



PREPARED FOR:

PREPARED BY:



TIMBER LAKES WATER SSD



BOWEN COLLINS
& ASSOCIATES

TIMBER LAKES WATER
SPECIAL SERVICE DISTRICT

FEBRUARY 2023

WATER RATE STUDY

TIMBER LAKES WATER SPECIAL SERVICE DISTRICT WATER RATE STUDY

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EXECUTIVE SUMMARY

Timber Lakes Water Special Service District asked Bowen Collins & Associates to complete a rate study for their water utility, which is documented in this report. The primary purpose of this study was to ensure TLWSSD can manage the cost of its systems and keep user rates up to date and manageable in the coming years.

The study considered a 10-year window of projected revenues and revenue requirements, which were based on historic budgets and expected growth within the District. Upcoming expenses include six new overflow meters, four new magnetic flow meters and manholes, two spring rehabilitation and development projects, and a new transmission pipeline. Following this revenue requirement analysis, which is described further in this report, BC&A recommends TLWSSD adopts the rates as summarized in Table ES-1.

**Table ES-1
Recommended Rate Schedule**

	Current	2023	2024	2025	2026	2027
Monthly Base Rate						
Base System Maintenance Fee*	\$30.00	\$34.80	\$37.24	\$39.47	\$41.05	\$42.69
Water Delivery O&M Fee	\$24.50	\$27.69	\$29.35	\$30.52	\$31.44	\$32.38
Capital Fee Bond 2004	\$3.50	\$3.50	\$3.50	\$0	\$0	\$0
Assessment Bond 2011	\$31.11	\$31.11	\$31.11	\$31.11	\$31.11	\$31.11
Revenue Bond	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95
Volumetric Tier Definitions						
Tier 1	Four lower tiers range from 0 to 4,000 gallons. Fourteen upper tiers range from 4,000 gallons to >17,000 gallons.	0-6,000 gal	0-6,000 gal	0-6,000 gal	0-6,000 gal	0-6,000 gal
Tier 2		6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal
Tier 3		12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal
Tier 4		30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal
Tier 5		50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal
Tier 6		>80,000 gal	>80,000 gal	>80,000 gal	>80,000 gal	>80,000 gal
Volumetric Charges						
Tier 1	Four lower tiers range from \$1.00 to \$2.00. Fourteen upper tiers range from \$13.00 to \$32.00.	\$6.00	\$6.36	\$6.61	\$6.81	\$7.02
Tier 2		\$8.00	\$8.48	\$8.82	\$9.08	\$9.36
Tier 3		\$10.00	\$10.60	\$11.02	\$11.35	\$11.70
Tier 4		\$15.00	\$15.90	\$16.54	\$17.03	\$17.54
Tier 5		\$25.00	\$26.50	\$27.56	\$28.39	\$29.24
Tier 6		\$32.00	\$33.92	\$35.28	\$36.34	\$37.43

*Combined lots will also be charged 50% of the Base System Maintenance Fee for each additional lot.

CHAPTER 1 INTRODUCTION AND BACKGROUND

INTRODUCTION

In the fall of 2022, Timber Lakes Water Special Service District (TLWSSD) retained Bowen Collins & Associates (BC&A) to conduct and document a rate study for the District's water utility. The rate updates are part of TLWSSD's ongoing efforts to manage the cost of its systems and keep user rates up to date and manageable.

The District's primary objectives for its financial planning and policies are:

- Maintaining high quality, reliable water service at affordable prices for customers;
- Maintaining stable revenue generation adequate to fund system needs; and
- Minimizing the District's long-term costs by minimizing further debt where possible.

The primary purpose of this report is to document the water rate study and provide recommendations regarding updates to the District's water user rates. The updates are intended to become effective in March 2023.

EXISTING WATER RATE STRUCTURE

Existing rates consist of the following:

- **Base Rate.** This includes a base system maintenance fee, a water delivery O&M fee, and three bond fees.
- **Volumetric Rates.** This includes 18 tiers based on water usage.

According to TLWSSD personnel, simplifying volumetric tiers with increasing volumetric charges to the rate structure would greatly reduce the complexity of the current rate structure. Therefore, in addition to ensuring District revenue needs are met in future years, this rate study also updates the TLWSSD water rate structure.

OVERALL DISTRICT FUNDING

The District operates a water utility and it is important for District costs to be recovered by the user rate revenues. It is also important to reflect the real costs of the water utility and in the District's new 10-year budget plan, all operating costs are recovered under the new recommended rate structure and facilitate the recovery of costs for the water utility. The District's overall funding plan is to fund operating costs using rate revenues and to fund capital expenditures using bonds.

The District accrues four basic categories of expenses as it operates its water utilities, which are described as follows.

- **Labor Expenditures.** This category includes salary, payroll taxes, and various benefits available to TLWSSD employees.
- **Administration Expenditures.** This category includes day to day expenses that keeps the District functioning including accounting, legal, office space rent, training, telephone bills, utilities, insurance, licenses, etc.

- **Maintenance and Equipment Expenditures.** This category includes engineering services, equipment rental, maintenance supplies, maintenance for equipment, etc.
- **Debt Service Expenditures.** These are the costs paid toward bonds taken out by the District in previous years. These costs are easily predictable because they are tied to set payment schedules for each bond. The District was approved for a 40-year, 0% interest rate State Revolving Fund (SRF) loan from the Division of Drinking Water. This SRF loan will be used to fund the District's upcoming 10-year Capital Improvement Expenditures. The loan amount was minimized to only include the District's essential projects that need to be completed in the 10-year window.
- **Capital Improvement Expenditures.** These are costs for constructing new facilities within the District. This can include completely new facilities or replacement of existing facilities. Capital improvement expenditures are usually the most volatile of expenditure categories. Because O&M and debt service costs are basically fixed, budgets are usually balanced by increasing or decreasing capital improvement expenditures as necessary. For this report, the District has provided the capital improvement expenditures that are necessary for the District to complete within the 10-year planning window and these expenditures will be funded by the SRF loan. The District will need to engage in more rehabilitation and replacement spending in the future after the 10-year capital improvement projects have been completed.

The revenue requirements for the water system are shown below in Chapter 2. These are based on recent real expenditures, next year's proposed budgets, and longer-term funding needs.

CHAPTER 2 WATER RATE STUDY

WATER RATE CALCULATION APPROACH

With the overall District funding plan in place, the next steps in the rate calculation process consists of the following principal tasks:

1. **Projecting Growth.** Future growth in the TLWSSD water system was based on current billing information and the growth patterns projected as part of this Water Rate Study.
2. **Calculating Revenue Requirements.** Total water revenue requirements for the system were projected for the next several years based on the overall funding plan discussed in Chapter 1. Non-rate revenue was deducted from the total revenue requirement to determine the net revenue requirement to be recovered from water system rate payers.
3. **Calculating Rates.** Rates were calculated to recover the water system revenue requirement (employee salary and benefits, operations and maintenance, capital improvement costs, and debt service costs) and maintain an adequate cash flow for the District's planned capital expenses, debt, and O&M. The rate structure was altered to simplify the rate schedule.

Key Assumptions

The water rate study results in this report are based on the following key assumptions:

- The District water operating fund will continue to be a self-funding enterprise-type fund.
- Growth rates for this rate study were determined based on historic growth in the District.
- This rate study assumes that all of the capital improvement projects in the 10-year window will be funded by the SRF loan mentioned in Chapter 1. At the time of this report, the District has not accepted the loan, but is working towards accepting it.
- This rate study is based on projections of future growth and projected system operations, maintenance, and improvement costs. These projections are based on current economic conditions and weather patterns over the last several years. Because conditions may change over time, it is recommended that the District review the rates regularly and adjust them if needed to provide a revenue stream that will adequately fund operation and maintenance costs as well as needed capital improvements. It is also recommended that a comprehensive review and updating of water rates be undertaken in three to five years so that the basic analytical foundations of this study can be re-evaluated.

PROJECTING GROWTH

District billing data was analyzed from 2021 and 2022, and this data source was used in this rate study to identify and project growth in TLWSSD.

Projected Connections

Using recent billing data, the number of connections served in 2022 were identified. Based on these existing customers and the projected growth rates mentioned above, the total number of future connections were projected. These projections are summarized below in Table 2-1.

**Table 2-1
Projected Growth in Water System Connections**

Year	Connections
2022	962
2023	984
2024	999
2025	1,014
2026	1,024
2027	1,034

CALCULATING REVENUE REQUIREMENTS

The revenue requirement to be recovered by user rates is based on the actual cash expenditures of the system to make sure that revenues meet the cash needs of the system. And, as mentioned previously, the revenue requirement for user rates is the total gross revenue requirement less non-rate revenues.

Non-Rate Revenues

Like the updated projections of growth above, non-rate revenue projections have been updated based on existing real revenues over the past several years, projected growth, and inflation. Projections in non-rate revenues are summarized below in Table 2-2.

**Table 2-2
Projected Non-Rate Revenues**

Item	2022	2023	2024	2025	2026	2027
Collection Fees Revenue	\$15,100	\$15,477	\$15,864	\$16,261	\$16,667	\$17,084
Meter and Lateral Installation Fees Revenue	\$144,626	\$154,750	\$162,487	\$167,362	\$172,383	\$177,554
Title Transfer Fees Revenue	\$11,521	\$11,809	\$12,104	\$12,407	\$12,717	\$13,035
Interest Revenue	\$328	\$0	\$0	\$0	\$0	\$0
2004 Bond Fee Revenue	\$66,696	\$66,696	\$66,696	\$0	\$0	\$0
2021 Bond Fee Revenue	\$372,223	\$372,223	\$372,223	\$372,223	\$372,223	\$372,223
Total Non-Rate Revenue	\$610,494	\$620,955	\$629,375	\$568,253	\$573,990	\$579,896

Gross Revenue Requirement

The gross water revenue requirements have been projected based on real expenditures from recent years (as described in the *Overall District Funding Section* of Chapter 1), projected growth, upcoming expenses, and inflation. Revenue requirement projections were also updated to reflect expected O&M budget requirements, updated capital expenditures, and changes in debt service as described below.

- **Labor Expenditures.** These expenditures were projected forward based on the District’s anticipated wage increases and labor needs. These projections constitute the anticipated future labor needs for the District and contribute to the gross revenue requirement.
- **Administration Expenditures.** These expenditures were projected forward based on inflation rates. These projections constitute the anticipated future administrative needs for the District and contribute to the gross revenue requirement.
- **Maintenance and Equipment Expenditures.** These expenditures were projected forward based on inflation rates. These projections constitute the anticipated future maintenance and equipment needs for the District and contribute to the gross revenue requirement.
- **Debt Service.** TLWSSD currently has debt service, which includes two bonds. The first bond is the 2004 Revenue Bond and the second bond is the 2021 Revenue and Special Assessment Bond. Both of these bonds are included in the analysis. The District has also been approved for the SRF loan mentioned in Chapter 1.
- **Upcoming Capital Improvements.** The District has several capital facilities projects scheduled for the next 10 years. Estimated costs of these projects have been considered in the gross revenue requirement. These projects include:
 - 6 new overflow meters,
 - 4 new magnetic flow meters and manholes,
 - 2 spring rehabilitation and development projects, and
 - New transmission pipeline

Discussions with District personnel and District board members concluded that only essential projects will be included in the 10-year window to make sure rate increases are as low as possible over the next 10 years. This means that not all of the District’s capital improvement projects will be happening in the 10-year window, only the essential project listed above.

Projections in gross revenue requirements are summarized below in Table 2-3.

**Table 2-3
Projected Gross Revenue Requirement**

Item	2022	2023	2024	2025	2026	2027
Labor	\$637,609	\$669,826	\$723,412	\$781,285	\$820,349	\$861,367
Administrative	\$149,402	\$159,861	\$167,854	\$172,889	\$178,076	\$183,418
Maintenance and Equipment	\$333,766	\$357,130	\$374,986	\$386,236	\$397,823	\$409,757
Debt Service	\$461,915	\$494,580	\$497,895	\$433,103	\$437,261	\$433,322
Total Revenue Requirement	\$1,582,692	\$1,681,396	\$1,764,147	\$1,773,513	\$1,833,508	\$1,887,864

Net Rate Revenue Requirement

The net revenue to be recovered by water rates (the difference between the projected gross revenue requirement and the projected non-rate revenues) is summarized below in Table 2-4.

**Table 2-4
Projected Net Rate Revenue Requirement**

Item	2022	2023	2024	2025	2026	2027
Total Revenue Requirement	\$1,582,692	\$1,681,396	\$1,764,147	\$1,773,513	\$1,833,508	\$1,887,864
Non-Rate Revenue	\$610,494	\$620,955	\$629,375	\$568,253	\$573,990	\$579,896
Total Rate Revenue Requirement	\$972,199	\$1,060,441	\$1,134,772	\$1,205,260	\$1,259,518	\$1,307,968

Figure 2-1 below compares the gross revenue and the gross revenue need and thus illustrates the net revenue requirement graphically over the next 10 years.

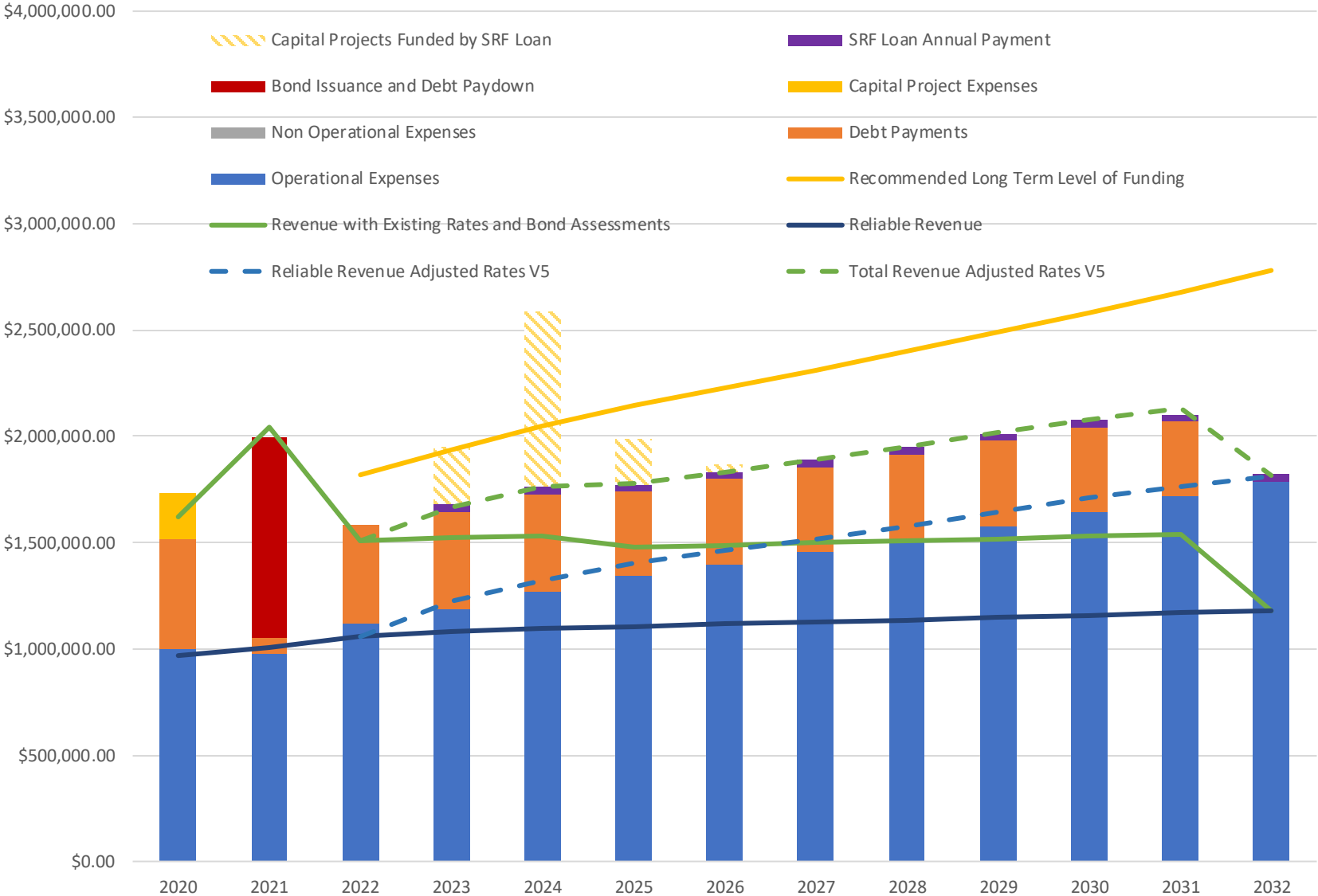
Recommended Long Term Funding Levels

An important part of maintaining existing infrastructure is anticipating and planning for rehabilitation and replacement of system components. The purpose of including a recommended long term funding level in this report is to help the District determine if their current funding levels are adequate to meet long term rehabilitation and replacement of the existing water system. This value is calculated by summing the estimated cost of rehabilitation or replacement of each system averaged over its typical lifespan. Table 2-5 below shows the value and estimated service life of the TLWSSD system components in 2022. For planning purposes, this value was projected into future years based on inflation.

**Table 2-5
Existing System Valuation**

System Component	Quantity	Estimated Total Value	Max Estimated Total Service Life
		(with contingency)	
<i>Pump Stations</i>			
1 Total Throughout the District	1	\$636,870	50 years
<i>Minimum Annual Budget</i>			\$13,268
<i>Tanks</i>			
5 Total Throughout the District	5	\$5,890,000	75 years
<i>Minimum Annual Budget</i>			\$79,955
<i>Pipes</i>			
<8 inches	63,311 ft	\$11,767,831	65 years
8" Pipe	104,465 ft	\$19,848,322	65 years
10" Pipe	16,386 ft	\$3,195,348	65 years
12" Pipe	2,025 ft	\$415,197	65 years
<i>Minimum Annual Budget</i>			\$572,434
<i>Springs</i>			
10 Total Throughout the District	10	\$1,725,000	60 years
<i>Minimum Annual Budget</i>			\$32,344
Total Recommended Long Term Funding Level			\$698,000

**Figure 2-1
10-Year Water Revenue and Expenditures**



As shown in Figure 2-1, projected revenue from existing rates will fall short of projected needs this year if capital projects continue as expected. The reserve account will need to be replenished through rate revenues so that sufficient funds are available for the future. To meet these projected funding needs, the District has the option of cutting expenses by curbing services or increasing revenue. Upon review of the District's budgets and infrastructure needs, the appropriate response is to increase user rates to meet the rate-revenue increases as summarized in Table 2-6. It should be noted that these percentages are based on gross revenue less bonds, not net rate revenue required.

Table 2-6
Recommended Overall Revenue Increases

Year	Increase
2023	16%
2024	8%
2025	6%
2026	4%
2027	4%

DESIGNING THE RATE STRUCTURE

BC&A has consulted closely with District personnel to formulate a rate structure that meets the identified goals of this rate study. The rate structure will consist of base rates and volumetric charges in 6 blocks.

Base Rates

The District currently utilizes a base monthly charge for its water rate arrangements, which includes a base system maintenance fee, a water delivery O&M fee, and three bond related fees. Customers who are connected to the water system and customers who are unconnected both pay the base system maintenance fee whereas only the connected customers pay the water delivery O&M fee. The new rate structure will keep this approach. Base charges have the advantage of spreading revenues over the entire year for proper upkeep and management of the system and the advantage of providing a stable revenue stream (as opposed to revenue from volumetric charges that can vary depending on consumption, economic circumstances, and conservation).

Volumetric Charges

There are several different types of rate structures that are commonly used for billing volumetric charges to customers. These includes uniform, seasonal, and increasing block rates. The State of Utah has mandated that most water rate structures use an increasing block rate (aka tiered rate structure). To comply with this requirement and to encourage water conservation, we have structured the recommended rates contained in this report using an increasing block structure.

The increasing block structure proposed is quite different from the existing rate structure. The existing rate structure has eighteen tiers where the proposed has six. The fewer tiers and the proposed future changes transition the rate structure to be more of an industry standard approach.

CALCULATING RATES

Based on the rate structure described above, BC&A calculated rates to recover the projected net rate revenue requirement in accordance with the goals of this rate study. The final calculated rates are shown below in Table 2-7. It should be noted that the District's convention is to adopt rates in five-year rate schedules. Therefore, the rate schedule shown below goes through 2027 and accounts for projected growth, revenue needs, and inflation.

It should be noted that in conjunction with this rate study, the District board has elected to reaffirm and establish the policy that combined lots will also be charged 50% of the base system maintenance fee for each additional lot combined into the original lot.

**Table 2-7
Recommended Rate Schedule**

	Current	2023	2024	2025	2026	2027
Monthly Base Rate						
Base System Maintenance Fee*	\$30.00	\$34.80	\$37.24	\$39.47	\$41.05	\$42.69
Water Delivery O&M Fee	\$24.50	\$27.69	\$29.35	\$30.52	\$31.44	\$32.38
Capital Fee Bond 2004	\$3.50	\$3.50	\$3.50	\$0	\$0	\$0
Assessment Bond 2011	\$31.11	\$31.11	\$31.11	\$31.11	\$31.11	\$31.11
Revenue Bond	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95	\$2.95
Volumetric Tier Definitions						
Tier 1	Four lower tiers range from 0 to 4,000 gallons. Fourteen upper tiers range from 4,000 gallons to >17,000 gallons.	0-6,000 gal	0-6,000 gal	0-6,000 gal	0-6,000 gal	0-6,000 gal
Tier 2		6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal	6,000-12,000 gal
Tier 3		12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal	12,000-30,000 gal
Tier 4		30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal	30,000-50,000 gal
Tier 5		50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal	50,000-80,000 gal
Tier 6		>80,000 gal	>80,000 gal	>80,000 gal	>80,000 gal	>80,000 gal
Volumetric Charges						
Tier 1	Four lower tiers range from \$1.00 to \$2.00. Fourteen upper tiers range from \$13.00 to \$32.00.	\$6.00	\$6.36	\$6.61	\$6.81	\$7.02
Tier 2		\$8.00	\$8.48	\$8.82	\$9.08	\$9.36
Tier 3		\$10.00	\$10.60	\$11.02	\$11.35	\$11.70
Tier 4		\$15.00	\$15.90	\$16.54	\$17.03	\$17.54
Tier 5		\$25.00	\$26.50	\$27.56	\$28.39	\$29.24
Tier 6		\$32.00	\$33.92	\$35.28	\$36.34	\$37.43

*Combined lots will also be charged 50% of the Base System Maintenance Fee for each additional lot.

WATER RATE STUDY CONCLUSIONS

Based on the analysis contained in this report, the following actions are recommended:

1. **Adopt and Implement New Rate Structure and New Rates.** It is recommended that TLWSSD adopt the rates summarized above in Table 2-7. These changes are needed: to continue to meet immediate operations and maintenance needs; to fund capital expenditures necessary to meet the District's longer-term system investment goals; to keep rates current with inflation and projected system growth; and to provide a manageable uniform rate structure for the District's entire water system.
2. **Continue Monitoring System Costs and Revenues.** After the implementation of any rate change, we would suggest TLWSSD monitor actual costs and revenues, as well as customer responses. Therefore, it is critical to continue to monitor system costs and revenues, especially now due to the volatile inflationary environment that we're in and due to the growth that is expected to continue in the District.
3. **Update this Rate Study Periodically.** All rates are calculated based on existing conditions and assumptions about the future which may need to be revised from time to time. Therefore, in addition to monitoring system costs and revenues, it is recommended that this rate study be updated every 3 to 5 years at a minimum and more often as dictated by changing conditions. Doing so will ensure rates are as up to date as possible and will also keep the District ahead of expiring rate schedules.

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