DIABLO WATER DISTRICT
Water Rate Study

December 14, 2021

DIABLO WATER DISTRICT
87 Carol Lane
Oakley, CA 94561-0127

WATER RATE STUDY

December 14, 2021

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GLOSSARY

AWWA – American Water Works Association

Board – The Board of Directors of the District

Breakpoint – The volume of water per billing period separating tiers in tiered rate structures

CCF – Hundred cubic feet (see HCF below)

CCWD – Contra Costa Water District

Capacity - Capacity is the maximum demand that a customer can place on the infrastructure. It is contrasted with demand (see below). Capacity is determined by the physical properties of the service connection

Charge - A charge is how much a customer is billed and is the product of a rate multiplied times a unit of service (e.g., accounts, HCF)

CIP - Capital Improvement Program

COS - Cost of Service

Demand - Demand is the metered or estimated flow that a customer places on the infrastructure. Demand is determined based on metered or estimated water use, which can vary and is limited by the capacity (see above) of the service connection

District – Diablo Water District

EMU – Equivalent Meter Unit

FY - Fiscal Year; for the District this begins on July 1 and concludes on the immediately following June 30

GPD - Gallons Per Day

HCF - Hundred cubic feet of metered water; 748 gallons; a cube of water 4.6 feet on edge. One HCF per month is about 25 gallons per day

Monthly Service Charge - Fixed charges per account that do not vary based on metered (volumetric) water use. Flat rates are not uniform rates (see below)

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

Rate - A rate is the unit cost of service per account or volume of flow, which, when multiplied times the units of service (i.e., accounts, HCF) yields a charge that customers are billed

SFR – Single Family Residential

Uniform rates - A constant rate per unit of metered water use that does not change depending on the volume of flow

Water Charges – The volumetric (usage) portion of the District's rate structure that charges a rate per unit of consumption

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Board of Directors
- Paul Seger, President
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- Ken Crockett
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LIMITATIONS

This document was prepared solely for the Diablo Water District (District) in accordance with the consulting 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, HF&H relied on information provided by the District, which we consider accurate and reliable. This Study contains certain assumptions and forecasts regarding future conditions, which cannot be predicted with certainty. If actual conditions vary from these assumptions, there may be a significant difference with the forecasts and projections set out in this Study.

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 Study should be referred to a qualified attorney.

DIABLO WATER DISTRICT
WATER RATE STUDY

I. EXECUTIVE SUMMARY

This report documents the process and basis for the proposed adjustments to the Diablo Water District's (District's) water rates and rate structures proposed for adoption for the next five years, beginning February 1, 2022. The following discussion summarizes HF&H's findings and recommendations.

PROJECTED REVENUE REQUIREMENTS AND REVENUE INCREASES

The water revenue requirements were reviewed and analyzed by preparing a ten-year projection of District operating and capital expenses. The proposed increases needed in rate revenue were determined by comparing the revenue requirement projections with the revenue projected from rates. The required annual revenue increases are summarized in **Table I-1**, which includes other key financial indicators. These increases do not translate into across the board rate increases. As documented throughout this study, when costs were reallocated, new customer classes added, and the addition of new tiers, **66% of the bills issued by the District will see a decrease in 2022**.

Table I-1 Proposed Revenue Increases and Projected Key Financial Parameters

		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
		a	b	c	d	e	f	g	h	i	j
1	Revenue Increases	17.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	3.0%	3.0%
2											
3	Revenue Requirement	$13,287,769	$14,875,226	$15,657,251	$16,490,636	$17,448,042	$18,455,655	$19,200,542	$20,103,455	$21,043,262	$22,021,364
4	EOY Fund Balance	$5,200,000	$5,271,003	$5,844,920	$7,302,409	$8,132,537	$9,027,528	$10,080,858	$11,154,559	$12,640,941	$12,270,950
5	Debt Coverage w/ Connection Fees	4.61	3.06	2.97	2.66	2.76	2.92	3.21	3.14	2.60	6.64
6	Debt Coverage w/o Connection Fees	1.03	1.47	1.65	1.29	1.35	1.60	1.86	1.73	1.30	3.67
7	Day of Cash	143	129	136	162	170	179	192	203	219	203

The projections show the increases in revenue requirements needed to fund expenses, meet debt service coverage requirements, and maintain adequate reserves. The revenue increases also provide debt coverage that exceeds the minimum 1.20 requirement if connection fee revenue is included. The debt coverage also meets the goal of a 1.00 ratio if connection fee revenue is not included. Reserve funding levels are increased to maintain the proposed target balance which increases due to the addition of a capital reserve and an emergency reserve.

Revenue needs should not be construed to mean rate increases.

CUSTOMER CLASS MODIFICATIONS

The District's current rate structure is applied to all customers regardless of customer class. In effect, the District has no existing customer classes despite tracking water use by a variety of different customer types.

HF&H proposes the District to implement separate rate structures for the major customer classes that the District tracks in its billing system. HF&H proposes the following customer classes be established and utilized: (i) Single Family Residential, (ii) Multi-Family Residential, (iii) Non Residential (commercial), (iv) Irrigation, and (v) Hydrants.

WATER RATE STRUCTURE MODIFICATIONS

The District's water rate structure currently comprises two components: monthly service charges and water charges. Service charges are charged on a monthly basis and vary depending on the size of the customer's meter. Water Charges are also charged monthly and vary depending on how many units of water are used. This rate structure is applied to all customers without regard to customer class and has been in place for several years with periodic rate increases.

Monthly Service Charges

The cost-of-service analysis indicates that the revenue from the monthly service charge should decrease from 24.5% to 22.4% of total rate revenue. A lower monthly service charge shifts more revenue generation to the water charges, thereby making customer bills more responsive to customer demands. Providing customers with more control over their bills via their consumption meets an objective of the Board. Increases or decreases in demand are more noticeable on bills with a lower monthly service charge, which encourages customers to conserve and discourages wastefulness.

In addition, the monthly service charges have been updated to reflect the rated capacities of each meter size. The proposed monthly service charges, shown by meter size, for the next five years are summarized in **Table I-2**.

Table I-2. Proposed Monthly Service Charge

Monthly Service Charges						
Meter Size	Current Rates	FY 2021-22 2/1/2022	FY 2022-23 2/1/2023	FY 2023-24 2/1/2024	FY 2024-25 2/1/2025	FY 2025-26 2/1/2026
5/8" meters	$17.52	$17.27	$17.96	$18.68	$19.42	$20.20
1" meters	$43.80	$39.36	$40.94	$42.57	$44.28	$46.05
1" w/ Fire meters	$17.52	$17.27	$17.96	$18.68	$19.42	$20.20
1 1/2" meters	$87.60	$76.18	$79.23	$82.40	$85.69	$89.12
2" meters	$140.16	$120.37	$125.18	$130.19	$135.40	$140.81
3" meters	$262.80	$260.29	$270.70	$281.53	$292.79	$304.50
4" meters	$438.00	$444.39	$462.17	$480.65	$499.88	$519.88
6" meters	$876.00	$996.71	$1,036.57	$1,078.04	$1,121.16	$1,166.01
8" meters	$1,401.60	$2,064.51	$2,147.10	$2,232.98	$2,322.30	$2,415.19
10" meters	$2,014.80	$3,095.50	$3,219.32	$3,348.09	$3,482.02	$3,621.30
12" meters	$3,766.80	$3,905.56	$4,061.79	$4,224.26	$4,393.23	$4,568.96
Fire Services	$20.69	$19.92	$20.72	$21.54	$22.41	$23.30
Fire Hydrant Meters	$262.80	$260.29	$270.70	$281.53	$292.79	$304.50

Water Charge (Consumption) Rates

The District's ratepayers are currently charged a two-tier increasing block rate for their metered water use. California case law[1] provides guidance on designing tiered rates that limits the amount of discretion that was previously common in designing conservation-oriented rates. First, the size of each tier should be based on actual customer demands that correspond with the cost of supplying those demands. This design guideline differs from prior common practices in which deemed amounts (e.g., essential use at the low end or excessive use at the high end) or budgets for indoor and outdoor needs were used as the basis for determining the size of tiers. The proposed consumption charge rates are based on recent customer demands taken from the District's billing data.

Second, the rate for each tier should reflect the cost of providing the service associated with each tier. This design guideline also differs from prior industry practices in which the rates for each tier were adjusted to reward low water use and discourage high water use. The proposed consumption charge rates are based on the cost of providing for levels of service corresponding to each of the tiers ranging from low peaking to high peaking.

With these modifications, the resulting proposed water charge rates are summarized in **Table I-3.**

[1] *Howard Jarvis Taxpayers Association v. City of San Juan Capistrano.*

Table I-3. Proposed Water Charge (Consumption) Rates

Water Charges							
			FY 2022-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Monthly Use	**Current Rates**	**Monthly Use**	**2/1/2022**	**2/1/2023**	**2/1/2024**	**2/1/2025**	**2/1/2026**
Residential - Single Family		**Residential - Single Family**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 8 hcf	$2.61	$2.72	$2.83	$2.94	$3.06
Tier 2: 9+ hcf	$3.80	Tier 2: 9 - 14 hcf	$4.36	$4.54	$4.72	$4.91	$5.11
		Tier 3: 15+ hcf	$5.96	$6.20	$6.45	$6.70	$6.97
Residential - Multi Family		**Residential - Multi Family**					
Tier 1: 0 - 8 hcf	$3.40	All Usage	$3.83	$3.99	$4.15	$4.31	$4.48
Tier 2: 9+ hcf	$3.80						
Non Residential		**Non Residential**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 34 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 35+ hcf	$4.30	$4.48	$4.65	$4.84	$5.03
Irrigation		**Irrigation**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 113 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 114+ hcf	$4.62	$4.80	$4.99	$5.19	$5.40
Hydrant		**Hydrant**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 115 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 116+ hcf	$4.29	$4.46	$4.64	$4.83	$5.02

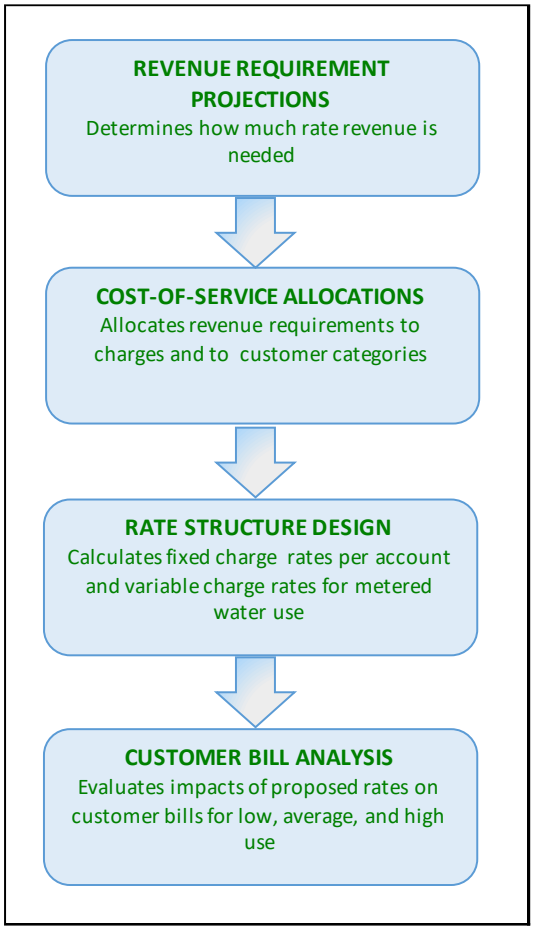
II. INTRODUCTION

STUDY PURPOSE

The purpose of this Study is to conduct a cost-of-service analysis that will determine rates and a rate structure that proportionally recovers the cost of providing the District's water service to its customers. Toward that end, the cost-of-service analysis determined how much revenue should be generated by each component of the rate structures so that ratepayers are charged for their proportionate shares of the cost of providing service.

STUDY PROCESS

The rate study was conducted following industry standards and practices promulgated by the American Water Works Association.[2] A comprehensive rate study involves the four steps shown in the adjacent diagram.



Revenue requirements were projected for a ten-year planning period based on operations, maintenance, capital expenses, debt service, and contributions to reserves. The cost-of-service analysis allocates the projected expenses among the customer classes in proportion to their use of the systems. Rates are then designed so that ratepayers are charged equitably. The impact on customers is then determined by comparing bills under the proposed rates with bills under the current rates.

During the course of the Study, interim work products were presented to District staff, a rate ad hoc subcommittee, and the Board of Directors:

- September 22, 2021 – Board Meeting: project introduction and Board direction.
- October 27, 2021 – Board meeting: review preliminary analysis.
- November 17, 2021 - Board meeting: present proposed rates and analyis.

[2] *Principles of Water Rates, Fees, and Charges*. American Water Works Association Manual M1. 2017.

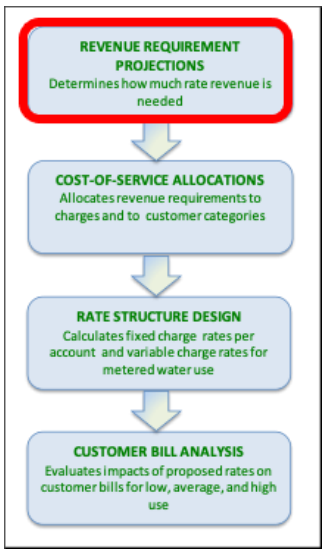
The input received from the Board is reflected in the recommended rates documented in this report.

REPORT ORGANIZATION

This report documents the analysis for each of the four rate-making steps. A glossary of technical terms and acronyms is provided following the Table of Contents. An appendix contains a copy of portions of the rate model that are not included in the body of the report text as tables and figures.

III. REVENUE REQUIREMENTS

The revenue requirement analysis began with the FY 2021-22 budgeted O&M and capital expenditures for the District's General Operating Fund (Fund 01). Revenue requirements for each fiscal year were then projected over a ten-year planning period. Revenue increases needed to cover the projected revenue requirements were then determined. Over a ten-year period it is possible to derive a relatively smooth series of annual revenue increases that minimize annual fluctuations.



ASSUMPTIONS AND PROJECTIONS

Expense projections combined with contributions to reserves constitute the revenue requirements. The assumptions shown in **Table III-1** were used to project expenses through FY 2031-32.

Table III-1. Projection Assumptions

	Budget	Projected								
	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
Annual Account Growth Rate		3.04%	1.72%	1.52%	1.50%	1.48%	1.46%	1.43%	1.41%	1.39%
Annual Water Demand Increases		0.68%	1.15%	1.20%	1.82%	1.79%	0.13%	1.73%	1.70%	1.68%
General Inflation	Budgeted	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Salaries & Wages	Budgeted	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Benefits	Budgeted	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Utilites	Budgeted	3.70%	4.18%	4.24%	4.88%	4.84%	3.13%	4.79%	4.76%	4.73%
Construction Cost Inflation		2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%
Interest on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Annual SFR conservation reduction	Budgeted	2.56%	0.79%	0.53%	0.00%	0.00%	1.33%	0.00%	0.00%	0.00%
CCWD Estimated Annual Increase	6.25%	6.00%	5.75%	5.25%	5.25%	5.25%	5.25%	4.00%	4.00%	4.00%

Source: Model Tab 1. Assumptions & Policies

The resulting revenue requirement projections are shown in **Figure III-1** as stacked bars. In addition,revenues from current rates are shown as a dashed black line and the revenue with revenue increases as a solid black line.

Expense Projections

The detail for the line items in each expense category is shown in the model in the Appendix.

Water Supply Expenses

The projected water supply expenses are the cost of purchased water from Contra Costa Water District (CCWD). This cost is gradually increasing during the projection period as a result of increases in the CCWD's wholesale rates.

Operating & Maintenance Expenses

The O&M expenses are projected to increase based on the escalation factors in **Table III-1**. O&M expenses include routine maintenance of the water system, chemicals used for treatment, and utilities. Of note, fire hydrant maintenance is now being performed by the District and this expense will increase from $25,000 in FY 2021-22 to $150,000 in FY 2022-23. Recent legislation[3] specifies that costs to construct, maintain, replace or repair public fire hydrants consistent with fire codes and industry standards (including costs of water distributed through those hydrants) may be included in system water costs and water rates.

PAYGo Capital Projects

A significant portion of the District's revenue requirements comprises annual expenditures on capital improvements paid from rate revenues and capital reserves. These expenditures fund the on-going renewal and replacement of aging infrastructure. Renewal of system infrastructure is necessary in order to preserve and protect the operational readiness and service capabilities of the District's water system. A list of the projected capital projects is shown in **Table III-2.** The annual average expenditures for pay-as-you-go (PAYGo) capital projects averages $1,915,938 in 2021 dollars over the ten-year period. **Table III-3** converts this average to an inflation-adjusted amount of $2,192,728.

Because PAYGo capital project costs fluctuate from year to year, they are funded from capital reserves, which buffers the annual fluctuations from District cash flows so that revenue requirements are relatively stable. To modulate these fluctuations, contributions from the revenue requirements are made to the capital reserve based on the average of annual PAYGo capital expenses. The amount of these contributions is based on meeting target balances, which are discussed further below.

[3] Senate Bill 1386 (Moorlach) was passed into law in 2020 and became effective on January 1, 2021 as Statutes of 2020, Chapter 240

Table III-2. Capital Improvement Program - PAYGo Projects

	PAYGo Funded Projects	10-Year Costs
1	Public Right of Way Relocations	$1,658,866
2	RBWTP - Projects & Improvements	$7,293,923
3	Additional RBWTP Projects	$14,000
4	Field Equipment Purchases	$845,000
5	Valve Replacement	$286,597
6	Add/Replace Vehicles - Construction Trucks	$1,197,500
7	Corpyard VFD's	$125,000
8	R1/R2 Seismic Upgrades	$1,200,940
9	Scada Upgrade	$606,500
10	New Office Equipment	$41,500
11	Corpyard Improvements	$160,278
12	Pipeline Corrosion Testing/Repairs	$229,278
13	Unidentified Future CIP	$5,500,000
	Total	**$19,159,382**

Source: District's 10-Year Budget Rate Model

Table III-3. Capital Improvement Program – Inflation Adjusted Costs

	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	Total Project Cost
PAYGo Funded Projects	$1,720,763	$1,952,701	$1,508,920	$1,436,477	$1,536,527	$1,802,216	$2,182,428	$1,629,611	$2,715,906	$2,673,832	$19,159,382
ENR Multiplier	1.000	1.029	1.058	1.088	1.117	1.146	1.175	1.205	1.234	1.263	
Project Costs Escalated	$1,720,763	$2,009,756	$1,597,096	$1,562,393	$1,716,108	$2,065,507	$2,565,033	$1,962,915	$3,350,745	$3,376,961	$21,927,279
									Average Annual Cash-Funded CIP	*$2,192,728*	

General & Administrative Expenses

Like O&M expenses, General & Administrative expenses are projected to increase slightly over the projection period based on the escalation factors in **Table III-1**.

Debt Service

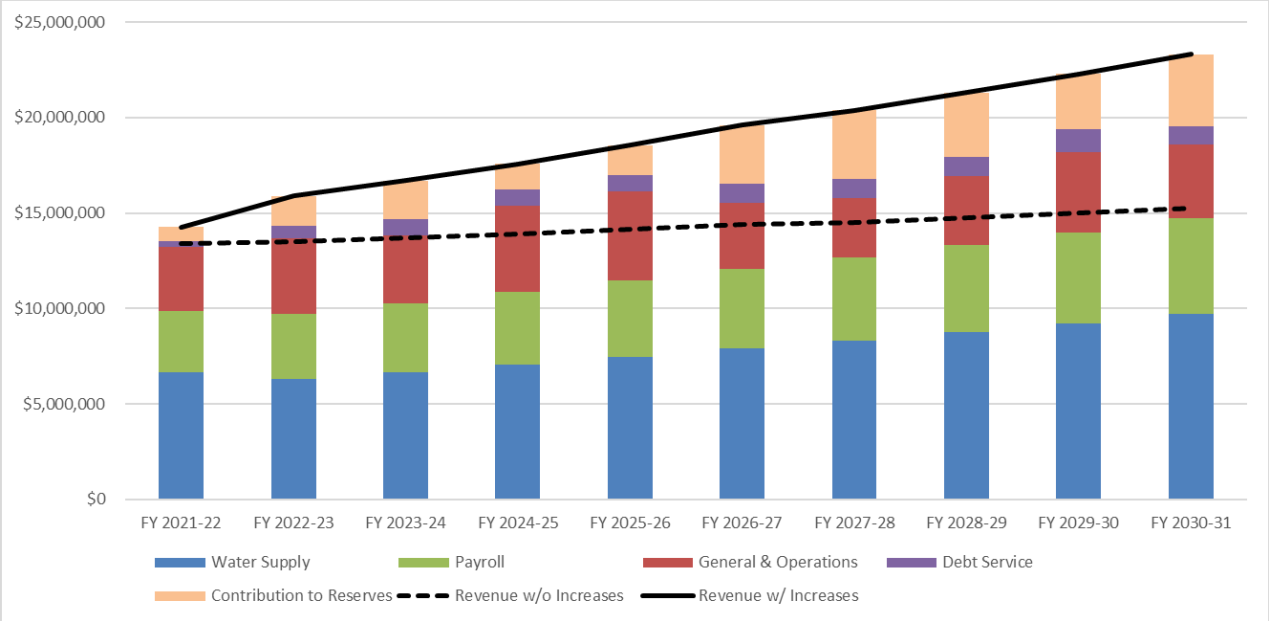
The District currently pays debt service on previously issued Certificates of Participation (COPs) and plans to issue new debt in the ten-year planning period to fund solar generation projects to offset greenhouse gas emissions, a new corporation/operations yard, and water mains and service lines replacements.

Contributions to Reserves

The revenue requirements include contributions to operating reserves and capital reserves in addition to what is needed to fund the PAYGo capital projects. The operating reserve provides working capital to meet month-to-month cash flow for O&M expenses. The capital reserve provides working capital for funding PAYGo capital projects.

Figure III-1 summarizes the projected revenue requirements.

Figure III-1. Revenue Requirement Projections



Source: Model Table 2. Revenue Requirement; data from District's FY 2021-22 Budget.

Proposed Revenue Increases

In addition to showing the major components of the revenue requirements, **Figure III-1** also shows the revenues from current rates and revenues from rates after rate increases are added. The revenue increases are summarized in **Table III-4** along with other key financial indicators. Note that the effective date for the FY 2021-22 increase is February 1, 2022. Subsequent revenue increases become effective each February 1.

Table III-4. Proposed Revenue Increases and Projected Key Financial Parameters

	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
	a	b	c	d	e	f	g	h	i	j
1 Revenue Increases	17.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	3.0%	3.0%	3.0%
2										
3 Revenue Requirement	$13,287,769	$14,875,226	$15,657,251	$16,490,636	$17,448,042	$18,455,655	$19,200,542	$20,103,455	$21,043,262	$22,021,364
4 EOY Fund Balance	$5,200,000	$5,271,003	$5,844,920	$7,302,409	$8,132,537	$9,027,528	$10,080,858	$11,154,559	$12,640,941	$12,270,950
5 Debt Coverage w/ Connection Fees	4.61	3.06	2.97	2.66	2.76	2.92	3.21	3.14	2.60	6.64
6 Debt Coverage w/o Connection Fees	1.03	1.47	1.65	1.29	1.35	1.60	1.86	1.73	1.30	3.67
7 Day of Cash	143	129	136	162	170	179	192	203	219	203

As further discussed below, the proposed revenue increases fund the O&M and capital expenses, meet debt service coverage requirements, and fund and maintain adequate reserves. With the recommended revenue increases, debt coverage will continue to be adequate based on the current capital improvement program.

RESERVE FUND BALANCE

Rates are set to generate sufficient revenue to cover annual expenses and to maintain adequate reserves. The difference between annual revenue requirements and revenue from rates and other sources results in an annual surplus or deficit that either adds to or subtracts from the unrestricted reserve fund balance.

Revenue increases that are proposed in this report would maintain reserves that meet certain conditions. One component of unrestricted reserves is needed to provide adequate working capital to meet monthly cash flow needs during the year related to O&M and capital expenses.

The Operating Reserve target is set based on the lag time between when the District incurs operating expenses and when the District receives payments from ratepayers. Hence, the billing frequency is a key consideration in setting the Operating Reserve target balance. In the District's case, it bills customers on a monthly basis. A target of 25% of annual O&M expenses is recommended because of the lag time between when the District incurs costs and receives revenues from rate payers. This is consistent with the District's current reserve policy.

The District maintains a Rate Stabilization Reserve that can be used to buffer minor fluctuations in water purchases throughout the year. Furthermore, this reserve can be used to cover minor unexpected expenses. Given the size of the District's operating budget, the current target of $1 million is viewed as sufficient for these purposes.

A proposed Capital Reserve target is based on the working capital that is needed to fund PAYGo project costs. In this case, the annual CIP average of the $2,192,728 (which includes inflation) is used as the target balance for the Capital Reserve.

A proposed Emergency Reserve will be used to cover major repairs in the case of an emergency that severely damages District infrastructure beyond minor repairs. This reserve will allow the Distict to quickly pay for repairs without the need to borrow money on the capital markets which could delay the necessary repairs. This reserve will be initially funded at $1 million and will be increased by $1 million every year until it reaches $5 million.

A comparison is made in **Table III-5** of the District's current target reserve balances with the proposed target balances. We regard these targets as minimums. The fund balance may exceed the targets from time to time but should not be allowed to continue to grow in excess of foreseeable needs.

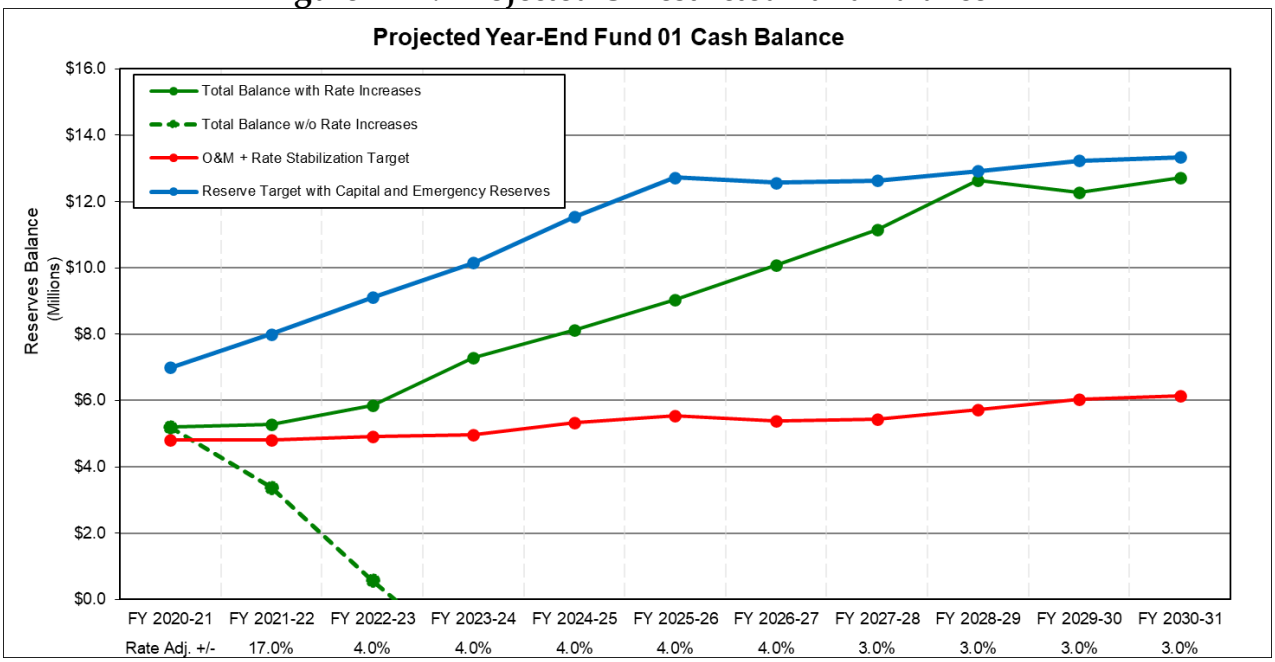
Table III-5. Current and Proposed Target Reserve Balances

Current Targets	Target
Operations & Maintenance	3 Months O&M Costs
Rate Stabilization	$1 million
HF&H Recommended	**Target**
Operations & Maintenance	3 Months O&M Costs
Rate Stabilization	$1 million
Capital	1-Year Average CIP
Emergency Reserve	$5 million

The projected fund balance over the planning period is graphed in **Figure III-2**. The solid green line represents the fund balance with the proposed annual revenue increases. The dashed green line shows the fund balance without revenue increases. Without revenue increases, the fund balance would drop off sharply beginning in FY 2021-22 because current revenues are unable to support the required capital improvement program.

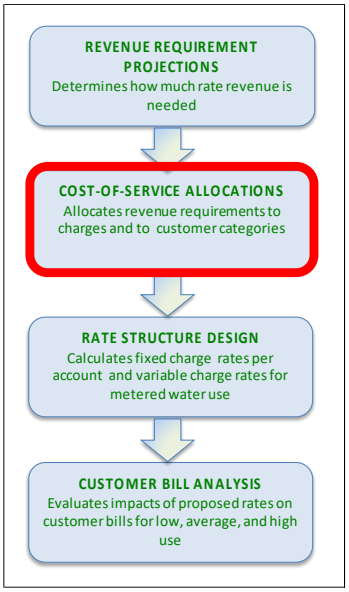
Figure III-2 also shows the current target balance for the District in red and the proposed target balance in blue. It can be seen that the current fund balance is less than the proposed fund balance, but above the current target. With the proposed revenue increases, the fund balance is projected to gradually climbing until it reaches the target balance in FY 2028-29. Higher revenue increases could reach the recommended target balance earlier. We regard the revenue increases as minimal because of the duration it takes to achieve the recommended target balance.

Figure III-2. Projected Unrestricted Fund Balance



IV. COST-OF-SERVICE ANALYSIS

The revenue requirement analysis establishes how much revenue is required from rates to cover the cost-of-service. The next step in the analysis is determining the cost of the services provided by the District to its customers, which will be charged through its rates. Cost-of-service analysis is used to derive rates that proportionally allocate the cost of service between the monthly services charge and the water usage charge and further allocated the consumption charge costs between the proposed customer classes and among customers in each proposed class.



ANALYTICAL APPROACH

The District provides demand services and customer services to water customers. Demand services include the costs related to meeting various levels of demand. Customer services include the costs related to customer accounts and the capacity that customers require.

The cost-of-service analysis performed in this study follows a procedure that has been long established by the American Water Works Association (AWWA),[4] which is referred to as the "base/extra capacity method." The analytical procedure contains the following steps:

1. **Cost classification** - Costs in the FY 2021-22 revenue requirement are classified into the service categories related to providing for customer demands and for customer service. FY 2021-22 costs are used for the cost-of-service analysis because they are the most recent budget year.
2. **Cost allocation** - The classified costs are allocated to the functions associated with each service. For demand services, the functions are levels of service that range from base, non-seasonal demands to the peak hour demands that represent the highest level of service. For customer services, the functions are customer accounts and customer capacity.

The criteria for classifying major costs are summarized as follows:

Demand services - the basis for the consumption charge rates.

[4] *Principles of Water Rates, Fees, and Charges.* Manual M1. American Water Works Association.

- Average day – average daily demand: facilities that do not provide for peak demands; additional water supplies.
- Maximum day – peak demand on the maximum day: transmission mains from the source of supply to distribution storage reservoirs; booster pumps.
- Maximum hour – peak hour demand on the maximum day: a portion of distribution storage reservoirs and distribution mains to customers; hydrants, conservation programs.

Customer services - the basis for the service charge.

- Accounts: meter reading, billing, accounting, customer service.
- Capacity: a portion of distribution storage reservoirs and transportation and distribution mains to customers.

Composite services - these costs are recovered from both consumption and service charges.

- Indirect allocations for costs that are not directly related to either the demand or customer service functions: personnel, overhead, non-operating revenue.

Working with District staff, the individual line items in the revenue requirements were classified into either the demand, customer, or composite services categories. Composite costs are allocated based on a composite of the direct allocations to the demand and customer service categories.

ALLOCATION FACTORS

Within the demand service function, allocations are made to varying levels of service. With these allocations, rates can be designed to proportionately charge customers based on their demands at each level of service.

Demand Services

Average Day Demand

Average day demand represents demand that includes only an average level of peaking. The average day demand was derived for each customer class from the District's customer billing data for FY 2020-21.

Maximum Day Demand

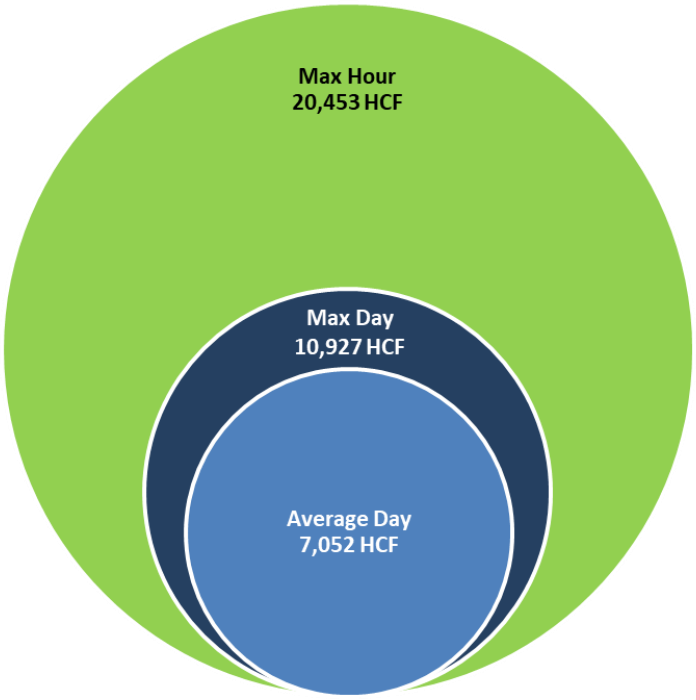
Maximum day demand includes average day demand plus peak day demand in the irrigation season. The District has daily readings for each customer class but not by individual meter. Hence, a maximum day demand can be established for each customer class.

Maximum Hour Demand

Maximum hour demand represents the maximum hour demand on the maximum day. The District has hourly readings for each customer class but not by individual meter. Hence, a maximum hour demand can be established for each customer class.

Figure IV-1 is a graphical depiction of the capacities of pipelines that correspond to each demand service level. This depiction is intended to exemplify the impact that peak levels of demand have on the design of facilities. The concentric circles are pipeline diameters proportionate to the levels of demand beginning with average day demand, which is demand when peaking is minimal. Maximum day demand requires a pipeline that is 1.55 times the capacity of average, non-peaking demand. To meet the highest level of service required by maximum hour demand, the pipeline capacity must be 2.9 times greater than the average demand. The larger capacities that are required to meet the higher levels of service require expenditures that the cost-of-service analysis allocates proportionately to those who require the service.

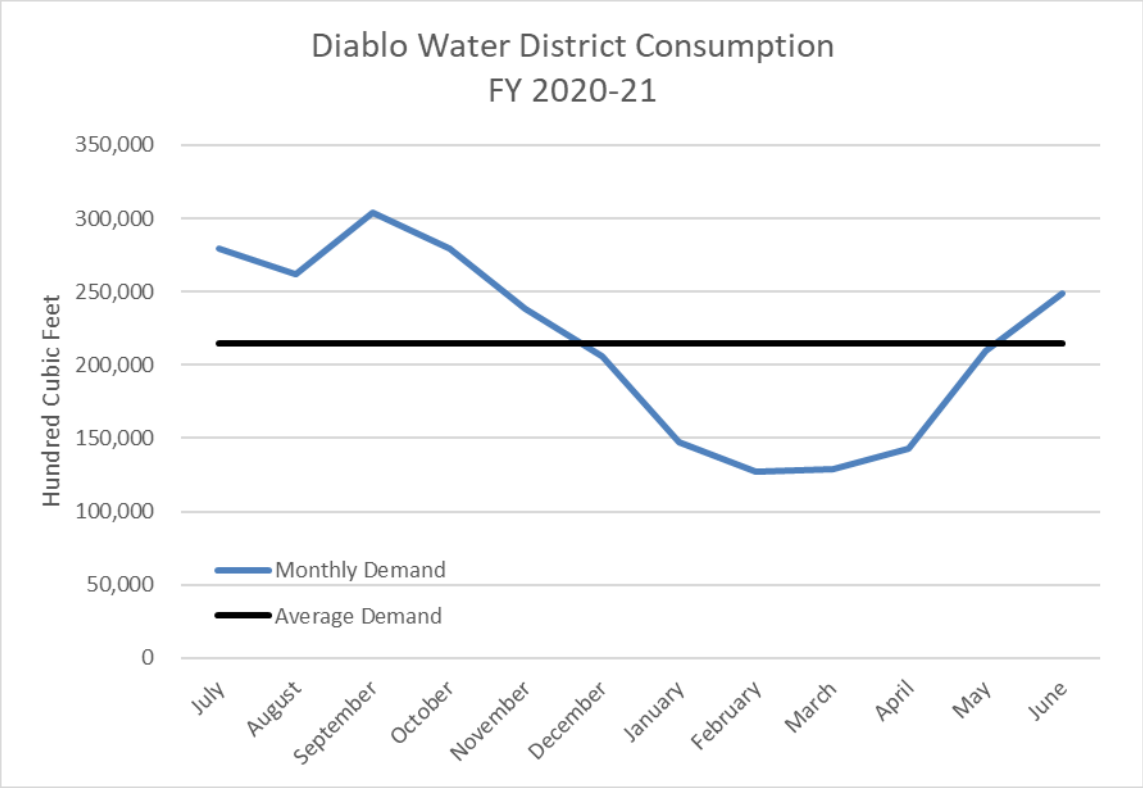
Figure IV-1. Pipeline Capacity Needed For Demand Service Levels



Note: Pipeline diameters drawn to relative scale

Figure IV-2 was prepared to further underscore the nature of peaking in the District from winter to summer.

Figure IV-2. Recent Seasonal Variation in Water Demand



Allocation Factors

The flows associated with the demand service levels for each proposed customer class and for the system as a whole are shown in **Table IV-1**. We note that the flows for the customer classes are coincident flows. Coincident flows represent the combined, total flow for which capacity is required at a given level of demand. It may be that one class' peak may not be highest during the system-wide peak. That is inconsequential because facilities are not designed for noncoincident peaks. Hence, it would be illogical to use noncoincident flows to allocate costs that correspond to facilities that are sized for coincident peaks.

Table IV-1. Service Level Demands and Load Factors

		Levels of Demand (hcf)		
		Average Day	Maximum Day	Maximum Hour
		a	b	c
1	**Demand by Customer Category (hcf)**			
2	Residential - SF	5,688	8,485	17,829
3	Residential - MF	194	198	180
4	Non Residential	277	490	221
5	Hydrant	211	400	600
6	Irrigation	682	1,354	1,622
7	Total	7,052	10,927	20,453
8	**Ratio of Flows to Average Day**			
9	Residential - SF	1.00	1.49	3.13
10	Residential - MF	1.00	1.02	0.93
11	Non Residential	1.00	1.77	0.80
12	Hydrant	1.00	1.89	2.84
13	Irrigation	1.00	1.98	2.38
14	Total	1.00	1.55	2.90
15				
16	Level of Service	7,052	10,927	20,453
17	Average Day Demand	7,052	7,052	7,052
18	**Ratio of Level of Service to Average Day**	**1.00**	**1.55**	**2.90**

Source: Data source as described in text.

Table IV-2 shows the system-wide allocation percentages corresponding to the flows and load factors in **Table IV-1.** Note that costs that are classified, for example, as maximum hour are allocated to both average day and maximum day and not to maximum hour only. This is done because the capacity provided by maximum hour facilities also provides capacity to meet average day and maximum day demands, as well.

Table IV-2. Service Level Allocation Factors

			Demand Service Levels			
	Allocation Basis	Load Factors	Average Day	Maximum Day	Maximum Hour	Totals
		a	b	c	d	e
1	**Average Day**	**1.00**	1.00			1.00
2	*Allocation %*		*100%*			*100%*
3						
4	**Maximum Day**	**1.55**	1.00	0.55		1.55
5	*Allocation %*		*64.5%*	*35.5%*		*100%*
6						
7	**Maximum Hour**	**2.90**	1.00	0.55	1.35	2.90
8	*Allocation %*		*34.5%*	*18.9%*	*46.6%*	*100%*

The allocation factors for costs classified as Customer Service are not related to levels of demand and, instead, are allocated either as 100% customer accounts or 100% customer capacity.

Table IV-3 summarizes the allocation factors for the demand and customer service costs. In addition, it shows the composite allocations. The O&M, Capital, and Expense composite allocation factors are based on subtotals of the O&M, Capital, and total costs that were directly allocated to either the demand or customer service categories. (These subtotals for the composite allocations are shown in **Tables IV-4, IV-5,** and **IV-6**.)

Table IV-3. Summary of Allocation Factors

	System-Wide Cost Allocation Factors	Demand Services			Customer Services		Total
		Average Day	Maximum Day	Maximum Hour	Accounts	Service Charge	
		a	b	c	d	e	f
1	Demand Services						
2	Average Day	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
3	Max Day	64.5%	35.5%	0.0%	0.0%	0.0%	100.0%
4	Max Hour	34.5%	18.9%	46.6%	0.0%	0.0%	100.0%
5	Customer Services						
6	Capacity	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
7	Accounts	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
8	Composite Allocations						
9	O&M Composite	85.1%	12.9%	0.4%	4.1%	-2.4%	100.0%
10	CIP Composite	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
11	Exp Composite	63.9%	9.7%	0.3%	3.0%	23.1%	100.0%

Source: Data source as described in the text

COST-OF-SERVICE ALLOCATIONS

O&M, Capital, and Composite Allocations

Tables IV-4, IV-5, and **IV-6** show the FY 2021-22 revenue requirement allocated into the demand and customer services categories. Each line item was classified with the assistance of District staff according to the associated function. The allocation factors that are summarized in **Table IV-3** allocate the costs across the services based on the cost classification in column b.

Table IV-4. Direct Allocations - O&M Expenses

		FY 2021-22 Revenue Requirement	Allocation Factor	Demand Services			Customer Services	
				Average Day	Maximum Day	Maximum Hour	Accounts	Capacity
		a	b	c	d	e	f	g
1	**Direct O&M**							
2	**Operations and Maintenance**							
3	Maintenance T&D	$278,500	Average Day	$278,500	$0	$0	$0	$0
4	Maintenance Backflow	$48,000	Accounts	$0	$0	$0	$48,000	$0
5	Maintenance Reservoirs	$41,000	Max Hour	$14,137	$7,767	$19,096	$0	$0
6	Maintenance Blending	$17,000	Max Day	$10,972	$6,028	$0	$0	$0
7	Maintenance Glen Park Well	$10,260	Max Day	$6,622	$3,638	$0	$0	$0
8	Maintenance Stonecreek Well	$10,260	Max Day	$6,622	$3,638	$0	$0	$0
9	Maintenance Delta Coves	$5,250	Average Day	$5,250	$0	$0	$0	$0
10	Water Samples	$80,000	Average Day	$80,000	$0	$0	$0	$0
11	**Transmission and Distribution**							
12	Chemicals Glen Park Well	$7,210	Max Day	$4,653	$2,557	$0	$0	$0
13	Chemicals Blending Facility	$25,100	Max Day	$16,200	$8,900	$0	$0	$0
14	Chemicals Stonecreek Well	$5,000	Max Day	$3,227	$1,773	$0	$0	$0
15	Chemicals Delta Coves	$7,000	Average Day	$7,000	$0	$0	$0	$0
16	General Operating - T&D	$178,030	Average Day	$178,030	$0	$0	$0	$0
17	General Operating Blending	$36,450	Max Day	$23,525	$12,925	$0	$0	$0
18	General Operating Glen Park Well	$3,000	Max Day	$1,936	$1,064	$0	$0	$0
19	General Operating Stonecreek Well	$3,000	Max Day	$1,936	$1,064	$0	$0	$0
20	General Operating Delta Coves	$1,000	Average Day	$1,000	$0	$0	$0	$0
21	**Water Purchases - Source of Supply CCWD**							
22	Service Charge	$93	Capacity	$0	$0	$0	$0	$93
23	Demand Charge	$683,453	Max Day	$441,112	$242,341	$0	$0	$0
24	Volumetric Charge	$3,606,119	Average Day	$3,606,119	$0	$0	$0	$0
25	Additional Water Purchases from CCWD	$500,000	Average Day	$500,000	$0	$0	$0	$0
26	**Water Treatment and Maintenance - RBWTP O&M**							
27	Randall Bold Water Treatment Plant O&M	$1,886,016	Max Day	$1,217,265	$668,751	$0	$0	$0
28	**Other Expenses**							
29	Pipeline Corrosion Testing/Repairs	$20,000	Average Day	$20,000	$0	$0	$0	$0
30	Groundwater Sustainability Expenses	$0	Average Day	$0	$0	$0	$0	$0
31	Fire Hydrant Maintanence	$25,000	Accounts	$0	$0	$0	$25,000	$0
32	Water Conservation Program	$25,000	Max Hour	$8,620	$4,736	$11,644	$0	$0
33	**Finance**	$185,000	Accounts	$0	$0	$0	$185,000	$0
34	**Customer Service**	$46,000	Accounts	$0	$0	$0	$46,000	$0
35	**Non-Operating Revenue**							
36	Check Valve Maintenance	($170,000)	Capacity	$0	$0	$0	$0	($170,000)
37	Check Valve Installation	($2,600)	Capacity	$0	$0	$0	$0	($2,600)
38	Destroyed Lock Charges	$0	Capacity	$0	$0	$0	$0	$0
39	Tampering Charges	($10,000)	Capacity	$0	$0	$0	$0	($10,000)
40	Meter Repairs	($530)	Capacity	$0	$0	$0	$0	($530)
41	Hydrant Meter Replacement	($3,183)	Max Hour	($1,097)	($603)	($1,482)	$0	$0
42	Delta Coves Property Tax Income	($59,883)	Average Day	($59,883)	$0	$0	$0	$0
43	Total Allocable O&M	$7,486,544		$6,371,747	$964,577	$29,258	$304,000	($183,037)
44	O&M Composite			85.1%	12.9%	0.4%	4.1%	-2.4%
45								
46	**Debt Service**	$289,095	Capacity	$0	$0	$0	$0	$289,095
47								
48	**Capital Expenses (PayGo)**	$2,192,728	CIP Composite	$0	$0	$0	$0	$2,192,728
49								
50	**Subtotal - O&M, Debt Service, and Capital**	$9,968,367		$6,371,747	$964,577	$29,258	$304,000	$2,298,786
51			% of Consumption	*86.5%*	*13.1%*	*0.4%*		
52	Expense Composite		*% of total*	*63.9%*	*9.7%*	*0.3%*	*3.0%*	*23.1%*
53								

Table IV-5 shows the allocation of the capital expenses. **Table IV-5** also includes the calculation of the capital composite allocation percentages that are used in **Table IV-6** for the CIP PAYGo expense**.**

Table IV-5. Direct Allocations - Capital Expenses

	Project	Total Cost	Allocation Factor	Average Day	Maximum Day	Maximum Hour	Accounts	Service Charge
		a	b	c	d	e	f	g
1	Public Right of Way Relocations	$1,658,866	Capacity	$0	$0	$0	$0	$1,658,866
2	RBWTP - Projects & Improvements	$7,293,923	Capacity	$0	$0	$0	$0	$7,293,923
3	Additional RBWTP Projects	$14,000	Capacity	$0	$0	$0	$0	$14,000
4	Field Equipment Purchases	$845,000	Capacity	$0	$0	$0	$0	$845,000
5	Valve Replacement	$286,597	Capacity	$0	$0	$0	$0	$286,597
6	Add/Replace Vehicles - Construction Trucks	$1,197,500	Capacity	$0	$0	$0	$0	$1,197,500
7	Corpyard VFD's	$125,000	Capacity	$0	$0	$0	$0	$125,000
8	R1/R2 Seismic Upgrades	$1,200,940	Capacity	$0	$0	$0	$0	$1,200,940
9	Scada Upgrade	$606,500	Capacity	$0	$0	$0	$0	$606,500
10	New Office Equipment	$41,500	Capacity	$0	$0	$0	$0	$41,500
11	Radio Read Upgrade	$0	Capacity	$0	$0	$0	$0	$0
12	Corpyard Improvements	$160,278	Capacity	$0	$0	$0	$0	$160,278
13	Pipeline Corrosion Testing/Repairs	$229,278	Capacity	$0	$0	$0	$0	$229,278
14	Maint T&D	$0	Capacity	$0	$0	$0	$0	$0
15	Unidentified Future CIP	$5,500,000	Capacity	$0	$0	$0	$0	$5,500,000
16		$19,159,382		$0	$0	$0	$0	$19,159,382
17				0.00%	0.00%	0.00%	0.00%	100.00%

Table IV-6 shows the allocation of the O&M composite expenses, the CIP composite expense[5], and non-operating revenues. **Table IV-6** also shows the distribution of the revenue requirement between the demand services and customer service categories. The demand service costs are recovered through the consumption charges and the customer accounts and capacity costs are combined for determining the service charges.

We note that the resulting allocations divide the revenue requirement between the demand services and customer services. Revenue from customer services is billed through the service charges, which are fixed based on the size of the service connection; they do not vary with demand. The analysis indicates that 22.4% of the revenue requirement is attributed to the service charges, which is a decrease from the current 24.5%.

[5] The CIP composite expense is the ten-year annual average of PAYGo projects (taking into account projected inflation).

Table IV-6. Composite and Non-Operating Revenue Allocations

		FY 2021-22 Revenue Requirement	Allocation Factor	Demand Services: Average Day	Demand Services: Maximum Day	Demand Services: Maximum Hour	Customer Services: Accounts	Customer Services: Capacity
		a	b	c	d	e	f	g
1	**Composite Allocations**							
2	**Operations & Maintenance**							
3	Maintenance Corpyard	$25,000	O&M Composite	$21,277	$3,221	$98	$1,015	($611)
4	General Operating Corpyard	$40,950	O&M Composite	$34,852	$5,276	$160	$1,663	($1,001)
5	Telephone Services for Field	$8,450	O&M Composite	$7,192	$1,089	$33	$343	($207)
6	Utilities for Field	$172,450	O&M Composite	$146,771	$22,219	$674	$7,003	($4,216)
7	Automotive Fuel, Maintenance, Misc	$87,000	O&M Composite	$74,045	$11,209	$340	$3,533	($2,127)
8	**Other**							
9	Corpyard Improvements	$13,545	O&M Composite	$11,528	$1,745	$53	$550	($331)
10	Additional Staff	$0	O&M Composite	$0	$0	$0	$0	$0
11	Administrative and General	$162,575	O&M Composite	$138,366	$20,946	$635	$6,602	($3,975)
12	Board of Directors	$27,562	O&M Composite	$23,458	$3,551	$108	$1,119	($674)
13	Office	$223,870	O&M Composite	$190,534	$28,844	$875	$9,091	($5,473)
14	Insurance	$85,000	O&M Composite	$72,343	$10,952	$332	$3,452	($2,078)
15	Legal Expenses	$39,000	O&M Composite	$33,193	$5,025	$152	$1,584	($954)
16	Training	$42,800	O&M Composite	$36,427	$5,514	$167	$1,738	($1,046)
17	**Total Composite Expenses**	$928,202		$789,986	$119,591	$3,627	$37,691	($22,693)
18								
19	**Subtotal O&M, Capital, Non-Operating**	$10,896,569		$7,161,733	$1,084,168	$32,885	$341,691	$2,276,092
20	*Expense Allocation*			*65.7%*	*9.9%*	*0.3%*	*3.1%*	*20.9%*
21								
22	**Payroll - Salaries/Benefits/Taxes**	$3,179,691	Exp Composite	$2,032,448	$307,679	$9,333	$96,969	$733,262
23	**Engineering**							
24	Engineering	$215,000	Exp Composite	$137,427	$20,804	$631	$6,557	$49,581
25	Consulting	$185,380	Exp Composite	$118,494	$17,938	$544	$5,653	$42,750
26	**Non-Operating Revenue**							
27	Late Charges	($65,000)	Exp Composite	($41,548)	($6,290)	($191)	($1,982)	($14,990)
28	Trip Charges	($26,523)	Exp Composite	($16,953)	($2,566)	($78)	($809)	($6,116)
29	Call-Out Charges	($2,500)	Exp Composite	($1,598)	($242)	($7)	($76)	($577)
30	Returned Item Charges	($2,500)	Exp Composite	($1,598)	($242)	($7)	($76)	($577)
31	Hydrant Meter Repairs	$0	Accounts	$0	$0	$0	$0	$0
32	Field Service Charges	($1,591)	Exp Composite	($1,017)	($154)	($5)	($49)	($367)
33	Bad Debt Recovery	($2,652)	Exp Composite	($1,695)	($257)	($8)	($81)	($612)
34	Retirees Health Benefits - OPEB	($65,376)	Exp Composite	($41,788)	($6,326)	($192)	($1,994)	($15,076)
35	Other Income	($25,750)	Exp Composite	($16,459)	($2,492)	($76)	($785)	($5,938)
36	Rental Income	($127,308)	Exp Composite	($81,375)	($12,319)	($374)	($3,882)	($29,358)
37	Southpark Well - M24	($5,517)	Exp Composite	($3,526)	($534)	($16)	($168)	($1,272)
38	Knightsen Well - M25	($5,252)	Exp Composite	($3,357)	($508)	($15)	($160)	($1,211)
39	Willow Park Marina Well - M27	($10,821)	Exp Composite	($6,917)	($1,047)	($32)	($330)	($2,495)
40	Reimbursement from Developers	($400,000)	Exp Composite	($255,679)	($38,706)	($1,174)	($12,199)	($92,243)
41	**Total Non-Operating**	$2,839,281		$1,814,859	$274,740	$8,333	$86,588	$654,761
42								
43	**Transfers to/(from) Reserves**	($1,448,081)	Exp Composite	($925,608)	($140,122)	($4,250)	($44,161)	($333,939)
44	**Emergency Reserve - Tier 1**	$1,000,000	Average Day	$1,000,000	$0	$0	$0	$0
45								
46	**Total Revenue Requirement**	$13,287,769		$9,050,983	$1,218,786	$36,968	$384,117	$2,596,914
47						**$10,306,737**	**$384,117**	**$2,596,914**
48				% of revenue requirement		**77.6%**		**22.4%**
49						*Consumption Charge COS*		*Service Charge COS*

Fixed and Variable Revenues and Costs

Revenue from the current service charges is 24.5% of the combined rate revenue. Receiving 24.5% of revenue from fixed charges is within a reasonable range compared with industry averages, which are typically at least 20% in California with a trend toward over 30% as a means of improving revenue stability.

The cost-of-service analysis decreased the service charge revenue to 22.4%, which is not a significant decrease from the District's current level. This indicates that the current service charge revenue is not significantly misaligned with the cost-of-service. Often times a decrease in the allocation to fixed charges can put revenue stability at risk. However, this should not be a concern for the District since the percent of revenue being recovered

from service charges is not dropping by a significant amount. Furthermore, increases in the target reserves will give the District some room for fluctuations in its rate revenues.

Allocation Comparison

Table IV-7 compares the revenue from current rates *with* the proposed 17% revenue increase with the cost-of-service allocations with the proposed revenue increase. If the District continued with its existing rate structure but increased the rates 17%, the comparison shows that the cost-of-service analysis shifts revenue from the service charges to the consumption charges.

Table IV-7. Comparison of Customer Class Allocations

	Components of Rate Structure	Revenue at Current Rates w/ Rate Increases		Cost of Service		Difference COS Minus Current	
		a	b	c	d	e	f
1	Water Charge Revenue	$10,031,275	75.5%	$10,306,737	77.6%	$275,462	2.7%
2	Service Charge Revenue	$3,256,494	24.5%	$2,981,032	22.4%	($275,462)	-8.5%
3	**Total**	$13,287,769	100.0%	$13,287,769	100.0%	$0	0.0%
4							
5	**Water Charge Revenue**						
6	Residential	$8,016,746	79.9%	$8,278,142	80.3%	$261,397	3.3%
7	Multi Family	$287,233	2.9%	$271,405	2.6%	($15,828)	-5.5%
8	Non Residential	$406,787	4.1%	$410,664	4.0%	$3,877	1.0%
9	Irrigation	$1,007,446	10.0%	$1,029,431	10.0%	$21,985	2.2%
10	Hydrant	$313,062	3.1%	$317,095	3.1%	$4,032	1.3%
11		$10,031,275	100.0%	$10,306,737	100.0%	$275,462	2.7%

CONSUMPTION CHARGE COST ALLOCATIONS

As previously discussed, the customer service function is independent of the customer classes. The demand service function requires further allocations to customer classes in deriving rates. **Table IV-8** derives the cost of service for each of the District's proposed customer classes. The allocation reflects each class' proportionate shares of the three demand service levels (i.e., average day, maximum day, and maximum hour) because they share common facilities. Moveover, the allocation of costs to the various proposed customers classes needs to be tracked by demand service level for purposes of calculating the tiered rates in **Section V** below.

Table IV-8. Consumption Charge Cost Allocations By Customer Class

	Consumption Charge Cost of Service	Average Day	Maximum Day	Maximum Hour	Total
		a	b	c	d
1	Operations & Maintenance	$7,161,733	$1,084,168	$32,885	$8,278,786
2	Debt Service	$0	$0	$0	$0
3	Capital Expenses (PayGo)	$0	$0	$0	$0
4	Non-Operating Revenue	$1,814,859	$274,740	$8,333	$2,097,932
5	Transfers to/(from) Reserves	$74,392	($140,122)	($4,250)	($69,980)
6	**Total Consumption Charge COS**	$9,050,983	$1,218,786	$36,968	$10,306,737
7					
8	**Units of Service (hcf)**				
9	Residential - SF	5,688	8,485	17,829	
10	Residential - MF	194	198	180	
11	Non Residential	277	490	221	
12	Hydrant	211	400	600	
13	Irrigation	682	1,354	1,622	
14		7,052	10,927	20,453	
15	**Proportional Allocation Factors**				
16	Residential - SF	80.65%	77.65%	87.17%	
17	Residential - MF	2.75%	1.82%	0.88%	
18	Non Residential	3.93%	4.48%	1.08%	
19	Hydrant	3.00%	3.66%	2.93%	
20	Irrigation	9.67%	12.39%	7.93%	
21		100.00%	100.00%	100.00%	
22					
23	Residential - Single Family	$7,299,488	$946,428	$32,227	$8,278,142
24	Residential - Multi Family	$248,946	$22,133	$326	$271,405
25	Non Residential	$355,645	$54,620	$399	$410,664
26	Hydrant	$271,394	$44,617	$1,084	$317,095
27	Irrigation	$875,510	$150,988	$2,932	$1,029,431
28	**Grand Total Consumption Charge COS**	**$9,050,983**	**$1,218,786**	**$36,968**	**$10,306,737**

V. RATE DESIGN

This section discusses the derivation of the proposed rates associated with the two charges paid by customers in the District's five proposed customer classes. These rates are based on the results of the cost-of-service analysis in the preceding section.

CUSTOMER CLASSES

The District's current rate structure is applied to all customers regardless of customer class. In effect, the District has no customer classes despite tracking water use by a variety of different customer types.

It is recommended that the District implement separate rate structures for the major customer classes that are tracked in its billing system. HF&H proposes (i) Single Family Residential, (ii) Multi-Family Residential, (iii) Non Residential (commercial), (iv) Irrigation, and (v) Hydrants.

The following is proposed as defining each proposed customer class:

Single Family Residential: includes free-standing single family homes, single family with an accessory dwelling unit, duplexes, and triplexes.

Multi-Family Residential: includes parcels with four or more dwelling units, apartments, condominiums, and mobile homes/mobile home parks.

Non-Residential: includes commercial businesses, hotels, churches, entertainment venues, industrial, clubs, fire-line services, and publicly-owned properties/facilities.

Irrigation: water system connections/meters that are specifically installed for outdoor irrigation purposes only.

Hydrants: temporary water system connections/portable meters used for provision of construction water.

CURRENT RATE STRUCTURE

Tables V-1 and **V-2** summarize the District's current rates for its two existing charges. This rate structure, including the customer classes, has been in place for many years. Customers are billed the sum of service charges and water consumption charges monthly.

Table V-1. Current Monthly Service Charges

Meter Size	Current Rates
5/8" meters	$17.52
1" meters	$43.80
1" w/ Fire meters	$17.52
1 1/2" meters	$87.60
2" meters	$140.16
3" meters	$262.80
4" meters	$438.00
6" meters	$876.00
8" meters	$1,401.60
10" meters	$2,014.80
12" meters	$3,766.80
Fire Services	$20.69
Fire Hydrant Meters	$262.80

Table V-2. Current Water Charges per hcf (Consumption Rates)

Monthly Use	Current Rates
Residential - Single Family	
Tier 1: 0 - 8 hcf	$3.40
Tier 2: 9+ hcf	$3.80
Residential - Multi Family	
Tier 1: 0 - 8 hcf	$3.40
Tier 2: 9+ hcf	$3.80
Non Residential	
Tier 1: 0 - 8 hcf	$3.40
Tier 2: 9+ hcf	$3.80
Irrigation	
Tier 1: 0 - 8 hcf	$3.40
Tier 2: 9+ hcf	$3.80
Hydrant	
Tier 1: 0 - 8 hcf	$3.40
Tier 2: 9+ hcf	$3.80

SERVICE CHARGES

Service charges are fixed rates charged on a per account basis that recover the cost of the customer service function. Service charges are graduated in proportion to the capacity of the service (i.e., size of the water meter) serving a property. They are also independent of customer classes because the capacity of a service is the same no matter what customer is connected to the meter. In other words, a one-inch meter provides the same capacity to any customer that is connected to it.

The service charges are set to generate the revenue required to cover the costs allocated to the customer service function, which was determined in the cost-of-service analysis. The customer service function has two components – customer accounts and customer capacity – each of which is itemized in the cost-of-service analysis. Costs attributable to customer accounts are allocated to customers in proportion to the total number of accounts. Costs attributable to customer capacity are allocated to customers in proportion to the capacity of their services. The sum of the two components equals the service charge rate per connection.

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 Equivalent Meter Units (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. The capacity multipliers are based on AWWA nominal rated capacities.

The inventory of these meters is shown in **Table V-3**, which also shows the rated capacity in gallons per minute (GPM) for each meter size. Using the rated capacities, it is possible to calculate the EMUs for each size meter. For example, a 1-inch meter provides 2.5 times as much capacity as a 5/8-inch meter. The 132 1-inch meters equal 330 EMUs (i.e., 5/8" meters). The number of EMUs was calculated for each meter type and summed up to determine the total EMUs.

Table V-3 derives the unit costs for the customer accounts and customer capacity cost components. Each account is allocated $2.54 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 $14.73 per EMU. That amount represents a portion of the cost of providing distribution system capacity for each account, and increases in proportion to the capacity of the meter.

Table V-3. Proposed Service Charge Unit Costs

Service Size	# of Accounts	Meter Ratings (gpm)	Capacity Multiplier*	EMUs
	a	b	c = b ÷ 20	a * c
5/8" meters	10,492	20	1.00	10,492
1" meters	132	50	2.50	330
1" w/ Fire meters	1,727	20	1.00	1,727
1 1/2" meters	58	100	5.00	288
2" meters	64	160	8.00	511
3" meters	13	350	17.50	220
4" meters	4	600	30.00	126
6" meters	0	1350	67.50	0
8" meters	1	2800	140.00	147
10" meters	0	4200	210.00	0
12" meters	0	5300	265.00	0
Fire Services [1]	69	23.6	1.18	82
Fire Hydrant Meters [2]	44	350	17.50	770
Total Accounts	**12,604**		**Total EMUs**	**14,693**
Units Costs	**$384,117**			**$2,596,914**
Monthly Cost				
per Account	**$2.54**			
per EMU				**$14.73**

1. Set to maintain same 1.18 ratio as current rate structure capacity multipliers
2. Same as 3″ meters

Table V-4 combines the customer service and capacity components into a service charge for each size service. These amounts are monthly values for FY 2021-22. They are compared with the current monthly equivalents.

Table V-4. Proposed Monthly Service Charges

Service Size	% of Meters	Account Component ($/mo.)	Capacity Component $/EMU	Capacity Multiplier	Capacity Total	Proposed Service Charges ($/mo.)	Total Current Charge	$ Difference
		a	b	c	d = b * c	e = a + d	f	g = e - f
5/8" meters	83.2%	$2.54	$14.73	1.00	$14.73	**$17.27**	$17.52	($0.25)
1" meters	1.0%	$2.54	$14.73	2.50	$36.82	**$39.36**	$43.80	($4.44)
1" w/ Fire meters	13.7%	$2.54	$14.73	1.00	$14.73	**$17.27**	$17.52	($0.25)
1 1/2" meters	0.5%	$2.54	$14.73	5.00	$73.64	**$76.18**	$87.60	($11.42)
2" meters	0.5%	$2.54	$14.73	8.00	$117.83	**$120.37**	$140.16	($19.79)
3" meters	0.1%	$2.54	$14.73	17.50	$257.75	**$260.29**	$262.80	($2.51)
4" meters	0.0%	$2.54	$14.73	30.00	$441.85	**$444.39**	$438.00	$6.39
6" meters	0.0%	$2.54	$14.73	67.50	$994.17	**$996.71**	$876.00	$120.71
8" meters	0.0%	$2.54	$14.73	140.00	$2,061.97	**$2,064.51**	$1,401.60	$662.91
10" meters	0.0%	$2.54	$14.73	210.00	$3,092.96	**$3,095.50**	$2,014.80	$1,080.70
12" meters	0.0%	$2.54	$14.73	265.00	$3,903.02	**$3,905.56**	$3,766.80	$138.76
Fire Services	0.5%	$2.54	$14.73	1.18	$17.38	**$19.92**	$20.69	($0.77)
Fire Hydrant Meters	0.3%	$2.54	$14.73	17.50	$257.75	**$260.29**	$262.80	($2.51)

WATER CHARGE RATES

The District's customers are currently charged a two-tier increasing block rate structure. These rates apply to all customers regardless of class. Increasing block rates are "progressive" in the sense that water is billed sequentially by block up to the highest block. It is not the case that all of the water is billed at only the rate for the highest block. All metered water use is at least billed the Tier 1 rate. Water use beyond Tier 1 is only billed the Tier 2 rate for the volume of water used within Tier 2.

Single Family Residential Rates

Breakpoints Between Tiers

The base/extra capacity cost-of-service analysis leads to distinct levels of demand that are defined by the functions performed by facilities that are designed to provide each service level. Tier breakpoints were calculated for indoor use, average day demand, and peak day demand. Each of these service levels have an average flow that can be used as the divider (i.e., "breakpoint") between each service level.

Based on residential billing data and estimates of peak demands, the proposed breakpoints for Tier 1, Tier 2, and Tier 3 were calculated as shown in **Table V-5.** Given that the current Tier 1 breakpoint is at 8 hcf, the District favors keeping the breakpoint at 8 hcf instead of changing the breakpoint to 7 hcf. This level of indoor water use, 8 hcf, is consistent with historic demand patterns. The analysis used to calculate the 7 hcf indoor use is based on only one year of consumption and may not be reflective of a typical year.

Table V-5. Calculated Breakpoint Locations – Single Family Tiers

	Tier 1	Tier 2	Tier 3
Flow per Customer	**Indoor Use**	**Average Day**	**Above Average**
Residential - SF			
hcf per day	2,755	5,688	8,485
hcf per month	82,646	170,627	
# of Accounts	12,075	12,075	
Average flow per Acct (hcf/mo)	**7.0**	**14.0**	**14+**

Rates Per Tier

With breakpoints that correspond to the service levels in the cost-of-service analysis, it is possible to calculate the rate per tier by dividing the cost of service per tier by the water demand in each tier. The resulting rates represent the *unit cost* of service for each tier.[6] **Table V-6** shows the calculations of the incremental cost per tier. Note that the cost-of-service allocated $7,299,488 to average day demand. It is estimated that approximately

[6] In this report, "rates" and "unit costs" are synonymous.

74.3%[7] or $5,423,923 (rounded) of average day demand is for indoor water use. This leaves $1,875,564 for non indoor water use in the average day demand service level.

Table V-6. Proposed Single Family Residential Water Rates

Residential - SF Class COS per Unit	Indoor Use	Average Day	Peak Day
Residential COS - Consumption	**$5,423,923**	**$1,875,564**	**$978,655**
Demand Per Tier			
Tier 1: 0 - 8 hcf	1,005,529		
Tier 2: 9 - 14 hcf	457,008	457,008	
Tier 3: 15+ hcf	613,428	613,428	613,428
Total hcf per Tier	**2,075,965**	**1,070,436**	**613,428**
Cost-of-Service per Unit (hcf)	**$2.61**	**$1.75**	**$1.60**

Residential - SF Class Unit Cost Calculation	Indoor Use	Average Day	Peak Day
Tier 1: 0 - 8 hcf	$2.61	$2.61	$2.61
Tier 2: 9 - 14 hcf		$1.75	$1.75
Tier 3: 15+ hcf			$1.60
Unit Cost per hcf (by Tier)	**$2.61**	**$4.36**	**$5.96**

Indoor use costs apply to all tiers. Usage up to the 8 hcf Tier 1 breakpoint is charged the indoor use rate only. Demand that does not exceed Tier 1 is not responsible for the additional costs of peaking that were allocated to the higher service levels. These additional peaking costs are both the initial capital cost, the subsequent rehabilitation and renewal costs, and the operations and maintenance costs for larger pipelines, additional pumps, and larger reservoirs. Bills that exceed Tier 1 pay additional rate increments corresponding to the higher levels of service.

Average day costs apply to all water use greater than Tier 1, namely, to Tier 2, and Tier 3. Usage between 9 and 14 hcf would be charged the Tier 2 rate, which is the sum of the indoor use and remaining average day incremental costs. Usage greater than 14 hcf would pay the Tier 3 rate, which is the sum of the average day and maximum day incremental costs. As demand progresses through the tiers, the additional costs of higher levels of service associated with peaking are allocated to the higher tiers to recover the costs from those who require the higher levels of service.

[7] Average winter water use (December, January, February, March) as a percent of average annual use.

Multi-Family Residential Rates

The water rates (consumption rates) for the proposed multi-family residential customer class are summarized in **Table V-7**. After analyzing the demand patterns of the District's customers, multi-family customers showed virtually no peaking. It is difficult to justify a tiered rate structure for a customer class with no peaking so a uniform rate is recommended for multi-family customers. The uniform rate is calculated in **Table V-7**.

Table V-7. Proposed Multi-Family Residential Water Rate

Residential - MF Class COS per Unit	
COS Allocation	$271,405
Consumption (hcf)	70,800
Unit Cost per hcf	**$3.83**

Non-Residential Rates

Breakpoint Between Tiers

Table V-8 shows the calculation of the breakpoint between the two proposed tiers for the proposed non-residential customer class. The breakpoint is set between average day demand and above average day demand. Each of these service levels have an average flow that can be used as the divider (i.e., "breakpoint") between each service level.

Table V-8. Proposed Breakpoint Locations – Non-Residential Tiers

	Tier 1	Tier 2
Flow per Customer	**Average Day**	**Above Average**
Non-Residential		
hcf per day	277	490
hcf per month	8,313	14,691
# of Accounts	246	246
Average flow per Acct (hcf/mo)	**34.0**	**34+**

Rates Per Tier

With breakpoints that correspond to the service levels in the cost-of-service analysis, it is possible to calculate the rate per tier by dividing the cost-of-service per tier by the water demand in each tier. The resulting rates represent the unit cost of service for each tier. **Table V-9** shows the calculations of the incremental cost per tier for the proposed non-residential class.

Table V-9. Proposed Non-Residential Water Rates

Non Residential Class COS per Unit	Average Day	Above Average
Non Res COS - Consumption	**$355,645**	**$55,019**
Demand Per Tier		
Tier 1: 0 - 34 hcf	31,269	
Tier 2: 34+ hcf	69,876	69,876
Total hcf per Tier	**101,145**	**69,876**
Cost-of-Service per Unit (hcf)	**$3.52**	**$0.79**

Non Residential Class Unit Cost Calculation	Average Day	Above Average
Tier 1: 0 - 34 hcf	$3.52	$3.52
Tier 2: 34+ hcf		$0.79
Unit Cost per hcf (by Tier)	**$3.52**	**$4.30**

Hydrant Rates

Breakpoint Between Tiers

Table V-10 shows the calculation of the breakpoint between the two proposed tiers for the proposed hydrant customer class. The breakpoint is set between average day demand and above average day demand. Each of these service levels have an average flow that can be used as the divider (i.e., "breakpoint") between each service level.

Table V-10. Proposed Breakpoint Locations – Hydrant Tiers

	Tier 1	Tier 2
Flow per Customer	Average Day	Above Average
Hydrant (Customer)		
hcf per day	211	400
hcf per month	6,344	12,000
# of Accounts	55	55
Average flow per Acct (hcf/mo)	**115.0**	**115+**

Rates Per Tier

With breakpoints that correspond to the service levels in the cost-of-service analysis, it is possible to calculate the rate per tier by dividing the cost-of-service per tier by the water demand in each tier. The resulting rates represent the unit cost of service for each tier.

Table V-11 shows the calculations of the incremental cost per tier for the proposed hydrant customer class.

Table V-11. Proposed Hydrant Water Rates

Hydrant Class COS per Unit	Average Day	Above Average
Hydrant COS - Consumption	**$271,394**	**$45,701**
Demand Per Tier		
Tier 1: 0 - 115 hcf	18,230	
Tier 2: 115+ hcf	58,954	58,954
Total hcf per Tier	**77,184**	**58,954**
Cost-of-Service per Unit (hcf)	**$3.52**	**$0.78**

Hydrant Class Unit Cost Calculation	Average Day	Above Average
Tier 1: 0 - 115 hcf	$3.52	$3.52
Tier 2: 115+ hcf		$0.78
Unit Cost per hcf (by Tier)	**$3.52**	**$4.29**

Irrigation Rates

Breakpoint Between Tiers

Table V-12 shows the calculation of the breakpoint between the two proposed tiers for the proposed irrigation customer class. The breakpoint is set between average day demand and above average day demand. Each of these service levels have an average flow that can be used as the divider (i.e., "breakpoint") between each service level.

Table V-12. Proposed Breakpoint Locations – Irrigation Tiers

	Tier 1	Tier 2
Flow per Customer	**Average Day**	**Above Average**
Irrigation		
hcf per day	682	1,354
hcf per month	20,465	40,610
# of Accounts	181	181
Average flow per Acct (hcf/mo)	**113.0**	**113+**

Rates Per Tier

With breakpoints that correspond to the service levels in the cost-of-service analysis, it is possible to calculate the rate per tier by dividing the cost-of-service per tier by the water

demand in each tier. The resulting rates represent the unit cost of service for each tier. **Table V-13** shows the calculations of the incremental cost per tier for the proposed irrigation customer class.

Table V-13. Proposed Irrigation Water Rates

Irrigation Class COS per Unit	Average Day	Above Average
Hydrant COS - Consumption	**$875,510**	**$153,920**
Demand Per Tier		
Tier 1: 0 - 113 hcf	109,000	
Tier 2: 113+ hcf	139,994	139,994
Total hcf per Tier	**248,994**	**139,994**
Cost-of-Service per Unit (hcf)	**$3.52**	**$1.10**

Irrigation Class Unit Cost Calculation	Average Day	Above Average
Tier 1: 0 - 113 hcf	$3.52	$3.52
Tier 2: 113+ hcf		$1.10
Unit Cost per hcf (by Tier)	**$3.52**	**$4.62**

RATE SUMMARY

The proposed rates for service charges and consumption charges are summarized for FY 2021-22 through FY 2025-26 in **Table V-14** and **Table V-15**.

Table V-14. Proposed Monthly Service Charges

Monthly Service Charges						
Meter Size	Current Rates	FY 2021-22 2/1/2022	FY 2022-23 2/1/2023	FY 2023-24 2/1/2024	FY 2024-25 2/1/2025	FY 2025-26 2/1/2026
5/8" meters	$17.52	$17.27	$17.96	$18.68	$19.42	$20.20
1" meters	$43.80	$39.36	$40.94	$42.57	$44.28	$46.05
1" w/ Fire meters	$17.52	$17.27	$17.96	$18.68	$19.42	$20.20
1 1/2" meters	$87.60	$76.18	$79.23	$82.40	$85.69	$89.12
2" meters	$140.16	$120.37	$125.18	$130.19	$135.40	$140.81
3" meters	$262.80	$260.29	$270.70	$281.53	$292.79	$304.50
4" meters	$438.00	$444.39	$462.17	$480.65	$499.88	$519.88
6" meters	$876.00	$996.71	$1,036.57	$1,078.04	$1,121.16	$1,166.01
8" meters	$1,401.60	$2,064.51	$2,147.10	$2,232.98	$2,322.30	$2,415.19
10" meters	$2,014.80	$3,095.50	$3,219.32	$3,348.09	$3,482.02	$3,621.30
12" meters	$3,766.80	$3,905.56	$4,061.79	$4,224.26	$4,393.23	$4,568.96
Fire Services	$20.69	$19.92	$20.72	$21.54	$22.41	$23.30
Fire Hydrant Meters	$262.80	$260.29	$270.70	$281.53	$292.79	$304.50

Table V-15. Proposed Water Rates (Consumption Charges)

Water Charges							
Monthly Use	Current Rates	Monthly Use	FY 2022-22 2/1/2022	FY 2022-23 2/1/2023	FY 2023-24 2/1/2024	FY 2024-25 2/1/2025	FY 2025-26 2/1/2026
Residential - Single Family		**Residential - Single Family**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 8 hcf	$2.61	$2.72	$2.83	$2.94	$3.06
Tier 2: 9+ hcf	$3.80	Tier 2: 9 - 14 hcf	$4.36	$4.54	$4.72	$4.91	$5.11
		Tier 3: 15+ hcf	$5.96	$6.20	$6.45	$6.70	$6.97
Residential - Multi Family		**Residential - Multi Family**					
Tier 1: 0 - 8 hcf	$3.40	All Usage	$3.83	$3.99	$4.15	$4.31	$4.48
Tier 2: 9+ hcf	$3.80						
Non Residential		**Non Residential**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 34 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 35+ hcf	$4.30	$4.48	$4.65	$4.84	$5.03
Irrigation		**Irrigation**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 113 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 114+ hcf	$4.62	$4.80	$4.99	$5.19	$5.40
Hydrant		**Hydrant**					
Tier 1: 0 - 8 hcf	$3.40	Tier 1: 0 - 115 hcf	$3.52	$3.66	$3.80	$3.96	$4.11
Tier 2: 9+ hcf	$3.80	Tier 2: 116+ hcf	$4.29	$4.46	$4.64	$4.83	$5.02

Water Shortage Rate Adjustment

We note that the proposed rates should be considered adequate in years of normal water supply. During water supply shortage conditions that require customers to curtail water use, revenue shortfalls can be expected to occur. These shortfalls may be fiscally tolerable for a brief shortage. However, during a severe or prolonged drought or other emergency shortage, the District's reserves may be unable to offset the revenue shortfall because fixed (non variable) District and system costs will not decrease by the amount of such usage reductions.

As a means of stabilizing revenue during shortages, some water agencies are integrating adjustment factors that are implemented only during shortages. These adjustment factors can be authorized to be effective during declared water shortages and can be implemented when warranted. Ratepayers must be notified in advance on their monthly bills; the need for the full ratepayer protest process under Proposition 218, which is costly and time consuming is avoided by simply providing advance notification on bills at least 30 days prior to when the adjustment is made. However, the maximum "shortage rates" must be noticed and go through the Proposition 218 process (even if they are not used during the applicable rate adjustment period).

The adjustment factors increase the consumption charges to cover fixed costs without generating a surplus. This revenue-neutral adjustment is correlated with the level of mandated reduction and is reduced and eliminated as the shortage is alleviated and ends.

For example, the Water Shortage Adjustment Factor for a 25% usage reduction would be derived as follows:

$$\text{Revenue Stabilization Factor} = \frac{1}{1-a} * \frac{b-(c*a)}{b}$$

a = Required conservation reduction = 25.0%.
b = Portion of total rate revenue produced by proposed consumption charges[8] = 77.6%.
c = Portion of total expenses that is variable (i.e., CCWD water purchases) = 36%.

Substituting the values into the formula yields the 1.18 rate adjustment factor. Note that this formula takes into account the fact that the cost of CCWD water purchases decreases during a shortage.

[8] Source: **Table IV-6**

Revenue Stabilization Factor $= \frac{1}{1-0.25} * \frac{0.776-(0.36*0.25)}{0.776}$

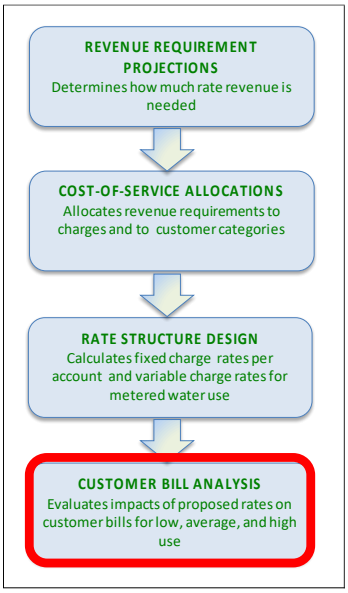
$= 1.333 * 0.884 =$ **1.18**

The District does not currently have a provision that allows it to make these adjustments. The Board should consider them for future rate studies and Prop 218 notifications.

Pass-Through Adjustments

Water Shortage Rate Adjustment Factors are intended for use only during declared water shortages. Another revenue stabilization measure adjusts consumption charge rates for unplanned increases in the cost(s) of CCWD purchased water, which can occur at any time, not just during shortages. These adjustments are referred to as "pass-through adjustments" because the cost is passed through directly to District ratepayers. The District does not determine CCWD's wholesale water rates and has no choice but to pass through the cost to avoid depleting the District's reserves to cover the unplanned rate increase. The District does not currently have a provision that allows it to make these pass-through adjustments. We note that at the District's November 17, 2021 Board Meeting, a new regulation was adopted that includes for a pass-through provision.

VI. CUSTOMER BILL IMPACTS

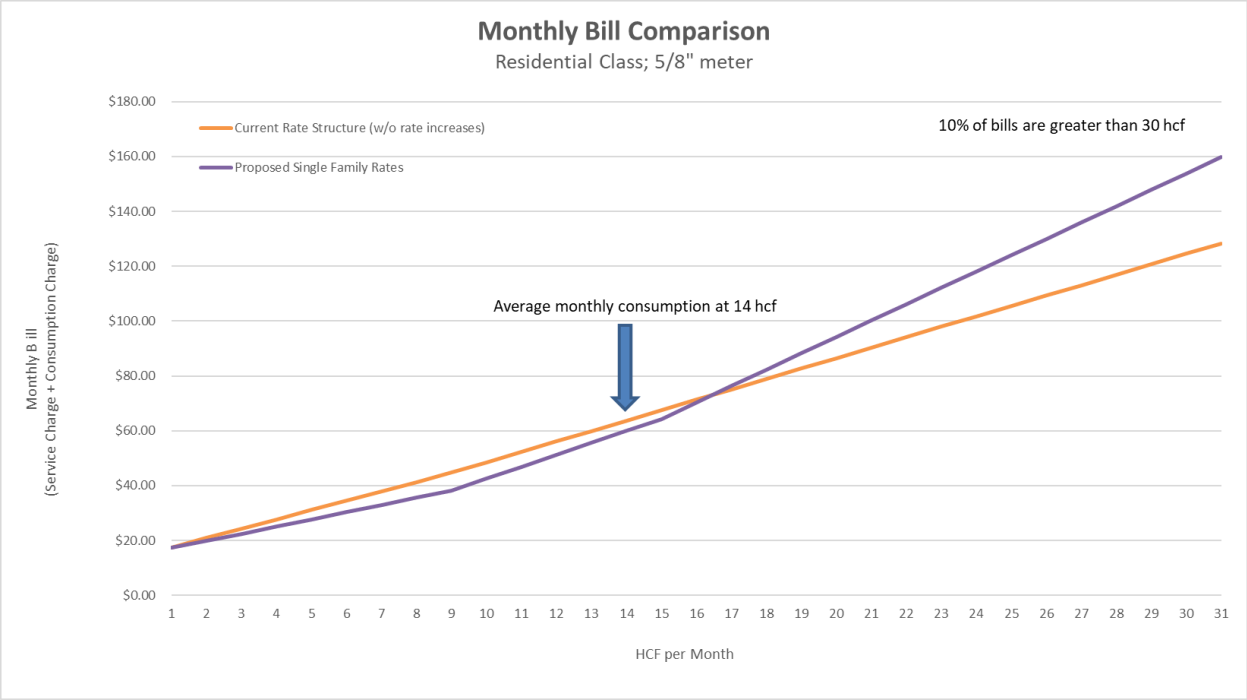


A further understanding of the differences between the current and proposed rates/rate structures is gained by comparing bills based on both rate structures. The monthly cost comparison is based on "typical" District customers or customers that are most representative of a group of customers. The typical customer is based on the most common meter sizes for the class and the average water use for customers of that type.

The monthly bills for the current and proposed rates for FY 2021-22 are compared in **Figure VI-1** for single family residential customers with a 5/8" meter. The figure plots monthly bills for a range of consumption from 0 to 31 hcf.

During the year, consumption varies from billing period to billing period. Hence, for any given customer, a bill will fall somewhere along the X-axis in **Figure VI-1**. During periods of low use, the bill under the proposed rates will be lower than they would have been if the current rate structure is unchanged. During periods of higher water use, the bill could be less or greater, depending on the level of water use. For the entire year, the sum of the bills under the proposed rates will be more or less than it would have been if the current rates are unchanged, again, depending on that customer's monthly/annual water use. 66% of the District's bills are issued at 15 hcf per month or less, all of these Single Family bills will see a bill reduction compared to current rates.

Figure VI-1. Current and Proposed Single Family Residential Bill Comparison



Four sample bills are shown for multi-family, non-residential, irrigation, and hydrant customers in **Table VI-1**.

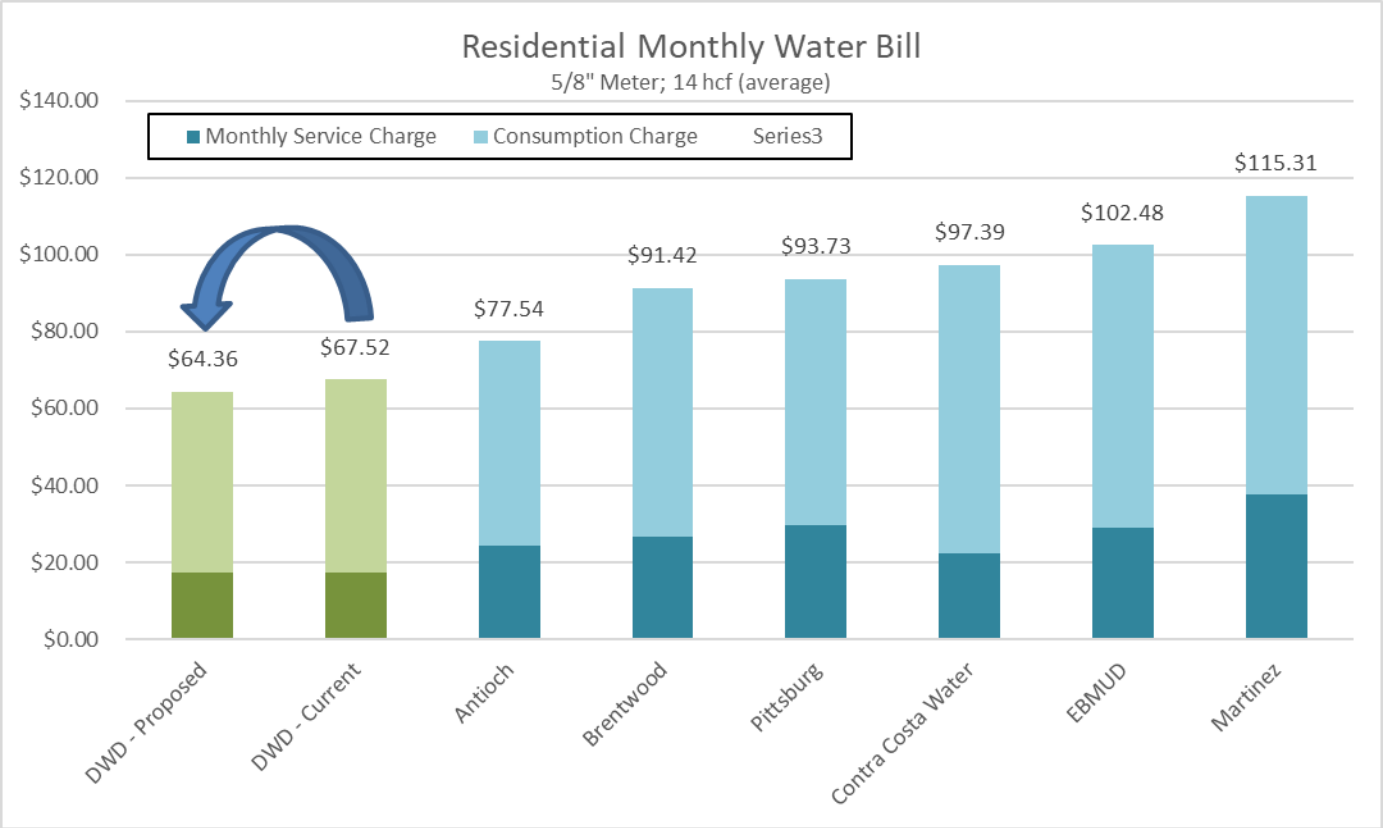
Table VI-1. Sample Water Bill Impacts (FY 2021-22)

	Multi Family	Non Residential	Irrigation	Hydrant
Current Rates				
Meter Size	2"	1"	2"	2"
Consumption (hcf/month)	300	60	250	250
Service Charge	$140.16	$87.60	$140.16	$140.16
Consumption Charge	$1,136.80	$224.80	$946.80	$946.80
Total Monthly Bill	$1,276.96	$312.40	$1,086.96	$1,086.96
Proposed Rates				
Meter Size	2"	1"	2"	2"
Consumption (hcf/month)	300	60	250	250
Service Charge	$120.37	$76.18	$120.37	$120.37
Consumption Charge	$1,150.02	$231.44	$1,029.68	$983.70
Total Monthly Bill	$1,270.39	$307.62	$1,150.04	$1,104.07
Difference				
$ Difference	($6.57)	($4.78)	$63.08	$17.11
% Difference	-0.5%	-1.5%	5.8%	1.6%

Figure VI-2 compares the District's residential monthly bills with a variety of water agencies in Contra Costa County. The comparison is for a customer with a 5/8- inch connection using the average amount of water for customers in each agency. Survey comparisons with other agencies are difficult to make on a comparable basis for various reasons:

- Every agency is physically unique. For example, some agencies are more expensive to operate because of hilly topography, which requires more booster pumping, etc..
- Each agency is fiscally unique. Some agencies have significant sources of non-operating revenues that may be utilized to reduces rates to customers.
- Finally, the size of the agency typically makes a difference, where larger agencies may have lower rates because of economies of scale.

Figure VI-2. Bill Comparison With Neighboring Water Agencies

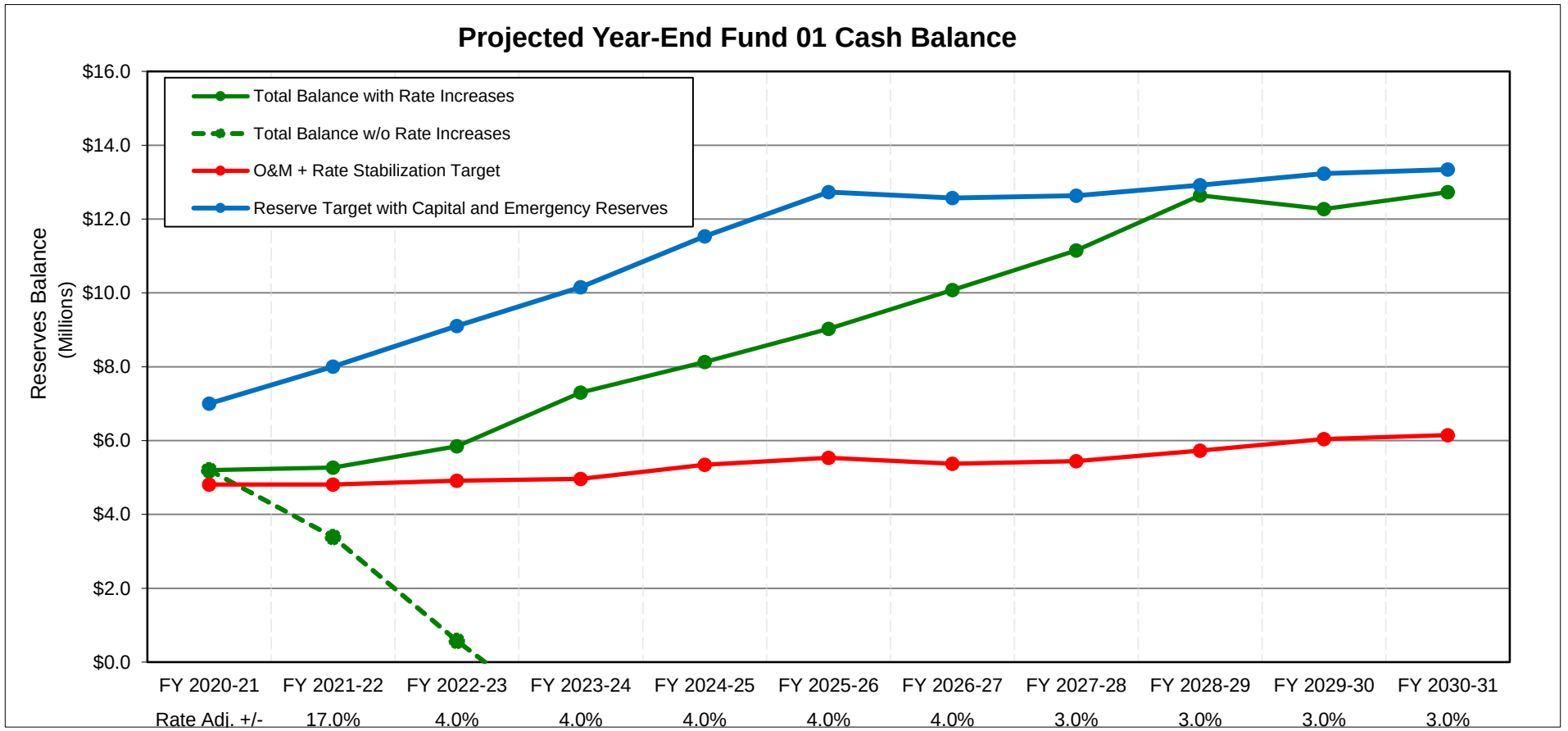


WATER RATE STUDY

APPENDIX
WATER RATE MODEL

Diablo Water District
Water Rate Model
Table 1A - Summary

Fiscal year	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
Eff. Date	*2/1/2022*	*2/1/2022*	*2/1/2023*	*2/1/2024*	*2/1/2025*	*2/1/2026*	*2/1/2027*	*2/1/2028*	*2/1/2029*	*2/1/2030*
Annual Rate Revenue Increases	**17.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
Debt Coverage (1.25 minimum)	4.61	3.06	2.97	2.66	2.76	2.92	3.21	3.14	2.60	6.64
Debt Coverage (1.00 minimum)	1.03	1.47	1.65	1.29	1.35	1.60	1.86	1.73	1.30	3.67
Cumulative Revenue Increase	17.0%	21.7%	26.5%	31.6%	36.9%	42.3%	46.6%	51.0%	55.5%	60.2%



Diablo Water District
Water Rate Model
Table 1B - Assumptions

		Budget	Projected							
		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
a	Annual Account Growth Rate		3.04%	1.72%	1.52%	1.50%	1.48%	1.46%	1.43%	1.41%	1.39%
b	Annual Water Demand Increases		0.68%	1.15%	1.20%	1.82%	1.79%	0.13%	1.73%	1.70%	1.68%
c	General Inflation	Budgeted	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
d	Salaries & Wages	Budgeted	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
e	Benefits	Budgeted	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
f	Utilites	Budgeted	3.70%	4.18%	4.24%	4.88%	4.84%	3.13%	4.79%	4.76%	4.73%
g	Construction Cost Inflation		2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%	2.92%
h	Interest on Fund Balance	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
i	Annual SFR conservation reduction	Budgeted	2.56%	0.79%	0.53%	0.00%	0.00%	1.33%	0.00%	0.00%	0.00%
j	CCWD Estimated Annual Increase	6.25%	6.00%	5.75%	5.25%	5.25%	5.25%	5.25%	4.00%	4.00%	4.00%

	A	C	D	E	F	G	H	I	J	K	L
1	**Diablo Water District**										
2	**Water Rate Model**										
3	**Table 2A - Revenue Requirements**										
4		**Budgeted**					**Projected**				
5		**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**
6	**Administrative and General**										
7	District Regulatory Permits and Dues	$86,700	$89,301	$91,980	$94,739	$97,582	$100,509	$103,524	$106,630	$109,829	$113,124
8	District Associations and Subscriptions	$16,990	$17,113	$17,627	$18,155	$18,700	$19,261	$19,839	$20,434	$21,047	$21,678
9	Audit	$44,750	$50,625	$52,144	$53,708	$55,319	$56,979	$58,688	$60,449	$62,262	$64,130
10	LAFCO - 50% GF and 50% FR	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
11	Taxes and Licenses	$2,605	$2,653	$2,703	$2,754	$2,806	$2,861	$2,916	$2,974	$3,033	$3,094
12	Office Record Imaging	$8,530	$9,376	$6,928	$9,936	$9,600	$10,520	$7,797	$11,131	$8,272	$14,270
13	Subtotal	$162,575	$172,158	$174,563	$182,570	$187,384	$193,608	$196,347	$205,308	$208,244	$220,211
14											
15	**Board of Directors**										
16	Payroll & Taxes	$14,100	$14,523	$14,959	$15,407	$15,870	$16,346	$16,836	$17,341	$17,861	$18,397
17	Mailings/Worker's Comp/Elections/Training/Miscell	$13,462	$31,141	$6,325	$36,515	$6,710	$31,912	$7,119	$33,333	$7,552	$34,779
18	Subtotal	$27,562	$45,664	$21,284	$51,922	$22,580	$48,257	$23,955	$50,674	$25,414	$53,176
19											
20	**Engineering / Consulting**										
21	Engineering	$215,000	$41,200	$42,436	$43,709	$215,020	$71,371	$47,762	$224,195	$50,671	$132,191
22	Consulting	$185,380	$77,641	$129,970	$82,369	$84,840	$272,386	$90,007	$92,707	$145,488	$98,353
23	Subtotal	$400,380	$118,841	$172,406	$126,078	$299,861	$343,756	$137,769	$316,902	$196,159	$230,544
24											
25	**Finance**										
26	Bank Charges	$2,000	$2,060	$2,122	$2,185	$2,251	$2,319	$2,388	$2,460	$2,534	$2,610
27	Collections Expense	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
28	Bills/Envelopes/Mailing Service	$22,000	$22,660	$23,340	$24,040	$24,761	$25,504	$26,269	$27,057	$27,869	$28,705
29	Postage Account	$52,000	$53,560	$55,167	$56,822	$58,526	$60,282	$62,091	$63,953	$65,872	$67,848
30	Postage Meter	$3,500	$3,605	$3,713	$3,825	$3,939	$4,057	$4,179	$4,305	$4,434	$4,567
31	Upgrades for Software	$2,500	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262
32	Credit Card Processing	$100,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
33	Subtotal	$185,000	$237,550	$240,177	$242,882	$245,668	$248,538	$251,494	$254,539	$257,675	$260,906
34											
35	**Customer Service**										
36	Answering Service	$2,100	$2,163	$2,228	$2,295	$2,364	$2,434	$2,508	$2,583	$2,660	$2,740
37	Conservation	$10,000	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002
38	Website	$2,400	$2,472	$2,546	$2,623	$2,701	$2,782	$2,866	$2,952	$3,040	$3,131
39	Tyler Software - SMS Customer Notifications & IVR	$1,500	$1,545	$1,591	$1,639	$1,688	$1,739	$1,791	$1,845	$1,900	$1,957
40	Public Information	$30,000	$30,900	$31,827	$32,782	$33,765	$34,778	$35,822	$36,896	$38,003	$39,143
41	Subtotal	$46,000	$52,080	$53,642	$55,252	$56,909	$58,616	$60,375	$62,186	$64,052	$65,973
42											
43	**Office**										
44	Maintenance Agreements	$48,910	$50,377	$51,889	$53,445	$55,049	$56,700	$58,401	$60,153	$61,958	$63,816
45	Janitorial Service	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572
46	Office Supplies	$25,000	$25,750	$26,523	$27,318	$28,138	$28,982	$29,851	$30,747	$31,669	$32,619
47	Miscellaneous	$3,500	$3,605	$3,713	$3,825	$3,939	$4,057	$4,179	$4,305	$4,434	$4,567
48	New Equipment	$7,500	$7,725	$7,957	$8,195	$8,441	$8,695	$8,955	$9,224	$9,501	$9,786
49	General Manager Expenses	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
50	Landscaping Services	$8,000	$8,240	$8,487	$8,742	$9,004	$9,274	$9,552	$9,839	$10,134	$10,438
51	Office Building Maintenance	$7,500	$7,725	$7,957	$8,195	$8,441	$8,695	$8,955	$9,224	$9,501	$9,786
52	Software - Annual Fee	$85,870	$88,446	$91,099	$93,832	$96,647	$99,547	$102,533	$105,609	$108,778	$112,041
53	Office - Utilities	$12,390	$12,762	$13,145	$13,539	$13,945	$14,363	$14,794	$15,238	$15,695	$16,166
54	Office - Phone Line Services	$7,200	$7,416	$7,638	$7,868	$8,104	$8,347	$8,597	$8,855	$9,121	$9,394
55	Subtotal	$223,870	$230,586	$237,504	$244,629	$251,968	$259,527	$267,312	$275,332	$283,592	$292,100
56											
57	**Insurance**										
58	Business, Auto, Liability, Commercial, Etc.	$85,000	$87,550	$90,177	$92,882	$95,668	$98,538	$101,494	$104,539	$107,675	$110,906
59	Subtotal	$85,000	$87,550	$90,177	$92,882	$95,668	$98,538	$101,494	$104,539	$107,675	$110,906
60											
61	**Legal Expenses**										
62	Legal Expenses - 50% GF and 50% FR	$39,000	$40,170	$41,375	$42,616	$43,895	$45,212	$46,568	$47,965	$49,404	$50,886
63	Subtotal	$39,000	$40,170	$41,375	$42,616	$43,895	$45,212	$46,568	$47,965	$49,404	$50,886
64											
65	**Operations and Maintenance**										
66	Maintenance Corpyard	$25,000	$25,750	$26,523	$27,318	$28,138	$28,982	$29,851	$30,747	$31,669	$32,619
67	Maintenance T&D	$278,500	$276,495	$279,685	$303,575	$263,673	$417,983	$278,512	$283,268	$294,256	$304,483
68	Maintenance Backflow	$48,000	$49,440	$50,923	$52,451	$54,024	$55,645	$57,315	$59,034	$60,805	$62,629
69	Maintenance Reservoirs	$41,000	$187,080	$38,192	$789,338	$790,518	$41,734	$42,986	$44,275	$45,604	$46,972
70	Maintenance Blending	$17,000	$25,010	$18,035	$18,576	$19,134	$19,708	$20,299	$20,908	$21,535	$22,181
71	Maintenance Glen Park Well	$10,260	$10,568	$10,885	$11,211	$11,548	$11,894	$12,251	$12,619	$312,997	$13,387
72	Maintenance Stonecreek Well	$10,260	$10,568	$10,885	$11,211	$11,548	$11,894	$12,251	$12,619	$362,997	$13,387
73	Maintenance Delta Coves	$5,250	$5,408	$5,570	$5,737	$5,909	$6,086	$6,269	$6,457	$6,651	$6,850
74	Water Samples	$80,000	$132,400	$84,872	$87,418	$90,041	$92,742	$95,524	$98,390	$101,342	$104,382
75	General Operating Corpyard	$40,950	$41,630	$42,845	$47,595	$45,382	$46,707	$48,071	$49,475	$54,421	$55,909
76	Telephone Services for Field	$8,450	$8,704	$8,965	$9,234	$9,511	$9,796	$10,090	$10,392	$10,704	$11,025
77	Utilities for Field	$172,450	$260,024	$267,824	$275,859	$284,135	$292,659	$301,439	$310,482	$319,796	$329,390
78	Energy Savings from GHG Offset	$0	$0	($125,000)	($128,750)	($132,613)	($136,591)	($140,689)	($144,909)	($149,257)	($153,734)
79	Subtotal	$737,120	$1,033,075	$720,203	$1,510,774	$1,480,947	$899,239	$774,168	$793,756	$1,473,519	$849,481
80											
81	**Payroll - Salaries/Benefits/Taxes**										
82	Salaries	$1,853,207	$1,945,868	$2,043,161	$2,145,319	$2,252,585	$2,365,214	$2,483,475	$2,607,649	$2,738,031	$2,874,933
83	Overtime	$144,334	$151,550	$159,128	$167,084	$175,438	$184,210	$193,421	$203,092	$213,246	$223,909
84	Benefits - Health/LTD/STD/Life Insurance/Retiremer	$685,475	$719,749	$755,736	$793,523	$833,199	$874,859	$918,602	$964,532	$1,012,759	$1,063,397
85	CalPERS UAL	$230,513	$248,874	$268,040	$280,579	$292,333	$299,342	$306,545	$313,944	$321,549	$329,362
86	Taxes - Worker's Compensation/FICA/Medi	$172,227	$180,838	$189,880	$199,374	$209,343	$219,810	$230,801	$242,341	$254,458	$267,181
87	Retired Employees Health Benefits	$69,793	$71,886	$74,043	$76,264	$78,552	$80,909	$83,336	$85,836	$88,411	$91,063
88	Contra Costa County Employee Retirement Associat	$121,143	$124,777	$128,521	$132,376	$136,348	$140,438	$144,651	$148,991	$153,460	$158,064
89	Delayed Hiring (Fund 01)	($97,000)	$0	$0	$0	$0	$0	$0	$0	$0	$0
90	Subtotal	$3,179,691	$3,443,542	$3,618,508	$3,794,520	$3,977,798	$4,164,782	$4,360,830	$4,566,384	$4,781,914	$5,007,908
91											

	A	C	D	E	F	G	H	I	J	K	L
92	**Transmission and Distribution**										
93	Automotive Fuel, Maintenance, Miscellaneous	$87,000	$89,610	$92,298	$95,067	$97,919	$100,857	$103,883	$106,999	$110,209	$113,515
94	Chemicals Glen Park Well	$7,210	$7,426	$7,649	$7,879	$8,115	$8,358	$8,609	$8,867	$9,133	$9,407
95	Chemicals Blending Facility	$25,100	$25,853	$26,629	$27,427	$28,250	$29,098	$29,971	$30,870	$31,796	$32,750
96	Chemicals Stonecreek Well	$5,000	$5,150	$5,305	$5,464	$5,628	$5,796	$5,970	$6,149	$6,334	$6,524
97	Chemicals Delta Coves	$7,000	$7,210	$7,426	$7,649	$7,879	$8,115	$8,358	$8,609	$8,867	$9,133
98	General Operating - T&D	$178,030	$179,621	$56,260	$57,947	$59,686	$61,476	$63,321	$65,220	$67,177	$69,192
99	General Operating Blending	$36,450	$37,544	$38,670	$39,830	$41,025	$42,256	$43,523	$44,829	$46,174	$47,559
100	General Operating Glen Park Well	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
101	General Operating Stonecreek Well	$3,000	$3,090	$3,183	$3,278	$3,377	$3,478	$3,582	$3,690	$3,800	$3,914
102	General Operating Delta Coves	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305
103	Subtotal	$352,790	$359,624	$241,662	$248,912	$256,380	$264,071	$271,993	$280,153	$288,558	$297,214
104											
105	**Training**										
106	Training & Professional Development	$30,500	$31,415	$32,357	$33,328	$34,328	$35,358	$36,419	$37,511	$38,636	$39,796
107	Safety	$12,300	$8,034	$10,275	$8,523	$10,779	$9,042	$11,314	$9,593	$11,881	$10,177
108	Subtotal	$42,800	$39,449	$42,632	$41,851	$45,107	$44,400	$47,732	$47,104	$50,517	$49,973
109											
110	**Water Purchases - Source of Supply CCWD**										
111	Water Purchases from CCWD	$4,789,665	$4,578,779	$4,908,048	$5,241,252	$5,607,255	$5,984,985	$6,324,580	$6,732,952	$7,109,809	$7,548,438
112	Subtotal	$4,789,665	$4,578,779	$4,908,048	$5,241,252	$5,607,255	$5,984,985	$6,324,580	$6,732,952	$7,109,809	$7,548,438
113											
114	**Water Treatment and Maintenance - RBWTP O&M**										
115	Randall Bold Water Treatment Plant O&M	$1,756,016	$1,705,696	$1,756,867	$1,809,573	$1,863,861	$1,919,776	$1,977,370	$2,036,691	$2,097,792	$2,160,725
116	Additional True Up	$130,000									
117	Subtotal	$1,886,016	$1,705,696	$1,756,867	$1,809,573	$1,863,861	$1,919,776	$1,977,370	$2,036,691	$2,097,792	$2,160,725
118											
119	**Other Expenses**										
120	Corpyard Improvements	$13,545	$13,951	$14,370	$14,801	$15,245	$20,702	$16,173	$16,659	$17,158	$17,673
121	Pipeline Corrosion Testing/Repairs	$20,000	$20,600	$21,218	$21,855	$22,510	$23,185	$23,881	$24,597	$25,335	$26,095
122	Groundwater Sustainability Expenses	$0	$48,250	$48,250	$48,250	$48,250	$73,250	$48,250	$48,250	$48,250	$48,250
123	Fire Hydrant Maintanence	$25,000	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108	$184,481	$190,016
124	Water Conservation Program	$25,000	$100,000	$103,000	$106,090	$111,395	$116,964	$122,812	$128,953	$135,401	$142,171
125	Additional Staff	$0	$175,000	$180,250	$335,658	$345,727	$531,099	$547,032	$743,443	$765,746	$973,719
126	Emergency Reserve Expense	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0	$0	$0	$0	$0
127		$1,083,545	$1,507,801	$1,521,588	$1,685,788	$1,707,036	$934,027	$932,040	$1,141,010	$1,176,372	$1,397,924
128											
129	**Total Operations & Maintenance**	**$13,241,013**	**$13,652,566**	**$13,840,637**	**$15,371,503**	**$16,142,315**	**$15,507,333**	**$15,774,030**	**$16,915,494**	**$18,170,696**	**$18,596,364**
130											
131	**Non-Operating Costs/Revenues**										
132	Check Valve Maintenance	($170,000)	($175,100)	($180,353)	($185,764)	($191,336)	($197,077)	($202,989)	($209,079)	($215,351)	($221,811)
133	Check Valve Installation	($2,600)	($2,678)	($2,758)	($2,841)	($2,926)	($3,014)	($3,105)	($3,198)	($3,294)	($3,392)
134	Late Charges	($65,000)	($66,950)	($68,959)	($71,027)	($73,158)	($75,353)	($77,613)	($79,942)	($82,340)	($84,810)
135	Trip Charges	($26,523)	($27,318)	($28,138)	($28,982)	($29,851)	($30,747)	($31,669)	($32,619)	($33,598)	($34,606)
136	Call-Out Charges	($2,500)	($2,575)	($2,652)	($2,732)	($2,814)	($2,898)	($2,985)	($3,075)	($3,167)	($3,262)
137	Destroyed Lock Charges	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
138	Tampering Charges	($10,000)	($10,300)	($10,609)	($10,927)	($11,255)	($11,593)	($11,941)	($12,299)	($12,668)	($13,048)
139	Returned Item Charges	($2,500)	($2,575)	($2,652)	($2,732)	($2,814)	($2,898)	($2,985)	($3,075)	($3,167)	($3,262)
140	Meter Repairs	($530)	($546)	($563)	($580)	($597)	($615)	($633)	($652)	($672)	($692)
141	Hydrant Meter Replacement	($3,183)	($3,278)	($3,377)	($3,478)	($3,582)	($3,690)	($3,800)	($3,914)	($4,032)	($4,153)
142	Hydrant Meter Repairs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
143	Field Service Charges	($1,591)	($1,639)	($1,688)	($1,739)	($1,791)	($1,845)	($1,900)	($1,957)	($2,016)	($2,076)
144	Bad Debt Recovery	($2,652)	($2,732)	($2,814)	($2,898)	($2,985)	($3,075)	($3,167)	($3,262)	($3,360)	($3,461)
145	Delta Coves Property Tax Income	($59,883)	($61,680)	($63,530)	($65,436)	($67,399)	($69,421)	($71,504)	($73,649)	($75,859)	($78,134)
146	Reimbursement for Retirees Health Benefits - OPEB	($65,376)	($67,337)	($69,357)	($71,438)	($73,581)	($75,789)	($78,062)	($80,404)	($82,816)	($85,301)
147	Other Income	($25,750)	($26,523)	($27,318)	($28,138)	($28,982)	($29,851)	($30,747)	($31,669)	($32,619)	($33,598)
148	Rental Income	($127,308)	($131,127)	($135,061)	($139,113)	($143,286)	($147,585)	($152,012)	($156,573)	($161,270)	($166,108)
149	Southpark Well - M24	($5,517)	($5,682)	($5,853)	($6,028)	($6,209)	($6,395)	($6,587)	($6,785)	($6,988)	($7,198)
150	Knightsen Well - M25	($5,252)	($5,410)	($5,572)	($5,739)	($5,911)	($6,088)	($6,271)	($6,459)	($6,653)	($6,853)
151	Reimbursement from Developers	($400,000)	($412,000)	($424,360)	($437,091)	($450,204)	($463,710)	($477,621)	($491,950)	($506,708)	($521,909)
152	Willow Park Marina Well - M27	($10,821)	($11,146)	($11,480)	($11,825)	($12,179)	($12,545)	($12,921)	($13,309)	($13,708)	($14,119)
153	Future Additional Fees										
154	Total Non-Rate Revenue	($986,987)	($1,016,596)	($1,047,094)	($1,078,507)	($1,110,862)	($1,144,188)	($1,178,514)	($1,213,869)	($1,250,285)	($1,287,794)
155											
156	**Subtotal**	$12,254,027	$12,635,970	$12,793,543	$14,292,996	$15,031,453	$14,363,145	$14,595,516	$15,701,625	$16,920,411	$17,308,571
157											
158	**Debt Service**										
159	2019 COPs (Refinancing of 2010s)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
160	2019 COPs (Restructuring of 2014s)	$150,880	$149,500	$150,880	$149,155	$150,190	$148,120	$148,810	$149,270	$149,500	$0
161	2019 COPs ($4M New Money)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
162	2021 COPs (Refinancing of 2013s)	$100,715	$115,752	$115,010	$114,162	$114,533	$114,745	$116,123	$114,639	$114,374	$0
163	Full GHG Offset (2023)	$37,500	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570
164	New Corporation Yard (2023)	$0	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139
165	Mains and Service Line Replacements #1	$0	$0	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058
166	Mains and Service Line Replacements #2	$0	$0	$0	$0	$0	$173,490	$173,490	$173,490	$173,490	$173,490
167	Mains and Service Line Replacements #3	$0	$0	$0	$0	$0	$0	$0	$0	$195,154	$195,154
168	Bond Fund CIP (FYs 2022-23, 2023-24)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
169	**Total Debt Service**	$289,095	$695,961	$849,657	$847,084	$848,490	$1,020,122	$1,022,190	$1,021,166	$1,216,285	$952,411
170											
171	**Transfers to/(from)**										
172	Operating Reserves	($1,448,081)	($649,432)	($178,677)	($842,171)	($624,629)	$879,659	$1,390,108	$1,187,935	$713,837	$1,567,654
173	Capital Reserves	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728
174		$744,647	$1,543,296	$2,014,051	$1,350,556	$1,568,099	$3,072,387	$3,582,836	$3,380,663	$2,906,565	$3,760,382
175											
176	**Total Revenue Requirement**	**$13,287,769**	**$14,875,226**	**$15,657,251**	**$16,490,636**	**$17,448,042**	**$18,455,655**	**$19,200,542**	**$20,103,455**	**$21,043,262**	**$22,021,364**
177	*Annual Change*		*11.9%*	*5.3%*	*5.3%*	*5.8%*	*5.8%*	*4.0%*	*4.7%*	*4.7%*	*4.6%*

	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
Additional Staff										
HR and Training Analyst	$0	$175,000	$180,250	$185,658	$191,227	$196,964	$202,873	$208,959	$215,228	$221,685
TBD New Position	$0	$0	$0	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108
TBD New Position	$0	$0	$0	$0	$0	$175,000	$180,250	$185,658	$191,227	$196,964
TBD New Position	$0	$0	$0	$0	$0	$0	$0	$180,000	$185,400	$190,962
TBD New Position	$0	$0	$0	$0	$0	$0	$0	$0	$0	$185,000
Total Additional Staff	$0	$175,000	$180,250	$335,658	$345,727	$531,099	$547,032	$743,443	$765,746	$973,719
Groundwater Sustainability										
Fund 01	$0	$48,250	$48,250	$48,250	$48,250	$73,250	$48,250	$48,250	$48,250	$48,250
Fund 02	$0	$48,250	$48,250	$48,250	$48,250	$73,250	$48,250	$48,250	$48,250	$48,250
	$0	$96,500	$96,500	$96,500	$96,500	$146,500	$96,500	$96,500	$96,500	$96,500
Fire Hydrant Maintenance	$25,000	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108	$184,481	$190,016
Water Conservation Program	$25,000	$100,000	$103,000	$106,090	$111,395	$116,964	$122,812	$128,953	$135,401	$142,171
Full GHG Offset D/S	$37,500	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570
Project Cost	$2,500,000									
Interest Rate	3.0%									
Terms	25									
New Corporation Yard D/S	$0	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139
Project Cost	$5,000,000									
Interest Rate	3.0%									
Terms	25									
Maint T&D D/S FY 2023-24	$0	$0	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058
Project Cost	$3,000,000									
Interest Rate	3.0%									
Terms	30									
Maint T&D D/S FY 2026-27	$0	$0	$0	$0	$0	$173,490	$173,490	$173,490	$173,490	$173,490
Project Cost	$3,000,000									
Interest Rate	4.0%									
Terms	30									
Maint T&D D/S FY 2029-30	$0	$0	$0	$0	$0	$0	$0	$0	$195,154	$195,154
Project Cost	$3,000,000									
Interest Rate	5.0%									
Terms	30									
Bond Fund CIP (FYs 2022-23, 2023-24)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Project Cost	$0									
Interest Rate	3.0%									
Terms	30									

Diablo Water District
Water Rate Model
Table 2E - Purchased Water Costs

	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
Gallons per Connection per Day	390	380	377	375	375	375	370	370	370	370
Gallons per Connection per Year	142,350	138,700	137,605	136,875	136,875	136,875	135,050	135,050	135,050	135,050
Number of Connections	12,491	12,891	13,116	13,316	13,516	13,716	13,916	14,116	14,316	14,516
Non Revenue Water	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Water Demand (tGal)	1,891,540	1,902,061	1,919,982	1,938,918	1,968,041	1,997,163	1,999,268	2,028,002	2,056,736	2,085,470
Well Water (tGal)	342,188	342,188	342,188	342,188	342,188	342,188	342,188	342,188	342,188	342,188
Purchased Water Needs (tGal)	1,549,353	1,559,873	1,577,794	1,596,731	1,625,853	1,654,976	1,657,081	1,685,815	1,714,549	1,743,283
Peak Month Demand	187,895	187,567	190,405	192,063	193,415	192,205	195,900	197,144	198,353	206,989
Service Charge per Month (8 months)	$7.47	$7.94	$8.41	$8.90	$9.36	$9.86	$10.37	$10.92	$11.35	$11.81
Service Charge per Month (4 months)	$7.94	$8.41	$8.90	$9.36	$9.86	$10.37	$10.92	$11.35	$11.81	$12.28
Demand Charge per tGal (8 months)	$3.56	$3.79	$4.01	$4.24	$4.47	$4.70	$4.95	$5.21	$5.42	$5.63
Demand Charge per tGal (4 months)	$3.79	$4.01	$4.24	$4.47	$4.70	$4.95	$5.21	$5.42	$5.63	$5.86
Volumetric Charge per tGal (8 months)	$2.28	$2.42	$2.57	$2.72	$2.86	$3.01	$3.17	$3.33	$3.47	$3.60
Volumetric Charge per tGal (4 months)	$2.42	$2.57	$2.72	$2.86	$3.01	$3.17	$3.33	$3.47	$3.60	$3.75
Service Charge	$93.38	$99.05	$104.83	$110.50	$116.30	$122.41	$128.83	$134.50	$139.88	$145.48
Demand Charge	$683,453	$724,311	$778,750	$829,338	$879,025	$919,386	$986,256	$1,040,348	$1,088,594	$1,181,432
Volumetric Charge	$3,606,119	$3,854,368	$4,129,193	$4,411,804	$4,728,114	$5,065,476	$5,338,195	$5,692,469	$6,021,074	$6,366,861
Additional Water Purchases	$500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$4,789,665	$4,578,779	$4,908,048	$5,241,252	$5,607,255	$5,984,985	$6,324,580	$6,732,952	$7,109,809	$7,548,438
Annual Water Demand Increase		0.7%	1.1%	1.2%	1.8%	1.8%	0.1%	1.7%	1.7%	1.7%

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Diablo Water District**											
2	**Water Rate Model**											
3	**Table 3A - Revenue Increases**											
4												
5		Months										
6		Increase						**Projected**				
7		In Effect	**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**
8	**Rate Revenue at Current Rates**											
9	Current Rate Revenue		$12,408,812	$12,505,445	$12,656,620	$12,817,587	$13,040,139	$13,262,691	$13,321,892	$13,542,096	$13,762,300	$13,982,504
10	**Total Revenue (before rate increases)**		$12,408,812	$12,505,445	$12,656,620	$12,817,587	$13,040,139	$13,262,691	$13,321,892	$13,542,096	$13,762,300	$13,982,504
11												
12	**Increase in Rate Revenue**		**17.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
13	*cumulative*		*17.0%*	*21.7%*	*26.5%*	*31.6%*	*36.9%*	*42.3%*	*46.6%*	*51.0%*	*55.5%*	*60.2%*
14												
15	**Revenue from Current Rates**		$12,408,812	$12,505,445	$12,656,620	$12,817,587	$13,040,139	$13,262,691	$13,321,892	$13,542,096	$13,762,300	$13,982,504
16												
17	**Revenue from Rate Increases**											
18	FY 2022-23 (eff. Feb 1, 2022)	5	$878,957	$2,125,926	$2,151,625	$2,178,990	$2,216,824	$2,254,657	$2,264,722	$2,302,156	$2,339,591	$2,377,026
19	FY 2023-24 (eff. Feb 1, 2023)	5		$243,856	$592,330	$599,863	$610,279	$620,694	$623,465	$633,770	$644,076	$654,381
20	FY 2024-25 (eff. Feb 1, 2024)	5			$256,676	$623,858	$634,690	$645,522	$648,403	$659,121	$669,839	$680,556
21	FY 2025-26 (eff. Feb 1, 2025)	5				$270,338	$660,077	$671,343	$674,339	$685,486	$696,632	$707,779
22	FY 2026-27 (eff. Feb 1, 2026)	5					$286,033	$698,196	$701,313	$712,905	$724,497	$736,090
23	FY 2027-28 (eff. Feb 1, 2027)	5						$302,552	$729,365	$741,421	$753,477	$765,533
24	FY 2028-29 (eff. Feb 1, 2028)	5							$237,044	$578,309	$587,712	$597,116
25	FY 2029-30 (eff. Feb 1, 2029)	5								$248,191	$605,344	$615,030
26	FY 2030-31 (eff. Feb 1, 2030)	5									$259,793	$633,480
27	FY 2031-32 (eff. Feb 1, 2031)	5										$271,869
28	**Total Revenue from Rate Increases**		$878,957	$2,369,782	$3,000,631	$3,673,049	$4,407,903	$5,192,964	$5,878,650	$6,561,359	$7,280,962	$8,038,860
29	**Total Current Revenue**		$12,408,812	$12,505,445	$12,656,620	$12,817,587	$13,040,139	$13,262,691	$13,321,892	$13,542,096	$13,762,300	$13,982,504
30	**Total Revenue with Rate Increases**		$13,287,769	$14,875,226	$15,657,251	$16,490,636	$17,448,042	$18,455,655	$19,200,542	$20,103,455	$21,043,262	$22,021,364
31	**Revenue Requirements**		$13,287,769	$14,875,226	$15,657,251	$16,490,636	$17,448,042	$18,455,655	$19,200,542	$20,103,455	$21,043,262	$22,021,364
32	**Operating Gain/Loss**		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
33												
34	Transfer to/(from) Reserves w/o rate increases		($878,957)	($2,369,782)	($3,000,631)	($3,673,049)	($4,407,903)	($5,192,964)	($5,878,650)	($6,561,359)	($7,280,962)	($8,038,860)
35												

Diablo Water District
Water Rate Model
Table 3B - Revenue at Current Rates

	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
Service Charge Revenue at Current Rates										
Meter Count by Size										
5/8" meters	10,492	10,828	11,017	11,185	11,353	11,521	11,689	11,857	12,025	12,193
1" meters	132	136	139	141	143	145	147	149	151	153
1" w/ Fire meters	1,727	1,783	1,814	1,841	1,869	1,897	1,924	1,952	1,980	2,007
1 1/2" meters	58	59	61	61	62	63	64	65	66	67
2" meters	64	66	67	68	69	70	71	72	73	74
3" meters	13	13	13	13	14	14	14	14	14	15
4" meters	4	4	4	4	5	5	5	5	5	5
6" meters	0	0	0	0	0	0	0	0	0	0
8" meters	1	1	1	1	1	1	1	1	1	1
10" meters	0	0	0	0	0	0	0	0	0	0
12" meters	0	0	0	0	0	0	0	0	0	0
14" meters	0	0	0	0	0	0	0	0	0	0
16" meters	0	0	0	0	0	0	0	0	0	0
Fire Services	69	71	73	74	75	76	77	78	79	80
Fire Hydrant Meters	44	25	22	22	22	22	22	22	22	22
	12,604	12,987	13,210	13,411	13,613	13,814	14,015	14,216	14,417	14,618
		3.0%	1.7%	1.5%	1.5%	1.5%	1.5%	1.4%	1.4%	1.4%
Monthly Rate										
5/8" meters	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52
1" meters	$43.80	$43.80	$43.80	$43.80	$43.80	$43.80	$43.80	$43.80	$43.80	$43.80
1" w/ Fire meters	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52	$17.52
1 1/2" meters	$87.60	$87.60	$87.60	$87.60	$87.60	$87.60	$87.60	$87.60	$87.60	$87.60
2" meters	$140.16	$140.16	$140.16	$140.16	$140.16	$140.16	$140.16	$140.16	$140.16	$140.16
3" meters	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80
4" meters	$438.00	$438.00	$438.00	$438.00	$438.00	$438.00	$438.00	$438.00	$438.00	$438.00
6" meters	$876.00	$876.00	$876.00	$876.00	$876.00	$876.00	$876.00	$876.00	$876.00	$876.00
8" meters	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60	$1,401.60
10" meters	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80	$2,014.80
12" meters	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80	$3,766.80
14" meters	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40	$5,606.40
16" meters	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16	$8,024.16
Fire Services (average per acct)	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69
Fire Hydrant Meters	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80
Annual Revenue										
5/8" meters	$2,205,213	$2,275,833	$2,315,556	$2,350,866	$2,386,176	$2,421,485	$2,456,795	$2,492,105	$2,527,415	$2,562,724
1" meters	$69,414	$71,637	$72,887	$73,998	$75,110	$76,221	$77,333	$78,444	$79,556	$80,667
1" w/ Fire meters	$363,056	$374,683	$381,222	$387,036	$392,849	$398,662	$404,475	$410,289	$416,102	$421,915
1 1/2" meters	$60,599	$62,540	$63,631	$64,602	$65,572	$66,542	$67,513	$68,483	$69,453	$70,424
2" meters	$107,536	$110,980	$112,917	$114,639	$116,361	$118,082	$119,804	$121,526	$123,248	$124,970
3" meters	$39,665	$40,935	$41,650	$42,285	$42,920	$43,555	$44,190	$44,825	$45,460	$46,095
4" meters	$22,036	$22,742	$23,139	$23,492	$23,844	$24,197	$24,550	$24,903	$25,256	$25,609
6" meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8" meters	$17,629	$18,193	$18,511	$18,793	$19,076	$19,358	$19,640	$19,922	$20,205	$20,487
10" meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12" meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14" meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16" meters	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fire Services (average per acct)	$17,177	$17,727	$18,037	$18,312	$18,587	$18,862	$19,137	$19,412	$19,687	$19,962
Fire Hydrant Meters	$138,758	$78,840	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379
Total Service Charge Revenue	$2,885,148	$2,977,542	$3,029,513	$3,075,710	$3,121,907	$3,168,104	$3,214,301	$3,260,497	$3,306,694	$3,352,891

	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
Water Consumption Revenue at Current Rates										
All Consumption										
Tier 1 Usage	1,034,517	1,041,541	1,053,508	1,066,152	1,085,597	1,105,042	1,106,448	1,125,634	1,144,820	1,164,006
Tier 2 Usage	1,539,571	1,550,025	1,567,833	1,586,650	1,615,588	1,644,527	1,646,619	1,675,171	1,703,724	1,732,277
Tier 1 Rate	$3.40	$3.40	$3.40	$3.40	$3.40	$3.40	$3.40	$3.40	$3.40	$3.40
Tier 2 Rate	$3.80	$3.80	$3.80	$3.80	$3.80	$3.80	$3.80	$3.80	$3.80	$3.80
Tier 1 Revenue	$3,517,358	$3,541,241	$3,581,926	$3,624,916	$3,691,030	$3,757,144	$3,761,923	$3,827,155	$3,892,388	$3,957,620
Tier 2 Revenue	$5,850,370	$5,890,094	$5,957,765	$6,029,270	$6,139,236	$6,249,202	$6,257,152	$6,365,652	$6,474,152	$6,582,652
Consumption Revenue	$9,367,728	$9,431,335	$9,539,690	$9,654,186	$9,830,266	$10,006,346	$10,019,075	$10,192,807	$10,366,539	$10,540,272

	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
Fire Service/Hydrant										
Meter Count										
Fire Services	69	71	73	74	75	76	77	78	79	80
Fire Hydrant Meters	44	25	22	22	22	22	22	22	22	22
Monthly Rate										
Fire Services (average per acct)	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69	$20.69
Fire Hydrant Meters	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80	$262.80
Annual Revenue										
Fire Services	$17,177	$17,727	$18,037	$18,312	$18,587	$18,862	$19,137	$19,412	$19,687	$19,962
Fire Hydrant Meters	$138,758	$78,840	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379	$69,379
	$155,936	$96,567	$87,416	$87,691	$87,966	$88,241	$88,516	$88,791	$89,066	$89,341

Revenue Recap	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
Service Charge Revenue	$2,885,148	$2,977,542	$3,029,513	$3,075,710	$3,121,907	$3,168,104	$3,214,301	$3,260,497	$3,306,694	$3,352,891
Fire Service/Hydrant	$155,936	$96,567	$87,416	$87,691	$87,966	$88,241	$88,516	$88,791	$89,066	$89,341
Consumption Revenue	$9,367,728	$9,431,335	$9,539,690	$9,654,186	$9,830,266	$10,006,346	$10,019,075	$10,192,807	$10,366,539	$10,540,272
	$12,408,812	$12,505,445	$12,656,620	$12,817,587	$13,040,139	$13,262,691	$13,321,892	$13,542,096	$13,762,300	$13,982,504
Annual Change		$96,633	$151,175	$160,968	$222,552	$222,552	$59,200	$220,204	$220,204	$220,204
		0.8%	1.2%	1.3%	1.7%	1.7%	0.4%	1.7%	1.6%	1.6%
District's Budget	$12,200,482	$12,571,433	$12,787,535	$12,982,206	$13,176,877	$13,371,549	$13,566,220	$13,760,892	$13,955,563	$14,150,235

	A	B	C	D	E	F	G	H	I	J	K	L
1	**Diablo Water District**											
2	**Water Rate Model**											
3	**Table 4 - Reserve Funds**											
4		*Rate Adj. +/-*	*17.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
5	**Fiscal Year**	**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**
6												
7	**FUND 01 General Operating Fund**											
8	**O&M (includes Rate Stabilization)**											
9	Beginning Balance		$3,136,421	$1,712,464	$1,076,910	$908,108	$70,807	($553,822)	$325,837	$1,726,154	$2,937,291	$3,684,070
10	Transfers											
11	(to/from) Operations		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	(to/from) Rev. Requirements		($1,448,081)	($649,432)	($178,677)	($842,171)	($624,629)	$879,659	$1,390,108	$1,187,935	$713,837	$1,567,654
13	(to/from) Capital											
14	(to/from) Emergency											
15	CalPERS Interfund Loan PMT - FUND 02		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Fund Subtotal		$1,688,340	$1,063,032	$898,233	$65,937	($553,822)	$325,837	$1,715,945	$2,914,090	$3,651,128	$5,251,725
17	Estimated Interest Earnings		$24,124	$13,877	$9,876	$4,870	$0	$0	$10,209	$23,201	$32,942	$44,679
18	**Ending Balance with Rate Increase**	**$3,136,421**	**$1,712,464**	**$1,076,910**	**$908,108**	**$70,807**	**($553,822)**	**$325,837**	**$1,726,154**	**$2,937,291**	**$3,684,070**	**$5,296,404**
19	*Target Balance*	*$4,810,253*	*$4,810,253*	*$4,913,141*	*$4,960,159*	*$5,342,876*	*$5,535,579*	*$5,376,833*	*$5,443,507*	*$5,728,874*	*$6,042,674*	*$6,149,091*
20	*Fund Balance Compared to Target*		*36%*	*22%*	*18%*	*1%*	*-10%*	*6%*	*32%*	*51%*	*61%*	*86%*
21												
22	**Capital**											
23	Beginning Balance		$2,063,579	$2,558,539	$2,768,011	$3,394,300	$4,061,730	$4,581,350	$4,755,021	$4,428,405	$4,703,650	$3,586,880
24	Revenues											
25	(to/from) Rev. Requirements		$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728
26	(to/from) Operating Fund		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
27	Cash Funded CIP Expenditures		($1,720,763)	($2,009,756)	($1,597,096)	($1,562,393)	($1,716,108)	($2,065,507)	($2,565,033)	($1,962,915)	($3,350,745)	($3,376,961)
28	Fund Subtotal		$2,535,543	$2,741,510	$3,363,642	$4,024,635	$4,538,350	$4,708,571	$4,382,716	$4,658,217	$3,545,633	$2,402,646
29	Estimated Interest Earnings		$22,996	$26,500	$30,658	$37,095	$43,000	$46,450	$45,689	$45,433	$41,246	$29,948
30	**Ending Balance with Rate Increase**	**$2,063,579**	**$2,558,539**	**$2,768,011**	**$3,394,300**	**$4,061,730**	**$4,581,350**	**$4,755,021**	**$4,428,405**	**$4,703,650**	**$3,586,880**	**$2,432,594**
31	*Target Balance*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*	*$2,192,728*
32	*Fund Balance Compared to Target*		*117%*	*126%*	*155%*	*185%*	*209%*	*217%*	*202%*	*215%*	*164%*	*111%*
33												
34	**Emergency Reserve**											
35	Beginning Balance		$0	$1,005,000	$2,020,050	$3,045,251	$4,080,703	$5,126,510	$5,177,775	$5,229,553	$5,281,848	$5,334,667
36	(to/from) Rev. Requirements		$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$0	$0	$0	$0	$0
37	(to/from) Operating Fund		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
38	Fund Subtotal		$1,000,000	$2,005,000	$3,020,050	$4,045,251	$5,080,703	$5,126,510	$5,177,775	$5,229,553	$5,281,848	$5,334,667
39	Estimated Interest Earnings		$5,000	$15,050	$25,201	$35,453	$45,807	$51,265	$51,778	$52,296	$52,818	$53,347
40	**Ending Balance with Rate Increase**	**$0**	**$1,005,000**	**$2,020,050**	**$3,045,251**	**$4,080,703**	**$5,126,510**	**$5,177,775**	**$5,229,553**	**$5,281,848**	**$5,334,667**	**$5,388,014**
41	*Target Balance*	*$0*	*$1,000,000*	*$2,000,000*	*$3,000,000*	*$4,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*	*$5,000,000*
42	*Fund Balance Compared to Target*		*101%*	*101%*	*102%*	*102%*	*103%*	*104%*	*105%*	*106%*	*107%*	*108%*
43												
44												
45	**FUND 02 Facilities Reserve Fund**											
46	Beginning Balance		$6,200,000	$7,387,093	$6,113,407	$5,401,157	$5,686,211	$5,851,371	$6,197,443	$6,664,139	$7,204,399	$7,255,731
47	Developer Fees Income		$4,040,720	$2,506,376	$2,294,727	$2,363,569	$2,434,476	$2,507,510	$2,582,735	$2,660,217	$2,740,024	$2,822,224
48	Non Operating Revenues		$95,472	$62,674	$40,602	$41,556	$30,776	$31,700	$32,651	$33,630	$34,639	$35,678
49	O&M Expenses		($914,994)	($971,179)	($1,052,891)	($1,025,406)	($1,133,745)	($1,107,935)	($1,123,001)	($1,188,968)	($1,485,865)	($1,288,718)
50	New Corp Yard Cash Expense		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
51	Debt Service		($840,262)	($877,748)	($883,310)	($875,683)	($873,277)	($877,935)	($882,267)	($873,091)	($876,926)	$0
52	Capital Expenses		($1,261,441)	($2,060,977)	($1,168,663)	($274,142)	($350,471)	($267,211)	($207,411)	($160,526)	($432,481)	($553,265)
53	CalPERS Interfund Loan - FUND 01		$0									
54	CalPERS Interfund Loan PMT - FUND 01		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
55	Fund Subtotal		$7,319,495	$6,046,240	$5,343,870	$5,631,050	$5,793,970	$6,137,499	$6,600,151	$7,135,401	$7,183,790	$8,271,650
56	Estimated Interest Earnings		$67,597	$67,167	$57,286	$55,161	$57,401	$59,944	$63,988	$68,998	$71,941	$77,637
57	**Ending Balance**	**$6,200,000**	**$7,387,093**	**$6,113,407**	**$5,401,157**	**$5,686,211**	**$5,851,371**	**$6,197,443**	**$6,664,139**	**$7,204,399**	**$7,255,731**	**$8,349,287**
58	*Target Balance*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*	*$3,000,000*
59	*Fund Balance Compared to Target*		*246%*	*204%*	*180%*	*190%*	*195%*	*207%*	*222%*	*240%*	*242%*	*278%*
60												
61												
62	**Operating Fund w/o Rate Increases**											
63	Beginning Balance		$3,136,421	$829,112	($2,190,102)	($5,369,410)	($9,884,631)	($14,917,162)	($19,230,467)	($23,719,009)	($29,092,432)	($35,659,557)
64	Transfers											
65	(to/from) Operations		($878,957)	($2,369,782)	($3,000,631)	($3,673,049)	($4,407,903)	($5,192,964)	($5,878,650)	($6,561,359)	($7,280,962)	($8,038,860)
66	(to/from) Rev. Requirements		($1,448,081)	($649,432)	($178,677)	($842,171)	($624,629)	$879,659	$1,390,108	$1,187,935	$713,837	$1,567,654
67	(to/from) Capital Reserve		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
68	(to/from) Emergency		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
69	CalPERS Interfund Loan PMT - FUND 02		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
70	Fund Subtotal		$809,383	($2,190,102)	($5,369,410)	($9,884,631)	($14,917,162)	($19,230,467)	($23,719,009)	($29,092,432)	($35,659,557)	($42,130,763)
71	Estimated Interest Earnings		$19,729	$0	$0	$0	$0	$0	$0	$0	$0	$0
72	**Ending Balance with Rate Increase**	**$3,136,421**	**$829,112**	**($2,190,102)**	**($5,369,410)**	**($9,884,631)**	**($14,917,162)**	**($19,230,467)**	**($23,719,009)**	**($29,092,432)**	**($35,659,557)**	**($42,130,763)**
73	*Target Balance*	*$4,810,253*	*$4,810,253*	*$4,913,141*	*$4,960,159*	*$5,342,876*	*$5,535,579*	*$5,376,833*	*$5,443,507*	*$5,728,874*	*$6,042,674*	*$6,149,091*
74	*Fund Balance Compared to Target*		*17%*	*-45%*	*-108%*	*-185%*	*-269%*	*-358%*	*-436%*	*-508%*	*-590%*	*-685%*
75												
76												
77	**Reserve Funds Summary**											
78	Total Balance with Rate Increases	$5,200,000	$5,271,003	$5,844,920	$7,302,409	$8,132,537	$9,027,528	$10,080,858	$11,154,559	$12,640,941	$12,270,950	$12,728,997
79	Total Balance w/o Rate Increases	$5,200,000	$3,387,651	$577,909	($1,975,110)	($5,822,901)	($10,335,812)	($14,475,446)	($19,290,604)	($24,388,782)	($32,072,677)	($39,698,169)
80												
81	O&M Target Balance	$3,310,253	$3,310,253	$3,413,141	$3,460,159	$3,842,876	$4,035,579	$3,876,833	$3,943,507	$4,228,874	$4,542,674	$4,649,091
82												
83	O&M + Rate Stabilization Target	$4,810,253	$4,810,253	$4,913,141	$4,960,159	$5,342,876	$5,535,579	$5,376,833	$5,443,507	$5,728,874	$6,042,674	$6,149,091
84	Fund 01 Capital Target	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728	$2,192,728
85	Reserve Target	$7,002,981	$7,002,981	$7,105,869	$7,152,887	$7,535,604	$7,728,307	$7,569,561	$7,636,235	$7,921,601	$8,235,402	$8,341,819
86												
87	Emergency Reserve Target	$0	$1,000,000	$2,000,000	$3,000,000	$4,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000	$5,000,000
88	Reserve Target with Capital and Emergency Reserv	$7,002,981	$8,002,981	$9,105,869	$10,152,887	$11,535,604	$12,728,307	$12,569,561	$12,636,235	$12,921,601	$13,235,402	$13,341,819
89												

Diablo Water District
Water Rate Model
Table 5 - Capital Improvement Program

Fund 01 Projects	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	Total Project Cost
PAYGo Funded Projects											
Public Right of Way Relocations	$135,000	$150,000	$154,500	$159,135	$163,909	$168,826	$173,891	$179,108	$184,481	$190,016	$1,658,866
RBWTP - Projects & Improvements (WTP 66.5% GF & 33.5% FR)	$591,178	$290,000	$780,809	$722,869	$816,726	$1,039,020	$877,131	$247,000	$833,262	$1,095,928	$7,293,923
Additional RBWTP Projects	$14,000										$14,000
Field Equipment Purchases	$51,500	$151,500	$101,500	$51,500	$51,500	$81,500	$51,500	$51,500	$201,500	$51,500	$845,000
Valve Replacement	$25,000	$25,750	$26,523	$27,318	$28,138	$28,982	$29,851	$30,747	$31,669	$32,619	$286,597
Add/Replace Vehicles - Construction Trucks 50% GF and 50% FR	$177,500	$140,000	$150,000	$160,000	$170,000	$180,000	$0	$70,000	$150,000	$0	$1,197,500
Corpyard VFD's	$125,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$125,000
R1/R2 Seismic Upgrades - 52% GF and 48% FR	$300,040	$900,900	$0	$0	$0	$0	$0	$0	$0	$0	$1,200,940
Scada Upgrade - 50% GF and 50% FR	$18,000	$10,000	$10,000	$10,000	$18,500	$10,000	$10,000	$10,000	$250,000	$260,000	$606,500
New Office Equipment	$0	$0	$0	$19,000	$0	$0	$0	$0	$22,500	$0	$41,500
Radio Read Upgrade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Corpyard Improvements	$13,545	$13,951	$14,370	$14,801	$15,245	$20,702	$16,173	$16,659	$17,158	$17,673	$160,278
Pipeline Corrosion Testing/Repairs	$20,000	$20,600	$21,218	$21,855	$22,510	$23,185	$23,881	$24,597	$25,335	$26,095	$229,278
Maint T&D	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional CIP Placeholder	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$5,500,000
	$1,720,763	**$1,952,701**	**$1,508,920**	**$1,436,477**	**$1,536,527**	**$1,802,216**	**$2,182,428**	**$1,629,611**	**$2,715,906**	**$2,673,832**	**$19,159,382**
ENR Multiplier	1.000	1.029	1.058	1.088	1.117	1.146	1.175	1.205	1.234	1.263	
Project Costs Escalated	$1,720,763	$2,009,756	$1,597,096	$1,562,393	$1,716,108	$2,065,507	$2,565,033	$1,962,915	$3,350,745	$3,376,961	

	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	Total Project Cost
PAYGo Funded Projects	$1,720,763	$1,952,701	$1,508,920	$1,436,477	$1,536,527	$1,802,216	$2,182,428	$1,629,611	$2,715,906	$2,673,832	$19,159,382
ENR Multiplier	1.000	1.029	1.058	1.088	1.117	1.146	1.175	1.205	1.234	1.263	
Project Costs Escalated	$1,720,763	$2,009,756	$1,597,096	$1,562,393	$1,716,108	$2,065,507	$2,565,033	$1,962,915	$3,350,745	$3,376,961	$21,927,279
									Average Annual Cash-Funded CIP	*$2,192,728*	

Fund 02 Projects	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	Total Project Cost
PAYGo Funded Projects											
Scada Upgrade - 50% GF and 50% FR	$15,000	$10,000	$10,000	$10,000	$18,500	$10,000	$10,000	$10,000	$10,000	$20,000	$123,500
Asset Management System / GIS / Mapping Update	$50,301	$50,868	$52,244	$68,661	$55,121	$56,624	$58,173	$59,768	$61,411	$63,104	$576,273
New Software - 50% GF and 50% FR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
RBWTP Improvements and Projects - 66.5% GF and 33.5% FR	$121,941	$0	$254,397	$173,388	$240,175	$166,526	$108,300	$63,500	$279,131	$354,964	$1,762,321
Additional RBWTP Projects	$39,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$39,500
Stonecreek Well Filter (Manganese Treatment)	$282,500	$847,500	$0	$0	$0	$0	$0	$0	$0	$0	$1,130,000
Add/Replace District Vehicles - Construction Trucks 50%GF and 50% FR	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Relocation of Downtown Railroad Pipeline - 20% GF and 80% FR	$250,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$250,000
Glen Park Permanent Generator	$225,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$225,000
Parallel R2/R3 Transmission Main	$0	$262,500	$787,500	$0	$0	$0	$0	$0	$0	$0	$1,050,000
R1 and R2 Seismic Upgrades - 52% GF and 48% FR	$277,200	$831,600	$0	$0	$0	$0	$0	$0	$0	$0	$1,108,800
	$1,261,441	**$2,002,468**	**$1,104,141**	**$252,048**	**$313,796**	**$233,150**	**$176,473**	**$133,268**	**$350,542**	**$438,068**	**$6,265,395**
ENR Multiplier	1.000	1.029	1.058	1.088	1.117	1.146	1.175	1.205	1.234	1.263	
Project Costs Escalated	$1,261,441	$2,060,977	$1,168,663	$274,142	$350,471	$267,211	$207,411	$160,526	$432,481	$553,265	

	Project	Total Cost	Allocation Factor	Average Day	Maximum Day	Maximum Hour	Accounts	Service Charge
		a	b	c	d	e	f	g
1	Public Right of Way R	$1,658,866	Capacity	$0	$0	$0	$0	$1,658,866
2	RBWTP - Projects & In	$7,293,923	Capacity	$0	$0	$0	$0	$7,293,923
3	Additional RBWTP Prc	$14,000	Capacity	$0	$0	$0	$0	$14,000
4	Field Equipment Purcl	$845,000	Capacity	$0	$0	$0	$0	$845,000
5	Valve Replacement	$286,597	Capacity	$0	$0	$0	$0	$286,597
6	Add/Replace Vehicles	$1,197,500	Capacity	$0	$0	$0	$0	$1,197,500
7	Corpyard VFD's	$125,000	Capacity	$0	$0	$0	$0	$125,000
8	R1/R2 Seismic Upgrad	$1,200,940	Capacity	$0	$0	$0	$0	$1,200,940
9	Scada Upgrade	$606,500	Capacity	$0	$0	$0	$0	$606,500
10	New Office Equipmen	$41,500	Capacity	$0	$0	$0	$0	$41,500
11	Radio Read Upgrade	$0	Capacity	$0	$0	$0	$0	$0
12	Corpyard Improvemer	$160,278	Capacity	$0	$0	$0	$0	$160,278
13	Pipeline Corrosion Tes	$229,278	Capacity	$0	$0	$0	$0	$229,278
14	Maint T&D	$0	Capacity	$0	$0	$0	$0	$0
15	Unidentified Future C	$5,500,000	Capacity	$0	$0	$0	$0	$5,500,000
16		$19,159,382		$0	$0	$0	$0	$19,159,382
17				0.00%	0.00%	0.00%	0.00%	100.00%

	A	B	C	D	E	F	G	H	I	J	K
1	**Diablo Water District**										
2	**Water Rate Model**										
3	**Table 6 - Debt Service & Coverage**										
4											
5											
6							**Projected**				
7		**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**
8											
9	**Operations Fund D/S**										
10	2019 COPs (Refinancing of 2010s)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	2019 COPs (Restructuring of 2014s)	$150,880	$149,500	$150,880	$149,155	$150,190	$148,120	$148,810	$149,270	$149,500	$0
12	2019 COPs ($4M New Money)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	2021 COPs (Refinancing of 2013s)	$100,715	$115,752	$115,010	$114,162	$114,533	$114,745	$116,123	$114,639	$114,374	$0
14	Total	$251,595	$265,252	$265,890	$263,317	$264,723	$262,865	$264,933	$263,909	$263,874	$0
15											
16	**Facilities Fund D/S**										
17	2019 COPs (Refinancing of 2010s)	$234,200	$233,800	$238,200	$237,200	$231,000	$234,800	$238,200	$231,200	$234,200	$0
18	2019 COPs (Restructuring of 2014s)	$111,520	$110,500	$111,520	$110,245	$111,010	$109,480	$109,990	$110,330	$110,500	$0
19	2019 COPs ($4M New Money)	$215,200	$212,400	$214,600	$211,600	$213,600	$215,400	$212,000	$213,600	$215,000	$0
20	2021 COPs (Refinancing of 2013s)	$279,342	$321,048	$318,990	$316,638	$317,667	$318,255	$322,077	$317,961	$317,226	$0
21		$840,262	$877,748	$883,310	$875,683	$873,277	$877,935	$882,267	$873,091	$876,926	$0
22											
23	**Future Operations Fund D/S**										
24	Full GHG Offset (FY 2022-23)	$37,500	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570	$143,570
25	New Corporation Yard (CY 2022)	$0	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139	$287,139
26	Mains and Service Line Replacements #1	$0	$0	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058	$153,058
27	Mains and Service Line Replacements #2	$0	$0	$0	$0	$0	$173,490	$173,490	$173,490	$173,490	$173,490
28	Mains and Service Line Replacements #3	$0	$0	$0	$0	$0	$0	$0	$0	$195,154	$195,154
29	Bond Fund CIP (FYs 2022-23, 2023-24)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
30		$37,500	$430,709	$583,767	$583,767	$583,767	$757,257	$757,257	$757,257	$952,411	$952,411
31											
32	**Total Debt Service**	**$1,129,357**	**$1,573,709**	**$1,732,967**	**$1,722,767**	**$1,721,767**	**$1,898,057**	**$1,904,457**	**$1,894,257**	**$2,093,211**	**$952,411**
33											
34	**Debt Coverage Calculation**										
35	Funds Available for Debt Service										
36	Rate Revenue	$13,287,769	$14,875,226	$15,657,251	$16,490,636	$17,448,042	$18,455,655	$19,200,542	$20,103,455	$21,043,262	$22,021,364
37	Connection Fees	$4,040,720	$2,506,376	$2,294,727	$2,363,569	$2,434,476	$2,507,510	$2,582,735	$2,660,217	$2,740,024	$2,822,224
38	Non-Operating Income	$986,987	$1,016,596	$1,047,094	$1,078,507	$1,110,862	$1,144,188	$1,178,514	$1,213,869	$1,250,285	$1,287,794
39	Interest Income	$47,119	$40,378	$40,534	$41,965	$43,000	$46,450	$55,898	$68,634	$74,189	$74,627
40	Total Funds Available w/ Connection Fees	$18,362,595	$18,438,577	$19,039,606	$19,974,676	$21,036,380	$22,153,802	$23,017,688	$24,046,175	$25,107,759	$26,206,009
41	Total Funds Available w/o Connection Fees	$14,321,875	$15,932,200	$16,744,879	$17,611,108	$18,601,904	$19,646,292	$20,434,953	$21,385,958	$22,367,735	$23,383,784
42											
43	Expenses										
44	Fund 01 O&M	$12,241,013	$12,652,566	$12,840,637	$14,371,503	$15,142,315	$15,507,333	$15,774,030	$16,915,494	$18,170,696	$18,596,364
45	Fund 02 O&M	$914,994	$971,179	$1,052,891	$1,025,406	$1,133,745	$1,107,935	$1,123,001	$1,188,968	$1,485,865	$1,288,718
46	Total Expenses	$13,156,007	$13,623,744	$13,893,529	$15,396,908	$16,276,061	$16,615,269	$16,897,030	$18,104,462	$19,656,561	$19,885,083
47											
48	Net Revenue w/ Connection Fees	$5,206,588	$4,814,832	$5,146,077	$4,577,768	$4,760,319	$5,538,534	$6,120,658	$5,941,713	$5,451,198	$6,320,926
49	Net Revenue w/o Connection Fees	$1,165,868	$2,308,456	$2,851,350	$2,214,199	$2,325,843	$3,031,024	$3,537,923	$3,281,495	$2,711,174	$3,498,702
50											
51	Debt Service	$1,129,357	$1,573,709	$1,732,967	$1,722,767	$1,721,767	$1,898,057	$1,904,457	$1,894,257	$2,093,211	$952,411
52	**Debt Coverage Ratio w/ Connection Fees**	**4.61**	**3.06**	**2.97**	**2.66**	**2.76**	**2.92**	**3.21**	**3.14**	**2.60**	**6.64**
53	**Debt Coverage Ratio w/o Connection Fees**	**1.03**	**1.47**	**1.65**	**1.29**	**1.35**	**1.60**	**1.86**	**1.73**	**1.30**	**3.67**

Diablo Water District
Water Rate Model
Table 9 - Allocations

	System-Wide Cost Allocation Factors	Demand Services: Average Day	Demand Services: Maximum Day	Demand Services: Maximum Hour	Customer Services: Accounts	Customer Services: Service Charge	Total
		a	b	c	d	e	f
1	Demand Services						
2	Average Day	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
3	Max Day	64.5%	35.5%	0.0%	0.0%	0.0%	100.0%
4	Max Hour	34.5%	18.9%	46.6%	0.0%	0.0%	100.0%
5	Customer Services						
6	Capacity	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
7	Accounts	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%
8	Composite Allocations						
9	O&M Composite	85.1%	12.9%	0.4%	4.1%	-2.4%	100.0%
10	CIP Composite	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
11	Exp Composite	63.9%	9.7%	0.3%	3.0%	23.1%	100.0%

		FY 2021-22 Revenue Requirement	Allocation Factor	Demand Services: Average Day	Demand Services: Maximum Day	Demand Services: Maximum Hour	Customer Services: Accounts	Customer Services: Capacity
		a	b	c	d	e	f	g
1	**Direct O&M**							
2	**Operations and Maintenance**							
3	Maintenance T&D	$278,500	Average Day	$278,500	$0	$0	$0	$0
4	Maintenance Backflow	$48,000	Accounts	$0	$0	$0	$48,000	$0
5	Maintenance Reservoirs	$41,000	Max Hour	$14,137	$7,767	$19,096	$0	$0
6	Maintenance Blending	$17,000	Max Day	$10,972	$6,028	$0	$0	$0
7	Maintenance Glen Park Well	$10,260	Max Day	$6,622	$3,638	$0	$0	$0
8	Maintenance Stonecreek Well	$10,260	Max Day	$6,622	$3,638	$0	$0	$0
9	Maintenance Delta Coves	$5,250	Average Day	$5,250	$0	$0	$0	$0
10	Water Samples	$80,000	Average Day	$80,000	$0	$0	$0	$0
11	**Transmission and Distribution**							
12	Chemicals Glen Park Well	$7,210	Max Day	$4,653	$2,557	$0	$0	$0
13	Chemicals Blending Facility	$25,100	Max Day	$16,200	$8,900	$0	$0	$0
14	Chemicals Stonecreek Well	$5,000	Max Day	$3,227	$1,773	$0	$0	$0
15	Chemicals Delta Coves	$7,000	Average Day	$7,000	$0	$0	$0	$0
16	General Operating - T&D	$178,030	Average Day	$178,030	$0	$0	$0	$0
17	General Operating Blending	$36,450	Max Day	$23,525	$12,925	$0	$0	$0
18	General Operating Glen Park Well	$3,000	Max Day	$1,936	$1,064	$0	$0	$0
19	General Operating Stonecreek Well	$3,000	Max Day	$1,936	$1,064	$0	$0	$0
20	General Operating Delta Coves	$1,000	Average Day	$1,000	$0	$0	$0	$0
21	**Water Purchases - Source of Supply CCWD**							
22	Service Charge	$93	Capacity	$0	$0	$0	$0	$93
23	Demand Charge	$683,453	Max Day	$441,112	$242,341	$0	$0	$0
24	Volumetric Charge	$3,606,119	Average Day	$3,606,119	$0	$0	$0	$0
25	Additional Water Purchases from CCWD	$500,000	Average Day	$500,000	$0	$0	$0	$0
26	**Water Treatment and Maintenance - RBWTP O&M**							
27	Randall Bold Water Treatment Plant O&M	$1,886,016	Max Day	$1,217,265	$668,751	$0	$0	$0
28	**Other Expenses**							
29	Pipeline Corrosion Testing/Repairs	$20,000	Average Day	$20,000	$0	$0	$0	$0
30	Groundwater Sustainability Expenses	$0	Average Day	$0	$0	$0	$0	$0
31	Fire Hydrant Maintanence	$25,000	Accounts	$0	$0	$0	$25,000	$0
32	Water Conservation Program	$25,000	Max Hour	$8,620	$4,736	$11,644	$0	$0
33	**Finance**	$185,000	Accounts	$0	$0	$0	$185,000	$0
34	**Customer Service**	$46,000	Accounts	$0	$0	$0	$46,000	$0
35	**Non-Operating Revenue**							
36	Check Valve Maintenance	($170,000)	Capacity	$0	$0	$0	$0	($170,000)
37	Check Valve Installation	($2,600)	Capacity	$0	$0	$0	$0	($2,600)
38	Destroyed Lock Charges	$0	Capacity	$0	$0	$0	$0	$0
39	Tampering Charges	($10,000)	Capacity	$0	$0	$0	$0	($10,000)
40	Meter Repairs	($530)	Capacity	$0	$0	$0	$0	($530)
41	Hydrant Meter Replacement	($3,183)	Max Hour	($1,097)	($603)	($1,482)	$0	$0
42	Delta Coves Property Tax Income	($59,883)	Average Day	($59,883)	$0	$0	$0	$0
43	Total Allocable O&M	$7,486,544		$6,371,747	$964,577	$29,258	$304,000	($183,037)
44	O&M Composite			85.1%	12.9%	0.4%	4.1%	-2.4%
45								
46	**Debt Service**	$289,095	Capacity	$0	$0	$0	$0	$289,095

	A	B	C	D	E	F	G	H	I	J
72		47								
73		48	**Capital Expenses (PayGo)**	$2,192,728	CIP Composite	$0	$0	$0	$0	$2,192,728
74		49								
75		50	**Subtotal - O&M, Debt Service, and Capital**	$9,968,367		$6,371,747	$964,577	$29,258	$304,000	$2,298,786
76		51			% of Consumption	*86.5%*	*13.1%*	*0.4%*		
77		52	Expense Composite		*% of total*	*63.9%*	*9.7%*	*0.3%*	*3.0%*	*23.1%*
78		53								
79		1	**Composite Allocations**							
80		2	**Operations & Maintenance**							
81		3	Maintenance Corpyard	$25,000	O&M Composite	$21,277	$3,221	$98	$1,015	($611)
82		4	General Operating Corpyard	$40,950	O&M Composite	$34,852	$5,276	$160	$1,663	($1,001)
83		5	Telephone Services for Field	$8,450	O&M Composite	$7,192	$1,089	$33	$343	($207)
84		6	Utilities for Field	$172,450	O&M Composite	$146,771	$22,219	$674	$7,003	($4,216)
85		7	Automotive Fuel, Maintenance, Misc	$87,000	O&M Composite	$74,045	$11,209	$340	$3,533	($2,127)
86		8	**Other**							
87		9	Corpyard Improvements	$13,545	O&M Composite	$11,528	$1,745	$53	$550	($331)
88		10	Additional Staff	$0	O&M Composite	$0	$0	$0	$0	$0
89		11	Administrative and General	$162,575	O&M Composite	$138,366	$20,946	$635	$6,602	($3,975)
90		12	Board of Directors	$27,562	O&M Composite	$23,458	$3,551	$108	$1,119	($674)
91		13	Office	$223,870	O&M Composite	$190,534	$28,844	$875	$9,091	($5,473)
92		14	Insurance	$85,000	O&M Composite	$72,343	$10,952	$332	$3,452	($2,078)
93		15	Legal Expenses	$39,000	O&M Composite	$33,193	$5,025	$152	$1,584	($954)
94		16	Training	$42,800	O&M Composite	$36,427	$5,514	$167	$1,738	($1,046)
95		17	**Total Composite Expenses**	$928,202		$789,986	$119,591	$3,627	$37,691	($22,693)
96		18								
97		19	**Subtotal O&M, Capital, Non-Operating**	$10,896,569		$7,161,733	$1,084,168	$32,885	$341,691	$2,276,092
98		20	*Expense Allocation*			*65.7%*	*9.9%*	*0.3%*	*3.1%*	*20.9%*
99		21								
100		22	**Payroll - Salaries/Benefits/Taxes**	$3,179,691	Exp Composite	$2,032,448	$307,679	$9,333	$96,969	$733,262
101		23	**Engineering**							
102		24	Engineering	$215,000	Exp Composite	$137,427	$20,804	$631	$6,557	$49,581
103		25	Consulting	$185,380	Exp Composite	$118,494	$17,938	$544	$5,653	$42,750
104		26	**Non-Operating Revenue**							
105		27	Late Charges	($65,000)	Exp Composite	($41,548)	($6,290)	($191)	($1,982)	($14,990)
106		28	Trip Charges	($26,523)	Exp Composite	($16,953)	($2,566)	($78)	($809)	($6,116)
107		29	Call-Out Charges	($2,500)	Exp Composite	($1,598)	($242)	($7)	($76)	($577)
108		30	Returned Item Charges	($2,500)	Exp Composite	($1,598)	($242)	($7)	($76)	($577)
109		31	Hydrant Meter Repairs	$0	Accounts	$0	$0	$0	$0	$0
110		32	Field Service Charges	($1,591)	Exp Composite	($1,017)	($154)	($5)	($49)	($367)
111		33	Bad Debt Recovery	($2,652)	Exp Composite	($1,695)	($257)	($8)	($81)	($612)
112		34	Retirees Health Benefits - OPEB	($65,376)	Exp Composite	($41,788)	($6,326)	($192)	($1,994)	($15,076)
113		35	Other Income	($25,750)	Exp Composite	($16,459)	($2,492)	($76)	($785)	($5,938)
114		36	Rental Income	($127,308)	Exp Composite	($81,375)	($12,319)	($374)	($3,882)	($29,358)
115		37	Southpark Well - M24	($5,517)	Exp Composite	($3,526)	($534)	($16)	($168)	($1,272)
116		38	Knightsen Well - M25	($5,252)	Exp Composite	($3,357)	($508)	($15)	($160)	($1,211)
117		39	Willow Park Marina Well - M27	($10,821)	Exp Composite	($6,917)	($1,047)	($32)	($330)	($2,495)
118		40	Reimbursement from Developers	($400,000)	Exp Composite	($255,679)	($38,706)	($1,174)	($12,199)	($92,243)
119		41	**Total Non-Operating**	$2,839,281		$1,814,859	$274,740	$8,333	$86,588	$654,761
120		42								
121		43	**Transfers to/(from) Reserves**	($1,448,081)	Exp Composite	($925,608)	($140,122)	($4,250)	($44,161)	($333,939)
122		44	**Emergency Reserve - Tier 1**	$1,000,000	Average Day	$1,000,000	$0	$0	$0	$0
123		45								
124		46	**Total Revenue Requirement**	$13,287,769		$9,050,983	$1,218,786	$36,968	$384,117	$2,596,914
125		47						**$10,306,737**	**$384,117**	**$2,596,914**
126		48					% of revenue requirement	**77.6%**		**22.4%**
127		49						*Consumption Charge COS*		*Service Charge COS*

Diablo Water District
Water Rate Model
Tab 8 - Load Factors

		Levels of Demand (hcf)		
		Average Day	Maximum Day	Maximum Hour
		a	b	c
1	**Demand by Customer Category (hcf)**			
2	Residential - SF	5,688	8,485	17,829
3	Residential - MF	194	198	180
4	Non Residential	277	490	221
5	Hydrant	211	400	600
6	Irrigation	682	1,354	1,622
7	Total	7,052	10,927	20,453
8	**Ratio of Flows to Average Day**			
9	Residential - SF	1.00	1.49	3.13
10	Residential - MF	1.00	1.02	0.93
11	Non Residential	1.00	1.77	0.80
12	Hydrant	1.00	1.89	2.84
13	Irrigation	1.00	1.98	2.38
14	Total	1.00	1.55	2.90
15				
16	Level of Service	7,052	10,927	20,453
17	Average Day Demand	7,052	7,052	7,052
18	**Ratio of Level of Service to Average**	**1.00**	**1.55**	**2.90**

			Demand Service Levels			
	Allocation Basis	Load Factors	Average Day	Maximum Day	Maximum Hour	Totals
		a	b	c	d	e
1	**Average Day**	**1.00**	1.00			1.00
2	*Allocation %*		*100%*			*100%*
3						
4	**Maximum Day**	**1.55**	1.00	0.55		1.55
5	*Allocation %*		*64.5%*	*35.5%*		*100%*
6						
7	**Maximum Hour**	**2.90**	1.00	0.55	1.35	2.90
8	*Allocation %*		*34.5%*	*18.9%*	*46.6%*	*100%*

	A	B	C	D	E	F	G	H
42								
43				**Average**	**Maximum**	**Maximum**		
44			**Flow per Customer**	**Day**	**Day**	**Hour**		
45			**Residential - SF**					
46			hcf per day	5,688	8,485	17,829		
47			hcf per month	170,627	254,549		x 30 days	
48			# of Accounts	12,075	12,075			
49			**Average flow per Acct (hcf/mo)**	**14.0**	**21.0**	**21+**	hcf per month ÷ Monthly bills	
50								
51			**Residential - MF**					
52			hcf per day	194	198	180		
53			hcf per month	5,819	5,953			
54			# of Accounts	21	21			
55			**Average flow per Acct (hcf/mo)**	**277.0**	**283.0**	**283+**		
56								
57			**Non Residential**					
58			hcf per day	277	490	221		
59			hcf per month	8,313	14,691			
60			# of Accounts	246	246			
61			**Average flow per Acct (hcf/mo)**	**34.0**	**60.0**	**60+**		
62								
63			**Irrigation**					
64			hcf per day	682	1,354	1,622		
65			hcf per month	20,465	40,610			
66			# of Accounts	181	181			
67			**Average flow per Acct (hcf/mo)**	**113.0**	**225.0**	**225+**		
68								
69			**Hydrant**					
70			hcf per day	211	400	600		
71			hcf per month	6,344	12,000			
72			# of Accounts	55	55			
73			**Average flow per Acct (hcf/mo)**	**115.0**	**218.0**	**218+**		
74								
75			**Combined**					
76			hcf per day	7,052	10,927	20,453		
77			hcf per month	211,569	327,802			
78			# of Accounts	12,577	12,577			
79			**Average flow per Acct (hcf/mo)**	**17.0**	**26.0**	**26+**		
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								

Diablo Water District
Water Rate Model
Table 9 - Consumption Charges

	Consumption Charge Cost of Service	Average Day	Maximum Day	Maximum Hour	Total	
		a	b	c	d	
1	Operations & Maintenance	$7,161,733	$1,084,168	$32,885	$8,278,786	
2	Debt Service	$0	$0	$0	$0	
3	Capital Expenses (PayGo)	$0	$0	$0	$0	
4	Non-Operating Revenue	$1,814,859	$274,740	$8,333	$2,097,932	
5	Transfers to/(from) Reserves	$74,392	($140,122)	($4,250)	($69,980)	
6	**Total Consumption Charge COS**	$9,050,983	$1,218,786	$36,968	$10,306,737	TRUE
7						
8	**Units of Service (hcf)**					
9	Residential - SF	5,688	8,485	17,829		
10	Residential - MF	194	198	180		
11	Non Residential	277	490	221		
12	Hydrant	211	400	600		
13	Irrigation	682	1,354	1,622		
14		7,052	10,927	20,453		
15	**Proportional Allocation Factors**					
16	Residential - SF	80.65%	77.65%	87.17%		
17	Residential - MF	2.75%	1.82%	0.88%		
18	Non Residential	3.93%	4.48%	1.08%		
19	Hydrant	3.00%	3.66%	2.93%		
20	Irrigation	9.67%	12.39%	7.93%		
21		100.00%	100.00%	100.00%		
22						
23	**Residential - SF**					
24	Operations & Maintenance	$5,775,835	$841,893	$28,667	$6,646,395	
25	Debt Service	$0	$0	$0	$0	
26	Capital Expenses (PayGo)	$0	$0	$0	$0	
27	Non-Operating Revenue	$1,463,657	$213,345	$7,265	$1,684,266	
28	Transfers to/(from) Reserves	$59,996	($108,809)	($3,705)	($52,518)	
23	Residential - Single Family	$7,299,488	$946,428	$32,227	$8,278,142	
24				Annual water use (hcf)	2,075,965	
25				**$ per hcf**	**$3.99**	
26	Residential - MF					
27	Operations & Maintenance	$196,983	$19,688	$290	$0	
28	Debt Service	$0	$0	$0	$0	
29	Capital Expenses (PayGo)	$0	$0	$0	$0	
30	Non-Operating Revenue	$49,917	$4,989	$74	$0	
31	Transfers to/(from) Reserves	$2,046	($2,545)	($38)	$0	
24	Residential - Multi Family	$248,946	$22,133	$326	$271,405	
25				Annual water use (hcf)	70,800	
26				**$ per hcf**	**$3.83**	
27	Non Residential					
28	Operations & Maintenance	$281,410	$48,587	$355	$0	
29	Debt Service	$0	$0	$0	$0	
30	Capital Expenses (PayGo)	$0	$0	$0	$0	
31	Non-Operating Revenue	$71,312	$12,313	$90	$0	
32	Transfers to/(from) Reserves	$2,923	($6,280)	($46)	$0	
25	Non Residential	$355,645	$54,620	$399	$410,664	
26				Annual water use (hcf)	101,145	
27				**$ per hcf**	**$4.06**	
28	Hydrant					
29	Operations & Maintenance	$214,744	$39,689	$965	$0	
30	Debt Service	$0	$0	$0	$0	
31	Capital Expenses (PayGo)	$0	$0	$0	$0	
32	Non-Operating Revenue	$54,419	$10,058	$244	$0	
33	Transfers to/(from) Reserves	$2,231	($5,130)	($125)	$0	
26	Hydrant	$271,394	$44,617	$1,084	$317,095	
27				Annual water use (hcf)	77,184	
28				**$ per hcf**	**$4.11**	
29	Irrigation					
30	Operations & Maintenance	$692,761	$134,311	$2,608	$0	
31	Debt Service	$0	$0	$0	$0	
32	Capital Expenses (PayGo)	$0	$0	$0	$0	
33	Non-Operating Revenue	$175,553	$34,036	$661	$0	
34	Transfers to/(from) Reserves	$7,196	($17,359)	($337)	$0	
27	Irrigation	$875,510	$150,988	$2,932	$1,029,431	
28				Annual water use (hcf)	248,994	
29				**$ per hcf**	**$4.13**	
30						
28	**Grand Total Consumption Charge COS**	**$9,050,983**	**$1,218,786**	**$36,968**	**$10,306,737**	$0.00

		Components of Rate Structure	Revenue at Current Rates w/ Rate Increases		Cost of Service		Difference COS Minus Current		
			a	b	c	d	e	f	
1		Water Charge Revenue	$10,031,275	75.5%	$10,306,737	77.6%	$275,462	2.7%	
2		Service Charge Revenue	$3,256,494	24.5%	$2,981,032	22.4%	($275,462)	-8.5%	
3		**Total**	$13,287,769	100.0%	$13,287,769	100.0%	$0	0.0%	7.0833%
4									
5		**Water Charge Revenue**							
6		Residential	$8,016,746	79.9%	$8,278,142	80.3%	$261,397	3.3%	
7		Multi Family	$287,233	2.9%	$271,405	2.6%	($15,828)	-5.5%	
8		Non Residential	$406,787	4.1%	$410,664	4.0%	$3,877	1.0%	
9		Irrigation	$1,007,446	10.0%	$1,029,431	10.0%	$21,985	2.2%	
10		Hydrant	$313,062	3.1%	$317,095	3.1%	$4,032	1.3%	
11			$10,031,275	100.0%	$10,306,737	100.0%	$275,462	2.7%	

Diablo Water District
Water Rate Model
Tab 10. Fixed Monthly Charges

Account and EMU Summary

Service Size	# of Accounts	Meter Ratings (gpm)	Capacity Multiplier*	EMUs	
	a	b	c = b ÷ 20	a * c	
5/8" meters	10,492	20	1.00	10,492	C712-15 Singlejet Type
1" meters	132	50	2.50	330	C712-15 Singlejet Type
1" w/ Fire meters	1,727	20	1.00	1,727	C712-15 Singlejet Type
1 1/2" meters	58	100	5.00	288	C712-15 Singlejet Type
2" meters	64	160	8.00	511	C712-15 Singlejet Type
3" meters	13	350	17.50	220	Compound Type II
4" meters	4	600	30.00	126	Compound Type II
6" meters	0	1350	67.50	0	Compound Type II
8" meters	1	2800	140.00	147	Turbine Class II
10" meters	0	4200	210.00	0	Turbine Class II
12" meters	0	5300	265.00	0	Turbine Class II
Fire Services [1]	69	23.6	1.18	82	Set to maintain same ratio
Fire Hydrant Meters [2]	44	350	17.50	770	Same as 3 inch meter
Total Accounts	**12,604**		**Total EMUs**	**14,693**	
Units Costs	**$384,117**			**$2,596,914**	
Monthly Cost					
per Account	**$2.54**				
per EMU				**$14.73**	

Meter Charge Unit Cost Calculation

	Service Charge Components		Total Service Charge		
	Accounts	Capacity			
Operations & Maintenance	$341,691	($205,730)	$135,960	From Table 9	
Debt Service	$0	$289,095	$289,095	From Table 9	
Capital Expenses (PayGo)	$0	$2,192,728	$2,192,728	From Table 9	
Non-Operating Revenue	$86,588	$654,761	$741,349	From Table 9	
Transfers to/(from) Reserves	($44,161)	($333,939)	($378,100)	From Table 9	
Service Charge Expenses	**$384,117**	**$2,596,914**	**$2,981,032**		$0
% of Component	*13%*	*87%*	*100%*		
Units of Service	**12,604**	**14,693**			
	Accounts	EMUs			
Monthly Cost					
per Account	**$2.54**				
per EMU		**$14.73**			

Expenses from Tab 8. Allocations

	A	B	C	D	E	F	G	H	I	J
54										
55										
56										
57				Account	Capacity Component			Proposed	Total	
58		Service	% of	Component		Capacity	Capacity	Service Charges	Current	$
59		Size	Meters	($/mo.)	$/EMU	Multiplier	Total	($/mo.)	Charge	Difference
60				a	b	c	d = b * c	e = a + d	f	g = e - f
61		5/8" meters	83.2%	$2.54	$14.73	1.00	$14.73	**$17.27**	$17.52	($0.25)
62		1" meters	1.0%	$2.54	$14.73	2.50	$36.82	**$39.36**	$43.80	($4.44)
63		1" w/ Fire meters	13.7%	$2.54	$14.73	1.00	$14.73	**$17.27**	$17.52	($0.25)
64		1 1/2" meters	0.5%	$2.54	$14.73	5.00	$73.64	**$76.18**	$87.60	($11.42)
65		2" meters	0.5%	$2.54	$14.73	8.00	$117.83	**$120.37**	$140.16	($19.79)
66		3" meters	0.1%	$2.54	$14.73	17.50	$257.75	**$260.29**	$262.80	($2.51)
67		4" meters	0.0%	$2.54	$14.73	30.00	$441.85	**$444.39**	$438.00	$6.39
68		6" meters	0.0%	$2.54	$14.73	67.50	$994.17	**$996.71**	$876.00	$120.71
69		8" meters	0.0%	$2.54	$14.73	140.00	$2,061.97	**$2,064.51**	$1,401.60	$662.91
70		10" meters	0.0%	$2.54	$14.73	210.00	$3,092.96	**$3,095.50**	$2,014.80	$1,080.70
71		12" meters	0.0%	$2.54	$14.73	265.00	$3,903.02	**$3,905.56**	$3,766.80	$138.76
72		Fire Services	0.5%	$2.54	$14.73	1.18	$17.38	**$19.92**	$20.69	($0.77)
73		Fire Hydrant Meters	0.3%	$2.54	$14.73	17.50	$257.75	**$260.29**	$262.80	($2.51)
74										