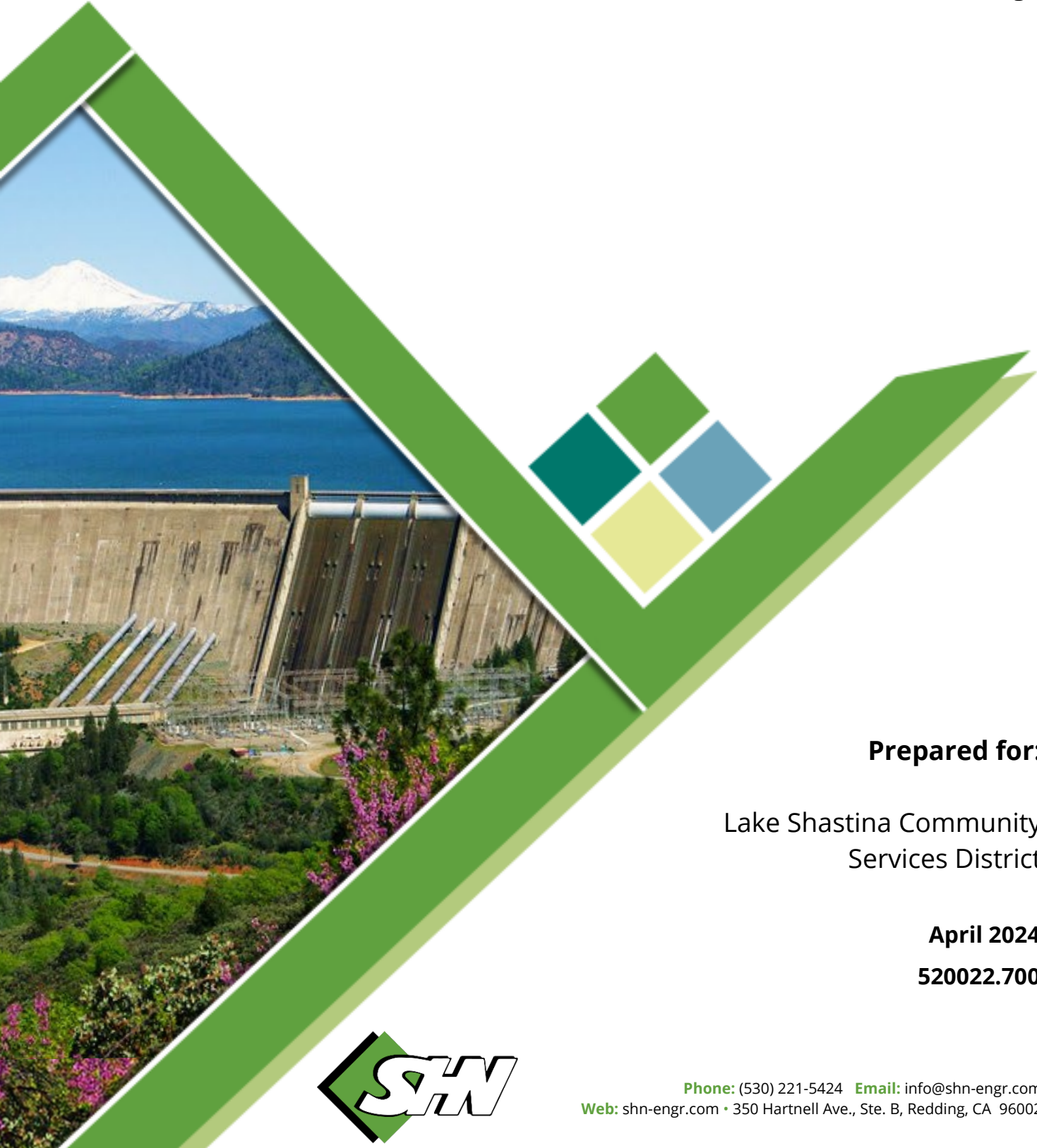


# Final Water Rate Study



**Prepared for:**

Lake Shastina Community  
Services District

**April 2024**

**520022.700**



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Reference: 520022.700

April 24, 2024

Rick Thompson  
Interim General Manager  
Lake Shastina Community Services District  
16320 Everhart Drive  
Weed, California 96904

**Subject: 2023 LSCSD Water Rate Study—Final Report**

Dear Rick Thompson,

Please find enclosed the final water rate study for your review and comment.

Respectfully,

**SHN**

A handwritten signature in blue ink that reads "Richard Culp".

Richard Culp, PE  
Senior Engineer

Enclosures: Final Water Rate Study

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# Final Water Rate Study

Prepared for:

**Lake Shastina Community Services District**



---

Richard Culp, PE

Prepared by:



350 Hartnell Avenue, Suite B  
Redding, CA 96002-1875  
530-221-5424

April 2024

QA/QC: AHR\_\_  
Reference: 520022.700

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## Appendix 1. Tables



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7. Summary of Revenue Requirements
8. Recommended Rates
9. Connection Fee Summary



# Abbreviations and Acronyms

<b>Term</b>	<b>Definition</b>
CIP	capital improvement plan
COLA	cost-of-living adjustment
EDU	equivalent dwelling unit
LSCSD	Lake Shastina Community Services District
MHI	median household income
O&M	operations and maintenance
PER	Preliminary Engineering Report
SDC	system development charge
SWRCB	State Water Resources Control Board



# 1.0 Introduction

## 1.1 Background

The Lake Shastina Community Services District (LSCSD) serves the unincorporated community of Lake Shastina, which is located just north of the City of Weed, in the central portion of Siskiyou County, California. The LSCSD provides water, wastewater, fire, and police services to the Lake Shastina community. The LSCSD has not conducted a water rate study since 2003 and is preparing for upgrades to the water system. Current water rates cover only minimal operational expenses. A water rate adjustment is needed to meet revenue requirements, which include increases to operations and maintenance (O&M) costs, capital upgrades, and additions to reserves.

A review of water connection fees is also needed, and this is addressed separately in Section 5.0. The remainder of Section 1.0 and all of Sections 2.0 through 4.0 are focused on rates.

A rate study was last conducted in 2003 by James G. Bray Civil Engineering.

## 1.2 Objectives

Several objectives should be considered in the development of a financial plan and in the design of rates. The major objectives of the study were:

- Ensure revenue sufficiency to meet the O&M and capital needs of the LSCSD's community services.
- Plan for revenue stability to provide for adequate operating and capital reserves and the overall financial health of the LSCSD.
- Provide fairness and equity in the development of a system of user charges.
- Minimize rate impacts to reduce financial hardship on user categories and individual members of those categories.
- Maintain simplicity for ease of administration and implementation, as well as customer understanding and acceptance.
- Growth pays a fair and equitable share to connect to the system.

Some of these objectives are interrelated. This being the case, judgment plays a role in the final design of rate structures and rates.

## 1.3 Legal Requirements: Proposition 218

Water and wastewater (sewer) rates imposed by local government agencies are subject to Proposition 218, which added Article 13D, Section 6, to the California Constitution, and which was passed by the voters of California in 1996. The main requirement is that rates and fees are reasonable and proportional to the cost of providing services. Additional requirements include the following:

- Revenues derived from rates shall not exceed the funds required to provide the property-related service.



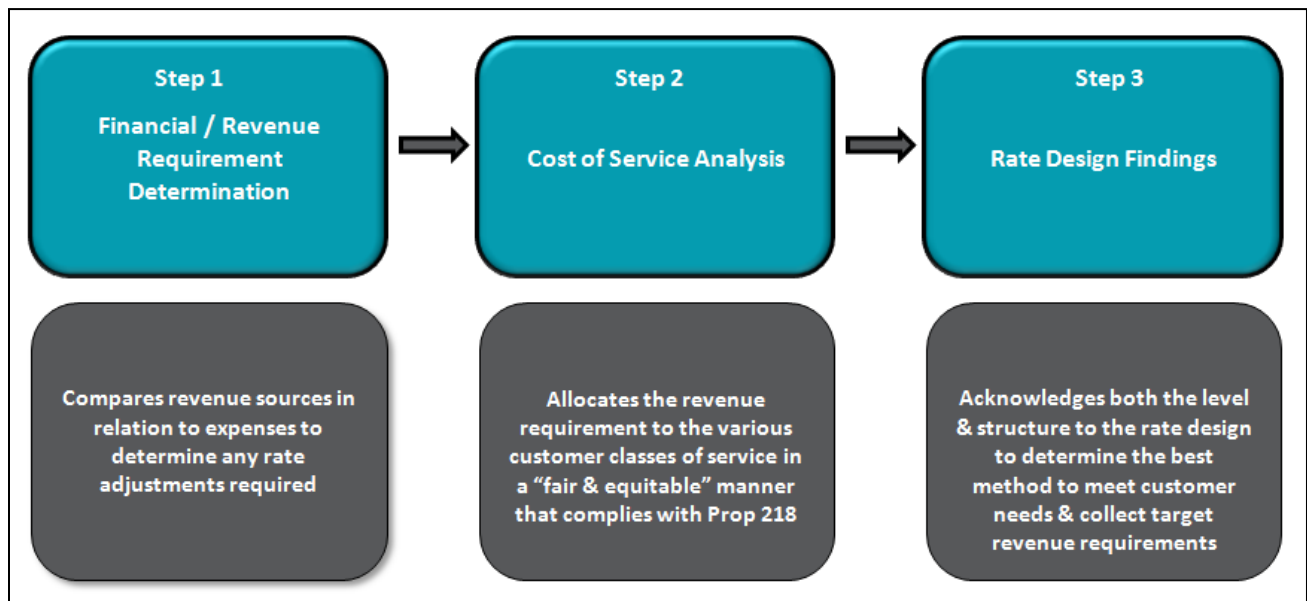
- Revenues derived from rates may not be used for any purpose other than that for which the rate was imposed.
- No charge may be imposed for a service unless that service was actually used by, or immediately available to, the owner of the property.
- Agencies must provide written notice of proposed changes to rates via mail to parcel owners at least 45 days prior to the public hearing, at which time the agency considers all written protests against the rate change.

## 1.4 Rate Making Methodology

The standard of practice for water and wastewater rate making methodology is, respectively, *Manual M1, Principles of Water Rates, Fees, and Charges*, by the American Water Works Association, and *Manual of Practice 27, Financing and Charges for Wastewater Systems*, by the Water Environment Federation. Both of these documents use the same general approach (see Figure 1):

- Determination of revenue requirements
- Cost of service analysis
- Rate design and calculations
- Rate adoption

Rate making is a trial-and-error process that includes weighing various factors, including whether to raise rates gradually over a period of years instead of all at once when significant increases are needed. In general, the approach used in this rate study is to determine the rates needed each fiscal year and let the agency determine if a stepped rate increase is a more appropriate approach.



**Figure 1.** Steps used in developing wastewater rates.



## 2.0 Revenue Requirements

### 2.1 General

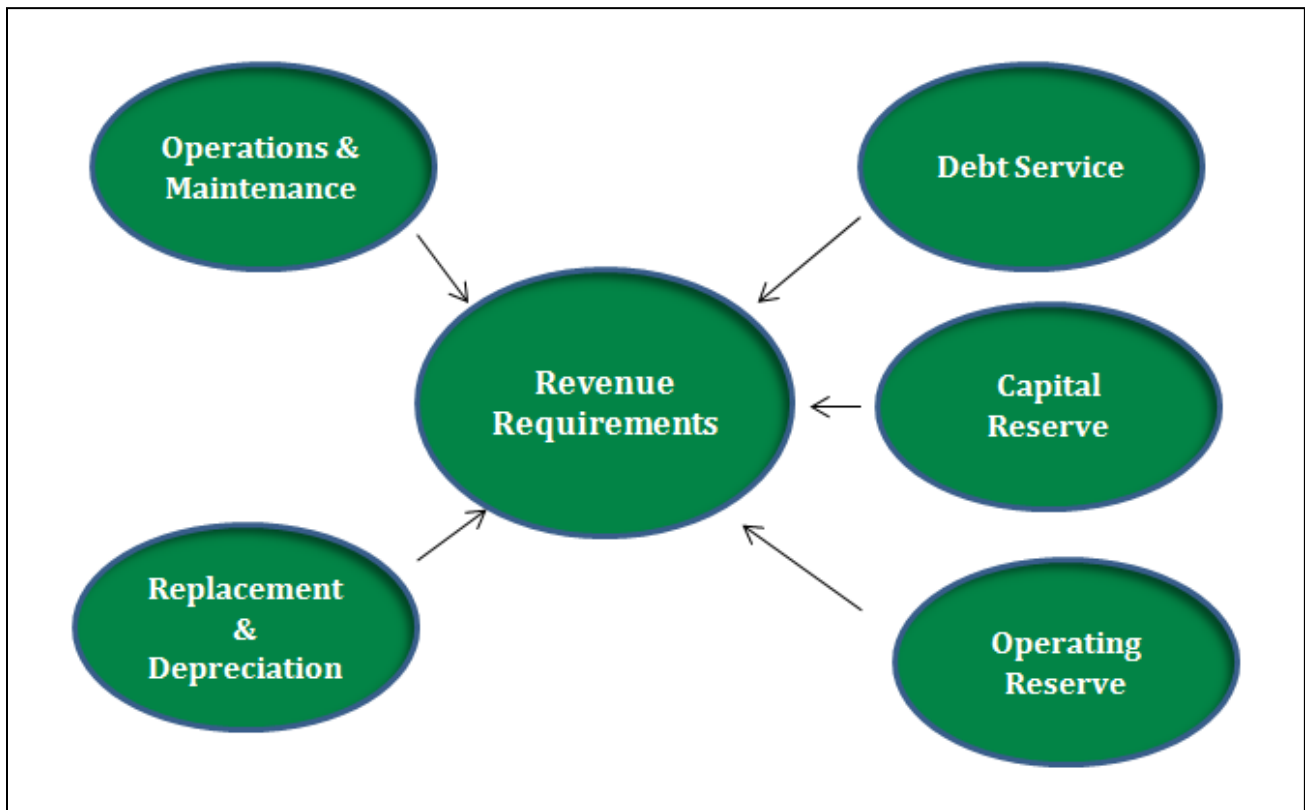
Revenue requirements for a water utility are comprised of five general categories (see Figure 2):

- Operations and maintenance (O&M)
- Replacement and depreciation
- Debt service
- Operating reserve
- Capital reserve

Current LSCSD water department reserves (\$640,000 as of June 30, 2023) are not allocated between these various reserve categories as listed above. It is anticipated that the current reserves will be used for current year capital projects (Jack Rabbit Road waterline replacement) and makeup funding should rate increases be staggered, creating shortfalls in the first 2 to 3 years (see Section 4.0 for how existing reserves are anticipated to be spent). For these reasons, all specific reserve amounts are assumed zero at the beginning of the first year of the proposed rate increase.

The following sections describe these categories in greater detail and include the numbers used for the LSCSD.

Growth projections are an important part in determining any related increases in costs, such as O&M. Recent growth has been very minimal with only a few houses added annually. As a conservative measure, no growth is assumed for the 5-year study period for this rate analysis.



**Figure 2.** Components of revenue requirements for a water utility.



## 2.2 Operations and Maintenance

The operations and maintenance (O&M) category consists of all the expenditures associated with the day-to-day operations of pumping, storage, distribution, and metering of water. These costs include staff salaries and wages, benefits, office costs, tools, other utility uses (power, telephone), supplies, training, vehicle fuel and maintenance, insurance, administrative expenses, equipment repair, and so on. Each utility defines these costs in each fiscal year's budget.

For proposed water rate adjustments to be properly analyzed, projections of the O&M budget for the next 5 years are required. O&M cost projections are based on four main factors:

- inflation;
- additional adjustments to budget line items as directed by LSCSD;
- additional O&M costs due to growth; and
- adjustments to O&M costs due to major capital improvements to the system, such as treatment facility upgrades.

Annual inflation for all O&M line items has been assumed to be 3 percent. The LSCSD has provided recommendations for additional modifications to budget line items. Due to the low rate of growth within the LSCSD service area, additional O&M costs due to additional customers have been assumed to be negligible and not accounted for within this study. The proposed capital improvement projects are not expected to add significant additional O&M costs, which have therefore not been accounted for within this study.

Table 1 presents the LSCSD's O&M budget for the current fiscal year as well as the projected budgets for the next 5 years.

## 2.3 Replacement and Depreciation

Replacement of short-lived assets is an important part of maintaining a water utility. Short-lived assets include such items as pumps, motors, telemetry and electrical controls, vehicles, and so on, generally equipment with useful lives of less than 15-20 years. Short-lived assets do not include expenses for major rehabilitation, capacity expansion, or other major upgrades, which are addressed under capital reserves.

The costs associated with replacement of short-lived assets are generally addressed in one of two ways for rate studies, either as a replacement reserve or as depreciation. While most accounting principles utilize depreciation, the State Water Resources Control Board (SWRCB) guidelines for small utilities recommends that replacement costs should be based, at a minimum, on a 5-year planning cycle and that an annualized amount should be placed in the replacement account. The SWRCB guidelines further recommends that in lieu of the 5-year replacement plan, a community may deposit an amount in the replacement fund equal to the sum of the straight-line depreciation of the short-lived asset.

Short-lived assets were taken from LSCSD's asset list and are shown in Table 2. Given the completeness of the records, we recommend the LSCSD set aside an amount equal to the straight-line depreciation of each short-lived asset, regardless of whether the asset is beyond its useful life. The annual depreciation amount is determined by dividing the water department's portion of the purchase price (or current



replacement price, if significantly different) by the number of years of expected life. Table 2 shows the annual dollar amount required to be set aside based on a straight-line depreciation.

## 2.4 Operating Reserve

Another reserve in addition to the replacement reserve is the operating reserve. This reserve fund is used to provide for ongoing operational costs when revenues do not match costs. This condition can occur under a variety of scenarios either from lower revenue or increased costs, or both, including the following:

- Late payment or non-payment of bills
- Unanticipated increases in electrical or other utility costs
- Unanticipated increases in labor costs
- Unanticipated compliance costs

Many utilities set aside a percentage of operational costs and put these funds into the operating reserve. Once the operating reserve fund is fully established, then adjustments can be made in the set aside amounts. Many water utilities in California normally operate with reserves of between 10% and 50% of annual revenue requirements. We are recommending that LSCSD annually set aside 5% of the Water Department O&M portion of the revenue requirements for the next several years with a goal of reaching 50% of O&M or whatever goal the LSCSD may set.

If the LSCSD chooses a gradual increase in rates, current reserves would be needed to make up shortfalls in revenue compared with the revenue requirements. Reserve spending for various rate structures is presented in Section 4.

Table 3 presents the revenue requirements for the operating reserve for the next 5 fiscal years.

## 2.5 Capital Reserve

Capital improvement projects are those projects requiring significant funding and have significant longevity, such as new wells, treatment upgrades, pipeline repair/replacement, or meter upgrade/replacement. Project funding can come from a variety of sources, including capital reserves, grants, and/or loans.

The capital reserves are those monies set aside by the utility to pay for capital projects. The up-front amount contributed to a project by the utility can vary significantly depending on a number of factors, including requirements from outside funding sources. For the LSCSD, we have assumed that 10% of the cost of upcoming projects is from capital reserves.

The starting point of determining the annual contributions to the capital reserve is the project schedule provided in the utility's capital improvements plan (CIP). The LSCSD does not have a detailed CIP schedule. Based on the conceptual schedule for the proposed projects provided in the *Drinking Water System Improvements Draft Preliminary Engineering Report* (PER) by SHN (December 2023) and discussion with LSCSD staff, a more defined CIP schedule has been developed and is presented in Table 4.



Table 4 also lists the anticipated project costs for the proposed capital improvements projects, which were provided in the 2023 PER, which listed a number of needed projects totaling approximately \$4.39 million. Additional technical information about each proposed project is available in the 2023 PER.

For this study, the LSCSD initial contribution to each project was assumed as 10% of the project cost with loans paying the remainder. The annual set-aside amounts for each project are presented in Table 5.

## 2.6 Debt Service

This item accounts for any debt payments made on outstanding loans that the LSCSD has under its water department. This item also includes new debt payments for loans received for new capital projects. New loan payments are based on various factors, including project schedule, loan principal amounts, interest rates, and other loan terms. Project schedule is usually provided by an approved CIP.

The LSCSD currently has no loan payments. The schedule for loan payments for proposed projects are based on the schedule discussed in Section 2.5. Typically, payments begin after construction is completed.

It is anticipated that much of the funding for the proposed CIP projects will be in the form of loans, with a 10 percent LSCSD contribution taken from the capital reserve fund. The following assumptions were made regarding debt service:

- Debt payments will begin the fiscal year after completion of construction.
- Loan amounts are assumed to be 90% of expected project costs as presented in Section 2.4.
- Loan terms are assumed to be at 3.5% for 40 years, based on current rates for U.S. Department of Agriculture Rural Development loans.
- Loan covenants are assumed to require collection of 125% of payments in order to maintain a reserve.

Table 6 summarizes the debt service payments for the assumed scenario and loan terms for the next 5 fiscal years. Once project loan principal amounts are determined and loan terms finalized, rates should be reevaluated against the updated debt service payments and adjusted if necessary.

## 2.7 Summary of Revenue Requirements

A summary of the revenue requirements for each fiscal year over the next 5 years is presented in Table 7.



## 3.0 Cost of Service Allocation

### 3.1 General

The revenue requirements described in Section 2 must be allocated to the customers in a fair and equitable manner that is acceptable to the ratepayers.

### 3.2 Proposition 218 Requirements

Proposition 218 requires that the cost of service be allocated to classes in a fair and equitable manner, based on the cost of providing the service to each customer class. Further, one class of customers cannot be subsidized by overcharging another class or classes of customers.

### 3.3 Customer Classes

#### 3.3.1 Existing Customer Classes

The LSCSD has two water customer classes: residential/commercial and standby. Being a residential community, the Lake Shastina community consists mostly of single-family residences. Residential accounts are per dwelling unit, which is either a single-family residence or an individual townhouse. Commercial accounts include any non-residential accounts but are considered the same as residential accounts for the purposes of water rates. Standby accounts are those unimproved lots that are within the service area of the LSCSD.

The LSCSD currently has 1,285 active residential/commercial accounts and 2,529 standby accounts for a total of 3,814 accounts.

#### 3.3.2 Cost Allocation Methodology

Water production, treatment, storage, distribution, and metering are generally dependent on two main factors: 1) fixed costs of monthly operations, and 2) metered usage. There are various methods of allocating costs that depend on a number of factors, including complexity of the water production and treatment process, types of customers present, and utility preference. For the LSCSD, we propose a simple approach based on the following:

- residential water constitutes most of the metered usage in the system; and
- commercial water from the small number of commercial customers is similar to residential usage.

As is currently done, residential and commercial customers are charged a minimum fixed rate and a variable rate based on metered usage records. Standby account rates will remain unchanged. Additional discussion is presented in Section 4.0.

#### 3.3.3 Proposed Customer Classes

Based on discussion with LSCSD staff, no change to the customer classes is proposed.



## 4.0 Rate Structure Analysis

### 4.1 Current Rate Structure

The water rate structure for the LSCSD is based on Ordinance 1-09 (2009), which provides for a fixed minimum charge and a variable metered usage with the following rates and billing frequencies:

- Each residential and commercial account, whether a single-family residence or a townhome/apartment, is charged a fixed quarterly rate of \$49.50, billed quarterly.
- Each residential and commercial account is charged a variable usage rate of \$0.52 per 1,000 gallons of metered usage, billed quarterly.
- Standby accounts are charged a fixed annual rate of \$40.00 billed semi-annually.

As stated in the previous section, residential accounts include all single-family and townhouse residences. Commercial accounts are all non-residential accounts. Standby accounts are those undeveloped lots that are required to connect to the water system upon development.

### 4.2 Method

LSCSD breaks down the rates between fixed costs and variable costs. Fixed operating costs do not change with the amount of water consumed by customers while variable costs do depend on the amount of metered water usage.

We recommend the LSCSD continue with the existing simple minimum charge (fixed rate) and metered usage rate, since it is fair and equitable in accordance with Proposition 218 requirements.

Growth in the LSCSD service area has been very little and is expected to continue to remain at only a few houses added annually. As a conservative measure, no growth is assumed for the 5-year study period for this rate analysis.

### 4.3 Proposed Rate Structure

- In developing the rate structure to meet the annual revenue requirements, it was apparent that the LSCSD currently does not have sufficient rate revenue to meet current O&M requirements, and it does not have sufficient revenue to meet capital project and future debt service requirements. This shortfall requires a substantial and immediate increase in rates. Table 8 presents the recommended rates to cover all costs with a significant increase in the first year and COLA increases each year thereafter. The recommended rates will provide sufficient funding for all required reserves and loan servicing for capital projects.

The proposed rate increase does not include an increase in the standby fees, which are governed by California Government Code Sections 54984 and 61124 and would be subject to voter approval under the Proposition 218 process. Water rates can be adjusted by the LSCSD Board following Proposition 218 procedures unless a majority of rate payers provide written protest.



## 4.4 Affordability

The recently completed (December 2018) Medial Household Income Survey, by the Rural Community Assistance Corporation (RCAC) determined that the median household income (MHI) for the LSCSD service area was \$50,693.50. Common guidelines for water rates indicate that these rates should not exceed about 2 percent of MHI, and California SWRCB guidelines often require a minimum rate of 1.5% of MHI to receive funding. Annual amounts for 1.5% and 2% of the MHI are \$760.40 and \$1,013.87 , respectively, or \$63.36 and \$84.49 monthly.

## 5.0 Connection Fees

Connection fees are those fees paid when an undeveloped property gets developed and a connection to the water system is made. These fees are governed by California Government Code Sections 66012-66014. The connection fee is comprised of three components: 1) Installation cost of the service connection, 2) Reimbursement System Development Charge (SDC), and 3) Improvement SDC. Descriptions of each component are provided in the following paragraphs. Table 9 shows the calculated values for each component.

### 5.1 Service Connection Installation

When a parcel is developed, the local water and sewer utility generally installs the service connection from the main pipe in the adjacent street to the meter at the property line within the public right-of-way. The developer of the parcel reimburses the utility for the cost of installing the service connection and meter. A cost of \$3,500 per connection has been estimated for this study.

### 5.2 Reimbursement System Development Charge

The Reimbursement SDC is defined as buying into an equity position in a utility. This reimburses existing rate payers for the cost of the available capacity in the existing system, which was paid for by the existing rate payers. For the LSCSD system, the simplest and most appropriate way to calculate the reimbursement SDC is to divide the value of the entire utility by the number of users which yields a dollar per connection. In general, the LSCSD water system has been built to accommodate the development of all standby accounts.

The LSCSD maintains a Fixed Asset Summary which shows the current value of fixed assets, including the water system. As of June 30, 2023, the water system value was \$3,157,240. Dividing that value by a total of 3,814 connections (1,285 active connections plus 2,529 standby accounts) gives a value per connection (or equivalent dwelling unit [EDU]) of \$828.

### 5.3 Improvement System Development Charge

The Improvement SDC is the share of future connections for near-term proposed project costs that will benefit those future users. The projects are identified in the 2023 "Water System Improvements Draft Preliminary Engineering Report" (PER) by SHN and shown earlier in Table 4. Since 1) all the proposed projects will benefit existing users, 2) future growth for the planning horizon of 5 years is assumed to be zero, and 3) no future capacity improvements are currently needed, the Improvement SDC has been set to zero dollars per connection.



## 5.4 Recommended Connection Fee

The calculated connection fee is \$4,328 and is the sum of the values for the service connection installation, Reimbursement SDC, and Improvement SDC, as described in the previous sections and as shown in Table 9.





# Tables **1**

Eureka, CA | Redding, CA | Willits, CA | Fort Bragg, CA | Coos Bay, OR | Klamath Falls, OR

