



# FORESTHILL PUBLIC UTILITY DISTRICT

## Water Rate Study

**May 26, 2021**  
**Final Report**





# **FORESTHILL PUBLIC UTILITY DISTRICT**

2450 Main Street  
Foresthill, CA 95631



## **WATER RATE STUDY**

*May 26, 2021*  
Final Report

### **HF&H CONSULTANTS, LLC**

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May 26, 2021

Mr. Hank White  
General Manager  
Foresthill Public Utility District  
24540 Main Street  
Foresthill, CA 95631

**Subject: Water Rate Cost-of-Service Study -Draft Report**

Dear Mr. White:

HF&H is pleased to submit this cost-of-service report to the Foresthill Public Utility District. The rates proposed in this report reflect the current and projected cost of providing service for the next five years, FY 2021-22 through FY 2025-26. We greatly appreciate your assistance in developing the cost-of-service analysis.

Very truly yours,

HF&H CONSULTANTS, LLC

Rick Simonson, Senior Vice President  
Gabe Sasser, Senior Associate



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## GLOSSARY

**AWWA** – American Water Works Association.

**CCF** – Hundred cubic feet (see HCF below).

**CIP** - Capital Improvement Program.

**COS** - Cost of Service.

**EDU** – Equivalent Dwelling Unit.

**EMU** – Equivalent Meter Unit.

**FY** - Fiscal Year.

**FYE** – Fiscal Year Ending.

**O&M** - Operating and Maintenance, in reference to the costs of running facilities.

**PAYGo** - Pay-As-You-Go, in reference to funding capital improvements from cash rather than from borrowed sources such as bonds or loans.

**R&R** – Repair and Replacement.

**Service Charges** – Fixed charges paid per account regardless of the amount of water used. The charge is proportionate to the capacity of the customer’s service.

**tGal** – Thousand gallons

## **ACKNOWLEDGEMENTS**

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## **LIMITATIONS**

This document was prepared solely for the Foresthill Public Utility District in accordance with the contract between the District and HF&H and is not intended for use by any other party for any other purpose. In preparing this study, we relied on information from the District, which we consider accurate and reliable.

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

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

## I. EXECUTIVE SUMMARY

### OVERVIEW

HF&H Consultants, LLC (HF&H) was retained by Foresthill Public Utility District (District) to conduct a cost of service (COS) analysis and water rate study. The District engaged HF&H to evaluate their current rate structure and update their water rates for a five-year period from FY 2021-22 through FY 2025-26. This section summarizes the findings and recommendations in this report.

In preparing this water rate study, expenses, revenues, and reserves were projected for a five-year planning period through FY 2025-26. The rates derived in this five-year period will be used for setting rates under Art. XIIID, Sec. 6 of the State Constitution.<sup>1</sup>

The following findings and recommendations were made, which result in the proposed water rate structure and subsequent rates. It is expected that the first rate increase will be effective August 15, 2021 with future rate increases effective each July 1 over the following four-year period, beginning July 1, 2022.

### FINDINGS & RECOMMENDATIONS

In preparing this water rate study, the following findings were made.

1. **Operating and Maintenance costs.** Operating and Maintenance (O&M) expenses (labor, utilities, maintenance, regulatory compliance, etc.) are based on the District's Board-adopted FY 2021-22 operating budget which is projected to increase by an average of 2.9% per year through the five-year planning period. The detailed annual O&M expenses are shown in detail in Table 2 of the rate model included in the Appendix.
2. **Capital costs.** The District prepared a Capital Improvement Plan (CIP) through FY 2025-26 (in 2021 dollars) driven by a focus on improvements to distribution and transmission assets. The District plans to spend \$6.4 million over the next five fiscal years, an average of \$1.28 million per year.

The District plans to fund these projects through a combination of connection fees from new customers, grants, the sale of surplus water, and water rate revenue. The proposed water rates resulting from this rate study include funding an average of approximately \$428,000 per year in capital projects, the remaining costs will

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<sup>1</sup> This law was enacted by Proposition 218 in 1996. The law contains procedural and substantive requirements that apply to property-related fees and charges such as water rates. The law exempts connection charges, which instead are governed by Section 66000 of the Government Code.

be funded through connection fees, grants, and/or surplus water sales. If the connection fee, grant, and surplus water sales revenue received in any given year are not sufficient to complete the budgeted project(s), the project(s) will be deferred.

3. **Revenue from existing rates.** Annual revenue generated from existing rates is sufficient to cover the District’s budgeted FY 2021-22 operating and capital expenses described above. As a result, overall revenue generated from customer water rates can be reduced by 12% in FY 2021-22. Because the rate adjustments are proposed to go into effect in mid-August, the actual decrease in rate revenue for FY 2021-22 will be 10%, as revenues during the first two months of the fiscal year (July and August) will be at current rates.

It should be noted that the ability to adopt new rates which will generate 10% less revenue in FY 2021-22 (saving rate payers money), is a direct result of the District’s decision to commit to fund a substantial amount of capital projects by aggressively pursuing grant funding and through revenues generated by selling surplus water. Had the needed capital projects been assumed to be solely funded with water rate revenue from rate payers, the rate revenues would have needed to increase.

The proposed rates discussed in this report reflect such a reduction in total revenue; however, the rate structure changes also being recommended (discussed in Section IV), which better aligns the rates with the cost-of-service and meets the District’s rate setting objectives, will result in some customer bills decreasing less than the 12%, or increasing, while other customer bills will decrease greater than 12%. The rate structure change will take effect with the mid-August 2021 rate adjustments, no further rate structure changes are proposed to be made through the end of the five-year planning period. As such, the annual percentage changes in rates (effective each July 1 of each subsequent year), as shown in **Figure ES-1**, will be applied across-the-board to all then-current water rates.

**Figure ES-1. Changes in Annual Rate Revenue**

Fiscal Year	Rate Adjustments	Date of Rate Adjustment	Revenue After Rate Adjustments	Change in Revenue
<b>Current Revenue at Current Rates</b>			<b>\$2,868,017</b>	
FY 2021-22	various	Aug. 2021	\$2,583,212	-10%
FY 2022-23	1%	July 2022	\$2,553,039	-1%
FY 2023-24	2%	July 2023	\$2,606,114	2%
FY 2024-25	2%	July 2024	\$2,660,293	2%
FY 2025-26	2%	July 2025	\$2,715,598	2%

4. **Fixed Service Charge revisions.** While most of the District’s current service charges are proportional to the design capacity of the meter size used, there are a

few exceptions. Currently, meters sized 5/8" and 3/4" are charged the same, and the same is true for all meter sizes exceeding 2". The proposed charges would be graduated in proportion to the capacity of the service (i.e., meter-size).

A comparison of proposed and existing service charge rates is provided in **Figure ES-2**. The rate adjustment percentage increases shown in **Figure ES-1**, have been applied to calculate rates for the next five fiscal years. Monthly bills are the sum of both the fixed service charges and consumption charges multiplied according to usage (discussed in Item #5).

**Figure ES-2. Current and Proposed Service Charges (\$/month)**

Service Size	Current (\$/month)	Proposed (\$/mo; All Customer Classes)				
		Aug. 2021	Jul. 2022	Jul. 2023	Jul. 2024	Jul. 2025
5/8"	\$90.54	\$70.81	\$71.52	\$72.95	\$74.41	\$75.90
3/4"	\$90.54	\$91.20	\$92.11	\$93.95	\$95.83	\$97.75
1"	\$163.87	\$131.98	\$133.30	\$135.97	\$138.69	\$141.46
1 1/2"	\$328.68	\$264.51	\$267.16	\$272.50	\$277.95	\$283.51
2"	\$643.17	\$427.63	\$431.91	\$440.55	\$449.36	\$458.35
4"	\$1,581.35	\$1,854.88	\$1,873.43	\$1,910.90	\$1,949.12	\$1,988.10
6"	\$1,581.35	\$3,587.97	\$3,623.85	\$3,696.33	\$3,770.26	\$3,845.67
8"	\$1,581.35	\$7,156.09	\$7,227.65	\$7,372.20	\$7,519.64	\$7,670.03

- Consumption charge revisions.** The District currently provides a monthly allotment to all customers based on meter size or number of dwelling units. Customers are billed based on two uniform consumption charge rates, known as "overage" and "credit", in relation to their actual usage versus their monthly allotment. Under the ratemaking proposal, the District would bill all customers on a uniform consumption charge rate and discontinue minimum monthly allotments. All customers will pay based on the first gallon of usage. **Figure ES-3** summarizes the current and proposed consumption charge rates. Percentage increases shown in **Figure ES-1**, have been applied to calculate rates for the next five fiscal years.

Monthly bills are the sum of both the service charge rate (Item #4 above) and the consumption charge rate multiplied by a customer's respective water use during the month.

**Figure ES-3. Current and Proposed Consumption Charge Rates**

Consumption Charge	Current (\$/tGal/month)	Proposed (\$/tGal/month; All Customers)				
		Aug-21	Jul-22	Jul-23	Jul-24	Jul-25
All customers	Credit (\$0.42)	\$1.96	\$1.98	\$2.02	\$2.06	\$2.10
	Overage \$1.55					

- Reserve fund targets.** Rates are set to generate a constant level of revenue to maintain reserves at adequate levels. At the same time that revenue from rates is added

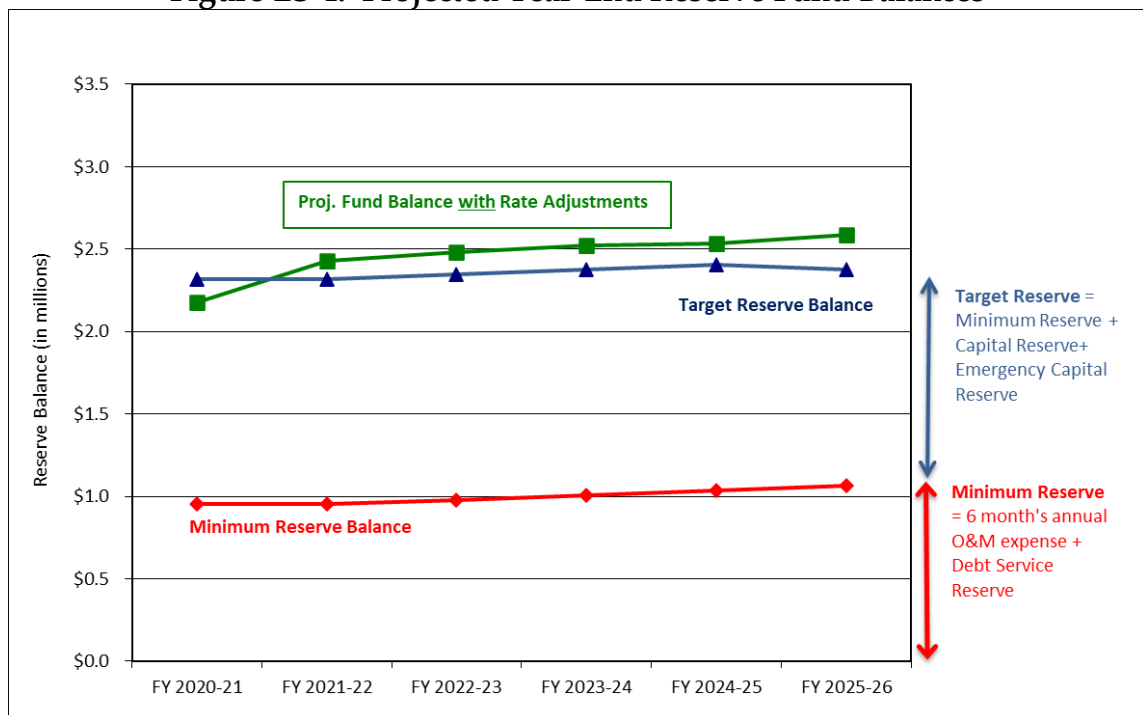
to reserves, reserves are drawn down to fund capital projects whose costs vary from year to year. In effect, reserves are used to buffer rates from varying levels of capital expenditures and unforeseen variances in operating expenditures. To determine what constitutes adequate reserve amounts for rate making purposes, we determine separate operating and capital reserve targets.

The operating reserve provides working capital for monthly O&M expenses. We agree with the District’s current policy requiring an operating reserve of six months of O&M expenses. This is adequate to cover potential cash flow lags between when the District incurs expenses and when it receives revenue from monthly billings. Furthermore, the operating reserve will accommodate uneven expense and revenues throughout the year.

The capital reserve provides liquidity to fund construction for projects that are funded on a PAYGo basis (as opposed to those that are funded from debt). With adequate capital reserves, the District is able to pay contractors without encroaching on the operating reserves. For purposes of this study, we recommend a target capital reserve balance equal to the District’s average annual water-rate funded capital expenditures. In addition, we recommend maintaining an additional \$600,000 in the District’s capital reserve for emergency capital repair purchases.

- Reserve fund balance.** With the recommended rate changes in **Figures ES-2 and ES-3**, the District’s reserve fund balance (solid green line) will meet or exceed the District’s reserve target throughout the five-year financial planning period.

**Figure ES-4. Projected Year-End Reserve Fund Balances**



8. **Water Rate Implementation.** This report documents the rates proposed for adoption by the District, as shown in **Figures ES-2** and **ES-3**, above. In accordance with Proposition 218, the District may adopt the rates for the five-year financial planning period once all property owners have been notified of the proposed rates and the public protest hearing has been conducted, no earlier than 45 days after the mailing of the notices.

The proposed rate plan would maintain adequate reserves for cash flow and emergency purposes. Actual revenues and expenses may differ from the projections included in the five-year financial model (included in **Appendix**), which is the basis for these proposed rate increases. Each year, as part of the annual budget process, the District would confirm the need for the next incremental rate change. The District can implement a lower rate increase, if supported by the financial forecast, without conducting the Proposition 218 protest process.



## II. INTRODUCTION

### BACKGROUND

The District provides treated water services to the community of Foresthill, located in Placer County. Currently the District serves just over 2,000 residential and non-residential metered accounts across an approximate service area of 13,000 acres. The District owns and operates its own plant which treats all raw water captured by the Sugar Pine Reservoir. The District assumed ownership of Sugar Pine Reservoir in 2003.

The previous rate study occurred in 2014 and covers FY 2014-15 through FY 2018-19. This study also included a cost-of-service analysis. In the past, the District was in a precarious financial position and structured their rates to mitigate this risk.

### STUDY PURPOSE

The purpose of this study is to conduct a cost-of-service analysis that will determine rates that proportionally recover the cost of providing Foresthill's water service. Toward that end, the cost-of-service analysis determines how much revenue should be generated by each component of the rate structure so that rate payers within each customer category are charged for their proportionate share of the cost of providing service on a parcel basis. The cost-of-service analysis has been tailored specifically to the District's customer classes and the rate structures that are appropriate for each category. Rate re-structuring was pursued while ensuring the District would maintain adequate reserves to support continued operations and capital infrastructure repair and replacements.

### STUDY PROCESS

A comprehensive rate study comprises three steps. Revenue requirement projections determine how much revenue is needed from rates. Cost-of-service analysis determines how much of the revenue should come from fixed and variable charges. Rate design determines the structure of the fixed service charges and the variable consumption charges for each customer category. The study process also considered recommendations made by the Community Advisory Committee.

The cost-of-service analysis considers industry practices described by the American Water Works Association.<sup>2</sup> At the outset of the analysis, the types of customer classes were reviewed, as were the types of rate structures that are appropriate to the District's customer categories. Customer meter records, water usage data, and District policies were also reviewed to hone our analysis.

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<sup>2</sup> *Principles of Water Rates, Fees, and Charges*. American Water Works Association Manual M1, 7<sup>th</sup> Edition.



## REPORT ORGANIZATION

The report contains six sections:

1. **Executive Summary** – Summarizes our findings and recommendations.
2. **Introduction** – Provides context for the study.
3. **Revenue Requirements** – Documents the annual revenue requirements and increases in rate revenue for the five-year planning period from FY 2021-22 through FY 2025-26.
4. **Cost-of-Service Analysis** – Documents the allocation of costs to be recovered by the fixed service charge and the consumption charges.
5. **Rate Design** – Documents the derivation of the rates.
6. **Customer Bill Impacts** - Provides a comparison by meter size and usage of current and proposed rates, assuming monthly usage.

In addition to the report sections, you may refer to these additional sections for guidance:

- A. **Table of Contents**
- B. **Glossary**
- C. **Appendix** - Contains a copy of the rate model.

### III. REVENUE REQUIREMENTS

To determine whether additional rate revenue is required, projected operating and capital expenses are compared with projected revenue from current rates. Annual surpluses or deficits are then applied to the reserve funds. Rates are then adjusted so that the expenses are covered, and reserve targets are met.

A spreadsheet model was developed to derive revenue requirements for FY 2021-22 through FY 2025-26. The revenue requirements represent the costs that must be covered by revenue from rates and other sources. The District’s Board-approved operating and capital budget for FY 2021-22 served as the starting point for projecting the District’s expenses and revenues.

The derivation of future rates builds on the trend analysis described later in this report. In setting future rates, expenses, revenues, and reserve balances are forecasted. This projection reflects the District’s rate-making objectives. The financial planning model that was developed to make these projections reflects the current understanding of the District’s circumstances, discussed in the following sections.

#### REVENUE REQUIREMENT ASSUMPTIONS AND PROJECTIONS

Expense projections combined with contributions to reserves become the revenue requirements. The District’s Board-approved operating budget was relied on for the FY 2021-22 expenses in the first year of the financial-planning period. Working with District staff, inflationary factors were developed based on recent historical results. The assumptions shown in **Figure III-1** were used to project the District’s revenue requirements through FY 2025-26.

**Figure III-1. Projection Assumptions**

	Budget		Projected		
	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
<b>a</b> Annual EMU Growth Rate	0.00%	0.00%	0.00%	0.00%	0.00%
Annual Additional EMUs	0	0	0	0	0
Total EMUs End of Year	2,585	2,585	2,585	2,585	2,585
<b>b</b> General Inflation	Budget	2.00%	2.00%	2.00%	2.00%
<b>c</b> Salaries & Wages	Budget	3.00%	3.00%	3.00%	3.00%
<b>d</b> Benefits	Budget	4.50%	4.50%	4.50%	4.50%
<b>e</b> Construction Cost Inflation	Budget	3.31%	3.31%	3.31%	3.31%
<b>f</b> Interest on Fund Balance	1.50%	1.50%	1.50%	1.50%	1.50%
<b>g</b> Bad debt as a % of rate revenue	0.0%	0.0%	0.0%	0.0%	0.0%
<b>h</b> Annual connection fee revenues	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000
<b>i</b> Utilities	Budgeted	3.0%	3.0%	3.0%	3.0%

#### Labor and Operations Expenses

These cost categories include direct salaries and benefits, materials and services, contract services, and overhead. These expenses are projected to increase an average of 2.9% per year

during the projection period. Details of budgeted and projected expenses are provided on Table 2 of the rate model included in the Appendix.

### Debt Service

The District has annual debt service of approximately \$340,000. Approximately half of the annual debt service was incurred to acquire the Sugar Pine Reservoir, to improve the District’s water reliability. The other portion of the debt service is a result of funding system improvements and investments in improving fire flow to better serve the public. The annual debt service payments are partially offset by assessment revenues. Projections of the District’s net debt service payments, to be funded through water rates, are summarized in **Figure III-2**.

**Figure III-2. Debt Service (Water Rate Funded)**

	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Assessment District No. 2 Debt Service					
2017 Water Revenue Bond	\$86,814	\$86,723	\$86,772	\$86,752	\$86,876
2017 Limited Obligation Refunding Bond	\$82,738	\$82,869	\$82,947	\$82,006	\$81,946
Assessment District Revenue	(\$82,239)	(\$82,239)	(\$82,239)	(\$82,239)	(\$82,239)
District Enterprise Fund					
2014 Water Loan Agreement - Sugar Pine Reservoir	\$168,583	\$171,333	\$173,383	\$169,852	\$111,981
<b>Net Debt Service Funded with Water Rates</b>	<b>\$255,896</b>	<b>\$258,686</b>	<b>\$260,863</b>	<b>\$256,371</b>	<b>\$198,563</b>

The District does not plan on issuing additional debt to fund capital improvement projects during the five-year planning period.

### Capital Improvements

Rates need to generate enough revenue to cover annual operating and capital repair and replacement expenses. However, rates are not set to exactly match cash expenditures because cash expenditures can fluctuate and the District may receive funds from other sources (e.g., grants, surplus water sales). Reserves are used to cover the difference so that rate increases are smooth and gradual. In order to maintain adequate reserves to help modulate rates, the revenue requirements include contributions to reserves. The contributions to reserves represent additional revenue from water rates that is needed to maintain adequate operating and capital reserves.

The District’s current level of reserves has enabled it to pay down its existing debt service and pursue capital improvements without additional debt funding. The District intends to continue paying for capital infrastructure projects on a Pay-As-You-Go (PAYGo) basis (using water rate revenue, grants, connection fees, and surplus water sales revenue), rather than incurring additional debt.

Facilities the District has constructed to provide water service will depreciate and eventually need to be replaced. The District has conducted periodic facility condition assessments to prioritize and address long-term capital projects via its Capital Improvement Program (CIP).

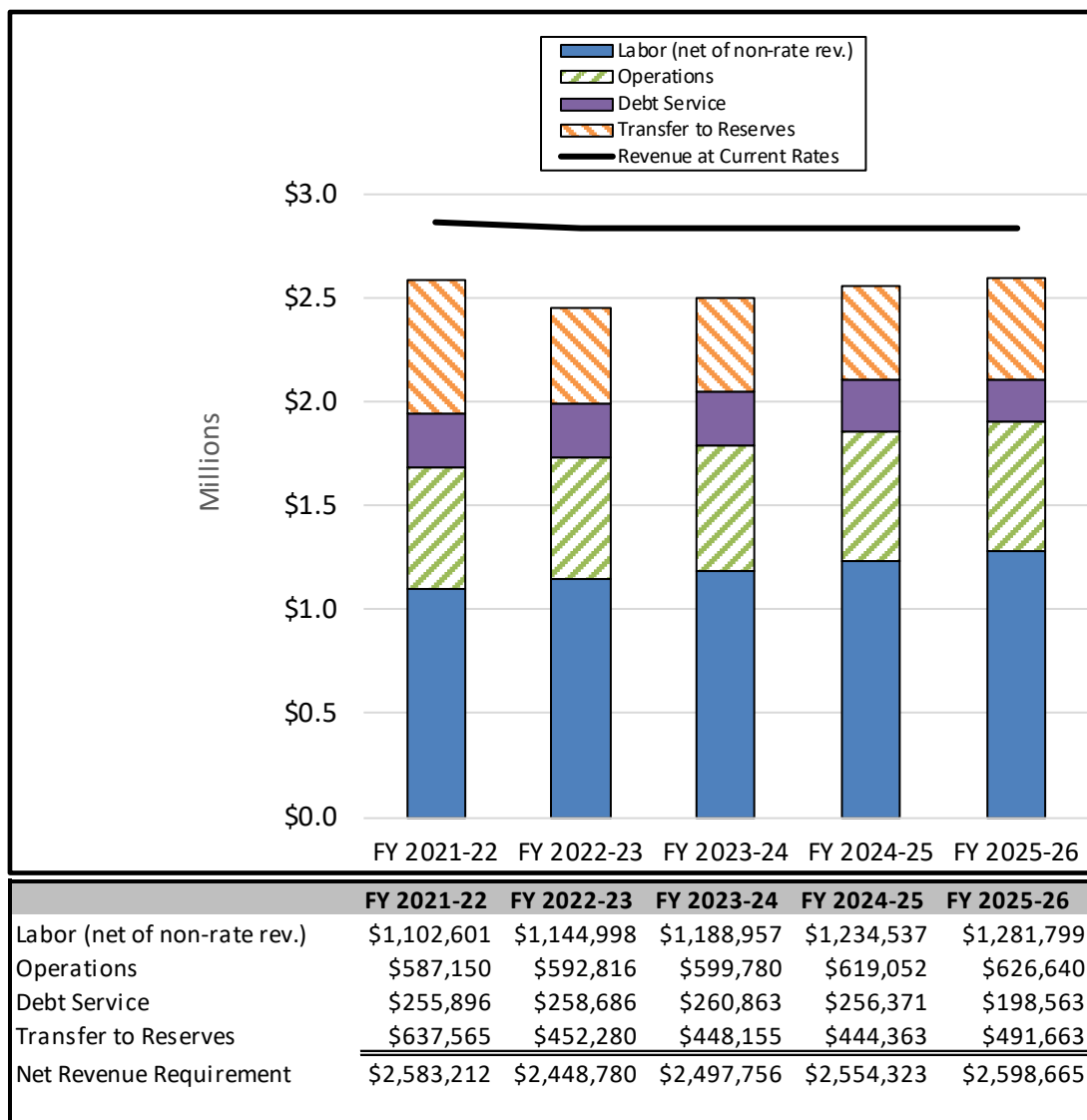
Based on these condition assessments and District capital outlay plans, the revenue requirement projections show approximately \$6.4 million in capital projects over the next 5 years are necessary, as shown in Figure III-3. The projections include an annual inflationary adjustment of 3.3% based on the average annual increase in the Construction Cost Index published by Engineering News-Record over the past ten years. The District plans to fund these projects through a combination of grants, the sale of surplus water, and water rate revenue. The proposed water rates from this rate study include funding an average of \$427,385 per year in capital projects, the remaining project costs will be funded through grants or surplus water sales. If the grant or surplus water sales revenue received in any given year are not sufficient to complete the budgeted project, the project will be deferred.

**Figure III-3. Projected Capital Improvement Plan**

Project Description	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	Total Project Cost
<b>Sugar Pine Dam &amp; Reservoir</b>						
Water Right Permit Extension	\$85,000					\$85,000
Piezometers	\$100,000					\$100,000
Deformation Survey and monuments		\$50,000				\$50,000
<b>Regulatory Expenses</b>						
Cost of Service Study	\$45,000					\$45,000
<b>Treatment Plant</b>						
Auxiliary Generators	\$100,000		\$100,000			\$200,000
Scaffold system for filters	\$20,000					\$20,000
Control Panel Rehabilitation		\$100,000				\$100,000
SCADA/GIS		\$100,000				\$100,000
Lime system rehabilitation	\$60,000					\$60,000
Rehabilitate storage tank			\$500,000			\$500,000
Asphalt sealing (51,000 sq-ft)	\$30,000					\$30,000
** Eq/Inventory building		\$100,000	\$100,000			\$200,000
TL 2300 Turbidity Meter	\$5,000					\$5,000
<b>Transmission &amp; Distribution</b>						
Ditch Witch Vacuum Trailer		\$120,000				\$120,000
Auxiliary Storage Tank					\$1,000,000	\$1,000,000
Sierra View Lane Pipe Replacement	\$1,000,000	\$1,000,000				\$2,000,000
Remaining Pipes (Distribution)				\$800,000		\$800,000
Pressure Relief Stations QTY 36	\$90,000	\$50,000	\$40,000	\$40,000	\$40,000	\$260,000
Sample stations	\$5,000					\$5,000
<b>Administration</b>						
Computers & Software	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$20,000
Billing Software	\$10,000					\$10,000
Facilities/Repairs (Paint & back office)	\$15,000	\$5,000	\$5,000	\$5,000	\$5,000	\$35,000
<b>Equipment/Vehicles</b>						
Vehicle Fleet (7)	\$60,000		\$60,000		\$60,000	\$180,000
Backhoe	\$150,000					\$150,000
<b>Project Costs</b>	<b>\$1,779,000</b>	<b>\$1,529,000</b>	<b>\$809,000</b>	<b>\$849,000</b>	<b>\$1,109,000</b>	<b>\$6,075,000</b>
Inflation Adjustment (3.3% annually)	100.0%	103.3%	106.7%	110.3%	113.9%	
<b>Escalated Total Project Costs</b>	<b>\$1,779,000</b>	<b>\$1,579,634</b>	<b>\$863,469</b>	<b>\$936,171</b>	<b>\$1,263,363</b>	<b>\$6,421,637</b>
<b>Less: Non-Water Rate Funding Sources</b>						
Connection Fees	(\$21,000)	(\$21,000)	(\$21,000)	(\$21,000)	(\$21,000)	(\$105,000)
Grants or Surplus Water Sales	(\$1,358,000)	(\$1,145,388)	(\$415,537)	(\$474,101)	(\$786,686)	(\$4,179,712)
<b>Total Capital Funded with Water Rate Revenue</b>	<b>\$400,000</b>	<b>\$413,246</b>	<b>\$426,932</b>	<b>\$441,070</b>	<b>\$455,677</b>	<b>\$2,136,925</b>
<i>Average Annual Capital Spending Funded through Water Rates</i>						<b>\$427,385</b>

The application of the assumptions in **Figure III-1** and inclusion of the capital expenses, to be funded with water rate revenue described above, comprise the revenue requirements shown in **Figure III-4**.

**Figure III-4. Net Revenue Requirement Projections**



### Revenue from Current Rates

As shown in **Figure III-4**, revenue from current rates is projected to be greater than the annual projected revenue requirements during the five-year planning period. As a result, overall revenue generated from customer water rates can be reduced by 12% in FY 2021-22. The proposed rates discussed in this report reflect such a reduction in total revenue; however, the rate structure changes also being recommended (discussed in **Section V**), will result in some customer bills decreasing less than the 12%, or increasing, while other customer bills will decrease greater than 12%.

It should be noted, the revenue at current rates reflects a sustained reduction in water demand of 20% in FY 2022-23, as a result of current drought conditions and potential changes in water demand, as some customers will experience bill increases as a result of the rate restructure.

## **RESERVE FUNDS**

Rates are set to generate sufficient revenue to cover annual expenses. In addition, rates are set to maintain adequate reserves.

### **Operating Reserve**

The District's reserve policy states that the minimum operating reserve balance will equal six months' annual O&M expense plus the debt service reserve. It is essential to not drop below this minimum balance to ensure adequate cash flow is available to the District throughout the year. Maintaining the minimum balance for the operations reserve is recommended as the highest priority for the District.

### **Debt Service Reserve**

The purpose of a debt service reserve is to provide funding to avoid defaulting on any existing loans if the District failed to make a loan payment. We recommend maintaining a full year's loan repayment. As such, the District's target debt service reserve is between \$280,802 and \$338,135 depending on the specific fiscal year.

### **Capital Reserve**

Just as working capital is needed to pay on-going O&M expenses, working capital is also needed to fund construction of water rate-funded (i.e., as opposed to debt-funded, grant-funded, etc.) capital projects. For purposes of this study, we recommend a Capital Reserve target equal to the average annual water-rate-funded capital expenses (\$427,000).<sup>3</sup>

### **Emergency Reserve**

Should a District asset unexpectedly fail, this reserve will provide funding toward replacement or repair. In light of the District's decision to assume a significant amount of funding for capital projects will need to come from connection fees, grants, and/or revenue from the sale of surplus water, all of which are not guaranteed to materialize, we recommend maintaining an additional reserve amount for emergency repair and replacement purposes. As such, the reserve balance target includes an emergency reserve amount of \$600,000 (in addition to the operating, debt, and capital reserve targets discussed above), which is equal to 2% of the book value of the District's existing assets.

## **REVENUE CHANGES**

The required revenue changes are determined by comparing the revenue from existing rates with the revenue requirements. Rate revenue is then adjusted to reduce or eliminate deficits

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or surpluses, provide adequate debt coverage, and maintain reserves. As shown in **Figure III-4**, annual revenue generated from existing rates is sufficient to cover the District’s budgeted FY 2021-22 operating and capital expenses described above. As a result, overall revenue generated from customer water rates can be reduced by 12% in FY 2021-22. Because the rate adjustments are proposed to go into effect in mid-August, the actual decrease in rate revenue for FY 2021-22 will be 10%, as revenues during the first two months of the fiscal year (July and August) will be at current rates.

**Figure III-5** summarizes the proposed annual rate changes and resulting changes in revenue generated. In FY 2021-22, the percentage rate increase varies among customers, because of rate structure modifications. In subsequent years, the rate adjustments are applied across the board to all rates.

**Figure III-5. Projected Revenue Increases**

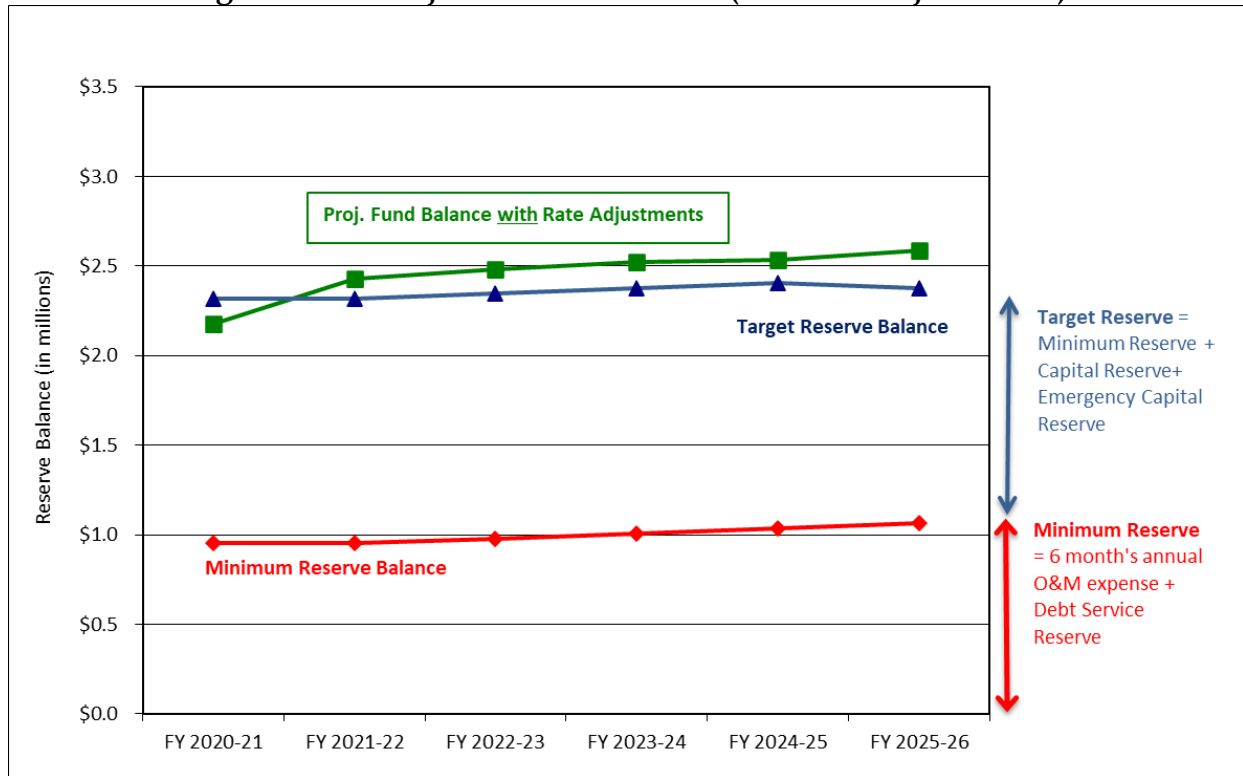
Fiscal Year	Rate Adjustments	Date of Rate Adjustment	Revenue After Rate Adjustments	Change in Revenue
<b>Current Revenue at Current Rates</b>			<b>\$2,868,017</b>	
FY 2021-22	various	Aug. 2021	\$2,583,212	-10%
FY 2022-23	1%	July 2022	\$2,553,039	-1%
FY 2023-24	2%	July 2023	\$2,606,114	2%
FY 2024-25	2%	July 2024	\$2,660,293	2%
FY 2025-26	2%	July 2025	\$2,715,598	2%

## RESERVE FUND BALANCE

**Figure III-6** shows (solid green line) the annual fluctuations in the fund balance that are caused by the differences between the revenue requirement and revenue from rates with the rate increases; the dashed green line is the projected fund balance without the rate adjustments. The revenue and rate adjustments in **Figure III-5** were derived to maintain the fund balance at or slightly above the target reserve. Maintaining a fund balance near the target reserve, will ensure the District has adequate cash flow for operations and reserves to pay for planned capital improvements and unplanned emergencies.

**Figure III-6** contains two target lines. First, the Minimum Reserve balance (red line) is equal to six month’s annual O&M expense plus the debt service reserve. It is essential to not drop below this minimum balance to ensure adequate cash flow is available to the District throughout the year. Second, the Target Reserve (blue line) is the sum of the Capital Reserve and Emergency Reserve added to the Minimum Reserve balance.

**Figure III-6. Projected Fund Balance (after rate adjustments)**





## IV. COST OF SERVICE ANALYSIS

### GENERAL APPROACH

The revenue requirement analysis establishes how much revenue is required from rates. The next step in the analysis is determining the cost of service. Cost-of-service analysis (COS) is used to derive rates that proportionally allocate the cost of service. This study uses the base/extra capacity method to allocate the cost of service to the fixed (service charge) and variable (consumption charge) rate components. The District has historically charged water customers the combination of a fixed service charge and a variable consumption charge based on metered water use in relation to a minimum monthly water allotment. This chapter explains the derivation of the revised service charge and consumption rates that will proportionally generate sufficient revenue to cover the operating and capital costs of the District, as well as maintain a reasonable reserve balance.

### Analytical Procedure

The cost-of-service analysis in this study involved a series of steps that allow for reasonable cost allocations. Costs are first classified according to the associated function. Functions provide the level of service required by customers. The cost of functions can be allocated in proportion to the service provided.

1. **Service function cost classification** – Revenue requirements need to be converted into service function cost categories, which conversion is needed for allocating costs that will be used for calculating rates.
2. **Demand service function allocation percentages** – Base and extra capacity allocation factors are needed to apportion costs related to the demand service functions and to customer categories.
3. **Service function allocations** – Costs from Step 1 are allocated to the demand and customer service functions from Step 2.

The steps constitute the cost-of-service analysis, which converts the revenue requirement for FY 2021-22 of \$2,583,263 (as shown in **Exhibit III-4**) into service charge rates and consumption charge rates.

### Service Function Cost Classification

After determining a utility's revenue requirements, the COS analysis begins by aligning the budget items with the associated function. For example, some cost items are related to functions that support the ability to meet base and peak water demands while other costs are incurred to provide customer service. In other words, "function" refers to the type of operational activity or capital cost needed to provide service. Organizing the budget by functions correlates budget items with the rate (fixed service charges or consumption charges) that will fund the cost.

The service functions for each cost category determine how the capital and O&M costs are allocated. The service functions fall into two categories:

- **Demand service function** - functions related to delivering water to customers at varying levels of demand. These costs will be recovered from the consumption rates.
- **Customer service function** - functions related to customer service and “reserved” capacity. These costs will be recovered from the service charge rates.

The cost of these service functions is derived from the District’s Board-approved FY 2021-22 budget. **Figure IV-1** shows the classification of the budgeted operating and capital expenses and non-operating revenues by service function, organizing them into O&M, Capital, Debt Service, and Non-Operating Revenue categories. The proposed rates are designed to generate 80% of revenue from the service charge and 20% of revenue from the consumption charge.

**Figure IV-1. FY 2021-22 Revenue Requirement by Service Function**

Cost Categories	Consumption Charge	Service Charge	FY 2021-22 Revenue Requirement
<b>O&amp;M Expenses by Function</b>			
Source of Supply	\$27,908	\$33,768	\$61,676
Pumping	\$18,498	\$22,381	\$40,879
Treatment	\$104,106	\$125,964	\$230,070
Distribution	\$186,253	\$225,360	\$411,613
Customer Service	\$0	\$484,029	\$484,029
Regulatory Compliance	\$0	\$350,600	\$350,600
Management and Administration	\$0	\$324,884	\$324,884
<b>Total O&amp;M Expenses</b>	<b>\$336,765</b>	<b>\$1,566,986</b>	<b>\$1,903,751</b>
<b>Total Capital Expenses (Debt Service)</b>	<b>\$0</b>	<b>\$87,313</b>	<b>\$87,313</b>
<b>Sugar Pine Debt Service</b>	<b>\$0</b>	<b>\$168,583</b>	<b>\$168,583</b>
<b>Capital Expenses (PayGo) by Function</b>			
Source of Supply	\$4,987	\$6,035	\$11,022
Pumping	\$0	\$0	\$0
Treatment	\$45,144	\$54,623	\$99,767
Distribution	\$130,975	\$158,475	\$289,451
Customer Service	\$0	\$25,122	\$25,122
Regulatory	\$0	\$2,024	\$2,024
<b>Total Capital Expenses</b>	<b>\$181,106</b>	<b>\$246,278</b>	<b>\$427,385</b>
<b>Net Non-Operating Revenue (Rev)/Exp</b>	<b>\$0</b>	<b>(\$3,820)</b>	<b>(\$3,820)</b>
<b>Total Revenue Requirement</b>	<b>\$517,871</b>	<b>\$2,065,341</b>	<b>\$2,583,212</b>
<b>% of Total</b>	<b>20%</b>	<b>80%</b>	

## V. RATE DESIGN

### GENERAL

The proposed rate design simplifies the District’s rate structure in accordance with rate setting objectives of the District staff, board, and citizens advisory committee. In summary, the proposed rates:

1. Eliminate the various allotments of water included in the fixed service charges, which varied by meter size and essentially provided more water to customers with larger meters, who put more demands on the system.
2. Replaces the per-unit charge for multi-unit customer classes (e.g., mobile homes, apartments) with a fixed service charge based on their meter size, which is consistent with all other customers.
3. Reduces the amount of revenue generated by the fixed service charges (from 95% to 80%) and increases the amount of revenue generated by the consumption charges (from 5% to 20%). With this revised proportionality that increases the weight given to variable charges, customers would have more control over their monthly bill. Customers who reduce their water use will reduce their variable cost compared to customers who increase their water use.

## FIXED SERVICE CHARGE RATE DESIGN

Service charge rates are fixed rates charged per account that are billed each billing period to recover the cost of the customer service function. The service charge rates are graduated in proportion to the capacity of the service connection serving a property. Service charge rates are independent of customer categories (e.g., single-family residents, multi-unit complexes, commercial businesses, schools) because the maximum potential demand capacity of a service connection varies by meter size. As such, the proposed fixed service charges would vary for all customers based on the size of the service connection serving the property. Service charges cover the cost to provide customer service for each connection (e.g. meter reading, billing, etc.) and the cost of overall water system capacity needed to meet maximum potential demand from each meter size, regardless of the number of dwelling units served by the meter.

The cost-of-service analysis determined how much of the revenue requirement would be collection from the fixed service charges (\$2,065,341, as shown in **Figure IV-1**). The function has two components – customer accounts and customer capacity – each of which is itemized in the cost-of-service analysis in **Figure V-1**. Costs attributable to customer accounts are allocated to customers in proportion to the number of accounts. Costs attributable to water system capacity needed to meet a customer’s demand are allocated in proportion to meter size and are described in terms of Equivalent Meter Units (EMUs), which are discussed on the next page.

**Figure V-1** derives the unit costs for the customer accounts and customer capacity cost components. Each account is allocated \$19.84 for the customer account cost component. That amount represents the costs the District incurs to maintain an account regardless of the capacity of the service. Each account is also allocated a total of \$50.97 per EMU ((\$37.60 + \$5.43 + \$7.94)). That amount represents a portion of the cost of providing distribution system capacity for each account, and increases based on the capacity of the meter.

**Figure V-1. Service Charge Unit Costs**

FY 2021-22 Service Charge Expenses	Service Charge Components				Total Service Charge
	Base Component		Sugar Pine Reservoir	Repair & Replacement	
	Accounts	Capacity	Debt Service	Component	
O&M Expenses	\$484,029	\$1,082,957			\$1,566,986
Total Capital Expenses (Debt Service)		\$87,313			\$87,313
Sugar Pine Reservoir (Debt Service)			\$168,583		\$168,583
Total Capital Expenses				\$246,278	\$246,278
Non-Operating Revenue	\$0	(\$3,820)			(\$3,820)
Total FY 2019-20	\$484,029	\$1,166,451	\$168,583	\$246,278	\$2,065,341
% of Component	23%	56%	8%	12%	100%
<b>Units of Service</b>	<b>2,033</b>	<b>2,585</b>	<b>2,585</b>	<b>2,585</b>	
	Accounts	EMUs	EMUs	EMUs	
<b>Monthly Cost</b>					
per Account	\$19.84				
per EMU		\$37.60	\$5.43	\$7.94	

Capacity costs associated with the distribution system are apportioned among the connections in proportion to the capacity associated with each connection. Accounts are converted to EMUs to apportion the customer capacity cost component. An EMU represents the number of 5/8-inch meters to which a larger meter is equivalent. For example, a 1-inch meter provides 2.20 times as much capacity as a 5/8-inch meter. The capacity multipliers are based on the manufacturer’s nominal capacity of the District’s meters. There are 2,585 total EMUs. In effect, the 2,033 services of various sizes have the equivalent capacity as 2,585 5/8-inch meters.

**Figure V-2. Service Charge Units of Service**

Service Size	# of Accounts	Meter Ratings (gpm)	Capacity Multiplier*	EMUs
	<b>a</b>	<b>b</b>	<b>c = b ÷ 25</b>	<b>a * c</b>
5/8"	1,371	25	1.00	1,371
3/4"	583	35	1.40	816
1"	17	55	2.20	37
1-1/2"	4	120	4.80	19
2"	10	200	8.00	80
4"	4	900	36.00	144
6"	1	1,750	70.00	70
8"	0	3,500	140.00	0
Dual 3/4"	8	35	1.40	11
Dual Service	29	25	1.00	29
Triple Service	3	25	1.00	3
Triple Service T3	3	35	1.40	4
<b>Total Accounts</b>	<b>2,033</b>		<b>Total EMUs</b>	<b>2,585</b>

\* Capacity multiplier assumes 5/8" meter = 1 EMU = 25 gals/min

Monthly service charge components for capacity, Sugar Pine Dam Reservoir debt service and Repair and Replacement (R&R) funding with their capacity components are shown in **Figures V-3, V-4, and V-5**, respectively.

The account component of \$19.84, which all customers pay, has been combined with the base capacity component (product of \$37.60/EMU and capacity multiplier) as one base charge in **Figure V-3**.

**Figure V-3. Proposed Base Service Charge Rates – FY 2021-22**

Service Size	Account Component (\$/mo.)	Capacity Component			Total Base Charge (\$/mo.)
		\$/EMU	Capacity Multiplier	Total	
	<b>a</b>	<b>b</b>	<b>c</b>	<b>d = b * c</b>	<b>e = a + d</b>
5/8"	\$19.84	\$37.60	1.00	\$37.60	\$57.44
3/4"	\$19.84	\$37.60	1.40	\$52.64	\$72.48
1"	\$19.84	\$37.60	2.20	\$82.72	\$102.56
1 1/2"	\$19.84	\$37.60	4.80	\$180.48	\$200.32
2"	\$19.84	\$37.60	8.00	\$300.80	\$320.64
4"	\$19.84	\$37.60	36.00	\$1,353.61	\$1,373.45
6"	\$19.84	\$37.60	70.00	\$2,632.02	\$2,651.86
8"	\$19.84	\$37.60	140.00	\$5,264.04	\$5,283.88

**Figure V-4. Proposed Sugar Pine Debt Service Charge Rates – FY 2021-22**

Service Size	Account Component (\$/mo.)	Capacity Component			Total Sugar Pine Charge (\$/mo.)
		\$/EMU	Capacity Multiplier	Total	
	<b>a</b>	<b>b</b>	<b>c</b>	<b>d = b * c</b>	<b>e = a + d</b>
5/8"	\$0.00	\$5.43	1.00	\$5.43	\$5.43
3/4"	\$0.00	\$5.43	1.40	\$7.61	\$7.61
1"	\$0.00	\$5.43	2.20	\$11.96	\$11.96
1 1/2"	\$0.00	\$5.43	4.80	\$26.08	\$26.08
2"	\$0.00	\$5.43	8.00	\$43.47	\$43.47
4"	\$0.00	\$5.43	36.00	\$195.63	\$195.63
6"	\$0.00	\$5.43	70.00	\$380.40	\$380.40
8"	\$0.00	\$5.43	140.00	\$760.79	\$760.79

**Figure V-5. Proposed R&R Capacity Service Charge Rates – FY 2021-22**

Service Size	Account Component (\$/mo.)	Capacity Component			Total R&R Charge (\$/mo.)
		\$/EMU	Capacity Multiplier	Total	
	<b>a</b>	<b>b</b>	<b>c</b>	<b>d = b * c</b>	<b>e = a + d</b>
5/8"	\$0.00	\$7.94	1.00	\$7.94	\$7.94
3/4"	\$0.00	\$7.94	1.40	\$11.11	\$11.11
1"	\$0.00	\$7.94	2.20	\$17.47	\$17.47
1 1/2"	\$0.00	\$7.94	4.80	\$38.11	\$38.11
2"	\$0.00	\$7.94	8.00	\$63.51	\$63.51
4"	\$0.00	\$7.94	36.00	\$285.79	\$285.79
6"	\$0.00	\$7.94	70.00	\$555.71	\$555.71
8"	\$0.00	\$7.94	140.00	\$1,111.42	\$1,111.42

**Figure V-6** combines the preceding Figures V-3, V-4, and V-5, which is the total recommended service charge rates for FY 2021-22.

**Figure V-6. Proposed Monthly Service Charge Rates - FY 2021-22**

<b>Service Size</b>	<b>Base Component</b>	<b>Sugar Pine Component</b>	<b>Repair &amp; Replacement Component</b>	<b>Total Service Chg (\$/mo.)</b>
5/8"	\$57.44	\$5.43	\$7.94	<b>\$70.81</b>
3/4"	\$72.48	\$7.61	\$11.11	<b>\$91.20</b>
1"	\$102.56	\$11.96	\$17.47	<b>\$131.98</b>
1 1/2"	\$200.32	\$26.08	\$38.11	<b>\$264.51</b>
2"	\$320.64	\$43.47	\$63.51	<b>\$427.63</b>
4"	\$1,373.45	\$195.63	\$285.79	<b>\$1,854.88</b>
6"	\$2,651.86	\$380.40	\$555.71	<b>\$3,587.97</b>
8"	\$5,283.88	\$760.79	\$1,111.42	<b>\$7,156.09</b>

**Figure V-7** compares the proposed with the current service charge rates. As shown in **Figure V-7**, larger meters (6" and 8") will see a significant increase. There are currently three meters over 4 inches, the High School (8"), Divide School (6"), and a multi-unit complex (6"). At any time, any customer may re-evaluate their needed meter size, based on their current water needs, and replace their meter with the appropriate size.

**Figure V-7. Comparison of Monthly Service Charge Rates – FY 2021-22**

Service Size	Current (\$/month)	Proposed (\$/month)	Difference (\$/month)
5/8"	\$90.54	\$70.81	(\$19.73)
3/4"	\$90.54	\$91.20	\$0.66
1"	\$163.87	\$131.98	(\$31.89)
1 1/2"	\$328.68	\$264.51	(\$64.17)
2"	\$643.17	\$427.63	(\$215.54)
4"	\$1,581.35	\$1,854.88	\$273.53
6"	\$1,581.35	\$3,587.97	\$2,006.62
8"	\$1,581.35	\$7,156.09	\$5,574.74
Dual Service			
5/8"	\$179.05	\$70.81	(\$108.24)
3/4"	\$179.05	\$91.20	(\$87.85)
Triple Service			
5/8"	\$267.56	\$70.81	(\$196.75)
3/4"	\$267.56	\$91.20	(\$176.36)
Multi-Unit	\$90.54+\$88.51 per additional DU	varies based on meter size only	varies based on meter size

**Figure V-8** shows the proposed Service Charge rates. Dual service, triple service and other multi-unit customers would be billed based on meter size, and not on the number of dwelling units within the multi-unit complex. That more closely aligns the charges paid by multi-unit customers to the maximum demands they can place on the District water system based on their service connection size, with larger sizes representing more ability to instantaneously demand more water and related distribution system capacity smaller service connections.

**Figure V-8. Proposed Monthly Service Charge Rates**

Service Size	Current (\$/month)	Proposed (\$/mo; All Customer Classes)				
		Sept. 2021	Jul. 2022	Jul. 2023	Jul. 2024	Jul. 2025
5/8"	\$90.54	\$70.81	\$71.52	\$72.95	\$74.41	\$75.90
3/4"	\$90.54	\$91.20	\$92.11	\$93.95	\$95.83	\$97.75
1"	\$163.87	\$131.98	\$133.30	\$135.97	\$138.69	\$141.46
1 1/2"	\$328.68	\$264.51	\$267.16	\$272.50	\$277.95	\$283.51
2"	\$643.17	\$427.63	\$431.91	\$440.55	\$449.36	\$458.35
4"	\$1,581.35	\$1,854.88	\$1,873.43	\$1,910.90	\$1,949.12	\$1,988.10
6"	\$1,581.35	\$3,587.97	\$3,623.85	\$3,696.33	\$3,770.26	\$3,845.67
8"	\$1,581.35	\$7,156.09	\$7,227.65	\$7,372.20	\$7,519.64	\$7,670.03

## CONSUMPTION CHARGE DESIGN

The proposed rate structure would remove the monthly water allotment and credit system for using less water than allotted. The proposed rate structure would simplify rates and give customers more control over their monthly bill in response to the customer’s increased or decreased water use. As with the district’s existing consumption charges the proposed rate structure would have a uniform consumption rate value (i.e. no tiers) that applies to all customers and customer types.

The uniform rate in **Figure V-9** is derived by dividing the total revenue to be derived by the consumptions charges for FY 2021-22 (\$517,871, as shown in **Figure IV-1**) by the projected water demand in FY 2021-22. Water demand for FY 2021-22 was projected based on calendar year 2019 actual demand, as more recent 2020 demand patterns have been affected by COVID-19.

**Figure V-9. Calculation of Consumption Charge (FY 2021-22)**

Revenue needed from Consumption Charges	\$517,871
Projected Demand (tGal)	264,695
Uniform Consumption Charge per tGal	\$1.96

## Consumption Charge Rate Summary

**Figure V-10** shows the current and proposed consumption charge rates.

**Figure V-10. Proposed Consumption Charge Rates**

Customer Class	Current (\$/tGal/month above or below allotment)	Proposed (\$/tGal/month)				
		Sept. 2021	Jul. 2022	Jul. 2023	Jul. 2024	Jul. 2025
All customers	Credit (\$0.42) Overage \$1.55	\$1.96	\$1.98	\$2.02	\$2.06	\$2.10



## VI. SAMPLE CUSTOMER BILL IMPACTS

In the previous section, the consumption and service charge structures were compared for the current and proposed rates. A further understanding of the differences between the two structures can be gained by comparing bills based on both rate structures.

### BILL COMPARISON

#### Bills Under Proposed Rates

Under the recommended structure, customers pay the sum of the service charge corresponding to the capacity of their service plus a consumption charge for water use during the billing period. **Figure VI-1** provides sample impacts. The bill impacts shown in **Figure VI-1** assume various size meters based on the most-common meter size for the given customer type. Actual bill impacts will vary depending on meter size and actual water use during the month. Customers’ bills vary during the year, which means that a customer may have a low demand at one time of the year and pay less, and a higher demand at another time and pay more.

**Figure VI-1. Sample Customer Bills as of August 2021**

<u>Monthly Bill Impacts</u>	<u>Usage</u>		<u>Current Bill</u>	<u>Proposed</u>	<u>Change (\$)</u>
	<u>DUs</u>	<u>(tGal/mo)</u>			
<u>Residential (5/8")</u>					
Low Use (50% of average)		5.0	\$88.44	\$80.61	(\$7.83)
Average Use		10.0	\$90.12	\$90.41	\$0.29
High Use (2x average)		20	\$102.94	\$110.01	\$7.07
Avg. Dual Service Customer	2	14.0	\$176.53	\$98.25	(\$78.28)
Avg. Triple Service Customer	3	26.0	\$265.88	\$121.77	(\$144.11)
<u>Non-Residential</u>					
1" Meter - Multi-Unit	36	40.3	\$3,198.52	\$210.97	(\$2,987.55)
1" Meter - Multi-Unit	14	101.0	\$1,272.79	\$329.94	(\$942.85)
2" Meter - Multi-Unit	12	35.6	\$1,068.70	\$497.41	(\$571.29)
4" Meter - Multi-Unit	78	468.9	\$7,079.15	\$2,773.92	(\$4,305.22)
4" Meter - Multi-Unit	34	231.3	\$3,093.72	\$2,308.23	(\$785.49)
6" Meter & 1 1/2" Meter - Multi-Unit	114	568.5	\$10,300.14	\$4,966.74	(\$5,333.40)
Low Use Non-Residential Customer (3/4")		28.5	\$119.22	\$147.06	\$27.85
Avg. Non-Residential Customer (3/4")		57.0	\$163.39	\$202.92	\$39.53
High Use Non-Residential Customer (3/4")		114.0	\$251.74	\$314.64	\$62.90
1" Meter		17.0	\$163.45	\$165.30	\$1.85
2" Meter		32.0	\$631.41	\$490.35	(\$141.06)





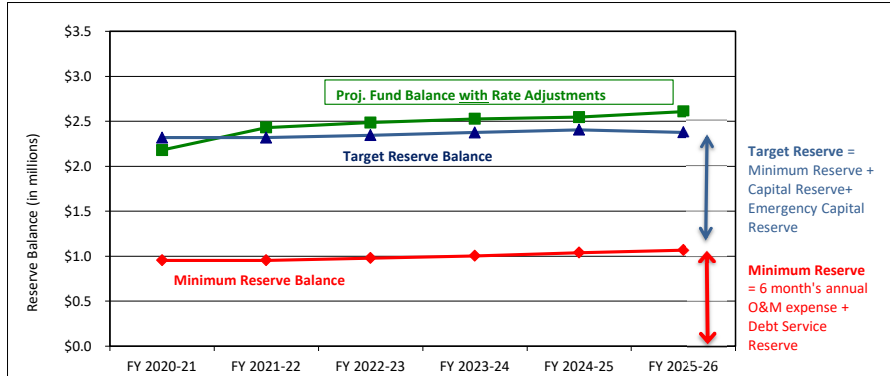
## Appendix. Water Rate Model



	A	B	C	D	E	F	G	H	I
1	<b>Foresthill PUD</b>								
2	<b>Water Rate Study</b>								
3	<b>Table 1A - Assumptions</b>								
4									
5									
6	<b>Inflation Factor Assumptions used for projections:</b>								
7		<b>Budget</b>	<b>Projected</b>						
8		<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>		
9	a	Annual EMU Growth Rate	0.08%	0.08%	0.08%	0.08%	0.08%	Estimate; To Tables 3, 4, 7	
10		Annual Additional EMUs	2	2	2	2	2	To Table 7; Provided by District	
11		Total EMUs End of Year	2,585	2,587	2,589	2,591	2,593	2,595	Data provided by District, from Table 7
12	b	General Inflation	Budget	2.00%	2.00%	2.00%	2.00%	2.00%	Estimate
13	c	Salaries & Wages	Budget	3.00%	3.00%	3.00%	3.00%	3.00%	Estimate
14	d	Benefits	Budget	4.50%	4.50%	4.50%	4.50%	4.50%	Estimate
15	e	Construction Cost Inflation	Budget	3.31%	3.31%	3.31%	3.31%	3.31%	ENR SF 10-Year Average annual change
16	f	Interest on Fund Balance	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	Estimate; To Table 4
17	g	Bad debt as a % of rate revenue	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	To Table 3; per District bad debt is recovered.
18	h	Annual connection fee revenues	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000	\$21,000	To Table 4; per District
19	i	Utilities	Budgeted	3.0%	3.0%	3.0%	3.0%	3.0%	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Foresthill PUD																			
2		Water Rate Study																			
3		Table 1B - Summary																			
4																					
5																					
6																					
7																					
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	Budget	Projected				
		FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
1	Eff. Date of Rate Adjustments	8/15/2021	7/1/2022	7/1/2023	7/1/2024	7/1/2025
2						
3	Annualized Change in Revenue	-12.0%	1.0%	2.0%	2.0%	2.0%
4	Cumulative	-12.0%	-11.1%	-9.3%	-7.5%	-5.7%
5						
6	Reduction in water consumption	0.0%	-20.0%	0.0%	0.0%	0.0%
7	for sensitivity analysis	100.0%	80.0%	80.0%	80.0%	80.0%



Service Size	Current (\$/month)	Proposed (\$/mo; All Customer Classes)				
		Aug. 2021	Jul. 2022	Jul. 2023	Jul. 2024	Jul. 2025
	% change	various	1.0%	2.0%	2.0%	2.0%
5/8"	\$90.54	\$70.81	\$71.52	\$72.95	\$74.41	\$75.90
3/4"	\$90.54	\$91.20	\$92.11	\$93.95	\$95.83	\$97.75
1"	\$163.87	\$131.98	\$133.30	\$135.97	\$138.69	\$141.46
1 1/2"	\$328.68	\$264.51	\$267.16	\$272.50	\$277.95	\$283.51
2"	\$643.17	\$427.63	\$431.91	\$440.55	\$449.36	\$458.35
4"	\$1,581.35	\$1,854.88	\$1,873.43	\$1,910.90	\$1,949.12	\$1,988.10
6"	\$1,581.35	\$3,587.97	\$3,623.85	\$3,696.33	\$3,770.26	\$3,845.67
8"	\$1,581.35	\$7,156.09	\$7,227.65	\$7,372.20	\$7,519.64	\$7,670.03

Customer Class	Current (\$/tGal/month above or below allotment)	Proposed (\$/tGal/month)				
		Aug. 2021	Jul. 2022	Jul. 2023	Jul. 2024	Jul. 2025
	% change	various	1.0%	2.0%	2.0%	2.0%
All customers	Credit Overage (\$0.42) (\$1.55)	\$1.96	\$1.98	\$2.02	\$2.06	\$2.10

	B	C	D	E	F	G	H	I
1	<b>Foresthill PUD</b>							
2	<b>Water Rate Study</b>							
3	<b>Table 2 - Revenue Requirements</b>							
4		Inflation	<b>Budgeted</b>	<b>Projected</b>				
5		Factor	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>
6	<b>Operating Expenses</b>							
7	<b>Source of Supply</b>							
8	Salaries	c	\$34,150	\$35,175	\$36,230	\$37,317	\$38,436	
9	Taxes	c	\$2,612	\$2,690	\$2,771	\$2,854	\$2,940	
10	Benefits	d	\$14,914	\$15,585	\$16,286	\$17,019	\$17,785	
11	Maintenance	b	\$2,000	\$2,040	\$2,081	\$2,122	\$2,165	
12	Vehicle Expense	b	\$0	\$0	\$0	\$0	\$0	
13	Contracted Services	b	\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	
14	Resource Development	b	\$0	\$0	\$0	\$0	\$0	
15	Power	i	\$5,000	\$4,120	\$4,244	\$4,371	\$4,502	
16	Other	b	\$2,000	\$2,040	\$2,081	\$2,122	\$2,165	
17								
18								
19	<b>Pumping</b>							
20	Salaries	c	\$16,045	\$16,526	\$17,022	\$17,533	\$18,059	
21	Taxes	c	\$1,227	\$1,264	\$1,302	\$1,341	\$1,381	
22	Benefits	d	\$7,007	\$7,322	\$7,652	\$7,996	\$8,356	
23	Materials & Supplies	b	\$100	\$102	\$104	\$106	\$108	
24	Equipment Expense	b	\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	
25	Power	i	\$10,000	\$8,240	\$8,487	\$8,742	\$9,004	
26	Propane	i	\$5,000	\$4,120	\$4,244	\$4,371	\$4,502	
27	Other	b	\$500	\$510	\$520	\$531	\$541	
28								
29								
30	<b>Treatment</b>							
31	Salaries	c	\$112,389	\$115,761	\$119,233	\$122,810	\$126,495	
32	Taxes	c	\$8,598	\$8,856	\$9,122	\$9,395	\$9,677	
33	Benefits	d	\$49,083	\$51,292	\$53,600	\$56,012	\$58,532	
34	Operating Supplies	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
35	Chemicals	b	\$25,000	\$20,400	\$20,808	\$21,224	\$21,649	
36	Vehicle Expense	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
37	Equipment Maintenance	b	\$2,000	\$2,040	\$2,081	\$2,122	\$2,165	
38	Contracted Services	b	\$0	\$0	\$0	\$0	\$0	
39	Resource Development	b	\$0	\$0	\$0	\$0	\$0	
40	Power	i	\$18,000	\$14,832	\$15,277	\$15,735	\$16,207	
41	Propane	i	\$2,000	\$1,648	\$1,697	\$1,748	\$1,801	
42	Other	b	\$0	\$0	\$0	\$0	\$0	
43	Uniforms	b	\$3,000	\$3,060	\$3,121	\$3,184	\$3,247	
44								
45								
46	<b>Distribution</b>							
47	Salaries	c	\$225,273	\$232,031	\$238,992	\$246,162	\$253,547	
48	Taxes	c	\$17,233	\$17,750	\$18,282	\$18,831	\$19,396	
49	Benefits	d	\$98,382	\$102,809	\$107,436	\$112,270	\$117,322	
50	Operating Supplies	b	\$40,000	\$40,800	\$41,616	\$42,448	\$43,297	
51	Uniforms	b	\$6,000	\$6,120	\$6,242	\$6,367	\$6,495	

	B	C	D	E	F	G	H	I
1	<b>Foresthill PUD</b>							
2	<b>Water Rate Study</b>							
3	<b>Table 2 - Revenue Requirements</b>							
4		Inflation	<b>Budgeted</b>	<b>Projected</b>				
5		Factor	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>
52	Vehicles Expense	b	\$12,000	\$12,240	\$12,485	\$12,734	\$12,989	
53	Equipment rentals/repairs	b	\$4,000	\$4,080	\$4,162	\$4,245	\$4,330	
54	General Shop Maintenance	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
55	Contracted Services	b	\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	
56	Resource Development	b	\$225	\$230	\$234	\$239	\$244	
57	Utilities	i	\$1,500	\$1,545	\$1,591	\$1,639	\$1,688	
58	Other	b	\$1,000	\$1,020	\$1,040	\$1,061	\$1,082	
59	Subtotal Distribution		\$411,613	\$424,745	\$438,323	\$452,364	\$466,885	
60								
61	<b>Customer Service</b>							
62	Salaries	c	\$282,199	\$290,665	\$299,385	\$308,366	\$317,617	
63	Taxes	c	\$21,588	\$22,236	\$22,903	\$23,590	\$24,297	
64	Benefits	d	\$123,242	\$128,788	\$134,583	\$140,640	\$146,968	
65	Office Supplies	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
66	Equipment maintenance	b	\$2,000	\$2,040	\$2,081	\$2,122	\$2,165	
67	Computer Enhancement Service	b	\$15,000	\$15,300	\$15,606	\$15,918	\$16,236	
68	Contracted Services	b	\$20,000	\$20,400	\$20,808	\$21,224	\$21,649	
69	Telephone & Internet	i	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	
70	Other	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
71	Subtotal Customer Service		\$484,029	\$499,929	\$516,379	\$533,400	\$551,013	
72								
73	<b>Regulatory Compliance</b>							
74	Salaries	c	\$87,330	\$89,950	\$92,648	\$95,428	\$98,291	
75	Taxes	c	\$6,681	\$6,881	\$7,088	\$7,301	\$7,520	
76	Benefits	d	\$38,139	\$39,855	\$41,649	\$43,523	\$45,481	
77	Supplies	b	\$1,200	\$1,224	\$1,248	\$1,273	\$1,299	
78	Water Analysis	b	\$10,000	\$10,200	\$10,404	\$10,612	\$10,824	
79	Accounting and auditing	b	\$15,000	\$15,300	\$15,606	\$15,918	\$16,236	
80	Legal Services	b	\$60,000	\$61,200	\$62,424	\$63,672	\$64,946	
81	State Dam Inspection	b	\$70,000	\$71,400	\$72,828	\$74,285	\$75,770	
82	Restoration Fee - US Bureau of Reclamation	b	\$25,000	\$25,500	\$26,010	\$26,530	\$27,061	
83	State Dept of Public Health	b	\$13,500	\$13,770	\$14,045	\$14,326	\$14,613	
84	Other	b	\$5,250	\$5,355	\$5,462	\$5,571	\$5,683	
85	Placer county Hazmat permit	b	\$5,000	\$5,100	\$5,202	\$5,306	\$5,412	
86	Department of Transportation testing	b	\$500	\$510	\$520	\$531	\$541	
87	Water Rights and Storage fees	b	\$13,000	\$13,260	\$13,525	\$13,796	\$14,072	
88	Subtotal Regulatory Compliance		\$350,600	\$359,506	\$368,660	\$378,072	\$387,749	
89								
90	<b>Management and Administration</b>							
91	Salaries	c	\$98,141	\$101,085	\$104,118	\$107,241	\$110,459	
92	Taxes	c	\$7,508	\$7,733	\$7,965	\$8,204	\$8,450	
93	Benefits	d	\$42,860	\$44,789	\$46,804	\$48,910	\$51,111	
94	Retired Medical Insurance	d	\$15,000	\$15,675	\$16,380	\$17,117	\$17,888	
95	Materials and supplies	b	\$7,000	\$7,140	\$7,283	\$7,428	\$7,577	
96	Maintenance	b	\$10,000	\$10,200	\$10,404	\$10,612	\$10,824	
97	County Tax Collection System charge	b	\$2,600	\$2,652	\$2,705	\$2,759	\$2,814	



	B	C	D	E	F	G	H	I
1	<b>Foresthill PUD</b>							
2	<b>Water Rate Study</b>							
3	<b>Table 2 - Revenue Requirements</b>							
4		Inflation	<b>Budgeted</b>	<b>Projected</b>				
5		Factor	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>
98	Dues and Subscriptions	b	\$10,500	\$10,710	\$10,924	\$11,143	\$11,366	
99	Travel - Seminars/Workshops	b	\$1,500	\$1,530	\$1,561	\$1,592	\$1,624	
100	Board Stipends	b	\$0	\$0	\$0	\$0	\$0	
101	Pension liability	d	\$28,000	\$29,260	\$30,577	\$31,953	\$33,391	
102	Utilities	i	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	
103	Other General Expense	b	\$5,500	\$5,610	\$5,722	\$5,837	\$5,953	
104	Election Expense		\$0	\$6,000	\$0	\$6,000	\$0	
105	Bank Analysis/other fees	b	\$6,000	\$6,120	\$6,242	\$6,367	\$6,495	
106	Liability and vehicle insurance	b	\$84,775	\$86,471	\$88,200	\$89,964	\$91,763	
107	Interest expense	f	\$500	\$508	\$515	\$523	\$531	
108	Subtotal Maintenance and Administration		\$324,884	\$340,632	\$344,705	\$361,114	\$365,873	
109								
110	<b>Total Operating Expenses</b>		<b>\$1,903,751</b>	<b>\$1,954,674</b>	<b>\$2,008,515</b>	<b>\$2,076,342</b>	<b>\$2,134,226</b>	To Tables 4 & 6
111				2.7%	2.8%	3.4%	2.8%	
112	<b>Non-Rate (Revenue)/Expense</b>							
113	Bad Debt Expense		\$0	\$0	\$0	\$0	\$0	
114	Meter Installation	b	(\$6,000)	(\$6,120)	(\$6,242)	(\$6,367)	(\$6,495)	
115	Property Tax Revenue	b	(\$112,000)	(\$114,240)	(\$116,525)	(\$118,855)	(\$121,232)	
116	Water Charges Penalties	b	(\$10,000)	(\$10,200)	(\$10,404)	(\$10,612)	(\$10,824)	
117	Service Charges and Reconnects	b	(\$15,000)	(\$15,300)	(\$15,606)	(\$15,918)	(\$16,236)	
118	Miscellaneous		(\$50,000)	(\$50,000)	(\$50,000)	(\$50,000)	(\$50,000)	
119	Stub Out charges	b	\$0	\$0	\$0	\$0	\$0	
120	Total Non-Rate Revenue <sup>[1]</sup>		(\$193,000)	(\$195,860)	(\$198,777)	(\$201,753)	(\$204,788)	
121								
122	<b>Net Operating Expenses</b>		\$1,710,751	\$1,758,814	\$1,809,738	\$1,874,589	\$1,929,438	
123								
124	<b>Debt Service Payments - (portion funded with water rates)</b>							
125	<b>Total Debt Service</b>		\$255,896	\$258,686	\$260,863	\$256,371	\$198,563	From Table 6
126								
127	<b>Subtotal before Transfers</b>		\$1,966,647	\$2,017,500	\$2,070,601	\$2,130,960	\$2,128,001	
128				2.6%	2.6%	2.9%	-0.1%	
129	<b>Transfers to/(from):</b>							
130	Operating (General) Reserve		\$189,180	\$0	\$0	\$0	\$0	From Table 4
131	Capital Improvement Reserve		\$427,385	\$427,385	\$427,385	\$427,385	\$427,385	From Table 4
132	Emergency Capital Reserve		\$0	\$0	\$0	\$0	\$0	From Table 4
133	Debt Service Reserve		\$0	\$0	\$0	\$0	\$0	From Table 4
134	<b>Total Transfers</b>		\$616,565	\$427,385	\$427,385	\$427,385	\$427,385	
135								
136	<b>Total Revenue Requirement</b>		<b>\$2,583,212</b>	<b>\$2,444,885</b>	<b>\$2,497,985</b>	<b>\$2,558,345</b>	<b>\$2,555,386</b>	To Table 3
137	<i>Annual Change</i>			-5.4%	2.2%	2.4%	-0.1%	
138								
139	[1] Interest is included in the 4 - Reserves tab							

	A	B	C	D	E	F	G	H
1	Foresthill PUD							
2	Water Rate Study							
3	Table 3 - Changes in Rate Revenue							
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	A	B	C	D	E	F	G	H	I
1	<b>Foresthill PUD</b>								
2	<b>Water Rate Study</b>								
3	<b>Table 4 - Reserve Funds</b>								
4									
5									
6		inflation		<b>Estimated</b>	<b>Projected</b>				
7		factor	FY 2020-21	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>
8	<b>Operating Reserve (includes "General Reserve", "General Fund - unrestricted", and "District 2")</b>								
9				\$491,463	\$689,434	\$705,609	\$719,856	\$725,902	
10									
11									
12	Transfers (to)/from:								
13	Revenue Requirements			\$189,180					To Table 2
14	Capital Reserve								
15	Debt Service Reserves			\$0	\$0	\$0	\$0	\$0	To below
16	Fund Subtotal			\$680,643	\$695,224	\$709,245	\$715,140	\$777,232	
17	Estimated interest earnings	h		\$8,791	\$10,385	\$10,611	\$10,762	\$11,274	Avg. bal. * Table 1A assumption f.
18	Ending balance - General Reserve			\$491,463	\$689,434	\$705,609	\$719,856	\$725,902	\$788,506
19	Minimum Balance			\$951,880	\$977,340	\$1,004,260	\$1,038,170	\$1,067,110	6 months of Operating Expenses
20	<b>Capital Improvement Reserve (includes "Repair &amp; Replacement Reserve")</b>								
21				\$1,391,475	\$1,439,937	\$1,072,781	\$918,054	\$918,037	
22	Capital Projects Expenditures (PAYGO)			(\$400,000)	(\$413,246)	(\$426,932)	(\$441,070)	(\$455,676)	From Table 5
23									
24	Transfers (to)/from:								
25	Revenue Requirements			\$427,385	\$427,385	\$427,385	\$427,385	\$427,385	To Table 2
26	Operating Reserves			\$0	\$0	\$0	\$0	\$0	To below
27	Emergency Reserves			\$0	(\$400,000)	(\$170,000)	\$0	\$0	To below
28	Debt Service Reserves			\$0	\$0	\$0	\$0	\$0	To below
29	Fund Subtotal			\$1,418,860	\$1,054,076	\$903,234	\$904,369	\$889,746	
30	Estimated interest earnings	h		\$21,078	\$18,705	\$14,820	\$13,668	\$13,558	Avg. Bal. * Table 1A assumption f.
31	Ending Balance			\$1,391,475	\$1,439,937	\$1,072,781	\$918,054	\$903,304	
32	Target Balance			\$427,385	\$427,385	\$427,385	\$427,385	\$427,385	Avg. Annual PayGo Capital Expense
33	<b>Debt Service Reserve</b>								
34	Beginning Balance			\$294,457	\$298,874	\$303,357	\$307,907	\$312,526	
35									
36	Transfers (to)/from:								
37	Revenue Requirements				\$0	\$0	\$0	\$0	To Table 2
38	Operating Reserves				\$0	\$0	\$0	\$0	From above
39	Fund Subtotal			\$294,457	\$298,874	\$303,357	\$307,907	\$312,526	
40	Estimated interest earnings	h		\$4,417	\$4,483	\$4,550	\$4,619	\$4,688	Avg. Bal. * Table 1A assumption f.
41	Ending Balance			\$294,457	\$298,874	\$303,357	\$307,907	\$312,526	\$317,214
42	Target Balance			\$338,135	\$340,925	\$343,102	\$338,610	\$280,802	
43	<b>Emergency Capital Reserve</b>								
44	Beginning Balance			\$0	\$0	\$403,000	\$580,320	\$589,025	
45									
46	Transfers (to)/from:								
47	Capital Improvement Reserve			\$0	\$400,000	\$170,000	\$0	\$0	
48	Revenue Requirements			\$0	\$0	\$0	\$0	\$0	
49	Fund Subtotal			\$0	\$400,000	\$573,000	\$580,320	\$589,025	
50	Estimated interest earnings	h		\$0	\$3,000	\$7,320	\$8,705	\$8,835	
51	Ending Balance			\$0	\$403,000	\$580,320	\$589,025	\$597,860	
52	Target Balance			\$600,000	\$600,000	\$600,000	\$600,000	\$600,000	2% of Book Value of Assets - RCN

	A	B	C	D	E	F	G	H	
1	<b>Foresthill PUD</b>								
2	<b>Water Rate Study</b>								
3	<b>Table 5 - Capital Improvement Program</b>								
4									
5									
6								<b>Total</b>	
7	<b>Project Description</b>	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Project Cost</b>	<b>Notes</b>	
8	<b>Sugar Pine Dam &amp; Reservoir</b>								
9	Water Right Permit Extension	\$85,000					\$85,000		
10	Piezometers	\$100,000					\$100,000		
11	Deformation Survey and monuments		\$50,000				\$50,000		
12	<b>Regulatory Expenses</b>								
13	Cost of Service Study	\$45,000					\$45,000		
14	<b>Treatment Plant</b>								
15	Auxiliary Generators	\$100,000		\$100,000			\$200,000		
16	Scaffold system for filters	\$20,000					\$20,000		
17	Control Panel Rehabilitation		\$100,000				\$100,000		
18	SCADA/GIS		\$100,000				\$100,000		
19	Lime system rehabilitation	\$60,000					\$60,000		
20	Rehabilitate storage tank			\$500,000			\$500,000	dependent upon selling water or grant funding	
21	Asphalt sealing (51,000 sq-ft)	\$30,000					\$30,000		
22	** Eq/Inventory building		\$100,000	\$100,000			\$200,000		
23	TL 2300 Turbidity Meter	\$5,000					\$5,000		
24	<b>Transmission &amp; Distribution</b>								
25	Ditch Witch Vacuum Trailer		\$120,000				\$120,000		
26	Auxiliary Storage Tank					\$1,000,000	\$1,000,000	dependent upon selling water or grant funding	
27	Sierra View Lane Pipe Replacement	\$1,000,000	\$1,000,000				\$2,000,000	dependent upon selling water or grant funding	
28	Remaining Pipes (Distribution)				\$800,000		\$800,000		
29	Pressure Relief Stations QTY 36	\$90,000	\$50,000	\$40,000	\$40,000	\$40,000	\$260,000		
30	Sample stations	\$5,000					\$5,000		
31	<b>Administration</b>								
32	Computers & Software	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$20,000		
33	Billing Software	\$10,000					\$10,000		
34	Facilities/Repairs (Paint & back office)	\$15,000	\$5,000	\$5,000	\$5,000	\$5,000	\$35,000		
35	<b>Equipment/Vehicles</b>								
36	Vehicle Fleet (7)	\$60,000		\$60,000		\$60,000	\$180,000		
37	Backhoe	\$150,000					\$150,000		
38	<b>Project Costs</b>	<b>\$1,779,000</b>	<b>\$1,529,000</b>	<b>\$809,000</b>	<b>\$849,000</b>	<b>\$1,109,000</b>	<b>\$6,075,000</b>	To Table 4	
39	Inflation Adjustment (3.3% annually)	100.0%	103.3%	106.7%	110.3%	113.9%			
40	<b>Escalated Total Project Costs</b>	<b>\$1,779,000</b>	<b>\$1,579,634</b>	<b>\$863,469</b>	<b>\$936,171</b>	<b>\$1,263,363</b>	<b>\$6,421,637</b>		
41	<b>Less: Non-Water Rate Funding Sources</b>								
42	Connection Fees	(\$21,000)	(\$21,000)	(\$21,000)	(\$21,000)	(\$21,000)	(\$105,000)	From Table 1A	
43	Grants or Surplus Water Sales	(\$1,358,000)	(\$1,145,388)	(\$415,537)	(\$474,101)	(\$786,686)	(\$4,179,712)		
44	<b>Total Capital Funded with Water Rate Revenue</b>	<b>\$400,000</b>	<b>\$413,246</b>	<b>\$426,932</b>	<b>\$441,070</b>	<b>\$455,677</b>	<b>\$2,136,925</b>		
45	<i>Average Annual Capital Spending Funded through Water Rates</i>							<b>\$427,385</b>	

	A	B	C	D	E	F	G	H
1	<b>Foresthill PUD</b>							
2	<b>Water Rate Study</b>							
3	<b>Table 6 - Debt Service &amp; Coverage</b>							
4								
5								
6			<b>Budgeted</b>		<b>Projected</b>			
7			<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>Notes</b>
8	Assessment District No. 2 Debt Service Fund							
9	2017 Water Revenue Bond		\$86,814	\$86,723	\$86,772	\$86,752	\$86,876	Source: Financial Statements FYE 2018 pg. 37
10	2017 Limited Obligation Refunding Bond		\$82,738	\$82,869	\$82,947	\$82,006	\$81,946	Source: Financial Statements FYE 2018 pg. 37
11								
12	District Enterprise Fund:							
13	2014 Water Loan Agreement - Sugar Pine Reservoir		\$168,583	\$171,333	\$173,383	\$169,852	\$111,981	Source: Financial Statements FYE 2018 pg. 37
14								
15	<b>Total Debt Service</b>		<b>\$338,135</b>	<b>\$340,925</b>	<b>\$343,102</b>	<b>\$338,610</b>	<b>\$280,802</b>	
16								
17	Less: Assessment District revenue		(\$82,239)	(\$82,239)	(\$82,239)	(\$82,239)	(\$82,239)	Source: FY 2019-20 CAFR
18								
19	<b>Water Rate-Funded Debt Service</b>		<b>\$255,896</b>	<b>\$258,686</b>	<b>\$260,863</b>	<b>\$256,371</b>	<b>\$198,563</b>	To Table 2
20								
21								
22	<b>Debt Coverage Calculation</b>							
23	Operating Revenue							
24	Rate revenue - Service Charge		\$2,583,212	\$2,553,039	\$2,606,114	\$2,660,293	\$2,715,598	From Table 3
25	Non-Operating Income		\$193,000	\$195,860	\$198,777	\$201,753	\$204,788	From Table 2
26	Interest income		\$34,285	\$33,573	\$29,982	\$29,049	\$29,520	From Table 4
27	Total Funds Available		\$2,810,497	\$2,782,472	\$2,834,873	\$2,891,095	\$2,949,906	To below
28								
29	Expenses							
30	O&M		\$1,903,751	\$1,954,674	\$2,008,515	\$2,076,342	\$2,134,226	From Table 2
31	Total Expenses		\$1,903,751	\$1,954,674	\$2,008,515	\$2,076,342	\$2,134,226	
32								
33	Net Operating Revenue		\$906,746	\$827,798	\$826,359	\$814,753	\$815,680	Revenue less O&M expenses
34								
35	Debt Service		\$338,135	\$340,925	\$343,102	\$338,610	\$280,802	From above
36	<b>Debt Coverage Ratio (1.10 Min)</b>		<b>2.68</b>	<b>2.43</b>	<b>2.41</b>	<b>2.41</b>	<b>2.90</b>	To Table 1B
37								

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	B	C	D	E	F	G	H	I	J	K	L
1	<b>Foresthill PUD</b>										
2	<b>Water Rate Cost-of-Service Study</b>										
3	<b>Tab 7. Service Charge Cost-of-Service Calculation</b>										
4											
92											
93	R&R Component Calculation										
94			<b>Account</b>				<b>Capacity Component</b>			<b>Total</b>	
95	<b>Service</b>	<b>Component</b>									<b>R&amp;R Charge</b>
96	<b>Size</b>	<b>(\$/mo.)</b>	<b>\$/EMU</b>	<b>Capacity</b>	<b>Multiplier</b>	<b>Total</b>					<b>(\$/mo.)</b>
97		<b>a</b>	<b>b</b>	<b>c</b>	<b>d = b * c</b>					<b>e = a + d</b>	
98	5/8"	\$0.00	\$7.94	1.00	\$7.94					\$7.94	
99	3/4"	\$0.00	\$7.94	1.40	\$11.11					\$11.11	
100	1"	\$0.00	\$7.94	2.20	\$17.47					\$17.47	
101	1 1/2"	\$0.00	\$7.94	4.80	\$38.11					\$38.11	
102	2"	\$0.00	\$7.94	8.00	\$63.51					\$63.51	
103	4"	\$0.00	\$7.94	36.00	\$285.79					\$285.79	
104	6"	\$0.00	\$7.94	70.00	\$555.71					\$555.71	
105	8"	\$0.00	\$7.94	140.00	\$1,111.42					\$1,111.42	
106											



	B	C	D	E	F	G	H	I	J	K	L
1	Foresthill PUD										
2	Water Rate Study										
3	Table 8 - Load Factors										
4											
5											
6	Billed Water Use in tGal (by Customer Category)										Notes
7											
8	<b>Customer Category</b>		<b>CY 2019</b>		<b>Non-Seasonal Demand</b>	<b>Seasonal Demand</b>	<b>Peak Period Demand</b>	<b>Peak Day Demand</b>			
9			tGals	% of Total							
10	Residential		223,080	84%	123,261	99,819	90,595	985			
11	Non-Residential		41,615	16%	1,892	39,723	20,442	222			
12	Total		264,695	100%	125,153	139,543	111,037	1,207	Total Use to Tab 9		
13					47%	53%					
14	Source: Actual consumption data - CY 2019										
15	Non-seasonal Demand = Average of February and March Billed Usage Annualized										
16	Seasonal Demand = Total Demand minus Non-seasonal Demand										
17	Peak Period Demand = Average of July, August, and September Billed Usage										
18	Peak Day Demand = Peak Period Demand divided by 90 days										
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		Levels of Demand				
		Base Day	Average Day	Maximum Day	Maximum Hour	Peak/Avg Day Ratio
<b>Demand by Customer Category (tGal/Day)*</b>						
	Residential	338	611	1,389	2,083	1.61
	Non-Residential	5	114	313	470	1.95
	Total	343	725	1,702	2,553	1.66
<b>Ratio of Flows to Average Day</b>						
	Residential	0.55	1.00	2.27	3.41	
	Non-Residential	0.05	1.00	2.75	4.12	
	Total	0.47	1.00	2.35	3.52	
	Level of Service	343	725	1,702	2,553	
	Base Day Demand	343	343	343	343	
	<b>Ratio of Level of Service to Base Day</b>	<b>1.00</b>	<b>2.11</b>	<b>4.96</b>	<b>7.45</b>	<b>Load Factors</b>

2.35

\*Base Day = Non-seasonal Demand ÷ 365 days  
Average Day = CY 2019 Total ÷ 365  
Maximum Day = Average Day \* Ratio of Maximum Day Flow to Average Day  
Maximum Hour = Maximum Day \* 1.5

	Allocation Basis	Load Factors	Demand Service Levels				Totals
			Base Day	Average Day	Maximum Day	Maximum Hour	
	<b>Base Day</b>	<b>1.00</b>	1.00				1.00
	Allocation %		100%				100%
	<b>Average Day</b>	<b>2.11</b>	1.00	1.11			2.11
	Allocation %		47%	53%			100%
	<b>Maximum Day</b>	<b>4.96</b>	1.00	1.11	2.85		4.96
	Allocation %		20%	22%	57%		100%
	<b>Maximum Hour</b>	<b>7.45</b>	1.00	1.11	2.85	2.48	7.45
	Allocation %		13%	15%	38%	33%	100%

	B	C	D	E	F	G	H	I	J	K	L
1		Foresthill PUD									
2		Water Rate Study									
3		Table 8 - Load Factors									
4											
56											
57											
58											
59		<b>Flow per Customer (tGal per month)</b>			<b>Base Day</b>	<b>Average Day</b>	<b>Maximum Day</b>	<b>Maximum Hour</b>			
60		<b>Residential</b>									
61		tGal per day			338	611	1,389	2,083			
62		tGal per month			10,131	18,335	41,660				From "Demand by Customer Category (tGal/Day)" above
63		# of Dwelling Units			1,992	1,992	1,992				x 30 days
64		<b>Average flow per DU (tGal/mo)</b>			<b>5</b>	<b>9</b>	<b>21</b>	<b>&gt;21</b>			tGal per month ÷ Monthly bills
65		Average gallons per day			167	300	700	>733			Average flow per bill x 1,000 ÷ 30 days
66											
67		<b>Non-Residential</b>									
68		tGal per day			5	114	313	470			
69		tGal per month			155	3,420	9,400				
70		# of Accounts			83	83	83				
71		<b>Average flow per Account (tGal/mo)</b>			<b>2</b>	<b>41</b>	<b>113</b>	<b>&gt;113</b>			
72		Average gallons per day			67	1,367	3,767	>3433			
73											
74		<b>Combined</b>									
75		tGal per day			343	725	1,702	2,553			
76		tGal per month			10,287	21,756	51,060				
77		# of Dwelling Units/Accounts			2,374	2,374	2,374				
78		<b>Average flow per DU (tGal/mo)</b>			<b>4</b>	<b>9</b>	<b>22</b>	<b>&gt;22</b>			
79		Average gallons per day			133	300	733	>667			
80											

	A	B	C	D	E	F	G	H	I	J
1		<b>Foresthill PUD</b>								
2		<b>Water Rate Study</b>								
3		<b>Table 9 - Allocations</b>								
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	A	B	C	D	E	F	G	H	I	J
1		<b>Foresthill PUD</b>								
2		<b>Water Rate Study</b>								
3		<b>Table 9 - Allocations</b>								
4										
51		<b>Calculation of the Uniform Consumption Charge</b>								
52		Revenue needed from Consumption Charge			\$517,871					
53		Projected Water Demand (tGal)			264,695					
54		<u>\$ per tGal</u>			<u>\$1.96</u>					
55										
56										
57		<b>System-Wide Allocation Factors</b>				<b>Base</b>	<b>Average Day</b>	<b>Maximum Day</b>	<b>Maximum Hour</b>	<b>Customer Service</b>
58		<b>System-wide</b>								
59		Base	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
60		Average Day	49.2%	50.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
61		Max Day	21.0%	21.7%	57.4%	0.0%	0.0%	0.0%	0.0%	
62		Max Hour	14.0%	14.4%	38.3%	33.3%	0.0%	0.0%	0.0%	
63		Max Hour Only	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
64		Exp Composite - Consumption Only	53.8%	11.7%	21.5%	13.0%	0.0%	0.0%	0.0%	
65		Exp Composite - Total	19.8%	4.3%	7.9%	4.8%	63.2%	0.0%	0.0%	
66		Service Charge	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	
70										