

## **FINAL TECHNICAL MEMORANDUM**

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**TO:** Steven Pinkerton, General Manager, Mountain House Community Service District

**FROM:** Greg Clumpner, Director, Utility Rate Group  
Alice Bou, Consultant, Utility Rate Group

**SUBJECT:** Summary of the Water and Sewer Rate Study

**DATE:** March 1, 2022

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### **Purpose**

Mountain House Community Services District (District) retained NBS to conduct a comprehensive water and sewer rate study for several reasons, including meeting revenue requirements, providing adequate funding for capital improvements, maintaining appropriate reserve levels, and complying with certain legal requirements including Proposition 218 (Prop 218)<sup>1</sup>. The rates resulting from this Study were developed in a manner that is consistent with industry standards and cost-of-service principles. In addition to documenting the rate study methodology, this Technical Memo is provided with the intent of assisting the District maintain transparent communications with the residents and community it serves.

In developing new water and sewer rates, NBS worked cooperatively with District staff to reflect the concerns of the Board of Directors (Board), including selecting an appropriate rate alternative. This memo summarizes the input and direction received from these stakeholders along with an overview of the methodology, assumptions, and data used to develop the proposed rates.

### **Key Study Assumptions**

**District Revenue Requirements:** The District is no longer subsidizing the water and sewer utilities with General Fund revenue. The Board agreed with staff and NBS' recommendation that this subsidy would be phased out by FY 2021/22. Although the Board has not determined when, and if, the utilities will begin repayments to the General Fund, the study has incorporated the costs based on a 10-year payment schedule to begin in FY 2027/28. Debt Service-Pledge Revenue has also been excluded from this analysis as it relates to the initial funding for the water and sewer treatment plants and is collected via a separate fee.

**Building and Maintaining Reserve Funds:** The District should maintain sufficient reserves based on recommendations from District staff which are consistent with industry standards for responsible fund

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<sup>1</sup> California Constitution Article XIII D, Section 6, which is commonly referred to as Proposition 218.

management. NBS recommends that the District maintain its *minimum* reserve fund targets at the levels described below.

- **Operating Reserve** – Reserve set equal to 45 days (or about 12 percent) of annual operating and maintenance costs, which is lower than a more typical operating reserve target of 90 days (or 25 percent). The District can use General Fund reserves for emergency assistance if necessary.
- **Capital Rehabilitation & Replacement Reserve** – Currently, the District does not maintain a reserve for capital rehabilitation and replacement. It is recommended that the District set up a reserve equal to 1.5% of net capital assets. This reserve is set aside to address long-term and routine capital system replacement and rehabilitation needs.
- **Drought Contingency Reserve (Water Utility only)** – Reserve set equal to \$2.5 million. The Board approved this reserve at the time of the last rate study, and a requirement as part of the District’s agreement to seek alternative water supplies. This reserve is expected to grow by \$250,000 annually over the first four (4) years of the 5-year rate adoption period and then \$100,000 annually last year. This reserve is intended to provide additional financial security should any unforeseen revenue shortages or capital emergency occur.

## Financial Plans

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. **Figure 1** and **Figure 2** summarize the sources and uses of funds beginning FY 2022/23 through FY 2026/27 for the water and sewer utilities.

**Figure 1. Summary of Sources and Uses of Water Funds**

Summary of Sources and Uses of Funds and Net Revenue Requirements	Actual	Budget	5-Year Projected Rate Period				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Sources of Water Funds</b>							
Rate Revenue Under Prevailing Rates <sup>1</sup>	\$ 4,226,468	\$ 4,341,429	\$ 4,514,809	\$ 4,688,189	\$ 4,861,568	\$ 5,034,948	\$ 5,208,328
Additional Revenue from Rate Increases <sup>2</sup>	-	-	316,037	679,319	1,094,062	1,441,481	1,826,091
<b>Total Rate Revenue</b>	<b>4,226,468</b>	<b>4,341,429</b>	<b>4,830,845</b>	<b>5,367,507</b>	<b>5,955,630</b>	<b>6,476,429</b>	<b>7,034,419</b>
Other Operating Revenue	25,259	32,310	33,601	34,891	36,181	37,472	38,762
Interest Earnings	2,632	3,552	8,962	-	792	5,283	10,436
<b>Total Sources of Funds</b>	<b>\$ 4,254,359</b>	<b>\$ 4,377,291</b>	<b>\$ 4,873,408</b>	<b>\$ 5,402,398</b>	<b>\$ 5,992,604</b>	<b>\$ 6,519,184</b>	<b>\$ 7,083,617</b>
<b>Uses of Water Funds</b>							
Operating Expenses	\$ 3,491,722	\$ 3,576,601	\$ 4,148,555	\$ 4,418,036	\$ 4,704,094	\$ 5,007,712	\$ 5,329,931
Rate-Funded Capital Expenses	-	136,553	1,999,990	635,131	742,116	891,473	903,107
<b>Total Use of Funds</b>	<b>\$ 3,491,722</b>	<b>\$ 3,713,154</b>	<b>\$ 6,148,546</b>	<b>\$ 5,053,167</b>	<b>\$ 5,446,209</b>	<b>\$ 5,899,185</b>	<b>\$ 6,233,038</b>
<b>Projected Increases in Rate Revenue</b>	<b>0.00%</b>	<b>0.00%</b>	<b>7.00%</b>	<b>7.00%</b>	<b>7.00%</b>	<b>5.00%</b>	<b>5.00%</b>
<b>Cumulative Rate Increases</b>	<b>0.00%</b>	<b>0.00%</b>	<b>7.00%</b>	<b>14.49%</b>	<b>22.50%</b>	<b>28.63%</b>	<b>35.06%</b>
<b>Net Revenue Requirement<sup>3</sup></b>	<b>\$ 3,463,831</b>	<b>\$ 3,677,292</b>	<b>\$ 6,105,983</b>	<b>\$ 5,018,276</b>	<b>\$ 5,409,236</b>	<b>\$ 5,856,430</b>	<b>\$ 6,183,840</b>

1. Revenues and expenses for FY 2020/21 and FY 2021/22 were provided by District staff. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf.

2. Assumes new rates are implemented July 1, 2022 and July 1 each year thereafter.

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

Figure 2. Summary of Sources and Uses of Sewer Funds

Summary of Sources and Uses of Funds and Net Revenue Requirements	Actual	Budget	5-Year Projected Rate Period				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Sources of Sewer Funds</b>							
Rate Revenue Under Prevailing Rates <sup>1</sup>	\$ 2,955,334	\$ 3,170,520	\$ 3,316,414	\$ 3,462,308	\$ 3,608,202	\$ 3,754,096	\$ 3,899,990
Additional Revenue from Rate Increases <sup>2</sup>	-	-	-	-	-	-	-
<b>Total Rate Revenue</b>	<b>2,955,334</b>	<b>3,170,520</b>	<b>3,316,414</b>	<b>3,462,308</b>	<b>3,608,202</b>	<b>3,754,096</b>	<b>3,899,990</b>
Interest Earnings	17,530	35,951	18,384	18,505	18,670	18,851	19,042
<b>Total Sources of Funds</b>	<b>\$ 2,972,864</b>	<b>\$ 3,206,471</b>	<b>\$ 3,334,798</b>	<b>\$ 3,480,813</b>	<b>\$ 3,626,872</b>	<b>\$ 3,772,947</b>	<b>\$ 3,919,032</b>
<b>Uses of Sewer Funds</b>							
Operating Expenses	\$ 2,246,571	\$ 2,577,639	\$ 2,685,295	\$ 2,842,992	\$ 3,009,746	\$ 3,186,067	\$ 3,372,496
Rate-Funded Capital Expenses	-	378,705	-	-	-	-	-
<b>Total Use of Funds</b>	<b>\$ 2,246,571</b>	<b>\$ 2,956,344</b>	<b>\$ 2,685,295</b>	<b>\$ 2,842,992</b>	<b>\$ 3,009,746</b>	<b>\$ 3,186,067</b>	<b>\$ 3,372,496</b>
<b>Projected Increases in Rate Revenue</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
<i>Cumulative Rate Increases</i>	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Net Revenue Requirement<sup>3</sup></b>	<b>\$ 2,229,041</b>	<b>\$ 2,920,393</b>	<b>\$ 2,666,911</b>	<b>\$ 2,824,487</b>	<b>\$ 2,991,076</b>	<b>\$ 3,167,216</b>	<b>\$ 3,353,455</b>

1. Revenues and expenses for FY 2021/22 was provided by District staff. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf.

2. Assumes new rates are implemented July 1, 2022 and July 1 each year thereafter.

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

## Cost-of-Service Analysis

The cost-of-service analysis (COSA) proportionately distributes the revenue requirements to each of the customer classes. The COSA consists of two major components: (1) the classification of expenses, and (2) the allocation of costs to each customer class. Costs were classified according 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. Ultimately, a COSA is intended to result in rates that are both proportional to the cost of providing service and fair and equitable for each of the various customer classes.

## Functionalization and Classification of Costs – Water Utility

For the water utility, budgeted costs were classified into the following four categories using the Commodity-Demand Method:<sup>2</sup> commodity, capacity, customer, and fire protection. The functionalization and classification process provides the basis for allocating costs to various customer classes based on the cost causation (classification) components described below:

- **Commodity-related costs** – These are cost associated with the change in the volume of water produced and delivered. These commonly include the costs of water quality testing, energy related to pumping for transmission and distribution, and source of supply.
- **Capacity-related costs** – These are costs associated with system infrastructure required to meet the maximum, or peak, system demands. This includes both operating costs and capital infrastructure costs incurred to accommodate peak system capacity events.
- **Customer-related costs** – These are costs associated with having a customer connected to the water system, such as meter reading, postage, billing, and other administrative services.
- **Fire Protection related costs** – These 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.

<sup>2</sup> Principles of Water Rates, Fees, and Charges, M1 Manual, American Water Works Association, Seventh Edition, 2017, p. 83.

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. This analysis resulted in a cost distribution that is approximately 72 percent fixed and 28 percent variable (volumetric or water supply specific) which differs slightly from the District’s current rate structure that is 65 percent fixed and 35 percent variable. **Figure 3** shows how costs are allocated to each cost component and used to establish new water rates.

**Figure 3. Classification of Expenses - Water**

Classification Components	Allocated Net Water Revenue Requirements (2022/23)	
Volumetric-Related Costs		
Commodity	\$ 1,334,729	27.6%
Capacity-Related Costs (variable allocation)	-	0.0%
<b>Subtotal: Volumetric-Related Costs</b>	<b>\$ 1,334,729</b>	<b>27.6%</b>
Capacity-Related Costs (fixed allocation)	\$ 3,397,744	70.3%
Customer-Related Costs	96,237	2.0%
Fire Protection-Related Costs	2,135	0.0%
<b>Subtotal: Fixed-Related Costs</b>	<b>\$ 3,496,117</b>	<b>72.4%</b>
<b>Net Revenue Requirement</b>	<b>\$ 4,830,845</b>	<b>100%</b>

### Functionalization and Classification of Costs – Sewer Utility

The intent of the cost-of-service analysis is to allocate sewer-related costs to each customer class in a fair and equitable manner that complies with Prop 218 requirements. This analysis first allocates costs into separate functional categories and then into customer classes based on factors such as effluent flow (estimated using water consumption), effluent strength (the two factors considered are BOD and TSS), and customer-related costs such as administrative, billing and customer service costs.

The cost-of-service analysis (COSA) proportionately distributes the revenue requirements to each of the customer classes. The COSA consists of the classification of expenses and then the allocation of those expenses to customer classes based on allocation factors, such as water consumption and number of accounts, or dwelling units (DUs). Costs are classified into the following categories:

- **Flow-related costs** – These are costs related solely to the amount of effluent generated.
- **Strength-related costs for BOD** - These are costs associated with the treatment of the Biochemical-Oxygen Demand (BOD).
- **Strength-related costs for TSS**– These are costs related to the treatment of the Total Suspended Solids (TSS).
- **Customer-related costs** – These are costs associated with meter reading, postage, billing, and similar customer related costs.

**Figure 4** below summarizes the classification of revenue requirements for the sewer utility.

**Figure 4. Classification of Expenses – Sewer**

Classification Components	Allocated Net Sewer Revenue Requirements (2022/23)	
Flow-related costs (Variable)	\$ 1,711,440	51.6%
Strength - BOD (Fixed)	729,611	22.0%
Strength - TSS (Fixed)	729,611	22.0%
Customer-related Costs (Fixed)	145,751	4.4%
<b>Net Revenue Requirement</b>	<b>\$ 3,316,414</b>	<b>100.0%</b>

This analysis resulted in a cost allocation that is approximately 52 percent variable and 48 percent fixed. The proposed rates are based on these allocations, although rate design determines fixed/variable rate structure.

### Customer Classes – Water Utility

The revenue requirement allocated to each customer class, and collected through either fixed or variable charges, are calculated based on the level of service for each class. This allocation process reflects three allocation factors: (1) the percentage of peak consumption (used to allocate fixed costs); (2) the percentage of annual water consumption (used to allocate variable costs); and (3) the percentage of the number of accounts (used to allocate customer costs).

**Fixed Monthly Service Charges** – In light of the fact that 96.6% of all District customers are Single Family Residential and the differences in use between Low- and Medium-Density residential customers, fixed costs were separately allocated to Low- and Medium-Density Single Family Customers with no distinction by meter size. Conversely, fixed costs for all other customers (i.e., commercial, schools, irrigation, and fire protection) are allocated by meter size.

**Commodity Charges** – Normally, with uniform commodity charges (also referred to as volumetric rates or single-tier rates), the same rates would apply to all customers. Because of the rate design used (i.e., the percent of revenue collected from fixed and variable charges), variable costs include a small portion of fixed costs which were shifted to commodity charges. As a result, the commodity charges are slightly different for residential and all other customer classes.

**Figure 5** below summarizes the fixed and volumetric rates for each water customer class.

**Figure 5. Water Rates by Customer Classes**

Customer Class	Fixed Charges	Volumetric Charges
Single Family Residential - Low Density	✓	} ✓
Single Family Residential - Med Density	✓	
All Other Classes	(by meter size)	} ✓
Fire Protection	(by meter size)	

## Customer Classes – Sewer Utility

**Fixed Monthly Service Charges** – Different fixed sewer charges have been calculated for each residential customer class (which includes the Fire Station and Multi-Family), because of their flow differences.

**Commodity Charges** – Since all residential customer classes have the same effluent strength, there would be no need for different commodity charges. However, the District’s residential sewer charges are 100% fixed and, therefore, do not rely on volumetric rates. In contrast, commercial and school customers have different effluent strengths and rely on commodity charges to allocate strength-related variable costs in a fair and equitable manner.

**Figure 6** below summarizes the types of applicable rates for the various customer classes.

**Figure 6. Sewer Rates by Customer Classes**

Customer Class	Fixed Charges	Volumetric Charges
<b>Residential</b>		
Single Family Residential - Low Density	✓	N.A
Single Family Residential - Med Density	✓	N.A
Fire Station	✓	N.A
Multi-Family Residential	✓	N.A
<b>Non-Residential</b>		
Commercial	✓	✓
Schools	✓	✓

The following sections present the rate design review and the proposed rates resulting from the water and sewer rate analyses.

## Rate Design Analysis

The process of evaluating the rate structure provides the opportunity to incorporate and balance rate design objectives and policies, such as revenue stability, equity among customer classes, and customer bill impacts. NBS discussed several rate alternatives and methodologies with the District staff over the course of the rate study, such as the percentage of revenue collected from fixed versus variable charges, how rates should be differentiated by customer class, and different methods of implementing volumetric rates (that is, tiered and uniform rates).

## Rate Design – Water Utility

In order to promote revenue stability and continuity with existing rates, the District has chosen to maintain the current rate structure for the water utility that collects 65 percent of the rate revenue from fixed charges and 35 percent from variable charges, as shown **Figure 7**. This rate alternative resulted in a small amount of capacity related costs (a fixed expense) being collected through variable charges (or volumetric rates).

**Figure 7. Allocation of Revenue Requirements - Water**

Classification Components	Proposed Rates	
	Adjusted Net Revenue Requirements (2022/23)	
Volumetric-Related Costs		
Commodity	\$ 1,334,729	27.6%
Capacity-Related Costs (variable allocation)	356,067	7.4%
<b>Subtotal: Volumetric-Related Costs</b>	<b>\$ 1,690,796</b>	<b>35.0%</b>
Capacity-Related Costs (fixed allocation)	\$ 3,041,677	63.0%
Customer-Related Costs	96,237	2.0%
Fire Protection-Related Costs	2,135	0.0%
<b>Subtotal: Fixed-Related Costs</b>	<b>\$ 3,140,049</b>	<b>65.0%</b>
<b>Net Revenue Requirement</b>	<b>\$ 4,830,845</b>	<b>100%</b>

The District’s water supply is from a single source, which does not lend itself to multi-tiered volumetric rates. Multi-tiered volumetric rates would require the District to demonstrate a clear cost-basis for more than one tier, and the District chose to maintain a uniform variable rate in light of this. The proposed water rates are shown below in **Figure 8**.

**Figure 8. Current vs. Proposed Water Rates**

Water Rate Schedule	Current Rates	Proposed Water Rates				
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		7.00%	7.00%	7.00%	5.00%	5.00%
<b>Monthly Fixed Service Charges</b>						
<b>Single Family Residential:</b>						
Low Density	\$26.11	\$28.79	\$30.80	\$32.96	\$34.61	\$36.34
Medium Density	\$19.65	\$22.53	\$24.11	\$25.80	\$27.09	\$28.44
<b>All Other Customers:</b>						
5/8 inch meter	\$33.80	\$37.40	\$40.02	\$42.82	\$44.96	\$47.21
3/4 inch meter	\$48.24	\$55.54	\$59.43	\$63.59	\$66.77	\$70.11
1 inch meter	\$77.14	\$91.83	\$98.26	\$105.14	\$110.39	\$115.91
1.5 inch meter	\$149.36	\$182.55	\$195.33	\$209.00	\$219.45	\$230.42
2 inch meter	\$236.04	\$291.41	\$311.81	\$333.64	\$350.32	\$367.84
3 inch meter	\$467.17	\$636.15	\$680.68	\$728.32	\$764.74	\$802.98
4 inch meter	\$727.19	\$1,271.18	\$1,360.16	\$1,455.37	\$1,528.14	\$1,604.55
6 inch meter	\$1,449.46	\$2,904.12	\$3,107.41	\$3,324.93	\$3,491.18	\$3,665.73
8 inch meter	\$2,316.20	\$5,081.38	\$5,437.08	\$5,817.67	\$6,108.55	\$6,413.98
<b>Fire Meters:</b>						
5/8 inch meter	\$5.31	\$1.64	\$1.76	\$1.88	\$1.98	\$2.07
8 inch meter	\$61.06	\$43.63	\$46.69	\$49.96	\$52.45	\$55.08
<b>Commodity Charges for All Water Consumed (in \$/hcf)<sup>1</sup></b>						
Single Family Residential	\$0.9033	\$0.8320	\$0.8902	\$0.9525	\$1.0002	\$1.0502
All Other Customers/Fire Accounts	\$0.9391	\$0.8952	\$0.9578	\$1.0249	\$1.0761	\$1.1299

1. HCF = hundred cubic feet (748 gallons).



## Proposed Rate Design – Sewer Utility

The revenue requirements for each classification of costs are summarized in **Figure 9**. These allocations provide the basis for calculating the actual fixed charges for all customer classes, and the commodity charges for the commercial and school customers.

**Figure 9. Allocation of Revenue Requirements – Sewer**

Customer Class	Cost Classification Components				Cost-of-Service Net Revenue Reqts.	% of COS Net Revenue Reqts.
	Volume	Treatment		Customer Related		
		BOD	TSS			
<b>Net Revenue Requirements<sup>1</sup></b>	<b>\$ 1,711,440</b>	<b>\$ 729,611</b>	<b>\$ 729,611</b>	<b>\$ 145,751</b>	<b>\$ 3,316,414</b>	--
<i>Percent of Revenue:</i>	51.6%	22.0%	22.0%	4.4%	100.0%	
Single Family Residential - Low Density	\$ 766,374	\$ 328,395	\$ 328,846	\$ 59,559	\$ 1,483,174	44.7%
Single Family Residential - Med Density	893,250	382,762	383,287	84,575	1,743,874	52.6%
Fire Station	774	332	332	23	1,461	0.0%
Multi-Family Residential	32,811	14,060	14,079	1,242	62,192	1.9%
Commercial	1,816	405	249	141	2,611	0.1%
Schools	16,415	3,658	2,817	211	23,102	0.7%
<b>Total</b>	<b>\$ 1,711,440</b>	<b>\$ 729,611</b>	<b>\$ 729,611</b>	<b>\$ 145,751</b>	<b>\$ 3,316,414</b>	<b>100.0%</b>

1. Revenue requirements for each customer class are determined by multiplying the revenue requirement from each cost classification by the allocation factors for each customer class.

For residential customers, including firehouse and multi-family residential customers, a fixed monthly service charge (\$/dwelling unit) is proposed. For non-residential classes (i.e., commercial and schools) an additional commodity charge based on the previous winter’s average monthly water consumption was added to the fixed charge. The proposed sewer rates are shown in **Figure 10**.

**Figure 10. Current vs. Proposed Sewer Rates**

Sewer Rate Schedule <sup>1</sup>	Current Rates	Proposed Sewer Rates				
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Residential Monthly Fixed Service Charges</b>						
Single Family Residential - Low Density	\$42.18	\$48.63	\$48.63	\$48.63	\$48.63	\$48.63
Single Family Residential - Med Density	\$35.45	\$40.27	\$40.27	\$40.27	\$40.27	\$40.27
Fire Station	\$37.50	\$60.89	\$60.89	\$60.89	\$60.89	\$60.89
Multi-Family Residential	\$17.65	\$20.32	\$20.32	\$20.32	\$20.32	\$20.32
<b>Non-Residential Monthly Fixed Service Charge</b>						
Commercial	\$31.07	\$21.09	\$21.09	\$21.09	\$21.09	\$21.09
Schools	\$100.14	\$95.11	\$95.11	\$95.11	\$95.11	\$95.11
<b>Non-Residential Volumetric Charge (\$/hcf)<sup>2</sup></b>						
Commercial	\$1.48	\$1.49	\$1.49	\$1.49	\$1.49	\$1.49
Schools	\$1.89	\$1.94	\$1.94	\$1.94	\$1.94	\$1.94

1. Proposed rates are based on charges to each customer account; volumetric rates for Commercial and School customers are per HCF of average winter water use from the previous winter period.

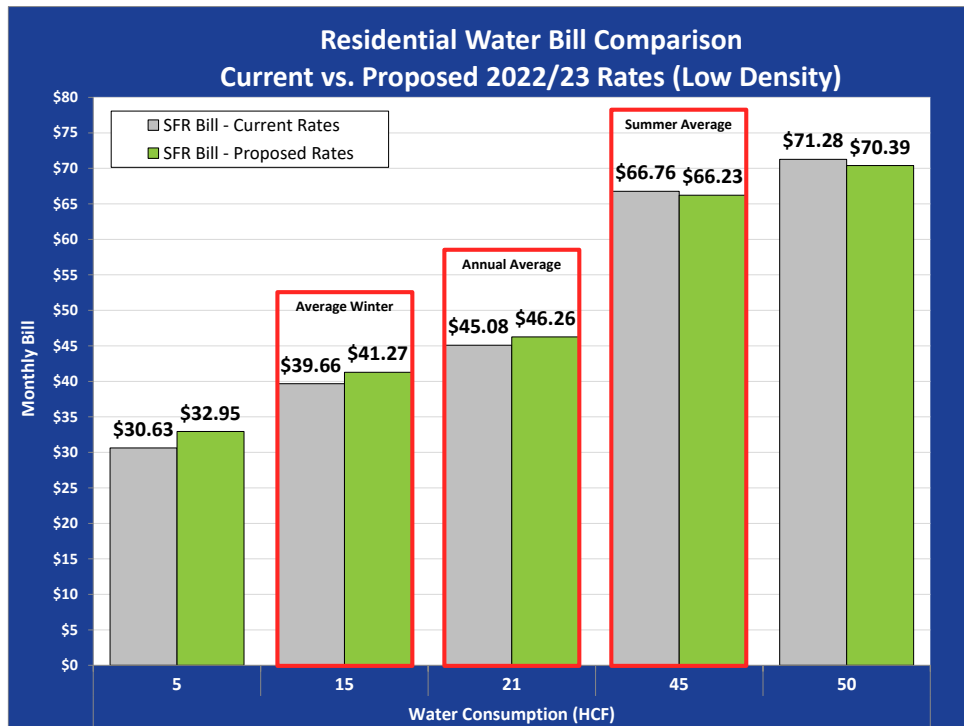
2. HCF = hundred cubic feet (748 gallons).



## Customer Bill Impacts

Low- and Medium-Density residential customer bill comparisons are presented below for both water (Figure 11 and Figure 12) and sewer (Figure 13 and Figure 14).

**Figure 11. Residential Low-Density Customer Bill Comparison – Water**



**Figure 12. Residential Medium-Density Customer Bill Comparison – Water**

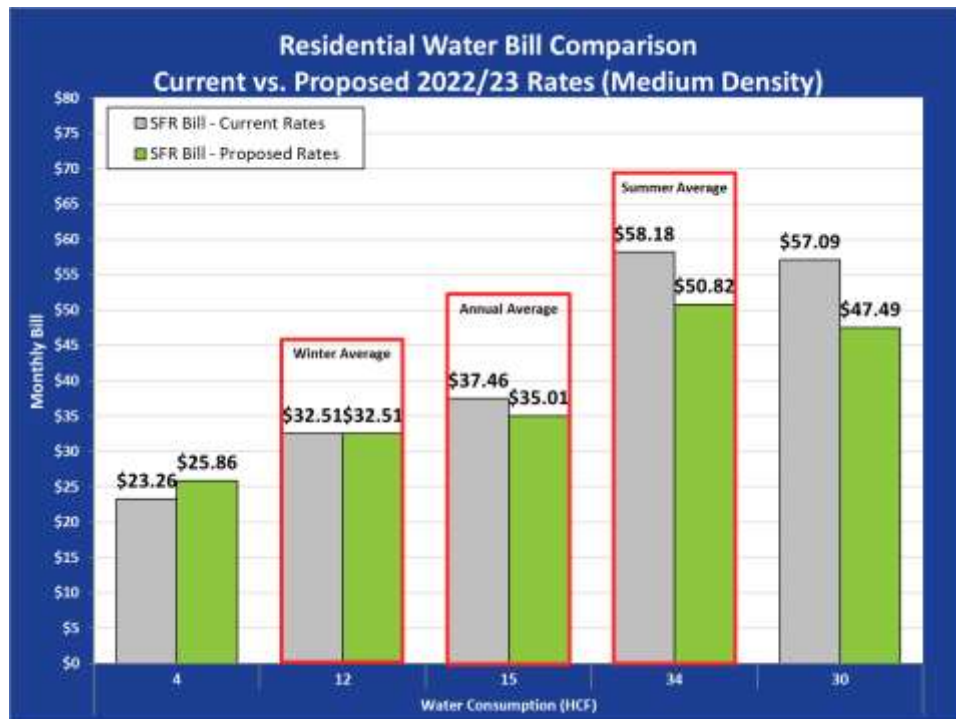
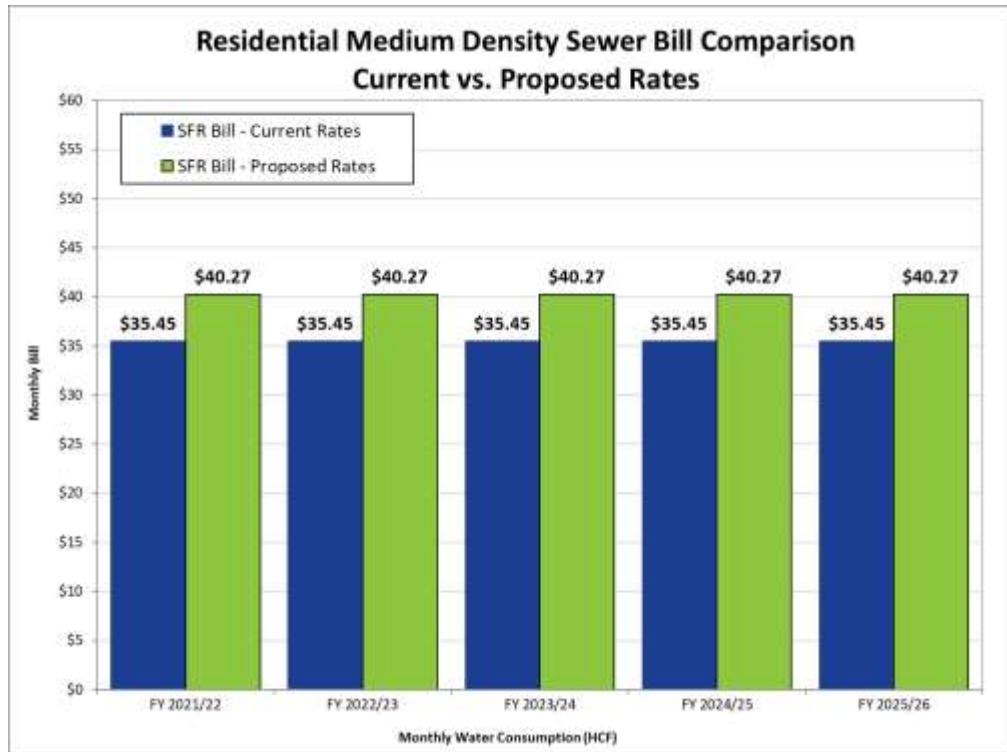


Figure 13. Residential Low-Density Customer Bill Comparison – Sewer



Figure 14. Residential Medium-Density Customer Bill Comparison – Sewer



## Combined Rate Increases – Customer Bill Impacts

Ultimately, the results were the annual adjustments to the water and sewer revenue requirements shown in Error! Reference source not found. below. Note that these are not percentages of “rate increases,” but instead the increases to the total revenue collected from water and sewer rates over the five-year adoption period.

**Figure 15. Proposed Combined Rate Increases**

Annual Adjustments to Water and Sewer Revenue Requirements					
Water and Sewer Rates	Annual Adjustments to Revenue Requirements				
	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b>Water Rate Revenue Requirements</b>	7.00%	7.00%	7.00%	5.00%	5.00%
<b>Sewer Rate Revenue Requirements</b>	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Average Adjustments</b>	3.50%	3.50%	3.50%	2.50%	2.50%

The combined water and sewer utility bills for low- and medium-density residential customers are shown below in **Figure 16** and **Figure 17**.

**Figure 16. Residential Low-Density Customer Bill Comparison – Combined**

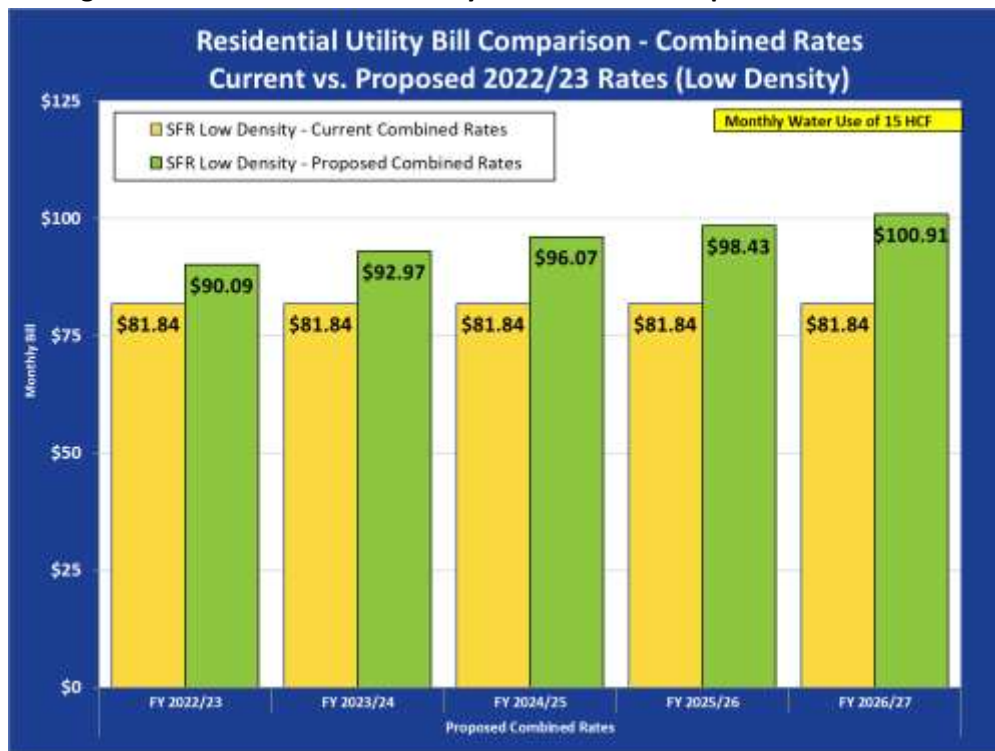
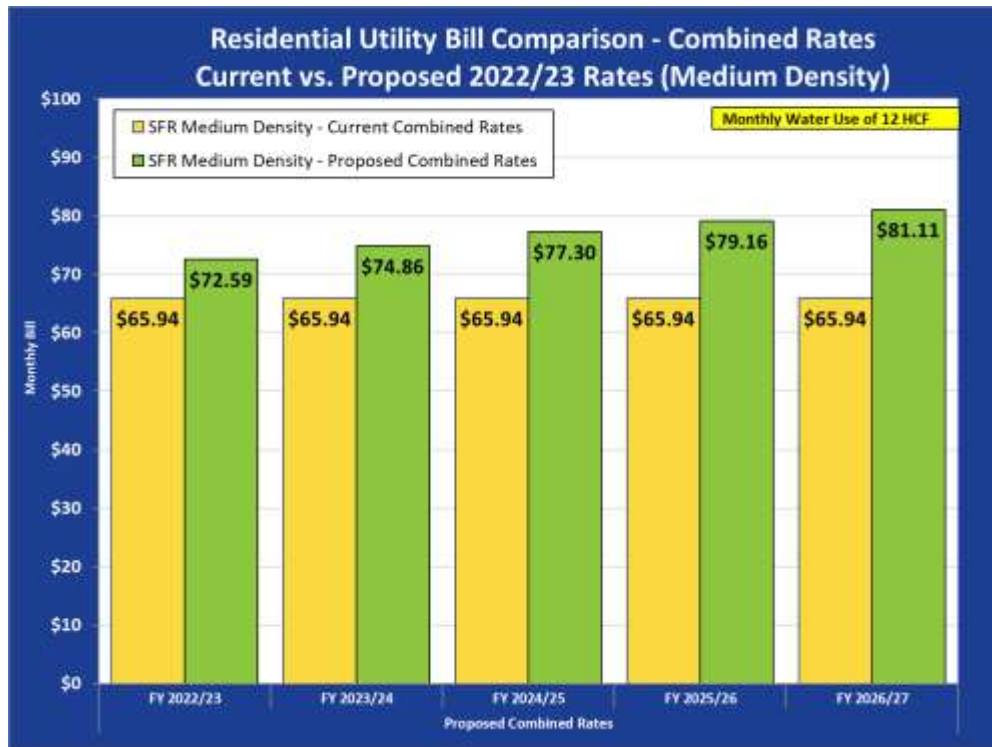


Figure 17. Residential Medium-Density Customer Bill Comparison – Combined



## 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 as a first step to implementing the proposed rates. This Study provides documentation of the rate study and the basis for analyzing 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 previously shown in Figure 8 and Figure 10. This will help ensure the continued financial health of District’s water and sewer utilities.
- Adopt Reserve Fund Targets:** NBS also recommends the Board of Directors adopt the recommended reserve fund targets described in this memorandum. The District should periodically evaluate these reserve fund levels in an attempt to maintain the levels recommended for the Operating Reserve, Capital Rehabilitation & Replacement Reserve, and Drought Contingency Reserve.

## Appendix A. Detailed Water Study Tables and Figures

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MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Financial Plan and Reserve Projections

TABLE 1 : FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS

RATE REVENUE REQUIREMENTS SUMMARY <sup>1</sup>	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Sources of Water Funds</b>												
<i>Rate Revenue:</i>												
Water Rate Revenue	\$ 4,226,468	\$ 4,341,429	\$ 4,514,809	\$ 4,688,189	\$ 4,861,568	\$ 5,034,948	\$ 5,208,328	\$ 5,381,708	\$ 5,555,087	\$ 5,728,467	\$ 5,901,847	\$ 6,075,227
Other	25,259	32,310	33,601	34,891	36,181	37,472	38,762	40,052	41,343	42,633	43,923	45,214
Interest Earnings	2,632	3,552	8,962	-	792	5,283	10,436	17,591	20,390	22,781	24,672	25,962
<b>Total Sources of Funds</b>	<b>\$ 4,254,359</b>	<b>\$ 4,377,291</b>	<b>\$ 4,557,371</b>	<b>\$ 4,723,079</b>	<b>\$ 4,898,542</b>	<b>\$ 5,077,703</b>	<b>\$ 5,257,526</b>	<b>\$ 5,439,351</b>	<b>\$ 5,616,820</b>	<b>\$ 5,793,881</b>	<b>\$ 5,970,442</b>	<b>\$ 6,146,402</b>
<b>Uses of Water Funds</b>												
<i>Operating Expenses:</i>												
Personnel Services	\$ 548,322	\$ 742,112	\$ 779,218	\$ 818,178	\$ 859,087	\$ 902,042	\$ 947,144	\$ 994,501	\$ 1,044,226	\$ 1,096,437	\$ 1,151,259	\$ 1,208,822
Engineering	71,022	20,000	81,280	88,621	96,494	104,932	113,972	123,655	134,020	145,114	156,981	169,672
Regulatory/Compliance	81,500	52,440	54,062	56,765	59,603	62,583	65,712	68,998	72,448	76,070	79,874	83,867
Operations and Maintenance	2,790,878	2,762,049	3,233,996	3,454,471	3,688,909	3,938,155	4,203,103	4,484,700	4,783,949	5,101,912	5,439,710	5,798,534
Subtotal: Operating Expenses	\$ 3,491,722	\$ 3,576,601	\$ 4,148,555	\$ 4,418,036	\$ 4,704,094	\$ 5,007,712	\$ 5,329,931	\$ 5,671,854	\$ 6,034,644	\$ 6,419,533	\$ 6,827,824	\$ 7,260,896
<i>Other Expenditures:</i>												
Repayment of General Fund <sup>2</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 326,255	\$ 376,448	\$ 426,641	\$ 476,834	\$ 527,027
Rate-Funded Capital Expenses	-	136,553	1,999,990	635,131	742,116	891,473	903,107	971,950	700,156	477,347	324,221	242,317
Subtotal: Other Expenditures	\$ -	\$ 136,553	\$ 1,999,990	\$ 635,131	\$ 742,116	\$ 891,473	\$ 903,107	\$ 1,298,205	\$ 1,076,604	\$ 903,988	\$ 801,055	\$ 769,344
<b>Total Uses of Water Funds</b>	<b>\$ 3,491,722</b>	<b>\$ 3,713,154</b>	<b>\$ 6,148,546</b>	<b>\$ 5,053,167</b>	<b>\$ 5,446,209</b>	<b>\$ 5,899,185</b>	<b>\$ 6,233,038</b>	<b>\$ 6,970,058</b>	<b>\$ 7,111,247</b>	<b>\$ 7,323,521</b>	<b>\$ 7,628,880</b>	<b>\$ 8,030,240</b>
Plus: Revenue from Rate Increases <sup>3</sup>	-	-	316,037	679,319	1,094,062	1,441,481	1,826,091	2,032,252	2,250,780	2,482,019	2,726,320	2,984,045
<b>Increase/Decrease to Reserves</b>	<b>\$ 762,637</b>	<b>\$ 664,137</b>	<b>\$ (1,275,138)</b>	<b>\$ 349,231</b>	<b>\$ 546,394</b>	<b>\$ 619,999</b>	<b>\$ 850,579</b>	<b>\$ 501,544</b>	<b>\$ 756,353</b>	<b>\$ 952,379</b>	<b>\$ 1,067,883</b>	<b>\$ 1,100,207</b>
<b>Net Revenue Req't. (Total Uses less Non-Rate Revenue)</b>	<b>\$ 3,463,831</b>	<b>\$ 3,677,292</b>	<b>\$ 6,105,983</b>	<b>\$ 5,018,276</b>	<b>\$ 5,409,236</b>	<b>\$ 5,856,430</b>	<b>\$ 6,183,840</b>	<b>\$ 6,912,415</b>	<b>\$ 7,049,515</b>	<b>\$ 7,258,107</b>	<b>\$ 7,560,284</b>	<b>\$ 7,959,065</b>
<b>Total Rate Revenue After Rate Increases</b>	<b>\$ 4,226,468</b>	<b>\$ 4,341,429</b>	<b>\$ 4,830,845</b>	<b>\$ 5,367,507</b>	<b>\$ 5,955,630</b>	<b>\$ 6,476,429</b>	<b>\$ 7,034,419</b>	<b>\$ 7,413,959</b>	<b>\$ 7,805,867</b>	<b>\$ 8,210,486</b>	<b>\$ 8,628,167</b>	<b>\$ 9,059,271</b>
<b>Projected Annual Rate Revenue Increase</b>	<b>0.00%</b>	<b>0.00%</b>	<b>7.00%</b>	<b>7.00%</b>	<b>7.00%</b>	<b>5.00%</b>	<b>5.00%</b>	<b>2.00%</b>	<b>2.00%</b>	<b>2.00%</b>	<b>2.00%</b>	<b>2.00%</b>
<i>Cumulative Increase from Annual Revenue Increases</i>	0.00%	0.00%	7.00%	14.49%	22.50%	28.63%	35.06%	37.76%	40.52%	43.33%	46.19%	49.12%
<i>Debt Coverage After Rate Increase</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

1. Revenues and expenses for FY 2020/21 and FY 2021/22 were provided by District staff. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf. Expenses for FY 2022/23 are per source file: Operating Budget 22-23 v2.xlsx.
2. Amount owed to the General Fund totals \$5.5M and is estimated to be repaid over 10 years beginning in FY 2027/28.
3. Revenue from rate increases assumes an implementation date of July 1, 2022. For each year thereafter, the assumption is that new rates will be implemented on July 1st of each year.

Selection of Financial Plan Alternative		1										
Financial Plan Alternatives	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
1 Alternative 1 - Combined Rate Increases	0.00%	0.00%	7.00%	7.00%	7.00%	5.00%	5.00%	2.00%	2.00%	2.00%	2.00%	2.00%
2 Alternative 2 - Moderate Rate Increases	0.00%	0.00%	9.00%	5.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
3 Alternative 3 - Up-Front Rate Increases	0.00%	0.00%	12.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
4 No Rate Increases	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT**  
**WATER RATE STUDY**  
**Financial Plan and Reserve Projections**

**TABLE 2 : RESERVE FUND SUMMARY**

RATE REVENUE REQUIREMENTS SUMMARY	Actual		5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Unrestricted Reserves:</b>												
<b>Total Beginning Cash<sup>1</sup></b>	\$ 2,452,113	\$ 2,616,955										
<b>Operating Reserve</b>												
Beginning Reserve Balance	\$ (877,800)	\$ (926,652)	\$ (262,515)	\$ (1,537,653)	\$ (1,188,422)	\$ (642,027)	\$ (22,029)	\$ 670,000	\$ 710,000	\$ 750,000	\$ 800,000	\$ 850,000
Plus: Net Cash Flow (After Rate Increases)	762,637	664,137	(1,275,138)	349,231	546,394	619,999	850,579	501,544	756,353	952,379	1,067,883	1,100,207
Plus: Transfer of Debt Reserve Surplus	-	-	-	-	-	-	-	-	-	-	-	-
Less: Transfer Out to Capital Replacement Reserve	-	-	-	-	-	-	(158,550)	(461,544)	(716,353)	(902,379)	(1,017,883)	(1,040,207)
<b>Ending Operating Reserve Balance</b>	\$ (115,163)	\$ (262,515)	\$ (1,537,653)	\$ (1,188,422)	\$ (642,027)	\$ (22,029)	\$ 670,000	\$ 710,000	\$ 750,000	\$ 800,000	\$ 850,000	\$ 910,000
<b>Target Ending Balance (45-days of O&amp;M)</b>	\$ 440,000	\$ 450,000	\$ 520,000	\$ 550,000	\$ 590,000	\$ 630,000	\$ 670,000	\$ 710,000	\$ 750,000	\$ 800,000	\$ 850,000	\$ 910,000
<b>Drought Contingency Reserve</b>												
Beginning Reserve Balance	\$ 900,000	\$ 1,150,000	\$ 1,400,000	\$ 1,650,000	\$ 1,900,000	\$ 2,150,000	\$ 2,400,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
Plus: Transfer of CIP Funds (Exh. 2)	-	250,000	250,000	250,000	250,000	250,000	100,000	-	-	-	-	-
Less: Use of Reserves for Water Purchases	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Capital Improvement &amp; Depreciation Reserve Balance</b>	\$ 900,000	\$ 1,400,000	\$ 1,650,000	\$ 1,900,000	\$ 2,150,000	\$ 2,400,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
<b>Target Ending Balance (\$2.5 million)<sup>2</sup></b>	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000
<b>Capital Rehabilitation &amp; Replacement Reserve</b>												
Beginning Reserve Balance	\$ 2,429,913	\$ 2,393,607	\$ 1,298,600	\$ 1,298,600	\$ 1,280,000	\$ 1,252,800	\$ 1,228,500	\$ 1,363,650	\$ 1,647,244	\$ 1,883,653	\$ 2,052,279	\$ 2,151,383
Plus: Transfer of Operating Reserve Surplus	-	-	-	-	-	-	158,550	461,544	716,353	902,379	1,017,883	1,040,207
Plus: Drought Reserve	-	-	-	-	-	-	-	-	-	-	-	-
Less: Use of Reserves for Capital Projects	(443,756)	(1,095,007)	-	(18,600)	(27,200)	(24,300)	(23,400)	(177,950)	(479,944)	(733,753)	(918,779)	(1,033,383)
<b>Ending Capital Improvement &amp; Depreciation Reserve Balance</b>	\$ 779,913	\$ 1,298,600	\$ 1,298,600	\$ 1,280,000	\$ 1,252,800	\$ 1,228,500	\$ 1,363,650	\$ 1,647,244	\$ 1,883,653	\$ 2,052,279	\$ 2,151,383	\$ 2,158,207
<b>Target Ending Balance (1.5% of Assets)<sup>3</sup></b>	\$ 1,320,200	\$ 1,298,600	\$ 1,309,700	\$ 1,280,000	\$ 1,252,800	\$ 1,228,500	\$ 1,205,100	\$ 1,185,700	\$ 1,167,300	\$ 1,149,900	\$ 1,133,500	\$ 1,118,000
<b>Ending Balance - Excl. Restricted Reserves</b>	\$ 1,564,750	\$ 2,436,085	\$ 1,410,947	\$ 1,991,578	\$ 2,760,773	\$ 3,606,471	\$ 4,533,650	\$ 4,857,244	\$ 5,133,653	\$ 5,352,279	\$ 5,501,383	\$ 5,568,207
<b>Minimum Target Ending Balance - Excl. Restricted Reserves</b>	\$ 4,260,200	\$ 4,248,600	\$ 4,329,700	\$ 4,330,000	\$ 4,342,800	\$ 4,358,500	\$ 4,375,100	\$ 4,395,700	\$ 4,417,300	\$ 4,449,900	\$ 4,483,500	\$ 4,528,000
<b>Ending Surplus/(Deficit) Compared to Minimum Reserve Target</b>	\$ (2,695,450)	\$ (1,812,515)	\$ (2,918,753)	\$ (2,338,422)	\$ (1,582,027)	\$ (752,029)	\$ 158,550	\$ 461,544	\$ 716,353	\$ 902,379	\$ 1,017,883	\$ 1,040,207
<b>Days Cash on Hand</b>	164	249	125	165	215	263	311	313	311	305	295	280
<b>Annual Interest Earnings Rate<sup>4</sup></b>	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%

1. Beginning cash balance for FY 2020/21 and FY 2021/22 provided by District staff.  
2. The Board approved a minimum target balance of \$2.5 million.  
3. The Capital Rehabilitation & Replacement Reserve target is set to 1.5% of net assets per direction from District Board.  
4. Historical interest earning rates are per the average annual yields for funds invested in LAIF (2012-2021). The source is the California State Treasurer's website: <https://www.treasurer.ca.gov/pmia-laif/historical/annual.asp>.



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Financial Plan and Reserve Projections

TABLE 3 : RESERVE FUND SUMMARY - RESTRICTED RESERVES

RATE REVENUE REQUIREMENTS SUMMARY	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Restricted Reserves:</b>												
<b>Debt Reserve</b>												
Beginning Reserve Balance <sup>1</sup>	\$ 4,285,512	\$ 2,716,095	\$ 2,739,589	\$ 2,763,287	\$ 2,787,189	\$ 2,811,298	\$ 2,835,616	\$ 2,860,144	\$ 2,884,884	\$ 2,909,839	\$ 2,935,009	\$ 2,960,397
Plus: Interest Earnings	37,070	23,494	23,697	23,902	24,109	24,318	24,528	24,740	24,954	25,170	25,388	25,607
Less: Transfer of Surplus to Operating Reserve	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Debt Reserve Balance</b>	<b>\$ 4,322,582</b>	<b>\$ 2,739,589</b>	<b>\$ 2,763,287</b>	<b>\$ 2,787,189</b>	<b>\$ 2,811,298</b>	<b>\$ 2,835,616</b>	<b>\$ 2,860,144</b>	<b>\$ 2,884,884</b>	<b>\$ 2,909,839</b>	<b>\$ 2,935,009</b>	<b>\$ 2,960,397</b>	<b>\$ 2,986,004</b>
<b>Target Ending Balance</b>	<b>\$ 5,322,030</b>	<b>\$ 5,483,069</b>	<b>\$ 5,483,069</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,389,753</b>
<b>Bond Project Fund</b>												
Beginning Reserve Balance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Plus: SRF Loan Funding Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
Plus: Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
Less: Use of Bond & Loan Funds for Capital Projects	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Bond Project Fund Balance</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Target Ending Balance</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Connection Fee Reserve</b>												
Beginning Reserve Balance	\$ -	\$ -	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632	\$ 2,632
Plus: Connection Fee Revenue	2,632	3,552	-	-	-	-	-	-	-	-	-	-
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Connection Fee Fund Balance</b>	<b>\$ 2,632</b>	<b>\$ 3,552</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>	<b>\$ 2,632</b>
<b>Annual Interest Earnings Rate<sup>2</sup></b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>	<b>0.87%</b>

1. Beginning cash balance for FY 2020/21 and FY 2021/22 provided by District staff.  
2. Historical interest earning rates are per the average annual yields for funds invested in LAIF (2012-2021). The source is the California State Treasurer's website: <https://www.treasurer.ca.gov/pmia-laif/historical/annual.asp>.

TABLE 4 : EXCLUDED PLEDGE SUMMARY<sup>1</sup> (for informational only)

PLEGGED REVENUE & EXPENSES EXCLUDED FROM ANALYSIS	Actual	Budget	Projected									
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>WATER PLEDGED REVENUE</b>												
Interest Income	\$ 13,544	\$ 14,108	\$ 14,671	\$ 15,235	\$ 15,798	\$ 16,362	\$ 16,925	\$ 17,488	\$ 18,052	\$ 18,615	\$ 19,179	\$ 19,742
Utility Serve Fee - Pledged Facility	4,201,059	4,375,812	4,550,565	4,725,318	4,900,071	5,074,824	5,249,577	5,424,330	5,599,083	5,773,835	5,948,588	6,123,341
Utility Pledge - District Usage	150,025	157,526	165,402	173,672	182,356	191,474	201,048	211,100	221,655	232,738	244,375	256,593
Fire Hydrant - Pledge	29,474	30,701	31,927	33,153	34,379	35,605	36,831	38,057	39,283	40,509	41,735	42,961
Operating Transfer In	70,911,899	73,861,646	76,811,392	79,761,138	82,710,884	85,660,631	88,610,377	91,560,123	94,509,869	97,459,616	100,409,362	103,359,108
<b>TOTAL PLEDGE REVENUE</b>	<b>\$ 75,306,003</b>	<b>\$ 78,439,792</b>	<b>\$ 81,573,957</b>	<b>\$ 84,708,516</b>	<b>\$ 87,843,488</b>	<b>\$ 90,978,895</b>	<b>\$ 94,114,757</b>	<b>\$ 97,251,098</b>	<b>\$100,387,942</b>	<b>\$103,525,313</b>	<b>\$106,663,238</b>	<b>\$109,801,746</b>
<b>WATER PLEDGED EXPENSES</b>												
Facility Pledged Payment	\$ 72,571,556	\$ 74,668,443	\$ 77,698,908	\$ 80,754,391	\$ 83,804,640	\$ 86,860,190	\$ 89,911,433	\$ 92,958,638	\$ 96,009,395	\$ 99,070,230	\$102,114,066	\$105,159,847
MHCSD - Pledged Principal Payment	535,000	510,000	625,000	720,000	825,000	930,000	1,045,000	1,170,000	1,300,000	1,430,000	1,585,000	1,745,000
Interest on Bonds	2,128,342	3,176,891	3,161,369	3,141,010	3,116,077	3,086,045	3,050,532	3,009,278	2,959,706	2,900,300	2,833,150	2,759,325
Professional Services - Other	-	3,008	3,158	3,316	3,482	3,656	3,839	4,031	4,232	4,444	4,666	4,900
Utility Processing Fees	71,104	81,450	85,523	89,799	94,289	99,003	103,953	109,151	114,609	120,339	126,356	132,674
<b>TOTAL PLEDGE EXPENSES</b>	<b>\$ 75,306,003</b>	<b>\$ 78,439,792</b>	<b>\$ 81,573,957</b>	<b>\$ 84,708,516</b>	<b>\$ 87,843,488</b>	<b>\$ 90,978,895</b>	<b>\$ 94,114,757</b>	<b>\$ 97,251,098</b>	<b>\$100,387,942</b>	<b>\$103,525,313</b>	<b>\$106,663,238</b>	<b>\$109,801,746</b>
<b>NET</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

1. Pledge revenue is a separate fee which is collected to pay back the original developers for putting the infrastructure in place. As such, it is used to pay both debt service on debt issued to pay the developer and the developer directly. As all debt is paid through the restricted pledge revenue, debt payments and funding are excluded from this analysis.

CHART 1

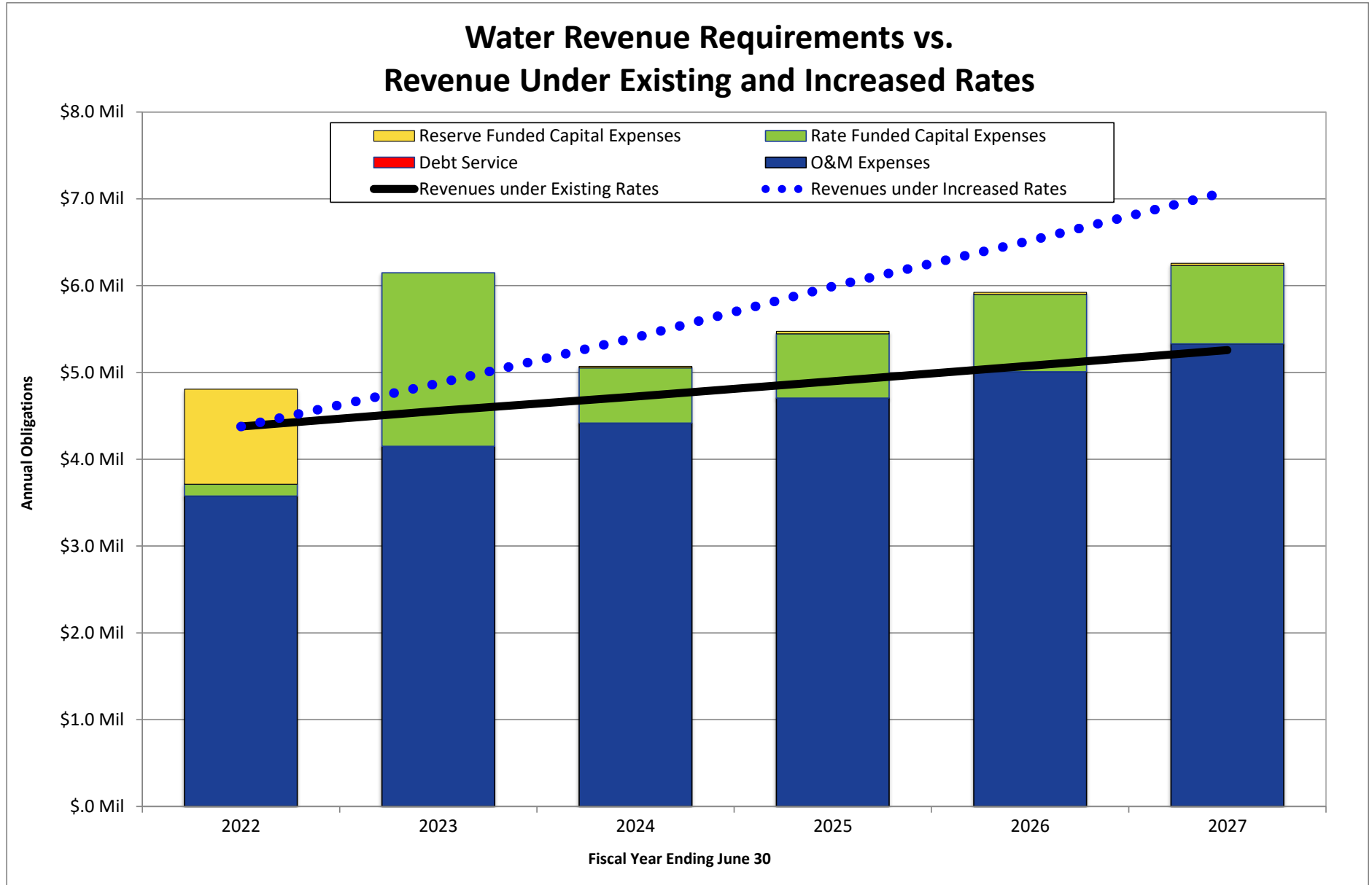
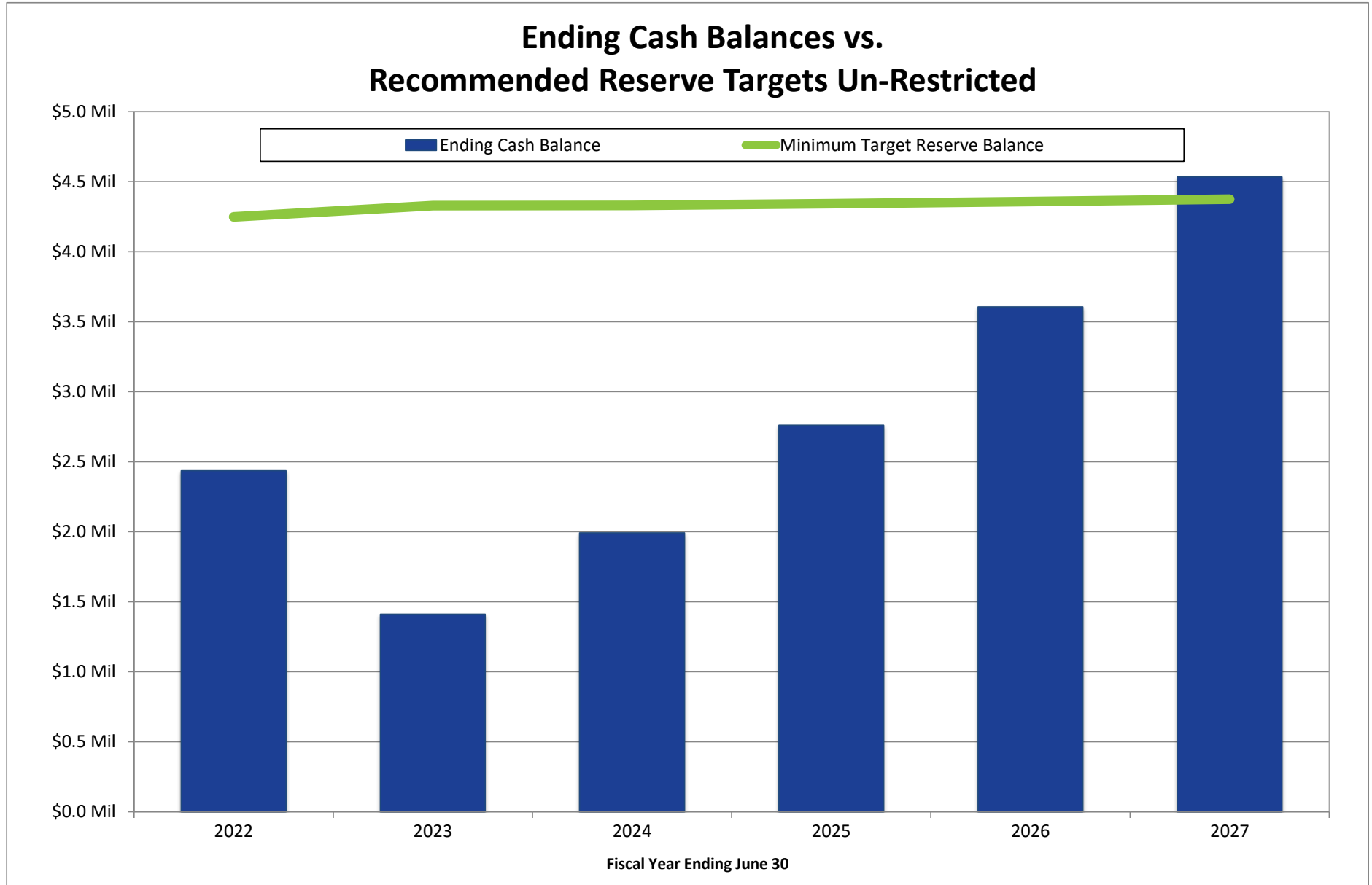
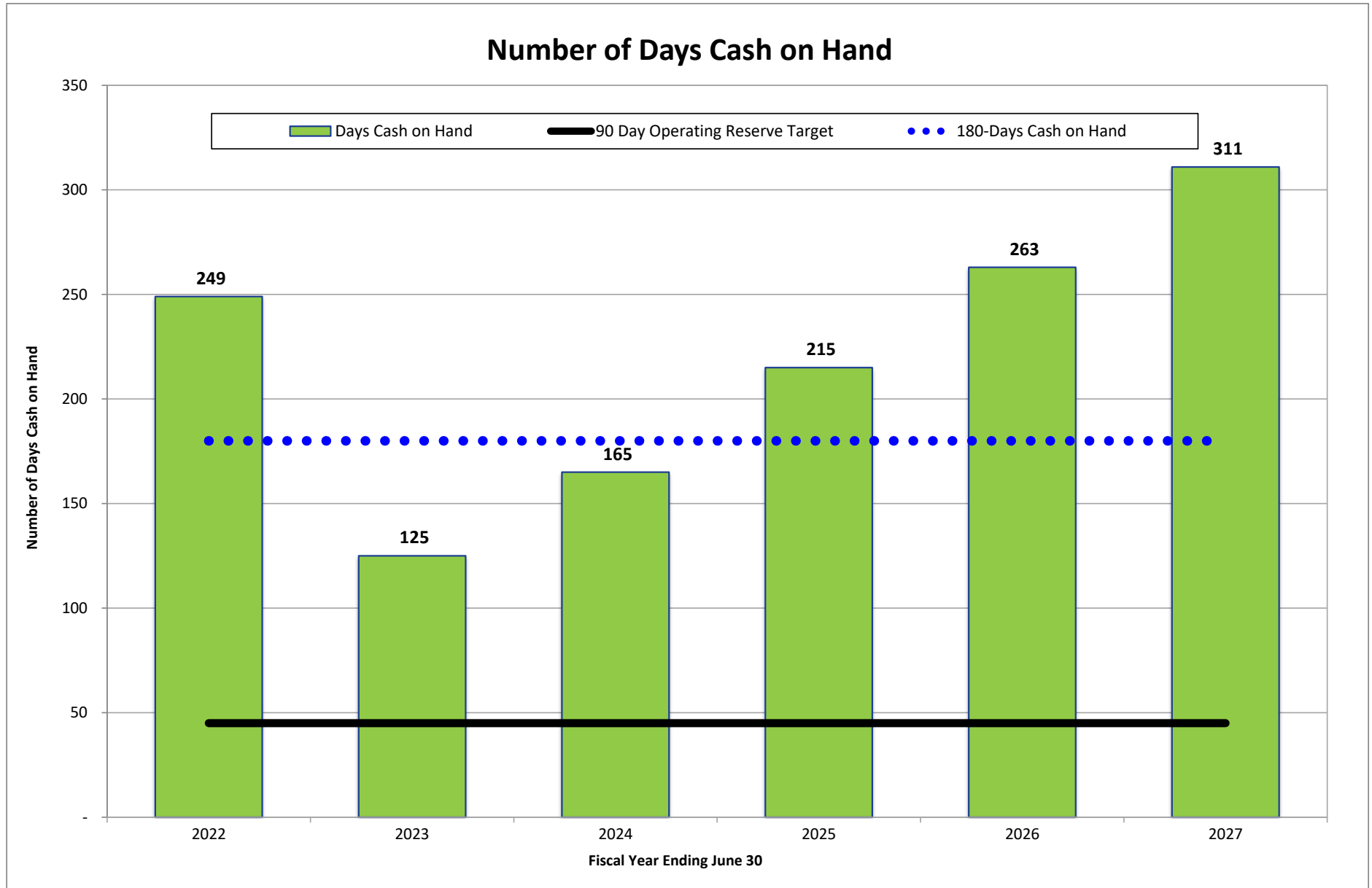


CHART 2



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Rate Adjustment Charts and Report Tables

CHART 3



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Rate Adjustment Charts and Report Tables

CHART 4

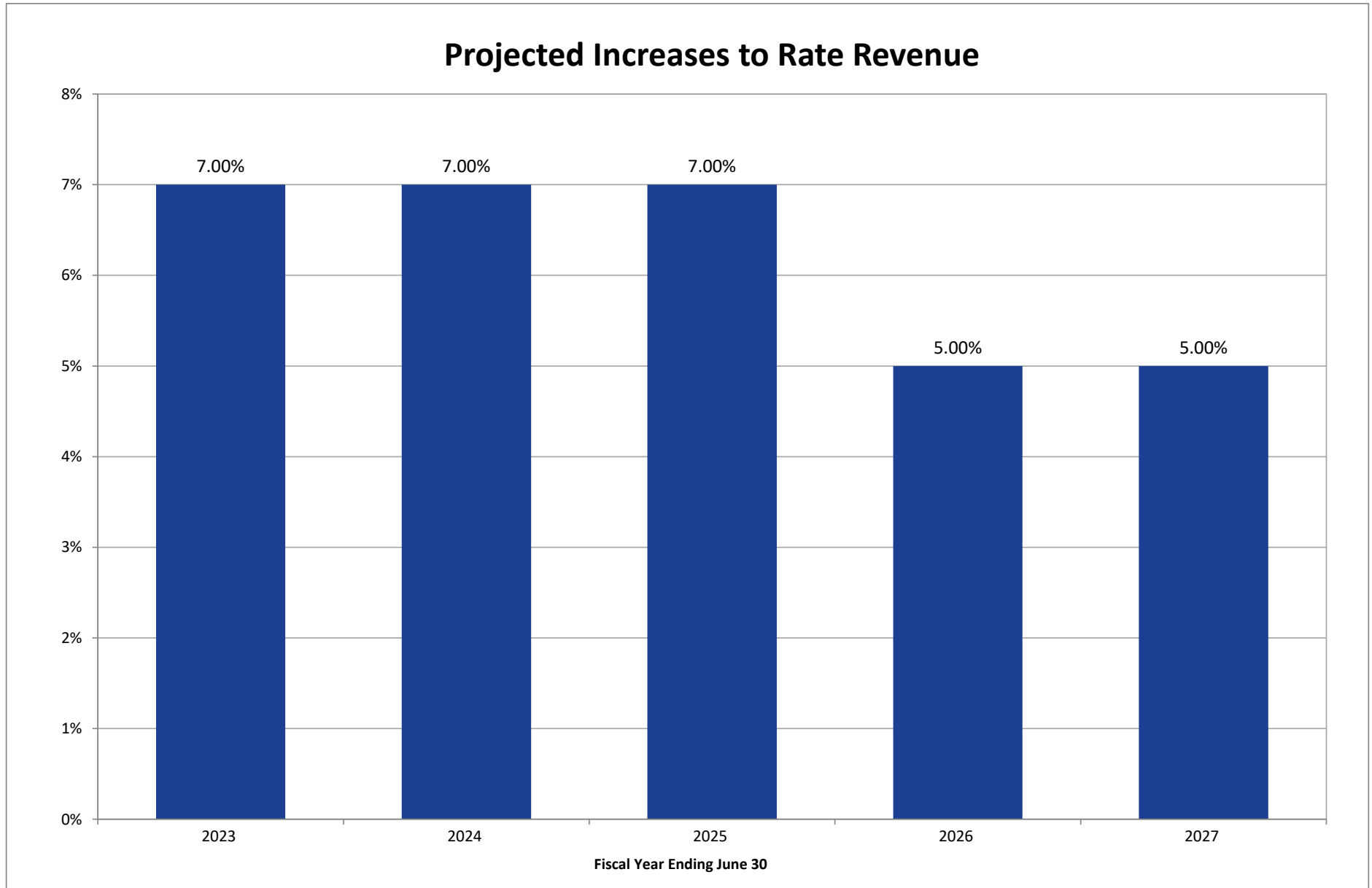
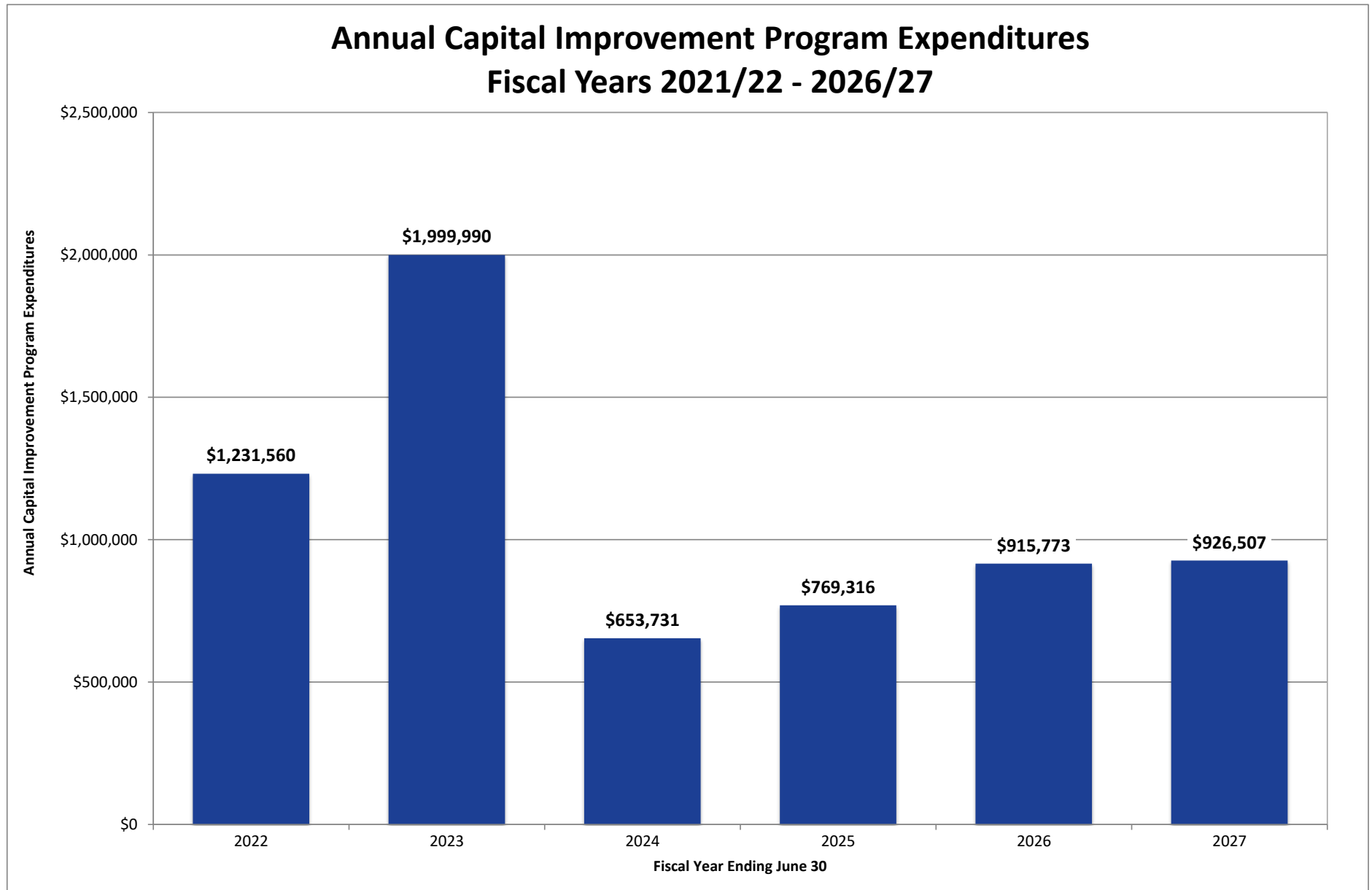


CHART 5



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Operating Revenue and Expenses

TABLE 5 : REVENUE FORECAST<sup>1</sup>

DESCRIPTION	Basis	Actual	Budget	5-Year Projected Rate Period					Projected				
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>WATER REVENUE</b>													
Interest Income	See FP	\$ 2,632	\$ 3,552	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Service Fee - Operations	1	3,821,664	3,931,929	4,088,955	4,245,981	4,403,007	4,560,033	4,717,059	4,874,085	5,031,110	5,188,136	5,345,162	5,502,188
Fire Hydrant - Usage	1	11,100	11,562	12,023	12,485	12,947	13,409	13,870	14,332	14,794	15,255	15,717	16,179
Utility Service Fee - Charges to MHCSD	1	404,804	409,500	425,854	442,208	458,562	474,915	491,269	507,623	523,977	540,331	556,685	573,038
Other - Penalties	1	7,944	8,274	8,605	8,935	9,266	9,596	9,927	10,257	10,587	10,918	11,248	11,579
Miscellaneous Revenue	1	-	6,000	6,240	6,479	6,719	6,958	7,198	7,438	7,677	7,917	8,157	8,396
Special Assessments - Current	1	5,192	5,408	5,624	5,840	6,056	6,272	6,488	6,704	6,920	7,136	7,352	7,568
Outlawed Warrants	1	1,024	1,066	1,109	1,152	1,194	1,237	1,279	1,322	1,364	1,407	1,450	1,492
<b>TOTAL: REVENUE</b>		<b>\$ 4,254,359</b>	<b>\$ 4,377,291</b>	<b>\$ 4,548,409</b>	<b>\$ 4,723,079</b>	<b>\$ 4,897,749</b>	<b>\$ 5,072,420</b>	<b>\$ 5,247,090</b>	<b>\$ 5,421,760</b>	<b>\$ 5,596,430</b>	<b>\$ 5,771,100</b>	<b>\$ 5,945,770</b>	<b>\$ 6,120,440</b>

1. Revenues for FY 2020/21 are actuals and then based on the District's Adopted Budget for FY 2021/22. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf.

TABLE 6 : REVENUE SUMMARY

DESCRIPTION	Basis	Actual	Budget	5-Year Projected Rate Period					Projected				
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>WATER REVENUE</b>													
<b>RATE REVENUE</b>													
Water Revenue		\$ 4,226,468	\$ 4,341,429	\$ 4,514,809	\$ 4,688,189	\$ 4,861,568	\$ 5,034,948	\$ 5,208,328	\$ 5,381,708	\$ 5,555,087	\$ 5,728,467	\$ 5,901,847	\$ 6,075,227
<b>OTHER REVENUE</b>													
Interest Income		2,632	3,552	-	-	-	-	-	-	-	-	-	-
All Other Operating Revenue		25,259	32,310	33,601	34,891	36,181	37,472	38,762	40,052	41,343	42,633	43,923	45,214
<b>TOTAL: REVENUE</b>		<b>\$ 4,254,359</b>	<b>\$ 4,377,291</b>	<b>\$ 4,548,409</b>	<b>\$ 4,723,079</b>	<b>\$ 4,897,749</b>	<b>\$ 5,072,420</b>	<b>\$ 5,247,090</b>	<b>\$ 5,421,760</b>	<b>\$ 5,596,430</b>	<b>\$ 5,771,100</b>	<b>\$ 5,945,770</b>	<b>\$ 6,120,440</b>



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Operating Revenue and Expenses

TABLE 7 : OPERATING EXPENSE FORECAST<sup>1</sup>

DESCRIPTION	Basis	Actual		Budget		5-Year Projected Rate Period					Projected			
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	
<b>WATER OPERATIONS EXPENSES</b>														
<b>Personnel Services</b>														
Personnel	3	\$ 416,680	\$ 538,508	\$ 565,433	\$ 593,705	\$ 623,390	\$ 654,559	\$ 687,287	\$ 721,652	\$ 757,734	\$ 795,621	\$ 835,402	\$ 877,172	
Labor Allocation	3	131,642	203,605	213,785	224,474	235,698	247,483	259,857	272,850	286,492	300,817	315,857	331,650	
<b>Engineering</b>														
Engineering Misc (Consultant)	2	50,000	20,000	75,000	81,774	89,038	96,824	105,166	114,101	123,666	133,901	144,852	156,563	
GIS Monitoring	2	21,022	-	6,280	6,847	7,455	8,107	8,806	9,554	10,355	11,212	12,129	13,110	
<b>Regulatory/Compliance</b>														
State Health Department/SWRCB	2	26,250	27,038	28,389	29,809	31,299	32,864	34,507	36,233	38,044	39,947	41,944	44,041	
Engineering Misc (Consultant)	2	50,000	20,000	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027	
Permits & Fees	2	5,250	5,402	5,672	5,956	6,254	6,566	6,895	7,240	7,602	7,982	8,381	8,800	
<b>Operations and Maintenance</b>														
Communications	2	3,995	4,153	4,153	4,361	4,579	4,808	5,048	5,300	5,565	5,844	6,136	6,443	
Maint & Repairs Distribution System	2	50,000	55,000	60,500	65,965	71,824	78,105	84,834	92,041	99,757	108,014	116,847	126,294	
Maint Structures & Grounds	2	146,000	151,800	166,980	182,062	198,235	215,570	234,143	254,034	275,329	298,118	322,498	348,571	
Landscaping	2	48,115	55,219	47,658	50,041	52,543	55,170	57,929	60,825	63,867	67,060	70,413	73,934	
Chemicals	2	270,000	308,000	338,800	355,740	373,527	392,203	411,814	432,404	454,024	476,726	500,562	525,590	
Utilities - Electricity	2	350,000	350,000	420,000	441,000	463,050	486,203	510,513	536,038	562,840	590,982	620,531	651,558	
Utilities- Water	2	825,000	825,000	940,000	987,000	1,036,350	1,088,168	1,142,576	1,199,705	1,259,690	1,322,674	1,388,808	1,458,249	
Irrigation Water	2	7,000	7,000	8,000	8,723	9,497	10,328	11,218	12,171	13,191	14,283	15,451	16,700	
Professional Services	2	990,768	980,127	1,222,155	1,332,543	1,450,915	1,577,792	1,713,730	1,859,317	2,015,179	2,181,978	2,360,419	2,551,250	
Technology/Web/Computer	2	25,000	25,750	25,750	27,038	28,389	29,809	31,299	32,864	34,507	36,233	38,044	39,947	
Security Services	2	75,000	-	-	-	-	-	-	-	-	-	-	-	
<b>SUBTOTAL: EXPENSES</b>		<b>\$ 3,491,722</b>	<b>\$ 3,576,601</b>	<b>\$ 4,148,555</b>	<b>\$ 4,418,036</b>	<b>\$ 4,704,094</b>	<b>\$ 5,007,712</b>	<b>\$ 5,329,931</b>	<b>\$ 5,671,854</b>	<b>\$ 6,034,644</b>	<b>\$ 6,419,533</b>	<b>\$ 6,827,824</b>	<b>\$ 7,260,896</b>	

1. Expenses for FY 2020/21 are projected actuals and then based on the District's Budgets for FY 2021/22 and FY 2022/23. Source files: 1.5- FY 2021-2022 O & M.pdf & Operating Budget 22-23 v2.xlsx . Expenses, with the exception of personnel costs, for FY 2022/23 are per source file: Operating Budget 22-23 v2.xlsx.

TABLE 8 : ADDITIONAL EXPENSES

DESCRIPTION	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Payment to General Fund <sup>1</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 326,255	\$ 376,448	\$ 426,641	\$ 476,834	\$ 527,027
<b>SUBTOTAL: REPAYMENT OF GENERAL FUND</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 326,255</b>	<b>\$ 376,448</b>	<b>\$ 426,641</b>	<b>\$ 476,834</b>	<b>\$ 527,027</b>

1. Amount owed to the General Fund totals \$5.5M and is estimated to be repaid over 10 years beginning in FY 2027/28.

<b>TOTAL: EXPENSES</b>	<b>\$ 3,491,722</b>	<b>\$ 3,576,601</b>	<b>\$ 4,148,555</b>	<b>\$ 4,418,036</b>	<b>\$ 4,704,094</b>	<b>\$ 5,007,712</b>	<b>\$ 5,329,931</b>	<b>\$ 5,998,109</b>	<b>\$ 6,411,092</b>	<b>\$ 6,846,174</b>	<b>\$ 7,304,658</b>	<b>\$ 7,787,923</b>
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TABLE 9 : FORECASTING ASSUMPTIONS

ECONOMIC VARIABLES	Basis	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Customer Growth <sup>1</sup>	1	--	4.16%	3.99%	3.84%	3.70%	3.57%	3.44%	3.33%	3.22%	3.12%	3.03%	2.94%
General Cost Inflation <sup>2</sup>	2	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Labor Cost Inflation <sup>3</sup>	3	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
No Escalation	4	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

1. Customer growth inflation is based on the estimated number of new accounts.  
 2. Based on discussions with District staff, the general cost inflation factor is set at 5.0%  
 3. Based on discussions with District staff, the labor cost inflation factor is set at 5.0%

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Capital Improvement Plan Expenditures

TABLE 10 : CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Actual		Budget		5-Year Projected Rate Period					Projected			
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32	
<b>Funding Sources:</b>													
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Use of Connection Fee Reserves	-	-	-	-	-	-	-	-	-	-	-	-	
SRF Loan Funding	-	-	-	-	-	-	-	-	-	-	-	-	
Use of Future Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-	-	
Use of Capital Rehabilitation and Replacement Reserve	443,756	1,095,007	-	18,600	27,200	24,300	23,400	177,950	479,944	733,753	918,779	1,033,383	
Rate Revenue	-	136,553	1,999,990	635,131	742,116	891,473	903,107	971,950	700,156	477,347	324,221	242,317	
<b>Total Sources of Capital Funds</b>	<b>\$ 443,756</b>	<b>\$ 1,231,560</b>	<b>\$ 1,999,990</b>	<b>\$ 653,731</b>	<b>\$ 769,316</b>	<b>\$ 915,773</b>	<b>\$ 926,507</b>	<b>\$ 1,149,900</b>	<b>\$ 1,180,100</b>	<b>\$ 1,211,100</b>	<b>\$ 1,243,000</b>	<b>\$ 1,275,700</b>	
<b>Uses of Capital Funds:</b>													
Total Project Costs	\$ 443,756	\$ 1,231,560	\$ 1,999,990	\$ 653,731	\$ 769,316	\$ 915,773	\$ 926,507	\$ 1,149,900	\$ 1,180,100	\$ 1,211,100	\$ 1,243,000	\$ 1,275,700	
<b>Capital Funding Surplus (Deficiency)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>SRF Loan Funding</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	
<b>Future Revenue Bond Proceeds</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	

CAPITAL IMPROVEMENT PROGRAM

TABLE 11 : CAPITAL IMPROVEMENT PROGRAM COSTS (in Current-Year Dollars)<sup>1</sup>

Project Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>Capital Projects</b>												
Water Treatment Facility Capital Projects	\$ 383,363	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Repair	-	700,000	783,800	354,750	443,438	554,297	692,871	-	-	-	-	-
Aquifer Storage and Recovery Project	-	-	-	-	-	-	-	-	-	-	-	-
Orion Endpoint Installation	60,393	250,000	865,000	-	-	-	-	-	-	-	-	-
Los Vaqueros / Tracy Interconnect Feasibility	-	-	-	-	-	-	-	-	-	-	-	-
Drought Contingency Funding	-	250,000	250,000	250,000	250,000	250,000	100,000	-	-	-	-	-
Alternative Water Supply Contingency	-	-	-	-	-	-	-	-	-	-	-	-
<b>Estimated Future Projects</b>												
Future Projects <sup>2</sup>	-	-	-	-	-	-	-	958,800	958,800	958,800	958,800	958,800
<b>Total: Capital Improvement Program Costs (Current-Year Dollars)</b>	<b>\$ 443,756</b>	<b>\$ 1,200,000</b>	<b>\$ 1,898,800</b>	<b>\$ 604,750</b>	<b>\$ 693,438</b>	<b>\$ 804,297</b>	<b>\$ 792,871</b>	<b>\$ 958,800</b>	<b>\$ 958,800</b>	<b>\$ 958,800</b>	<b>\$ 958,800</b>	<b>\$ 958,800</b>

TABLE 12 : CAPITAL IMPROVEMENT PROGRAM COSTS (in Future-Year Dollars)<sup>3</sup>

Project Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>Capital Projects</b>												
Water Treatment Facility Capital Projects	\$ 383,363	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Repair	-	718,410	825,570	383,482	491,960	631,123	809,652	-	-	-	-	-
Aquifer Storage and Recovery Project	-	-	-	-	-	-	-	-	-	-	-	-
Orion Endpoint Installation	60,393	256,575	911,097	-	-	-	-	-	-	-	-	-
Los Vaqueros / Tracy Interconnect Feasibility	-	-	-	-	-	-	-	-	-	-	-	-
Drought Contingency Funding	-	256,575	263,323	270,248	277,356	284,650	116,855	-	-	-	-	-
Alternative Water Supply Contingency	-	-	-	-	-	-	-	-	-	-	-	-
<b>Estimated Future Projects</b>												
Future Projects <sup>2</sup>	-	-	-	-	-	-	-	1,149,900	1,180,100	1,211,100	1,243,000	1,275,700
<b>Total: Capital Improvement Program Costs (Future-Year Dollars)</b>	<b>\$ 443,756</b>	<b>\$ 1,231,560</b>	<b>\$ 1,999,990</b>	<b>\$ 653,731</b>	<b>\$ 769,316</b>	<b>\$ 915,773</b>	<b>\$ 926,507</b>	<b>\$ 1,149,900</b>	<b>\$ 1,180,100</b>	<b>\$ 1,211,100</b>	<b>\$ 1,243,000</b>	<b>\$ 1,275,700</b>

TABLE 13 : FORECASTING ASSUMPTIONS

Economic Variables	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Construction Cost Inflation, Per Engineering News Record <sup>4</sup>	0.00%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%
Cumulative Construction Cost Multiplier from 2022	1.00	1.03	1.05	1.08	1.11	1.14	1.17	1.20	1.23	1.26	1.30	1.33

1. Capital project costs for FY 2020/21 through FY 2026/27 were provided by District staff. Source files: 4.2 - FY 2020-2021 CIP funded by rates and GF transfers.pdf, 4.3 - FY 2021-2022 CIP funded by rates and GF transfers.pdf, and UTILITY OM COSTS ANALYSIS.xlsx.

2. Future project costs for FY 2027/28 and beyond were calculated based on the City's 5-year average (2023-2027).

3. The project costs provided by the City include an annual inflation factor of 2.63% per year.

4. For reference purposes, the annual Construction Cost Inflation percentage is the 10-year average change in the Construction Cost Index for August 2010-2020 (2.63%). Source: Engineering News Record website (<http://enr.construction.com>).

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Debt Service

Exhibit 3

\*Exhibit 3 is for informational purposes only as all debt obligations are paid through the restricted pledge revenue.

TABLE 14 : EXISTING DEBT OBLIGATIONS<sup>1</sup>

EXISTING DEBT OBLIGATIONS	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Annual Repayment Schedules:</b>												
MHCSD - 2019 Utility Systems Revenue Bond <sup>2</sup>												
Principal Payment	\$ 535,000	\$ 510,000	\$ 520,000	\$ 540,000	\$ 555,000	\$ 570,000	\$ 590,000	\$ 610,000	\$ 635,000	\$ 665,000	\$ 705,000	\$ 740,000
Interest Payment	608,302	595,691	582,269	567,610	551,677	534,245	515,032	494,078	469,006	438,200	403,950	367,825
<b>Subtotal: Annual Debt Service</b>	<b>\$ 1,143,302</b>	<b>\$ 1,105,691</b>	<b>\$ 1,102,269</b>	<b>\$ 1,107,610</b>	<b>\$ 1,106,677</b>	<b>\$ 1,104,245</b>	<b>\$ 1,105,032</b>	<b>\$ 1,104,078</b>	<b>\$ 1,104,006</b>	<b>\$ 1,103,200</b>	<b>\$ 1,108,950</b>	<b>\$ 1,107,825</b>
Coverage Requirement (\$-Amnt above annual payment) <sup>3</sup>	\$ 1,257,633	\$ 1,216,260	\$ 1,212,495	\$ 1,218,371	\$ 1,217,345	\$ 1,214,670	\$ 1,215,535	\$ 1,214,485	\$ 1,214,406	\$ 1,213,520	\$ 1,219,845	\$ 1,218,608
Reserve Requirement (total fund balance) <sup>3</sup>	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363	\$ 1,148,363
MHCSD - 2020 Utility Systems Revenue Bonds <sup>4</sup>												
Principal Payment	\$ -	\$ -	\$ 105,000	\$ 180,000	\$ 270,000	\$ 360,000	\$ 455,000	\$ 560,000	\$ 665,000	\$ 765,000	\$ 880,000	\$ 1,005,000
Interest Payment	1,520,040	2,581,200	2,579,100	2,573,400	2,564,400	2,551,800	2,535,500	2,515,200	2,490,700	2,462,100	2,429,200	2,391,500
<b>Subtotal: Annual Debt Service</b>	<b>\$ 1,520,040</b>	<b>\$ 2,581,200</b>	<b>\$ 2,684,100</b>	<b>\$ 2,753,400</b>	<b>\$ 2,834,400</b>	<b>\$ 2,911,800</b>	<b>\$ 2,990,500</b>	<b>\$ 3,075,200</b>	<b>\$ 3,155,700</b>	<b>\$ 3,227,100</b>	<b>\$ 3,309,200</b>	<b>\$ 3,396,500</b>
Coverage Requirement (\$-Amnt above annual payment) <sup>5</sup>	\$ 1,672,044	\$ 2,839,320	\$ 2,952,510	\$ 3,028,740	\$ 3,117,840	\$ 3,202,980	\$ 3,289,550	\$ 3,382,720	\$ 3,471,270	\$ 3,549,810	\$ 3,640,120	\$ 3,736,150
Reserve Requirement (total fund balance) <sup>5</sup>	\$ 4,173,667	\$ 4,281,935	\$ 4,334,706	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,347,400	\$ 4,241,390
<b>Grand Total: Existing Annual Debt Service</b>	<b>\$ 2,663,342</b>	<b>\$ 3,686,891</b>	<b>\$ 3,786,369</b>	<b>\$ 3,861,010</b>	<b>\$ 3,941,077</b>	<b>\$ 4,016,045</b>	<b>\$ 4,095,532</b>	<b>\$ 4,179,278</b>	<b>\$ 4,259,706</b>	<b>\$ 4,330,300</b>	<b>\$ 4,418,150</b>	<b>\$ 4,504,325</b>
<b>Grand Total: Existing Annual Coverage Requirement</b>	<b>\$ 2,929,677</b>	<b>\$ 4,055,580</b>	<b>\$ 4,165,005</b>	<b>\$ 4,247,111</b>	<b>\$ 4,335,185</b>	<b>\$ 4,417,650</b>	<b>\$ 4,505,085</b>	<b>\$ 4,597,205</b>	<b>\$ 4,685,676</b>	<b>\$ 4,763,330</b>	<b>\$ 4,859,965</b>	<b>\$ 4,954,758</b>
<b>Grand Total: Existing Debt Reserve Target</b>	<b>\$ 5,322,030</b>	<b>\$ 5,430,297</b>	<b>\$ 5,483,069</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,495,763</b>	<b>\$ 5,389,753</b>

1. Per District Staff, all debt obligations are funded with revenue sources placed on the tax roll.
2. The repayment schedule was provided by District staff. The water utility portion is 50%, or \$16,805,000 (Principal). Source file: 6.1 - Repayment schedules - bonded debt 2019 A&B & 2020 A&B Future maturities.xlsx.
3. Coverage and reserve requirements were provided by the District. Source file: 8. 2019 Revenue Bond POS.pdf , pages 10 & 23.
4. The repayment schedule was provided by District staff. The water utility portion is 50%, or \$44,860,000 (Principal). Source file: 6.1 - Repayment schedules - bonded debt 2019 A&B & 2020 A&B Future maturities.xlsx.
5. Coverage and reserve requirements were provided by the District. Source file: 2020 Final Official Statement.pdf , pages 25-26.

TABLE 15 : EXISTING ANNUAL DEBT OBLIGATIONS TO BE SATISFIED BY WATER RATES

Annual Obligations	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Existing Annual Debt Service	\$ 2,663,342	\$ 3,686,891	\$ 3,786,369	\$ 3,861,010	\$ 3,941,077	\$ 4,016,045	\$ 4,095,532	\$ 4,179,278	\$ 4,259,706	\$ 4,330,300	\$ 4,418,150	\$ 4,504,325
Existing Annual Coverage Requirement	\$ 2,929,677	\$ 4,055,580	\$ 4,165,005	\$ 4,247,111	\$ 4,335,185	\$ 4,417,650	\$ 4,505,085	\$ 4,597,205	\$ 4,685,676	\$ 4,763,330	\$ 4,859,965	\$ 4,954,758
Existing Debt Reserve Target	\$ 5,322,030	\$ 5,430,297	\$ 5,483,069	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,495,763	\$ 5,389,753

**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Projected Water Rates Under Existing Rate Schedule**

**TABLE 16 : CURRENT WATER RATE SCHEDULE**

Water Rate Schedule	Current Rates
<i>Projected Increase in Rate Revenue per Financial Plan:</i>	
<b>Monthly Fixed Service Charges</b>	
<b>Single Family Residential:</b>	
Low Density	\$26.11
Medium Density	\$19.65
<b>Non-Residential:</b>	
5/8 inch meter	\$33.80
3/4 inch meter	\$48.24
1 inch meter	\$77.14
1.5 inch meter	\$149.36
2 inch meter	\$236.04
3 inch meter	\$467.17
4 inch meter	\$727.19
6 inch meter	\$1,449.46
8 inch meter	\$2,316.20
<b>Fire Meters:</b>	
5/8 inch meter	\$5.31
8 inch meter	\$61.06
<b>Commodity Charges for All Water Consumed (in \$/hcf)<sup>2</sup></b>	
Single Family Residential	\$0.9033
All Non-Residential/Fire Accounts	\$0.9391

1. Rates available on the District website. Source: <https://www.mountainhousecsd.org>.

2. HCF = hundred cubic feet (748 gallons).

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Cost of Service Analysis

TABLE 17 : CLASSIFICATION OF EXPENSES FOR COST OF SERVICE ANALYSIS

Classification of Expenses Budget Categories	Total Revenue Requirements FY 2022/23	Volumetric		Fixed		Basis of Classification			
		Commodity	Capacity	Customer	Fire Protection	COM	CAP	CA	FP
		COM	CAP	CA	FP	COM	CAP	CA	FP
<b>WATER FUND</b>									
<b>Personnel Services</b>									
Personnel	\$ 565,433	\$ -	\$ 536,534	\$ 28,272	\$ 627	0.0%	94.9%	5.0%	0.1%
Labor Allocation	213,785	-	202,858	10,689	237	0.0%	94.9%	5.0%	0.1%
<b>Engineering</b>									
Engineering Misc (Consultant)	75,000	-	71,167	3,750	83	0.0%	94.9%	5.0%	0.1%
GIS Monitoring	6,280	-	5,959	314	7	0.0%	94.9%	5.0%	0.1%
<b>Regulatory/Compliance</b>									
State Health Department/SWRCB	28,389	-	26,938	1,419	31	0.0%	94.9%	5.0%	0.1%
Engineering Misc (Consultant)	20,000	-	18,978	1,000	22	0.0%	94.9%	5.0%	0.1%
Permits & Fees	5,672	-	5,382	284	6	0.0%	94.9%	5.0%	0.1%
<b>Operations and Maintenance</b>									
Communications	4,153	-	3,941	208	5	0.0%	94.9%	5.0%	0.1%
Maint & Repairs Distribution System	60,500	-	57,408	3,025	67	0.0%	94.9%	5.0%	0.1%
Maint Structures & Grounds	166,980	-	158,446	8,349	185	0.0%	94.9%	5.0%	0.1%
Landscaping	47,658	-	45,222	2,383	53	0.0%	94.9%	5.0%	0.1%
Chemicals	338,800	338,800	-	-	-	100.0%	0.0%	0.0%	0.0%
Utilities - Electricity	420,000	420,000	-	-	-	100.0%	0.0%	0.0%	0.0%
Utilities- Water	940,000	940,000	-	-	-	100.0%	0.0%	0.0%	0.0%
Irrigation Water	8,000	-	7,591	400	9	0.0%	94.9%	5.0%	0.1%
Professional Services	1,222,155	-	1,159,691	61,108	1,356	0.0%	94.9%	5.0%	0.1%
Technology/Web/Computer	25,750	-	24,434	1,288	29	0.0%	94.9%	5.0%	0.1%
Security Services	-	-	-	-	-	0.0%	94.9%	5.0%	0.1%
<b>Grand Total: Water Fund Operations</b>	<b>\$ 4,148,555</b>	<b>\$ 1,698,800</b>	<b>\$ 2,324,550</b>	<b>\$ 122,488</b>	<b>\$ 2,717</b>	<b>41%</b>	<b>56%</b>	<b>3%</b>	<b>0.1%</b>

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Cost of Service Analysis

TABLE 18 : CLASSIFICATION OF EXPENSES FOR COST OF SERVICE ANALYSIS, cont.

Classification of Expenses Budget Categories	Total Revenue Requirements FY 2022/23	Volumetric		Fixed		Basis of Classification			
		Commodity	Capacity	Customer	Fire Protection	COM	CAP	CA	FP
		COM	CAP	CA	FP	COM	CAP	CA	FP
<b>Capital Expenditures</b>									
Rate Funded Capital Expenses	\$ 1,999,990	\$ -	\$ 1,999,990	\$ -	\$ -	0%	100%	0%	0%
<b>TOTAL REVENUE REQUIREMENTS</b>	<b>\$ 6,148,546</b>	<b>\$ 1,698,800</b>	<b>\$ 4,324,540</b>	<b>\$ 122,488</b>	<b>\$ 2,717</b>	<b>28%</b>	<b>70%</b>	<b>2%</b>	<b>0%</b>
<i>Less: Non-Rate Revenues</i>									
Interest Earnings	\$ (8,962)	\$ (2,476)	\$ (6,303)	\$ (179)	\$ (4)	28%	70%	2%	0%
All Other Operating Revenue	(33,601)	(9,284)	(23,633)	(669)	(15)	28%	70%	2%	0%
<b>NET REVENUE REQUIREMENTS</b>	<b>\$ 6,105,983</b>	<b>\$ 1,687,040</b>	<b>\$ 4,294,604</b>	<b>\$ 121,640</b>	<b>\$ 2,699</b>				
<i>Allocation of Revenue Requirements</i>	<i>100.0%</i>	<i>27.6%</i>	<i>70.3%</i>	<i>2.0%</i>	<i>0.0%</i>				

Net Revenue Req't. Check from Financial Plan \$ -

TABLE 19 : ADJUSTMENT TO CLASSIFICATION OF EXPENSES FOR COST-OF-SERVICE ANALYSIS

Adjustments to Classification of Expenses					
Adjustment for Current Rate Level:	Total	COM	CAP	CA	FP
Target Rate Rev. After Rate Increases*	\$ 4,830,845				
Projected Rate Revenue at Current Rates	\$ 4,514,809				
Rate Increase (FY 2022/23)	7.0%				
<b>Adjusted Net Revenue Req'ts</b>	<b>\$ 4,830,845</b>	<b>\$ 1,334,729</b>	<b>\$ 3,397,744</b>	<b>\$ 96,237</b>	<b>\$ 2,135</b>
<i>Percent of Revenue</i>		<i>27.6%</i>	<i>70.3%</i>	<i>2.0%</i>	<i>0.0%</i>

\* Proposed rates are effective July 1st each year.

Existing Allocation of Fixed vs. Variable Charges	Total	Allocation
Fixed Charges	\$ 2,066,673	57%
Variable Charges	1,582,097	43%
<b>Total</b>	<b>\$ 3,648,770</b>	<b>100%</b>

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Water Cost of Service Analysis

TABLE 20 : DEVELOPMENT OF THE COMMODITY ALLOCATION FACTORS

Development of the BASE COMMODITY Allocation Factor		
Customer Class	FY 2020/21 Volume <sup>1</sup>	Percent of Total Volume
Single Family Residential - Low Density	691,266	34.7%
Single Family Residential - Med Density	758,364	38.1%
Multi-Family Residential	292,045	14.7%
Irrigation	249,169	12.5%
Fire Protection	273	0.0%
<b>Grand Total</b>	<b>1,991,116</b>	<b>100%</b>

1. Consumption rates and customer class from Source file: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021.xlsx .

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

TABLE 21 : DEVELOPMENT OF THE CAPACITY ALLOCATION FACTORS

Development of the PEAK CAPACITY (MAX MONTH) Allocation Factors				
Customer Class	Average Monthly Use (hcf)	Peak Monthly Use (hcf) <sup>1</sup>	Peak Month Factor	Max Month Capacity Factor
Single Family Residential - Low Density	57,605	80,425	1.40	30.7%
Single Family Residential - Med Density	63,197	92,214	1.46	35.2%
Multi-Family Residential	24,337	44,941	1.85	17.1%
Irrigation	20,764	44,665	2.15	17.0%
Fire Protection	23	81	3.56	0.0%
<b>Grand Total</b>	<b>165,926</b>	<b>262,325</b>	<b>1.58</b>	<b>100%</b>

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

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

TABLE 22 : DEVELOPMENT OF THE CUSTOMER ALLOCATION FACTORS

Development of the Customer Allocation Factor		
Customer Class	Number of Meters <sup>1</sup>	Percent of Total
Single Family Residential - Low Density	2,808	38.9%
Single Family Residential - Med Density	4,160	57.7%
Multi-Family Residential	117	1.6%
Irrigation	119	1.7%
Fire Protection	8	0.1%
<b>Grand Total</b>	<b>7,212</b>	<b>100%</b>

1. Number of meters and customer class from source file: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021.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.



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Water Cost of Service Analysis/Rate Design

TABLE 23 : ALLOCATION OF WATER REVENUE REQUIREMENTS

Classification Components	Allocation of Net Revenue Requirements (2022/23)		Proposed Rates	
			Adjusted Net Revenue Requirements (2022/23)	
Volumetric-Related Costs				
Commodity	\$ 1,334,729	27.6%	\$ 1,334,729	27.6%
Capacity-Related Costs (variable allocation)	-	0.0%	356,067	7.4%
<b>Subtotal: Volumetric-Related Costs</b>	<b>\$ 1,334,729</b>	<b>27.6%</b>	<b>\$ 1,690,796</b>	<b>35.0%</b>
Capacity-Related Costs (fixed allocation)	\$ 3,397,744	70.3%	\$ 3,041,677	63.0%
Customer-Related Costs	96,237	2.0%	96,237	2.0%
Fire Protection-Related Costs	2,135	0.0%	2,135	0.0%
<b>Subtotal: Fixed-Related Costs</b>	<b>\$ 3,496,117</b>	<b>72.4%</b>	<b>\$ 3,140,049</b>	<b>65.0%</b>
<b>Net Revenue Requirement</b>	<b>\$ 4,830,845</b>	<b>100%</b>	<b>\$ 4,830,845</b>	<b>100%</b>
	<i>Unadjusted Net Rev. Req'ts.</i>		<i>Adjusted Net Rev. Req'ts.</i>	
	<i>total variable</i>	28%	<i>total variable</i>	35%
	<i>total fixed</i>	72%	<i>total fixed</i>	65%

TABLE 24 : ALLOCATION OF REVENUE REQUIREMENTS BY CUSTOMER CLASS

Customer Class	Proposed Rates	
	COS Allocated Rates FY 2022/23	
	COS Rev. Req't	% of COS Rev. Req't.
Single Family Residential - Low Density	\$ 1,542,547	31.9%
Single Family Residential - Med Density	1,758,263	36.4%
Multi-Family Residential	779,426	16.1%
Irrigation	747,136	15.5%
Fire Protection	3,474	0.1%
<b>Total</b>	<b>\$ 4,830,845</b>	<b>100%</b>

TABLE 25 : METER EQUIVALENCY FACTORS USED IN FIXED CHARGE CALCULATION

Meter Size	Standard Meters		Fire Meters	
	Meter Capacity (gpm) <sup>1</sup>	Equivalency to 3/4 inch	Meter Capacity (gpm) <sup>2</sup>	Equivalency to 3/4 inch
	<i>Displacement Meters</i>		<i>Displacement Meters</i>	
5/8 inch	20	1.00	20	1.00
3/4 inch	30	1.50	30	1.50
1 inch	50	2.50	50	2.50
1.5 inch	100	5.00	100	5.00
2 inch	160	8.00	160	8.00
	<i>Compound Class I Meters</i>		<i>Fire Service Type I &amp; II Meters</i>	
3 inch	320	16.00	350	17.50
4 inch	500	25.00	700	35.00
6 inch	1,000	50.00	1,600	80.00
8 inch	1,600	80.00	2,800	140.00
	<i>Turbine Class II Meters</i>			
10 inch	4,200	210.00	4,400	220.00
12 inch	5,300	265.00	N/A	--

1. Per AWWA M-1, Table VII.2-5.
2. Per AWWA M-6, Table 5-3.

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
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TABLE 26 : ALLOCATION OF ADJUSTED NET REVENUE REQUIREMENTS - FY 2022/23

Proposed Rates - Adjusted Net Revenue Requirements (65% fixed / 35% variable)							
Customer Class	Cost Classification Components					Cost of Service Net Rev. Req'ts	% of COS Net Revenue Req'ts
	Commodity	Capacity (Variable Allocation)	Capacity (Fixed Allocation)	Customer	Fire Protection		
Single Family Residential - Low Density	\$ 463,384	\$ 109,164	\$ 932,528	\$ 37,470	\$ -	\$ 1,542,547	31.9%
Single Family Residential - Med Density	508,363	125,166	1,069,222	55,511	-	1,758,263	36.4%
Multi-Family Residential	195,770	61,001	521,094	1,561	-	779,426	16.1%
Irrigation	167,028	60,626	517,893	1,588	-	747,136	15.5%
Fire Protection	183	110	939	107	2,135	3,474	0.1%
<b>Total</b>	<b>\$ 1,334,729</b>	<b>\$ 356,067</b>	<b>\$ 3,041,677</b>	<b>\$ 96,237</b>	<b>\$ 2,135</b>	<b>\$ 4,830,845</b>	<b>100.0%</b>
<b>Total Volumetric and Fixed Rate Revenue</b>	<b>\$1,690,796</b>		<b>\$3,140,049</b>			<b>\$ 4,830,845</b>	<b>100.0%</b>

TABLE 27 : CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES

Number of Meters By Class	Number of Meters	Proposed Rates			
		Capacity (Fixed Allocation)	Customer	Target Rev. Req't from Fixed Charges	Fixed Monthly Rate
Single Family Residential - Low Density	2,808	\$ 932,528	\$ 37,470	\$ 969,998	\$28.79
Single Family Residential - Med Density	4,160	\$ 1,069,222	\$ 55,511	\$ 1,124,734	\$22.53

TABLE 28 : CALCULATION OF MONTHLY FIRE METER SERVICE CHARGES

Number of Meters by Class and Size <sup>1</sup>	Proposed Rates - Adjusted Net Revenue Requirements (65% fixed / 35% variable)										Total
	FY 2022/23										
	5/8 inch	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Multi-Family Residential	2	2	1	21	78	3	5	1	4	0	117
Irrigation	23	2	20	4	67	0	2	1	0	0	119
<b>Total Meters/Accounts</b>	<b>25</b>	<b>4</b>	<b>21</b>	<b>25</b>	<b>145</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>236</b>
Hydraulic Capacity Factor <sup>2</sup>	1.00	1.50	2.50	5.00	8.00	17.50	35.00	80.00	140.00	220.00	
<b>Total Equivalent Meters</b>	<b>25</b>	<b>6</b>	<b>53</b>	<b>125</b>	<b>1,160</b>	<b>53</b>	<b>245</b>	<b>160</b>	<b>560</b>	<b>0</b>	<b>2,386</b>
<b>Monthly Fixed Service Charges</b>											
Customer Costs (\$/Acct/mo.) <sup>3</sup>	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	
Capacity Costs (\$/Acct/mo.) <sup>4</sup>	\$36.29	\$54.43	\$90.72	\$181.44	\$290.30	\$635.03	\$1,270.07	\$2,903.01	\$5,080.27	\$7,983.28	
<b>Total Monthly Meter Charge</b>	<b>\$37.40</b>	<b>\$55.54</b>	<b>\$91.83</b>	<b>\$182.55</b>	<b>\$291.41</b>	<b>\$636.15</b>	<b>\$1,271.18</b>	<b>\$2,904.12</b>	<b>\$5,081.38</b>	<b>\$7,984.39</b>	
<b>Annual Fixed Costs Allocated to Monthly Meter Charges</b>											
Customer Costs	\$ 3,149										
Capacity Costs	1,038,987										
<b>Total Fixed Meter Costs</b>	<b>\$ 1,042,136</b>										
<b>Annual Revenue from Monthly Meter Charges</b>											
Customer Charges	\$ 334	\$ 53	\$ 280	\$ 334	\$ 1,935	\$ 40	\$ 93	\$ 27	\$ 53	\$ -	\$ 3,149
Capacity Charges	\$ 10,886	\$ 2,613	\$ 22,861	\$ 54,431	\$ 505,124	\$ 22,861	\$ 106,686	\$ 69,672	\$ 243,853	\$ -	\$ 1,038,987
<b>Total Revenue from Monthly Meter Charges</b>	<b>\$ 11,220</b>	<b>\$ 2,666</b>	<b>\$ 23,141</b>	<b>\$ 54,765</b>	<b>\$ 507,059</b>	<b>\$ 22,901</b>	<b>\$ 106,779</b>	<b>\$ 69,699</b>	<b>\$ 243,906</b>	<b>\$ -</b>	<b>\$ 1,042,136</b>

1. Number of meters by size and class are from source file: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021.xlsx.

2. Source: AWWA Manual M1, Principles of Water Rates, Fees and Charges, Table VII.2-5. Assumes displacement meters for 5/8- to 2-inch meters, Compound for 3- to 8-inch meters, and Turbine for 10-inch, unless noted otherwise.

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.

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
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TABLE 29 : CALCULATION OF MONTHLY FIXED METER SERVICE CHARGES

Proposed Rates - Adjusted Net Revenue Requirements (65% fixed / 35% variable)

Number of Meters by Class and Size <sup>1</sup>	FY 2022/23										Total
	5/8 inch	3/4 inch	1 inch	1.5 inch	2 inch	3 inch	4 inch	6 inch	8 inch	10 inch	
Fire Protection	2	0	0	0	0	0	0	0	6	0	8
<b>Total Meters/Accounts</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>8</b>
Hydraulic Capacity Factor <sup>2</sup>	1.00	1.50	2.50	5.00	8.00	16.00	25.00	50.00	80.00	210.00	
<b>Total Equivalent Meters</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>480</b>	<b>0</b>	<b>482</b>
<b>Monthly Fixed Service Charges</b>											
Customer Costs (\$/Acct/mo.) <sup>3</sup>	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	\$1.11	
Capacity Costs (\$/Acct/mo.) <sup>4</sup>	\$0.53	\$0.80	\$1.33	\$2.66	\$4.25	\$8.50	\$13.29	\$26.58	\$42.52	\$111.62	
<b>Total Monthly Meter Charge</b>	<b>\$1.64</b>	<b>\$1.91</b>	<b>\$2.44</b>	<b>\$3.77</b>	<b>\$5.36</b>	<b>\$9.62</b>	<b>\$14.40</b>	<b>\$27.69</b>	<b>\$43.63</b>	<b>\$112.73</b>	
<b>Annual Fixed Costs Allocated to Monthly Meter Charges</b>											
Customer Costs	\$ 107										
Capacity and Fire Protection Costs	3,074										
<b>Total Fixed Meter Costs</b>	<b>\$ 3,181</b>										
<b>Annual Revenue from Monthly Meter Charges</b>											
Customer Charges	\$ 27	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 80	\$ -	\$ 107
Capacity and Fire Protection Charges	\$ 13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,061	\$ -	\$ 3,074
<b>Total Revenue from Monthly Meter Charges</b>	<b>\$ 39</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 3,142</b>	<b>\$ -</b>	<b>\$ 3,181</b>

1. Number of meters by size and class are from source file: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021.xlsx .

2. Source: AWWA Manual M1, Principles of Water Rates, Fees and Charges , Table VII.2-5. Assumes displacement meters for 5/8- to 2-inch meters, Compound for 3- to 8-inch meters, and Turbine for 10-inch, unless noted otherwise.

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.

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
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TABLE 30 : PROPOSED VOLUMETRIC CHARGES

<b>Proposed Rates - Adjusted Net Revenue Requirements (65% fixed / 35% variable)</b>						
Rate Structure Type	Number of Meters <sup>1</sup>	Water Consumption (hcf/yr.)	Commodity Assigned Costs	Capacity Assigned Costs	Target Rev. Req't from Vol. Charges	Uniform Commodity Rates (\$/hcf)
Single Family Residential - Low Density	2,808	691,266	\$ 463,384	\$ 109,164	\$ 572,549	\$0.8320
Single Family Residential - Med Density	4,160	758,364	508,363	125,166	633,529	
All Other Meters	244	541,487	362,981	121,737	484,718	\$0.8952
<b>Total</b>	<b>7,212</b>	<b>1,991,116</b>	<b>\$ 1,334,729</b>	<b>\$ 356,067</b>	<b>\$ 1,690,796</b>	--

1. Meter counts and customer class from source file: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021.xlsx.

TABLE 31 : COMPARISON OF PREVIOUS WATER CONSUMPTION DATA USED FOR VOLUMETRIC RATES

<b>Comparison of Previous Water Consumption Data Used for Volumetric Rates:</b>					
Summary of Consumption by Class	Consumption (hcf/year)	Accounts	Avg. hcf/month (FY 2020/21)		
			Winter	Annual	Summer
<b>Single Family Residential - Low Density</b>					
SFR - Low Density (2020)	691,266	2,808	15	21	45
SFR - Low Density (2017)	366,539	1,779	10	17	26
SFR - Low Density (2020 vs. 2017)	89%	58%	45%	19%	74%
<b>Single Family Residential - Medium Density</b>					
SFR - Medium Density (2020)	758,364	4,160	12	15	34
SFR - Medium Density (2017)	421,726	2,764	8	12	18
SFR - Medium Density (2020 vs. 2017)	80%	51%	46%	23%	91%

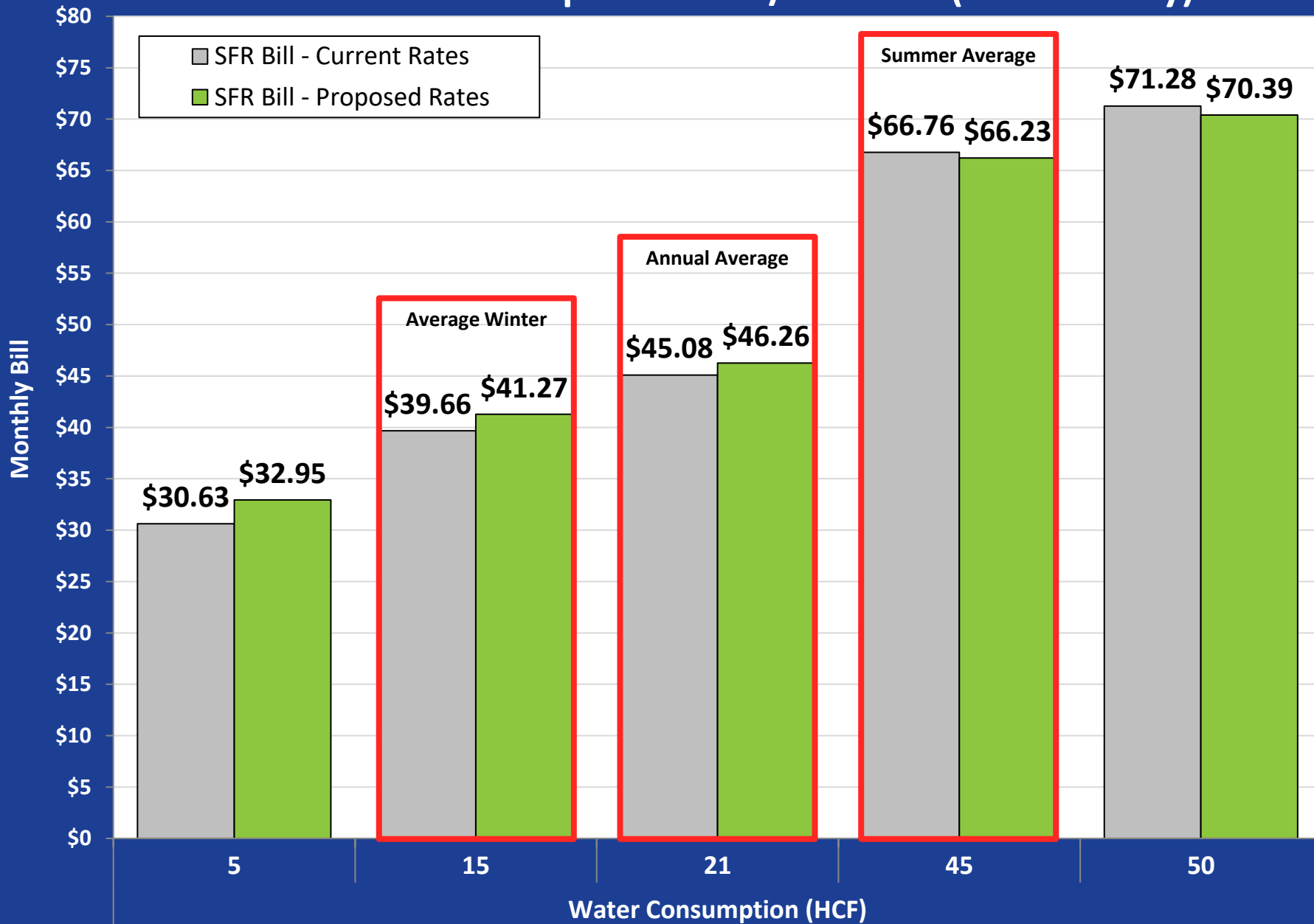
MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
WATER RATE STUDY  
Water Cost of Service Analysis/Rate Design

TABLE 32 : CURRENT VS. PROPOSED WATER RATES

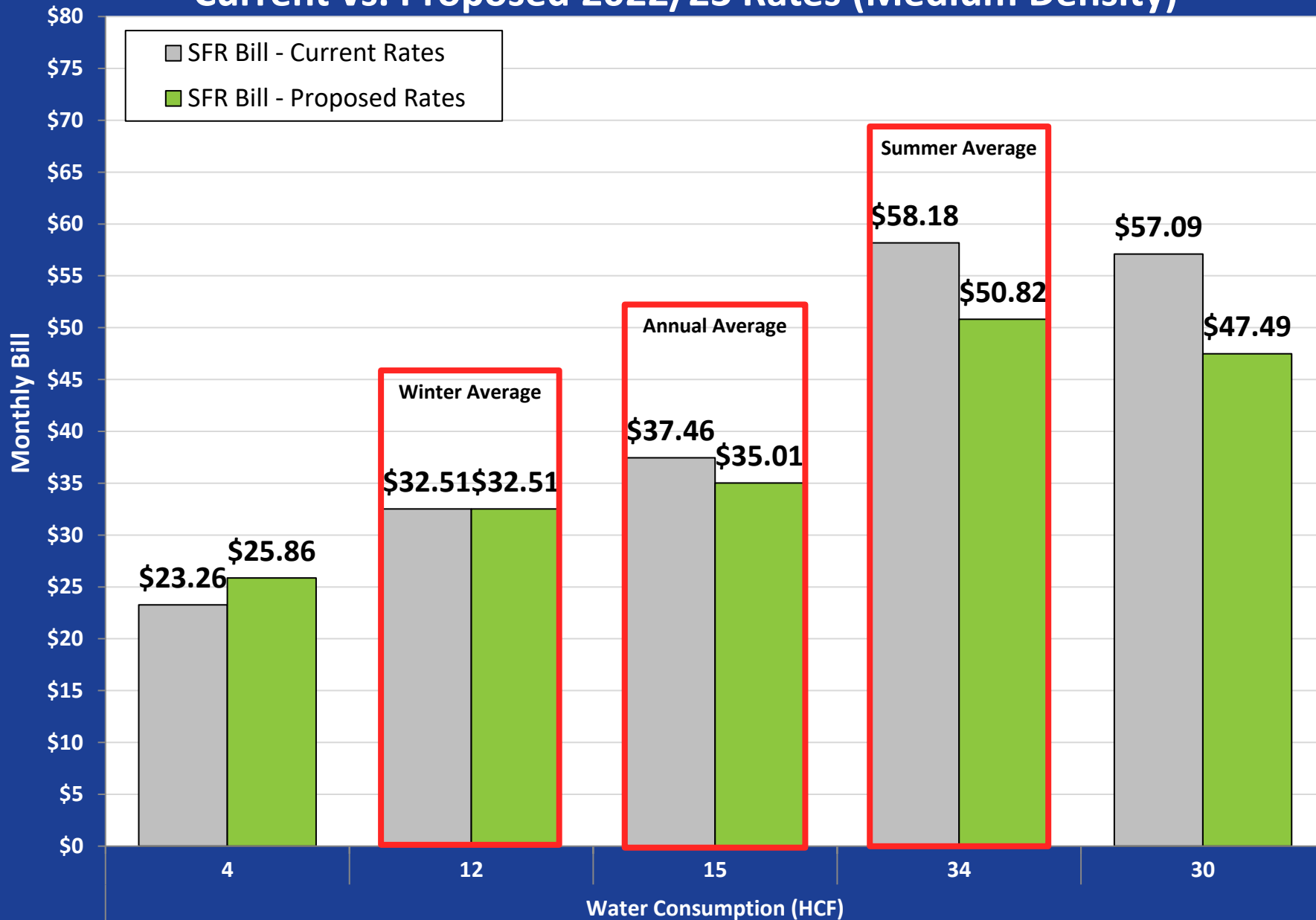
<b>Proposed Rates - Adjusted Net Revenue Requirements (65% fixed / 35% variable)</b>						
Water Rate Schedule	Current Rates	Proposed Water Rates				
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<i>Projected Increase in Rate Revenue per Financial Plan:</i>		7.00%	7.00%	7.00%	5.00%	5.00%
<b>Monthly Fixed Service Charges</b>						
<b>Single Family Residential:</b>						
Low Density	\$26.11	\$28.79	\$30.80	\$32.96	\$34.61	\$36.34
Medium Density	\$19.65	\$22.53	\$24.11	\$25.80	\$27.09	\$28.44
<b>All Other Customers:</b>						
5/8 inch meter	\$33.80	\$37.40	\$40.02	\$42.82	\$44.96	\$47.21
3/4 inch meter	\$48.24	\$55.54	\$59.43	\$63.59	\$66.77	\$70.11
1 inch meter	\$77.14	\$91.83	\$98.26	\$105.14	\$110.39	\$115.91
1.5 inch meter	\$149.36	\$182.55	\$195.33	\$209.00	\$219.45	\$230.42
2 inch meter	\$236.04	\$291.41	\$311.81	\$333.64	\$350.32	\$367.84
3 inch meter	\$467.17	\$636.15	\$680.68	\$728.32	\$764.74	\$802.98
4 inch meter	\$727.19	\$1,271.18	\$1,360.16	\$1,455.37	\$1,528.14	\$1,604.55
6 inch meter	\$1,449.46	\$2,904.12	\$3,107.41	\$3,324.93	\$3,491.18	\$3,665.73
8 inch meter	\$2,316.20	\$5,081.38	\$5,437.08	\$5,817.67	\$6,108.55	\$6,413.98
<b>Fire Meters:</b>						
5/8 inch meter	\$5.31	\$1.64	\$1.76	\$1.88	\$1.98	\$2.07
8 inch meter	\$61.06	\$43.63	\$46.69	\$49.96	\$52.45	\$55.08
<b>Commodity Charges for All Water Consumed (in \$/hcf) <sup>1</sup></b>						
Single Family Residential	\$0.9033	\$0.8320	\$0.8902	\$0.9525	\$1.0002	\$1.0502
All Other Customers/Fire Accounts	\$0.9391	\$0.8952	\$0.9578	\$1.0249	\$1.0761	\$1.1299

1. HCF = hundred cubic feet (748 gallons).

## Residential Water Bill Comparison Current vs. Proposed 2022/23 Rates (Low Density)

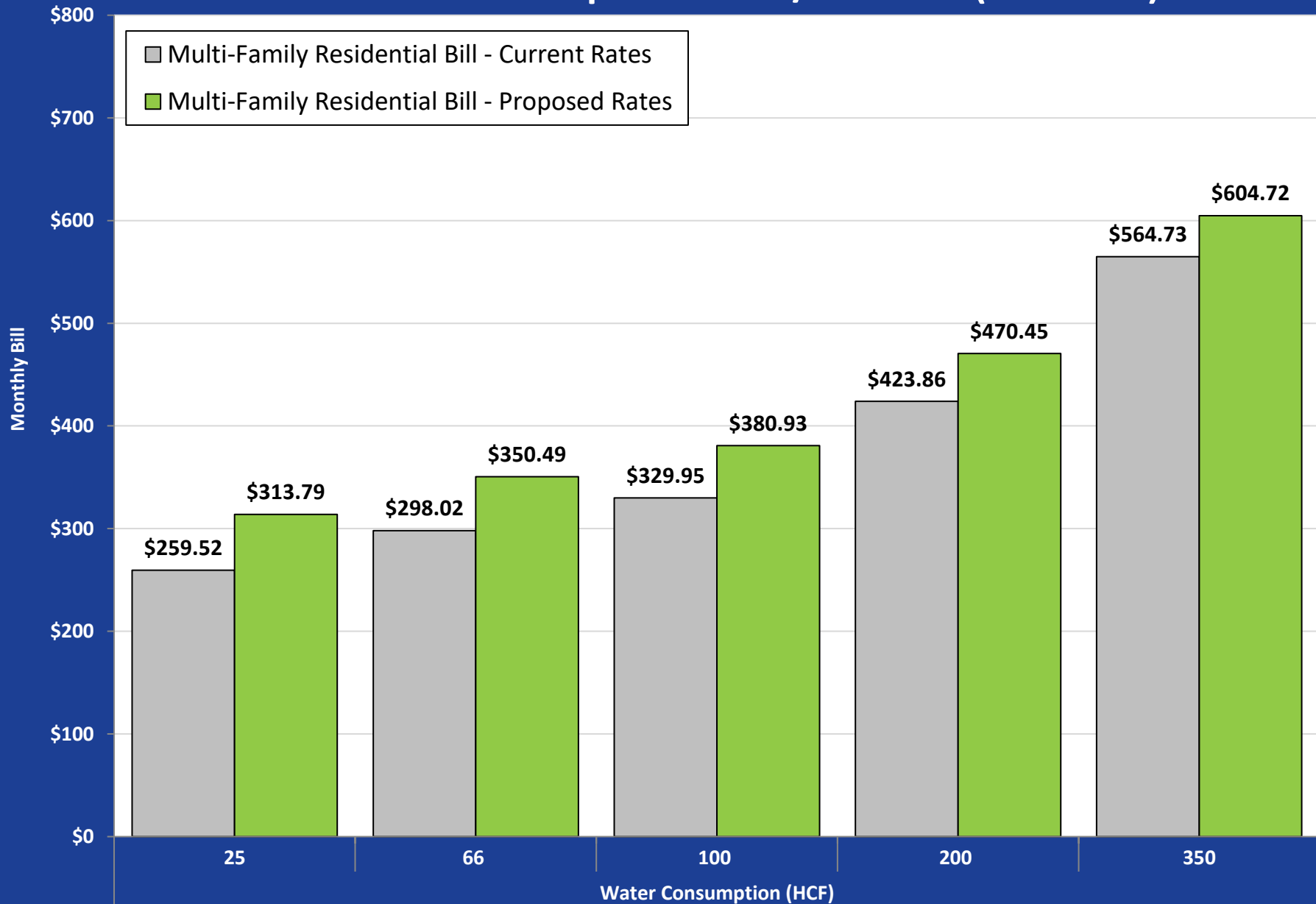


## Residential Water Bill Comparison Current vs. Proposed 2022/23 Rates (Medium Density)

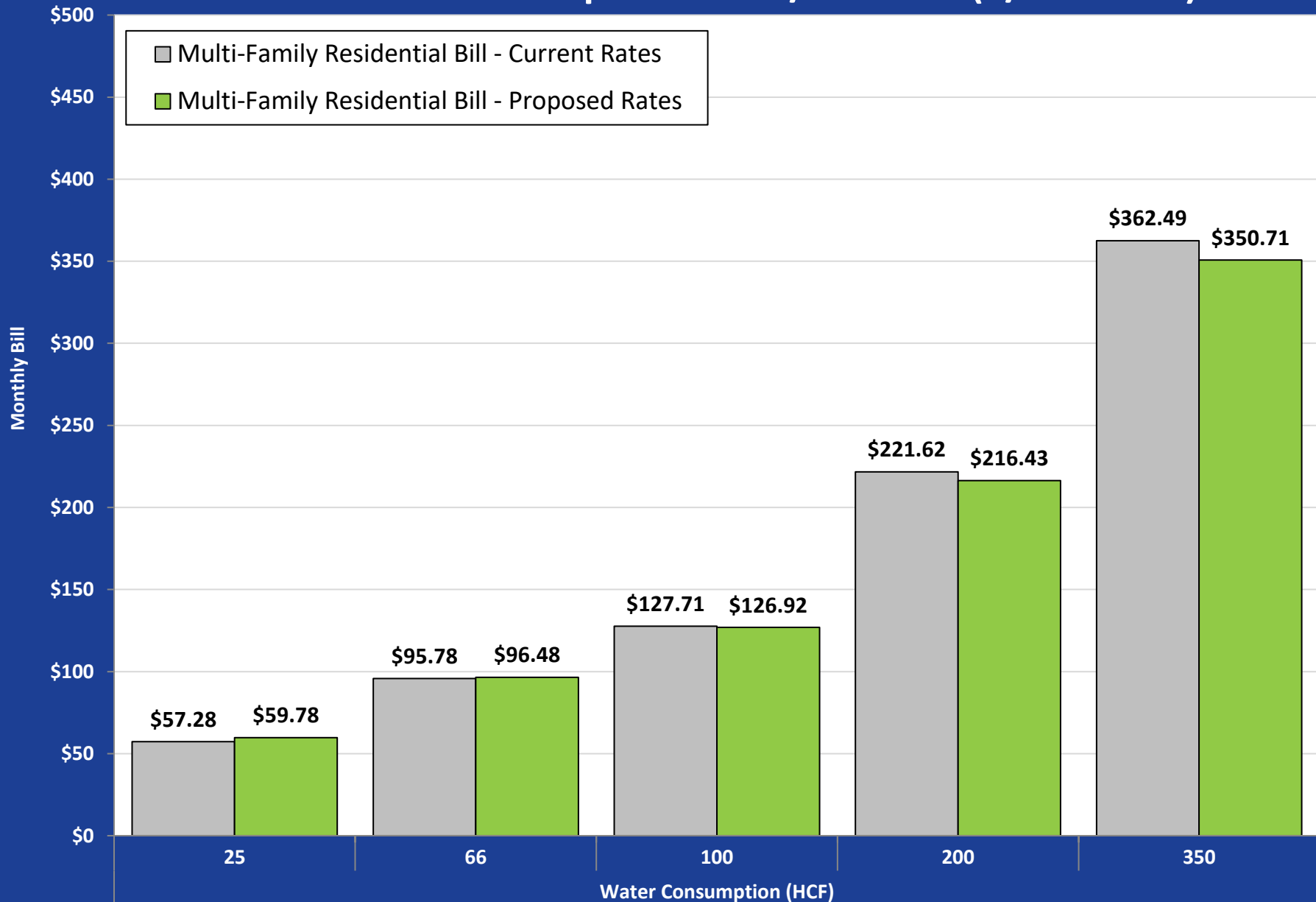




# Multi-Family Residential Water Bill Comparison Current vs. Proposed 2022/23 Rates (2" Meter)



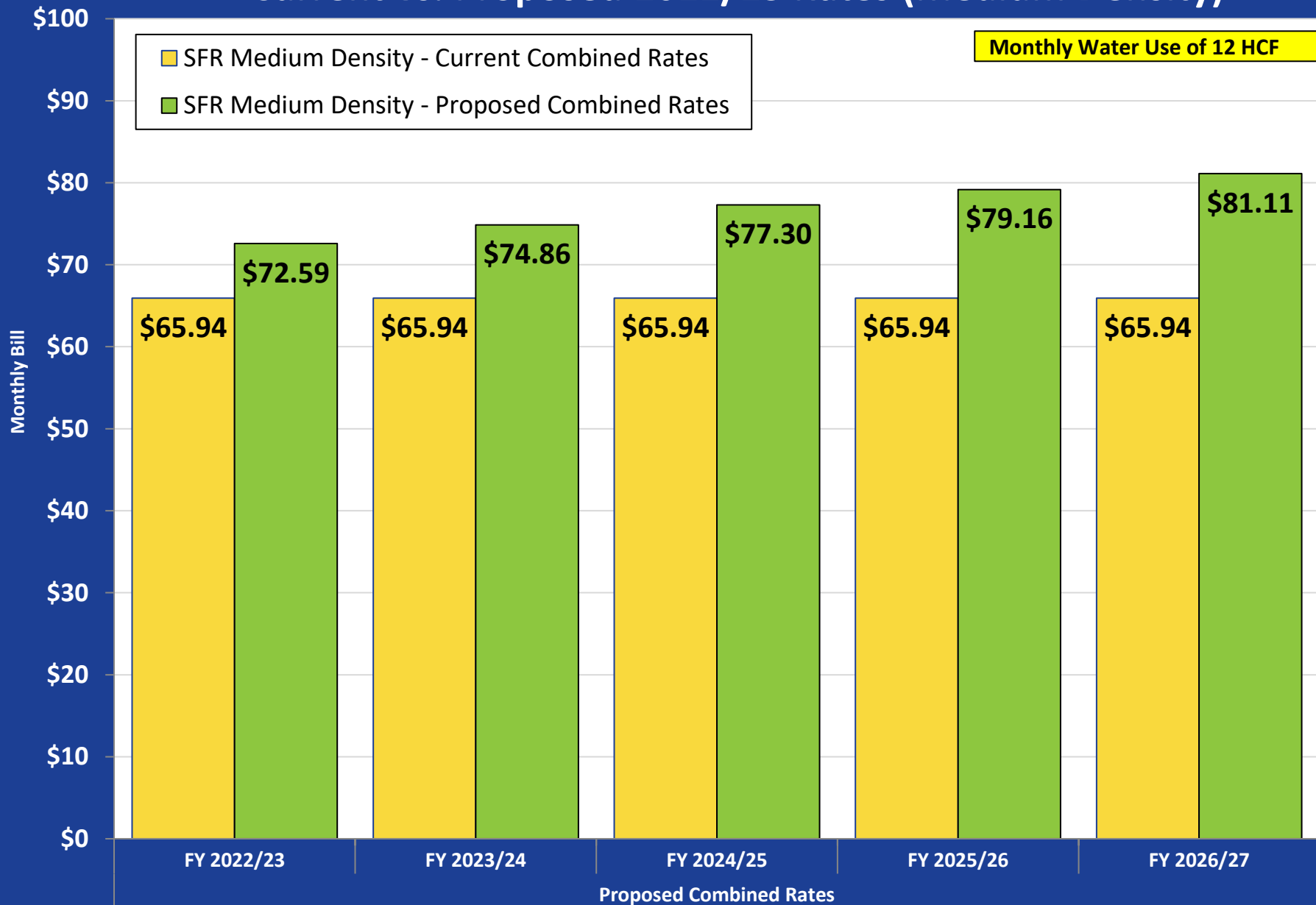
## Multi-Family Residential Water Bill Comparison Current vs. Proposed 2022/23 Rates (5/8" Meter)



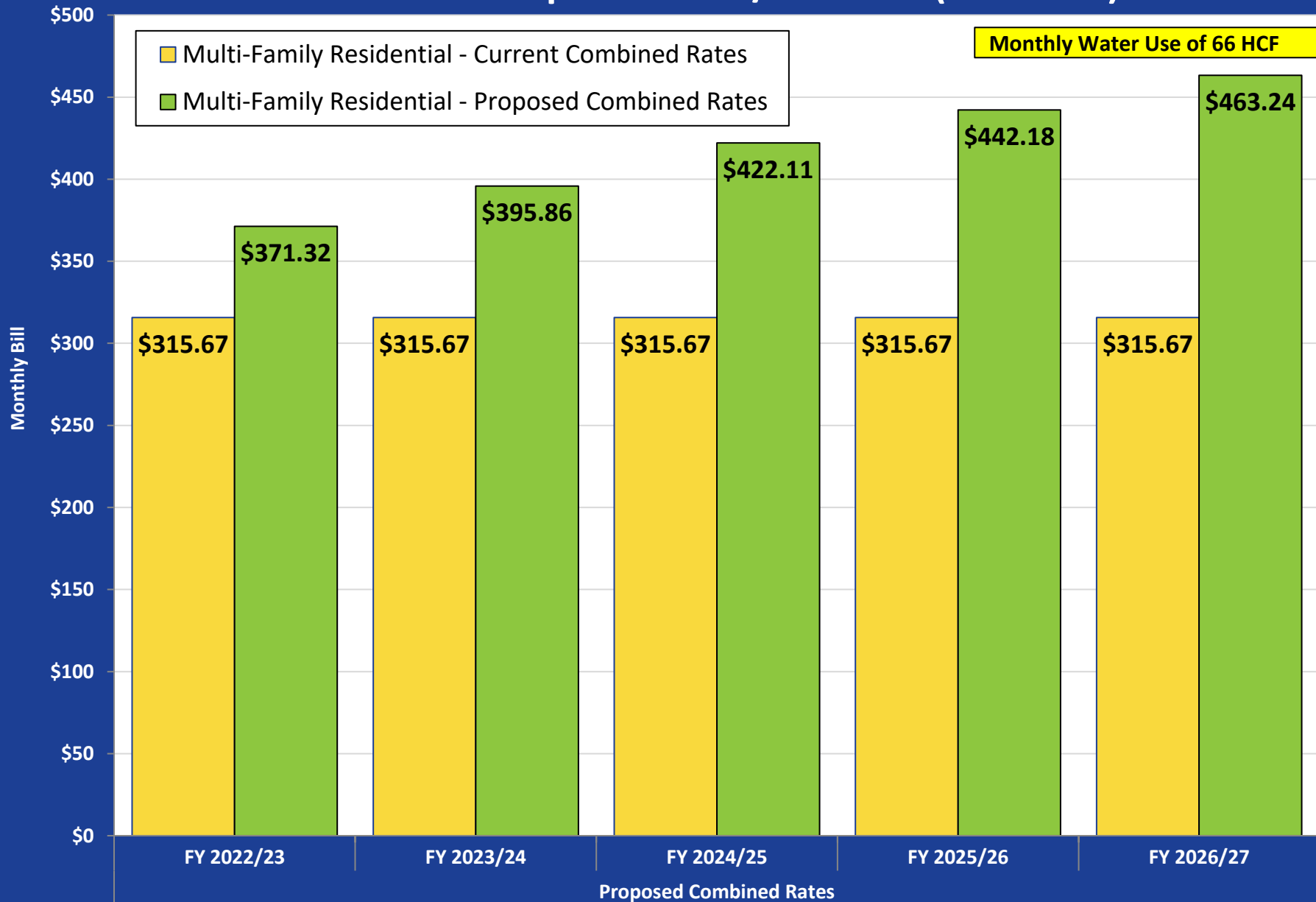
## Residential Utility Bill Comparison - Combined Rates Current vs. Proposed 2022/23 Rates (Low Density)



## Residential Utility Bill Comparison - Combined Rates Current vs. Proposed 2022/23 Rates (Medium Density)



## MFR Utility Bill Comparison - Combined Rates Current vs. Proposed 2022/23 Rates (2" Meter)



## Appendix B. Detailed Sewer Study Tables and Figures

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**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT**  
**SEWER RATE STUDY**  
Financial Plan and Reserve Projections

**TABLE 1 : FINANCIAL PLAN AND SUMMARY OF REVENUE REQUIREMENTS**

RATE REVENUE REQUIREMENTS SUMMARY <sup>1</sup>	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Sources of Funds</b>												
<i>Rate Revenue:</i>												
Sewer Rate Revenue	\$ 2,955,334	\$ 3,170,520	\$ 3,316,414	\$ 3,462,308	\$ 3,608,202	\$ 3,754,096	\$ 3,899,990	\$ 4,045,884	\$ 4,191,778	\$ 4,337,672	\$ 4,483,566	\$ 4,629,460
Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-
Interest Earnings	17,530	35,951	18,384	18,505	18,670	18,851	19,042	19,249	19,457	19,682	19,343	17,820
<b>Total Sources of Funds</b>	<b>\$ 2,972,864</b>	<b>\$ 3,206,471</b>	<b>\$ 3,334,798</b>	<b>\$ 3,480,813</b>	<b>\$ 3,626,872</b>	<b>\$ 3,772,947</b>	<b>\$ 3,919,032</b>	<b>\$ 4,065,133</b>	<b>\$ 4,211,235</b>	<b>\$ 4,357,354</b>	<b>\$ 4,502,909</b>	<b>\$ 4,647,280</b>
<b>Uses of Water Funds</b>												
<i>Operating Expenses:</i>												
Personnel Services	\$ 496,074	\$ 703,949	\$ 739,146	\$ 776,104	\$ 814,909	\$ 855,654	\$ 898,437	\$ 943,359	\$ 990,527	\$ 1,040,053	\$ 1,092,056	\$ 1,146,659
Engineering	1,750,497	1,873,690	1,946,149	2,066,888	2,194,837	2,330,413	2,474,059	2,626,244	2,787,462	2,958,237	3,139,120	3,330,697
Subtotal: Operating Expenses	\$ 2,246,571	\$ 2,577,639	\$ 2,685,295	\$ 2,842,992	\$ 3,009,746	\$ 3,186,067	\$ 3,372,496	\$ 3,569,603	\$ 3,777,989	\$ 3,998,290	\$ 4,231,176	\$ 4,477,355
<i>Other Expenditures:</i>												
General Fund Repayment <sup>2</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 319,583	\$ 368,749	\$ 417,916	\$ 467,082	\$ 516,249
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-	-
Future Debt Service	-	-	-	-	-	-	-	-	-	-	-	-
Rate-Funded Capital Expenses	-	378,705	-	-	-	-	-	-	-	-	-	351,055
Subtotal: Other Expenditures	\$ -	\$ 378,705	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 319,583	\$ 368,749	\$ 417,916	\$ 467,082	\$ 867,304
<b>Total Uses of Water Funds</b>	<b>\$ 2,246,571</b>	<b>\$ 2,956,344</b>	<b>\$ 2,685,295</b>	<b>\$ 2,842,992</b>	<b>\$ 3,009,746</b>	<b>\$ 3,186,067</b>	<b>\$ 3,372,496</b>	<b>\$ 3,889,186</b>	<b>\$ 4,146,739</b>	<b>\$ 4,416,206</b>	<b>\$ 4,698,259</b>	<b>\$ 5,344,660</b>
Plus: Revenue from Rate Increases <sup>3</sup>	-	-	-	-	-	-	-	-	-	-	-	-
<b>Annual Surplus/(Deficit)</b>	<b>\$ 726,293</b>	<b>\$ 250,127</b>	<b>\$ 649,503</b>	<b>\$ 637,821</b>	<b>\$ 617,126</b>	<b>\$ 586,880</b>	<b>\$ 546,535</b>	<b>\$ 175,947</b>	<b>\$ 64,496</b>	<b>\$ (58,852)</b>	<b>\$ (195,350)</b>	<b>\$ (697,379)</b>
<b>Net Revenue Req. (Total Uses less Non-Rate Revenue)</b>	<b>\$ 2,229,041</b>	<b>\$ 2,920,393</b>	<b>\$ 2,666,911</b>	<b>\$ 2,824,487</b>	<b>\$ 2,991,076</b>	<b>\$ 3,167,216</b>	<b>\$ 3,353,455</b>	<b>\$ 3,869,937</b>	<b>\$ 4,127,282</b>	<b>\$ 4,396,525</b>	<b>\$ 4,678,916</b>	<b>\$ 5,326,839</b>
<b>Total Rate Revenue After Rate Increases</b>	<b>\$ 2,955,334</b>	<b>\$ 3,170,520</b>	<b>\$ 3,316,414</b>	<b>\$ 3,462,308</b>	<b>\$ 3,608,202</b>	<b>\$ 3,754,096</b>	<b>\$ 3,899,990</b>	<b>\$ 4,045,884</b>	<b>\$ 4,191,778</b>	<b>\$ 4,337,672</b>	<b>\$ 4,483,566</b>	<b>\$ 4,629,460</b>
<b>Projected Annual Rate Revenue Increase</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
<b>Cumulative Increase from Annual Revenue Increases</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>	<b>0.00%</b>
<b>Debt Coverage After Rate Increase</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

1. Revenues and expenses for FY 2020/21 and FY 2021/22 were provided by District staff. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf .  
 2. Amount owed to the General Fund totals \$5.4M and is estimated to be repaid over 10 years beginning in FY 2027/28.  
 3. Revenue from rate increases assumes an implementation date of July 1, 2022. For each year thereafter, the assumption is that new rates will be implemented on July 1st of each year.

Selection of Financial Plan Alternative		4											
Financial Plan Alternatives		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
1	Alternative 1 - 2% Annual Rate Increases	0.00%	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
2	Alternative 2 - 3% Annual Rate Increases	0.00%	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
3	Alternative 3 - Custom Rate Increases	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	2.00%	2.00%	2.00%	2.00%	4.00%	4.00%
4	No Rate Increases	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Financial Plan and Reserve Projections

TABLE 2 : RESERVE FUND SUMMARY

SUMMARY OF CASH ACTIVITY SEWER FUND RESERVES	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Total Beginning Cash<sup>1</sup></b>	\$ 4,272,734	\$ 1,975,940										
<b>Unrestricted Reserves:</b>												
<b>Operating Reserve</b>												
Beginning Reserve Balance	\$ 1,374,077	\$ 1,886,318	\$ 322,000	\$ 336,000	\$ 355,000	\$ 376,000	\$ 398,000	\$ 422,000	\$ 446,000	\$ 472,000	\$ 432,829	\$ 256,822
Plus: Net Cash Flow (After Rate Increases)	3	250,127	649,503	637,821	617,126	586,880	546,535	175,947	64,496	(58,852)	(195,350)	(697,379)
Plus: Transfer of Debt Reserve Surplus	1,756,703	486,140	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599
Plus: Interest Earnings	11,886	16,317	2,785	2,906	3,071	3,252	3,443	3,650	3,858	4,083	3,744	2,222
Less: Transfer Out to Capital Replacement Reserve	(2,861,669)	(2,316,901)	(653,887)	(637,326)	(614,795)	(583,731)	(541,577)	(171,197)	(57,953)	-	-	-
<b>Ending Operating Reserve Balance</b>	\$ 281,000	\$ 322,000	\$ 336,000	\$ 355,000	\$ 376,000	\$ 398,000	\$ 422,000	\$ 446,000	\$ 472,000	\$ 432,829	\$ 256,822	\$ (422,737)
<b>Target Ending Balance (45-days of O&amp;M)</b>	\$ 281,000	\$ 322,000	\$ 336,000	\$ 355,000	\$ 376,000	\$ 398,000	\$ 422,000	\$ 446,000	\$ 472,000	\$ 500,000	\$ 529,000	\$ 560,000
<b>Capital Rehabilitation &amp; Replacement Reserve</b>												
Beginning Reserve Balance	\$ 2,898,657	\$ 89,622	\$ 2,406,523	\$ 2,770,755	\$ 1,955,497	\$ 2,093,587	\$ 2,065,765	\$ 1,822,795	\$ 1,642,992	\$ 1,340,945	\$ 971,945	\$ 592,945
Plus: Grant Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
Plus: Transfer of Operating Reserve Surplus	2,861,669	2,316,901	653,887	637,326	614,795	583,731	541,577	171,197	57,953	-	-	-
Less: Use of Reserves for Capital Projects	(467,000)	-	(289,655)	(1,452,585)	(476,705)	(611,553)	(784,547)	(351,000)	(360,000)	(369,000)	(379,000)	(37,945)
<b>Ending Capital Rehab &amp; Replacement Reserve Balance</b>	\$ 5,293,326	\$ 2,406,523	\$ 2,770,755	\$ 1,955,497	\$ 2,093,587	\$ 2,065,765	\$ 1,822,795	\$ 1,642,992	\$ 1,340,945	\$ 971,945	\$ 592,945	\$ 555,000
<b>Target Ending Balance (1.5% of Assets)<sup>2</sup></b>	\$ 675,000	\$ 661,000	\$ 645,000	\$ 647,000	\$ 634,000	\$ 624,000	\$ 617,000	\$ 604,000	\$ 591,000	\$ 578,000	\$ 567,000	\$ 555,000
<b>Ending Cash Balance - Excl. Restricted Reserves</b>	\$ 5,574,326	\$ 2,728,523	\$ 3,106,755	\$ 2,310,497	\$ 2,469,587	\$ 2,463,765	\$ 2,244,795	\$ 2,088,992	\$ 1,812,945	\$ 1,404,774	\$ 849,767	\$ 132,263
<b>Min. Target Ending Cash Balance -Excl. Restricted Reserves</b>	\$ 956,000	\$ 983,000	\$ 981,000	\$ 1,002,000	\$ 1,010,000	\$ 1,022,000	\$ 1,039,000	\$ 1,050,000	\$ 1,063,000	\$ 1,078,000	\$ 1,096,000	\$ 1,115,000
<b>Ending Surplus/(Deficit) Compared to Reserve Targets</b>	\$ 4,618,326	\$ 1,745,523	\$ 2,125,755	\$ 1,308,497	\$ 1,459,587	\$ 1,441,765	\$ 1,205,795	\$ 1,038,992	\$ 749,945	\$ 326,774	\$ (246,233)	\$ (982,737)
<b>Days Cash on Hand</b>	906	337	423	297	300	283	243	214	176	129	74	10
<b>Annual Interest Earnings Rate<sup>3</sup></b>	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%

1. Beginning cash balance for FY 2020/21 and FY 2021/22 provided by District staff.
2. The Capital Rehabilitation & Replacement Reserve target is set to 1.5% of net assets per direction from District staff.
3. Historical interest earning rates are per the average annual yields for funds invested in LAIF (2012-2021). The source is the California State Treasurer's website: <https://www.treasurer.ca.gov/pmia-laif/historical/annual.asp>.

TABLE 3 : RESERVE FUND SUMMARY - RESTRICTED RESERVES

SUMMARY OF CASH ACTIVITY, cont. RESTRICTED SEWER FUND RESERVES	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Restricted Reserves:</b>												
<b>Connection Fee &amp; Alternate Water Source Reserve</b>												
Beginning Reserve Balance	\$ -	\$ 17,530	\$ 31,974	\$ 32,251	\$ 32,529	\$ 32,811	\$ 33,095	\$ 33,381	\$ 33,670	\$ 33,961	\$ 34,255	\$ 34,551
Plus: Interest Earnings	-	152	277	279	281	284	286	289	291	294	296	299
Plus: Capacity Fee Revenue	17,530	14,292	-	-	-	-	-	-	-	-	-	-
Less: Use of Reserves for Capital Projects	-	-	-	-	-	-	-	-	-	-	-	-
<b>Ending Connection Fee Fund Balance</b>	\$ 17,530	\$ 31,974	\$ 32,251	\$ 32,529	\$ 32,811	\$ 33,095	\$ 33,381	\$ 33,670	\$ 33,961	\$ 34,255	\$ 34,551	\$ 34,850
<b>Target Ending Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Debt Reserve</b>												
Beginning Reserve Balance <sup>1</sup>	\$ 3,529,504	\$ 2,269,837	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331
Plus: Reserve Funding from Future Debt Obligations	-	-	-	-	-	-	-	-	-	-	-	-
Plus: Interest Earnings	30,530	19,634	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599	15,599
Less: Transfer of Surplus to Operating Reserve	(1,756,703)	(486,140)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)	(15,599)
<b>Ending Debt Reserve Balance</b>	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331
<b>Target Ending Balance</b>	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331
<b>Target Ending Balance</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Annual Interest Earnings Rate<sup>2</sup></b>	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%

1. Beginning cash balance for FY 2020/21 and FY 2021/22 provided by District staff.
2. Historical interest earning rates are per the average annual yields for funds invested in LAIF (2012-2021). The source is the California State Treasurer's website: <https://www.treasurer.ca.gov/pmia-laif/historical/annual.asp>.



**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT**  
**SEWER RATE STUDY**  
**Financial Plan and Reserve Projections**

**TABLE 4 : EXCLUDED PLEDGE SUMMARY<sup>1</sup> (for informational only)**

PLEGGED REVENUE & EXPENSES EXCLUDED FROM ANALYSIS	Actual	Budget	5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>WATER PLEDGED REVENUE</b>												
Interest Income	\$ 18	\$ 19	\$ 20	\$ 21	\$ 21	\$ 22	\$ 23	\$ 24	\$ 25	\$ 26	\$ 27	\$ 28
Utility Serve Fee - Pledged Facility	3,143,250	3,294,866	3,446,482	3,598,098	3,749,714	3,901,330	4,052,945	4,204,561	4,356,177	4,507,793	4,659,409	4,811,025
Utility Pledge - District Usage	6,518	6,844	7,186	7,546	7,923	8,319	8,735	9,172	9,631	10,112	10,618	11,149
Operating Transfer In	51,738,575	54,234,205	56,729,835	59,225,465	61,721,096	64,216,726	66,712,356	69,207,986	71,703,617	74,199,247	76,694,877	79,190,507
<b>TOTAL PLEDGE REVENUE</b>	<b>\$ 54,888,361</b>	<b>\$ 57,535,934</b>	<b>\$ 60,183,523</b>	<b>\$ 62,831,129</b>	<b>\$ 65,478,754</b>	<b>\$ 68,126,397</b>	<b>\$ 70,774,060</b>	<b>\$ 73,421,744</b>	<b>\$ 76,069,449</b>	<b>\$ 78,717,178</b>	<b>\$ 81,364,930</b>	<b>\$ 84,012,708</b>
<b>WATER PLEDGED EXPENSES</b>												
Facility Pledged Payment	\$ 51,008,520	\$ 52,818,031	\$ 55,331,524	\$ 57,822,700	\$ 60,301,890	\$ 62,779,280	\$ 65,244,924	\$ 67,711,898	\$ 70,164,919	\$ 72,615,523	\$ 75,053,628	\$ 77,484,159
MHCSD - Pledged Principal Payment	400,000	380,000	425,000	490,000	565,000	640,000	725,000	810,000	910,000	1,010,000	1,120,000	1,235,000
Interest on Bonds	1,578,274	2,341,257	2,330,522	2,317,128	2,300,497	2,280,182	2,255,854	2,224,150	2,185,050	2,141,700	2,093,850	2,041,225
Professional Services - Other	2,195	2,304	2,420	2,541	2,668	2,801	2,941	3,088	3,242	3,405	3,575	3,754
Utility Processing Fees	61,943	65,040	68,292	71,706	75,292	79,056	83,009	87,159	91,517	96,093	100,898	105,943
Interest Expense	162,772	170,911	179,457	188,429	197,851	207,743	218,131	229,037	240,489	252,513	265,139	278,396
Operating Transfer - Out	1,674,657	1,758,390	1,846,310	1,938,625	2,035,556	2,137,334	2,244,201	2,356,411	2,474,232	2,597,943	2,727,840	2,864,232
<b>TOTAL PLEDGE EXPENSES</b>	<b>\$ 54,888,361</b>	<b>\$ 57,535,934</b>	<b>\$ 60,183,523</b>	<b>\$ 62,831,129</b>	<b>\$ 65,478,754</b>	<b>\$ 68,126,397</b>	<b>\$ 70,774,060</b>	<b>\$ 73,421,744</b>	<b>\$ 76,069,449</b>	<b>\$ 78,717,178</b>	<b>\$ 81,364,930</b>	<b>\$ 84,012,708</b>
<b>NET</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

1. Pledge revenue is a separate fee which is collected to pay back the original developers for putting the infrastructure in place. As such, it is used to pay both debt service on debt issued to pay the developer and the developer directly. As all debt is paid through the restricted pledge revenue, debt payments and funding are excluded from this analysis.

CHART 1

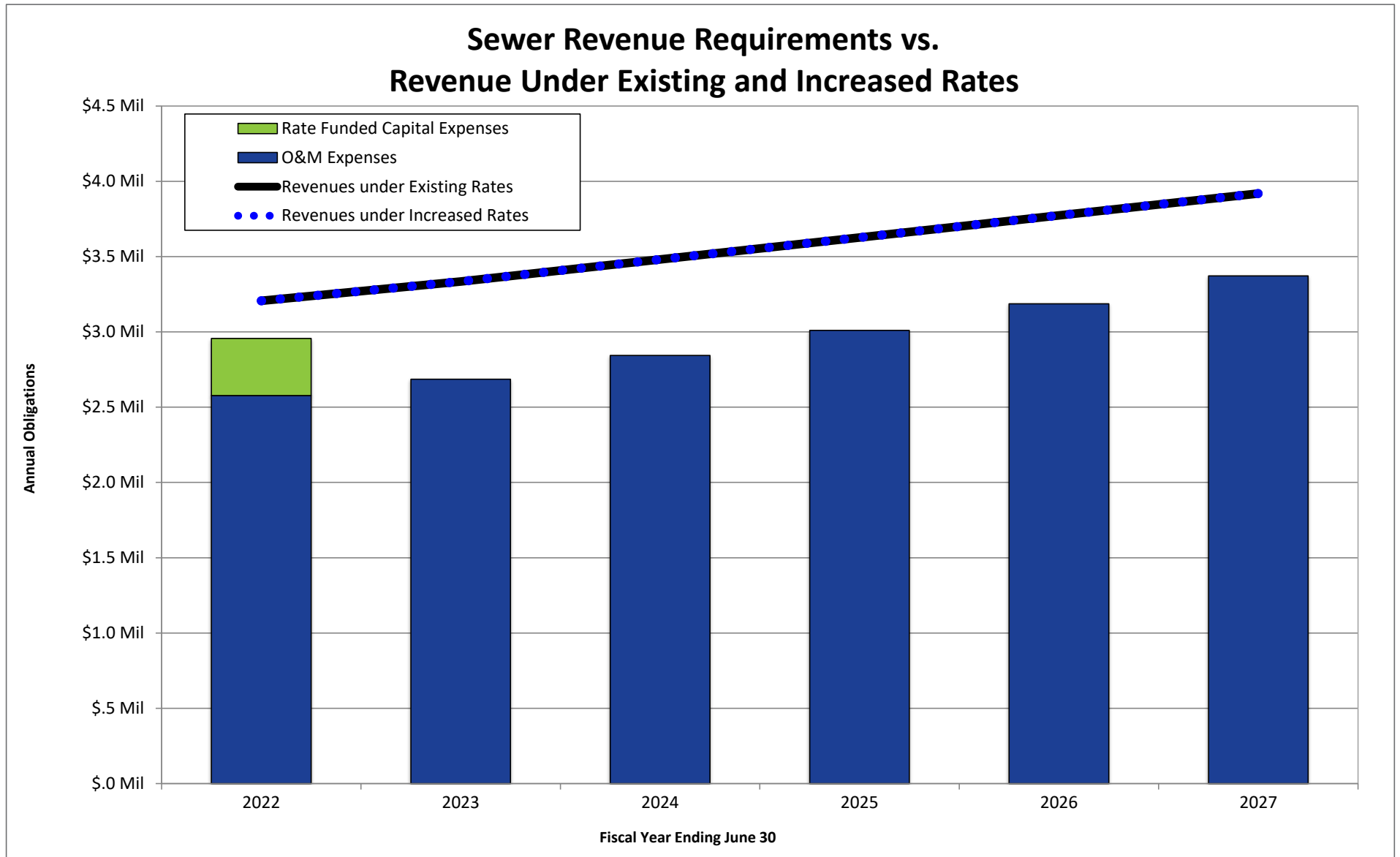


CHART 2

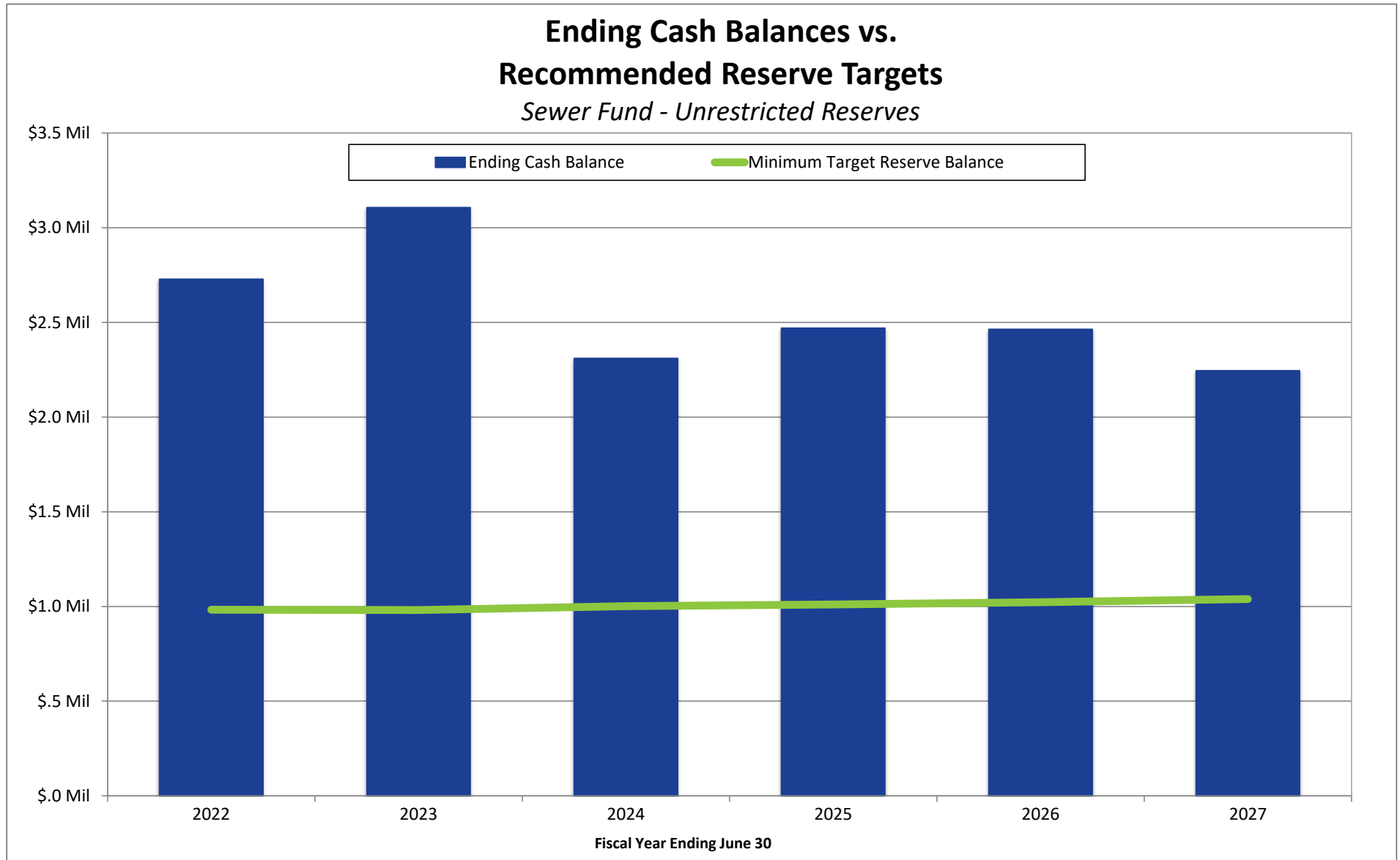
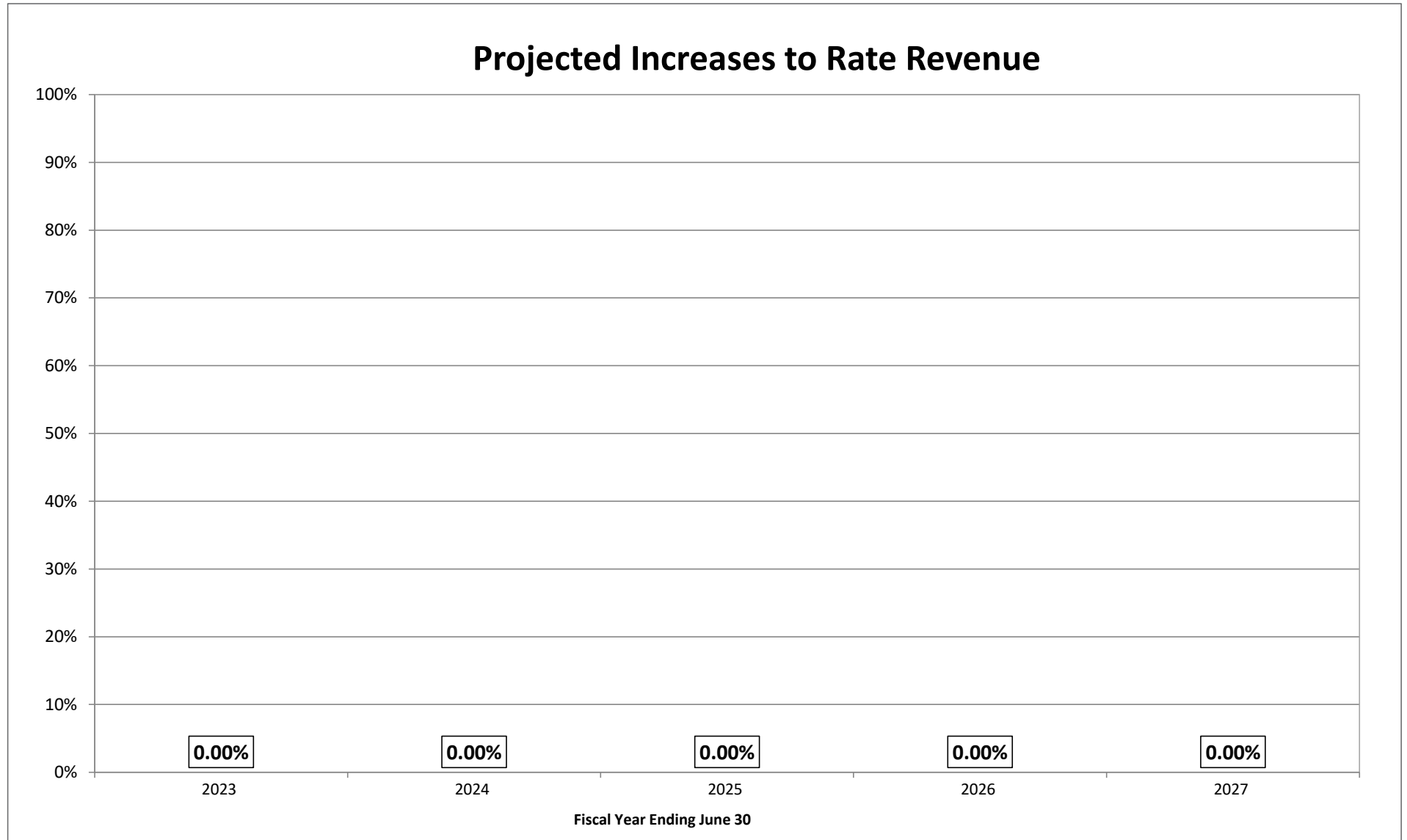


CHART 3



MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Operating Revenue and Expenses

TABLE 5 : REVENUE FORECAST<sup>1</sup>

DESCRIPTION	Basis	Actual	Budget	5-Year Projected Rate Period					Projected				
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>SEWER REVENUE</b>													
Interest Income	See FP	\$ 17,530	\$ 14,292	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Service Fee - Operations	1	2,954,990	3,169,155	3,314,986	3,460,817	3,606,649	3,752,480	3,898,311	4,044,142	4,189,973	4,335,805	4,481,636	4,627,467
Utility Service Fee - Charges to MHCS	1	344	1,365	1,428	1,491	1,553	1,616	1,679	1,742	1,805	1,867	1,930	1,993
Operating Transfer In	1	-	-	-	-	-	-	-	-	-	-	-	-
Transfer for Capital Projects	1	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL: REVENUE</b>		<b>\$ 2,972,864</b>	<b>\$ 3,184,812</b>	<b>\$ 3,316,414</b>	<b>\$ 3,462,308</b>	<b>\$ 3,608,202</b>	<b>\$ 3,754,096</b>	<b>\$ 3,899,990</b>	<b>\$ 4,045,884</b>	<b>\$ 4,191,778</b>	<b>\$ 4,337,672</b>	<b>\$ 4,483,566</b>	<b>\$ 4,629,460</b>

1. Revenues for FY 2020/21 are actuals and then based on the District's Adopted Budget for FY 2021/22. Source files: 1.5- FY 2021-2022 O & M.pdf & 2.2 - FY 2020-2021 annual revenue.pdf.

TABLE 6 : REVENUE SUMMARY

DESCRIPTION	Basis	Actual	Budget	5-Year Projected Rate Period					Projected				
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>RATE REVENUE</b>													
Sewer Rate Revenue		\$ 2,955,334	\$ 3,170,520	\$ 3,316,414	\$ 3,462,308	\$ 3,608,202	\$ 3,754,096	\$ 3,899,990	\$ 4,045,884	\$ 4,191,778	\$ 4,337,672	\$ 4,483,566	\$ 4,629,460
<b>OTHER REVENUE</b>													
Interest Income		17,530	14,292	-	-	-	-	-	-	-	-	-	-
Other Revenue		-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL: REVENUE</b>		<b>\$ 2,972,864</b>	<b>\$ 3,184,812</b>	<b>\$ 3,316,414</b>	<b>\$ 3,462,308</b>	<b>\$ 3,608,202</b>	<b>\$ 3,754,096</b>	<b>\$ 3,899,990</b>	<b>\$ 4,045,884</b>	<b>\$ 4,191,778</b>	<b>\$ 4,337,672</b>	<b>\$ 4,483,566</b>	<b>\$ 4,629,460</b>

TABLE 7 : OPERATING EXPENSE FORECAST<sup>2</sup>

DESCRIPTION	Basis	Actual	Budget	5-Year Projected Rate Period					Projected				
		FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>SEWER OPERATIONS EXPENSES</b>													
<b>Personnel Services</b>													
Personnel	3	\$ 376,976	\$ 510,815	\$ 536,356	\$ 563,174	\$ 591,332	\$ 620,899	\$ 651,944	\$ 684,541	\$ 718,768	\$ 754,706	\$ 792,442	\$ 832,064
Labor Allocation	3	119,098	193,134	202,791	212,930	223,577	234,756	246,493	258,818	271,759	285,347	299,614	314,595
<b>Engineering</b>													
Engineering Misc	2	-	20,000	20,000	21,924	23,990	26,208	28,588	31,140	33,876	36,808	39,948	43,311
Professional Consultant Services	2	55,000	20,000	20,000	21,924	23,990	26,208	28,588	31,140	33,876	36,808	39,948	43,311
GIS Monitoring	2	14,837	-	3,140	3,442	3,766	4,115	4,488	4,889	5,319	5,779	6,272	6,800
<b>Regulatory Compliance</b>													
Memberships	2	19,500	27,011	28,593	30,023	31,524	33,100	34,755	36,493	38,318	40,234	42,245	44,358
Engineering Misc.	2	20,000	20,000	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027
Permits Fees (DMV, SJVA, SWRCB, ETC.)	2	25,725	27,011	27,011	28,362	29,780	31,269	32,832	34,474	36,198	38,008	39,908	41,903
<b>Operations and Maintenance</b>													
Communications	2	750	788	788	827	869	912	958	1,006	1,056	1,109	1,164	1,222
Maint & Repair Collection System	2	50,000	55,000	60,500	63,525	66,701	70,036	73,538	77,215	81,076	85,130	89,386	93,855
Maint Structures & Grounds	2	370,000	504,200	548,420	575,841	604,633	634,865	666,608	699,938	734,935	771,682	810,266	850,779
Lanscaping (Landscape & Tree Maint.)	2	39,890	44,623	28,763	30,201	31,711	33,297	34,961	36,710	38,545	40,472	42,496	44,621
Chemicals (Polymer)	2	130,000	126,500	139,150	152,535	166,911	182,342	198,900	216,658	235,694	256,092	277,941	301,334
Utilities - Electricity	2	322,000	322,000	325,000	356,262	389,838	425,881	464,553	506,028	550,489	598,131	649,161	703,799
Irrigation Water	2	7,000	7,000	8,000	8,400	8,820	9,261	9,724	10,210	10,721	11,257	11,820	12,411
Professional Services	2	580,795	574,557	591,783	621,372	652,441	685,063	719,316	755,282	793,046	832,698	874,333	918,050
Refuse Disposal (Synagro)	2	110,000	120,000	120,000	126,000	132,300	138,915	145,861	153,154	160,811	168,852	177,295	186,159
Technology/Web/Computer	2	5,000	5,000	5,000	5,250	5,513	5,788	6,078	6,381	6,700	7,036	7,387	7,757
Security Services	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>SUBTOTAL:</b>		<b>\$ 2,246,571</b>	<b>\$ 2,577,639</b>	<b>\$ 2,685,295</b>	<b>\$ 2,842,992</b>	<b>\$ 3,009,746</b>	<b>\$ 3,186,067</b>	<b>\$ 3,372,496</b>	<b>\$ 3,569,603</b>	<b>\$ 3,777,989</b>	<b>\$ 3,998,290</b>	<b>\$ 4,231,176</b>	<b>\$ 4,477,355</b>

1. Expenses for FY 2020/21 are projected actuals and then based on the District's Budgets for FY 2021/22 and FY 2022/23. Source files: 1.5- FY 2021-2022 O & M.pdf & Operating Budget 22-23 v2.xlsx. Expenses, with the exception of personnel costs, for FY 2022/23 are per source file: Operating Budget 22-23 v2.xlsx.

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Operating Revenue and Expenses

TABLE 8 : OPERATING EXPENSE FORECAST<sup>1</sup>

DESCRIPTION	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>REPAYMENT OF GENERAL FUND</b>												
Payment to General Fund <sup>1</sup>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 319,583	\$ 368,749	\$ 417,916	\$ 467,082	\$ 516,249
<b>SUBTOTAL: REPAYMENT OF GENERAL FUND</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 319,583	\$ 368,749	\$ 417,916	\$ 467,082	\$ 516,249
<b>GRAND TOTAL: SEWER EXPENSES</b>	\$ 2,246,571	\$ 2,577,639	\$ 2,685,295	\$ 2,842,992	\$ 3,009,746	\$ 3,186,067	\$ 3,372,496	\$ 3,889,186	\$ 4,146,739	\$ 4,416,206	\$ 4,698,259	\$ 4,993,604

1. Amount owed to the General Fund totals \$5.5M and is estimated to be repaid over 10 years beginning in FY 2027/28.

TABLE 9 : FORECASTING ASSUMPTIONS

COST INFLATION FACTORS	Basis	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
Customer Growth <sup>1</sup>	1	--	4.82%	4.60%	4.40%	4.21%	4.04%	3.89%	3.74%	3.61%	3.48%	3.36%	3.25%
General Cost Inflation <sup>2</sup>	2	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Labor Cost Inflation <sup>3</sup>	3	--	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
No Escalation	6	--	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

- Customer growth inflation is based on the estimated number of new accounts.
- Based on discussions with District staff, the general cost inflation factor is set at 5.0%
- Based on discussions with District staff, the labor cost inflation factor is set at 5.0%

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Capital Improvement Plan Expenditures

TABLE 10 : CAPITAL FUNDING SUMMARY

CAPITAL FUNDING FORECAST	Actual		5-Year Projected Rate Period					Projected				
	FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Funding Sources:</b>												
Grants	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Use of Capacity Fee Reserves	-	-	-	-	-	-	-	-	-	-	-	-
SRF Loan Funding	-	-	-	-	-	-	-	-	-	-	-	-
Use of Future Revenue Bond Proceeds	-	-	-	-	-	-	-	-	-	-	-	-
Use of Capital Rehabilitation and Replacement Reserve	467,000	-	289,655	1,452,585	476,705	611,553	784,547	351,000	360,000	369,000	379,000	37,945
Rate Revenue	-	378,705	-	-	-	-	-	-	-	-	-	351,055
<b>Total Sources of Capital Funds</b>	<b>\$ 467,000</b>	<b>\$ 378,705</b>	<b>\$ 289,655</b>	<b>\$ 1,452,585</b>	<b>\$ 476,705</b>	<b>\$ 611,553</b>	<b>\$ 784,547</b>	<b>\$ 351,000</b>	<b>\$ 360,000</b>	<b>\$ 369,000</b>	<b>\$ 379,000</b>	<b>\$ 389,000</b>
<b>Uses of Capital Funds:</b>												
Total Project Costs	\$ 467,000	\$ 378,705	\$ 289,655	\$ 1,452,585	\$ 476,705	\$ 611,553	\$ 784,547	\$ 351,000	\$ 360,000	\$ 369,000	\$ 379,000	\$ 389,000
<b>Capital Funding Surplus (Deficiency)</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>SFR Loan Funding</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Future Revenue Bond Proceeds</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

CAPITAL IMPROVEMENT PROGRAM FUNDING OPTIONS

TABLE 11 : CAPITAL IMPROVEMENT PROGRAM COSTS (in Current-Year Dollars)<sup>1</sup>

Project Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>Capital Projects</b>												
Facility Repairs O&M	\$ 367,000	\$ 369,000	\$ 275,000	\$ 343,750	\$ 429,688	\$ 537,109	\$ 671,387	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Oversight	100,000	-	-	-	-	-	-	-	-	-	-	-
Effluent cooling system project	-	-	-	1,000,000	-	-	-	-	-	-	-	-
<b>Estimated Future Projects</b>												
Future Projects <sup>2</sup>	-	-	-	-	-	-	-	292,352	292,352	292,352	292,352	292,352
<b>Total: CIP Program Costs</b>	<b>\$ 467,000</b>	<b>\$ 369,000</b>	<b>\$ 275,000</b>	<b>\$ 1,343,750</b>	<b>\$ 429,688</b>	<b>\$ 537,109</b>	<b>\$ 671,387</b>	<b>\$ 292,352</b>	<b>\$ 292,352</b>	<b>\$ 292,352</b>	<b>\$ 292,352</b>	<b>\$ 292,352</b>

TABLE 12 : CAPITAL IMPROVEMENT PROGRAM COSTS (in Future-Year Dollars)<sup>2,3</sup>

Project Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>Capital Projects</b>												
Facility Repairs O&M	\$ 367,000	\$ 378,705	\$ 289,655	\$ 371,591	\$ 476,705	\$ 611,553	\$ 784,547	\$ -	\$ -	\$ -	\$ -	\$ -
Facility Oversight	100,000	-	-	-	-	-	-	-	-	-	-	-
Effluent cooling system project	-	-	-	1,080,993	-	-	-	-	-	-	-	-
<b>Estimated Future Projects</b>												
Future Projects <sup>2</sup>	-	-	-	-	-	-	-	351,000	360,000	369,000	379,000	389,000
<b>Total: Capital Improvement Program Costs (Future-Year Dollars)</b>	<b>\$ 467,000</b>	<b>\$ 378,705</b>	<b>\$ 289,655</b>	<b>\$ 1,452,585</b>	<b>\$ 476,705</b>	<b>\$ 611,553</b>	<b>\$ 784,547</b>	<b>\$ 351,000</b>	<b>\$ 360,000</b>	<b>\$ 369,000</b>	<b>\$ 379,000</b>	<b>\$ 389,000</b>

TABLE 13 : FORECASTING ASSUMPTIONS

Economic Variables	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Annual Construction Cost Inflation, Per Engineering News Record <sup>4</sup>	0.00%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%	2.63%
Cumulative Construction Cost Multiplier from 2021	1.00	1.03	1.05	1.08	1.11	1.14	1.17	1.20	1.23	1.26	1.30	1.33

1. Capital project costs for FY 2020/21 through FY 2021/22 were provided by District staff. Source files: 4.2 - FY 2020-2021 CIP funded by rates and GF transfers.pdf, 4.3 - FY 2021-2022 CIP funded by rates and GF transfers.pdf, and UTILITY OM COSTS ANALYSIS.xlsx.  
 2. Future project costs for FY 2027/28 and beyond were calculated based on the City's 7-year average (2021-2027).  
 3. The project costs provided by the City include an annual inflation factor of 2.63% per year.  
 4. For reference purposes, the annual Construction Cost Inflation percentage is the 10-year average change in the Construction Cost Index for August 2010-2020 (2.63%). Source: Engineering News Record website (<http://enr.construction.com>).

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Debt Service

\*Exhibit 3 is for informational purposes only as all debt obligations are paid through the restricted pledge revenue.

TABLE 14 : SEWER UTILITY EXISTING DEBT OBLIGATIONS<sup>1</sup>

EXISTING DEBT OBLIGATIONS	Actual	Budget	5-Year Projected Rate Period					Projected				
			FY 2020/21	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30
<b>Annual Repayment Schedules:</b>												
<b>MHCSD - 2019 Utility Systems Revenue Bond<sup>2</sup></b>												
Principal Payment	\$ 400,000	\$ 380,000	\$ 390,000	\$ 405,000	\$ 415,000	\$ 425,000	\$ 440,000	\$ 460,000	\$ 480,000	\$ 510,000	\$ 540,000	\$ 565,000
Interest Payment	\$ 471,870	\$ 462,457	\$ 452,422	\$ 441,428	\$ 429,497	\$ 416,482	\$ 402,154	\$ 383,150	\$ 359,650	\$ 334,900	\$ 308,650	\$ 281,025
<b>Subtotal: Annual Debt Service</b>	<b>\$ 871,870</b>	<b>\$ 842,457</b>	<b>\$ 842,422</b>	<b>\$ 846,428</b>	<b>\$ 844,497</b>	<b>\$ 841,482</b>	<b>\$ 842,154</b>	<b>\$ 843,150</b>	<b>\$ 839,650</b>	<b>\$ 844,900</b>	<b>\$ 848,650</b>	<b>\$ 846,025</b>
Coverage Requirement (\$-Amnt above annual payment) <sup>3</sup>	\$ 1,089,837	\$ 1,053,072	\$ 1,053,027	\$ 1,058,035	\$ 1,055,621	\$ 1,051,852	\$ 1,052,693	\$ 1,053,938	\$ 1,049,563	\$ 1,056,125	\$ 1,060,813	\$ 1,057,531
Reserve Requirement (total fund balance) <sup>3</sup>	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331	\$ 873,331
<b>MHCSD - 2020 Utility Systems Revenue Bonds<sup>4</sup></b>												
Principal Payment	\$ -	\$ -	\$ 35,000	\$ 85,000	\$ 150,000	\$ 215,000	\$ 285,000	\$ 350,000	\$ 430,000	\$ 500,000	\$ 580,000	\$ 670,000
Interest Payment	\$ 1,106,404	\$ 1,878,800	\$ 1,878,100	\$ 1,875,700	\$ 1,871,000	\$ 1,863,700	\$ 1,853,700	\$ 1,841,000	\$ 1,825,400	\$ 1,806,800	\$ 1,785,200	\$ 1,760,200
<b>Subtotal: Annual Debt Service</b>	<b>\$ 1,106,404</b>	<b>\$ 1,878,800</b>	<b>\$ 1,913,100</b>	<b>\$ 1,960,700</b>	<b>\$ 2,021,000</b>	<b>\$ 2,078,700</b>	<b>\$ 2,138,700</b>	<b>\$ 2,191,000</b>	<b>\$ 2,255,400</b>	<b>\$ 2,306,800</b>	<b>\$ 2,365,200</b>	<b>\$ 2,430,200</b>
Coverage Requirement (\$-Amnt above annual payment) <sup>5</sup>	\$ 1,383,005	\$ 2,348,500	\$ 2,391,375	\$ 2,450,875	\$ 2,526,250	\$ 2,598,375	\$ 2,673,375	\$ 2,738,750	\$ 2,819,250	\$ 2,883,500	\$ 2,956,500	\$ 3,037,750
Reserve Requirement (total fund balance) <sup>5</sup>	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000	\$ 930,000
<b>Grand Total: Existing Annual Debt Service</b>	<b>\$ 1,978,274</b>	<b>\$ 2,721,257</b>	<b>\$ 2,755,522</b>	<b>\$ 2,807,128</b>	<b>\$ 2,865,497</b>	<b>\$ 2,920,182</b>	<b>\$ 2,980,854</b>	<b>\$ 3,034,150</b>	<b>\$ 3,095,050</b>	<b>\$ 3,151,700</b>	<b>\$ 3,213,850</b>	<b>\$ 3,276,225</b>
<b>Grand Total: Existing Annual Coverage Requirement</b>	<b>\$ 2,472,842</b>	<b>\$ 3,401,572</b>	<b>\$ 3,444,402</b>	<b>\$ 3,508,910</b>	<b>\$ 3,581,871</b>	<b>\$ 3,650,227</b>	<b>\$ 3,726,068</b>	<b>\$ 3,792,688</b>	<b>\$ 3,868,813</b>	<b>\$ 3,939,625</b>	<b>\$ 4,017,313</b>	<b>\$ 4,095,281</b>
<b>Grand Total: Existing Debt Reserve Target</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>	<b>\$ 1,803,331</b>

1. Per District Staff, all debt obligations are funded with revenue sources placed on the tax roll.
2. The repayment schedule was provided by District staff. The sewer utility portion is 38%, or \$12,770,000 (Principal). Source file: 6.1 - *Repayment schedules - bonded debt 2019 A&B & 2020 A&B Future maturities.xlsx*.
3. Coverage and reserve requirements were provided by client in source file: 8. *2019 Revenue Bond POS.pdf*, pages 10 & 23.
4. The repayment schedule was provided by District staff. The sewer utility portion is 38%, or \$37,760,000 (Principal under Master Contracts). Source file: 6.1 - *Repayment schedules - bonded debt 2019 A&B & 2020 A&B Future maturities.xlsx*.
5. Coverage and reserve requirements were provided by client in source file: *2020 Final Official Statement.pdf*, pages 25-26.

TABLE 15 : EXISTING ANNUAL DEBT OBLIGATIONS TO BE SATISFIED BY SEWER RATES

Annual Obligations	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<i>Existing Annual Debt Service</i>	\$ 1,978,274	\$ 2,721,257	\$ 2,755,522	\$ 2,807,128	\$ 2,865,497	\$ 2,920,182	\$ 2,980,854	\$ 3,034,150	\$ 3,095,050	\$ 3,151,700	\$ 3,213,850	\$ 3,276,225
<i>Existing Annual Coverage Requirement</i>	\$ 2,472,842	\$ 3,401,572	\$ 3,444,402	\$ 3,508,910	\$ 3,581,871	\$ 3,650,227	\$ 3,726,068	\$ 3,792,688	\$ 3,868,813	\$ 3,939,625	\$ 4,017,313	\$ 4,095,281
<i>Existing Debt Reserve Target</i>	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331	\$ 1,803,331



**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Projected Sewer Rates Under Existing Rate Schedule**

**TABLE 16 : CURRENT WATER RATE SCHEDULE**

Sewer Rate Schedule	Current Rates <sup>1</sup>
<b><i>Residential Monthly Fixed Service Charges</i></b>	
Single Family Residential Low Den	\$42.18
Single Family Residential Med Den	\$35.45
Fire House	\$37.50
Multi-Family Residential	\$17.65
<b><i>Non-Residential Monthly Fixed Service Charge</i></b>	
Commercial	\$31.07
Schools	\$100.14
<b><i>Non-Residential Volumetric Charge (\$/hcf)<sup>2</sup></i></b>	
Commercial	\$1.48
Schools	\$1.89

1. Current rates are based on charges to each customer account; volumetric rates for Commercial and School customers are per HCF of average winter water use from the previous winter period.
2. HCF = hundred cubic feet (748 gallons).

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis

TABLE 17 : CLASSIFICATION OF EXPENSES FOR COST OF SERVICE ANALYSIS

Classification of Expenses									
Budget Categories	Total Revenue Requirements	Flow	Strength		Customer	Basis of Classification			
	FY 2022/23	(VOL)	(BOD)	(TSS)	(CA)	(VOL)	(BOD)	(TSS)	(CA)
<b>SEWER OPERATIONS EXPENSES</b>									
<b>Personnel Services</b>									
Personnel	\$ 536,356	\$ 273,541	\$ 117,998	\$ 117,998	\$ 26,818	51%	22%	22%	5%
Labor Allocation	202,791	103,423	44,614	44,614	10,140	51%	22%	22%	5%
<b>Engineering</b>									
Engineering Misc	20,000	10,200	4,400	4,400	1,000	51%	22%	22%	5%
Professional Consultant Services	20,000	10,200	4,400	4,400	1,000	51%	22%	22%	5%
GIS Monitoring	3,140	1,601	691	691	157	51%	22%	22%	5%
<b>Regulatory Compliance</b>									
Memberships	28,593	14,583	6,291	6,291	1,430	51%	22%	22%	5%
Engineering Misc.	20,000	10,200	4,400	4,400	1,000	51%	22%	22%	5%
Permits Fees (DMV, SJVA, SWRCB, ETC.)	27,011	13,776	5,942	5,942	1,351	51%	22%	22%	5%
<b>Operations and Maintenance</b>									
Communications	788	402	173	173	39	51%	22%	22%	5%
Maint & Repair Collection System	60,500	30,855	13,310	13,310	3,025	51%	22%	22%	5%
Maint Structures & Grounds	548,420	279,694	120,652	120,652	27,421	51%	22%	22%	5%
Lanscaping (Landscape & Tree Maint.)	28,763	14,669	6,328	6,328	1,438	51%	22%	22%	5%
Chemicals (Polymer)	139,150	70,967	30,613	30,613	6,958	51%	22%	22%	5%
Utilities - Electricity	325,000	182,000	71,500	71,500	-	56%	22%	22%	0%
Irrigation Water	8,000	4,080	1,760	1,760	400	51%	22%	22%	5%
Professional Services	591,783	301,809	130,192	130,192	29,589	51%	22%	22%	5%
Refuse Disposal (Synagro)	120,000	61,200	26,400	26,400	6,000	51%	22%	22%	5%
Technology/Web/Computer	5,000	2,550	1,100	1,100	250	51%	22%	22%	5%
Security Services	-	-	-	-	-	51%	22%	22%	5%
<b>Grand Total: Sewer Fund Operations</b>	<b>\$ 2,685,295</b>	<b>\$ 1,385,751</b>	<b>\$ 590,765</b>	<b>\$ 590,765</b>	<b>\$ 118,015</b>	<b>52%</b>	<b>22%</b>	<b>22%</b>	<b>4%</b>

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis

TABLE 18 : CLASSIFICATION OF EXPENSES FOR COST OF SERVICE ANALYSIS

Classification of Expenses, cont.									
Budget Categories	Total Revenue Requirements	Flow	Strength		Customer	Basis of Classification			
	FY 2022/23	(VOL)	(BOD)	(TSS)	(CA)	(VOL)	(BOD)	(TSS)	(CA)
<b>Capital Expenditures</b>									
Rate Funded Capital Expenses	\$ -	\$ -	\$ -	\$ -	\$ -	52%	22%	22%	4%
<b>TOTAL REVENUE REQUIREMENTS</b>	<b>\$ 2,685,295</b>	<b>\$ 1,385,751</b>	<b>\$ 590,765</b>	<b>\$ 590,765</b>	<b>\$ 118,015</b>	<b>52%</b>	<b>22%</b>	<b>22%</b>	<b>4%</b>
<i>Less: Non-Rate Revenues</i>									
<b>Rate Revenue</b>									
Sewer Rate Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	52%	22%	22%	4%
Other Revenue	-	-	-	-	-	52%	22%	22%	4%
Interest Earnings	(18,384)	(9,487)	(4,045)	(4,045)	(808)	52%	22%	22%	4%
<b>NET REVENUE REQUIREMENTS</b>	<b>\$ 2,666,911</b>	<b>\$ 1,376,263</b>	<b>\$ 586,720</b>	<b>\$ 586,720</b>	<b>\$ 117,207</b>				
<i>Allocation of Revenue Requirements</i>	100.0%	51.6%	22.0%	22.0%	4.4%				
<i>Net Revenue Req't. Check from Financial Plan \$ -</i>									

TABLE 19 : ADJUSTMENT TO CLASSIFICATION OF EXPENSES FOR COST-OF-SERVICE ANALYSIS

Adjustment to Current Rate Level:	Total	(VOL)	(BOD)	(TSS)	(CA)
FY 2022/23 Target Rate Rev. After Rate Increases	\$ 3,316,414				
Projected Rate Revenue at Current Rates	\$ 3,316,414				
FY 2022/23 Projected Rate Increase	0%				
<b>Adjusted Net Revenue Req'ts</b>	<b>\$ 3,316,414</b>	<b>\$ 1,711,440</b>	<b>\$ 729,611</b>	<b>\$ 729,611</b>	<b>\$ 145,751</b>
<i>Percent of Revenue</i>		<i>51.6%</i>	<i>22.0%</i>	<i>22.0%</i>	<i>4.4%</i>

**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis**

**TABLE 20 : DEVELOPMENT OF THE FLOW ALLOCATION FACTOR**

Customer Class <sup>1</sup>	Number of Dwelling Units / Accounts <sup>2</sup>	Monthly Average Consumption by DU (HCF)	Winter Average Consumption by DU / Account (HCF)	Adjusted Annual Volume (gallons) <sup>3</sup>	Percentage of Adjusted Volume
Single Family Residential - Low Density	2,542	21.33	10.13	231,039,793	44.8%
Single Family Residential - Med Density	3,609	16.10	8.31	269,289,098	52.2%
Fire Station	2	28.63	13.00	233,376	0.05%
Multi-Family Residential	255	6.03	4.32	9,891,552	1.92%
Commercial	6	36.68	10.17	547,536	0.11%
Schools	9	525.51	61.26	4,948,768	0.96%
<b>Total:</b>	<b>6,423</b>	<b>18.51</b>	<b>9.02</b>	<b>515,950,122</b>	<b>100.0%</b>

1. Customer data provided by the District for FY 2020/21. Source files: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021\_sewer.xlsx , Sewer Codes.xlsx , and Sewer Rate Code Example.xlsx .
2. Residential classes are by number of dwelling units while non-residential classes are by number of accounts.
3. Annual consumption for all customer classes based upon average winter consumption.

**TABLE 21 : DEVELOPMENT OF THE STRENGTH ALLOCATION FACTOR**

Customer Class	Annual Flow (gallons)	Biochemical Oxygen Demand (BOD)			Total Suspended Solids (TSS)		
		Average Strength Factor (mg/l) <sup>1</sup>	Calculated BOD (lbs./yr.)	Percent of Total	Average Strength Factor (mg/l) <sup>1</sup>	Calculated TSS (lbs./yr.)	Percent of Total
Single Family Residential - Low Density	231,039,793	250	481,718	45.0%	250	481,718	45.1%
Single Family Residential - Med Density	269,289,098	250	561,468	52.5%	250	561,468	52.5%
Fire Station	233,376	250	487	0.05%	250	487	0.05%
Multi-Family Residential	9,891,552	250	20,624	1.93%	250	20,624	1.93%
Commercial	547,536	130	594	0.06%	80	365	0.03%
Schools	4,948,768	130	5,365	0.50%	100	4,127	0.39%
<b>Total:</b>	<b>515,950,122</b>		<b>1,070,255</b>	<b>100.0%</b>		<b>1,068,789</b>	<b>100.0%</b>

1. Average strength factors for BOD and TSS are from the CA State Water Resources Control Board's Revenue Program Guidelines (Appendix G), March 1998 Edition.

**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis**

**TABLE 22 : DEVELOPMENT OF THE CUSTOMER ALLOCATION FACTOR**

Customer Class	Number of Accounts	Percent of Total
Single Family Residential - Low Density	2,542	40.9%
Single Family Residential - Med Density	3,609	58.0%
Fire Station	1	0.02%
Multi-Family Residential	53	0.85%
Commercial	6	0.10%
Schools	9	0.14%
<b>Total:</b>	<b>6,220</b>	<b>100.0%</b>

MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis

TABLE 23 : ALLOCATION OF SEWER REVENUE REQUIREMENTS

Customer Class	Cost Classification Components				Cost-of-Service Net Revenue Reqs.	% of COS Net Revenue Reqs.
	Volume	Treatment		Customer Related		
		BOD	TSS			
<b>Net Revenue Requirements<sup>1</sup></b>	<b>\$ 1,711,440</b>	<b>\$ 729,611</b>	<b>\$ 729,611</b>	<b>\$ 145,751</b>	<b>\$ 3,316,414</b>	<b>--</b>
<i>Percent of Revenue:</i>	51.6%	22.0%	22.0%	4.4%	100.0%	
Single Family Residential - Low Density	\$ 766,374	\$ 328,395	\$ 328,846	\$ 59,559	\$ 1,483,174	44.7%
Single Family Residential - Med Density	893,250	382,762	383,287	84,575	1,743,874	52.6%
Fire Station	774	332	332	23	1,461	0.0%
Multi-Family Residential	32,811	14,060	14,079	1,242	62,192	1.9%
Commercial	1,816	405	249	141	2,611	0.1%
Schools	16,415	3,658	2,817	211	23,102	0.7%
<b>Total</b>	<b>\$ 1,711,440</b>	<b>\$ 729,611</b>	<b>\$ 729,611</b>	<b>\$ 145,751</b>	<b>\$ 3,316,414</b>	<b>100.0%</b>

1. Revenue requirements for each customer class are determined by multiplying the revenue requirement from each cost classification by the allocation factors for each customer class.

TABLE 24 : CALCULATION OF PROPOSED SEWER RATES

Customer Class	No. of Dwelling Units <sup>1</sup>	Annualized Winter Consumption (hcf)	Annual Revenue Requirement			Monthly Fixed Charge Per Dwelling Unit	Volumetric Charge Per hcf
			Total	Fixed <sup>2,3</sup>	Volumetric		
<b>Residential</b>							
Single Family Residential - Low Density	2,542	308,877	\$ 1,483,174	\$ 1,483,174	\$ -	\$48.63	\$ -
Single Family Residential - Med Density	3,609	360,012	1,743,874	1,743,874	-	\$40.27	-
Fire Station	2	312	1,461	1,461	-	\$60.89	-
Multi-Family Residential	255	13,224	62,192	62,192	-	\$20.32	-
<b>Subtotal</b>	<b>6,408</b>	<b>682,425</b>	<b>\$ 3,290,702</b>	<b>\$ 3,290,702</b>	<b>\$ -</b>		
<b>Commercial &amp; Schools</b>							
Commercial	6	732	\$ 2,611	\$ 1,519	\$ 1,092	\$21.09	\$1.49
Schools	9	6,616	23,102	10,272	12,829	\$95.11	\$1.94
<b>Subtotal</b>	<b>15</b>	<b>7,348</b>	<b>25,712</b>	<b>11,791</b>	<b>\$ 13,921</b>		
<b>Total</b>	<b>6,423</b>	<b>689,773</b>	<b>\$ 3,316,414</b>	<b>\$ 3,302,493</b>	<b>\$ 13,921</b>		
<i>Percent of Revenue from Fixed vs. Volumetric Charges</i>			<i>100.0%</i>	<i>99.6%</i>	<i>0.4%</i>		

1. Customer data provided by the District for FY 2020/21. Source files: 13 & 14 - 4 MH Billing 7-1-2020 thru 6-30-2021\_sewer.xlsx , Sewer Codes.xlsx , and Sewer Rate Code Example.xlsx .  
 2. Fixed charges are set at 100% of the revenue requirement for residential customers.  
 3. Fixed charges are set at 58% of revenue requirement for commercial and school customers as winter consumption is used to allocate costs due to mixed meter use.

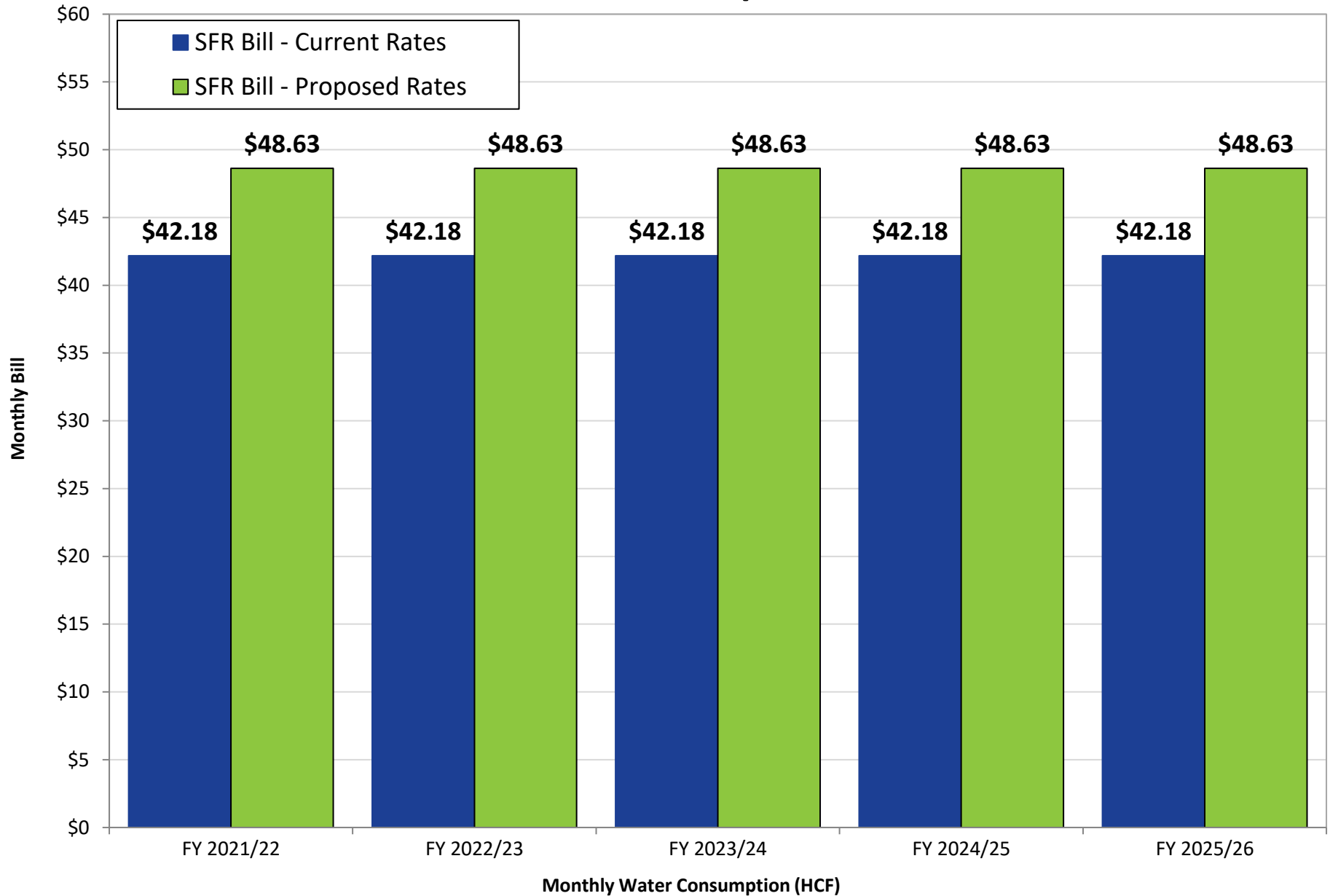
**MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT  
SEWER RATE STUDY  
Cost-of-Service Analysis & Rate Design**

**TABLE 25 : CURRENT VS. PROPOSED SEWER RATES**

Sewer Rate Schedule <sup>1</sup>	Current Rates	Proposed Sewer Rates				
		FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27
<b><i>Residential Monthly Fixed Service Charges</i></b>						
Single Family Residential - Low Density	\$42.18	\$48.63	\$48.63	\$48.63	\$48.63	\$48.63
Single Family Residential - Med Density	\$35.45	\$40.27	\$40.27	\$40.27	\$40.27	\$40.27
Fire Station	\$37.50	\$60.89	\$60.89	\$60.89	\$60.89	\$60.89
Multi-Family Residential	\$17.65	\$20.32	\$20.32	\$20.32	\$20.32	\$20.32
<b><i>Non-Residential Monthly Fixed Service Charge</i></b>						
Commercial	\$31.07	\$21.09	\$21.09	\$21.09	\$21.09	\$21.09
Schools	\$100.14	\$95.11	\$95.11	\$95.11	\$95.11	\$95.11
<b><i>Non-Residential Volumetric Charge (\$/hcf)<sup>2</sup></i></b>						
Commercial	\$1.48	\$1.49	\$1.49	\$1.49	\$1.49	\$1.49
Schools	\$1.89	\$1.94	\$1.94	\$1.94	\$1.94	\$1.94

- Proposed rates are based on charges to each customer account; volumetric rates for Commercial and School customers are per HCF of average winter water use from the previous winter period.
- HCF = hundred cubic feet (748 gallons).

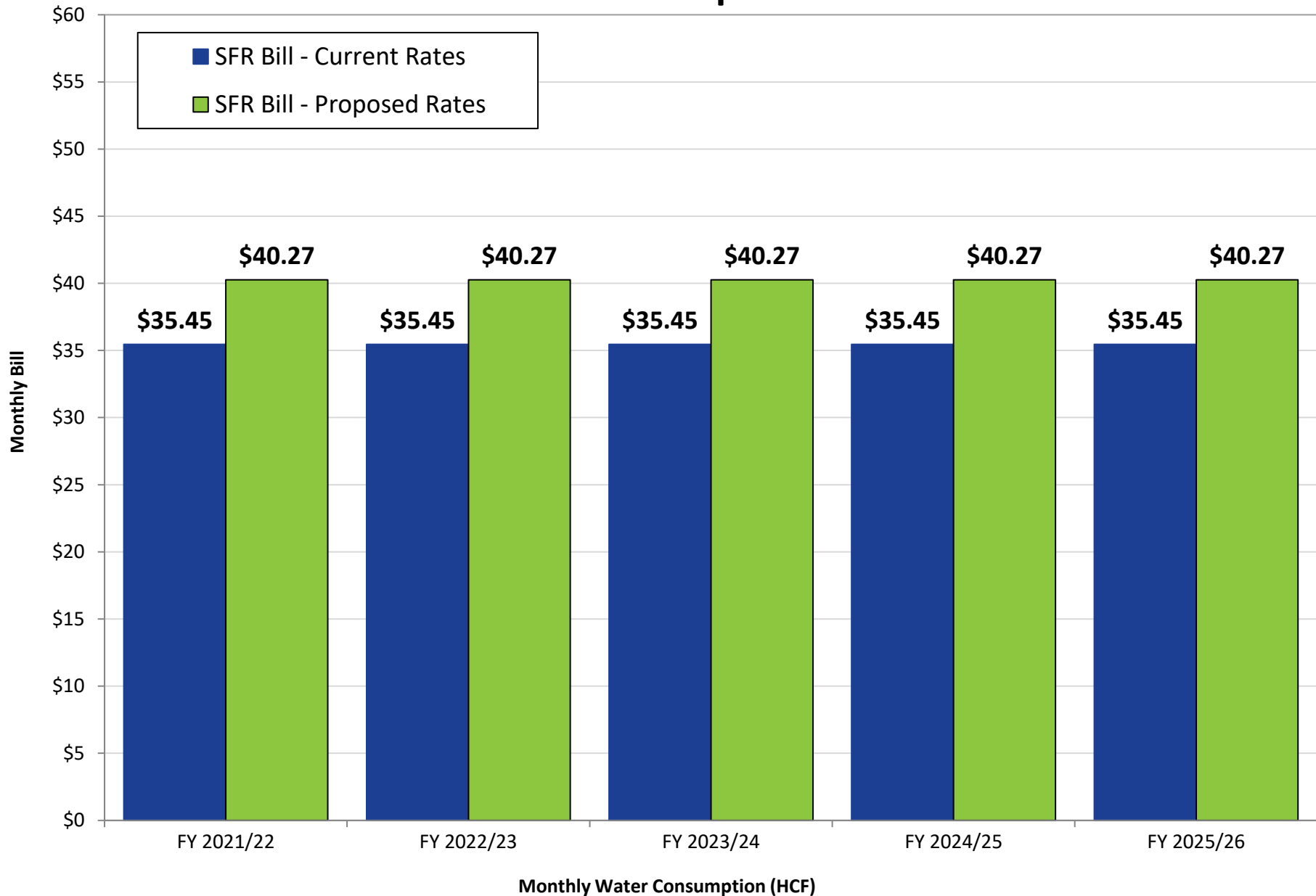
## Residential Low Density Sewer Bill Comparison Current vs. Proposed Rates





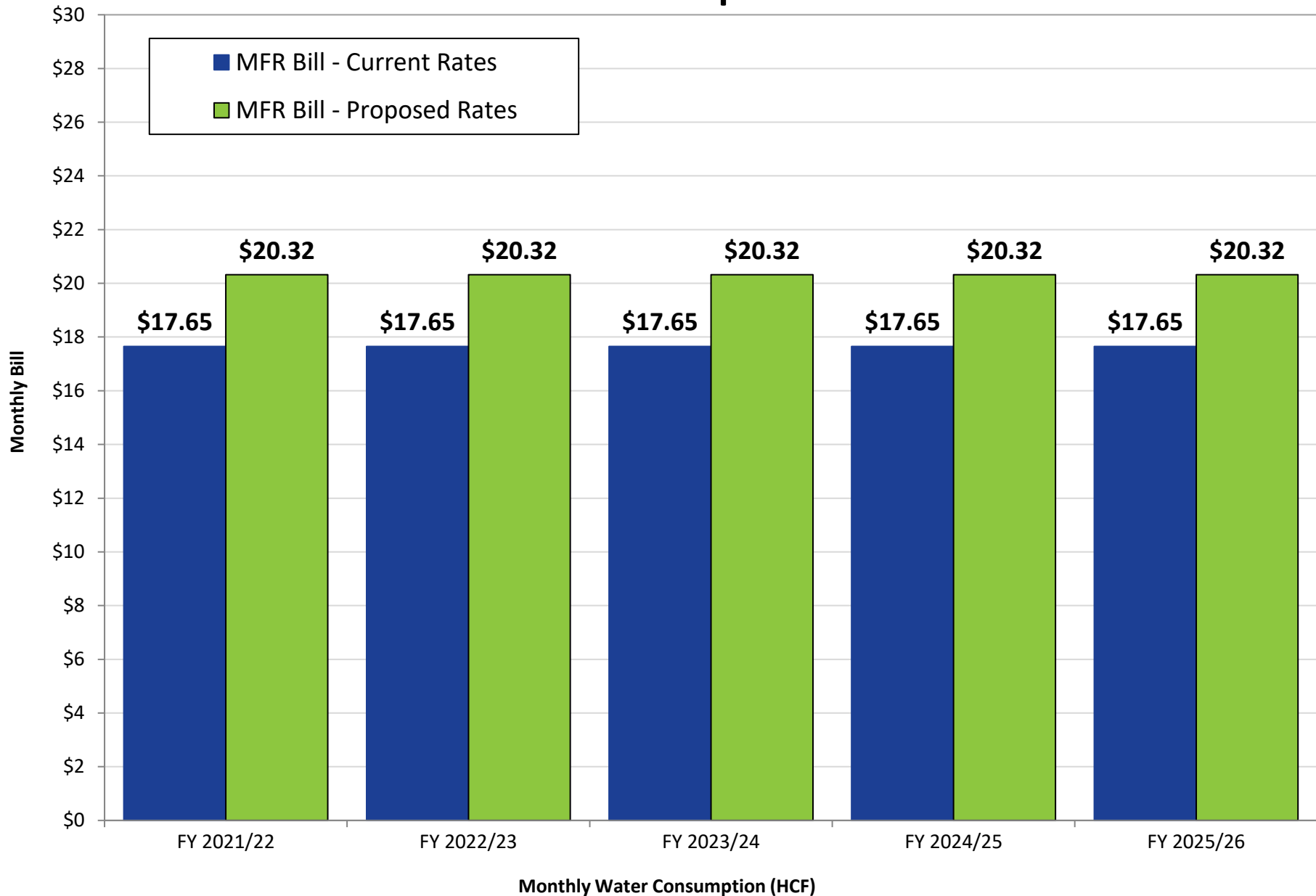
# Residential Medium Density Sewer Bill Comparison

## Current vs. Proposed Rates

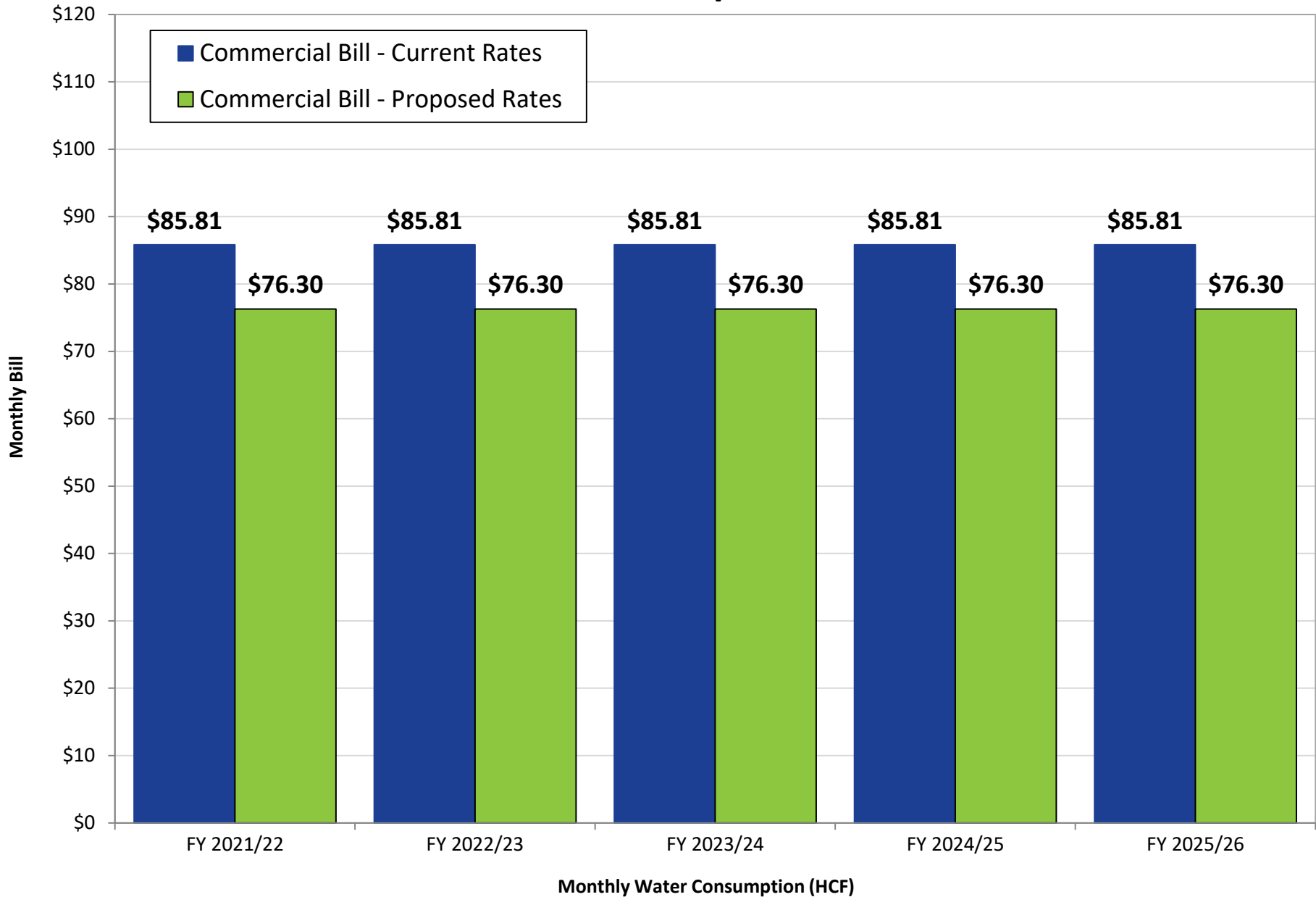


# Multi-Family Residential Sewer Bill Comparison

## Current vs. Proposed Rates



## Commercial Sewer Bill Comparison Current vs. Proposed Rates



## School Sewer Bill Comparison Current vs. Proposed Rates

