# Secondary Rate Study

## December 2019

**Prepared for:**

**Twin Creeks**
**Special Service District**

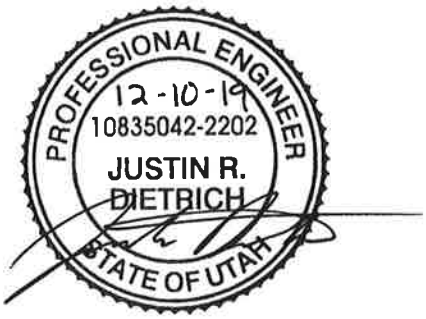
**Prepared by:**

BOWEN COLLINS & ASSOCIATES

# TWIN CREEK SPECIAL SERVICE DISTRICT

# SECONDARY WATER RATE STUDY

**DECEMBER 2019**

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# EXECUTIVE SUMMARY

## INTRODUCTION

In accordance with Twin Creeks Special Service District (TCSSD) objectives of maintaining its high quality secondary water services to its customers, TCCSD hired Bowen Collins & Associates (BC&A) to conduct a rate study to update secondary user rates. The updated rates are intended to go into effect in January 2020.

The historic secondary user rates are not uniform across all customers and had not be evaluated for a long time. A rate study in 2018 was completed, but policy updates (e.g. establishment of the equalization fee) and other developments (completion of metering projects) during the implementation period caused the full rate implementation to be placed on hold until it could be updated. The awaited update is outlined in this report. The District and BC&A have agreed to include in this rate study a new rate structure that can be implemented uniformly across the District while simultaneously honoring previous District commitments.

## SECONDARY RATE STUDY

The execution of this water rate study consisted of the following principal tasks.

1. **Projecting Secondary Water Use.** The following items and conclusions are part of this task.
    a. A new concept, called an Irrigation Billing Unit (IBU) will be utilized for the new rate design. A typical residential connection is 1 IBU with some connections being more, or fewer IBUs depending on the relative amount of water delivery associated with the property[1]. The IBU is the basis of the rate analysis, and the growth projections. The recommended rate schedule and recommended billing is presented in a per-IBU basis as well.
    b. Recent meter data (2017-2019 for all metered customers) was analyzed to understand water use characteristics of secondary customers and to project low, medium, and high users' water use for rate modeling purposes. Total growth in IBUs was estimated by considering all new TCSSD growth (based on latest growth projections) to become TCSSD secondary customers. This excludes Red Ledges because Red Ledges does not now have, nor does it expect to have, any secondary water service.
2. **Calculating the Revenue Requirements.** Based on the overall funding requirements from the master planning effort, a new 10-year budget for the secondary water utility was created. The net revenue requirement to be recovered by user rates was projected by subtracting non-rate revenue projections from the 10-year budget. The results indicate a revenue requirement from user rates of about $162,000 in 2020, which grows to about $228,000 in 2024. The first 5 years of the revenue requirement projections is shown because the rate analysis focuses on the first 5 years of budget projections. For informational purposes, the revenue requirement from rates expected in 2029 is $310,000 at this time. Figure ES-1 below includes a representation of the culinary system revenue requirement projection.

[1] It should be noted that users wishing to have more IBUs can turn in additional water shares to the District to obtain them. However, new water dedications for any lot may not exceed the standard duty expected for the lot in question (based on lot size and expected irrigable acreage).

3. **Allocating Cost.** To provide equitable rates, this rate study utilizes the cost of service approach recommended by the American Water Works Association (AWWA). Therefore, all budgeted costs were allocated based on three customer service characteristics so that rate calculations can collect revenue from customers in accordance with the actual cost of serving those customers. The rates calculated (see *Calculating Rates* below) successfully allocate costs according to these cost allocations within acceptable margins of error.
4. **Designing the Rate Structure.** For the secondary system a new, consistent rate structure was designed that is manageable and honors existing commitments to the District's customers. The following are highlighted components and features of the new rate structure:
    a. The rate structure utilizes a single class of IBU (Class 1 and Class 2 distinctions having been discontinued) for all customers.
    b. The new rate design will continue to utilize a monthly base charge.
    c. The new rate design will discontinue the allowance of 50,000 gallons per month and a single overage rate and replace it with a 4 tiered volumetric charge tied to cost of service allocations based on the statistical analysis of existing use patterns.
    d. A standby charge will be implemented for all standby connections. Currently, only some standby connections pay the standby charge.
    e. The flat monthly charge for unmetered connections will be updated to better reflect the costs of service.
5. **Calculating Rates.** In accordance with common District practice, new rates were calculated for each of the next five years and documented below in Table ES-1. These new rates accompany the new rate structure and are cost-of-service rates for the various user types. After the initial adjustment in 2020, user rates are projected to have a steady increase of 0.5% per year.

(See next page for Figure ES-1 and Table ES-1.)

**Figure ES-1**
**10-Year Secondary Revenue and Expenditures**

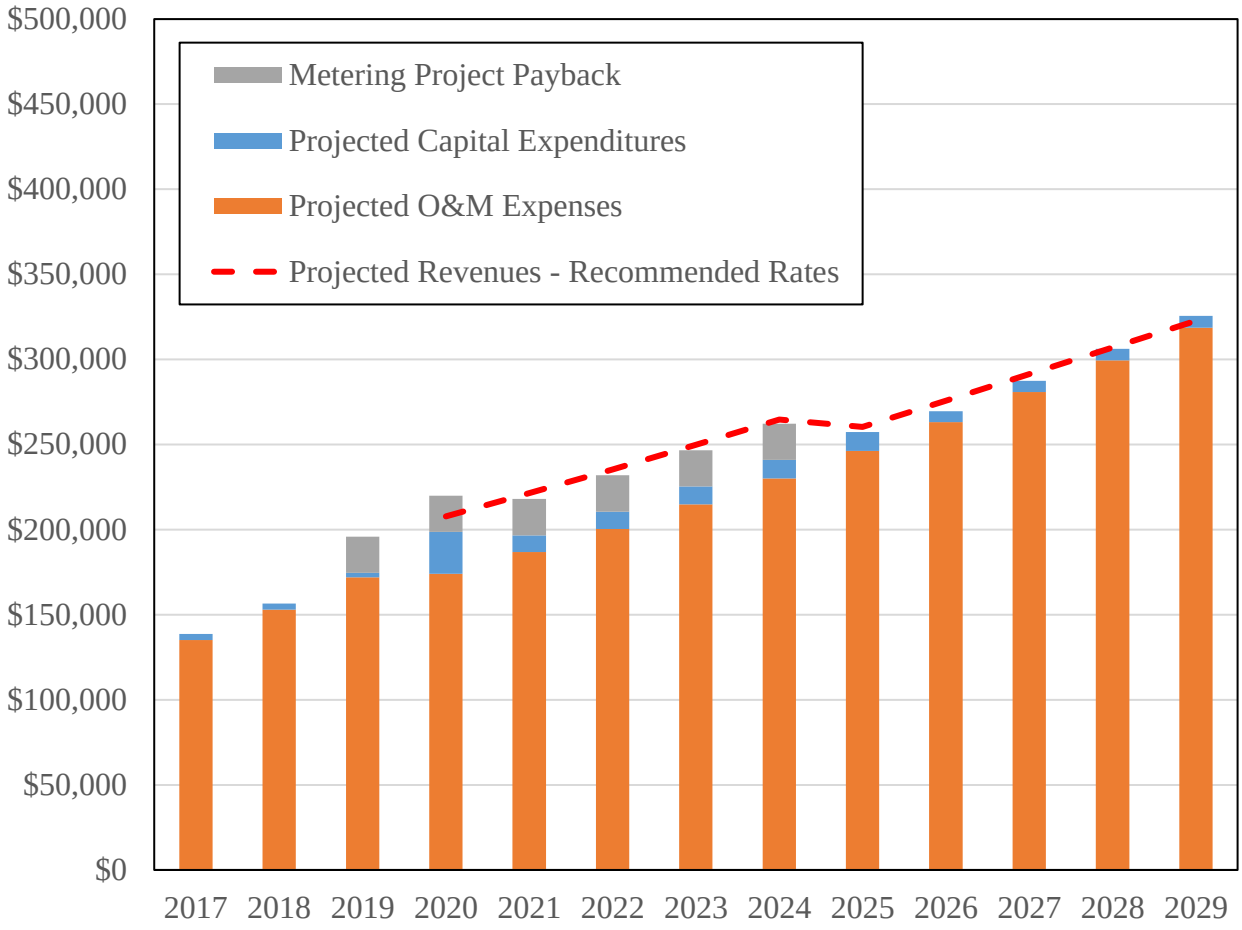



**Table ES-1**
**Recommended Secondary Rates**

| Rate Component | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Base Rate Per Month per IBU | $8.24 | $8.28 | $8.32 | $8.36 | $8.40 |
| Tier 1 Volume Charge (0 - 50 kGal per Month per IBU) | $0.24 | $0.24 | $0.24 | $0.24 | $0.24 |
| Tier 2 Volume Charge (50 - 90 kGal per Month per IBU) | $0.65 | $0.65 | $0.65 | $0.65 | $0.65 |
| Tier 3 Volume Charge (90 - 250 kGal per Month per IBU) | $1.33 | $1.34 | $1.35 | $1.36 | $1.37 |
| Tier 4 Volume Charge (>250 kGal per Month per IBU) | $2.00 | $2.01 | $2.02 | $2.03 | $2.04 |
| Separate Assessment Credit per Month per IBU | -$2.22 | -$2.29 | -$2.36 | -$2.43 | -$2.50 |
| Standby Charge per Month per IBU | $6.67 | $6.70 | $6.73 | $6.76 | $6.79 |

IBU = Irrigation Billing Unit
All rate components shown above are on a "per IBU" basis.
The standby charge is the charge for customers that have turned in water but have not yet connected to the system.
Separate Assessment Credit is only available to those IBUs grandfathered in to the arrangement where the customer pays his own water assessments to the irrigation company and the District delivers his water. See *Designing the Rate Structure*, above.

# CHAPTER 1
# INTRODUCTION AND BACKGROUND

## INTRODUCTION

In the spring of 2019, Twin Creeks Special Service District (TCSSD) retained Bowen Collins & Associates (BC&A) to conduct and document a rate study for the District's secondary water utility. The rate updates are part of TCSSD's ongoing efforts to manage the cost of its systems and keep user rates up to date, manageable, and equitable.

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

- Maintaining high quality, reliable water service at affordable prices for customers;
- Encouraging wise use of resources through conservation;
- Maintaining stable revenue generation adequate to fund system needs; and
- Minimizing the District's long-term costs by avoiding debt where possible.

The primary purpose of this report is to document the secondary rate study and provide recommendations regarding updates to the District's secondary user rates. The updates are intended to become effective in 2019.

## EXISTING SECONDARY RATE STRUCTURE

TCSSD is a retail secondary irrigation utility provider for many—but not all—of the secondary system customers within the overall TCSSD culinary water and sewer utility service boundaries. Some of the connections within that boundary are still customers of the same irrigation companies that wholesale water directly to TCSSD for its retail deliveries.

The historic secondary rate structure within TCSSD has not previously been studied by BC&A. The system has been assembled piece-meal over the last decade as the various developments have been constructed or been converted from customers of the various irrigation companies into customers of TCSSD. Due to the varying origin of customers, different arrangements have been put in place for different groups of customers that are not well documented.

In 2018, BC&A conducted a preliminary study on secondary rates to apply to the 2019 irrigation season. However, during the implementation of those rates, changes in underlying conditions[2] and the desire of the District to better transition rates from the historic to the long-term rate structure caused the implementation of those rates to be frozen in anticipation of the herein documented rate update. The results of that preliminary study are correspondingly superseded by the results of this report.

[2] One of the primary changes in underlying conditions was the conception and implementation of the District's equalization fee. The equalization fee is an upfront fee that must be paid along with water dedications (typically by developers) if the shares being transferred carry a higher ongoing liability (in terms of delivery assessments from the irrigation companies) than the District is collecting from its customers as part of the secondary rates. The shares that currently carry such a higher liability are Timp Class D shares and LCIC-MI shares.

In the 2018 rate study, is was proposed that rates be charged differently to two classes of water uses. Class 1 rates would apply to those customers who brought less expensive LCIC primary shares. Class 2 would be used to cover the cost of the higher cost dedicated water shares. The effect of the equalization fee on the rates is that the Class 2 customer class is no longer necessary.

## OVERALL DISTRICT FUNDING REQUIREMENTS

TCSSD operates three utilities: sanitary sewer, culinary water, and secondary irrigation water and it is important for District costs to be recovered by the user rate revenues of each utility. It is also important to reflect the real costs of each utility individually in its respective user rates.

Therefore, in the District's new 10-year budget plan, all costs have been divided across each utility to ensure all operating costs are recovered under the new recommended rate structures and facilitate the recovery of costs for each utility by its respective user rates. This was done by reviewing each of the District's budgetary line items and identifying the proportion of each which is attributable to the culinary system, the sewer system, and the secondary system, respectively. The result of this exercise established the revenue requirement for the secondary water system. This revenue requirement projected over the next 10 years is shown in Appendix A and is the foundation of how much revenue the new rate structure needs to collect.

In addition to identifying the required overall revenue requirement, this rate study is tasked with appropriately allocating cost to the various customers by use of the rate schedule. A recommended approach for cost allocation in rate studies has been developed in the American Water Works Association's (AWWA) *Manual M1 – Principles of Water Rates, Fees, and Charges*. This study follows the principles and approach generally outlined in that document, but modifies some of the cost categories to match the unique needs and circumstances of the District.

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

- **Operations and Maintenance Expenditures.** These are the annual costs of running the system. They include items such as salary and benefit costs for District staff, equipment and supplies, power costs, water delivery assessments, software costs, and all other costs associated with doing business throughout the year. Most operation and maintenance (O&M) costs are relatively constant from year to year and tend to follow the rate of inflation. Some costs, such as water delivery assessments grow with system growth (addition of new customers) as well as with inflation.
- **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 secondary system has no current or projected debt expenditures.
- **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 secondary system has only one identified capital project for 2020 which is the installation of a new water screen at the system intake to decrease the amount of debris that enters the system. For the future budgetary projections, one yet-to-be-identified, small capital project each year has been predicted.

# CHAPTER 2
# SECONDARY RATE STUDY

## SECONDARY RATE CALCULATION APPROACH

Based on the overall District funding requirements described in Chapter 1, the next steps in the rate calculation process include the following principal tasks and objectives:

1. **Projecting Secondary Water Use.** To accurately predict the revenue to be realized by any rate structure, it is necessary to understand the projected use which will produce the revenue. TCSSD recently completed its metering projects and that has provided an opportunity to gain an understanding of existing water use patterns and project those water use patterns into the future. System growth and the effects of metering must also be considered in the rate calculations.
2. **Calculating the Revenue Requirements**. The secondary funding requirements must be projected forward and considered alongside non-rate revenue projections to determine the amount of revenue that must be recovered from secondary rate payers.
3. **Allocating Cost.** To meet the District's objectives of equitable user rates, the secondary rates will follow the cost-of-service approach recommended by AWWA. The essential principle of this method is that "rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers."[3] Therefore, customers with similar cost of service characteristics must be grouped together into customer classes and the costs associated with serving those classes allocated respectively.
4. **Designing the Rate Structure.** For the secondary system a new, a consistent rate structure must be designed that is manageable and honors existing commitments to the District's customers.
5. **Calculating Rates.** After the rate structure is designed, the actual rates must be calculated such that they will both recover the necessary rate revenue requirement and charge customers in accordance with the cost-of-service cost allocations.

### Key Assumptions

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

- Red Ledges is, and is expected in the future to be, outside the service area boundary of the secondary water system. Therefore, Red Ledges is excluded from the secondary rate study. However, the existing users not currently served with secondary water outside of Red Ledges are expected to gradually convert over to being TCSSD secondary customers.
- The cash basis method of the aforementioned AWWA rate calculation approach will be used.
- There is no reliable historic metering data to analyze historic conservation trends among secondary water customers in TCSSD or quantify future conservation. However, it will be assumed that users will generally reduce water consumption as this new uniform rate structure is introduced and the District continues to install meters on new customers.
- This rate study is based on projections of future secondary water demands 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 rates regularly

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

and adjust them if needed to provide a revenue stream that will adequately fund operations and maintenance costs as well as needed capital improvements. It is also recommended that a comprehensive review and updating of secondary water rates be undertaken in three to five years so that the basic analytical foundations of this study can be re-evaluated.

# PROJECTING WATER USE

## Irrigation Billing Units (IBUs)

Before discussion of historic water use or projected water use, it is essential to introduce the new concept of an Irrigation Billing Unit (IBU). As the name implies, this is the basic billing unit of the proposed secondary rate structure.

The necessity of the IBU is best understood in terms of the most common historic billing structure. Under the historic billing structure, users were previously charged a monthly base rate of $15 per month for every residential equivalent amount of water rights or water shares that were turned in for the user's particular lot. Similarly, for every residential equivalent amount of water rights or water shares that were turned in originally, the user received up to 50,000 gallons per month (if metered) before paying a volumetric overage charge of $1.25 per 1,000 gallons.

For example, if the original developer of a certain residential lot turned in double the typical residential amount of water rights or water shares, the current customer on that lot would pay $30 per month as a base rate and, if metered, would be allowed up to 100,000 gallons per month before paying the volumetric overage charge.

The newly introduced IBU maintains this principle, but standardizes it and allows for a manageable, uniform administration of secondary billing. In essence, it normalizes the bases of secondary billing to a common unit. It is similar to the "Equivalent Residential Connections (ERCs)" and "Equivalent Residential Units (ERUs)" which are commonly used in planning and billing for other types of utilities.

Based on an audit of the District's water dedications of the past, each customer has been assigned a number of IBUs consistent with the District's current level of service, which is 1 IBU for the amount of dedicated secondary water associated with the reference typical residence (currently 1 acre-foot of dedicated water per IBU). It should be emphasized that assignment of IBUs represents the District's commitment to provide services in accordance with the historic level of service associated with each property. It is not a guaranteed volume of water to be delivered.

## Historical Water Use Analysis

Like nearly all secondary water systems, TCSSD has historically operated its system without metering of individual connections. However, a few years ago the District began metering a few of its connections and this year finished metering all non-agricultural customers.

TCSSD currently serves about 300 secondary customers. While available meter data is limited for some customers due to their meters having been only recently installed, we were able to statistically analyze the available 2017-2019 metering data to understand various use characteristics.

The first understanding gained is the character and magnitude of the seasonal fluctuations in water use that is always observed as weather changes from spring to summer and then to fall. This understanding is essential for predicting the revenues that will be generated by volumetric charges as customers use more or less water depending on the month.

We also were able to identify the water use characteristics of the low, median, and high water use customers and the relative numbers of each within the District. Of note is the observation that, on

average, half of customers are consuming water at rates just within or below the typical, historic monthly allotment with the overall median water use being about 49,000 gallons per month per IBU during the irrigation season. The other half of customers use more than the typical, historic monthly allotment with the highest users averaging about 166,000 gallons per month per IBU.

### Projected IBUs

In conjunction with these rate studies, the District is currently conducting an update to the culinary water system master plan. This is useful here because new District-wide growth projections have been created for the culinary system. In addition to new development, some growth is expected by way of existing residents being converted from irrigation company customers to TCSSD secondary retail customers. After excluding Red Ledges growth, the projected number of IBUs are summarized below in Table 2-1.

**Table 2-1**
**Projected Growth in Secondary System IBUs**

| Type | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Metered IBUs | 600 | 645 | 692 | 740 | 789 | 840 |
| Standby IBUs | 543 | 582 | 623 | 664 | 707 | 750 |
| Separate Assessment Credit IBUs | 48 | 48 | 48 | 48 | 48 | 48 |
| Unmetered IBUs | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1,191 | 1,276 | 1,363 | 1,453 | 1,544 | 1,638 |

## CALCULATING REVENUE REQUIREMENTS

As with the District's culinary water, and sanitary sewer utilities, the secondary utility user rates must recover the costs of operating the system not otherwise recovered through non-rate revenue. Revenue requirements in this study are based on the actual cash expenditures of the system.

### Non-Rate Revenues

Projected non-rate revenue associated with the District's secondary system is summarized in Table 2-2. This revenue is the net income from activities not associated with secondary system user rates. As there are currently no secondary system impact fees, this non-rate revenue consists of separate service fees (M&I fees, and meter installation fees) and secondary system's proportional share of District interest revenue. Like all other projections in this study, non-rate revenues are based on recent year actual data and projected forward to account for system growth and inflation.

**Table 2-2**
**Projected Secondary Non-Rate Revenue**

| Item | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| M&I Fees | $10,000 | $10,000 | $10,300 | $10,609 | $10,927 | $11,255 |
| Interest Revenue | $2,884 | $1,806 | $1,860 | $1,916 | $1,973 | $2,033 |
| Misc. Revenue (Meter surcharge) | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 |
| Total | $34,184 | $33,106 | $33,460 | $33,825 | $34,201 | $34,588 |

### Gross Revenue Requirement

Gross secondary 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, and inflation. Revenue requirement projections consist of Operations and Maintenance expenses (O&M),

Debt Service expenses, and Capital expenses. However, the secondary system has no debt now and there is currently no expectation that the secondary system will incur any debt within the planning window. Secondary capital improvement expenses are described below.

- **General Approach to Secondary System Capital Improvements.** The District does not own or maintain the major secondary system conveyance facilities. These facilities are owned and operated by the area irrigation companies (principally Lake Creek Irrigation Company and Timpanogos Irrigation Company). Therefore, most capital expenditures for large, system-level improvements are incurred by the irrigation companies, who then embed and pass the cost to customers (like TCCD) via their annual water delivery assessments. TCSSD simply acts as a retail provider and is only responsible for the local, project-level infrastructure in the distribution system. Therefore, the District does not typically budget for many large secondary capital improvement projects[4]. In this planning window, there is only a single larger capital improvement project identified: the Lake Creek Intake Screen Project.
    - **Lake Creek Intake Screen Project.** This $25,000 project is budgeted for completion in 2020 and consists of the installation of an intake screen at the secondary system's Lake Creek intake structure.

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

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

| Item | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| O&M | $172,014 | $173,969 | $186,778 | $200,404 | $214,855 | $230,137 |
| Metering Project Payback | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 |
| Debt Service | $0 | $0 | $0 | $0 | $0 | $0 |
| Capital Projects (New Irrigation Screen in 2020 and small projects thereafter) | $0 | $20,000 | $5,000 | $5,150 | $5,305 | $5,464 |
| Contribution to Reserve Fund | $2,542 | $4,730 | $4,872 | $5,018 | $5,169 | $5,324 |
| Total | $195,856 | $219,999 | $217,950 | $231,872 | $246,628 | $262,224 |

### Net Rate Revenue Requirement

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

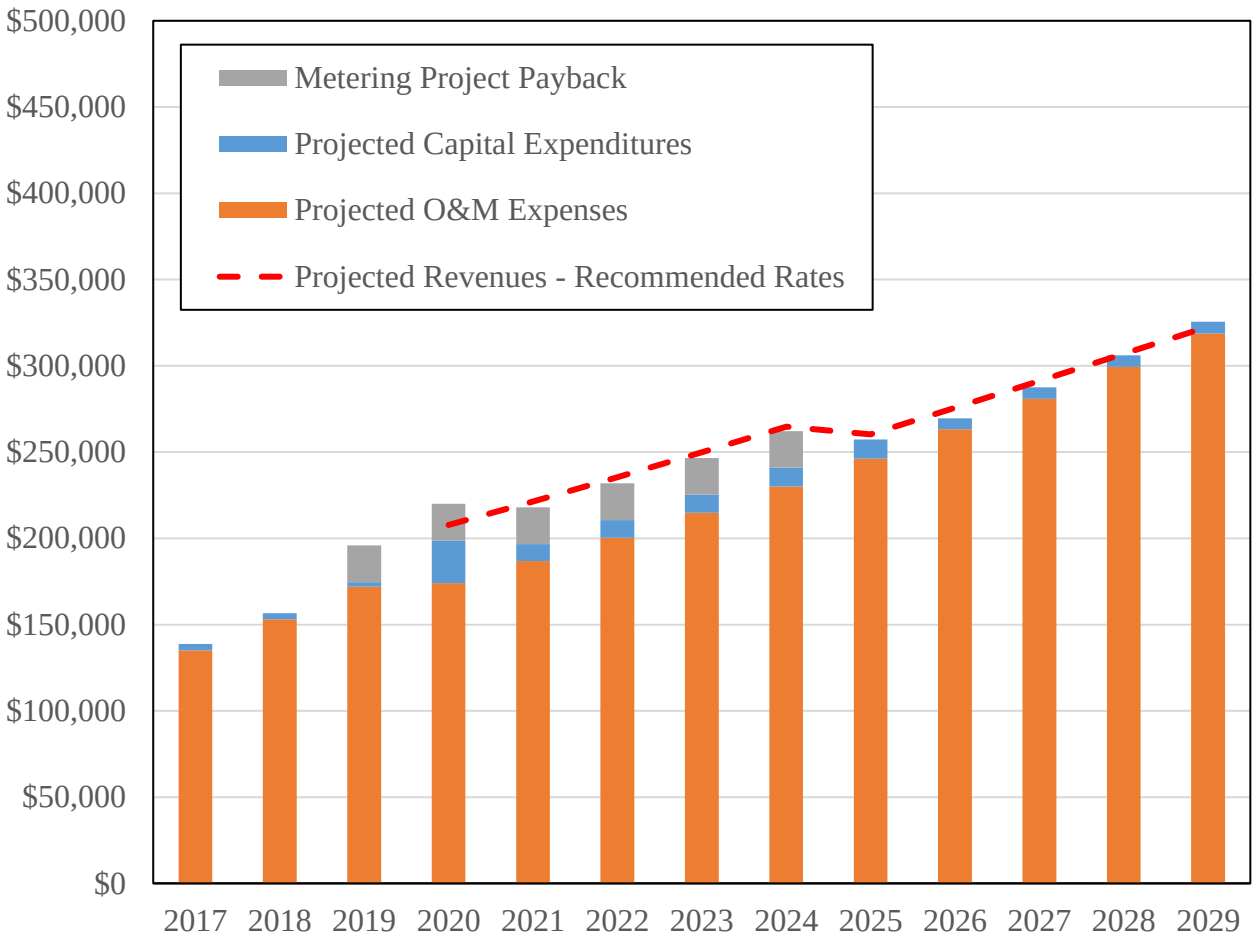
**Table 2-4**
**Projected Net Secondary Rate Revenue Requirement**

| Item | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|
| Total Expenses | $195,856 | $219,999 | $217,950 | $231,872 | $246,628 | $262,224 |
| Total Non-Rate Revenue | ($34,184) | ($33,106) | ($33,460) | ($33,825) | ($34,201) | ($34,588) |
| Total Rate Revenue Requirement | $161,672 | $186,893 | $184,490 | $198,047 | $212,428 | $227,636 |

[4] The reason the District does not currently fund many capital improvement projects is that the District's relatively small amount of local, distribution infrastructure is mostly new and consists only of pipe and meters, which have a long service life. We expect that, in the future, the District will begin to more actively engage in rehabilitation and replacement of even this infrastructure as it ages and reaches the end of its useful service life. However, this has not been identified by the District to significantly begin within the planning window of this rate study. Instead it is assumed that the secondary system will continue to need only one small, yet-to-be-identified project each year for basic repair.

Figure 2-1 aggregates the gross secondary revenue requirement and the projected revenues over the next 10 years.

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




To meet projected needs, it is recommended that rates and rate structure are constructed to match the funding requirements contained in this report. Required increases in rates to meet funding requirements are summarized in Table 2-5.

**Table 2-5**
**Recommended Overall Rate Increases**

| Year | Increase |
|---|---|
| 2020 | n/a |
| 2021 | 0.5% |
| 2022 | 0.5% |
| 2023 | 0.5% |
| 2024 | 0.5% |

As can be seen in the table, after initial adjustments to the overall secondary rate structure, rates can be increased relatively slowly. Projected increases are actually less than the rate of inflation because expected growth is expected to cover much of the cost increase associated with inflation. It will be noted that the table shows "n/a" as the increase in 2020. This is because the new rate structure is different from the ones currently in use and will affect various users quite differently and so the change cannot be described in a single number.

## ALLOCATING COST

The cost of service approach used in this rate study requires that the cost recovered via the user rates be proportionally reflective of the actual cost of serving that user. Therefore, care has been taken to allocate various components of cost to several different customer service characteristics that correlate to the customer classes in the proposed rate design.

### Customer Service Characteristics

Customer service characteristics can be thought of as the collection of services that the customer receives. Specifically, the service characteristics identified for the secondary system include:

1. The average/annual delivery of water and system administration;
2. The peak day delivery of water; and
3. The maintenance of extra water rights and water deliveries.

The first step in allocating cost is to divide all budgeted system costs between the first two categories. This has been done by estimating the percentage of each line item in the District's budget associated with each category. For example, 100% of the District's utility costs, postage cost, and rent costs are allocated to the first characteristic, *average/annual delivery of water and system administration*, because the power bill is relatively unaffected by the peaking characteristics of the system. On the other hand, the District's supplies, tools, and the Lake Creek Intake Screen Project cost categories have been split such that 75% of the cost is allocated to the first service characteristics and the remaining 25% to the second because those costs would all be expected to be less if the additional capacity for peak deliveries did not need to be maintained. Each of the other District costs have been allocated to these service characteristics based on similar logic.

The third category, *maintenance of extra water rights and water deliveries*, is used for the special case of evaluating the cost of severe overage use, for which the District must acquire and maintain additional water rights/shares. This will be discussed in greater detail below in the *Calculating Rates* section.

### Cost Allocation Results

After allocating costs, it has been determined that the rate calculation should target the following in order to maintain the intended cost-of-service approach for secondary rates.

- Approximately 81% of regular rate revenues should be associated with average water usage.
- Approximately 19% of regular rate revenues should be associated with peaking water usage (i.e. monthly usage above the annual average use).

## 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. It has been determined that the rate structure will be based on IBUs (as mentioned above) and be operated on a monthly basis. The rate structure will contain a flat base rate, a volumetric charge, and a standby charge for standby connections. BC&A and the District also

conducted a public open house to receive public comment on draft analysis results and rate study structure. While not all comments resulted in a change to the rate structure or study, all public comments were carefully reviewed and considered prior to finalizing this report

### Base Rate

The District currently utilizes a base monthly charge for most of its secondary rate arrangements. The new rate structure will keep this approach and include a monthly base charge per IBU. Base charges have the advantage of spreading revenues over the entire year (not just during the irrigation season) 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 be volatile depending on weather, economic circumstances, and conservation).

### Volumetric Charges

There are several different types of rate structures that have historically been used for billing volumetric charges to customers. These includes uniform, seasonal, and increasing block rates. Recently, the State of Utah mandated that all culinary rate structures use an increasing block rate (aka tiered rate structure). While this requirement has not yet been extended to secondary water systems, BC&A is aware of proposals being discussed that would likely make this a requirement in the near future. To help the District prepare for this likely future requirement, we have structured the recommended rates contained in this report using an increasing block structure. This will also help the District encourage conservation to meet the State's regional water conservation goal.

The increasing block structure proposed is similar to the historic rate structure in several of the current billing arrangements in the District but does contain some notable differences which are summarize below in Table 2-6.

Figure 2-2, below shows the structure of the volumetric charges visually for convenience in understanding the new rate structure.

**Table 2-6**
**Historic Metered vs Proposed Structure for Volumetric Charges**

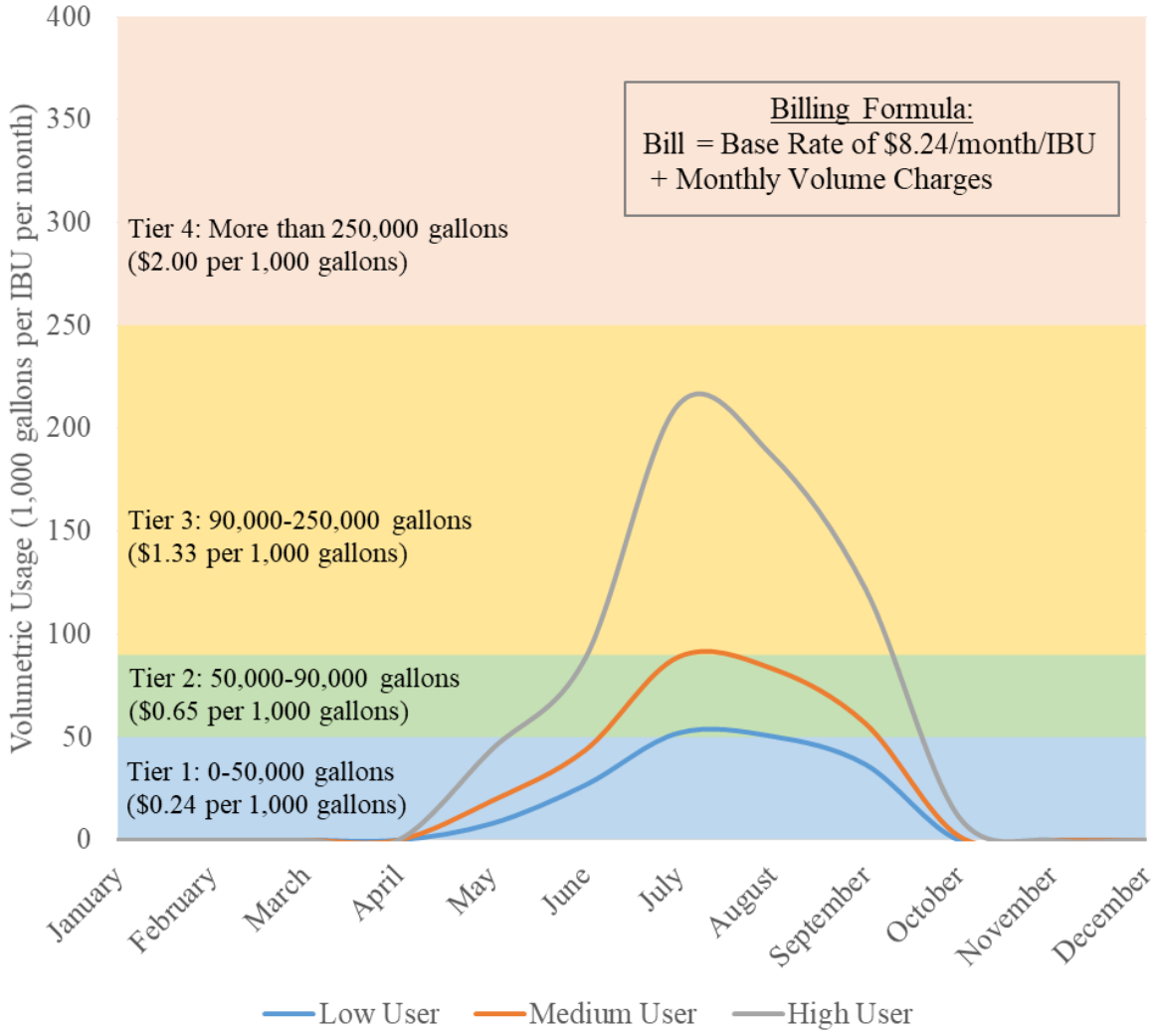
| Historic Volumetric Rate Structure | New Volumetric Rate Structure |
|---|---|
| • Allowance: 50,000 gallons per month per IBU with no volume charges (only requires payment of the monthly base rate).<br>• Overage Charge: Volume charge ($1.25) for every 1,000 gallons above the 50,000 allowance. | • Allowance: none<br>• Tiers: Four tiers with increasing volumetric charges per 1,000 gallons per month.<br>Tier 1: 0 – 50,000 gallons per IBU<br>Tier 2: 50,000 – 90,000 gallons per IBU<br>Tier 3: 90,000 – 250,000 gallons per IBU<br>Tier 4: 250,000+ gallons Per IBU<br>• The Tier 1 bracket was set after significant input from the customers and District personnel. It represents an approximation of the delivered amount of the average water share per IBU[5].<br>• The Tier 2 bracket covers typical peaking of the theoretical customer that uses an annual average of 50,000 gallons per month.<br>• The Tier 3 bracket covers all existing metered use except the highest 5% of users.<br>• The Tier 4 bracket covers extreme overages. It is expected that up to 5% of users (based on historic metered data) will hit Tier 4 use in one or two months each year. |

The changes in volumetric rate structure are proposed to address the following challenges:

- The existing 50,000 gallon monthly allowance does not fairly distribute costs based on cost of service. Low water users end up paying for water they don't use or benefit from. Additionally, the historic allowance provides no incentive for conservation of water below 50,000 gallons per month per IBU.
- The current single overage tier does not recover the actual cost incurred by the District to acquire, maintain, and deliver overage water, especially for the highest users.

[5] The average water share per IBU across the District yields 1 acre-ft of water in a good water year at the point of diversion. Some astute comments were received during the open house asking if this amount would be better represented as 54,000 gallons per month (1 acre-ft/6 months). While the math associated with this comment is accurate, it does not account for system losses. All water systems have losses between the points of diversion and the location of use by the end user. After considering average losses in the District's system, 50,000 gallons was selected as a good approximation of full delivery per IBU. It is probably a little higher than actual full delivery with losses, but is also convenient as it is the amount used in the historic rate structure for metered customers. Also, it should be noted that 50,000 gallons per month, while a typical target delivery amount per IBU at this time, is not a guaranteed amount. Water availability dictates the amount of water available and is affected by longer or shorter irrigation seasons, snowpack, runoff rates, and system losses, as well as other factors.

**Figure 2-2**
**Proposed Structure for Volumetric Charges**




## Standby Charge

Standby connections are those lots for which water rights/shares have been dedicated to the District, but on which no connection has been completed. This situation commonly occurs when a land developer subdivides a property, installs infrastructure in the streets, and dedicates the requisite water rights/shares to the District, but then takes time (often years) selling lots to builders/homeowners.

In some of the existing rate arrangements, a standby fee is charged for standby connections. In other areas, a standby fee is not currently charged. This is a problem for the District because the District still pays delivery assessments for the water to the irrigation companies and maintains the system in the street, but does not recover these costs from the users benefiting from these services (i.e. the standby lots).

The new rate structure will include a standby fee that should be charged to all standby connections.

### Separate Assessment Credit

In the past, the District has entered into agreements with a few customers to deliver water based on water shares owned by the lot owner (i.e. shares not turned into the District). This practice has since been prohibited in District policy but the few customers previously under such an arrangement have been grandfathered in to allow this to continue for them. Because they own their own water shares, they also pay separate water share assessments to the irrigation companies (i.e. they get a bill from the irrigation company for the share assessments and also get a bill from the District for delivery instead of having all the cost rolled into the District bill). To recognize that these customers pay water share assessments separately (instead of the District paying them on their behalf), the rate structure will include a credit which is equal to the water share assessment component of the District rates. This credit is given on a per IBU basis for all IBUs that fall under the previous commitment by the District. These users are not allowed to add more water under this arrangement and no new users can add water under this arrangement either.

It should be noted that the credit will usually not cover the assessments paid separately by these customers to the irrigation companies, especially if the water in question is of a more expensive type (i.e. M&I, Class D). Instead, the effect of the credit is that these customers do not pay toward irrigation company delivery assessments twice, but they still pay the full remaining cost (maintenance, capital projects, postage, overhead, etc.).

### Other Considerations

It should be noted that the District has a small number of agricultural "ag" customers which TCSSD shares with the irrigation companies. These customers are on water turn set by the irrigation companies and therefore do not affect the system the same way that other customers do. The liability for overall water usage is also on the irrigation companies, not the District. The District is currently investigating how to best bill these customers. One solution may be that the District simply charge a small delivery charge to these customers with all other aspects of billing handled by the irrigation companies. It is expected that the effect of the resolution to this question on the secondary rate study will be negligible.

## CALCULATING RATES

After the rate structure was designed and accepted by the District, rates have been calculated to recover the projected net secondary rate revenue requirement (summarized in Table 2-4) in accordance with the goals of this rate study, including the aforementioned cost-of-service requirements. Highlighted calculation methods and rationale are listed as follows and 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 2023.

- **Base Rate, Standby, and Tier 1 and 2 Volume Charges.** After other rate components were set, these rates were adjusted relative to each other to (1) provide the proper rate revenue to meet the revenue requirements and (2) meet the target cost of service split between average and peak water use as described above in the *Cost Allocation Results* section. The rates calculated and shown below in Table 2-7 produce in the rate model an 81%/19% split between revenue collection associated with average use (Base Rates, Standby Rates, and Tier 1 Rates) and revenue collection associated with peak use (Tier 2 Rates). This matches the cost of service target split within the margin of error for this study.
- **Tier 3 and 4 Volume Charges.** With respect to available water, a limited amount of overage water use can be provided based on miscellaneous water rights owned by the District or due to low water use of other customers. However, the extreme overages of Tier 4 may not be met in that manner. Therefore, the Tier 4 overage charge has been set at the annualized cost per

1,000 gallons required of the District to go out into the market and acquire additional CUP M&I water shares (which are readily available) and pay the delivery assessments for that water. Tier 3 is the average of Tier 2 and Tier 4 costs under the assumption that half of Tier 3 water can be covered using existing rights and half will come from additional water secured by the District.

- **Standby Charges.** Standby charges have been set to recover the costs of water delivery assessments and a minimal amount of the cost of maintaining and operating the system in working order while the standby lot has not yet connected.
- **Annual Increases.** Rates for the next 5 years have been set to meet revenue requirements with even 0.5% annual increases base on the analysis presented previously.

**Table 2-7**
**Recommended Secondary Rates per IBU**

| Rate Component | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Base Rate Per Month per IBU | $8.24 | $8.28 | $8.32 | $8.36 | $8.40 |
| Tier 1 Volume Charge (0 - 50 kGal per Month per IBU) | $0.24 | $0.24 | $0.24 | $0.24 | $0.24 |
| Tier 2 Volume Charge (50 - 90 kGal per Month per IBU) | $0.65 | $0.65 | $0.65 | $0.65 | $0.65 |
| Tier 3 Volume Charge (90 - 250 kGal per Month per IBU) | $1.33 | $1.34 | $1.35 | $1.36 | $1.37 |
| Tier 4 Volume Charge (>250 kGal per Month per IBU) | $2.00 | $2.01 | $2.02 | $2.03 | $2.04 |
| Separate Assessment Credit per Month per IBU | -$2.22 | -$2.29 | -$2.36 | -$2.43 | -$2.50 |
| Standby Charge per Month per IBU | $6.67 | $6.70 | $6.73 | $6.76 | $6.79 |

IBU = Irrigation Billing Unit
All rate components shown above are on a "per IBU" basis.
The standby charge is the charge for customers that have turned in water but have not yet connected to the system.
Separate Assessment Credit is only available to those IBUs grandfathered in to the arrangement where the customer pays his own water assessments to the irrigation company and the District delivers his water. See *Designing the Rate Structure*, above.

The effect of adopting these rates on existing customers is illustrated below in Table 2-8. Table 2-8 shows how the new 2020 rate structure will affect different users. As shown in the table, the change is different depending on whether the user is accustomed to paying a metered rate for overage charges or if the user was not previously metered. Some users will see a decrease, some will stay roughly the same, and some (principally the high users) will see an increase.

**Table 2-8**
**Previous vs Proposed Billing Comparison (Monthly per IBU)**

| Customer Description | Historic Rates (metered) | Historic Rates (non-metered) | New 2019 Rates (metered) |
|---|---|---|---|
| Average Bill - Low User | $15.26 | $15.00 | $11.80 |
| Average Bill - Medium User | $23.24 | $15.00 | $16.82 |
| Average Bill - High User | $57.56 | $15.00 | $49.68 |

Notes: Average bill is a 12 month average (customers pay the base rate throughout the off season). Low, Medium, and High user descriptions are the 25th, 50th, and 85th percentile user, respectively.

## SECONDARY 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 TCSSD 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 secondary water system.
2. **Continue Monitoring System Costs and Revenues.** After the implementation of any major change to a rate structure (such as this), we would suggest TCSSD monitor customer responses and demand patterns to ensure the rate study projects are applicable to actual future observations.
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. Also, because this rate structure is different from the ones used historically in the District for the secondary system, it is especially important to evaluate the rates after adoption. Therefore, in addition to monitoring system costs and revenues, it is recommended that the District evaluate whether this rate study needs to be updated after the first year or two of use. After that, we recommend this rate study be updated every 3 to 5 years. Doing so will ensure rates are as up to date as possible and will also keep the District ahead of expiring rate schedules if the District continues to adopt 5-year rate schedules.

# APPENDIX A:
# CALCULATIONS

**Table A-1**
**Twin Creeks Special Service District**
**Secondary System Historic and Projected Revenue Requirement**

Assumed Annual Rate of Inflation: 3.0%

| | Actual | Actual | Estimated | Budgeted | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** |
| *O&M* | *$135,079* | *$152,978* | *$193,314* | *$195,269* | *$208,078* | *$221,704* | *$236,155* | *$251,437* | *$246,245* | *$263,173* | *$280,905* | *$299,420* | *$318,692* |
| Utilities | $1,013 | $996 | $1,036 | $1,140 | $1,252 | $1,372 | $1,500 | $1,636 | $1,780 | $1,931 | $2,090 | $2,257 | $2,430 |
| Rent (Metering Tower Expenses) | $0 | $0 | $3,972 | $366 | $377 | $388 | $400 | $412 | $424 | $437 | $450 | $464 | $478 |
| Phones | $66 | $22 | $22 | $22 | $23 | $23 | $24 | $25 | $26 | $26 | $27 | $28 | $29 |
| Overhead/Management | $4,320 | $12,177 | $15,580 | $16,296 | $16,785 | $17,288 | $17,807 | $18,341 | $18,892 | $19,458 | $20,042 | $20,643 | $21,263 |
| Legal Fees | $139 | $910 | $716 | $1,000 | $1,098 | $1,204 | $1,316 | $1,435 | $1,561 | $1,694 | $1,833 | $1,979 | $2,132 |
| Twin Creeks Water (Water Delivery Assessments) | $68,865 | $73,261 | $84,572 | $86,174 | $94,657 | $103,730 | $113,399 | $123,667 | $134,529 | $145,977 | $158,000 | $170,578 | $183,690 |
| Bank Charges | $135 | $173 | $198 | $228 | $250 | $274 | $300 | $327 | $356 | $386 | $418 | $451 | $486 |
| Materials | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Repairs and Maintenance | $257 | $167 | $626 | $720 | $791 | $867 | $947 | $1,033 | $1,124 | $1,220 | $1,320 | $1,425 | $1,535 |
| Supplies | $1,326 | $4,511 | $2,683 | $3,101 | $3,406 | $3,733 | $4,081 | $4,450 | $4,841 | $5,253 | $5,686 | $6,138 | $6,610 |
| Postage | $16 | $1 | $24 | $48 | $53 | $58 | $63 | $69 | $75 | $81 | $88 | $95 | $102 |
| Tools | $165 | $64 | $36 | $110 | $121 | $132 | $145 | $158 | $172 | $186 | $202 | $218 | $234 |
| Services | $42,365 | $43,675 | $45,026 | $46,377 | $47,768 | $49,201 | $50,677 | $52,197 | $53,763 | $55,376 | $57,038 | $58,749 | $60,511 |
| Insurance-Liability | $458 | $432 | $584 | $940 | $1,033 | $1,131 | $1,237 | $1,349 | $1,467 | $1,592 | $1,723 | $1,861 | $2,004 |
| Estimated Irrigation System Maintenance | $15,952 | $16,445 | $16,938 | $17,447 | $19,164 | $21,001 | $22,958 | $25,037 | $27,236 | $29,554 | $31,988 | $34,534 | $37,189 |
| Metering Project Payback | $0 | $0 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $0 | $0 | $0 | $0 | $0 |
| Miscellaneous Expenses | $0 | $143 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| *Debt Service* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* |
| Debt Service Fees | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Interest Expense | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| *Capital Expenditures* | *$3,636* | *$3,636* | *$2,542* | *$24,730* | *$9,872* | *$10,168* | *$10,473* | *$10,787* | *$11,111* | *$6,361* | *$6,552* | *$6,749* | *$6,951* |
| Land | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Easements | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Equipment | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Vehicles | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Capital Projects (New Irrigation Screen in 2020) | $0 | $0 | $0 | $20,000 | $5,000 | $5,150 | $5,305 | $5,464 | $5,628 | $5,796 | $5,970 | $6,149 | $6,334 |
| Contribution to Reserve Fund | $3,636 | $3,636 | $2,542 | $4,730 | $4,872 | $5,018 | $5,169 | $5,324 | $5,483 | $565 | $582 | $599 | $617 |
| **Total Expenses** | **$138,715** | **$156,614** | **$195,856** | **$219,999** | **$217,950** | **$231,872** | **$246,628** | **$262,224** | **$257,356** | **$269,534** | **$287,457** | **$306,169** | **$325,643** |

**Table A-2**
**Twin Creeks Special Service District**
**Historic and Projected Revenue (Projections Assume No Change to Existing Rate Structure)**

Assumed Annual Rate of Inflation: 3.0%

| | Actual | Actual | Estimated | Budgeted | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** |
| *Operations* | *$126,550* | *$99,906* | *$72,584* | *$108,706* | *$115,692* | *$122,874* | *$130,226* | *$137,716* | *$145,310* | *$152,974* | *$160,668* | *$168,354* | *$175,992* |
| Water Revenue (Water Rate Revenue) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Water Reserve Revenue (Reservation Payments) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Billy Bethers Water System Revenue (Rates) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Sewer Reserve Revenue | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Sewer Monthly Revenue (Sewer Rate Revenue) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Bond Administration Fees | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Inspection Fees | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| M&I Fees | $0 | $10,150 | $10,000 | $10,000 | $10,300 | $10,609 | $10,927 | $11,255 | $11,593 | $11,941 | $12,299 | $12,668 | $13,048 |
| Penalty Revenue | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Secondary Irrigation (Secondary Rate Revenue) | $125,789 | $88,155 | $59,700 | $96,900 | $103,532 | $110,349 | $117,325 | $124,428 | $131,624 | $138,877 | $146,148 | $153,398 | $160,588 |
| Interest Revenue | $761 | $1,601 | $2,884 | $1,806 | $1,860 | $1,916 | $1,973 | $2,033 | $2,094 | $2,156 | $2,221 | $2,288 | $2,356 |
| Other? | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| *Expansion and Replacement* | *$0* | *$0* | *$21,300* | *$21,300* | *$21,300* | *$21,300* | *$21,300* | *$21,300* | *$0* | *$0* | *$0* | *$0* | *$0* |
| Sewer Impact Fees | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Water Impact Fees | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Federal and State Grants | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Water Connection Revenue | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Misc. Revenue (Meter surcharge) | $0 | $0 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $21,300 | $0 | $0 | $0 | $0 | $0 |
| Gain (Loss) on Sale of Assets | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Other? | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| *Bond Special Assessment Revenue* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* | *$0* |
| Sewer Bond Revenue 2004-1 (special assessment) | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| SAB 2015 Red Ledges Bond Assessments (special assess | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| 2004A Water Bond Rev (Billy Bethers are special assessr | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| Other? | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **Total Revenue** | **$126,550** | **$99,906** | **$93,884** | **$130,006** | **$136,992** | **$144,174** | **$151,526** | **$159,016** | **$145,310** | **$152,974** | **$160,668** | **$168,354** | **$175,992** |

**Table A-3**
**Twin Creeks Special Service District**
**Existing and Projected Customers by Type**

| | Actual | Actual | Estimated | Budgeted | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Customer Base** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** |
| Metered IBUs | | | 600 | 645 | 692 | 740 | 789 | 840 | 891 | 943 | 995 | 1,047 | 1,098 |
| Standby IBUs | | | 543 | 582 | 623 | 664 | 707 | 750 | 794 | 837 | 881 | 924 | 967 |
| Separate Assessment Credit IBUs | | | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| Unmetered IBUs | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total IBUs** | | | **1,191** | **1,276** | **1,363** | **1,453** | **1,544** | **1,638** | **1,733** | **1,828** | **1,924** | **2,019** | **2,114** |

**Table A-4**
**Twin Creeks Special Service District**
**Historic and Projected Expenses and Revenues**

| | Actual | Actual | Estimated | Budgeted | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Item** | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** |
| Total Expenses | $138,715 | $156,614 | $195,856 | $219,999 | $217,950 | $231,872 | $246,628 | $262,224 | $257,356 | $269,534 | $287,457 | $306,169 | $325,643 |
| Total Non-Rate Revenue | $761 | $11,752 | $34,184 | $33,106 | $33,460 | $33,825 | $34,201 | $34,588 | $13,686 | $14,097 | $14,520 | $14,955 | $15,404 |
| *Scenario 1: Do Nothing and Keep Existing Rates* | | | | | | | | | | | | | |
| Total Rate Revenues | $125,789 | $88,155 | $59,700 | $96,900 | $103,532 | $110,349 | $117,325 | $124,428 | $131,624 | $138,877 | $146,148 | $153,398 | $160,588 |
| **Total Revenues** | $126,550 | $99,906 | $93,884 | $130,006 | $136,992 | $144,174 | $151,526 | $159,016 | $145,310 | $152,974 | $160,668 | $168,354 | $175,992 |
| **Revenue Surplus (Shortfall)** | **-$12,165** | **-$56,708** | **-$101,972** | **-$89,993** | **-$80,958** | **-$87,697** | **-$95,102** | **-$103,208** | **-$112,046** | **-$116,561** | **-$126,789** | **-$137,815** | **-$149,651** |
| *Scenario 2: Meet Revenue Need with Initial and Annual Increases* | | | | | | | | | | | | | |
| Total Rate Revenues | | | | $174,666 | $187,885 | $201,560 | $215,640 | $230,071 | $246,579 | $261,614 | $276,796 | $292,047 | $307,287 |
| **Total Revenues** | | | | $207,772 | $221,345 | $235,385 | $249,841 | $264,659 | $260,265 | $275,711 | $291,316 | $307,002 | $322,691 |
| **Revenue Surplus (Shortfall)** | | | | **-$12,227** | **$3,396** | **$3,513** | **$3,213** | **$2,435** | **$2,909** | **$6,177** | **$3,859** | **$834** | **-$2,952** |

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