829	\$ 197,176	\$ 242,209	\$ 224,550
Contractual-TOTAL	\$ 373	\$ 574	\$ 804	\$ 373	\$ 164	\$ 338	\$ 500	\$ 3,500
Other Operating	\$ 37,866	\$ 44,402	\$ 40,081	\$ 51,328	\$ 65,057	\$ 75,223	\$ 67,411	\$ 64,330
Capital Outlay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 99,973	\$ -
Subtotal: Distribution System Maintenance	\$ 1,103,175	\$ 1,114,903	\$ 1,052,379	\$ 1,083,095	\$ 1,115,346	\$ 1,162,501	\$ 1,264,984	\$ 1,232,760
PIPELINE MAINTENANCE								
Salaries	\$ 338,213	\$ 346,411	\$ 366,185	\$ 378,772	\$ 374,867	\$ 368,172	\$ 391,518	\$ 393,957
Benefits	\$ 134,009	\$ 146,638	\$ 134,205	\$ 133,236	\$ 137,364	\$ 133,561	\$ 126,357	\$ 155,565
Materials and Operations	\$ 761,845	\$ 582,546	\$ 636,252	\$ 632,185	\$ 543,350	\$ 360,331	\$ 449,913	\$ 634,120
Contractual	\$ 52,008	\$ 4,005	\$ 13,671	\$ 13,981	\$ 1,201	\$ 23,170	\$ 13,000	\$ 38,500
Other Operating	\$ 67,488	\$ 54,869	\$ 68,014	\$ 79,737	\$ 51,110	\$ 87,325	\$ 70,870	\$ 59,705
Capital Outlay	\$ -	\$ -	\$ 6,210	\$ -	\$ -	\$ -	\$ 172,830	\$ -
Subtotal: Pipeline Maintenance	\$ 1,353,563	\$ 1,134,469	\$ 1,224,537	\$ 1,237,911	\$ 1,107,892	\$ 972,559	\$ 1,224,488	\$ 1,281,847
ENGINEERING								
Salaries	\$ 590,691	\$ 542,583	\$ 537,485	\$ 499,543	\$ 490,018	\$ 475,405	\$ 482,876	\$ 526,117
Benefits	\$ 211,008	\$ 218,325	\$ 192,827	\$ 177,015	\$ 176,395	\$ 142,944	\$ 125,074	\$ 208,432
Materials and Operations	\$ 8,826	\$ 9,324	\$ 10,162	\$ 8,465	\$ 19,787	\$ 9,529	\$ 9,366	\$ 9,845
Contractual	\$ 99,106	\$ 39,408	\$ 47,336	\$ 47,456	\$ 48,488	\$ 189,173	\$ 237,750	\$ 237,750
Other Operating	\$ 9,829	\$ 13,074	\$ 10,663	\$ 13,249	\$ 11,057	\$ 7,501	\$ 11,740	\$ 17,740
Capital Outlay	\$ -	\$ -	\$ 12,339	\$ -	\$ -	\$ -	\$ -	\$ 10,000
Subtotal: Engineering	\$ 919,460	\$ 822,714	\$ 810,812	\$ 745,728	\$ 745,745	\$ 824,552	\$ 866,806	\$ 1,009,884

1. Source: <http://www.cityofhesperia.us/452/Financial-Documents> under Adopted Budget for FY 1718, FY 1516 and FY 1314

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

Historical Revenue vs. Expenses

TABLE 6 - HISTORICAL EXPENSES

DESCRIPTION	2011	2012	2013	2014	2015	2016	2017	2018
CUSTOMER SERVICE								
Salaries	\$ 424,480	\$ 432,958	\$ 448,104	\$ 493,705	\$ 494,426	\$ 493,582	\$ 502,492	\$ 514,733
Benefits	\$ 156,072	\$ 175,710	\$ 165,872	\$ 172,203	\$ 182,844	\$ 179,535	\$ 170,445	\$ 219,087
Materials and Operations	\$ 629,328	\$ 499,594	\$ 484,401	\$ 418,507	\$ 245,892	\$ 751,316	\$ 647,815	\$ 864,522
Contractual	\$ 20,180	\$ 17,872	\$ 15,616	\$ 13,355	\$ 14,176	\$ 15,760	\$ 17,920	\$ 18,970
Other Operating	\$ 22,974	\$ 26,432	\$ 28,488	\$ 32,435	\$ 33,826	\$ 29,171	\$ 30,699	\$ 31,805
Capital Outlay	\$ -	\$ -	\$ 7,792	\$ -	\$ -	\$ -	\$ -	\$ 35,000
Subtotal: Customer Service	\$ 1,253,034	\$ 1,152,566	\$ 1,150,273	\$ 1,130,205	\$ 971,164	\$ 1,469,364	\$ 1,369,371	\$ 1,684,117
UTILITY BILLING								
Salaries	\$ 460,845	\$ 485,514	\$ 527,963	\$ 556,079	\$ 560,836	\$ 557,731	\$ 572,223	\$ 584,520
Benefits	\$ 157,222	\$ 182,145	\$ 169,074	\$ 173,159	\$ 167,702	\$ 155,315	\$ 140,128	\$ 200,159
Materials and Operations	\$ 119,728	\$ 111,971	\$ 113,136	\$ 142,197	\$ 143,241	\$ 133,396	\$ 149,545	\$ 157,433
Contractual	\$ 86,543	\$ 114,403	\$ 123,916	\$ 141,722	\$ 135,272	\$ 148,827	\$ 118,551	\$ 119,560
Other Operating	\$ 1,921	\$ 4,309	\$ 4,547	\$ 4,308	\$ 6,431	\$ 3,872	\$ 39,755	\$ 4,110
Capital Outlay	\$ 9,342	\$ -	\$ 5,985	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal: Utility Billing	\$ 835,601	\$ 898,342	\$ 944,621	\$ 1,017,465	\$ 1,013,482	\$ 999,141	\$ 1,020,202	\$ 1,065,782
ADMINISTRATION								
Salaries	\$ 573,973	\$ 575,601	\$ 576,717	\$ 605,436	\$ 604,994	\$ 526,571	\$ 375,480	\$ 415,435
Benefits	\$ 334,701	\$ 354,415	\$ 321,316	\$ 338,726	\$ 344,315	\$ 312,450	\$ 129,145	\$ 182,008
Materials and Operations	\$ 65,704	\$ 64,008	\$ 65,940	\$ 66,045	\$ 88,054	\$ 87,723	\$ 78,940	\$ 88,937
Contractual	\$ 395,366	\$ 404,155	\$ 442,103	\$ 430,879	\$ 467,641	\$ 481,011	\$ 540,035	\$ 506,289
Other Operating	\$ 1,715,896	\$ 1,824,621	\$ 1,715,457	\$ 1,869,954	\$ 1,713,877	\$ 1,813,123	\$ 1,810,974	\$ 1,964,975
Capital Outlay	\$ -	\$ -	\$ 68,929	\$ -	\$ 24,243	\$ -	\$ 3,000	\$ -
Subtotal: Administration	\$ 3,085,640	\$ 3,222,800	\$ 3,190,462	\$ 3,311,040	\$ 3,243,124	\$ 3,220,878	\$ 2,937,574	\$ 3,157,644
PROPERTY MANAGEMENT								
Salaries	\$ 124,052	\$ 141,260	\$ 146,731	\$ 152,567	\$ 148,353	\$ 154,308	\$ 159,859	\$ 200,473
Benefits	\$ 55,319	\$ 68,489	\$ 65,933	\$ 63,679	\$ 66,054	\$ 67,901	\$ 69,515	\$ 96,770
Materials and Operations	\$ 36,038	\$ 33,085	\$ 47,834	\$ 32,734	\$ 27,561	\$ 19,316	\$ 25,323	\$ 26,170
Contractual	\$ 33,757	\$ 27,334	\$ 28,476	\$ 26,581	\$ 25,489	\$ 27,859	\$ 18,212	\$ 38,312
Other Operating	\$ 21,425	\$ 12,586	\$ 12,362	\$ 19,015	\$ 22,469	\$ 23,845	\$ 61,050	\$ 54,400
Capital Outlay	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,000	\$ -
Subtotal: Property Management	\$ 270,591	\$ 282,754	\$ 301,336	\$ 294,576	\$ 289,926	\$ 293,229	\$ 348,959	\$ 416,125
GRAND TOTAL: WATER OPERATING EXPENSES	\$ 15,647,087	\$ 13,913,195	\$ 14,260,652	\$ 15,124,465	\$ 14,100,157	\$ 14,616,217	\$ 14,675,208	\$ 16,871,113

1. Source: <http://www.cityofhesperia.us/452/Financial-Documents> under Adopted Budget for FY 1718, FY 1516 and FY 1314

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 7 - REVENUE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Water Operating Fund												
Taxes- Secured Property Taxes	8	\$ 289,385	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960	\$ 300,960
Taxes- WEDA Pass Through	8	10,310	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830
Taxes- Other	8	33,920	35,570	35,570	35,570	35,570	35,570	35,570	35,570	35,570	35,570	35,570
Interest- Income	calc'd	28,387	23,544	-	-	-	-	-	-	-	-	-
Intergovernmental- City Rent Charge	8	52,537	18,064	18,064	18,064	18,064	18,064	18,064	18,064	18,064	18,064	18,064
Charges for Services- WaterSales/Residential	1	6,910,669	7,290,756	7,396,292	7,503,356	7,611,970	7,722,156	7,833,937	7,947,336	8,062,376	8,179,082	8,297,477
Charges for Services- WaterSales/Business	1	454,994	477,744	484,660	491,675	498,792	506,012	513,337	520,768	528,306	535,954	543,712
Charges for Services- WaterSales/Public Building	1	605,678	666,245	675,889	685,673	695,598	705,667	715,882	726,245	736,757	747,422	758,241
Charges for Services- WaterSales/Irrigation	1	225,277	247,804	251,391	255,030	258,722	262,467	266,266	270,120	274,030	277,997	282,021
Charges for Services- WaterSales/Construction	1	139,249	208,873	211,897	214,964	218,075	221,232	224,435	227,683	230,979	234,323	237,715
Charges for Services- WaterSales/Industrial	1	9,071	13,945	14,147	14,352	14,559	14,770	14,984	15,201	15,421	15,644	15,871
Charges for Services- Water Availability Charge	1	6,641,151	6,707,563	6,804,657	6,903,157	7,003,083	7,104,455	7,207,294	7,311,622	7,417,461	7,524,831	7,633,756
Charges for Services- Water Meter Fees	1	280,000	260,000	263,764	267,582	271,455	275,384	279,371	283,415	287,517	291,679	295,901
Charges for Services- Reconnection Fees	1	185,643	194,925	197,747	200,609	203,513	206,459	209,447	212,479	215,555	218,675	221,841
Charges for Services- Water Inspection	1	11,009	10,000	10,145	10,292	10,441	10,592	10,745	10,901	11,058	11,218	11,381
Charges for Services- New Account Setup	1	102,500	105,000	106,520	108,062	109,626	111,213	112,823	114,456	116,113	117,793	119,499
Charges for Services- Rent Eagle Plaza	8	228,258	226,464	226,464	226,464	226,464	226,464	226,464	226,464	226,464	226,464	226,464
Charges for Services- Other	8	106,934	104,000	104,000	104,000	104,000	104,000	104,000	104,000	104,000	104,000	104,000
Grants- MWA Toilet Grant	8	-	-	-	-	-	-	-	-	-	-	-
Other Operating	8	190,597	189,341	189,341	189,341	189,341	189,341	189,341	189,341	189,341	189,341	189,341
All Other	8	75,471	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
Subtotal: Water Operating Fund		\$ 16,581,040	\$ 17,116,628	\$ 17,327,337	\$ 17,564,980	\$ 17,806,063	\$ 18,050,636	\$ 18,298,750	\$ 18,550,455	\$ 18,805,803	\$ 19,064,848	\$ 19,327,643
Water Capital Fund												
Capital Facility Charges	8	\$ 1,141,270	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880
Prop 84 Drought Relief Grant	See Ex 4	-	-	-	-	-	-	-	-	-	-	-
Prop 1 State Water Board	See Ex 4	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Water Capital Fund		\$ 1,141,270	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880
TOTAL: REVENUE		\$ 17,722,310	\$ 18,100,508	\$ 18,311,217	\$ 18,548,860	\$ 18,789,943	\$ 19,034,516	\$ 19,282,630	\$ 19,534,335	\$ 19,789,683	\$ 20,048,728	\$ 20,311,523

TABLE 8 - REVENUE SUMMARY:

OPERATING FUND:												
Rate Revenue		\$ 14,986,089	\$ 15,612,930	\$ 15,838,933	\$ 16,068,207	\$ 16,300,800	\$ 16,536,760	\$ 16,776,135	\$ 17,018,975	\$ 17,265,331	\$ 17,515,253	\$ 17,768,792
Tax Revenue		\$ 333,615	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360	\$ 347,360
Interest Income		\$ 28,387	\$ 23,544	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Fees		\$ 966,881	\$ 918,453	\$ 926,703	\$ 935,072	\$ 943,563	\$ 952,176	\$ 960,914	\$ 969,778	\$ 978,771	\$ 987,894	\$ 997,149
All other		\$ 266,068	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341	\$ 214,341
CAPITAL FUND												
Capital Facility Charges		\$ 1,141,270	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880	\$ 983,880
Other Revenue		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTAL: REVENUE		\$ 17,722,310	\$ 18,100,508	\$ 18,311,217	\$ 18,548,860	\$ 18,789,943	\$ 19,034,516	\$ 19,282,630	\$ 19,534,335	\$ 19,789,683	\$ 20,048,728	\$ 20,311,523

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 9 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
SOURCE OF SUPPLY												
Salaries	3	\$ 89,835	\$ 93,339	\$ 97,073	\$ 100,955	\$ 104,994	\$ 109,193	\$ 113,561	\$ 118,104	\$ 122,828	\$ 127,741	\$ 132,851
Benefits	4	29,247	33,765	35,453	37,580	39,835	42,225	44,759	47,444	50,291	53,309	56,507
Salaries and Benefits - TOTAL		\$ 119,082	\$ 127,104	\$ 132,526	\$ 138,536	\$ 144,829	\$ 151,419	\$ 158,320	\$ 165,548	\$ 173,119	\$ 181,049	\$ 189,358
Materials and Operations- Office Expense	2		\$ 235	\$ 240	\$ 244	\$ 249	\$ 254	\$ 259	\$ 265	\$ 270	\$ 275	\$ 281
Materials and Operations- Computer Supplies	2		-	-	-	-	-	-	-	-	-	-
Materials and Operations- Printing	2		13,350	13,617	13,889	14,167	14,450	14,739	15,034	15,335	15,642	15,954
Materials and Operations- Postage/Shipping Costs	2		9,000	9,180	9,364	9,551	9,742	9,937	10,135	10,338	10,545	10,756
Materials and Operations- Uniform Expense	2		620	632	645	658	671	685	698	712	726	741
Materials and Operations- School Ed & Public Info	2		16,800	17,136	17,479	17,828	18,185	18,549	18,920	19,298	19,684	20,078
Materials and Operations- Safety Supplies	2		200	204	208	212	216	221	225	230	234	239
Materials and Operations- Fuel	7		2,130	2,194	2,260	2,328	2,397	2,469	2,543	2,620	2,698	2,779
Materials and Operations- Utilities- Water- Administrative Assessment Fees	2		47,826	48,783	49,758	50,753	51,768	52,804	53,860	54,937	56,036	57,156
Materials and Operations- Utilities- Water- Biological Assessment Fees	2		11,855	12,092	12,334	12,581	12,832	13,089	13,351	13,618	13,890	14,168
Materials and Operations- Utilities- Water- Leases	2		2,567,126	2,057,378	2,098,526	2,140,496	2,183,306	2,226,972	2,271,512	2,316,942	2,363,281	2,410,546
Materials and Operations- TOTAL		\$ 2,259,451	\$ 2,669,142	\$ 2,161,456	\$ 2,204,707	\$ 2,248,823	\$ 2,293,823	\$ 2,339,724	\$ 2,386,543	\$ 2,434,299	\$ 2,483,011	\$ 2,532,698
Other Operating- Water Conservation Outreach	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Operating- Dues and Memberships	2		300	306	312	318	325	331	338	345	351	359
Other Operating- Travel and Meetings	2		100	102	104	106	108	110	113	115	117	120
Other Operating- Training and Education	2		1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195
Other Operating- Vehicle/Equipment- Maintenance/Repair	2		1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195
Other Operating- TOTAL		\$ 2,575	\$ 2,400	\$ 2,448	\$ 2,497	\$ 2,547	\$ 2,598	\$ 2,650	\$ 2,703	\$ 2,757	\$ 2,812	\$ 2,868
Subtotal: Source of Supply		\$ 2,381,108	\$ 2,798,646	\$ 2,296,429	\$ 2,345,740	\$ 2,396,199	\$ 2,447,840	\$ 2,500,693	\$ 2,554,794	\$ 2,610,175	\$ 2,666,873	\$ 2,724,924

TABLE 10 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PRODUCTION												
Salaries	3	\$ 436,749	\$ 464,587	\$ 483,170	\$ 502,497	\$ 522,597	\$ 543,501	\$ 565,241	\$ 587,851	\$ 611,365	\$ 635,819	\$ 661,252
Benefits	4	152,058	189,428	198,899	210,833	223,483	236,892	251,106	266,172	282,143	299,071	317,015
Salaries and Benefits - TOTAL		\$ 588,807	\$ 654,015	\$ 682,070	\$ 713,331	\$ 746,081	\$ 780,393	\$ 816,347	\$ 854,023	\$ 893,507	\$ 934,891	\$ 978,268
Materials and Operations- Office Expense	2		\$ 100	\$ 102	\$ 104	\$ 106	\$ 108	\$ 110	\$ 113	\$ 115	\$ 117	\$ 120
Materials and Operations- Uniform Expense	2		4,580	4,672	4,765	4,860	4,958	5,057	5,158	5,261	5,366	5,474
Materials and Operations- Preventative Maintenance Prog	2		105,500	107,610	109,762	111,957	114,197	116,481	118,810	121,186	123,610	126,082
Materials and Operations- Safety Supplies	2		1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195
Materials and Operations- Fuel	7		20,900	21,527	22,173	22,838	23,523	24,229	24,956	25,704	26,475	27,270
Materials and Operations- Small Tools	2		4,000	4,080	4,162	4,245	4,330	4,416	4,505	4,595	4,687	4,780
Materials and Operations- Equipment under Capital	2		25,500	26,010	26,530	27,061	27,602	28,154	28,717	29,291	29,877	30,475
Materials and Operations- Utilities- Electric	5		2,290,400	2,404,920	2,525,166	2,651,424	2,783,996	2,923,195	3,069,355	3,222,823	3,383,964	3,553,162
Materials and Operations- Telephone	2		9,351	9,538	9,729	9,923	10,122	10,324	10,531	10,741	10,956	11,175
Materials and Operations- TOTAL		\$ 2,331,909	\$ 2,461,331	\$ 2,579,479	\$ 2,703,431	\$ 2,833,476	\$ 2,969,917	\$ 3,113,070	\$ 3,263,270	\$ 3,420,866	\$ 3,586,225	\$ 3,759,733
Contractual	2	\$ 148,100	\$ 205,775	\$ 209,891	\$ 214,088	\$ 218,370	\$ 222,737	\$ 227,192	\$ 231,736	\$ 236,371	\$ 241,098	\$ 245,920
Contractual- TOTAL		\$ 148,100	\$ 205,775	\$ 209,891	\$ 214,088	\$ 218,370	\$ 222,737	\$ 227,192	\$ 231,736	\$ 236,371	\$ 241,098	\$ 245,920
Other Operating- Dues/Membership	2		\$ 2,000	\$ 2,040	\$ 2,081	\$ 2,122	\$ 2,165	\$ 2,208	\$ 2,252	\$ 2,297	\$ 2,343	\$ 2,390
Other Operating- Travel and Meetings	2		50	51	52	53	54	55	56	57	59	60
Other Operating- Training and Education	2		5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,743	5,858	5,975
Other Operating- Education Reimbursement	2		300	306	312	318	325	331	338	345	351	359
Other Operating- Facility Maintenance	2		26,000	26,520	27,050	27,591	28,143	28,706	29,280	29,866	30,463	31,072
Other Operating- Vehicle/Equipment- Maintenance/Repair	2		19,000	19,380	19,768	20,163	20,566	20,978	21,397	21,825	22,262	22,707
Other Operating- TOTAL		\$ 46,300	\$ 52,350	\$ 53,397	\$ 54,465	\$ 55,554	\$ 56,665	\$ 57,799	\$ 58,955	\$ 60,134	\$ 61,336	\$ 62,563
Subtotal: Production		\$ 3,115,116	\$ 3,373,471	\$ 3,524,836	\$ 3,685,315	\$ 3,853,481	\$ 4,029,713	\$ 4,214,408	\$ 4,407,984	\$ 4,610,878	\$ 4,823,550	\$ 5,046,484

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

TABLE 11 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
DISTRIBUTION SYSTEM MAINTENANCE												
Salaries	3	\$ 647,737	\$ 676,185	\$ 703,232	\$ 731,362	\$ 760,616	\$ 791,041	\$ 822,682	\$ 855,590	\$ 889,813	\$ 925,406	\$ 962,422
Benefits	4	207,154	264,195	277,405	294,049	311,692	330,393	350,217	371,230	393,504	417,114	442,141
Salaries and Benefits - TOTAL		\$ 854,891	\$ 940,380	\$ 980,637	\$ 1,025,411	\$ 1,072,308	\$ 1,121,434	\$ 1,172,900	\$ 1,226,820	\$ 1,283,317	\$ 1,342,520	\$ 1,404,563
Materials and Operations- Computer Supplies	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Materials and Operations- Uniform Expense	2		5,320	5,426	5,535	5,646	5,759	5,874	5,991	6,111	6,233	6,358
Materials and Operations- General	2		172,000	175,440	178,949	182,528	186,178	189,902	193,700	197,574	201,525	205,556
Materials and Operations- Safety Supplies	2		500	510	520	531	541	552	563	574	586	598
Materials and Operations- Fuel	7		29,450	30,334	31,244	32,181	33,146	34,141	35,165	36,220	37,306	38,426
Materials and Operations- Small Tools	2		8,000	8,160	8,323	8,490	8,659	8,833	9,009	9,189	9,373	9,561
Materials and Operations- Utilities- Telephone	2		9,280	9,466	9,655	9,848	10,045	10,246	10,451	10,660	10,873	11,090
Materials and Operations- TOTAL		\$ 242,209	\$ 224,550	\$ 229,336	\$ 234,226	\$ 239,222	\$ 244,329	\$ 249,547	\$ 254,879	\$ 260,328	\$ 265,897	\$ 271,588
Contractual	2	500	3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Contractual-TOTAL		\$ 500	\$ 3,500	\$ 3,570	\$ 3,641	\$ 3,714	\$ 3,789	\$ 3,864	\$ 3,942	\$ 4,020	\$ 4,101	\$ 4,183
Other Operating- Dues/Membership	2		1,500	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	1,793
Other Operating- Travel and Meetings	2		150	153	156	159	162	166	169	172	176	179
Other Operating- Training and Education	2		6,480	6,610	6,742	6,877	7,014	7,154	7,298	7,443	7,592	7,744
Other Operating- Education Reimbursement	2		1,200	1,224	1,248	1,273	1,299	1,325	1,351	1,378	1,406	1,434
Other Operating- Vehicle/Equipment- Maintenance/Repair	2		55,000	56,100	57,222	58,366	59,534	60,724	61,939	63,178	64,441	65,730
Other Operating- TOTAL		\$ 67,411	\$ 64,330	\$ 65,617	\$ 66,929	\$ 68,268	\$ 69,633	\$ 71,026	\$ 72,446	\$ 73,895	\$ 75,373	\$ 76,880
Subtotal: Distribution System Maintenance		\$ 1,165,011	\$ 1,232,760	\$ 1,279,159	\$ 1,330,207	\$ 1,383,512	\$ 1,439,184	\$ 1,497,336	\$ 1,558,087	\$ 1,621,561	\$ 1,687,891	\$ 1,757,214

TABLE 12 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PIPELINE MAINTENANCE												
Salaries	3	\$ 391,518	\$ 393,957	\$ 409,715	\$ 426,104	\$ 443,148	\$ 460,874	\$ 479,309	\$ 498,481	\$ 518,421	\$ 539,157	\$ 560,724
Benefits	4	126,357	155,565	163,343	173,144	183,532	194,544	206,217	218,590	231,706	245,608	260,344
Salaries and Benefits - TOTAL		\$ 517,875	\$ 549,522	\$ 573,059	\$ 599,248	\$ 626,681	\$ 655,418	\$ 685,526	\$ 717,071	\$ 750,126	\$ 784,765	\$ 821,068
Materials and Operations- Office Expense	2		250	255	260	265	271	276	282	287	293	299
Materials and Operations- Computer Supplies	2		-	-	-	-	-	-	-	-	-	-
Materials and Operations- Advertising	2		250	255	260	265	271	276	282	287	293	299
Materials and Operations- Uniform Expense	2		3,550	3,621	3,693	3,767	3,843	3,919	3,998	4,078	4,159	4,243
Materials and Operations- Water Lines	2		588,500	600,270	612,275	624,521	637,011	649,752	662,747	676,002	689,522	703,312
Materials and Operations- Safety Supplies	2		2,400	2,448	2,497	2,547	2,598	2,650	2,703	2,757	2,812	2,868
Materials and Operations- Fuel	7		31,600	32,548	33,524	34,530	35,566	36,633	37,732	38,864	40,030	41,231
Materials and Operations- Small Tools	2		3,500	3,570	3,641	3,714	3,789	3,864	3,942	4,020	4,101	4,183
Materials and Operations- Telephone	2		4,070	4,151	4,234	4,319	4,405	4,494	4,583	4,675	4,769	4,864
Materials and Operations- TOTAL		\$ 449,913	\$ 634,120	\$ 647,118	\$ 660,386	\$ 673,929	\$ 687,753	\$ 701,864	\$ 716,267	\$ 730,970	\$ 745,978	\$ 761,298
Contractual- Contract Services	2		35,500	36,210	36,934	37,673	38,426	39,195	39,979	40,778	41,594	42,426
Contractual- Equipment Rental	2		3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585
Contractual- TOTAL		\$ 13,000	\$ 38,500	\$ 39,270	\$ 40,055	\$ 40,857	\$ 41,674	\$ 42,507	\$ 43,357	\$ 44,224	\$ 45,109	\$ 46,011
Other Operating- Dues and Memberships	2		600	612	624	637	649	662	676	689	703	717
Other Operating- Travel and Meetings	2		3,605	3,677	3,751	3,826	3,902	3,980	4,060	4,141	4,224	4,308
Other Operating- Training and Education	2		500	510	520	531	541	552	563	574	586	598
Other Operating- Vehicle/Equipment- Maintenance/Repair	2		55,000	56,100	57,222	58,366	59,534	60,724	61,939	63,178	64,441	65,730
Other Operating- TOTAL		\$ 70,870	\$ 59,705	\$ 60,899	\$ 62,117	\$ 63,359	\$ 64,627	\$ 65,919	\$ 67,238	\$ 68,582	\$ 69,954	\$ 71,353
Subtotal: Pipeline Maintenance		\$ 1,051,658	\$ 1,281,847	\$ 1,320,346	\$ 1,361,806	\$ 1,404,826	\$ 1,449,472	\$ 1,495,816	\$ 1,543,934	\$ 1,593,903	\$ 1,645,806	\$ 1,699,730

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 13 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ENGINEERING (2)												
Salaries	3	\$ 482,876	\$ 418,494	\$ 435,233	\$ 452,643	\$ 470,748	\$ 489,578	\$ 509,161	\$ 529,528	\$ 550,709	\$ 572,737	\$ 595,647
Benefits	4	125,074	166,746	175,083	185,588	196,723	208,527	221,038	234,300	248,358	263,260	279,056
Salaries and Benefits - TOTAL		\$ 607,950	\$ 585,239	\$ 610,316	\$ 638,231	\$ 667,472	\$ 698,105	\$ 730,200	\$ 763,828	\$ 799,067	\$ 835,997	\$ 874,702
Materials and Operations- Office Expense	2		\$ 1,100	\$ 1,122	\$ 1,144	\$ 1,167	\$ 1,191	\$ 1,214	\$ 1,239	\$ 1,264	\$ 1,289	\$ 1,315
Materials and Operations- Computer Supplies	2		4,500	4,590	4,682	4,775	4,871	4,968	5,068	5,169	5,272	5,378
Materials and Operations- Uniform Expense	2		485	495	505	515	525	535	546	557	568	580
Materials and Operations- Survey Paint	2		-	-	-	-	-	-	-	-	-	-
Materials and Operations- Safety Supplies	2		100	102	104	106	108	110	113	115	117	120
Materials and Operations- Fuel	7		3,660	3,770	3,883	3,999	4,119	4,243	4,370	4,501	4,636	4,775
Materials and Operations- Small Tools	2		-	-	-	-	-	-	-	-	-	-
Materials and Operations- TOTAL		\$ 9,366	\$ 9,845	\$ 10,079	\$ 10,318	\$ 10,563	\$ 10,814	\$ 11,072	\$ 11,336	\$ 11,606	\$ 11,883	\$ 12,167
Contractual- GIS System Services	2		\$ 170,550	\$ 173,961	\$ 177,440	\$ 180,989	\$ 184,609	\$ 188,301	\$ 192,067	\$ 195,908	\$ 199,827	\$ 203,823
Contractual- GIS System Computer Services	2		39,200	39,984	40,784	41,599	42,431	43,280	44,146	45,028	45,929	46,848
Contractual- TOTAL		\$ 237,750	\$ 209,750	\$ 213,945	\$ 218,224	\$ 222,588	\$ 227,040	\$ 231,581	\$ 236,213	\$ 240,937	\$ 245,756	\$ 250,671
Other Operating- Dues/Membership	2		\$ 1,440	\$ 1,469	\$ 1,498	\$ 1,528	\$ 1,559	\$ 1,590	\$ 1,622	\$ 1,654	\$ 1,687	\$ 1,721
Other Operating- Travel & Meetings	2		1,800	1,836	1,873	1,910	1,948	1,987	2,027	2,068	2,109	2,151
Other Operating- Training	2		10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951
Other Operating- Equip/Vehicles-Maintenance/Repair	2		4,500	4,590	4,682	4,775	4,871	4,968	5,068	5,169	5,272	5,378
Other Operating- TOTAL		\$ 11,740	\$ 17,740	\$ 18,095	\$ 18,457	\$ 18,826	\$ 19,202	\$ 19,586	\$ 19,978	\$ 20,378	\$ 20,785	\$ 21,201
Subtotal: Engineering		\$ 866,806	\$ 822,574	\$ 852,435	\$ 885,229	\$ 919,449	\$ 955,162	\$ 992,439	\$ 1,031,355	\$ 1,071,988	\$ 1,114,421	\$ 1,158,741

TABLE 14 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CUSTOMER SERVICE												
Salaries	3	\$ 502,492	\$ 514,733	\$ 535,322	\$ 556,735	\$ 579,005	\$ 602,165	\$ 626,251	\$ 651,301	\$ 677,354	\$ 704,448	\$ 732,626
Benefits	4	170,445	219,087	230,041	243,844	258,474	273,983	290,422	307,847	326,318	345,897	366,651
Salaries and Benefits - TOTAL		\$ 672,937	\$ 733,820	\$ 765,364	\$ 800,579	\$ 837,479	\$ 876,148	\$ 916,673	\$ 959,149	\$ 1,003,672	\$ 1,050,345	\$ 1,099,277
Materials and Operations- Computer Supplies	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Materials and Operations- Postage/Shipping Costs	2		30	31	31	32	32	33	34	34	35	36
Materials and Operations- Uniform Expense	2		3,665	3,738	3,813	3,889	3,967	4,046	4,127	4,210	4,294	4,380
Materials and Operations- Meters	2		817,507	833,857	850,534	867,545	884,896	902,594	920,646	939,059	957,840	976,997
Materials and Operations- Safety Supplies	2		600	612	624	637	649	662	676	689	703	717
Materials and Operations- Fuel	7		32,170	33,135	34,129	35,153	36,208	37,294	38,413	39,565	40,752	41,975
Materials and Operations- Small Tools	2		1,200	1,224	1,248	1,273	1,299	1,325	1,351	1,378	1,406	1,434
Materials and Operations- Equipment under Capital	2		3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585
Materials and Operations- Utilities- Telephone	2		6,350	6,477	6,607	6,739	6,873	7,011	7,151	7,294	7,440	7,589
Materials and Operations- TOTAL		\$ 647,815	\$ 864,522	\$ 882,134	\$ 900,108	\$ 918,452	\$ 937,172	\$ 956,278	\$ 975,776	\$ 995,676	\$ 1,015,985	\$ 1,036,712
Contractual	2		\$ 18,970	\$ 19,349	\$ 19,736	\$ 20,131	\$ 20,534	\$ 20,944	\$ 21,363	\$ 21,791	\$ 22,226	\$ 22,671
Contractual- TOTAL		\$ 17,920	\$ 18,970	\$ 19,349	\$ 19,736	\$ 20,131	\$ 20,534	\$ 20,944	\$ 21,363	\$ 21,791	\$ 22,226	\$ 22,671
Other Operating- Dues/Membership	2		\$ 1,105	\$ 1,127	\$ 1,150	\$ 1,173	\$ 1,196	\$ 1,220	\$ 1,244	\$ 1,269	\$ 1,295	\$ 1,321
Other Operating- Travel & Meetings	2		200	204	208	212	216	221	225	230	234	239
Other Operating- Training	2		5,500	5,610	5,722	5,837	5,953	6,072	6,194	6,318	6,444	6,573
Other Operating- Equip/Vehicles-Maintenance/Repair	2		25,000	25,500	26,010	26,530	27,061	27,602	28,154	28,717	29,291	29,877
Other Operating- TOTAL		\$ 30,699	\$ 31,805	\$ 32,441	\$ 33,090	\$ 33,752	\$ 34,427	\$ 35,115	\$ 35,818	\$ 36,534	\$ 37,265	\$ 38,010
Subtotal: Customer Service		\$ 1,369,371	\$ 1,649,117	\$ 1,699,288	\$ 1,753,514	\$ 1,809,814	\$ 1,868,280	\$ 1,929,011	\$ 1,992,106	\$ 2,057,672	\$ 2,125,821	\$ 2,196,670

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

2. Only 80% of some costs from budget are assigned as explained by City staff in email 8/7/2017.

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 15 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
UTILITY BILLING (2)												
Salaries	3	\$ 572,223	\$ 489,749	\$ 509,339	\$ 529,713	\$ 550,901	\$ 572,937	\$ 595,855	\$ 619,689	\$ 644,477	\$ 670,256	\$ 697,066
Benefits	4	140,128	167,706	176,092	186,657	197,857	209,728	222,312	235,650	249,789	264,777	280,663
Salaries and Benefits - TOTAL		\$ 712,351	\$ 657,456	\$ 685,431	\$ 716,370	\$ 748,758	\$ 782,665	\$ 818,166	\$ 855,339	\$ 894,266	\$ 935,032	\$ 977,729
Materials and Operations- Office Expense	2		\$ 18,433	\$ 18,802	\$ 19,178	\$ 19,561	\$ 19,953	\$ 20,352	\$ 20,759	\$ 21,174	\$ 21,597	\$ 22,029
Materials and Operations- Computer Supplies	2		9,426	9,615	9,807	10,003	10,203	10,407	10,615	10,827	11,044	11,265
Materials and Operations- Postage/Shipping Costs	2		69,962	71,361	72,788	74,244	75,729	77,243	78,788	80,364	81,971	83,611
Materials and Operations- Fuel	7		34	35	36	37	38	39	40	41	42	44
Materials and Operations- Equipment under Capital	2		2,328	2,374	2,422	2,470	2,519	2,570	2,621	2,674	2,727	2,782
Materials and Operations- Utilities- Telephone	2		2,044	2,085	2,127	2,170	2,213	2,257	2,302	2,348	2,395	2,443
Materials and Operations- Lease Maintenance	2		29,681	30,275	30,881	31,498	32,128	32,771	33,426	34,095	34,776	35,472
Materials and Operations- TOTAL		\$ 149,545	\$ 131,908	\$ 134,546	\$ 137,237	\$ 139,983	\$ 142,783	\$ 145,639	\$ 148,552	\$ 151,523	\$ 154,554	\$ 157,646
Contractual- Contract Services	2		\$ 13,322	\$ 13,589	\$ 13,860	\$ 14,137	\$ 14,420	\$ 14,709	\$ 15,003	\$ 15,303	\$ 15,609	\$ 15,921
Contractual- Computer Services	2		3,796	3,871	3,949	4,028	4,108	4,191	4,274	4,360	4,447	4,536
Contractual- Utility Billing Software Licenses	2		26,502	27,032	27,572	28,124	28,686	29,260	29,845	30,442	31,051	31,672
Contractual- Service Fees and Charges	2		56,556	57,687	58,841	60,018	61,218	62,442	63,691	64,965	66,264	67,590
Contractual- TOTAL		\$ 118,551	\$ 100,175	\$ 102,179	\$ 104,222	\$ 106,307	\$ 108,433	\$ 110,602	\$ 112,814	\$ 115,070	\$ 117,371	\$ 119,719
Other Operating- Dues and Memberships	2		\$ 92	\$ 94	\$ 96	\$ 98	\$ 100	\$ 102	\$ 104	\$ 106	\$ 108	\$ 110
Other Operating- Conferences and Seminars	2		2,514	2,564	2,615	2,667	2,721	2,775	2,831	2,887	2,945	3,004
Other Operating- Training and Education	2		838	855	872	889	907	925	944	962	982	1,001
Other Operating- Bad Debt Expense	2		-	-	-	-	-	-	-	-	-	-
Other Operating- TOTAL		\$ 39,755	\$ 3,444	\$ 3,513	\$ 3,583	\$ 3,654	\$ 3,727	\$ 3,802	\$ 3,878	\$ 3,956	\$ 4,035	\$ 4,115
Subtotal: Utility Billing		\$ 1,020,202	\$ 892,982	\$ 925,668	\$ 961,412	\$ 998,701	\$ 1,037,608	\$ 1,078,209	\$ 1,120,583	\$ 1,164,815	\$ 1,210,992	\$ 1,259,209

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

2. Only 84% of costs from budget are assigned which is based upon percentage of customers, per direction from City staff 8/10/17 (also includes adjustments for City Manager salary and benefits.)

CITY OF HESPERIA
WATER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 16 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ADMINISTRATION (2)												
Salaries	3	\$ 375,480	\$ 381,578	\$ 396,841	\$ 412,715	\$ 429,224	\$ 446,393	\$ 464,248	\$ 482,818	\$ 502,131	\$ 522,216	\$ 543,105
Benefits	4	129,145	161,013	169,063	179,207	189,959	201,357	213,438	226,245	239,819	254,209	269,461
Salaries and Benefits - TOTAL		\$ 504,625	\$ 542,591	\$ 565,905	\$ 591,922	\$ 619,183	\$ 647,750	\$ 677,687	\$ 709,063	\$ 741,950	\$ 776,425	\$ 812,566
Materials and Operations- Office Expense	2		\$ 4,825	\$ 4,922	\$ 5,020	\$ 5,120	\$ 5,223	\$ 5,327	\$ 5,434	\$ 5,542	\$ 5,653	\$ 5,766
Materials and Operations- Computer Supplies	2		3,000	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585
Materials and Operations- Printing	2		2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988
Materials and Operations- Postage/Shipping Costs	2		50	51	52	53	54	55	56	57	59	60
Materials and Operations- Uniform Expense	2		1,270	1,295	1,321	1,348	1,375	1,402	1,430	1,459	1,488	1,518
Materials and Operations- Lease Maintenance	2		-	-	-	-	-	-	-	-	-	-
Materials and Operations- Parts	2		2,800	2,856	2,913	2,971	3,031	3,091	3,153	3,216	3,281	3,346
Materials and Operations- Safety Supplies	2		1,000	1,020	1,040	1,061	1,082	1,104	1,126	1,149	1,172	1,195
Materials and Operations- Fuel	7		3,980	4,099	4,222	4,349	4,480	4,614	4,752	4,895	5,042	5,193
Materials and Operations- Small Tools	2		500	510	520	531	541	552	563	574	586	598
Materials and Operations- Utilities- Electricity	5		45,800	48,090	50,495	53,019	55,670	58,454	61,376	64,445	67,667	71,051
Materials and Operations- Utilities- Gas	2		7,400	7,548	7,699	7,853	8,010	8,170	8,334	8,500	8,670	8,844
Materials and Operations- Utilities- Telephone	2		2,812	2,868	2,926	2,984	3,044	3,105	3,167	3,230	3,295	3,361
Materials and Operations- Utilities- Telecomm Services	2		1,500	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	1,793
Materials and Operations- Leases for Copiers	2		11,500	11,730	11,965	12,204	12,448	12,697	12,951	13,210	13,474	13,744
Materials and Operations- TOTAL		\$ 78,940	\$ 88,937	\$ 92,130	\$ 95,456	\$ 98,922	\$ 102,535	\$ 106,300	\$ 110,226	\$ 114,319	\$ 118,588	\$ 123,040
Contractual- Contract Services	2		\$ 170,189	\$ 173,593	\$ 177,065	\$ 180,606	\$ 184,218	\$ 187,902	\$ 191,660	\$ 195,494	\$ 199,404	\$ 203,392
Contractual- Legal Services	2		20,000	20,400	20,808	21,224	21,649	22,082	22,523	22,974	23,433	23,902
Contractual- Litigation Services	2		2,100	2,142	2,185	2,229	2,273	2,319	2,365	2,412	2,460	2,510
Contractual- Claims/Lawsuits/Settlements	2		40,000	40,800	41,616	42,448	43,297	44,163	45,046	45,947	46,866	47,804
Contractual- Software Licenses	2		24,000	24,480	24,970	25,469	25,978	26,498	27,028	27,568	28,120	28,682
Contractual- Franchise Fee	2		250,000	255,000	260,100	265,302	270,608	276,020	281,541	287,171	292,915	298,773
Contractual- TOTAL		\$ 540,035	\$ 506,289	\$ 516,415	\$ 526,743	\$ 537,278	\$ 548,023	\$ 558,984	\$ 570,164	\$ 581,567	\$ 593,198	\$ 605,062
Other Operating- Dues and Memberships	2		\$ 925	\$ 944	\$ 962	\$ 982	\$ 1,001	\$ 1,021	\$ 1,042	\$ 1,063	\$ 1,084	\$ 1,105
Other Operating- Travel & Meetings	2		200	204	208	212	216	221	225	230	234	239
Other Operating- Training and Education	2		4,850	4,947	5,046	5,147	5,250	5,355	5,462	5,571	5,683	5,796
Other Operating- General and Administrative	2		1,950,000	2,400,000	2,448,000	2,496,960	2,546,899	2,597,837	2,649,794	2,702,790	2,756,846	2,811,983
Other Operating- Vehicle/Equipment- Maintenance/Repair	2		9,000	9,180	9,364	9,551	9,742	9,937	10,135	10,338	10,545	10,756
Other Operating- TOTAL		\$ 1,810,974	\$ 1,964,975	\$ 2,415,275	\$ 2,463,580	\$ 2,512,852	\$ 2,563,109	\$ 2,614,371	\$ 2,666,658	\$ 2,719,991	\$ 2,774,391	\$ 2,829,879
Subtotal: Administration		\$ 2,934,574	\$ 3,102,792	\$ 3,589,723	\$ 3,677,701	\$ 3,768,235	\$ 3,861,416	\$ 3,957,342	\$ 4,056,111	\$ 4,157,828	\$ 4,262,602	\$ 4,370,547

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf

2. Only 84% of costs from budget are assigned which is based upon percentage of customers, per direction from City staff 8/10/17 (also includes adjustments for City Manager salary and benefits.)

TABLE 17 - OPERATING EXPENSE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
PROPERTY MANAGEMENT												
Salaries	3	\$ 159,859	\$ 200,473	\$ 208,492	\$ 216,832	\$ 225,505	\$ 234,525	\$ 243,906	\$ 253,662	\$ 263,809	\$ 274,361	\$ 285,336
Benefits	4	69,515	96,770	101,609	107,705	114,167	121,017	128,278	135,975	144,134	152,782	161,949
Salaries and Benefits - TOTAL		\$ 229,374	\$ 297,243	\$ 310,100	\$ 324,537	\$ 339,672	\$ 355,542	\$ 372,184	\$ 389,637	\$ 407,942	\$ 427,143	\$ 447,284
Materials and Operations- Custodial Supplies	2		\$ 6,400	\$ 6,528	\$ 6,659	\$ 6,792	\$ 6,928	\$ 7,066	\$ 7,207	\$ 7,352	\$ 7,499	\$ 7,649
Materials and Operations- Fuel	7		2,070	2,132	2,196	2,262	2,330	2,400	2,472	2,546	2,622	2,701
Materials and Operations- Small Tools	2		500	510	520	531	541	552	563	574	586	598
Materials and Operations- Utilities- Electricity	5		14,700	15,435	16,207	17,017	17,868	18,761	19,699	20,684	21,719	22,805
Materials and Operations- Utilities- Gas	2		2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988
Materials and Operations- TOTAL		\$ 25,323	\$ 26,170	\$ 27,155	\$ 28,183	\$ 29,254	\$ 30,373	\$ 31,539	\$ 32,757	\$ 34,028	\$ 35,354	\$ 36,739
Contractual- Maintenance Services	2		\$ 37,600	\$ 38,352	\$ 39,119	\$ 39,901	\$ 40,699	\$ 41,513	\$ 42,344	\$ 43,191	\$ 44,054	\$ 44,935
Contractual- Software Licenses	2		712	726	741	756	771	786	802	818	834	851
Contractual- TOTAL		\$ 18,212	\$ 38,312	\$ 39,078	\$ 39,860	\$ 40,657	\$ 41,470	\$ 42,300	\$ 43,146	\$ 44,008	\$ 44,889	\$ 45,786
Other Operating- Gym	2		\$ 2,000	\$ 2,040	\$ 2,081	\$ 2,122	\$ 2,165	\$ 2,208	\$ 2,252	\$ 2,297	\$ 2,343	\$ 2,390
Other Operating- Facility Maintenance	2		52,400	53,448	54,517	55,607	56,719	57,854	59,011	60,191	61,395	62,623
Other Operating- TOTAL		\$ 61,050	\$ 54,400	\$ 55,488	\$ 56,598	\$ 57,730	\$ 58,884	\$ 60,062	\$ 61,263	\$ 62,489	\$ 63,738	\$ 65,013
Subtotal: Property Management		\$ 333,959	\$ 416,125	\$ 431,822	\$ 449,177	\$ 467,313	\$ 486,269	\$ 506,085	\$ 526,803	\$ 548,467	\$ 571,124	\$ 594,823

TABLE 18 - FUTURE OPERATING EXPENSE FORECAST (2):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual Information Technology												
AMI Expense	2	\$ -	\$ -	\$ 43,788	\$ 166,074	\$ 288,360	\$ 294,127	\$ 300,010	\$ 306,010	\$ 312,130	\$ 318,373	\$ 324,740
Remote Pressure Monitors	2	-	-	2,250	5,250	5,355	5,462	5,571	5,683	5,796	5,912	6,031
Annual Information Technology - TOTAL		\$ -	\$ -	\$ 46,038	\$ 171,324	\$ 293,715	\$ 299,589	\$ 305,581	\$ 311,693	\$ 317,927	\$ 324,285	\$ 330,771
Chromium 6 Treatment												
Chromium 6 Annual O&M	2	\$ -	\$ -	\$ -	\$ 100,000	\$ 102,000	\$ 104,040	\$ 106,121	\$ 108,243	\$ 110,408	\$ 112,616	\$ 114,869
Subtotal: Additional Items		\$ -	\$ -	\$ 46,038	\$ 271,324	\$ 395,715	\$ 403,629	\$ 411,702	\$ 419,936	\$ 428,335	\$ 436,901	\$ 445,639
GRAND TOTAL: WATER OPERATING EXPENSES		\$ 14,237,805	\$ 15,570,314	\$ 15,965,745	\$ 16,721,424	\$ 17,397,245	\$ 17,978,574	\$ 18,583,041	\$ 19,211,690	\$ 19,865,620	\$ 20,545,981	\$ 21,253,981

TABLE 19 - FORECASTING ASSUMPTIONS

INFLATION FACTORS	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Customer Growth (3)	1	--	--	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%
General Cost Inflation	2	--	--	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Salary Inflation (4)	3	--	--	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Benefits Inflation (4)	4	--	--	5.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Energy	5	--	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Chemicals	6	--	--	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Fuel	7	--	--	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
No Escalation	8	--	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: FY 2017-18 Proposed Budget.pdf Page C-33 and 17-18 EDN Water Sewer.pdf
2. Future O&M expenses provided by staff via email 6/19/2017.
3. Customer Growth based upon expected growth in number of Residential Units. Source: *Hesperia DIF Technical Study Memo 05.pdf* (pages 25-27)
4. The salary inflation consists of an assumed Cost of Living Adjustment of 1 percent and merit step increases of 3 percent annually. Source: *Water Sewer Salary and Benefits.xlsx* & staff email 8/4/17.

TABLE 21 - CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Revised		Projected								
Funding Sources:	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Grants (1)	\$ -	\$ 4,726,918	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Developer Fee Revenues (2)	-	-	-	-	4,644,090	4,783,412	-	-	-	-	-
Use of SRF Loan Proceeds (3)	-	7,946,413	2,000,000	-	-	-	-	-	-	-	-
Use of New Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	-	-	-	-	-	-	-	-	-	-	-
Rate Funded Capital Outlay	794,489	830,200	412,000	424,360	437,091	450,204	463,710	477,621	491,950	506,708	521,909
Rate Revenue	236,000	3,640,000	1,622,770	742,630	764,909	787,856	3,231,873	5,487,706	5,151,401	4,873,784	7,153,483
Total Sources of Capital Funds	\$ 1,030,489	\$ 17,143,531	\$ 6,034,770	\$ 1,166,990	\$ 5,846,089	\$ 6,021,472	\$ 3,695,583	\$ 5,965,327	\$ 5,643,351	\$ 5,380,492	\$ 7,675,393
Uses of Capital Funds:											
Total Project Costs	\$ 1,030,489	\$ 17,143,531	\$ 6,034,770	\$ 1,166,990	\$ 5,846,089	\$ 6,021,472	\$ 3,695,583	\$ 5,965,327	\$ 5,643,351	\$ 5,380,492	\$ 7,675,393
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New SRF Loan Proceeds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Revenue Bond Proceeds	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Potable Subsidy of Reclaimed Water	\$ 836,170										

1. Grant funds will be used to help fund the Reclaimed Water distribution system.
2. NBS assumes that Developer Fees will be used for the I-15 Rancho Interchange capital projects.
3. SRF Loan proceeds will be used to fund the Reclaimed Water distribution system.

CAPITAL IMPROVEMENT PROGRAM

TABLE 22 - Capital Improvement Program Costs (in Current-Year Dollars):

Project Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Capital Outlay from Operating Budget (1)											
General Projects	\$ 794,489	\$ -	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
Source of Supply- Water Rights Capital Exp.	-	760,200	-	-	-	-	-	-	-	-	-
Production- Land and Buildings	-	25,000	-	-	-	-	-	-	-	-	-
Engineering - Vehicles Capital Expend	-	10,000	-	-	-	-	-	-	-	-	-
Customer Service - Vehicles Capital Expend	-	35,000	-	-	-	-	-	-	-	-	-
I-15 Projects (3)											
I-15 at Rancho Interchange Reservoir, Pump Station Upgrade and Pipeline	-	-	-	-	4,250,000	4,250,000	-	-	-	-	-
Additional Projects (4)	-	3,200,000	1,420,000	700,000	700,000	700,000	2,787,842	4,595,867	4,188,561	3,847,410	5,482,549
Total: CIP Program Costs (Current-Year Dollars)	\$ 794,489	\$ 4,030,200	\$ 1,820,000	\$ 1,100,000	\$ 5,350,000	\$ 5,350,000	\$ 3,187,842	\$ 4,995,867	\$ 4,588,561	\$ 4,247,410	\$ 5,882,549

TABLE 23 - Recycled Water Capital Improvement Program Costs (in Current-Year Dollars):

Reclaimed Water Projects (2)											
Reclaimed Water Distribution System (3)	236,000	13,113,331	4,039,000	-	-	-	-	-	-	-	-

TABLE 24 - Capital Improvement Program Costs (in Future-Year Dollars) (1):

Project Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Capital Outlay from Operating Budget (1)											
General Projects	\$ 794,489	\$ -	\$ 412,000	\$ 424,360	\$ 437,091	\$ 450,204	\$ 463,710	\$ 477,621	\$ 491,950	\$ 506,708	\$ 521,909
Source of Supply- Water Rights Capital Exp.	-	760,200	-	-	-	-	-	-	-	-	-
Production- Land and Buildings	-	25,000	-	-	-	-	-	-	-	-	-
Engineering - Vehicles Capital Expend	-	10,000	-	-	-	-	-	-	-	-	-
Customer Service - Vehicles Capital Expend	-	35,000	-	-	-	-	-	-	-	-	-
I-15 Projects (3)											
I-15 at Rancho Interchange Reservoir, Pump Station Upgrade and Pipeline	-	-	-	-	4,644,090	4,783,412	-	-	-	-	-
Additional Projects (4)	-	3,200,000	1,462,600	742,630	764,909	787,856	3,231,873	5,487,706	5,151,401	4,873,784	7,153,483
Total: Potable CIP Program Costs (Future-Year Dollars)	794,489	4,030,200	1,874,600	1,166,990	5,846,089	6,021,472	3,695,583	5,965,327	5,643,351	5,380,492	7,675,393

TABLE 25 - Recycled Water Capital Improvement Program Costs (in Future-Year Dollars) (1):

Reclaimed Water Projects (2)											
Reclaimed Water Distribution System (3)	236,000	13,113,331	4,160,170	-	-	-	-	-	-	-	-
Total: CIP Program Costs (Future-Year Dollars)	\$ 1,030,489	\$ 17,143,531	\$ 6,034,770	\$ 1,166,990	\$ 5,846,089	\$ 6,021,472	\$ 3,695,583	\$ 5,965,327	\$ 5,643,351	\$ 5,380,492	\$ 7,675,393

TABLE 26 - FORECASTING ASSUMPTIONS:

Economic Variables (5)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Annual Construction Cost Inflation, Per Engineering News	0.00%	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2018	1.00	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30

1. FY 2016/17 & 2017/18 from budget assumed for future years. Source: 17-18 END Water Sewer.pdf
2. From FY 1617 City of Hesperia Capital Improvement Program page G-6, most of the Recycled Water Project is Grant and SRF loan funded. Approximately \$836,000 will need to be funded by potable water rates.
3. Source: Copy of Summary 7-13-17.xlsx
4. Additional Projects represent unknown capital projects funded through rates.
5. Construction inflator is based on the most current 10 year average of the Engineering News-Record Construction Cost Index. Source: www.enr.com/economics

TABLE 27

DISTRICT DEBT OBLIGATIONS	Revised	Projected								
Annual Repayment Schedules:	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
Variable Rate Lease Revenue Refunding Bonds (Water And Administration Facilities Acquisition Project) Taxable Series 1998A (1)										
Principal Payment	\$ 780,000	\$ 810,000	\$ 840,000	\$ 875,000	\$ 910,000	\$ 945,000	\$ 985,000	\$ 1,025,000	\$ 1,065,000	\$ 1,105,000
Interest Payment	565,000	526,440	476,625	424,965	301,750	256,250	209,000	159,750	108,500	55,250
Admin/Other Costs	149,923	145,000	145,000	145,000	145,000	145,000	145,000	145,000	145,000	145,000
Subtotal: Annual Debt Service	\$ 1,494,923	\$ 1,481,440	\$ 1,461,625	\$ 1,444,965	\$ 1,356,750	\$ 1,346,250	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250
Coverage Requirement (\$-Amnt above annual payment)	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Reserve Requirement (total fund balance)	\$ 1,494,923	\$ 1,481,440	\$ 1,461,625	\$ 1,444,965	\$ 1,356,750	\$ 1,346,250	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250
Variable Rate Lease Revenue Refunding Bonds (Water And Administration Facilities Acquisition Project) NonTaxable Series 1998B (1)										
Principal Payment	\$ 105,000	\$ 110,000	\$ 115,000	\$ 120,000	\$ 125,000	\$ 130,000	\$ -	\$ -	\$ -	\$ -
Interest Payment	5,550	10,500	8,575	6,563	4,463	2,275	-	-	-	-
Admin/Other Costs	11,323	9,500	12,000	12,000	12,000	12,000	-	-	-	-
Subtotal: Annual Debt Service	\$ 121,873	\$ 130,000	\$ 135,575	\$ 138,563	\$ 141,463	\$ 144,275	\$ -	\$ -	\$ -	\$ -
Coverage Requirement (\$-Amnt above annual payment)	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Reserve Requirement (total fund balance)	\$ 144,275	\$ 144,275	\$ 144,275	\$ 144,275	\$ 144,275	\$ 144,275	\$ -	\$ -	\$ -	\$ -
1992B Certificate of Participation (2)										
Principal Payment	\$ 80,000	\$ 90,000	\$ 100,000	\$ 105,000	\$ 115,000	\$ 125,000	\$ -	\$ -	\$ -	\$ -
Interest Payment	55,350	48,150	40,050	31,050	21,600	11,250	-	-	-	-
Admin/Other Costs	4,314	5,000	5,000	5,000	5,000	5,000	-	-	-	-
Subtotal: Annual Debt Service	\$ 139,664	\$ 143,150	\$ 145,050	\$ 141,050	\$ 141,600	\$ 141,250	\$ -	\$ -	\$ -	\$ -
Coverage Requirement (\$-Amnt above annual payment)	105%	105%	105%	105%	105%	105%	0%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ 140,500	\$ 140,500	\$ 140,500	\$ 140,500	\$ 140,500	\$ 140,500	\$ -	\$ -	\$ -	\$ -

TABLE 28 - Existing Annual Debt Obligations to be Satisfied by Water Rates:

Existing Annual Debt Service	\$ 1,756,460	\$ 1,754,590	\$ 1,742,250	\$ 1,724,578	\$ 1,639,813	\$ 1,631,775	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250
Existing Annual Coverage Requirement	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%
Existing Debt Reserve Target	\$ 1,779,698	\$ 1,766,215	\$ 1,746,400	\$ 1,729,740	\$ 1,641,525	\$ 1,631,025	\$ 1,339,000	\$ 1,329,750	\$ 1,318,500	\$ 1,305,250

TABLE 29 - Proposed SFR Loan for Recycled Water Distribution System:

SRF Loan for Recycled Water Project (3)										
Principal Payment	\$ -	\$ -	\$ -	\$ 291,419	\$ 288,636	\$ 291,523	\$ 294,438	\$ 297,382	\$ 300,356	\$ 303,360
Interest Payment	\$ -	\$ -	\$ -	\$ 93,767	\$ 96,550	\$ 93,664	\$ 90,748	\$ 87,804	\$ 84,830	\$ 81,827
Subtotal: Annual Debt Service	\$ -	\$ -	\$ -	\$ 385,186	\$ 385,186	\$ 385,186	\$ 385,186	\$ 385,186	\$ 385,186	\$ 385,186
Coverage Requirement (\$-Amnt above annual payment)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Reserve Requirement (total fund balance)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

- Client provided Source File: 16-17 Budget- Water Debt.pdf & 1998A Variable Rate Bonds Amended Sinking Fund Payment Schedule.pdf
For Variable Rate Lease Revenue Refunding Bonds Taxable Series 1998A, annual interest payment assumed to be 6.05% AND 1998B is 1.00% Source: 16-17 Budget- Water Debt.pdf.
Coverage requirement Source: 2016 CAFR Report As Of 1-25-2017 FINAL.pdf page 60
- 1992B COP Reserve Requirement found in Official Statement pdf page 16. No reserve requirements for Variable Rate Leases
- SFR Loan for Recycled Water assumed to be funded through Recycled Water Rate Revenue. Payment Schedule postponed one FY. Source: State Water Board Acknowledgement 9-28-16.pdf (page C-2).

TABLE 30 - Current Water Rate Schedule:

Current Rates		
<i>Bi-Monthly Meter Charge (1):</i>		
5/8 Inch		\$39.27
3/4 Inch		\$39.27
1 Inch		\$58.91
1 1/2 Inch		\$157.09
2 Inch		\$251.35
3 Inch		\$502.70
4 Inch		\$785.47
6 Inch		\$1,570.94
8 Inch		\$2,513.51
<i>Water Consumption Charge (1,2)</i>	<i>Bi-Monthly Use (hcf)</i>	
<i>Tier 1</i>	<i>0-10</i>	<i>\$0.90</i>
<i>Tier 2</i>	<i>11-40</i>	<i>\$1.55</i>
<i>Tier 3</i>	<i>41-80</i>	<i>\$1.88</i>
<i>Tier 4</i>	<i>Over 80</i>	<i>\$2.24</i>
<i>Meters 1-1/2" & Larger Uniform Block Rate</i>		<i>\$1.68</i>
<i>Construction Meters Uniform Block Rate</i>		<i>\$3.37</i>

1. Proposed Bi-Monthly Water Rates Effective November 1, 2011 Source: Water-Sewer Rates adopted 2008.pdf

2. HCF = Hundred Cubic Feet or 748 gallons.

CITY OF HESPERIA
WATER RATE STUDY
Cost of Service Analysis

TABLE 31

Classification of Expenses										
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification				
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)	
SOURCE OF SUPPLY										
Salaries	\$ 93,339	\$ 65,327	\$ 28,002	\$ -	\$ 10	70.0%	30.0%	0.0%	0.0%	
Benefits	\$ 33,765	\$ 23,632	\$ 10,130	\$ -	\$ 4	70.0%	30.0%	0.0%	0.0%	
7250 Materials and Operations- Office Expense	\$ 235	\$ 164	\$ 71	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7255 Materials and Operations- Computer Supplies	\$ -	\$ -	\$ -	\$ -	\$ -	70.0%	30.0%	0.0%	0.0%	
7260 Materials and Operations- Printing	\$ 13,350	\$ 9,344	\$ 4,005	\$ -	\$ 1	70.0%	30.0%	0.0%	0.0%	
7270 Materials and Operations- Postage/Shipping Costs	\$ 9,000	\$ 6,299	\$ 2,700	\$ -	\$ 1	70.0%	30.0%	0.0%	0.0%	
7320 Materials and Operations- Uniform Expense	\$ 620	\$ 434	\$ 186	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7400 Materials and Operations- School Ed & Public Info	\$ 16,800	\$ 11,758	\$ 5,040	\$ -	\$ 2	70.0%	30.0%	0.0%	0.0%	
7410 Materials and Operations- Safety Supplies	\$ 200	\$ 140	\$ 60	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7440 Materials and Operations- Fuel	\$ 2,130	\$ 1,491	\$ 639	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7476 Materials and Operations- Utilities- Water-	\$ 47,826	\$ 33,473	\$ 14,348	\$ -	\$ 5	70.0%	30.0%	0.0%	0.0%	
7476 Materials and Operations- Utilities- Water- Biological Assessment Fees	\$ 11,855	\$ 11,855	\$ -	\$ -	\$ -	100.0%	0.0%	0.0%	0.0%	
7476 Materials and Operations- Utilities- Water- Leases	\$ 2,567,126	\$ 2,567,126	\$ -	\$ -	\$ -	100.0%	0.0%	0.0%	0.0%	
7800 Other Operating- Water Conservation Outreach	\$ -	\$ -	\$ -	\$ -	\$ -	70.0%	30.0%	0.0%	0.0%	
7805 Other Operating- Dues and Memberships	\$ 300	\$ 210	\$ 90	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7820 Other Operating- Travel and Meetings	\$ 100	\$ 70	\$ 30	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
7845 Other Operating- Training and Education	\$ 1,000	\$ 700	\$ 300	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
8071 Other Operating- Vehicle/Equipment- Maintenance/Repair	\$ 1,000	\$ 700	\$ 300	\$ -	\$ 0	70.0%	30.0%	0.0%	0.0%	
Subtotal: Source of Supply	\$ 2,798,646	\$ 2,732,722	\$ 65,900	\$ -	\$ 24	97.6%	2.4%	0.0%	0.0%	
PRODUCTION										
Salaries	\$ 464,587	\$ 325,159	\$ 139,376	\$ -	\$ 52	70.0%	30.0%	0.0%	0.01%	
Benefits	\$ 189,428	\$ 132,578	\$ 56,828	\$ -	\$ 21	70.0%	30.0%	0.0%	0.01%	
7250 Materials and Operations- Office Expense	\$ 100	\$ 70	\$ 30	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
7320 Materials and Operations- Uniform Expense	\$ 4,580	\$ 3,205	\$ 1,374	\$ -	\$ 1	70.0%	30.0%	0.0%	0.01%	
7400 Materials and Operations- Preventative Maintenance Program	\$ 105,500	\$ 73,838	\$ 31,650	\$ -	\$ 12	70.0%	30.0%	0.0%	0.01%	
7410 Materials and Operations- Safety Supplies	\$ 1,000	\$ 700	\$ 300	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
7440 Materials and Operations- Fuel	\$ 20,900	\$ 14,628	\$ 6,270	\$ -	\$ 2	70.0%	30.0%	0.0%	0.01%	
7455 Materials and Operations- Small Tools	\$ 4,000	\$ 2,800	\$ 1,200	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
7460 Materials and Operations- Equipment under Capital	\$ 25,500	\$ 17,847	\$ 7,650	\$ -	\$ 3	70.0%	30.0%	0.0%	0.01%	
7470 Materials and Operations- Utilities- Electric	\$ 2,290,400	\$ 2,290,400	\$ -	\$ -	\$ -	100.0%	0.0%	0.0%	0.00%	
7482 Materials and Operations- Telephone	\$ 9,351	\$ 6,545	\$ 2,805	\$ -	\$ 1	70.0%	30.0%	0.0%	0.01%	
7500 Contractual	\$ 205,775	\$ 144,020	\$ 61,733	\$ -	\$ 23	70.0%	30.0%	0.0%	0.01%	
7805 Other Operating- Dues/Membership	\$ 2,000	\$ 1,400	\$ 600	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
7820 Other Operating- Travel and Meetings	\$ 50	\$ 35	\$ 15	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
7845 Other Operating- Training and Education	\$ 5,000	\$ 3,499	\$ 1,500	\$ -	\$ 1	70.0%	30.0%	0.0%	0.01%	
7860 Other Operating- Education Reimbursement	\$ 300	\$ 210	\$ 90	\$ -	\$ 0	70.0%	30.0%	0.0%	0.01%	
8070 Other Operating- Facility Maintenance	\$ 26,000	\$ 18,197	\$ 7,800	\$ -	\$ 3	70.0%	30.0%	0.0%	0.01%	
8071 Other Operating- Vehicle/Equipment- Maintenance/Repair	\$ 19,000	\$ 13,298	\$ 5,700	\$ -	\$ 2	70.0%	30.0%	0.0%	0.01%	
Subtotal: Production	\$ 3,373,471	\$ 3,048,429	\$ 324,921	\$ -	\$ 121	90.4%	9.6%	0.0%	0.00%	

CITY OF HESPERIA
WATER RATE STUDY
Cost of Service Analysis

TABLE 32

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
DISTRIBUTION SYSTEM MAINTENANCE									
Salaries	\$ 676,185	\$ 130,670	\$ 540,948	\$ -	\$ 4,567	19.3%	80.0%	0.0%	0.7%
Benefits	\$ 264,195	\$ 51,055	\$ 211,356	\$ -	\$ 1,784	19.3%	80.0%	0.0%	0.7%
7255 Materials and Operations- Computer Supplies	\$ -	\$ -	\$ -	\$ -	\$ -	19.3%	80.0%	0.0%	0.7%
7320 Materials and Operations- Uniform Expense	\$ 5,320	\$ 1,028	\$ 4,256	\$ -	\$ 36	19.3%	80.0%	0.0%	0.7%
7400 Materials and Operations- General	\$ 172,000	\$ 33,238	\$ 137,600	\$ -	\$ 1,162	19.3%	80.0%	0.0%	0.7%
7410 Materials and Operations- Safety Supplies	\$ 500	\$ 97	\$ 400	\$ -	\$ 3	19.3%	80.0%	0.0%	0.7%
7440 Materials and Operations- Fuel	\$ 29,450	\$ 5,691	\$ 23,560	\$ -	\$ 199	19.3%	80.0%	0.0%	0.7%
7455 Materials and Operations- Small Tools	\$ 8,000	\$ 1,546	\$ 6,400	\$ -	\$ 54	19.3%	80.0%	0.0%	0.7%
7482 Materials and Operations- Utilities- Telephone	\$ 9,280	\$ 1,793	\$ 7,424	\$ -	\$ 63	19.3%	80.0%	0.0%	0.7%
7650 Contractual	\$ 3,500	\$ 676	\$ 2,800	\$ -	\$ 24	19.3%	80.0%	0.0%	0.7%
7805 Other Operating- Dues/Membership	\$ 1,500	\$ 290	\$ 1,200	\$ -	\$ 10	19.3%	80.0%	0.0%	0.7%
7820 Other Operating- Travel and Meetings	\$ 150	\$ 29	\$ 120	\$ -	\$ 1	19.3%	80.0%	0.0%	0.7%
7845 Other Operating- Training and Education	\$ 6,480	\$ 1,252	\$ 5,184	\$ -	\$ 44	19.3%	80.0%	0.0%	0.7%
7860 Other Operating- Education Reimbursement	\$ 1,200	\$ 232	\$ 960	\$ -	\$ 8	19.3%	80.0%	0.0%	0.7%
8071 Other Operating- Vehicle/Equipment- Maintenance/Repair	\$ 55,000	\$ 10,629	\$ 44,000	\$ -	\$ 371	19.3%	80.0%	0.0%	0.7%
Subtotal: Distribution System Maintenance	\$ 1,232,760	\$ 238,225	\$ 986,208	\$ -	\$ 8,327	19.3%	80.0%	0.0%	0.7%
PIPELINE MAINTENANCE									
Salaries	\$ 393,957	\$ 76,130	\$ 315,166	\$ -	\$ 2,661	19.3%	80.0%	0.0%	0.7%
Benefits	\$ 155,565	\$ 30,062	\$ 124,452	\$ -	\$ 1,051	19.3%	80.0%	0.0%	0.7%
7250 Materials and Operations- Office Expense	\$ 250	\$ 48	\$ 200	\$ -	\$ 2	19.3%	80.0%	0.0%	0.7%
7255 Materials and Operations- Computer Supplies	\$ -	\$ -	\$ -	\$ -	\$ -	19.3%	80.0%	0.0%	0.7%
7290 Materials and Operations- Advertising	\$ 250	\$ 48	\$ 200	\$ -	\$ 2	19.3%	80.0%	0.0%	0.7%
7320 Materials and Operations- Uniform Expense	\$ 3,550	\$ 686	\$ 2,840	\$ -	\$ 24	19.3%	80.0%	0.0%	0.7%
7400 Materials and Operations- Water Lines	\$ 588,500	\$ 113,725	\$ 470,800	\$ -	\$ 3,975	19.3%	80.0%	0.0%	0.7%
7410 Materials and Operations- Safety Supplies	\$ 2,400	\$ 464	\$ 1,920	\$ -	\$ 16	19.3%	80.0%	0.0%	0.7%
7440 Materials and Operations- Fuel	\$ 31,600	\$ 6,107	\$ 25,280	\$ -	\$ 213	19.3%	80.0%	0.0%	0.7%
7455 Materials and Operations- Small Tools	\$ 3,500	\$ 676	\$ 2,800	\$ -	\$ 24	19.3%	80.0%	0.0%	0.7%
7482 Materials and Operations- Telephone	\$ 4,070	\$ 787	\$ 3,256	\$ -	\$ 27	19.3%	80.0%	0.0%	0.7%
7500 Contractual- Contract Services	\$ 35,500	\$ 6,860	\$ 28,400	\$ -	\$ 240	19.3%	80.0%	0.0%	0.7%
7650 Contractual- Equipment Rental	\$ 3,000	\$ 580	\$ 2,400	\$ -	\$ 20	19.3%	80.0%	0.0%	0.7%
7805 Other Operating- Dues and Memberships	\$ 600	\$ 116	\$ 480	\$ -	\$ 4	19.3%	80.0%	0.0%	0.7%
7820 Other Operating- Travel and Meetings	\$ 3,605	\$ 697	\$ 2,884	\$ -	\$ 24	19.3%	80.0%	0.0%	0.7%
7845 Other Operating- Training and Education	\$ 500	\$ 97	\$ 400	\$ -	\$ 3	19.3%	80.0%	0.0%	0.7%
8071 Other Operating- Vehicle/Equipment- Maintenance/Repair	\$ 55,000	\$ 10,629	\$ 44,000	\$ -	\$ 371	19.3%	80.0%	0.0%	0.7%
Subtotal: Pipeline Maintenance	\$ 1,281,847	\$ 247,711	\$ 1,025,478	\$ -	\$ 8,658	19.3%	80.0%	0.0%	0.7%

CITY OF HESPERIA
WATER RATE STUDY
Cost of Service Analysis

TABLE 33

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
ENGINEERING (2)									
Salaries	\$ 418,494	\$ -	\$ 415,667	\$ -	\$ 2,827	0.0%	99.3%	0.0%	0.7%
Benefits	\$ 166,746	\$ -	\$ 165,619	\$ -	\$ 1,126	0.0%	99.3%	0.0%	0.7%
4250 Materials and Operations- Office Expense	\$ 1,100	\$ -	\$ 1,093	\$ -	\$ 7	0.0%	99.3%	0.0%	0.7%
7255 Materials and Operations- Computer Supplies	\$ 4,500	\$ -	\$ 4,470	\$ -	\$ 30	0.0%	99.3%	0.0%	0.7%
7320 Materials and Operations- Uniform Expense	\$ 485	\$ -	\$ 482	\$ -	\$ 3	0.0%	99.3%	0.0%	0.7%
7400 Materials and Operations- Survey Paint	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	99.3%	0.0%	0.7%
7410 Materials and Operations- Safety Supplies	\$ 100	\$ -	\$ 99	\$ -	\$ 1	0.0%	99.3%	0.0%	0.7%
7440 Materials and Operations- Fuel	\$ 3,660	\$ -	\$ 3,635	\$ -	\$ 25	0.0%	99.3%	0.0%	0.7%
7455 Materials and Operations- Small Tools	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	99.3%	0.0%	0.7%
7500 Contractual- GIS System Services	\$ 170,550	\$ -	\$ 169,398	\$ -	\$ 1,152	0.0%	99.3%	0.0%	0.7%
7580 Contractual- GIS System Computer Services	\$ 39,200	\$ -	\$ 38,935	\$ -	\$ 265	0.0%	99.3%	0.0%	0.7%
7805 Other Operating- Dues/Membership	\$ 1,440	\$ -	\$ 1,430	\$ -	\$ 10	0.0%	99.3%	0.0%	0.7%
7820 Other Operating- Travel & Meetings	\$ 1,800	\$ -	\$ 1,788	\$ -	\$ 12	0.0%	99.3%	0.0%	0.7%
7845 Other Operating- Training	\$ 10,000	\$ -	\$ 9,932	\$ -	\$ 68	0.0%	99.3%	0.0%	0.7%
8071 Other Operating- Equip/Vehicles-Maintenance/Repair	\$ 4,500	\$ -	\$ 4,470	\$ -	\$ 30	0.0%	99.3%	0.0%	0.7%
Subtotal: Engineering	\$ 822,574	\$ -	\$ 817,018	\$ -	\$ 5,556	0.0%	99.3%	0.0%	0.7%
CUSTOMER SERVICE									
Salaries	\$ 514,733	\$ -	\$ -	\$ 514,733	\$ -	0.0%	0.0%	100.0%	0.0%
Benefits	\$ 219,087	\$ -	\$ -	\$ 219,087	\$ -	0.0%	0.0%	100.0%	0.0%
7255 Materials and Operations- Computer Supplies	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	0.0%	100.0%	0.0%
7270 Materials and Operations- Postage/Shipping Costs	\$ 30	\$ -	\$ -	\$ 30	\$ -	0.0%	0.0%	100.0%	0.0%
7320 Materials and Operations- Uniform Expense	\$ 3,665	\$ -	\$ -	\$ 3,665	\$ -	0.0%	0.0%	100.0%	0.0%
7400 Materials and Operations- Meters	\$ 817,507	\$ -	\$ -	\$ 817,507	\$ -	0.0%	0.0%	100.0%	0.0%
7410 Materials and Operations- Safety Supplies	\$ 600	\$ -	\$ -	\$ 600	\$ -	0.0%	0.0%	100.0%	0.0%
7440 Materials and Operations- Fuel	\$ 32,170	\$ -	\$ -	\$ 32,170	\$ -	0.0%	0.0%	100.0%	0.0%
7455 Materials and Operations- Small Tools	\$ 1,200	\$ -	\$ -	\$ 1,200	\$ -	0.0%	0.0%	100.0%	0.0%
7460 Materials and Operations- Equipment under Capital	\$ 3,000	\$ -	\$ -	\$ 3,000	\$ -	0.0%	0.0%	100.0%	0.0%
7482 Materials and Operations- Utilities- Telephone	\$ 6,350	\$ -	\$ -	\$ 6,350	\$ -	0.0%	0.0%	100.0%	0.0%
7600 Contractual	\$ 18,970	\$ -	\$ -	\$ 18,970	\$ -	0.0%	0.0%	100.0%	0.0%
7805 Other Operating- Dues/Membership	\$ 1,105	\$ -	\$ -	\$ 1,105	\$ -	0.0%	0.0%	100.0%	0.0%
7820 Other Operating- Travel & Meetings	\$ 200	\$ -	\$ -	\$ 200	\$ -	0.0%	0.0%	100.0%	0.0%
7845 Other Operating- Training	\$ 5,500	\$ -	\$ -	\$ 5,500	\$ -	0.0%	0.0%	100.0%	0.0%
8071 Other Operating- Equip/Vehicles-Maintenance/Repair	\$ 25,000	\$ -	\$ -	\$ 25,000	\$ -	0.0%	0.0%	100.0%	0.0%
Subtotal: Customer Service	\$ 1,649,117	\$ -	\$ -	\$ 1,649,117	\$ -	0.0%	0.0%	100.0%	0.0%

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TABLE 34

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
UTILITY BILLING (2)									
Salaries	\$ 489,749	\$ -	\$ -	\$ 489,749	\$ -	0.0%	0.0%	100.0%	0.0%
Benefits	\$ 167,706	\$ -	\$ -	\$ 167,706	\$ -	0.0%	0.0%	100.0%	0.0%
7250 Materials and Operations- Office Expense	\$ 18,433	\$ -	\$ -	\$ 18,433	\$ -	0.0%	0.0%	100.0%	0.0%
7255 Materials and Operations- Computer Supplies	\$ 9,426	\$ -	\$ -	\$ 9,426	\$ -	0.0%	0.0%	100.0%	0.0%
7270 Materials and Operations- Postage/Shipping Costs	\$ 69,962	\$ -	\$ -	\$ 69,962	\$ -	0.0%	0.0%	100.0%	0.0%
7440 Materials and Operations- Fuel	\$ 34	\$ -	\$ -	\$ 34	\$ -	0.0%	0.0%	100.0%	0.0%
7460 Materials and Operations- Equipment under Capital	\$ 2,328	\$ -	\$ -	\$ 2,328	\$ -	0.0%	0.0%	100.0%	0.0%
7482 Materials and Operations- Utilities- Telephone	\$ 2,044	\$ -	\$ -	\$ 2,044	\$ -	0.0%	0.0%	100.0%	0.0%
7485 Materials and Operations- Lease Maintenance	\$ 29,681	\$ -	\$ -	\$ 29,681	\$ -	0.0%	0.0%	100.0%	0.0%
7500 Contractual- Contract Services	\$ 13,322	\$ -	\$ -	\$ 13,322	\$ -	0.0%	0.0%	100.0%	0.0%
7580 Contractual- Computer Services	\$ 3,796	\$ -	\$ -	\$ 3,796	\$ -	0.0%	0.0%	100.0%	0.0%
7585 Contractual- Utility Billing Software Licenses	\$ 26,502	\$ -	\$ -	\$ 26,502	\$ -	0.0%	0.0%	100.0%	0.0%
7590 Contractual- Service Fees and Charges	\$ 56,556	\$ -	\$ -	\$ 56,556	\$ -	0.0%	0.0%	100.0%	0.0%
7805 Other Operating- Dues and Memberships	\$ 92	\$ -	\$ -	\$ 92	\$ -	0.0%	0.0%	100.0%	0.0%
7840 Other Operating- Conferences and Seminars	\$ 2,514	\$ -	\$ -	\$ 2,514	\$ -	0.0%	0.0%	100.0%	0.0%
7845 Other Operating- Training and Education	\$ 838	\$ -	\$ -	\$ 838	\$ -	0.0%	0.0%	100.0%	0.0%
7900 Other Operating- Bad Debt Expense	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	0.0%	100.0%	0.0%
Subtotal: Utility Billing (2)	\$ 892,982	\$ -	\$ -	\$ 892,982	\$ -	0.0%	0.0%	100.0%	0.0%
ADMINISTRATION (2)									
Salaries	\$ 381,578	\$ -	\$ 359,922	\$ 19,079	\$ 2,577	0.0%	94.3%	5.0%	0.7%
Benefits	\$ 161,013	\$ -	\$ 151,874	\$ 8,051	\$ 1,088	0.0%	94.3%	5.0%	0.7%
7250 Materials and Operations- Office Expense	\$ 4,825	\$ -	\$ 4,551	\$ 241	\$ 33	0.0%	94.3%	5.0%	0.7%
7255 Materials and Operations- Computer Supplies	\$ 3,000	\$ -	\$ 2,830	\$ 150	\$ 20	0.0%	94.3%	5.0%	0.7%
7260 Materials and Operations- Printing	\$ 2,500	\$ -	\$ 2,358	\$ 125	\$ 17	0.0%	94.3%	5.0%	0.7%
7440 Materials and Operations- Postage/Shipping Costs	\$ 50	\$ -	\$ 47	\$ 3	\$ 0	0.0%	94.3%	5.0%	0.7%
7482 Materials and Operations- Uniform Expense	\$ 1,270	\$ -	\$ 1,198	\$ 64	\$ 9	0.0%	94.3%	5.0%	0.7%
7485 Materials and Operations- Lease Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	94.3%	5.0%	0.7%
7400 Materials and Operations- Parts	\$ 2,800	\$ -	\$ 2,641	\$ 140	\$ 19	0.0%	94.3%	5.0%	0.7%
7410 Materials and Operations- Safety Supplies	\$ 1,000	\$ -	\$ 943	\$ 50	\$ 7	0.0%	94.3%	5.0%	0.7%
7440 Materials and Operations- Fuel	\$ 3,980	\$ -	\$ 3,754	\$ 199	\$ 27	0.0%	94.3%	5.0%	0.7%
7455 Materials and Operations- Small Tools	\$ 500	\$ -	\$ 472	\$ 25	\$ 3	0.0%	94.3%	5.0%	0.7%
7470 Materials and Operations- Utilities- Electricity	\$ 45,800	\$ -	\$ 43,201	\$ 2,290	\$ 309	0.0%	94.3%	5.0%	0.7%
7473 Materials and Operations- Utilities- Gas	\$ 7,400	\$ -	\$ 6,980	\$ 370	\$ 50	0.0%	94.3%	5.0%	0.7%
7482 Materials and Operations- Utilities- Telephone	\$ 2,812	\$ -	\$ 2,652	\$ 141	\$ 19	0.0%	94.3%	5.0%	0.7%
7483 Materials and Operations- Utilities- Telecomm Services	\$ 1,500	\$ -	\$ 1,415	\$ 75	\$ 10	0.0%	94.3%	5.0%	0.7%
7485 Materials and Operations- Leases for Copiers	\$ 11,500	\$ -	\$ 10,847	\$ 575	\$ 78	0.0%	94.3%	5.0%	0.7%
7500 Contractual- Contract Services	\$ 170,189	\$ -	\$ 160,530	\$ 8,509	\$ 1,150	0.0%	94.3%	5.0%	0.7%
7560 Contractual- Legal Services	\$ 20,000	\$ -	\$ 18,865	\$ 1,000	\$ 135	0.0%	94.3%	5.0%	0.7%
7563 Contractual- Litigation Services	\$ 2,100	\$ -	\$ 1,981	\$ 105	\$ 14	0.0%	94.3%	5.0%	0.7%
7565 Contractual- Claims/Lawsuits/Settlements	\$ 40,000	\$ -	\$ 37,730	\$ 2,000	\$ 270	0.0%	94.3%	5.0%	0.7%
7585 Contractual- Software Licenses	\$ 24,000	\$ -	\$ 22,638	\$ 1,200	\$ 162	0.0%	94.3%	5.0%	0.7%
7720 Contractual- Franchise Fee	\$ 250,000	\$ -	\$ 235,811	\$ 12,500	\$ 1,689	0.0%	94.3%	5.0%	0.7%
7805 Other Operating- Dues and Memberships	\$ 925	\$ -	\$ 873	\$ 46	\$ 6	0.0%	94.3%	5.0%	0.7%
7820 Other Operating- Travel & Meetings	\$ 200	\$ -	\$ 189	\$ 10	\$ 1	0.0%	94.3%	5.0%	0.7%
7845 Other Operating- Training and Education	\$ 4,850	\$ -	\$ 4,575	\$ 243	\$ 33	0.0%	94.3%	5.0%	0.7%
7890 Other Operating- General and Administrative	\$ 1,950,000	\$ -	\$ 1,839,329	\$ 97,500	\$ 13,171	0.0%	94.3%	5.0%	0.7%
8071 Other Operating- Vehicle/Equipment- Maintenance/Repair	\$ 9,000	\$ -	\$ 8,489	\$ 450	\$ 61	0.0%	94.3%	5.0%	0.7%
Subtotal: Administration (2)	\$ 3,102,792	\$ -	\$ 2,926,695	\$ 155,140	\$ 20,958	0.0%	94.3%	5.0%	0.7%

Funct. & Classification, 25 of 45

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TABLE 35

Classification of Expenses, continued									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
PROPERTY MANAGEMENT									
Salaries	\$ 200,473	\$ -	\$ 189,095	\$ 10,024	\$ 1,354	0.0%	94.3%	5.0%	0.7%
Benefits	\$ 96,770	\$ -	\$ 91,278	\$ 4,839	\$ 654	0.0%	94.3%	5.0%	0.7%
7400 Materials and Operations- Custodial Supplies	\$ 6,400	\$ -	\$ 6,037	\$ 320	\$ 43	0.0%	94.3%	5.0%	0.7%
7440 Materials and Operations- Fuel	\$ 2,070	\$ -	\$ 1,953	\$ 104	\$ 14	0.0%	94.3%	5.0%	0.7%
7455 Materials and Operations- Small Tools	\$ 500	\$ -	\$ 472	\$ 25	\$ 3	0.0%	94.3%	5.0%	0.7%
7470 Materials and Operations- Utilities- Electricity	\$ 14,700	\$ -	\$ 13,866	\$ 735	\$ 99	0.0%	94.3%	5.0%	0.7%
7473 Materials and Operations- Utilities- Gas	\$ 2,500	\$ -	\$ 2,358	\$ 125	\$ 17	0.0%	94.3%	5.0%	0.7%
7500 Contractual- Maintenance Services	\$ 37,600	\$ -	\$ 35,466	\$ 1,880	\$ 254	0.0%	94.3%	5.0%	0.7%
7585 Contractual- Software Licenses	\$ 712	\$ -	\$ 672	\$ 36	\$ 5	0.0%	94.3%	5.0%	0.7%
7800 Other Operating- Gym	\$ 2,000	\$ -	\$ 1,886	\$ 100	\$ 14	0.0%	94.3%	5.0%	0.7%
8070 Other Operating- Facility Maintenance	\$ 52,400	\$ -	\$ 49,426	\$ 2,620	\$ 354	0.0%	94.3%	5.0%	0.7%
Subtotal: Property Management	\$ 416,125	\$ -	\$ 392,508	\$ 20,806	\$ 2,811	0.0%	94.3%	5.0%	0.7%
Total Operating Expense	\$ 15,570,314	\$ 6,267,088	\$ 6,538,727	\$ 2,718,045	\$ 46,455	40.3%	42.0%	17.5%	0.3%

CITY OF HESPERIA
WATER RATE STUDY
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TABLE 36

Classification of Expenses, continued									
Budget Categories	Total Revenue Requirements	Commodity	Capacity	Customer	Fire Protection	Basis of Classification			
	FY 2017/18	(COM)	(CAP)	(CA)	(FP)	(COM)	(CAP)	(CA)	(FP)
Debt Service Payments									
1992B Certificate of Participation	\$ 143,150	\$ -	\$ 143,150	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
Variable Rate Lease Revenue Refunding Bonds Taxable Series 1998A	\$ 1,481,440	\$ -	\$ 1,481,440	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
Variable Rate Lease Revenue Refunding Bonds Nontaxable Series 1998B	\$ 130,000	\$ -	\$ 130,000	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
Future Debt	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
Total Debt Service Payments	\$ 1,754,590	\$ -	\$ 1,754,590	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
Capital Expenditures									
Rate Funded Capital Expenses	\$ 3,640,000	\$ -	\$ 3,629,140	\$ -	\$ 10,860	0.0%	99.7%	0.0%	0.3%
Recycled Water Subsidy	\$ -	\$ -	\$ -	\$ -	\$ -	0.0%	100.0%	0.0%	0.0%
TOTAL REVENUE REQUIREMENTS	\$ 20,964,904	\$ 6,267,088	\$ 11,922,457	\$ 2,718,045	\$ 57,315	29.9%	56.9%	13.0%	0.3%
Less: Non-Rate Revenues									
Water Operating Fund									
Taxes- Secured Property Taxes	\$ (300,960)	\$ (89,967)	\$ (171,152)	\$ (39,019)	\$ (823)	29.9%	56.9%	13.0%	0.3%
Taxes- WEDA Pass Through	\$ (10,830)	\$ (3,237)	\$ (6,159)	\$ (1,404)	\$ (30)	29.9%	56.9%	13.0%	0.3%
Taxes- Other	\$ (35,570)	\$ (10,633)	\$ (20,228)	\$ (4,612)	\$ (97)	29.9%	56.9%	13.0%	0.3%
Interest- Income	\$ (23,544)	\$ (7,038)	\$ (13,389)	\$ (3,052)	\$ (64)	29.9%	56.9%	13.0%	0.3%
Intergovernmental- City Rent Charge	\$ (18,064)	\$ (5,400)	\$ (10,273)	\$ (2,342)	\$ (49)	29.9%	56.9%	13.0%	0.3%
Charges for Services- WaterSales/Residential									
Charges for Services- WaterSales/Business									
Charges for Services- WaterSales/Public Building									
Charges for Services- WaterSales/Irrigation									
Charges for Services- WaterSales/Construction									
Charges for Services- WaterSales/Industrial									
Charges for Services- Water Availability Charge									
Charges for Services- Water Meter Fees	\$ (260,000)	\$ (77,722)	\$ (147,858)	\$ (33,708)	\$ (711)	29.9%	56.9%	13.0%	0.3%
Charges for Services- Reconnection Fees	\$ (194,925)	\$ -	\$ -	\$ (194,925)	\$ -	0.0%	0.0%	100.0%	0.0%
Charges for Services- Water Inspection	\$ (10,000)	\$ -	\$ -	\$ (10,000)	\$ -	0.0%	0.0%	100.0%	0.0%
Charges for Services- New Account Setup	\$ (105,000)	\$ -	\$ -	\$ (105,000)	\$ -	0.0%	0.0%	100.0%	0.0%
Charges for Services- Rent Eagle Plaza	\$ (226,464)	\$ (67,697)	\$ (128,787)	\$ (29,360)	\$ (619)	29.9%	56.9%	13.0%	0.3%
Charges for Services- Other	\$ (104,000)	\$ (31,089)	\$ (59,143)	\$ (13,483)	\$ (284)	29.9%	56.9%	13.0%	0.3%
Grants- MWA Toilet Grant	\$ -	\$ -	\$ -	\$ -	\$ -	29.9%	56.9%	13.0%	0.3%
Other Operating	\$ (189,341)	\$ (56,600)	\$ (107,676)	\$ (24,548)	\$ (518)	29.9%	56.9%	13.0%	0.3%
All Other	\$ (25,000)	\$ (7,473)	\$ (14,217)	\$ (3,241)	\$ (68)	29.9%	56.9%	13.0%	0.3%
Water Capital Fund									
Capital Facility Charges									
Prop 1 State Water Board									
NET REVENUE REQUIREMENTS	\$ 19,461,206	\$ 5,910,230	\$ 11,243,574	\$ 2,253,350	\$ 54,051				
Allocation of Revenue Requirements	100.0%	30.4%	57.8%	11.6%	0.3%				

Net Revenue Req't. Check from Financial Plan \$ 830,200

TABLE 37

Classification of Expenses, continued					
Adjustments to Classification of Expenses					
Adjustment for Current Rate Level:	Total	(COM)	(CAP)	(CA)	(FP)
FY 2017/18 Target Rate Rev. After Rate Increases	\$ 17,018,094				
Projected Rate Revenue at Current Rates	\$ 15,612,930				
FY 2017/18 Projected Rate Increase	9.0%				
Adjusted Net Revenue Req'ts	\$ 17,018,094	\$ 5,168,274	\$ 9,832,084	\$ 1,970,470	\$ 47,266
<i>Percent of Revenue</i>	<i>100.0%</i>	<i>30.4%</i>	<i>57.8%</i>	<i>11.6%</i>	<i>0.3%</i>

CITY OF HESPERIA
WATER RATE STUDY
Water Cost of Service Analysis

TABLE 38 - Single Family Residential Meter Characteristics:

Meter Size	Number of Meters	Average Bi-Monthly Consumption May '16 - April '17	Peak Bi-Monthly Consumption May '16 - April '17	Peaking Factor
5/8 inch	339	33	50	1.52
3/4 inch	23,632	27	36	1.34
1 inch	362	34	48	1.39
1 1/2 inch (1)	1	103	130	1.26
Total	24,334	27	36	1.34

1. Given the difference in average consumption, the 1.5 inch Single Family Residential Meters are considered a separate class for analysis.

TABLE 39

Development of the COMMODITY Allocation Factor					
Customer Class	Volume FY2014/15 (hcf) (1)	Volume FY2015/16 (hcf) (1)	Volume May '16 April '17 (hcf) (1)	Volume (hcf) (1)	Percent of Total Volume
Single Family Residential	4,264,435	3,710,947	3,931,565	4,264,435	75.9%
SFR 1.5"	645	582	620	645	0.0%
Multi-Family Residential	443,041	412,578	422,195	443,041	7.9%
Business	342,563	330,784	350,306	342,563	6.1%
Public Building	420,008	343,166	386,583	420,008	7.5%
Industry	4,180	3,904	4,853	4,180	0.1%
Irrigation	142,513	113,001	127,997	142,513	2.5%
Fire Service	746	714	901	746	0.0%
Total	5,618,131	4,915,676	5,225,020	5,618,131	100.0%
Temporary / Construction (2)	98,074	22,579	39,673	98,074	
Utility	2,217	1,911	1,980	2,217	
Grand Total	5,718,422	4,940,166	5,266,673	5,718,422	

1. Source files: *Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx* (data combined and summarized in *pivotTables.xlsx*)

2. Excluded from consumption as the water used by construction/temporary hydrants is inconsistent.

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

CITY OF HESPERIA
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TABLE 40

Development of the CAPACITY (MAX MONTH) Allocation Factor							
Customer Class	Peak Bi-Monthly FY2014/15 (hcf) (1)	Peak Bi-Monthly FY2015/16 (hcf) (1)	Peak Monthly May '16 - April '17 (hcf) (1)	Average Bi- Monthly Use (hcf)	Peak Bi-Monthly Use (hcf) (1)	Bi-Monthly Peaking Factor	Bi-Monthly Max Capacity Factor
Single Family Residential	973,893	775,892	878,119	710,739	973,893	1.37	75.4%
SFR 1.5"	149	148	130	108	149	1.39	0.0%
Multi-Family Residential	92,174	81,924	87,424	73,840	92,174	1.25	7.1%
Business	65,265	60,797	68,083	57,094	65,265	1.14	5.1%
Public Building	119,496	87,072	110,724	70,001	119,496	1.71	9.3%
Industry	1,277	719	1,250	697	1,277	1.83	0.1%
Irrigation	39,416	28,868	35,836	23,752	39,416	1.66	3.1%
Fire Service	144	126	208	124	144	1.16	0.0%
Total	1,291,814	1,035,546	1,181,774	936,355	1,291,814	1.38	100.0%
Temporary / Construction	28,710	5,858	17,999	16,346	28,710	1.76	
Utility	488	404	464	370	488	1.32	

1. Based on bi-monthly billing 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.

TABLE 41

Development of the CUSTOMER Allocation Factor		
Customer Class	Number of Meters (1)	Percent of Total
Single Family Residential	24,333	93.2%
SFR 1.5"	1	0.0%
Multi-Family Residential	504	1.9%
Business	736	2.8%
Public Building	136	0.5%
Industry	20	0.1%
Irrigation	92	0.4%
Fire Service	294	1.1%
Total	26,116	100.0%
Temporary / Construction	82	
Utility	19	

1. Meter Count for April / May 2017. Hesperia bills bi-monthly.

Source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx (data combined and summarized in pivotTables.xlsx)

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.

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TABLE 42

Consumption by Tier						
Tier	Bi-Monthly Breakpoint (1)	Expected Consumption FY 2014/15 (hcf) (2)	Expected Consumption FY 2015/16 (hcf) (2)	Expected Consumption May '16 - April '17 (hcf) (2)	Expected Consumption (2)	Percentage of Total SFR Consumption
Tier 1	14 hcf	1,743,487	1,729,546	1,747,414	1,743,487	40.9%
Tier 2	35 hcf	1,375,265	1,212,651	1,242,889	1,375,265	32.2%
Tier 3	--	1,146,328	769,332	941,882	1,146,328	26.9%
Total		4,265,080	3,711,529	3,932,185	4,265,080	100%

1. Tier 1 break point set to 14 hcf which is expected indoor water consumption. Based upon: Codes and Standard Research Report, California's Residential Indoor Water Use, 2nd Edition. Tier 2 break point set to 35 hcf which is average summer consumption.
2. Consumption for all SFR customers (including 1.5" meters)
 Source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx (data combined and summarized in pivotTables.xlsx)

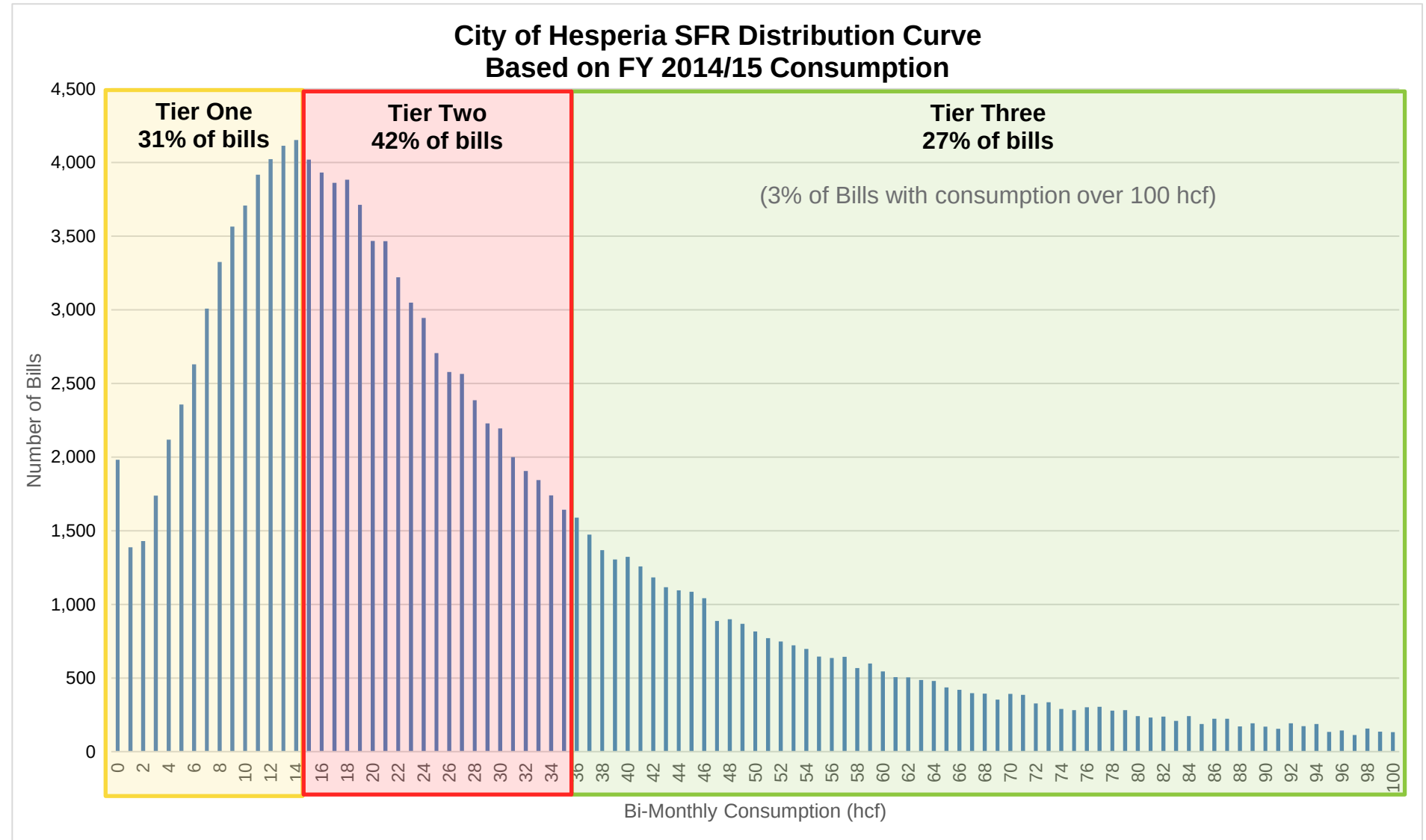
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TABLE 43 - DEVELOPMENT OF ADDITIONAL CAPACITY FACTORS FOR SINGLE FAMILY RESIDENTIAL CUSTOMERS FY 2017/18:

Development of the Single Family Residential PEAK CAPACITY (MAX BI-MONTHLY) Allocation Factors							
Tier	Description	Peak Consumption FY 2014/15 (hcf) (1)	Peak Consumption FY 2015/16 (hcf) (1)	Peak Consumption May '16 - April '17 (hcf) (1)	Peak Bi-Monthly Consumption (hcf) (1)	Additional Capacity Required (hcf) (4)	Additional Capacity Factor
Tier 1	Max Tier 1 Capacity (2)	340,662	340,662	340,662	340,662	0	0.0%
Tier 2	Peak up to Tier 2 (3)	592,868	550,963	573,650	592,868	252,206	39.8%
Tier 3	Peak up to Tier 3 (3)	974,042	776,040	878,249	974,042	381,174	60.2%
Total						633,380	100.0%

1. Source files: *Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx* (data combined and summarized in *pivotTables.xlsx*)
2. Capacity allocated to the first tier represents the tier break multiplied by the number of customers.
3. This is the cumulative peak consumption up to the tier break; it represents capacity required to provide service to a given tier.
4. This is the additional cumulative capacity to meet peak consumption at each tier.

Single Family Residential Consumption Distribution Curve:



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WATER RATE STUDY
Water Cost of Service Analysis/Rate Design

TABLE 44

Meter Size	Standard Meters (1)		Fire Service Meters	
	Meter Capacity (gpm)	Equivalency to 3/4- inch	Meter Capacity (gpm)	Equivalency to 3/4- inch
	<u>Displacement Meters</u>		<u>Displacement Meters</u>	
5/8 inch	20	0.67	20	0.67
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
	<u>Compound Class I Meters</u>		<u>Fire Service Type I & II (2)</u>	
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
	<u>Turbine Class II Meters</u>		<u>Turbine Class I Meters</u>	
8 inch	2,800	93.33	2,800	93.33
10 inch	4,200	140.00	4,200	140.00

1. Meter flow rates are from AWWA M-1 (Seventh Edition) Table B-2.

2. Fire Service meter flow rates are from AWWA M-6 Table 5-3.

TABLE 45 - ALLOCATION OF WATER REVENUE REQUIREMENTS:

Customer Classes	COSA Results		Proposed Rates 17/18		Proposed Rate 21/22	
	Unadjusted Net Revenue Requirements (2017-18) 70% Fixed / 30% Variable		Adjusted Net Revenue Requirements (2017-18) 50% Fixed / 50% Variable		Adjusted Net Revenue Requirements (2021-22) 55% Fixed / 45% Variable	
Variable Costs:						
Commodity - Related Costs	\$ 5,168,274	30.4%	\$ 5,168,274	30.4%	\$ 7,727,118	30.4%
Capacity - Related Costs (volumetric allocation)	\$ -	0.0%	\$ 3,340,773	19.6%	\$ 3,722,616	14.6%
Fixed Costs:						
Capacity - Related Costs (fixed allocation)	\$ 9,832,084	57.8%	\$ 6,491,311	38.1%	\$ 10,977,391	43.1%
Customer - Related Costs	\$ 1,970,470	11.6%	\$ 1,970,470	11.6%	\$ 2,946,062	11.6%
Fire Protection - Related Costs	\$ 47,266	0.3%	\$ 47,266	0.3%	\$ 70,667	0.3%
Net Revenue Requirement	\$ 17,018,094	100%	\$ 17,018,094	100%	\$ 25,443,854	100%

TABLE 46 - Expected Customer Growth

	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	Total
Expected Annual Growth	100.00%	101.45%	101.45%	101.45%	101.45%	105.92%

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TABLE 47 - Allocation of Adjusted Net Revenue Requirements - FY 2017/18:

Net Revenue Requirements 2017/18 (50% Fixed / 50% Variable)							
Customer Classes	Classification Components					Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Commodity-Related Costs	Capacity-Related Costs Volumetric Allocation	Capacity-Related Costs Fixed Allocation	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 3,922,972	\$ 2,518,594	\$ 4,893,771	\$ 1,835,942	\$ -	\$ 13,171,279	77.4%
SFR 1.5"	593	385	749	75	-	\$ 1,803	0.0%
Multi-Family Residential	407,566	238,372	463,170	38,027	-	1,147,135	6.7%
Business	315,133	168,782	327,954	55,532	-	867,401	5.1%
Public Building	386,377	309,030	600,462	10,261	-	1,306,130	7.7%
Industry	3,845	3,302	6,417	1,509	-	15,074	0.1%
Irrigation	131,102	101,934	198,064	6,941	-	438,041	2.6%
Fire Service	686	372	724	22,183	47,266	71,230	0.4%
Total Net Revenue Requirement	\$ 5,168,274	\$ 3,340,773	\$ 6,491,311	\$ 1,970,470	\$ 47,266	\$ 17,018,094	100%

TABLE 48 - Allocation of Adjusted Net Revenue Requirements - FY 2021/22:

Net Revenue Requirements 2021/22 (55% Fixed / 45% Variable)							
Customer Classes	Classification Components					Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Commodity-Related Costs	Capacity-Related Costs Volumetric Allocation	Capacity-Related Costs Fixed Allocation	Customer-Related Costs	Fire Protection-Related Costs		
Single Family Residential	\$ 5,865,259	\$ 2,806,464	\$ 8,275,808	\$ 2,744,927	\$ -	\$ 19,692,458	77.4%
SFR 1.5"	887	429	1,266	113	-	2,695	0.0%
Multi-Family Residential	609,354	265,618	783,263	56,855	-	1,715,089	6.7%
Business	471,158	188,074	554,600	83,026	-	1,296,857	5.1%
Public Building	577,675	344,351	1,015,436	15,342	-	1,952,803	7.7%
Industry	5,749	3,680	10,852	2,256	-	22,537	0.1%
Irrigation	196,011	113,585	334,944	10,378	-	654,918	2.6%
Fire Service	1,026	415	1,224	33,165	70,667	106,497	0.4%
Total Net Revenue Requirement	\$ 7,727,118	\$ 3,722,616	\$ 10,977,391	\$ 2,946,062	\$ 70,667	\$ 25,443,854	100%

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TABLE 49 - Cost-of-Service Summary of Revenue Requirements:

Customer Class	May '16 - April '17		FY '17/18 Proposed Rates			FY '21/22 Proposed Rates		
	Rate Revenue	% of Revenue	COS Rev. Req't	% of COS Rev. Req't.	% Change	COS Rev. Req't	% of COS Rev. Req't.	% Change
Single Family Residential	\$ 11,373,300	77.6%	\$ 13,173,082	77.4%	-0.2%	\$ 19,695,154	77.4%	-0.2%
Multi-Family Residential	\$ 1,057,658	7.2%	\$ 1,147,135	6.7%	-0.5%	\$ 1,715,089	6.7%	-0.5%
Business	\$ 996,051	6.8%	\$ 867,401	5.1%	-1.7%	\$ 1,296,857	5.1%	-1.7%
Public Building	\$ 884,227	6.0%	\$ 1,306,130	7.7%	1.6%	\$ 1,952,803	7.7%	1.6%
Industry	\$ 15,722	0.1%	\$ 15,074	0.1%	0.0%	\$ 22,537	0.1%	0.0%
Irrigation	\$ 302,980	2.1%	\$ 438,041	2.6%	0.5%	\$ 654,918	2.6%	0.5%
Fire Service	\$ 22,986	0.2%	\$ 71,230	0.4%	0.3%	\$ 106,497	0.4%	0.3%
Total	\$ 14,652,924	100.0%	\$ 17,018,094	100%	0.0%	\$ 25,443,854	100%	0.0%

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TABLE 50 - CALCULATION OF SINGLE FAMILY BI-MONTHLY FIXED METER SERVICE CHARGES FOR FY 2017/18:

Net Revenue Requirements 2017/18 (50% Fixed / 50% Variable)					
Class (1)	Meters	Allocated Capacity Costs	Allocated Customer Costs	Total Allocated Costs	Bi-Monthly Charge
	a	b	c	d = b+c	e=d/a/6
Single Family Residential	24,333	\$4,893,771	\$1,835,942	\$ 6,729,713	\$46.09

TABLE 51 - CALCULATION OF BI-MONTHLY FIXED METER SERVICE CHARGES FOR FY 2017/18:

Net Revenue Requirements 2017/18 (50% Fixed / 50% Variable)									
Number of Meters by Class and Size (1)	FY 2017/18								Total
	3/4 inch	1 inch	1 1/2 inch	2 inch	3 inch	4 inch	6 inch	8 inch	
Single Family Residential	-	-	1	-	-	-	-	-	1
Multi-Family Residential	246	177	39	26	8	6	2	-	504
Business	357	224	76	66	10	3	-	-	736
Public Building	38	26	16	29	16	11	-	-	136
Industry	5	12	3	-	-	-	-	-	20
Irrigation	10	38	18	20	5	-	-	1	92
Total Meters/Accounts	656	477	153	141	39	20	2	1	1,489
Hydraulic Capacity Factor (2)	1.00	1.67	3.33	5.33	10.67	16.67	33.33	93.33	
Total Equivalent Meters	656	795	510	752	416	333	67	93	3,622
Bi-Monthly Fixed Service Charges									
Customer Costs (\$/Acct/bi-month) (3)	\$12.58	\$12.58	\$12.58	\$12.58	\$12.58	\$12.58	\$12.58	\$12.58	
Capacity Costs (\$/Acct/bi-month) (4)	\$73.47	\$122.45	\$244.90	\$391.84	\$783.69	\$1,224.51	\$2,449.03	\$6,857.28	
Total Monthly Meter Charge	\$86.05	\$135.03	\$257.48	\$404.42	\$796.26	\$1,237.09	\$2,461.60	\$6,869.86	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges									
Customer Costs	\$ 112,346								
Capacity Costs	1,596,816								
Total Fixed Meter Costs	\$ 1,709,162								
Annual Revenue from Bi-Monthly Meter Charges									
Customer Charges	\$ 49,496	\$ 35,990	\$ 11,544	\$ 10,639	\$ 2,943	\$ 1,509	\$ 151	\$ 75	\$ 112,346
Capacity Charges	289,181	350,456	224,821	331,501	183,383	146,942	29,388	41,144	\$ 1,596,816
Total Revenue	\$ 338,677	\$ 386,446	\$ 236,365	\$ 342,139	\$ 186,326	\$ 148,451	\$ 29,539	\$ 41,219	\$ 1,709,162

1. Source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx
2. Meter flow rates & hydraulic capacity ratio are from AWWA M-1 (Seventh Edition) Table B-2.
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.

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TABLE 52 - CALCULATION OF BI-MONTHLY FIRE METER SERVICE CHARGES FOR FY 2017/18:

Number of Meters by Class and Size (1)	FY 2017/18					Total
	2.5 Inch	4 Inch	6 Inch	8 Inch	10 Inch	
Fire Service	1	95	102	88	8	294
Total Meters/Accounts	1	95	102	88	8	294
<i>Hydraulic Capacity Factor (2)</i>	<i>11.67</i>	<i>23.33</i>	<i>53.33</i>	<i>93.33</i>	<i>140.00</i>	
Total Equivalent Meters	12	2,217	5,440	8,213	1,120	17,002
Bi-Monthly Fixed Service Charges						
Customer Costs (\$/Acct/bi-month) (3)	\$12.58	\$12.58	\$12.58	\$12.58	\$12.58	
Capacity Costs (\$/Acct/bi-month) (4)	\$5.49	\$10.98	\$25.09	\$43.91	\$65.86	
Total Monthly Meter Charge	\$18.06	\$23.55	\$37.67	\$56.48	\$78.44	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges						
Customer Costs	\$ 22,183					
Capacity & Fire Protection Costs	47,989					
Total Fixed Meter Costs	\$ 70,172					
Annual Revenue from Bi-Monthly Meter Charges						
Customer Charges	\$ 75	\$ 7,168	\$ 7,696	\$ 6,640	\$ 604	\$ 22,183
Capacity Charges	33	6,257	15,355	23,183	3,161	47,989
Total Revenue	\$ 108	\$ 13,425	\$ 23,051	\$ 29,823	\$ 3,765	\$ 70,172

1. Source files: *Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx*
2. Meter flow rates & hydraulic capacity ratio are from *AWWA M-1 (Seventh Edition)* Table B-2.
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.

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TABLE 53 - CALCULATION OF SINGLE FAMILY BI-MONTHLY FIXED METER SERVICE CHARGES FOR FY 2021/22:

Net Revenue Requirements 2021/22 (55% Fixed / 45% Variable)					
Class (1)	Meters	Allocated Capacity Costs	Allocated Customer Costs	Total Allocated Costs	Bi-Monthly Charge
	a	b	c	d = b+c	c=d/a/6
Single Family Residential	25,773	\$8,275,808	\$2,744,927	\$11,020,735	\$71.27

TABLE 54 - CALCULATION OF BI-MONTHLY FIXED METER SERVICE CHARGES FOR FY 2021/22:

Net Revenue Requirements 2021/22 (55% Fixed / 45% Variable)									
Number of Meters by Class and Size (1)	FY 2021/22								Total
	3/4 inch	1 inch	1 1/2 inch	2 inch	3 inch	4 inch	6 inch	8 inch	
Single Family Residential	-	-	1	-	-	-	-	-	1
Multi-Family Residential	261	187	41	28	8	6	2	-	534
Business	378	237	80	70	11	3	-	-	780
Public Building	40	28	17	31	17	12	-	-	144
Industry	5	13	3	-	-	-	-	-	21
Irrigation	11	40	19	21	5	-	-	1	97
Total Meters/Accounts	695	505	162	149	41	21	2	1	1,577
Hydraulic Capacity Factor (2)	1.00	1.67	3.33	5.33	10.67	16.67	33.33	93.33	
Total Equivalent Meters	695	842	540	796	441	353	71	99	3,837
Bi-Monthly Fixed Service Charges									
Customer Costs (\$/Acct/bi-month) (3)	\$17.75	\$17.75	\$17.75	\$17.75	\$17.75	\$17.75	\$17.75	\$17.75	
Capacity Costs (\$/Acct/bi-month) (4)	\$117.30	\$195.51	\$391.02	\$625.63	\$1,251.25	\$1,955.08	\$3,910.16	\$10,948.45	
Total Monthly Meter Charge	\$135.06	\$213.26	\$408.77	\$643.38	\$1,269.00	\$1,972.83	\$3,927.91	\$10,966.20	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges									
Customer Costs	\$ 167,969								
Capacity Costs	2,700,360								
Total Fixed Meter Costs	\$ 2,868,329								
Annual Revenue from Bi-Monthly Meter Charges									
Customer Charges	\$ 74,001	\$ 53,809	\$ 17,259	\$ 15,906	\$ 4,399	\$ 2,256	\$ 226	\$ 113	\$ 167,969
Capacity Charges	489,032	592,653	380,192	560,597	310,118	248,492	49,698	69,578	\$ 2,700,360
Total Revenue	\$ 563,033	\$ 646,462	\$ 397,452	\$ 576,503	\$ 314,517	\$ 250,748	\$ 49,924	\$ 69,690	\$ 2,868,329

1. Source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx
2. Meter flow rates & hydraulic capacity ratio are from AWWA M-1 (Seventh Edition) Table B-2.
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.

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TABLE 55 - CALCULATION OF BI-MONTHLY FIRE METER SERVICE CHARGES FOR FY 2021/22:

Number of Meters by Class and Size (1)	FY 2017/18					Total
	2.5 Inch	4 Inch	6 Inch	8 Inch	10 Inch	
Fire Service	1	101	108	93	8	311
Total Meters/Accounts	1	101	108	93	8	311
<i>Hydraulic Capacity Factor (2)</i>	<i>11.67</i>	<i>23.33</i>	<i>53.33</i>	<i>93.33</i>	<i>140.00</i>	
Total Equivalent Meters	12	2,348	5,762	8,699	1,186	18,008
Bi-Monthly Fixed Service Charges						
Customer Costs (\$/Acct/bi-month) (3)	\$17.75	\$17.75	\$17.75	\$17.75	\$17.75	
Capacity Costs (\$/Acct/bi-month) (4)	\$7.76	\$15.53	\$35.49	\$62.10	\$93.15	
Total Monthly Meter Charge	\$25.51	\$33.28	\$53.24	\$79.85	\$110.90	
Annual Fixed Costs Allocated to Bi-Monthly Meter Charges						
Customer Costs	\$ 33,165					
Capacity & Fire Protection Costs	<u>71,891</u>					
Total Fixed Meter Costs	\$ 105,056					
Annual Revenue from Bi-Monthly Meter Charges						
Customer Charges	\$ 113	\$ 10,717	\$ 11,506	\$ 9,927	\$ 902	\$ 33,165
Capacity Charges	<u>49</u>	<u>9,373</u>	<u>23,003</u>	<u>34,730</u>	<u>4,736</u>	<u>71,891</u>
Total Revenue	\$ 162	\$ 20,090	\$ 34,509	\$ 44,657	\$ 5,638	\$ 105,056

1. Source files: *Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx*
2. Meter flow rates & hydraulic capacity ratio are from *AWWA M-1 (Seventh Edition)* Table B-2.
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.

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PROPOSED VOLUMETRIC CHARGES FOR FY 2017/18:

Net Revenue Requirements 2017/18 (50% Fixed / 50% Variable)

TABLE 56

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr) ¹	Commodity Assigned Costs	Capacity Assigned Costs	Total Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
Single Family Residential	24,334	4,265,080	\$ 3,923,565	\$ 2,518,979	\$ 6,442,545	37.9%	\$1.51	<i>Tiered</i>
Multi-Family Residential	504	443,041	407,566	238,372	645,938	3.8%		<i>Uniform</i>
Business	736	342,563	315,133	168,782	483,916	2.8%	\$1.44	<i>Uniform</i>
Fire Service	294	746	686	372	1,059	0.0%		<i>Uniform</i>
Public Building	136	420,008	386,377	309,030	695,407	4.1%		<i>Uniform</i>
Industry	20	4,180	3,845	3,302	7,148	0.0%	\$1.65	<i>Uniform</i>
Irrigation	92	142,513	131,102	101,934	233,036	1.4%		<i>Uniform</i>
Total	26,116	5,618,131	\$ 5,168,274	\$ 3,340,773	\$ 8,509,047	50%		

1. Source files: *Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx*

TABLE 57

Single-Family Residential Tiered Rates	Tier Break	Water Consumption (hcf/yr)	Commodity Assigned Costs	Capacity Assigned Costs	Total Target Rev. Req't from Vol. Charges	% of Total Volumetric Rate Revenue	Tiered Rates (\$/hcf)
Tier 1	14	1,743,487	\$ 1,603,882	\$ -	\$ 1,603,882	18.8%	\$0.92
Tier 2	35	1,375,265	1,265,144	1,003,034	2,268,178	26.7%	\$1.65
Tier 3	--	1,146,328	1,054,539	1,515,945	2,570,484	30.2%	\$2.24
Total		4,265,080	\$ 3,923,565	\$ 2,518,979	\$ 6,442,545	75.7%	

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Net Revenue Requirements 2021/22 (55% Fixed / 45% Variable)

TABLE 58

Customer Classes	Number of Meters ¹	Water Consumption (hcf/yr) ¹	Commodity Assigned Costs	Capacity Assigned Costs	Target Rev. Req't from Vol. Charges	% of Total Rate Revenue	Uniform Commodity Rates (\$/hcf)	Proposed Rate Structure
Single Family Residential	25,774	4,517,448	\$ 5,866,146	\$ 2,806,894	\$ 8,673,040	51.0%	\$1.92	Tiered
Multi-Family Residential	534	469,256	609,354	265,618	874,971	5.1%		Uniform
Business	780	362,833	471,158	188,074	659,231	3.9%	\$1.84	Uniform
Fire Service	311	790	1,026	415	1,441	0.0%		Uniform
Public Building	144	444,860	577,675	344,351	922,026	5.4%		Uniform
Industry	21	4,427	5,749	3,680	9,429	0.1%	\$2.07	Uniform
Irrigation	97	150,946	196,011	113,585	309,596	1.8%		Uniform
Total	27,661	5,950,560	\$ 7,727,118	\$ 3,722,616	\$ 11,449,734	67%		

1. Source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx

TABLE 59

Single-Family Residential Tiered Rates	Tier Break	Water Consumption (hcf/yr) ¹	Commodity Assigned Costs	Capacity Assigned Costs	Total Target Rev. Req't from Vol. Charges	% of Total Volumetric Rate Revenue	Tiered Rates (\$/hcf)
Tier 1	14	1,846,651	\$ 2,397,974	\$ -	\$ 2,397,974	20.9%	\$1.30
Tier 2	35	1,456,641	1,891,525	1,117,679	3,009,204	26.3%	\$2.07
Tier 3	--	1,214,157	1,576,647	1,689,215	3,265,862	28.5%	\$2.69
Total		4,517,448	\$ 5,866,146	\$ 2,806,894	\$ 8,673,040	76%	

TABLE 60 - Construction Rate Calculation FY 2017/18

Construction Rate Calculation	Total Target Water Rate Revenue	Expected Lease Cost ¹	Adjusted Target Water Rate Revenue	Total Expected Consumption (hcf)	Rate Excluding Water Purchase	Watermaster Lease Cost Per hcf ¹	Proposed Rate (\$/hcf)
Construction Rate	\$ 17,018,094	\$ 2,567,126	\$ 14,450,968	5,618,131	\$2.57	\$0.80	\$3.37

1. Construction water is assumed to use water leased from the Mojave Basin Area Water Master (\$565 an AF & includes 5% system loss). Budgeted lease costs (line item 7476 in SoI

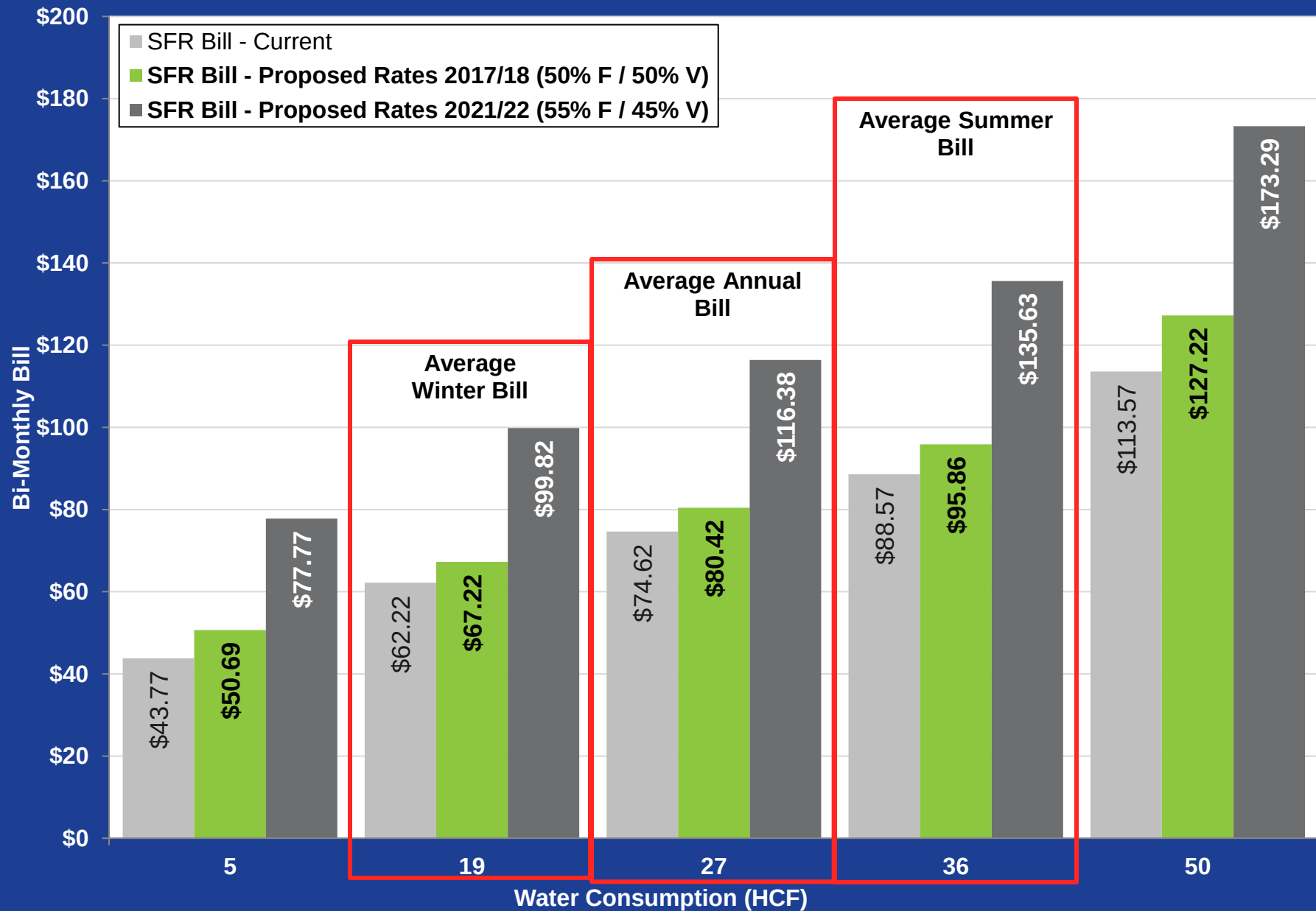
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CURRENT VS. PROPOSED WATER RATES:

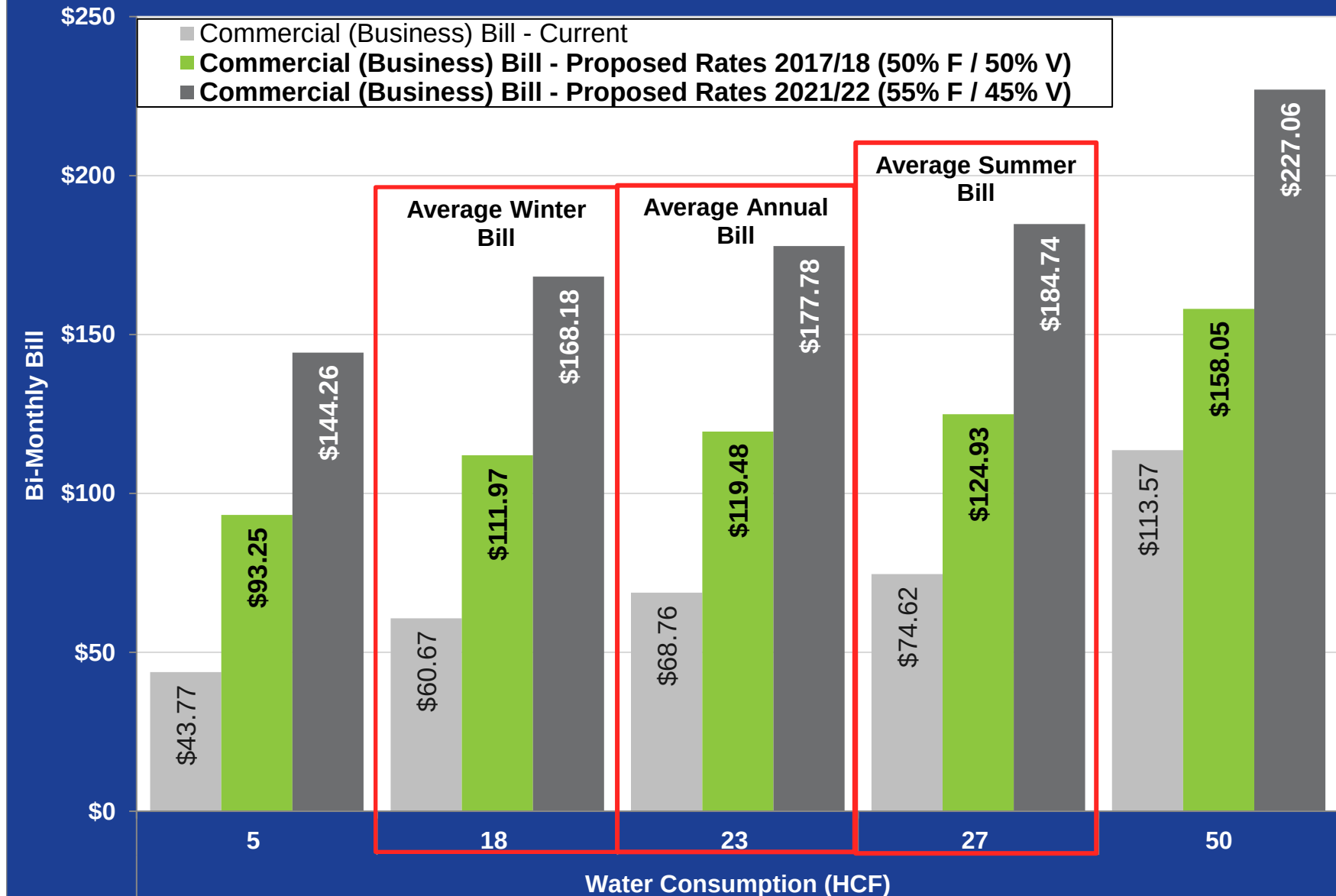
TABLE 61

Net Revenue Requirements 2017/18 (50% Fixed / 50% Variable)							
Water Rate Schedule	Number of Customers	Current Rates	Proposed Rates				
			1/1/2018	12/1/2018	12/1/2019	12/1/2020	12/1/2021
(% Fixed / % Variable):			(50% F / 50% V)	(50% F / 50% V)	(50% F / 50% V)	(50% F / 50% V)	(55% F / 45% V)
Projected Increase in Rate Revenue per Financial Plan:			9.00%	9.00%	9.00%	9.00%	9.00%
Bi-Monthly Fixed Service Charges:							
Single Family Residential							
5/8 inch	339	\$39.27	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
3/4 inch	23,632	\$39.27	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
1 inch	362	\$58.91	\$46.09	\$50.24	\$54.76	\$59.69	\$71.27
All Other Customers:							
3/4 inch	656	\$39.27	\$86.05	\$93.79	\$102.23	\$111.43	\$135.06
1 inch	477	\$58.91	\$135.03	\$147.18	\$160.43	\$174.86	\$213.26
1.5 inch	153	\$157.09	\$257.48	\$280.65	\$305.91	\$333.44	\$408.77
2 inch	141	\$251.35	\$404.42	\$440.82	\$480.49	\$523.74	\$643.38
3 inch	39	\$502.70	\$796.26	\$867.93	\$946.04	\$1,031.19	\$1,269.00
4 inch	20	\$785.47	\$1,237.09	\$1,348.43	\$1,469.79	\$1,602.07	\$1,972.83
6 inch	2	\$1,570.94	\$2,461.60	\$2,683.15	\$2,924.63	\$3,187.85	\$3,927.91
8 inch	1	--	\$6,869.86	\$7,488.14	\$8,162.08	\$8,896.66	\$10,966.20
Fire Service Charges:							
2.5 inch	1	\$10.00	\$18.06	\$19.69	\$21.46	\$23.39	\$25.51
4 inch	95	\$10.00	\$23.55	\$25.67	\$27.98	\$30.50	\$33.28
6 inch	102	\$12.00	\$37.67	\$41.05	\$44.75	\$48.78	\$53.24
8 inch	88	\$14.00	\$56.48	\$61.57	\$67.11	\$73.15	\$79.85
10 inch	8	\$18.00	\$78.44	\$85.50	\$93.19	\$101.58	\$110.90
Commodity Charges							
Rate per hcf of water consumed:							
Construction Rate		\$3.37	\$3.37	\$3.67	\$4.00	\$4.36	\$4.75
Uniform Potable Rate (MFR, Business, FS)		\$1.68	\$1.44	\$1.57	\$1.71	\$1.86	\$1.84
Uniform Potable Rate (Public Building, Inds. Irr.)		\$1.68	\$1.65	\$1.80	\$1.96	\$2.14	\$2.07
Current	Proposed						
Break	Break						
Tiered Rate (SFR Customers)							
Tier 1	10 hcf 14 hcf	\$0.90	\$0.92	\$1.00	\$1.09	\$1.19	\$1.30
Tier 2	40 hcf 35 hcf	\$1.55	\$1.65	\$1.80	\$1.96	\$2.14	\$2.07
Tier 3	80 hcf 35+ hcf	\$1.88	\$2.24	\$2.44	\$2.66	\$2.90	\$2.69
Tier 4	80+ hcf --	\$2.24	N/A	N/A	N/A	N/A	N/A

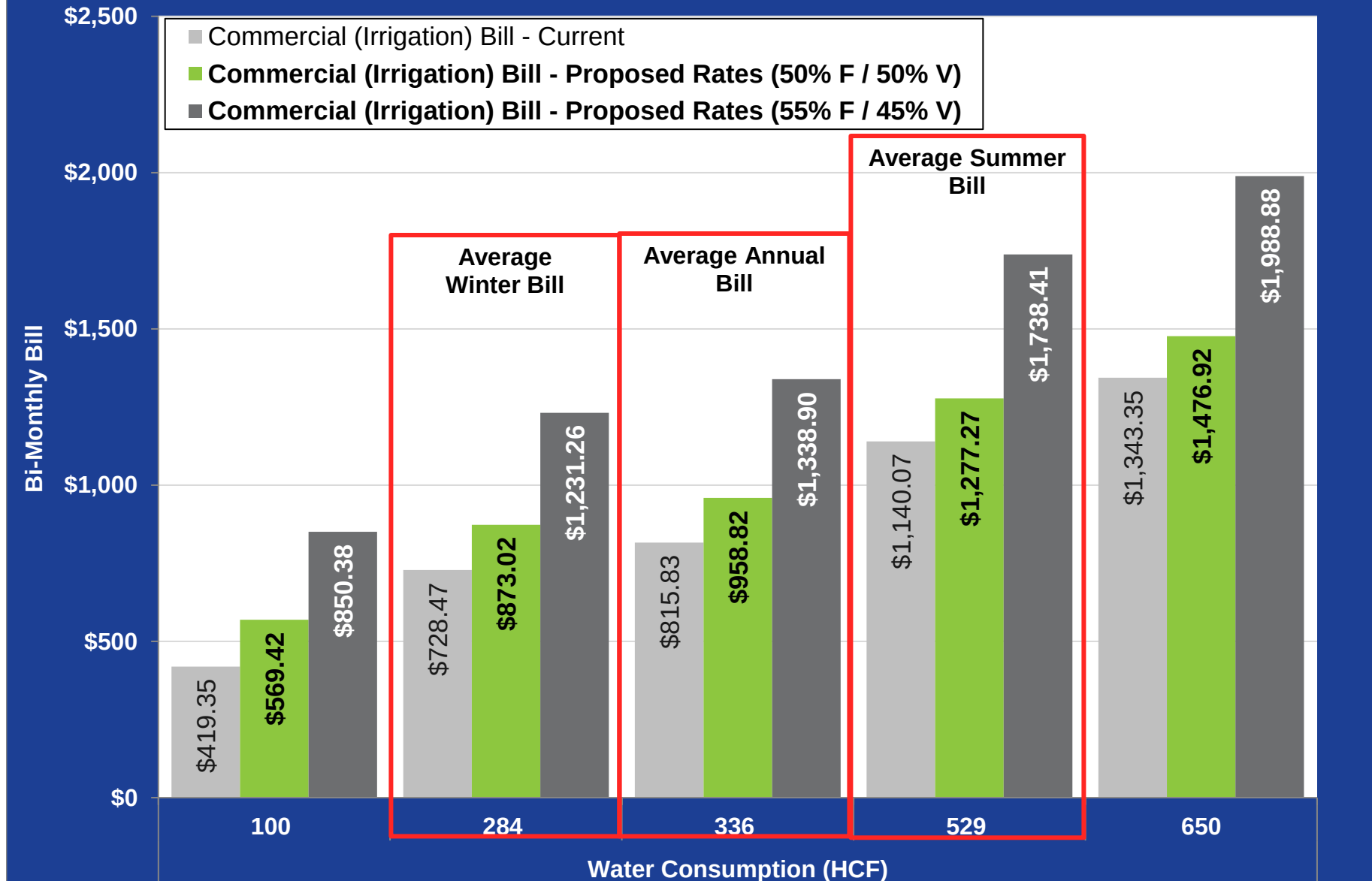
Residential Water Bill Comparison Current vs. Proposed



Commercial (Business) Water Bill Comparison Current vs. Proposed 2017/18 Rate (3/4-inch meter)



Commercial (Irrigation) Water Bill Comparison Current vs. Proposed 2017/18 Rate (2-inch meter)



Appendix B: Detailed Sewer Study Tables and Figures

TABLE 1
FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY (1)	Revised	Projected									
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Sources of Sewer Funds											
Rate Revenue:											
Revenue Under Current Rates	\$ 3,496,284	\$ 3,548,728	\$ 3,760,422	\$ 3,984,745	\$ 4,123,263	\$ 4,266,596	\$ 4,414,912	\$ 4,568,384	\$ 4,727,190	\$ 4,886,964	\$ 5,052,137
Revenue from Rate Increases (2)	-	106,462	365,137	649,219	959,490	1,308,410	1,768,950	2,342,348	2,995,850	3,735,832	4,575,238
Subtotal: Rate Revenue After Rate Increases	3,496,284	3,655,190	4,125,559	4,633,964	5,082,753	5,575,006	6,183,862	6,910,732	7,723,040	8,622,796	9,627,375
Non-Rate Revenue:											
Charges for Services- Zone J Sewer Billing	\$ 69,215	\$ 69,215	\$ 73,344	\$ 77,719	\$ 80,421	\$ 83,216	\$ 86,109	\$ 89,103	\$ 92,200	\$ 95,316	\$ 98,538
Charges for Services- Sewer Inspections	6,500	5,000	5,298	5,614	5,809	6,011	6,220	6,437	6,660	6,886	7,118
Charges for Services- Plan Check	3,600	1,000	1,060	1,123	1,162	1,202	1,244	1,287	1,332	1,377	1,424
Interest Income	43,498	37,280	30,109	55,741	72,385	70,103	81,723	76,638	73,238	71,853	72,820
Subtotal: Non-Rate Revenue	122,813	112,495	109,810	140,198	159,777	160,533	175,297	173,465	173,431	175,432	179,900
Total Sources of Funds	\$ 3,619,097	\$ 3,767,685	\$ 4,235,370	\$ 4,774,161	\$ 5,242,530	\$ 5,735,539	\$ 6,359,159	\$ 7,084,197	\$ 7,896,471	\$ 8,798,227	\$ 9,807,274
Uses of Sewer Funds											
Operating Expenses (3):											
VWVRA Treatment Costs	\$ -	\$ 2,425,000	\$ 2,775,233	\$ 3,176,048	\$ 3,549,371	\$ 3,966,574	\$ 4,432,818	\$ 4,953,865	\$ 5,536,157	\$ 6,181,134	\$ 6,901,253
Other Operating Costs	3,063,259	1,087,772	1,129,780	1,175,306	1,223,147	1,273,622	1,312,294	1,352,416	1,394,052	1,437,260	1,482,123
Administration Costs	-	104,996	109,508	114,542	119,817	125,345	131,138	137,210	143,574	150,245	157,239
Utility Billing Costs	-	172,800	179,125	186,042	193,257	200,786	208,643	216,842	225,401	234,337	243,667
Engineering Costs	-	174,310	181,139	188,689	196,582	204,834	213,464	222,490	231,930	241,806	252,138
Subtotal: Operating Expenses:	\$ 3,063,259	\$ 3,964,878	\$ 4,374,785	\$ 4,840,627	\$ 5,282,174	\$ 5,771,162	\$ 6,298,357	\$ 6,882,822	\$ 7,531,114	\$ 8,244,782	\$ 9,036,420
Other Expenditures:											
Existing Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Rate-Funded Capital Expenses	432,760	-	-	-	-	-	-	-	-	-	-
Subtotal: Other Expenditures	\$ 432,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Uses of Funds	\$ 3,496,019	\$ 3,964,878	\$ 4,374,785	\$ 4,840,627	\$ 5,282,174	\$ 5,771,162	\$ 6,298,357	\$ 6,882,822	\$ 7,531,114	\$ 8,244,782	\$ 9,036,420
Annual Surplus/(Deficit)	\$ 123,078	\$ (197,193)	\$ (139,415)	\$ (66,466)	\$ (39,644)	\$ (35,623)	\$ 60,802	\$ 201,374	\$ 365,357	\$ 553,445	\$ 770,854
Net Revenue Req't. (Total Uses less Non-Rate Revenue)	\$ 3,373,206	\$ 3,852,383	\$ 4,264,974	\$ 4,700,429	\$ 5,122,397	\$ 5,610,629	\$ 6,123,060	\$ 6,709,357	\$ 7,357,683	\$ 8,069,351	\$ 8,856,521
Projected Annual Rate Revenue Adjustment	0.00%	6.00%	6.00%	6.00%	6.00%	6.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Cumulative Increase from Annual Revenue Increases	0.00%	6.00%	12.36%	19.10%	26.25%	33.82%	44.53%	56.09%	68.58%	82.06%	96.63%
Debt Coverage After Rate Increase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: *FY 2017-18 Proposed Budget.pdf* (pages C-34, F-104) and *17-18 EDN Water Sewer.pdf*. Budget values have been adjusted as part of the analysis, as detailed in Exhibit 1 (O&M).
2. Revenue from rate increases assumes an implementation date of January 1, 2018 and then December 1 each year thereafter.
3. The FY 2016/17 and FY 2017/18 operating expenses are from the budget. Inflationary factors are applied to these expenses to project costs in FY 2018/19 and beyond.

TABLE 2
RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY UN-RESTRICTED RESERVES	Revised	Projected									
	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
Total Beginning Cash (1, 2)	\$13,456,475										
Operating Reserve (Fund 710)											
Beginning Reserve Balance (1)	\$ 9,493,715	\$ 9,616,793	\$ 1,982,439	\$ 1,843,024	\$ 1,776,558	\$ 1,736,914	\$ 1,701,291	\$ 1,762,092	\$ 1,963,467	\$ 2,328,824	\$ 2,882,269
Plus: Net Cash Flow (After Rate Increases)	123,078	(197,193)	(139,415)	(66,466)	(39,644)	(35,623)	60,802	201,374	365,357	553,445	770,854
Plus: Transfer of Debt Reserve Surplus	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out to Capital Replacement Reserve	-	(7,437,161)	-	-	-	-	-	-	-	-	-
Ending Operating Reserve Balance	\$ 9,616,793	\$ 1,982,439	\$ 1,843,024	\$ 1,776,558	\$ 1,736,914	\$ 1,701,291	\$ 1,762,092	\$ 1,963,467	\$ 2,328,824	\$ 2,882,269	\$ 3,653,123
Target Ending Balance (180-days of O&M)	\$ 1,531,630	\$ 1,982,439	\$ 2,187,392	\$ 2,420,314	\$ 2,641,087	\$ 2,885,581	\$ 3,149,179	\$ 3,441,411	\$ 3,765,557	\$ 4,122,391	\$ 4,518,210
Capital Rehabilitation & Replacement Reserve											
Beginning Reserve Balance	\$ -	\$ -	\$ 7,397,161	\$ 7,397,161	\$ 6,397,874	\$ 4,266,338	\$ 3,934,789	\$ 3,523,298	\$ 3,087,461	\$ 2,626,550	\$ 2,139,811
Plus: Transfer of Operating Reserve Surplus	-	7,437,161	-	-	-	-	-	-	-	-	-
Less: Use of Reserves for Capital Projects	-	(40,000)	-	(999,287)	(2,131,536)	(331,549)	(411,491)	(435,837)	(460,912)	(486,739)	(513,341)
Ending Capital Rehab & Replacement Reserve Balance	\$ -	\$ 7,397,161	\$ 7,397,161	\$ 6,397,874	\$ 4,266,338	\$ 3,934,789	\$ 3,523,298	\$ 3,087,461	\$ 2,626,550	\$ 2,139,811	\$ 1,626,469
Capital R&R Reserve (6% of Net Assets)	\$ 329,800	\$ 566,400	\$ 595,200	\$ 696,700	\$ 826,600	\$ 847,600	\$ 872,700	\$ 898,400	\$ 924,800	\$ 951,900	\$ 979,700
Ending Balance	\$ 9,616,793	\$ 9,379,600	\$ 9,240,185	\$ 8,174,433	\$ 6,003,252	\$ 5,636,080	\$ 5,285,390	\$ 5,050,928	\$ 4,955,373	\$ 5,022,079	\$ 5,279,592
Minimum Target Ending Balance	\$ 1,861,430	\$ 2,548,839	\$ 2,782,592	\$ 3,117,014	\$ 3,467,687	\$ 3,733,181	\$ 4,021,879	\$ 4,339,811	\$ 4,690,357	\$ 5,074,291	\$ 5,497,910
Ending Surplus/(Deficit) Compared to Reserve Targets	\$ 7,755,363	\$ 6,830,761	\$ 6,457,593	\$ 5,057,419	\$ 2,535,565	\$ 1,902,899	\$ 1,263,512	\$ 711,117	\$ 265,016	\$ (52,212)	\$ (218,318)
Restricted Reserves:											
Connection Fee Reserve (Fund 711)											
Beginning Reserve Balance (2)	\$ 3,962,760	\$ 4,095,896	\$ 923,541	\$ 595,205	\$ 3,591	\$ 32	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Plus: Capacity Fee Revenue	116,568	953,537	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Interest Earnings	16,568	14,108	2,965	3,591	32	0	0	0	0	0	0
Less: Use of Reserves for Capital Projects	-	(4,140,000)	(731,300)	(995,205)	(403,591)	(400,032)	(400,000)	(400,000)	(400,000)	(400,000)	(400,000)
Ending Connection Fee Fund Balance	\$ 4,095,896	\$ 923,541	\$ 595,205	\$ 3,591	\$ 32	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ -
Annual Interest Earnings Rate (3)	0.25%	0.25%	0.32%	0.60%	0.89%	1.17%	1.45%	1.45%	1.45%	1.45%	1.45%

1. Sum of Fund 710 Account 1000 (Cash) Source: Water Cash Balances at 2016-07-01.xlsx
2. Fund 711 Account 1000 Source: Water Cash Balance at 2016-07-01.xlsx
3. Interest earnings in FY 2018/19 equal to 5-year LAIF average (2011/12-2015/16). Interest earnings increase to 10-year LAIF average by FY 2022/23.

CHART 1

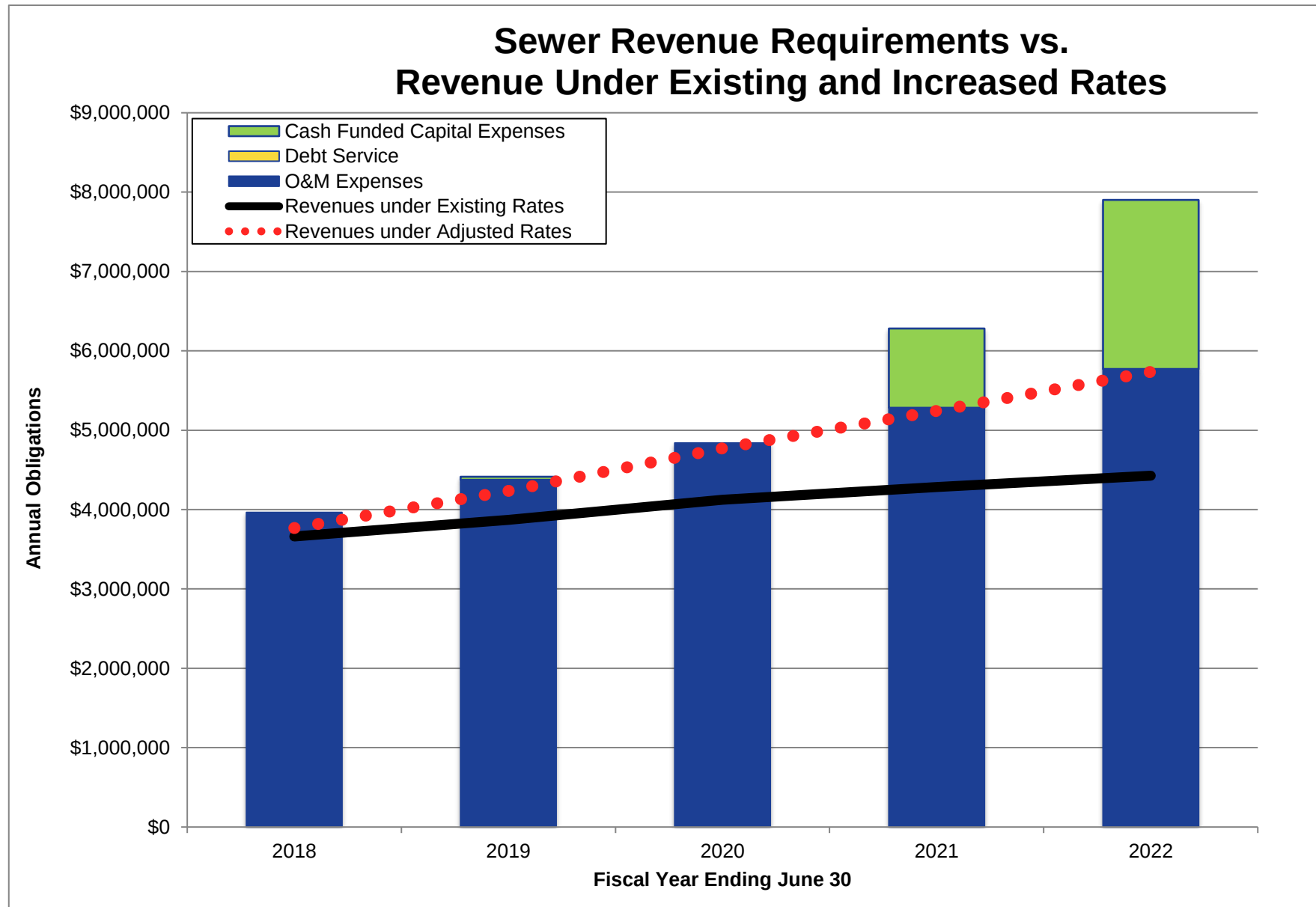


CHART 2

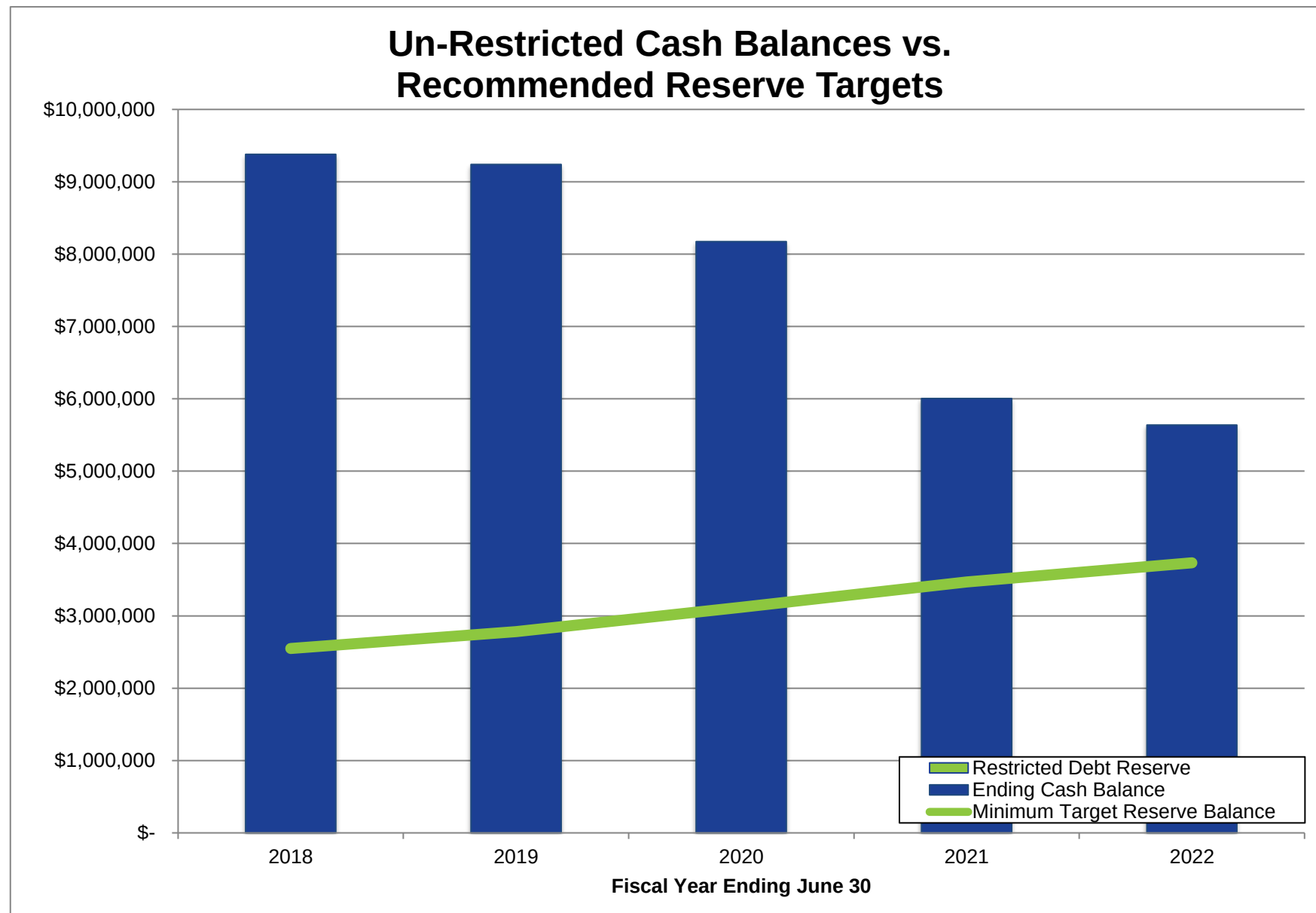


CHART 3

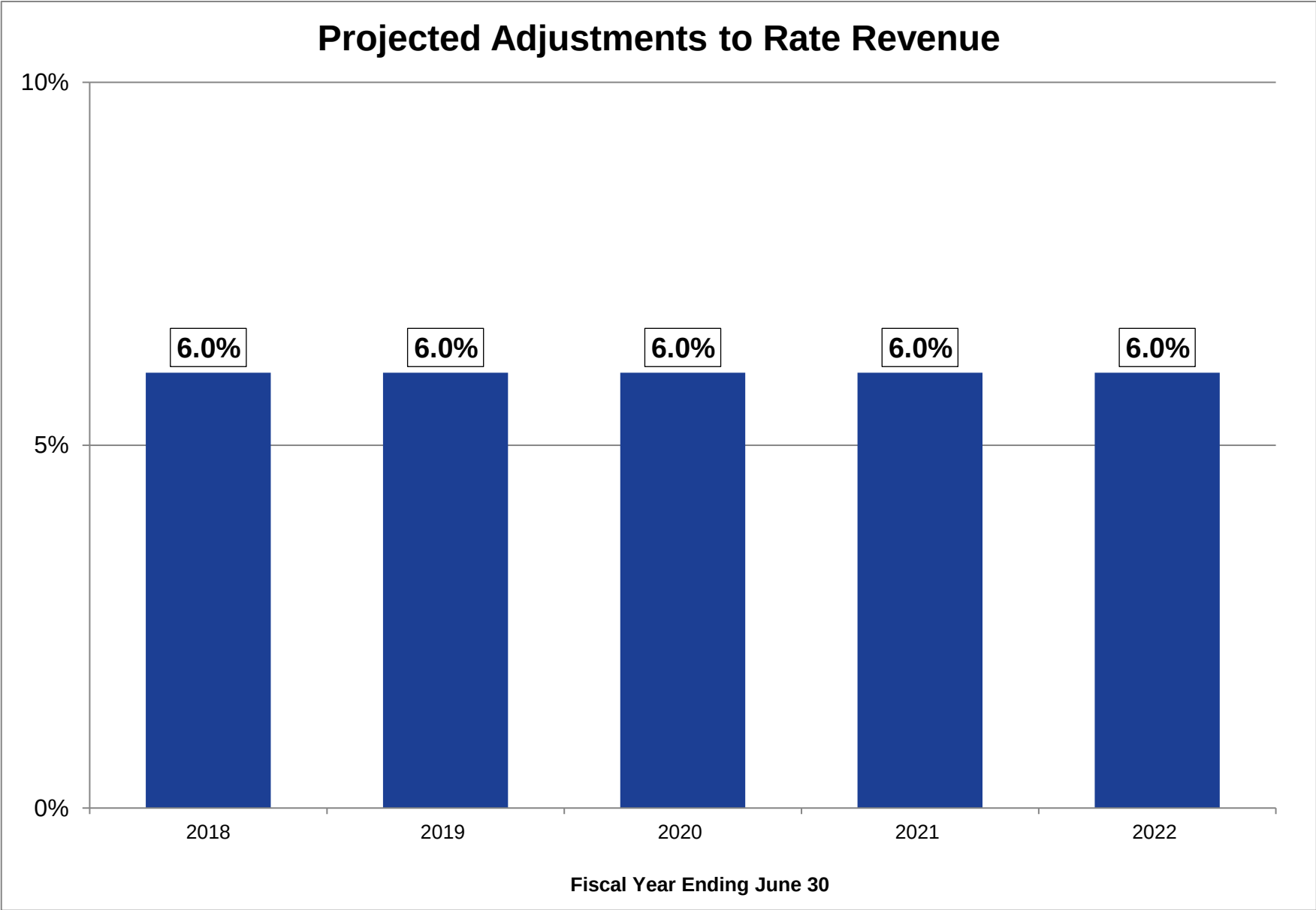
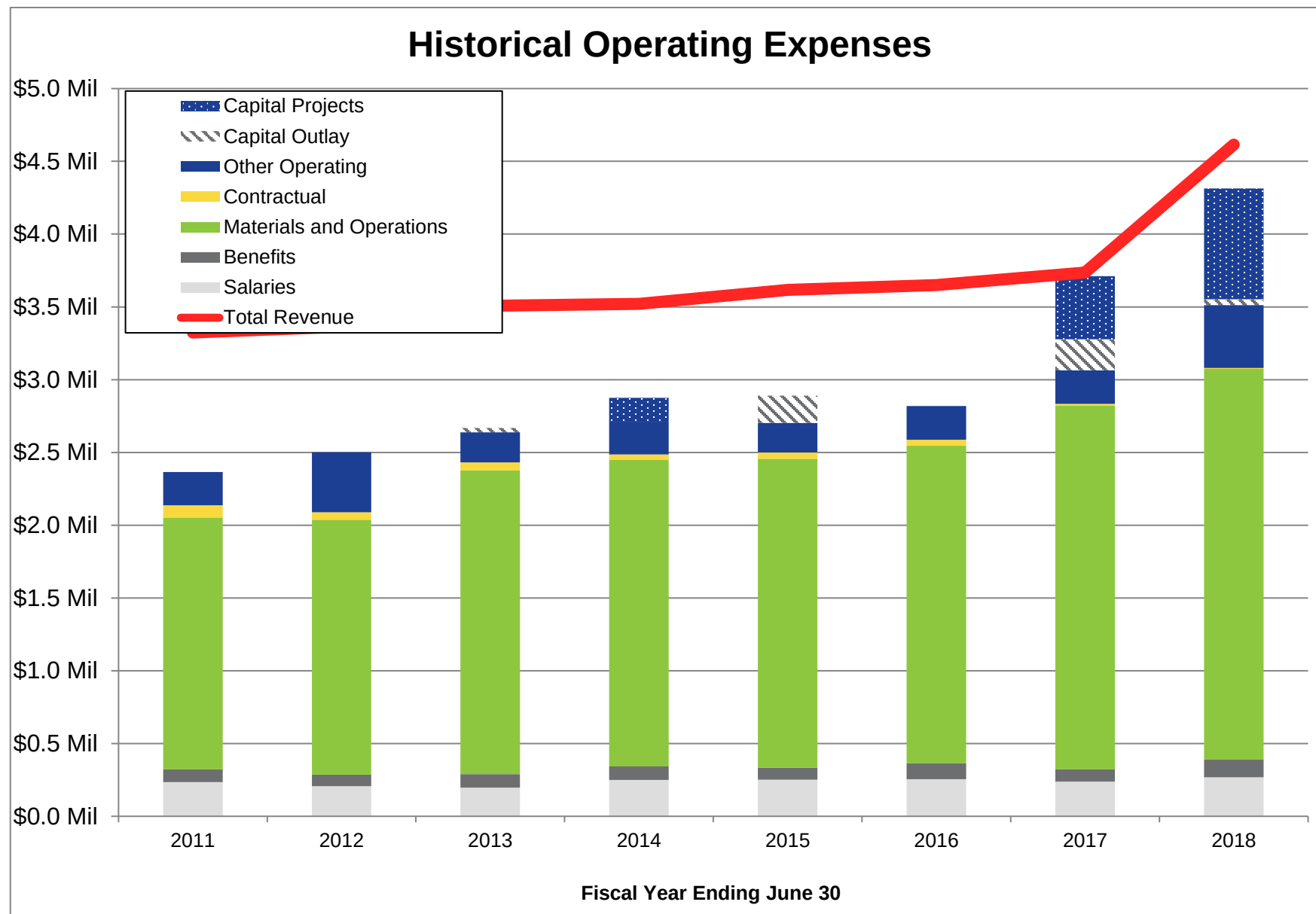


CHART 4



CITY OF HESPERIA
SEWER RATE STUDY
Operating Revenue and Expenses

EXHIBIT 1

TABLE 3 - REVENUE FORECAST (1):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Sewer Operating Fund												
Interest- Income	cal'd	\$ 43,498	\$ 37,280	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Charges for Services- Sewer Billing	1	3,496,284	3,548,728	3,760,422	3,984,745	4,123,263	4,266,596	4,414,912	4,568,384	4,727,190	4,886,964	5,052,137
Charges for Services- Zone J Sewer Billing	1	69,215	69,215	73,344	77,719	80,421	83,216	86,109	89,103	92,200	95,316	98,538
Charges for Services- Sewer Inspections	1	6,500	5,000	5,298	5,614	5,809	6,011	6,220	6,437	6,660	6,886	7,118
Charges for Services- Plan Check	1	3,600	1,000	1,060	1,123	1,162	1,202	1,244	1,287	1,332	1,377	1,424
Sewer Capital Fund												
Charges for Services- Sewer Connections	9	\$ 100,000	\$ 939,429	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
Charges for Services- Interest Income	cal'd	16,568	14,108	-	-	-	-	-	-	-	-	-
TOTAL: REVENUE		\$ 3,735,665	\$ 4,614,760	\$ 4,240,124	\$ 4,469,201	\$ 4,610,655	\$ 4,757,026	\$ 4,908,486	\$ 5,065,210	\$ 5,227,383	\$ 5,390,542	\$ 5,559,217

TABLE 4 - REVENUE SUMMARY:

RATE REVENUE:												
Sewer Billing		\$ 3,496,284	\$ 3,548,728	\$ 3,760,422	\$ 3,984,745	\$ 4,123,263	\$ 4,266,596	\$ 4,414,912	\$ 4,568,384	\$ 4,727,190	\$ 4,886,964	\$ 5,052,137
Other Charges for Services		\$ 79,315	\$ 75,215	\$ 79,702	\$ 84,456	\$ 87,392	\$ 90,430	\$ 93,574	\$ 96,827	\$ 100,192	\$ 103,579	\$ 107,080
Interest Income		\$ 43,498	\$ 37,280	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OTHER REVENUE:												
Sewer Capital Fund		\$ 116,568	\$ 953,537	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
TOTAL: REVENUE		\$ 3,735,665	\$ 4,614,760	\$ 4,240,124	\$ 4,469,201	\$ 4,610,655	\$ 4,757,026	\$ 4,908,486	\$ 5,065,210	\$ 5,227,383	\$ 5,390,542	\$ 5,559,217

TABLE 5 - OPERATING EXPENSE FORECAST (2):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
SEWER OPERATIONS												
Salaries	3	\$ 237,733	\$ 268,213	\$ 278,942	\$ 290,099	\$ 301,703	\$ 313,771	\$ 326,322	\$ 339,375	\$ 352,950	\$ 367,068	\$ 381,751
Benefits	4	\$ 85,570	\$ 120,852	\$ 126,895	\$ 134,508	\$ 142,579	\$ 151,133	\$ 160,202	\$ 169,814	\$ 180,002	\$ 190,803	\$ 202,251
Salaries and Benefits- TOTAL		\$ 323,303	\$ 389,065	\$ 405,836	\$ 424,607	\$ 444,282	\$ 464,905	\$ 486,524	\$ 509,189	\$ 532,952	\$ 557,871	\$ 584,001
Materials and Operations- Office Expense	2		\$ 600	\$ 612	\$ 624	\$ 637	\$ 649	\$ 662	\$ 676	\$ 689	\$ 703	\$ 717
Materials and Operations- Computer Supplies	2		775	791	806	822	839	856	873	890	908	926
Materials and Operations- Uniform Expense	2		3,660	3,733	3,808	3,884	3,962	4,041	4,122	4,204	4,288	4,374
Materials and Operations- Road Repairs	2		43,000	43,860	44,737	45,632	46,545	47,475	48,425	49,393	50,381	51,389
Materials and Operations- Safety Supplies	2		4,000	4,080	4,162	4,245	4,330	4,416	4,505	4,595	4,687	4,780
Materials and Operations- Fuel	7		21,960	22,619	23,297	23,996	24,716	25,458	26,221	27,008	27,818	28,653
Materials and Operations- Small Tools	2		2,500	2,550	2,601	2,653	2,706	2,760	2,815	2,872	2,929	2,988
Materials and Operations- Utilities- Electric	8		6,500	7,232	8,047	8,743	9,499	10,321	11,213	12,183	13,225	14,356
Materials and Operations- Utilities- Discharge Fee	2		15,000	15,300	15,606	15,918	16,236	16,561	16,892	17,230	17,575	17,926
Materials and Operations- Utilities- SP-2	2		155,000	168,541	183,292	199,342	216,782	221,118	225,540	230,051	234,652	239,345
Materials and Operations- Utilities- VVWRA	9		2,425,000	2,775,233	3,176,048	3,549,371	3,966,574	4,432,818	4,953,865	5,536,157	6,181,134	6,901,253
Materials and Operations- Utilities- Telephone	2		6,350	6,477	6,607	6,739	6,873	7,011	7,151	7,294	7,440	7,589
Materials and Operations- TOTAL		\$ 2,498,824	\$ 2,684,345	\$ 3,051,028	\$ 3,469,635	\$ 3,861,981	\$ 4,299,712	\$ 4,773,497	\$ 5,302,299	\$ 5,892,568	\$ 6,545,741	\$ 7,274,296
Contractual- Services	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contractual- Software License	2		5,800	5,916	6,034	6,155	6,278	6,404	6,532	6,662	6,796	6,932
Contractual- Equipment Rental	2		1,500	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	1,793
Contractual- TOTAL		\$ 11,800	\$ 7,300	\$ 7,446	\$ 7,595	\$ 7,747	\$ 7,902	\$ 8,060	\$ 8,221	\$ 8,385	\$ 8,553	\$ 8,724
Other Operating- Dues and Memberships	2		\$ 1,500	\$ 1,530	\$ 1,561	\$ 1,592	\$ 1,624	\$ 1,656	\$ 1,689	\$ 1,723	\$ 1,757	\$ 1,793
Other Operating- Training and Education	2		11,500	11,730	11,965	12,204	12,448	12,697	12,951	13,210	13,474	13,744
Other Operating- Education Reimbursement	2			-	-	-	-	-	-	-	-	-
Other Operating- General and Admin Expenses	2		394,062	401,943	409,982	418,182	426,545	435,076	443,778	452,653	461,706	470,941
Other Operating - Vehicle/Equipment- Maintenance/Repair	2		25,000	25,500	26,010	26,530	27,061	27,602	28,154	28,717	29,291	29,877
Other Operating- TOTAL		\$ 229,332	\$ 432,062	\$ 440,703	\$ 449,517	\$ 458,508	\$ 467,678	\$ 477,031	\$ 486,572	\$ 496,303	\$ 506,229	\$ 516,354
SUB TOTAL: SEWER OPERATING EXPENSES		\$ 3,063,259	\$ 3,512,772	\$ 3,905,013	\$ 4,351,354	\$ 4,772,518	\$ 5,240,197	\$ 5,745,112	\$ 6,306,280	\$ 6,930,209	\$ 7,618,394	\$ 8,383,376

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ADMINISTRATION (2)												
Salaries	3		\$ 73,839	\$ 76,792	\$ 79,864	\$ 83,059	\$ 86,381	\$ 89,836	\$ 93,430	\$ 97,167	\$ 101,053	\$ 105,096
Benefits	4		31,157	32,715	34,678	36,759	38,964	41,302	43,780	46,407	49,192	52,143
Salaries and Benefits - TOTAL			\$ 104,996	\$ 109,508	\$ 114,542	\$ 119,817	\$ 125,345	\$ 131,138	\$ 137,210	\$ 143,574	\$ 150,245	\$ 157,239
Subtotal: ADMINISTRATION		\$ -	\$ 104,996	\$ 109,508	\$ 114,542	\$ 119,817	\$ 125,345	\$ 131,138	\$ 137,210	\$ 143,574	\$ 150,245	\$ 157,239

TABLE 6 - OPERATING EXPENSE FORECAST (3):

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
UTILITY BILLING (2)												
Salaries	3		\$ 94,771	\$ 98,562	\$ 102,504	\$ 106,604	\$ 110,868	\$ 115,303	\$ 119,915	\$ 124,712	\$ 129,700	\$ 134,888
Benefits	4		\$ 32,453	\$ 34,075	\$ 36,120	\$ 38,287	\$ 40,584	\$ 43,019	\$ 45,600	\$ 48,336	\$ 51,237	\$ 54,311
Salaries and Benefits - TOTAL			\$ 127,223	\$ 132,637	\$ 138,624	\$ 144,891	\$ 151,453	\$ 158,322	\$ 165,516	\$ 173,048	\$ 180,937	\$ 189,199
Materials and Operations- Office Expense	2		\$ 3,567	\$ 3,638	\$ 3,711	\$ 3,785	\$ 3,861	\$ 3,938	\$ 4,017	\$ 4,097	\$ 4,179	\$ 4,263
Materials and Operations- Computer Supplies	2		\$ 1,824	\$ 1,860	\$ 1,898	\$ 1,936	\$ 1,974	\$ 2,014	\$ 2,054	\$ 2,095	\$ 2,137	\$ 2,180
Materials and Operations- Postage/Shipping Costs	2		\$ 13,538	\$ 13,809	\$ 14,085	\$ 14,367	\$ 14,654	\$ 14,947	\$ 15,246	\$ 15,551	\$ 15,862	\$ 16,179
Materials and Operations- Fuel	2		\$ 6	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 7	\$ 8	\$ 8
Materials and Operations- Equipment under Capital Leases	2		\$ 450	\$ 459	\$ 469	\$ 478	\$ 488	\$ 497	\$ 507	\$ 517	\$ 528	\$ 538
Materials and Operations- Utilities- Telephone	2		\$ 396	\$ 404	\$ 412	\$ 420	\$ 428	\$ 437	\$ 446	\$ 454	\$ 464	\$ 473
Materials and Operations- Lease Maintenance	2		\$ 5,744	\$ 5,858	\$ 5,976	\$ 6,095	\$ 6,217	\$ 6,341	\$ 6,468	\$ 6,598	\$ 6,730	\$ 6,864
Materials and Operations- TOTAL			\$ 25,525	\$ 26,036	\$ 26,557	\$ 27,088	\$ 27,629	\$ 28,182	\$ 28,746	\$ 29,321	\$ 29,907	\$ 30,505
Contractual- Contract Services	2		\$ 2,578	\$ 2,629	\$ 2,682	\$ 2,736	\$ 2,790	\$ 2,846	\$ 2,903	\$ 2,961	\$ 3,020	\$ 3,081
Contractual- Computer Services	2		\$ 734	\$ 749	\$ 764	\$ 779	\$ 795	\$ 811	\$ 827	\$ 844	\$ 861	\$ 878
Contractual- Utility Billing Software Licenses	2		\$ 5,128	\$ 5,231	\$ 5,335	\$ 5,442	\$ 5,551	\$ 5,662	\$ 5,775	\$ 5,891	\$ 6,009	\$ 6,129
Contractual- Service Fees and Charges	2		\$ 10,944	\$ 11,163	\$ 11,386	\$ 11,614	\$ 11,846	\$ 12,083	\$ 12,325	\$ 12,571	\$ 12,823	\$ 13,079
Contractual- TOTAL			\$ 19,385	\$ 19,772	\$ 20,168	\$ 20,571	\$ 20,983	\$ 21,402	\$ 21,830	\$ 22,267	\$ 22,712	\$ 23,167
Other Operating- Dues and Memberships	2		\$ 18	\$ 18	\$ 19	\$ 19	\$ 19	\$ 20	\$ 20	\$ 20	\$ 21	\$ 21
Other Operating- Conferences and Seminars	2		\$ 486	\$ 496	\$ 506	\$ 516	\$ 526	\$ 537	\$ 548	\$ 559	\$ 570	\$ 581
Other Operating- Training and Education	2		\$ 162	\$ 165	\$ 169	\$ 172	\$ 175	\$ 179	\$ 183	\$ 186	\$ 190	\$ 194
Other Operating- Bad Debt Expense	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other Operating- TOTAL			\$ 666	\$ 680	\$ 693	\$ 707	\$ 721	\$ 736	\$ 750	\$ 765	\$ 781	\$ 796
SUB TOTAL: UTILITY BILLING		\$ -	\$ 172,800	\$ 179,125	\$ 186,042	\$ 193,257	\$ 200,786	\$ 208,643	\$ 216,842	\$ 225,401	\$ 234,337	\$ 243,667

TABLE 7 - OPERATING EXPENSE FORECAST:

DESCRIPTION	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ENGINEERING (3)												
Salaries	3		\$ 104,623	\$ 108,808	\$ 113,161	\$ 117,687	\$ 122,395	\$ 127,290	\$ 132,382	\$ 137,677	\$ 143,184	\$ 148,912
Benefits	4		\$ 41,686	\$ 43,771	\$ 46,397	\$ 49,181	\$ 52,132	\$ 55,260	\$ 58,575	\$ 62,090	\$ 65,815	\$ 69,764
Salaries and Benefits - TOTAL			\$ 146,310	\$ 152,579	\$ 159,558	\$ 166,868	\$ 174,526	\$ 182,550	\$ 190,957	\$ 199,767	\$ 208,999	\$ 218,676
Contractual- GIS System Services	2		\$ 28,000	\$ 28,560	\$ 29,131	\$ 29,714	\$ 30,308	\$ 30,914	\$ 31,533	\$ 32,163	\$ 32,806	\$ 33,463
Contractual- GIS System Computer Services	2		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contractual- TOTAL			\$ 28,000	\$ 28,560	\$ 29,131	\$ 29,714	\$ 30,308	\$ 30,914	\$ 31,533	\$ 32,163	\$ 32,806	\$ 33,463
SUB TOTAL: ENGINEERING EXPENSES		\$ -	\$ 174,310	\$ 181,139	\$ 188,689	\$ 196,582	\$ 204,834	\$ 213,464	\$ 222,490	\$ 231,930	\$ 241,806	\$ 252,138
GRAND TOTAL: SEWER OPERATING EXPENSES		\$ 3,063,259	\$ 3,964,878	\$ 4,374,785	\$ 4,840,627	\$ 5,282,174	\$ 5,771,162	\$ 6,298,357	\$ 6,882,822	\$ 7,531,114	\$ 8,244,782	\$ 9,036,420

TABLE 8 - FORECASTING ASSUMPTIONS

INFLATION FACTORS	Inflation Basis	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Customer Growth (4)	1	--	--	5.97%	5.97%	3.48%	3.48%	3.48%	3.48%	3.48%	3.38%	3.38%
General Cost Inflation	2	--	--	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Salary Inflation (5)	3	--	--	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Benefits Inflation (5)	4	--	--	5.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
Energy	5	--	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
VVWRA Cost Increase	6	--	--	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Fuel	7	--	--	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Energy Costs (including customer growth)	8	--	--	11.26%	11.26%	8.65%	8.65%	8.65%	8.65%	8.65%	8.55%	8.55%
VVWRA Cost Increase (including customer growth)	9	--	--	14.44%	14.44%	11.75%	11.75%	11.75%	11.75%	11.75%	11.65%	11.65%
No Escalation	10	--	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

- Revenue and expenses for FY 2016/17 & FY 2017-18 are from source file: *FY 2017-18 Proposed Budget.pdf* (pages C-34, F-104) and *17-18 EDN Water Sewer.pdf*
- Administrative salary and benefits as well as all Utility Billing expenses are fully assigned to the Water Utility in the FY 2017/18 budget.
At staff recommendation, 16.2% of costs are allocated to the Sewer Utility for this analysis in accordance with a staff email 8/7/17.
- Engineering expenses are fully assigned to the Water Utility in the FY 2017/18 budget, but at staff recommendation, 20% of some of the costs are allocated to the Sewer Utility for this analysis in accordance with a staff email 8/7/17.
- Annual Growth based upon Table ES-1 in the Wastewater Master Plan, Wastewater Flow Projections
- The salary inflation consists of an assumed Cost of Living Adjustment of 1 percent and merit step increases of 3 percent annually. Source: *Water Sewer Salary and Benefits.xlsx* & staff email 8/4/17.

CITY OF HESPERIA
SEWER RATE STUDY
Operating Revenue and Expenses

Historical Revenue vs. Expenses

HISTORICAL REVENUE

DESCRIPTION	2011	2012	2013	2014	2015	2016	2017	2018
Sewer Operating Fund								
Interest- Income	\$ 109,844	\$ 3,849	\$ 5,042	\$ 5,484	\$ 5,428	\$ 11,436	\$ 43,498	\$ 37,280
Charges for Services- Sewer Billing	\$ 3,016,286	\$ 3,189,429	\$ 3,342,146	\$ 3,352,554	\$ 3,412,190	\$ 3,460,855	\$ 3,496,284	\$ 3,548,728
Charges for Services- Zone J Sewer Billing	\$ 63,282	\$ 56,189	\$ 74,999	\$ 69,216	\$ 69,216	\$ 69,216	\$ 69,215	\$ 69,215
Charges for Services- Sewer Plan Check	\$ -	\$ -	\$ -	\$ -	\$ 944	\$ 564	\$ 3,600	\$ 1,000
Charges for Services- Sewer Inspections	\$ 4,650	\$ 6,195	\$ 2,450	\$ 3,068	\$ 5,200	\$ 3,098	\$ 6,500	\$ 5,000
Sewer Capital Fund								
Charges for Services- Sewer Connections	\$ 123,350	\$ 105,478	\$ 79,685	\$ 87,592	\$ 120,128	\$ 99,697	\$ 100,000	\$ 939,429
Charges for Services- Interest Income	\$ 6,538	\$ 2,170	\$ 2,555	\$ 2,563	\$ 2,417	\$ 4,835	\$ 16,568	\$ 14,108
Charges for Services- Other	\$ -	\$ -	\$ -	\$ 758	\$ 689	\$ -	\$ -	\$ -
TOTAL: REVENUE	\$ 3,323,950	\$ 3,363,310	\$ 3,506,877	\$ 3,521,235	\$ 3,616,212	\$ 3,649,701	\$ 3,735,665	\$ 4,614,760

HISTORICAL EXPENSE

DESCRIPTION	2011	2012	2013	2014	2015	2016	2017	2018
SEWER OPERATIONS								
Salaries	\$ 234,591	\$ 206,659	\$ 197,115	\$ 250,559	\$ 251,956	\$ 254,586	\$ 237,733	\$ 268,213
Benefits	\$ 88,640	\$ 79,227	\$ 91,889	\$ 91,271	\$ 82,648	\$ 109,401	\$ 85,570	\$ 120,852
Materials and Operations	\$ 1,729,005	\$ 1,751,085	\$ 2,087,442	\$ 2,105,513	\$ 2,121,282	\$ 2,181,336	\$ 2,498,824	\$ 2,684,345
Contractual	\$ 85,210	\$ 52,204	\$ 54,765	\$ 39,002	\$ 43,785	\$ 41,982	\$ 11,800	\$ 7,300
Other Operating	\$ 227,691	\$ 411,131	\$ 207,684	\$ 224,470	\$ 202,612	\$ 231,964	\$ 229,332	\$ 432,062
Capital Outlay	\$ -	\$ -	\$ 30,021	\$ -	\$ 188,136	\$ -	\$ 214,250	\$ 40,000
Capital Projects	\$ -	\$ -	\$ -	\$ 164,980	\$ -	\$ -	\$ 432,760	\$ 760,000
GRAND TOTAL: Sewer Expenses	\$ 2,365,137	\$ 2,500,306	\$ 2,638,895	\$ 2,710,815	\$ 2,702,283	\$ 2,819,269	\$ 3,710,269	\$ 3,512,772

1. Source: <http://www.cityofhesperia.us/452/Financial-Documents> under Adopted Budget for FY 1718, FY 1516 and FY 1314

TABLE 9 - CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Revised		Projected							
Funding Sources:	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Capacity Fee Reserves (1)	-	4,140,000	731,300	995,205	403,591	400,032	400,000	400,000	400,000	400,000
Use of New Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	-	40,000	-	999,287	2,131,536	331,549	411,491	435,837	460,912	486,739
Rate Revenue	432,760	-	-	-	-	-	-	-	-	-
Total Sources of Capital Funds	\$ 432,760	\$ 4,180,000	\$ 731,300	\$ 1,994,492	\$ 2,535,127	\$ 731,581	\$ 811,492	\$ 835,837	\$ 860,912	\$ 886,739
Uses of Capital Funds:										
Total Project Costs	\$ 432,760	\$ 4,180,000	\$ 731,300	\$ 1,994,492	\$ 2,535,127	\$ 731,581	\$ 811,492	\$ 835,837	\$ 860,912	\$ 886,739
Capital Funding Surplus (Deficiency)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

1. Capacity fee reserves are assigned to the Golf Line & I Av. Lift station & Force Main Expansion related projects

CAPITAL IMPROVEMENT PROGRAM

TABLE 10 - Capital Improvement Program Costs (in Current-Year Dollars) (1):

Project Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Capital Outlay from Operating Budget (1)										
Sewer Operations- Equipment Capital	\$ -	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer Capital (2)										
I-15 at Rancho Improvements - construct sewer conveyance system together with Amargosa sewer diversion to supply larger wastewater	432,760	3,700,000	-	-	-	-	-	-	-	-
Main St. Sewer Replacement (C Av. to I Av.)	-	100,000	210,000	210,000	-	-	-	-	-	-
Main St. Sewer Replacement (Topaz Av. to Fuente Av.)	-	-	250,000	-	-	-	-	-	-	-
Maple Av. Sewer Replacement (Sultana Av. to Mojave Av.)	-	340,000	250,000	500,000	500,000	-	-	-	-	-
Golf Course Sewer Line - New Sewer	-	-	-	-	-	-	-	-	-	-
I Av. Lift Station and Force Main Upgrade	-	-	-	-	650,000	650,000	-	-	-	-
I Av. Sewer Replacement (Muscatel Av. to Hercules Av.)	-	-	-	1,170,000	1,170,000	-	-	-	-	-
Future Projects (3)	-	-	-	-	-	-	700,000	700,000	700,000	700,000
Total: CIP Program Costs (Current-Year Dollars)	\$ 432,760	\$ 4,180,000	\$ 710,000	\$ 1,880,000	\$ 2,320,000	\$ 650,000	\$ 700,000	\$ 700,000	\$ 700,000	\$ 700,000

TABLE 11 - Capital Improvement Program Costs (in Future-Year Dollars):

Project Description	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Capital Outlay from Operating Budget (1)										
Sewer Operations- Equipment Capital	\$ -	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sewer Capital (2)										
I-15 at Ranchero Improvements - construct sewer conveyance system together with Amargosa sewer diversion to supply larger wastewater flows for recycled water uses	432,760	3,700,000	-	-	-	-	-	-	-	-
Main St. Sewer Replacement (C Av. to I Av.)	-	100,000	216,300	222,789	-	-	-	-	-	-
Main St. Sewer Replacement (Topaz Av. to Fuente Av.)	-	-	257,500	-	-	-	-	-	-	-
Maple Av. Sewer Replacement (Sultana Av. to Mojave Av.)	-	340,000	257,500	530,450	546,364	-	-	-	-	-
Golf Course Sewer Line - New Sewer	-	-	-	-	-	-	-	-	-	-
I Av. Lift Station and Force Main Upgrade	-	-	-	-	710,273	731,581	-	-	-	-
I Av. Sewer Replacement (Muscatel Av. to Hercules Av.)	-	-	-	1,241,253	1,278,491	-	-	-	-	-
Total: CIP Program Costs (Future-Year Dollars)	\$ 432,760	\$ 4,180,000	\$ 731,300	\$ 1,994,492	\$ 2,535,127	\$ 731,581	\$ 811,492	\$ 835,837	\$ 860,912	\$ 886,739

TABLE 12 - FORECASTING ASSUMPTIONS:

Economic Variables	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Annual Construction Cost Inflation, Per Engineering News Record (4)	0.00%	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Construction Cost Multiplier from 2017	1.00	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27

1. For FY 2017/18 Source: 17-18 EDN Water Sewer.pdf
2. Source: Copy of Summary 7-13-17.xlsx
3. Future projects, beyond the initial 5-year rate period are estimated at the average of rate-funded capital projects in FY 2017/18 - 2021/22.
4. Construction inflator is based on the most current 10 year average of the Engineering News-Record Construction Cost Index. Source: www.enr.com/economics

CITY OF HESPERIA
SEWER RATE STUDY
Projected Water Rates Under Existing Rate Schedule

EXHIBIT 4

TABLE 13 Current Water Rate Schedule:

Current Rates	
Fixed Charge per EDU (1):	\$45.97

Source: *Water-Sewer Rates adopted 2008.pdf*

CITY OF HESPERIA
SEWER RATE STUDY
Cost of Service Analysis

TABLE 14 - Development of the EDU Allocation Factor

Customer Class	Number of Accounts (1)	Number of EDUs (1)	Percentage of Assigned EDUs	Average EDUs per Account
Single Family Residential	4,355	5,736	45.7%	1.3
Multi-Family Residential	214	3,293	26.3%	15.4
Business	432	2,386	19.0%	5.5
Public Building	53	1,131	9.0%	21.3
Total	5,054	12,546	100.0%	2.5
Utility	2	9		4.6

1. EDUs from source files: Rate Study Billing Info Jan to June 2014, 2015, 2016, 2017.xlsx (data combined and summarized in pivotTables.xlsx)
EDU count from most recent months of available data.

TABLE 15 - FY 2017/18 Rate Calculation

	Total Rate Revenue	Number of EDUs	Bi-Monthly Charge
	a	b	c = a/b/6
Bi-Monthly Charge Per EDU	\$ 3,761,652	12,546	\$49.97

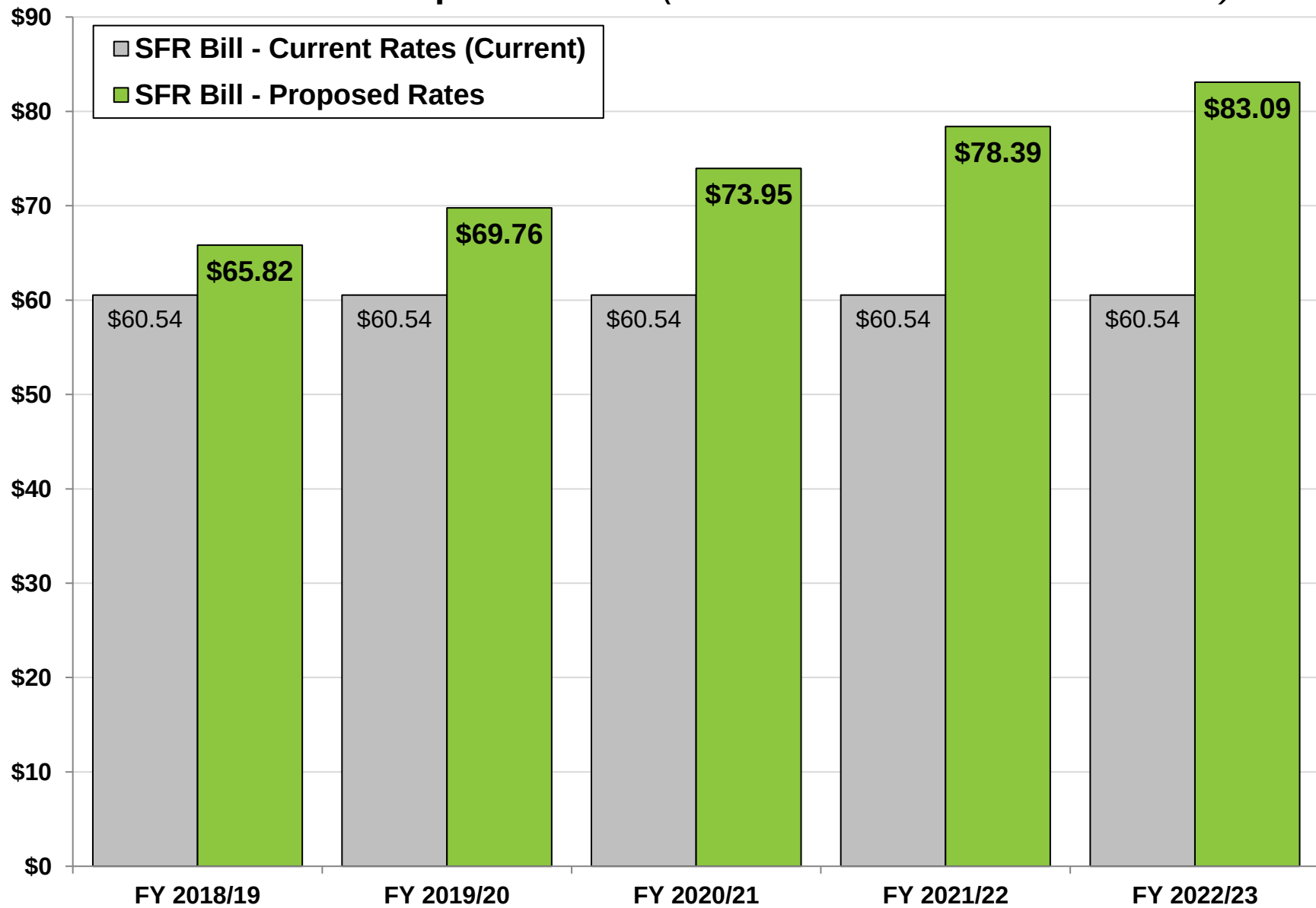
CITY OF HESPERIA
SEWER RATE STUDY
Sewer Rate Development

TABLE 16 Current vs. Proposed Sewer Rates (Bi-Monthly)

Sewer Rate Schedule	Current Rates (1)	Proposed Sewer Rates				
		FY 2017/18	FY 2018/19	FY 2019/20	FY 2020/21	FY 2021/22
% Increase in Annual Rate Revenue:		6.00%	6.00%	6.00%	6.00%	6.00%
Rate Per EDU	\$45.97	\$49.97	\$52.97	\$56.15	\$59.52	\$63.09

1. Sewer customers are charged on the basis of their number of assigned Equivalent Dwelling Units (EDUs).

Single Family Residential Sewer Bill Comparison Current vs. Proposed Rates *(Assumes 1.3 EDU's/SFR Account)*



Average Commercial Sewer Bill Comparison

Current vs. Proposed Rates*(Assumes 5.6 EDU's/Business Account)*

