

TUOLUMNE

UTILITIES DISTRICT

Water Rate Study

Draft Report / May 2022



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May 19, 2022

Don Perkins
General Manager
Tuolumne Utilities District
18885 Nugget Blvd
Sonora, CA 95370

Subject: Water Rate Study Report

Dear Mr. Perkins,

Raftelis Financial Consultants, Inc. (Raftelis) is pleased to provide this report for a Water Rate Study for the Tuolumne Utilities District (TUD or the District). The water rates developed in this study are designed to meet the revenue needs to operate and maintain the District's entire water system with the additional components the District is expected to acquire from the Pacific Gas and Electric Company (PG&E).

The major objectives of the Water Rate Study include:

1. Develop five years of rates in alignment with Proposition 218 requirements for implementation starting September 1, 2022 and September of every year thereafter
2. Ensure financial sufficiency to fund additional operating and maintenance costs associated with the acquisition and transfer of PG&E-owned Federal Energy Regulatory Commission (FERC) hydropower project and related facilities
3. Fund operating, emergency, and rate stabilization reserves that meet targets designated by TUD staff

This report details the rate analysis and five years of proposed rates for the District. It has been a pleasure working with you, TUD staff, and the Board of Directors on this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Nancy Phan'.

Nancy Phan
Manager

A handwritten signature in black ink, appearing to read 'Ellyse'.

Ellyse Szczepanski
Associate Consultant

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1. Executive Summary

District Background

The Tuolumne Utilities District was created on July 1, 1992 as a result of the consolidation of the Tuolumne Regional Water District and the Tuolumne Water System. TUD provides water and wastewater services to over 44,000 residents in Tuolumne County, and its current water system is owned by TUD and by the Pacific Gas and Electric Company.

TUD owns and operates the portion of its water system related to treatment and distribution, including approximately 70 miles of raw water conveyance infrastructure, 11 water treatment plants, 66 treated water storage tanks, and 320 miles of treated water pipelines. PG&E owns the portion of the water system related to raw water collection and storage, which includes the Tuolumne Main Canal, Pinecrest Lake, Lyons Reservoir, and Phoenix Hydropower Facilities. TUD has the opportunity to acquire the PG&E-owned portion of the water system which allows the District to own its entire water system, including the water rights that make up the District's water supply.

Study Background

In 2020, TUD contracted with Raftelis to develop water rates to fund the additional operating and maintenance costs associated with acquiring the PG&E-owned portion of the water system. Raftelis reviewed financial estimates and projections for the costs associated with the addition of the PG&E-owned portion of the water system only; the District's revenues, operating expenses, capital project costs, and reserve balances for the existing water system (without the acquisition of the PG&E-owned portion of the water system) are not a part of the analysis provided in this study. The District is not planning to make changes to its existing water rate structure beyond the addition of the proposed rates developed as part of this rate study. For the purposes of this report, the water rates designed to fund the additional costs for operating and maintaining the PG&E-owned portion of the water system are called "additional revenue charges."

Raftelis worked closely with the District Board of Directors and TUD staff to discuss and understand the objectives, characteristics, and challenges of the District. This report documents the results and recommendations of the study, the basis upon which the additional revenue charges were calculated, the rationale and justifications behind the proposed charges, and the anticipated financial impacts to ratepayers. The study period is from fiscal year (FY) 2023¹ and to FY 2027.

The objectives of the rate study include the following:

1. Develop five years of additional revenue charges in alignment with Proposition 218 requirements for implementation starting September 1, 2022 and September of every year thereafter
2. Ensure financial sufficiency to increase water system reliability by funding additional operating and maintenance costs associated with the acquisition and transfer of PG&E-owned FERC hydropower project and related facilities
3. Fund operating, emergency, and rate stabilization reserves that meet targets designated by TUD staff

¹ For the purposes of this study, FY 2023 is the year starting July 1, 2022 through June 30, 2023

Proposition 218 Requirements²

Proposition 218 was enacted by voters in 1996 to ensure, in part, that fees and charges imposed for ongoing delivery of a service to a property (property-related fees and charges) are proportional to, and do not exceed, the cost of providing service. Water service fees and charges are property-related fees and charges subject to the provisions of California Constitution Article XIII D, Section 6 (Proposition 218). The principal requirements, as they relate to public water service fees and charges are as follows:

1. Revenues derived from the fee or charge shall not exceed the costs required to provide the property-related service.
2. Revenues derived by the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of the fee or charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed fee or charge shall be mailed to the record owner of each parcel not less than 45 days prior to a public hearing, when the agency considers all written protests against the charge.

Revenue Needs

At the start of the rate study, TUD staff provided estimates and projections for expenses, miscellaneous revenues and offsets, and reserve funding requirements which include the following components:

- » **Expenses:** water fund operating and maintenance (O&M) expenses, capital improvement plan (CIP) costs for repair and replacement, one-time expenses, and relicensing costs to acquire the PG&E-owned portion of the water system
- » **Miscellaneous Revenues and Offsets:** one year of TUD water system CIP reduction based on property tax revenues and four years of projected revenues generated from the Phoenix Hydropower Facilities
- » **Reserve Funding:** reserve targets are built up over the five-year study period and include 90 days of O&M expenses for the Operating reserve, 2% of O&M expenses for the Emergency reserve, and \$450,000 for the Rate Stabilization reserve

Table 1-1 shows the revenue needs for the study period from FY 2023 through FY 2027. The combined reserve funding targets are equal to \$1.5 million, which TUD will meet at the end of the five-year period. The average revenue needs are equal to approximately \$4.5 million per year, and includes expenses, miscellaneous revenues, and reserve funding.

Table 1-1: Revenue Needs

Line	A Revenue Needs	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027	G Total
1	Expenses	\$3,652,867	\$4,795,660	\$5,472,259	\$5,056,275	\$6,062,159	\$25,039,220
2	Miscellaneous Revenues	(\$914,549)	(\$805,000)	(\$805,000)	(\$805,000)	(\$805,000)	(\$4,134,549)
3	Reserve Funding	\$450,000	\$374,998	\$0	\$688,676	\$0	\$1,513,674
4	Total Revenue Need	\$3,188,318	\$4,365,658	\$4,667,259	\$4,939,951	\$5,257,159	\$22,418,345

² Raftelis does not practice law, nor does it provide legal advice. The above discussion provides a general overview of Raftelis' understanding as rate practitioners. TUD should consult with its legal counsel for clarification and/or specific guidance.

Proposed Rates

The proposed rate structure is designed to meet the revenue needs of TUD as well as the policy objectives that are deemed most important by the Board. The three policy objectives discussed with the Board include:

- » **Revenue sufficiency and stability:** Ensures adequate revenues for the water fund post-acquisition of the PG&E-owned portion of the water system
- » **Customer understanding:** Enhances understanding to gain community confidence
- » **Equity:** Provides access to water for all customers at a proportionate cost

The discussion of these three policy objectives provides a framework for determining the most appropriate rate structure. Revenue sufficiency and stability are critical objectives since the District must have the funds available to operate and maintain the PG&E-owned portion of the water system. The costs associated with the acquisition/transfer and operating and maintaining the PG&E-owned portion of the water system are also not dependent on volume of water used, so a variable rate structure based on water usage was not recommended to TUD. A fixed charge, whether by equivalent meter sizes or by account, provides revenue sufficiency and is easily understood by customers. However, since larger meter sizes require more capacity in the water system compared to smaller meter sizes, a fixed charge by equivalent meter size is the more equitable rate structure between the two potential options.

Table 1-2 and **Table 1-3** show the proposed monthly and bi-monthly additional revenue charges, respectively. The first year of additional revenue charges are proposed to be implemented on September 1, 2022 (for FY 2023) and on September 1 of every year thereafter. The District bills its customers bi-monthly, based on meter size for metered customers or miners' inches per day³ (MID) for unmetered customers.

Table 1-2: Proposed Increase in Monthly Fixed Rates

Line	A Monthly Additional Revenue Charges	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Metered					
2	1 inch and smaller	\$16.87	\$23.10	\$24.69	\$26.13	\$27.81
3	1-1/2 inch	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
4	2 inch	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
5	3 inch	\$118.09	\$161.70	\$172.83	\$182.91	\$194.67
6	4 inch	\$212.57	\$291.06	\$311.10	\$329.24	\$350.41
7	6 inch	\$438.62	\$600.60	\$641.94	\$679.38	\$723.06
8	8 inch	\$944.72	\$1,293.60	\$1,382.64	\$1,463.28	\$1,557.36
9	Unmetered					
10	0.5 MID	\$16.87	\$23.10	\$24.69	\$26.13	\$27.81
11	1 MID	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
12	1.5 MID	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
13	2 MID	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
14	3 MID	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
15	4 MID	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
16	5 MID	\$118.09	\$161.70	\$172.83	\$182.91	\$194.67

³ Miners' inches per day is a measure for the flow of water, equal to 11.22 gallons per minute.

Table 1-3: Proposed Increase in Bi-Monthly Fixed Rates

Line	A	C	D	E	F	G
	Bi-Monthly Additional Revenue Charges	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
1	Metered					
2	1 inch and smaller	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
3	1-1/2 inch	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
4	2 inch	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
5	3 inch	\$236.18	\$323.40	\$345.66	\$365.82	\$389.34
6	4 inch	\$425.14	\$582.12	\$622.20	\$658.48	\$700.82
7	6 inch	\$877.24	\$1,201.20	\$1,283.88	\$1,358.76	\$1,446.12
8	8 inch	\$1,889.44	\$2,587.20	\$2,765.28	\$2,926.56	\$3,114.72
9	Unmetered					
10	0.5 MID	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
11	1 MID	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
12	1.5 MID	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
13	2 MID	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
14	3 MID	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
15	4 MID	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
16	5 MID	\$236.18	\$323.40	\$345.66	\$365.82	\$389.34

2. Revenue Needs

Expenses

The water fund expense components related to operating and maintaining the PG&E-owned portion of the water system are summarized in **Table 2-1**, showing O&M, CIP, one-time, and relicensing expenses through the study period. TUD staff provided expense estimates and projections, which assume a 3% inflationary increase each year for cost increases.

Table 2-1: Operating and Maintenance Expenses

Line	A Expenses	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027	G Total
1	O&M	\$3,652,867	\$3,361,160	\$3,710,076	\$3,628,871	\$3,976,476	\$18,329,450
2	CIP	\$0	\$1,096,500	\$1,132,183	\$1,177,404	\$1,835,683	\$5,241,770
3	One-time	\$0	\$338,000	\$0	\$0	\$0	\$338,000
4	Relicense	\$0	\$0	\$630,000	\$250,000	\$250,000	\$1,130,000
5	Total Expenses	\$3,652,867	\$4,795,660	\$5,472,259	\$5,056,275	\$6,062,159	\$25,039,220

Miscellaneous Revenues and Offsets

Table 2-2 shows the projected miscellaneous revenues and offsets provided by TUD staff, which reduce the total required revenue need each year. The miscellaneous revenues and offsets include the projected revenue generated from the Phoenix Hydroelectric Facilities and the reduction of CIP costs based on property tax revenues. The Board provided direction to offset CIP costs in the first year, which reduces financial impacts to customers while allowing the District to restore property tax revenue to the CIP during the remaining four years of the study.

Table 2-2: Miscellaneous Revenues and Offsets

Line	A Revenue Offsets	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027	G Total
1	Revenue Generation	\$0	(\$805,000)	(\$805,000)	(\$805,000)	(\$805,000)	(\$3,220,000)
2	Property Tax from CIP	(\$914,549)	\$0	\$0	\$0	\$0	(\$914,549)
3	Total Revenue Offsets	(\$914,549)	(\$805,000)	(\$805,000)	(\$805,000)	(\$805,000)	(\$4,134,549)

Reserve Funding

Table 2-3 summarizes the projected reserve funding, based on reserve targets provided by TUD staff. The components of the reserve policy targets include:

- » **Operating:** The Operating reserve target allows the District to maintain adequate cash flow throughout the year and to fund planned O&M expenses associated with the PG&E-owned portion of the water system, as well as any unexpected operating costs that may arise.
- » **Emergency:** an Emergency reserve of 2% of the O&M expenses each year will help alleviate the impact of any large, unexpected expenditures associated with the PG&E-owned portion of the water system.
- » **Rate Stabilization:** The Rate Stabilization reserve target of \$450,000 provides funds for the District to use in case of significant cost spikes, which can help stabilize and smooth future water rate increases.

The annual reserve funding amounts serve two functions: to ultimately build up reserves to meet the total targets (Column G) by FY 2027 at the latest and to smooth out the revenue needs over five years to provide incrementally increasing rates for each year. The recommended reserve funding amounts in each year are designed to minimize year-to-year rate shock to the extent possible. Due to the variability of the one-time and relicensing fees, the projected reserve funding amounts fluctuate in each year in order to smooth out the total revenue needs for all years of the study. The total reserve balance targets equal approximately \$1.5 million at the end of the study period.

Table 2-3: Reserve Funding

Line	A Reserve Funding	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027	G Total
1	Operating	\$292,495	\$243,745	\$0	\$447,631	\$0	\$983,871
2	Emergency	\$23,725	\$19,769	\$0	\$36,309	\$0	\$79,803
3	Rate Stabilization	\$133,780	\$111,484	\$0	\$204,736	\$0	\$450,000
4	Total Reserve Funding	\$450,000	\$374,998	\$0	\$688,676	\$0	\$1,513,674

Revenue Needs

Table 2-4 summarizes the expenses (**Table 2-1**), miscellaneous revenues and offsets (**Table 2-2**), and reserve funding (**Table 2-3**) from FY 2023 through 2027. The total revenue need (Line 4) is equal to the amount of revenue that the rates are designed to recover in each year. The average revenue need is approximately \$4.5 million each year.

Table 2-4: Revenue Needs

Line	A Revenue Needs	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027	G Total
1	Expenses	\$3,652,867	\$4,795,660	\$5,472,259	\$5,056,275	\$6,062,159	\$25,039,220
2	Miscellaneous Revenues	(\$914,549)	(\$805,000)	(\$805,000)	(\$805,000)	(\$805,000)	(\$4,134,549)
3	Reserve Funding	\$450,000	\$374,998	\$0	\$688,676	\$0	\$1,513,674
4	Total Revenue Need	\$3,188,318	\$4,365,658	\$4,667,259	\$4,939,951	\$5,257,159	\$22,418,345

3. Proposed Rates

Policy Discussion

The discussion of important policy objectives and priorities serves as a framework for determining the most appropriate rate structure for the District. The Board and TUD staff determined the following policy objectives as priorities for the study:

- » **Revenue sufficiency and stability:** Ensures adequate revenues to fund acquisition
- » **Customer understanding:** Enhances understanding to gain community confidence
- » **Equity:** Provides access to water for all customers at a proportionate cost

Revenue sufficiency and stability are critical objectives since the District must have the funds available to operate and maintain the PG&E-owned portion of the water system. The costs of operating and maintaining the PG&E-owned portion of the water system are also not dependent on volume of water used, so a variable rate structure based on water usage was not recommended to TUD. The two remaining options for a rate structure includes a fixed charge by equivalent meter units (EMUs) or a fixed charge by account. Both options provide revenue sufficiency and are easily understood by customers. However, since larger meter sizes require more capacity in the water system compared to smaller meter sizes, a fixed charge by EMU is the more equitable rate structure between the two potential options.

Equivalent Meter Units

EMUs are used to allocate the operating and maintenance costs of the PG&E-owned portion of the water system across the District's various customers. Larger meters have the capacity to use more water than smaller meters, and thus, more costs are allocated to larger meter sizes. For this study, the base meter is equal to 1 inch and smaller, which has a capacity of 50 gallons per minute (gpm). Larger meters are scaled up proportionally to the base meter based on their capacity in gpm⁴.

Table 3-1 details the meter capacities for metered accounts in TUD's system. The equivalence factor (Column C) is calculated by dividing the capacity of each meter size by the base meter capacity of 50 gpm.

Table 3-1: Equivalent Capacity for Metered Accounts

Line	A Metered Accounts	B Capacity (gpm)	C Equivalence Factor
1	1 inch and smaller	50	1.00
2	1-1/2 inch	100	2.00
3	2 inch	160	3.20
4	3 inch	350	7.00
5	4 inch	630	12.60
6	6 inch	1,300	26.00
7	8 inch	2,800	56.00

⁴ Meter capacity equivalents are derived from the American Water Works Association's *Principles of Water Rates, Fees, and Charges, Seventh Edition*.

TUD staff provided historical data on the number of metered customers on the District’s treated water (TW) and raw water (RW) systems, shown in **Table 3-2**. The number of accounts (Columns C and D) are multiplied by the equivalence factor (Column B) to obtain the number of EMUs (Columns E and F).

Table 3-2: Equivalent Meter Units for Metered Accounts

Line	A Metered Accounts	B Equivalence Factor	C TW Accounts	D RW Accounts	E TW EMUs	F RW EMUs
1	1 inch and smaller	1.00	13,448	277	13,448	277
2	1-1/2 inch	2.00	113	5	226	10
3	2 inch	3.20	257	7	822	22
4	3 inch	7.00	7	1	49	7
5	4 inch	12.60	18	2	227	25
6	6 inch	26.00	4	2	104	52
7	8 inch	56.00	0	1	0	56
8	Total		13,847	295	14,876	450

The District’s unmetered accounts are a part of the raw water system and are charged based on MID. **Figure 3-1** shows the meter size conversions for MID customers based on the District’s Water Rules and Regulations.

Figure 3-1: Conversion of MID to Meter Size

14.08 Conversion of Unmetered Raw Water Accounts to Metered Raw Water Accounts

It is the District’s intent, over time, to convert unmetered raw water accounts to metered raw water accounts. All raw water services established after January 1, 2016 shall be metered. The conversion of current unmetered raw water services to metered water services will be undertaken by the District at its sole and absolute discretion.

Conversion from water service based on miner’s inches to a service based upon meter size will be determined in accordance with the following table:

Miner’s Inch Contract	Acre-Feet per Irrigation Season	Acre-Feet per Year	Constant Flow Rate (gpm)	Recommended Meter Size based on 24 hr/day Constant Flow assuming a minimum 2 psi static pressure at meter*
0.50	4.5	9.0	5.6	1"
1.00	9.1	18.1	11.2	1.5"
1.50	13.6	27.1	16.8	1.5"
2.00	18.1	36.2	22.4	1.5"
2.50	22.7	45.2	28.1	1.5"
3.00	27.2	54.3	33.7	2"
3.50	31.8	63.3	39.3	2"
4.00	36.3	72.4	44.9	2"
4.50	40.8	81.4	50.5	3"
5.00	45.4	90.5	56.1	3"

*The meter size required will be determined by the District Engineer on a case-by-case basis.

MID customers have a similar level of service to metered water customers, and because they are required to convert in the future, TUD staff provided direction to assess the same fee as their equivalent meter size. The equivalence factors for unmetered customers are shown in **Table 3-3**.

Table 3-3: Equivalent Capacity for Unmetered Accounts

	A	B	C
Line	Unmetered Accounts	Meter Conversion	Equivalence Factor
1	0.5 MID	1 inch and smaller	1.00
2	1 MID	1-1/2 inch	2.00
3	1.5 MID	1-1/2 inch	2.00
4	2 MID	1-1/2 inch	2.00
5	3 MID	2 inch	3.20
6	4 MID	2 inch	3.20
7	5 MID	3 inch	7.00

TUD staff provided historical data on the number of unmetered customers on the District’s TW and RW systems, shown in **Table 3-4**. The EMUs are calculated by multiplying the equivalence factor by number of accounts.

Table 3-4: Equivalent Meter Units for Unmetered Accounts

	A	B	C	D	E	F
Line	Unmetered Accounts	Equivalence Factor	TW Accounts	RW Accounts	TW EMUs	RW EMUs
1	0.5 MID	1.00	0	173	0	173
2	1 MID	2.00	0	67	0	134
3	1.5 MID	2.00	0	4	0	8
4	2 MID	2.00	0	16	0	32
5	3 MID	3.20	0	11	0	35
6	4 MID	3.20	0	6	0	19
7	5 MID	7.00	0	4	0	28
8	Total		0	281	0	429

The total number of metered and unmetered accounts and EMUs in the District’s water system is summarized in **Table 3-5**. The total number of EMUs in the TUD system is 15,755 EMUs. The District does not expect additional growth in the water system, so the number of EMUs each year is kept constant over the five year period.

Table 3-5: Total Accounts and EMUs

x	A	B	C	F	G	H
Line	Customer Type	TW Accounts	RW Accounts	TW EMUs	RW EMUs	Total EMUs
1	Metered	13,847	295	14,876	450	15,326
2	Unmetered	0	281	0	429	429
3	Total	13,847	576	14,876	879	15,755

Rate Calculation

Table 3-6 shows the proposed additional revenue charge per EMU per month, derived by dividing the revenue need in each year (**Table 2-4**, Line 4) by the number of EMUs (**Table 3-5**, Column H, Line 3) by 12 months. Additional revenue charges are rounded up to the nearest cent.

Table 3-6: Monthly Additional Revenue Charge Calculation

Line	A Rate Calculation	B FY 2023	C FY 2024	D FY 2025	E FY 2026	F FY 2027
1	Total Revenue Need	\$3,188,318	\$4,365,658	\$4,667,259	\$4,939,951	\$5,257,159
2	Number of EMUs	15,755	15,755	15,755	15,755	15,755
3	Charge per EMU per Month	\$16.87	\$23.10	\$24.69	\$26.13	\$27.81

Table 3-7 shows the proposed monthly additional revenue charges based on equivalent meter sizes, which is determined by multiplying the charge per EMU per month by the equivalence factor for each meter size. For example, the charge in FY 2023 for a 1-1/2 inch meter is equal to the charge of the base meter size (Column C, Line 2) multiplied by the equivalence factor of a 1-1/2 inch meter (Column B, Line 3).

Table 3-7: Proposed Monthly Additional Revenue Charges

Line	A Monthly Additional Revenue Charges	B Equivalence Factor	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Metered						
2	1 inch and smaller	1.00	\$16.87	\$23.10	\$24.69	\$26.13	\$27.81
3	1-1/2 inch	2.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
4	2 inch	3.20	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
5	3 inch	7.00	\$118.09	\$161.70	\$172.83	\$182.91	\$194.67
6	4 inch	12.60	\$212.57	\$291.06	\$311.10	\$329.24	\$350.41
7	6 inch	26.00	\$438.62	\$600.60	\$641.94	\$679.38	\$723.06
8	8 inch	56.00	\$944.72	\$1,293.60	\$1,382.64	\$1,463.28	\$1,557.36
9	Unmetered						
10	0.5 MID	1.00	\$16.87	\$23.10	\$24.69	\$26.13	\$27.81
11	1 MID	2.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
12	1.5 MID	2.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
13	2 MID	2.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
14	3 MID	3.20	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
15	4 MID	3.20	\$53.99	\$73.92	\$79.01	\$83.62	\$89.00
16	5 MID	7.00	\$118.09	\$161.70	\$172.83	\$182.91	\$194.67

Table 3-8 shows the proposed additional revenue charges by equivalent meter size on a bi-monthly basis. Since TUD bills on a bi-monthly cycle, the proposed charges below are what customers would see on their water bills as an increase to the bi-monthly fixed rate.

Table 3-8: Proposed Bi-Monthly Additional Revenue Charges

Line	A Bi-Monthly Additional Revenue Charges	B Equivalence Factor	C FY 2023	D FY 2024	E FY 2025	F FY 2026	G FY 2027
1	Metered						
2	1 inch and smaller	1.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
3	1-1/2 inch	2.00	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
4	2 inch	3.20	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
5	3 inch	7.00	\$236.18	\$323.40	\$345.66	\$365.82	\$389.34
6	4 inch	12.60	\$425.14	\$582.12	\$622.20	\$658.48	\$700.82
7	6 inch	26.00	\$877.24	\$1,201.20	\$1,283.88	\$1,358.76	\$1,446.12
8	8 inch	56.00	\$1,889.44	\$2,587.20	\$2,765.28	\$2,926.56	\$3,114.72
9	Unmetered						
10	0.5 MID	1.00	\$33.74	\$46.20	\$49.38	\$52.26	\$55.62
11	1 MID	2.00	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
12	1.5 MID	2.00	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
13	2 MID	2.00	\$67.48	\$92.40	\$98.76	\$104.52	\$111.24
14	3 MID	3.20	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
15	4 MID	3.20	\$107.98	\$147.84	\$158.02	\$167.24	\$178.00
16	5 MID	7.00	\$236.18	\$323.40	\$345.66	\$365.82	\$389.34

Customer Impacts

TUD’s current rate structure is currently comprised of two components: a fixed charge and a water quantity charge, both billed on a bi-monthly basis. The fixed charge is assessed based on meter size, which follows a similar structure as the proposed additional revenue charges developed in this study. These current charges have already been approved during TUD’s previous rate study and will not be subject to a protest vote. The current monthly and bi-monthly fixed charges for treated water customers are shown below in **Table 3-9**.

Table 3-9: Current Monthly and Bi-Monthly Treated Water Fixed Charges

Line	A Meter Size	B Current Monthly Fixed Charge	C Current Bi-Monthly Fixed Charge
1	1 inch and smaller	\$64.50	\$129.00
2	1-1/2 inch	\$103.20	\$206.40
3	2 inch	\$148.35	\$296.70
4	3 inch	\$328.95	\$657.90
5	4 inch	\$457.95	\$915.90
6	6 inch	\$806.25	\$1,612.50
7	8 inch	\$1,231.95	\$2,463.90

Table 3-10 shows the current treated water quantity charge, based on how much water each account uses. The first 400 cubic feet (cf) are included in the fixed charge per month, and every 100 cf after the first 400 are billed at a rate of \$3.40.

Table 3-10: Current Monthly and Bi-Monthly Treated Water Quantity Charges

	A	B
Line	Water Usage Tiers	Rate per 100 Cubic Feet
Monthly Quantity Charge		
1	Tier 1 - Up to 400 cu. Ft.	\$0.00
2	Tier 2 - Over 400 cu. Ft.	\$3.40
Bi-Monthly Quantity Charge		
3	Tier 1 - Up to 800 cu. Ft.	\$0.00
4	Tier 2 - Over 800 cu. Ft.	\$3.40

Table 3-11 and **Table 3-12** show the monthly and bi-monthly bill impacts for FY 2023 to Residential customers receiving treated water service with a 1-inch meter, respectively. The existing fixed charge (Column C) is based on the current fixed charge by meter size (**Table 3-9**). The quantity charge (Column D) is based on the water usage (Column B) applied to the current quantity charge rates (**Table 3-10**). The current bill (Column E) is the sum of the fixed charge and quantity charge. The proposed rates developed in this study are called additional revenue charges (Column F) and are added to the current bills to derive the proposed bill (Column G).

Table 3-11: Residential Monthly Bill Impacts

Line	A Residential Customer	B Monthly Use (cf)	C Monthly Fixed Charge	D Quantity Charge	E Current Monthly Bill	F Additional Revenue Charge	G Proposed Monthly Bill (FY23)
1	Residential with 1" Meter	400	\$64.50	\$0.00	\$64.50	\$16.87	\$81.37
2	Residential with 1" Meter	500	\$64.50	\$3.40	\$67.90	\$16.87	\$84.77
3	Residential with 1" Meter	750	\$64.50	\$11.90	\$76.40	\$16.87	\$93.27
4	Residential with 1" Meter	1,000	\$64.50	\$20.40	\$84.90	\$16.87	\$101.77
5	Residential with 1" Meter	1,250	\$64.50	\$28.90	\$93.40	\$16.87	\$110.27

Table 3-12: Residential Bi-Monthly Bill Impacts

Line	A Residential Customer	B Bi-Monthly Use (cf)	C Bi-Monthly Fixed Charge	D Quantity Charge	E Current Bi-Monthly Bill	F Additional Revenue Charge	G Proposed Bi-Monthly Bill (FY23)
1	Residential with 1" Meter	800	\$129.00	\$0.00	\$129.00	\$33.74	\$162.74
2	Residential with 1" Meter	1,000	\$129.00	\$6.80	\$135.80	\$33.74	\$169.54
3	Residential with 1" Meter	1,500	\$129.00	\$23.80	\$152.80	\$33.74	\$186.54
4	Residential with 1" Meter	2,000	\$129.00	\$40.80	\$169.80	\$33.74	\$203.54
5	Residential with 1" Meter	2,500	\$129.00	\$57.80	\$186.80	\$33.74	\$220.54

Neighboring Agency Comparison

TUD staff conducted a survey of local utilities to compare TUD’s current and FY 2023 rates to neighboring communities, shown in

Figure 3-2. The rate comparison shows monthly charges to a customer with a 1-inch meter using 1,000 cf per month and do not include any additional agency surcharges. TUD’s rates are currently among the lowest today and will be average upon approval of the proposed additional revenue charges detailed in this report. Many of the utilities listed in the graph below plan to adopt rate increases in the coming year, which are not captured in the chart.

Figure 3-2: Neighboring Agency Rate Comparison

