DRAFT REPORT | JANUARY 2022

2020 Urban Water Management Plan

PREPARED FOR

Olivehurst Public Utility District

PREPARED BY

WEST YOST
Water. Engineered.

Urban Water Management Plan

Prepared for

Olivehurst Public Utility District

Project No. 749-60-21-02

Project Manager: Elizabeth Drayer, PE _____ Date

QA/QC Review: James Connell, PE _____ Date

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AC	Asbestos Cement
Act	Urban Water Management Planning Act
AF	Acre-Feet
AWWA	American Water Works Association
BE	Bookman-Edmonston Engineering

bgs	Below Ground Surface
CASGEM	California Statewide Groundwater Elevation Monitoring
ccf	One Hundred Cubic Feet
CCR	Consumer Confidence Report
CDP	Census Designated Places
CID	Cordua Irrigation District
CII	Commercial Industrial Institutional
CIMIS	California Irrigation Management Information System
CWC	California Water Code
District	Olivehurst Public Utility District
DMMs	Demand Management Measures
DRA	Drought Risk Assessment
DWR	Department of Water Resources
DWR *Methodologies*	DWR *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (2016)
ET_o	Evapotranspiration
GHG	Greenhouse Gas
GPCD	Gallons Per Capita Per Day
gpm	Gallons Per Minute
GSA	Groundwater Sustainability Agency
GSC	Groundwater Sustainability Committee
GSP	Groundwater Sustainability Plan
IRWMP	Integrated Regional Water Management Plan
kWh	Kilowatt Hour
MGD	Million Gallons per Day
MG	Million Gallons
NAICS	North American Industry Classification System
PG&E	Pacific Gas & Electric
PVC	Polyvinyl Chloride
RUWMP	Regional Urban Water Management Plan
SB X7-7	Senate's Seventh Extraordinary Session of 2009 / California Senate Bill X7-7 / Water Conservation Act of 2009
SCADA	Supervisory Control and Data Acquisition
SGMA	Sustainable Groundwater Management Act of 2014
UAFW	Unaccounted for Water
ULFT	Ultra-Low Flush Toilets
UWMP	Urban Water Management Plan
WSCP	Water Shortage Contingency Plan
WUE	Water Use Efficiency
YWA	Yuba Water Agency

INTRODUCTION

An Urban Water Management Plan (UWMP) helps water suppliers assess the availability and reliability of their water supplies and current and projected water use to help ensure reliable water service under different conditions. This water supply planning is especially critical for California currently, as climate change is resulting in changes in rainfall and snowfall, which in turn impact water supply availability. Development is occurring throughout the State resulting in increased needs for reliable water supplies.

The Urban Water Management Planning Act (Act) requires water suppliers providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually to develop UWMPs every five years. UWMPs evaluate conditions for the next 20 years, so these regular updates ensure continued long-term planning.

In 2020, the Olivehurst Public Utility District (District) provided water to 7,434 customer connections (includes single family and multi-family residential, commercial/institutional, industrial and landscape irrigation connections) and supplied 1,382 million gallons (MG) of water (equivalent to 4,241 AF) to its customers. Therefore, based on the number of connections and volume of water served, the District is required to prepare a UWMP. The District's last UWMP, the 2015 UWMP, was adopted by the District's Board of Directors on May 18, 2017.

This Executive Summary serves as a Lay Description of the District's 2020 UWMP, as required by California Water Code §10630.5.

CALIFORNIA WATER CODE REQUIREMENTS

The California Water Code documents specific requirements for California water suppliers. The Act is included in the California Water Code and specifies the required elements of a UWMP, including discussing the District's water system and facilities, calculating how much water its customers use (i.e., water demand) and how much water the District can supply, and detailing how the District would respond during a drought or other water supply shortage. Also, a UWMP must describe what specific coordination steps were taken to prepare, review, and adopt the plan.

The Act has been revised over the years. The Water Conservation Act of 2009 (California Senate Bill X7-7 [SB X7-7]) required retail water agencies to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. In 2020, retail agencies are required to report on their compliance with SB X7-7.

The 2012 to 2016 drought led to further revisions to the Act under the 2018 Water Conservation Legislation to improve water supply planning for long-term reliability and resilience to drought and climate change. Changes presented by the legislation include:

- Five Consecutive Dry Year Water Reliability Assessment: Analyze water supply reliability for five consecutive dry years over the planning period of this UWMP (see Chapter 7).
- Drought Risk Assessment: Assess water supply reliability from 2021 to 2025 assuming that the next five years are dry years (see Chapter 7).

- Seismic Risk: Identify the seismic risk to the water supplier's facilities and have a plan to address the identified risks; the region's Local Hazard Mitigation Plan may address this requirement (see Chapter 8 and Appendix J).
- Energy Use Information: Include reporting on the amount of electricity used to obtain, treat, and distribute water if data are available (see Chapter 6).
- Water Shortage Contingency Plan: Update the water supplier's plan to include an annual process for assessing potential gaps between planned supply and demands; conform with the State's standard water shortage levels (including a shortage level greater than 50 percent) for consistent messaging and reporting; and provide water shortage responses that are locally appropriate (see Chapter 8 and Appendix J).
- Lay Description: Provide a lay description of the findings of the UWMP; this Executive Summary serves as the Lay Description for the District's 2020 UWMP.

The major components of the District's 2020 UWMP, including its findings, are summarized below.

DISTRICT WATER SERVICE AREA AND WATER SYSTEM FACILITIES

The District is located in California's Central Valley, in Yuba County, approximately 30 to 38 miles north of the City of Sacramento. Founded in 1948, the District currently provides potable water, wastewater, and recreation services for the communities of Olivehurst and Plumas Lake, and fire protection services for the community of Olivehurst (fire protection services for most of the community of Plumas Lake are provided by Linda Fire Protection District).

The District operates two separate water pumping and distribution systems for the Olivehurst and Plumas Lake communities.

The District's Olivehurst system is provided with water supply from six groundwater wells. The number of wells used at one time depends on the season. During the spring and summer, there are four active wells with two wells on standby. During the fall and winter, there are two active wells with four wells on standby. The Olivehurst system also has two storage tanks, two hydropneumatic tanks, eight filter vessels, three treatment facilities for the removal of iron and manganese, and a distribution system made up of steel, asbestos cement (AC) and C-900 polyvinyl chloride (PVC) pipelines. The Olivehurst system was constructed in 1951 and is currently undergoing improvements to increase efficiency. In the District's Capital Improvement Plan, the highest priority item is replacing the Olivehurst system's aging pipelines.

The District's Plumas Lake system was constructed between 2003 and 2007, so the system is relatively new and currently operates more efficiently than the Olivehurst system. The Plumas Lake system includes three active wells, one standby well, one storage tank, two treatment plants, and C-900 PVC distribution pipelines.

DISTRICT SERVICE AREA POPULATION AND WATER USE

The District currently serves a population of approximately 25,697. The District's Olivehurst service area is a mostly urbanized, well-established community, and little growth in the area is anticipated. Development in the District's Plumas Lake service area experienced significant growth from 2004 through 2010, and then slowed due to the economic downturn. However, in recent years development has

rebounded, particularly since 2018, although development slowed somewhat during 2020 due to the pandemic. Growth in the Plumas Lake service area is expected to continue with several new development projects currently in progress and planned for the future.

Thorough and accurate accounting of current and future water demands is critical for the District's planning efforts. To continue delivering safe and reliable drinking water, the District must know how much water its customers currently use and how much they expect to use in the future. Future water use projections have been developed based on population projections for the District's service area and current water use trends. Total water use within the District's service area was 1,382 MG in 2020 and is projected to increase to 2,693 MG by 2045.

The District's historical, current and projected water use is discussed in Chapter 4.

DISTRICT WATER SUPPLIES

Groundwater is currently the only source of potable water supply for the District. Groundwater is pumped from the South Yuba Groundwater Subbasin from six active wells in the Olivehurst system and three active wells in the Plumas Lake system.

The Yuba Subbasins (the North Yuba Subbasin and the South Yuba Subbasin) have a long history of successful groundwater management, and the water budget analysis conducted as part of the December 2019 Yuba Subbasins Groundwater Sustainability Plan estimates sustainable groundwater conditions into the future. The District's current groundwater supply is constrained by a filter capacity of 16,600 gallons per minute (gpm) (8,725 MG/year). However, new developments within the District's service area are required to install new wells and treatment facilities as necessary, with maintenance and ownership transferred to the District. Since water delivery and treatment infrastructure will be developed and funded by developers, it is assumed that adequate water service will be available for planned growth in the District's service area.

Regional groundwater quality in the Yuba Subbasins is considered good to excellent for municipal, domestic, and agricultural uses and does not have a significant adverse impact on the beneficial uses of groundwater in the subbasins. There is naturally occurring arsenic, iron, and manganese in some areas that may have concentrations that exceed the associated drinking water thresholds, although such occurrences are limited.[1]

Water delivered by the District to its customers meets all applicable drinking water standards. The District has several iron and manganese treatment plants within its water systems (three in the Olivehurst system and two in the Plumas Lake system) to address iron and manganese levels that exceed the respective secondary maximum contaminant levels.

Additional discussion on the District's water supplies is provided in Chapter 6 of this plan.

[1] Yuba Subbasins Groundwater Management Plan: A Groundwater Sustainability Plan, December 2019.

CONSERVATION TARGET COMPLIANCE

In accordance with the Water Conservation Act of 2009 (SB X7-7), the District must meet a gross per capita water use target of 167 gallons per person per day by 2020 for its water service area. Based on the District's water service area population and water use in 2020, the District met its water conservation target with a gross per capita water use of 147 gallons per person per day.

Additional discussion regarding the District's compliance with SB X7-7 is provided in Chapter 5 of this plan.

WATER SERVICE RELIABILITY

UWMP guidelines ask water suppliers to evaluate their water service reliability by examining the impact of drought on their water supplies and comparing those reduced supplies to water demands. Specifically, agencies should calculate their water supplies during a single dry year and five consecutive dry years using historical records.

The South Yuba Subbasin is not expected to become overdrafted in the future based on projected groundwater pumpage and surface water deliveries. Unlike many medium- and high-priority basins and subbasins managed under Groundwater Sustainability Plans, groundwater pumping in the Yuba Subbasins does not exceed the sustainable yield of the subbasins, and the average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions. Therefore, the South Yuba Subbasin is expected to be reliable in all hydrologic conditions over the 25-year planning horizon of this 2020 UWMP.

The District will continue to invest in water system improvements and continues to support water conservation and the most efficient uses of water in the District's service area.

Additional discussion on the District's water supply reliability is provided in Chapter 7 of this plan.

WATER SHORTAGE CONTINGENCY PLAN

A Water Shortage Contingency Plan (WSCP) describes an agency's plan for preparing and responding to water shortages. The District updated its WSCP to include its process for assessing potential gaps between planned water supply and demands for the current year and the next potentially dry year. It aligned its water service area's water shortage levels with the State's standard stages for consistent messaging and reporting and planned for locally appropriate water shortage responses. The WSCP may be used for foreseeable and unforeseeable events.

The updated WSCP, which is described in Chapter 8 and provided in Appendix J of this plan, is adopted concurrently with this 2020 UWMP by separate resolution so that it may be updated as necessary to adapt to changing conditions.

UWMP PREPARATION, REVIEW, AND ADOPTION

While preparing its UWMP, the District notified other stakeholders (including Yuba County, the Yuba Water Agency and the general public) of its preparation, its availability for review, and the public hearing prior to adoption. The District encouraged community participation in the development of the 2020 UWMP using newspaper advertisements and web-based communication. These public notices included the time and place of the public hearing, as well as the location where the plan would be available for public inspection.

The public hearing provided an opportunity for District water users and the general public to become familiar with the 2020 UWMP and ask questions about the District's water supply, its continuing plans for providing a reliable and safe water supply, and its plans to address potential water shortages. Following the public hearing, the District Board of Directors adopted the 2020 UWMP on _____, 2022. A copy of the adopted Plan was provided to the Department of Water Resources and is available on the District's website.

Additional discussion on the District's 2020 UWMP preparation and adoption is provided in Chapters 2 and 10 of this plan.

CHAPTER 1
Introduction

This chapter provides an introduction and overview of Olivehurst Public Utility District (District) 2020 Urban Water Management Plan (UWMP) including the importance and extent of the District's water management planning efforts, changes since the preparation of the District's 2015 UWMP, and the organization of the District's 2020 UWMP. This plan has been prepared jointly by District staff and West Yost.

1.1 INTRODUCTION

The Urban Water Management Planning Act (Act) was originally established by Assembly Bill (AB) 797 on September 21, 1983. Passage of the Act was recognition by state legislators that water is a limited resource and a declaration that efficient water use and conservation would be actively pursued throughout the state. The primary objective of the Act is to direct "urban water suppliers" to develop a UWMP which provides a framework for long-term water supply planning, and documents how urban water suppliers are carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future water demands. A copy of the current version of the Act, as incorporated in Sections 10610 through 10656 of the California Water Code, is provided in Appendix A of this plan.

1.2 IMPORTANCE AND EXTENT OF DISTRICT'S WATER MANAGEMENT PLANNING EFFORTS

The purpose of the UWMP is to provide a planning tool for the District for developing and delivering municipal water supplies to the District's water service area. This UWMP provides the District a water management action plan for guidance as water conditions change and management conditions arise.

Further, changes to the Act since 2015 require updates to the District's previously updated and adopted Water Shortage Contingency Plan (WSCP). The WSCP is part of this UWMP and provides a plan for response to various water supply shortage conditions.

The District has had a long history of providing clean and reliable water to its customers. The District's UWMP is a comprehensive guide towards planning for a safe and adequate water supply.

1.3 CHANGES FROM 2015 UWMP

The Urban Water Management Planning Act has been modified over the years in response to the State's water shortages, droughts and other factors. A significant amendment was made in 2009, after the 2007 to 2009 drought, and as a result of the Governor's call for a statewide 20 percent reduction in urban water use by the year 2020. This was the Water Conservation Act of 2009, also known as Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009 (SB X7-7). This act required agencies to establish water use targets for 2015 and 2020 that would result in statewide water savings of 20 percent by 2020. The 2014 to 2017 drought has led to further amendments to the California Water Code to improve on water supply planning for long-term reliability and resilience to drought and climate change.

Summarized below are the major additions and changes to the California Water Code (CWC) since the District's 2015 UWMP was prepared:

- **Five Consecutive Dry-Year Water Reliability Assessment [CWC §10635(a)].** The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation. This statutory change requires the urban water supplier to analyze the reliability of its water supplies to meet its water use over an extended drought period. This requirement is addressed in the water use assessment presented in Chapter 4; the water supply analysis presented in Chapter 6; and the water reliability determinations in Chapter 7 of this plan.
- **Drought Risk Assessment [CWC §10635(b)].** The California Legislature created a new UWMP requirement for drought planning because of the significant duration of recent California droughts and the predictions about hydrologic variability attributable to climate change. The Drought Risk Assessment (DRA) requires the urban water supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years. The DRA discussed in Chapter 7 is based on the water use information in Chapter 4; the water supply analysis is presented in Chapter 6; and the water reliability determinations are discussed in Chapter 7 of this plan.
- **Seismic Risk [CWC §10632.5].** The Water Code now requires urban water suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan. Water supply infrastructure planning is correlated with the regional hazard mitigation plan associated with the urban water supplier. The District's seismic risk is discussed in Chapter 8 of this plan.
- **Energy Use Information [CWC §10631.2].** The Water Code now requires Suppliers to include readily obtainable information on estimated amounts of energy for their water supply extraction, treatment, distribution, storage, conveyance, and other water uses. The reporting of this information was voluntary in 2015. The District's energy use information is provided in Chapter 6 of this plan.
- **Water Loss Reporting for Five Years [CWC §10608.34].** The Water Code added the requirement to include the past five years of water loss audit reports as part of this UWMP. The District's water loss reporting is provided in Chapter 4 of this plan.
- **Water Shortage Contingency Plan [CWC §10632].** In 2018, the Legislature modified the UWMP laws to require a WSCP with specific elements. The WSCP is a document that provides the urban water supplier with an action plan for a drought or catastrophic water supply shortage. Although the new requirements are more prescriptive than previous versions, many of these elements have long been included in WSCPs, other sections of UWMPs, or as part of the urban water supplier's standard procedures and response actions. Many of these actions were implemented by the urban water suppliers during the last drought to successfully meet changing local water supply challenges. The WSCP is used by DWR, the State Water Board, and the Legislature in addressing extreme drought conditions or statewide calamities that impact water supply availability. The District's WSCP is presented in Appendix J of this plan.

- **Groundwater Supplies Coordination [CWC §10631(b)(4)].** In 2014, the Legislature enacted the Sustainable Groundwater Management Act to address groundwater conditions throughout California. Water Code now requires 2020 UWMPs to be consistent with Groundwater Sustainability Plans in areas where those plans have been completed by Groundwater Sustainability Agencies. This requirement is addressed in Chapter 6 of this plan.
- **Lay Description [CWC §10630.5].** The Legislature included a new statutory requirement for the urban water supplier to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. This section of the UWMP could be viewed as a synopsis for new staff, new governing members, customers, and the media, and it can ensure a consistent representation of the Supplier's detailed analysis. This requirement is addressed in the Executive Summary of this plan.
- **Water Loss Management [CWC §10608.34(a) (1)].** The Legislature included a requirement for urban water suppliers to report on their plan to meet the water loss performance standards in their 2020 UWMPs. This requirement is addressed in the Demand Management Measures (DMM) presented in Chapter 9 of this plan.

1.4 PLAN ORGANIZATION

This plan contains the appropriate sections and tables required per CWC Division 6, Part 2.6 (Urban Water Management Planning Act), included in Appendix A of this plan, and has been prepared based on guidance provided by the California Department of Water Resources (DWR) in their "2020 Urban Water Management Plans Guidebook for Urban Water Suppliers" (DWR Guidebook).

This plan is organized into the following chapters:

- Chapter 1: Introduction
- Chapter 2: Plan Preparation
- Chapter 3: System Description
- Chapter 4: Water Use Characterization
- Chapter 5: SB X7-7 Baselines, Targets and 2020 Compliance
- Chapter 6: Water Supply Characterization
- Chapter 7: Water Service Reliability and Drought Risk Assessment
- Chapter 8: Water Shortage Contingency Plan
- Chapter 9: Demand Management Measures
- Chapter 10: Plan Adoption, Submittal and Implementation

This plan also contains the following appendices of supplemental information and data related to the District's 2020 UWMP:

- Appendix A: Legislative Requirements
- Appendix B: DWR 2020 Urban Water Management Plan Tables
- Appendix C: DWR 2020 Urban Water Management Plan Checklist
- Appendix D: Agency and Public Notices
- Appendix E: Population Information
- Appendix F: AWWA Water Loss Audits
- Appendix G: SB X7-7 Compliance Form
- Appendix H: Groundwater Information
- Appendix I: 2020 Consumer Confidence Report
- Appendix J: Water Shortage Contingency Plan
- Appendix K: Water Conservation Ordinance
- Appendix L: Water Rate Schedule
- Appendix M: UWMP Adoption Resolution

Furthermore, this plan contains all the tables recommended in the DWR Guidebook, both embedded into the UWMP chapters where appropriate and included in Appendix B.

DWR's Urban Water Management Plan Checklist, as provided in the DWR Guidebook, has been completed by West Yost to demonstrate the plan's compliance with applicable requirements. A copy of the completed checklist is included in Appendix C.

CHAPTER 2
Plan Preparation

This chapter describes the preparation of the District's 2020 UWMP and WSCP, including the basis for the preparation of the plan, individual or regional planning, fiscal or calendar year reporting, units of measure, and plan coordination and outreach.

2.1 BASIS FOR PREPARING A PLAN

The Act requires every "urban water supplier" to prepare and adopt a UWMP, to periodically review its UWMP at least once every five years and make any amendments or changes which are indicated by the review. An "urban water supplier" is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet (AF) of water annually.

The District manages two Public Water Systems: the Olivehurst system (CA5810003) and the Plumas Lake system (CA5805001). As shown in Table 2-1, in 2020 the District provided water to 7,434 customer connections (includes single family and multi-family residential, commercial/institutional, industrial and landscape irrigation connections) and supplied 1,382 million gallons (MG) of water (equivalent to 4,241 AF) to its customers. Therefore, based on the number of connections and volume of water served, the District is required to prepare a UWMP. The District's last UWMP, the 2015 UWMP, was adopted by the District's Board of Directors on May 18, 2017.

Table 2-1. Public Water Systems (DWR Table 2-1 Retail)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA5810003	Olivehurst System	4,765	802
CA5805001	Plumas Lake System	2,669	580
	TOTAL	7,434	1,382
NOTES: Volumes are in million gallons (MG).			

2.2 REGIONAL PLANNING

As described in Section 2.3 below, the District has prepared this 2020 UWMP on an individual reporting basis, not as part of a regional planning process.

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

This plan has been prepared on an individual reporting basis covering only the District's service area, see Table 2-2. The District does not participate in a regional alliance, and it has not prepared a Regional Urban Water Management Plan (RUWMP). As described below in Section 2.5, the District has notified and coordinated planning and compliance with appropriate regional agencies and constituents.

Table 2-2. Plan Identification (DWR Table 2-2)

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance *if applicable*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

2.4 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

The District is a water retailer.

The District's 2020 UWMP has been prepared on a calendar year basis, with the calendar year starting on January 1 and ending on December 31 of each year. Water use and planning data for the entire calendar year of 2020 has been included.

The water volumes in this plan are reported in units of million gallons (MG).

The District's reporting methods for this plan are summarized in Table 2-3.

Table 2-3. Supplier Identification (DWR Table 2-3)

Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
Units of measure used in UWMP *	
Unit	MG
**** Units of measure (AF, CCF, MG)*** *must remain consistent throughout the UWMP as reported in Table 2-3.*	

2.5 COORDINATION AND OUTREACH

This section includes a discussion of the District's inter-agency coordination and coordination with the general public. The UWMP Act requires the District to coordinate the preparation of its UWMP with other appropriate agencies and all departments within the District, including other water suppliers that share a common source, water management agencies, and relevant public agencies. These agencies, as well as the public, participated in the coordination and preparation of this plan and are summarized below.

2.5.1 Wholesale and Retail Coordination

The District does not rely upon a wholesale agency for water supply. Therefore, Table 2-4 is intentionally blank.

Table 2-4. Water Supplier Information Exchange (DWR Table 2-4 Retail)

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name

2.5.2 Coordination with Other Agencies and the Community

The District actively encourages community participation in water management activities and specific water-related projects. The District's public participation program includes both active and passive means of obtaining input from the community, such as mailings, public meetings, and web-based communication. The District's website describes on-going projects and posts announcements of planned rate increases to fund these water projects.

As part of the 2020 UWMP update, the District facilitated a public review period. Public noticing, pursuant to Section 6066 of the Government Code, was conducted prior to commencement of a public comment period. Public hearing notices are included in Appendix D of this plan. During the public comment period, the Draft UWMP was made available on the District's website and at the District office.

The District also coordinated the preparation of this plan with several agencies, including the following:

- Yuba County
- Yuba Water Agency
- Linda County Water District
- Marysville Joint Unified School District
- Plumas Lake School District

The public hearings provided an opportunity for all District water users and the general public to become familiar with this plan and ask questions about the District's water supply, in addition to the District's continuing plans for providing a reliable, safe, high-quality water supply.

2.5.3 Notice to Cities and Counties

CWC Section 10621 (b) requires agencies to notify the cities and counties to which they serve water at least 60 days in advance of the public hearing that the plan is being updated and reviewed. In November 2021, a notice of preparation was sent to the county and other stakeholders, to inform them of the UWMP update process and schedule, and to solicit input for the 2020 UWMP. The notifications to the county and other agencies, the public hearing notifications, and the public hearing and adoption are discussed in Chapter 10 of this report.

CHAPTER 3
System Description

This chapter provides a description of the District's water system and service area. This includes a description of the water system facilities, climate, population, and housing within the District's service area.

3.1 GENERAL DESCRIPTION

The District is located in Yuba County, approximately 30 to 38 miles north of the City of Sacramento. Founded in 1948, the District currently provides potable water, wastewater, and recreation services for the communities of Olivehurst and Plumas Lake, and fire protection services for the community of Olivehurst (fire protection services for most of the community of Plumas Lake are provided by Linda Fire Protection District). The District operates two separate water pumping and distribution systems for the Olivehurst and Plumas Lake communities.

The District's Olivehurst system is provided with water supply from six groundwater wells. The number of wells used at one time depends on the season. During the spring and summer, there are four active wells with two wells on standby. During the fall and winter, there are two active wells with four wells on standby. The District also has two storage tanks, two hydropneumatic tanks, eight filter vessels, three treatment facilities for the removal of iron and manganese, and a distribution system made up of steel, asbestos cement (AC) and C-900 polyvinyl chloride (PVC) pipelines. The Olivehurst system was constructed in 1951 and is currently undergoing improvements to increase efficiency. In the District's Capital Improvement Plan, the highest priority item is replacing the Olivehurst system's aging pipelines.

The District's Plumas Lake system was constructed between 2003 and 2007, so the system is relatively new and currently operates more efficiently than the Olivehurst system. The Plumas Lake system includes three active wells, one standby well, one storage tank, two treatment plants, and C-900 PVC distribution pipelines.

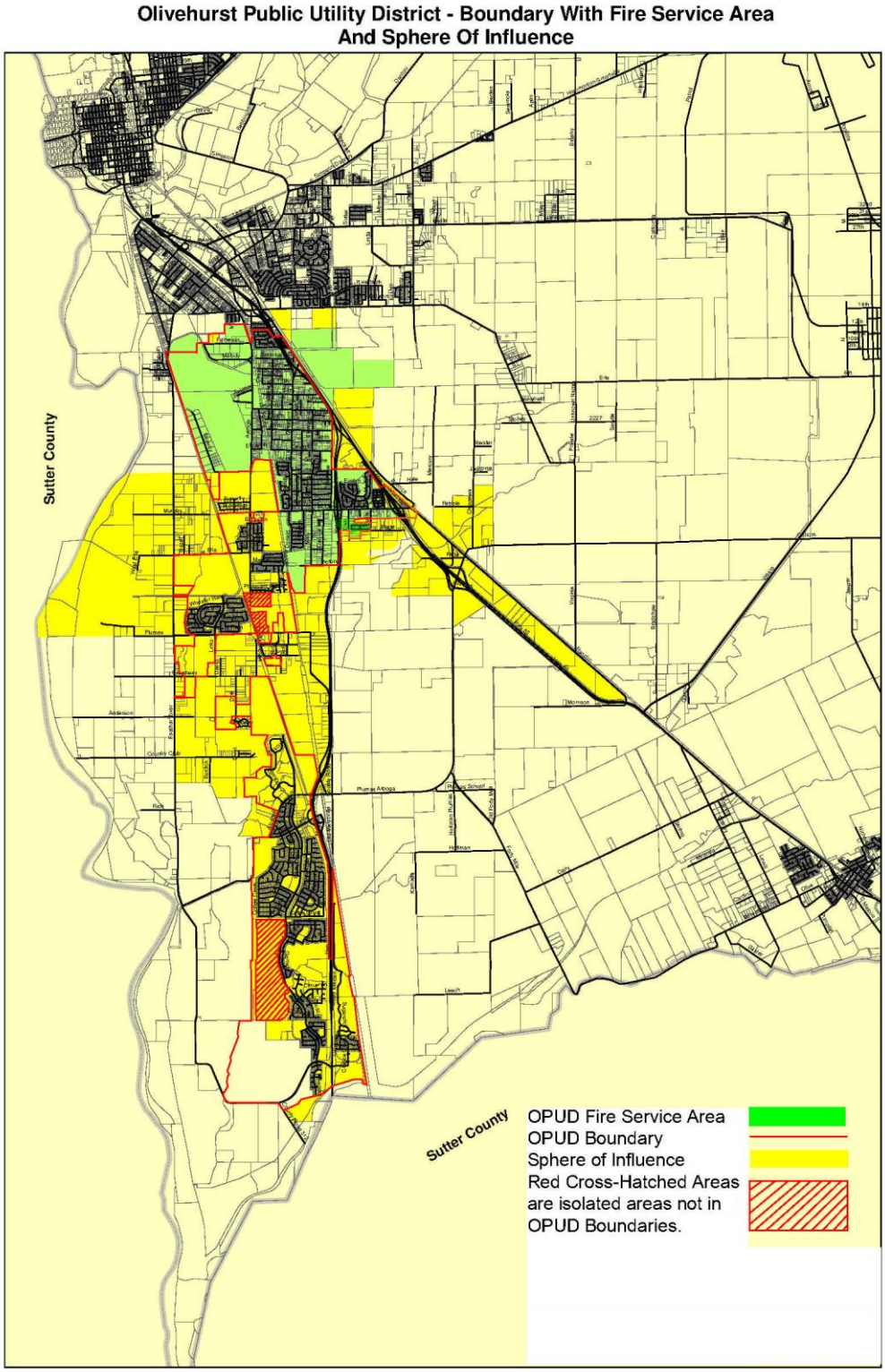
A description of the District's distribution system and groundwater well capacities is provided in Section 6.2.3 (Groundwater Well Capacity).

3.2 SERVICE AREA BOUNDARY

The District is located in California's Central Valley, approximately 30 to 38 miles north of the City of Sacramento. The District's Olivehurst system resides at approximately 66 feet above sea level and the District's Plumas Lake system resides at approximately 46 feet above sea level. As of 2020, the District's total service area boundary encompasses approximately 9 square miles and includes a total of 7,434 water service connections.

The District's service area boundaries and sphere of influence are shown on Figure 3-1.

Figure 3-1. District Service Area Boundary



3.3 SERVICE AREA CLIMATE

The District experiences an arid Mediterranean climate characterized by long, dry summers and cool, rainy winters. Summer weather trends extend from May through October. Average daily maximum temperatures for July are in the mid 90's with lows in the low 60's. Winter daytime temperatures are generally in the mid-60's to mid-50's, with average lows in the upper 30's and occasional freezing temperatures. The rainy season extends from late November to mid-April and the average rainfall is about 21 inches per year.

Water use within the District's service area is dependent on various climate factors such as temperature, precipitation, and evapotranspiration (ET_o). Climate data, including temperature and precipitation estimates, were obtained from the Western Regional Climate Center for Marysville, California. The period of record was from February 1, 1897 to October 31, 2007.

ET_o describes the combined water lost through evaporation from the soil and surface-water bodies and plant transpiration. In general, a reference ET_o is given for turf grass, and then corrected for a specific crop type. Local ET_o data was obtained from the California Irrigation Management Information System (CIMIS) monitoring station in Verona (Station #235), which is located in the Sacramento Valley just south of the District's service area.

The historical climate characteristics affecting water management in the District's service area are shown in Table 3-1.

Table 3-1. Monthly Average Climate Data Summary

Month	Standard Monthly Average ET_o, inches[a]	Average Total Rainfall, inches[b]	Average Temperature, Degrees Fahrenheit[b]	
			Maximum	Minimum
January	1.63	4.01	54.1	37.7
February	2.52	3.73	60.4	41.3
March	3.99	2.88	66	44
April	6.17	1.53	73	47.6
May	8.16	0.75	81.2	52.7
June	8.34	0.22	89.6	58.1
July	8.14	0.03	96.3	61.3
August	6.99	0.06	94.6	59.3
September	5.72	0.34	89.2	56.2
October	3.96	1.21	79	49.9
November	2.09	2.44	65.2	42.2
December	1.36	3.76	55.1	38
Total	**59.07**	**20.96**	**75.3**	**49.0**

(a) Source: California Irrigation Management Information System (CIMIS) data over October 2020 to September 2021 for Station #235: Verona (Downloaded October 28, 2021).

(b) Source: Western Regional Climate Center (www.wrcc.dri.edu) data for Marysville, California (period of record: February 1, 1897 to October 31, 2007)

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 Service Area Population

The District's Olivehurst service area is a mostly urbanized, well-established community, and little growth in the area is anticipated. Development in the District's Plumas Lake service area experienced significant growth from 2004 through 2010, and then slowed due to the economic downturn. However, development in recent years has rebounded, particularly since 2018, although development slowed somewhat during 2020 due to the pandemic.

Land use planning and development approvals within the District's boundaries are the responsibility of Yuba County. Yuba County's most recent General Plan (Yuba County 2030 General Plan) was prepared in August 2010. The 2030 General Plan indicates the opportunity for up 48,000 additional residents in the unincorporated areas of Olivehurst and Plumas Lake. However, according to the Yuba County 2030 General Plan, these buildout estimates are not official growth projections and actual population may vary due to:

- The need to preserve the agricultural base, grazing lands, and other types of open space
- Infrastructure availability, including transportation facilities, public services, and facilities
- The need to limit development on steep slopes, flood risk, fire risk, geologic and soils constraints, presence of habitat and biological resources, and presence of other important natural resources
- Other factors, as described in the General Plan, community plans, specific plans, and County codes and ordinances

The District's service areas generally include the Census Designated Places (CDP) of Olivehurst and Plumas Lake. However, the District's service area for the Olivehurst system also includes approximately 291 houses in the Wheeler Ranch area that are outside of the Olivehurst CDP boundary, and does not include approximately 20 houses in the northwestern area of the Olivehurst CDP boundary. The District's service area for the Plumas Lake system is consistent with the Plumas Lake CDP boundary. In accordance with DWR's *Methodologies* document, the District has chosen the option of developing its population estimates using a person-per-connection methodology, as well as available Census data.

According to U.S. Census data, approximately 16,595 people were reported in the Olivehurst CDP in 2020. This equates to approximately 3.6 persons per residential connection (4,609 residential connections). Assuming approximately 3.6 persons per connection, there are about 1,048 people in the Wheeler Ranch area and about 72 people in the northwestern Olivehurst CDP boundary. Therefore, in 2020, the total population in the Olivehurst water service area is approximately 17,571 people (16,595 + 1,048 - 72 = 17,571 people).

As mentioned previously, the District's service area for Plumas Lake is consistent with the Plumas Lake CDP. According to U.S. Census data, approximately 8,126 people were reported in the Plumas Lake CDP in 2020. This equates to approximately 3.1 persons per residential connection (2,632 residential connections).

Based on the methodology discussed above, the District's 2020 water service area population was estimated to be approximately 25,697 people. Of which, there are approximately 17,571 people served by the Olivehurst system and 8,126 people served by the Plumas Lake system.

Additional discussion of the District's historical and 2020 service area population, for purposes of determining the District's SBX 7-7 2020 compliance, is provided in Chapter 5 (SBX 7-7 Baselines, Targets and 2020 Compliance). The District's population calculations separated for the Olivehurst and Plumas Lake systems are provided in Appendix E.

The District's projected population through 2045 was estimated based on recent development trends within the District's service area, particularly in the Plumas Lake service area. As noted above, development has rebounded in recent years, although development in 2020 slowed a bit due to the pandemic. Looking forward, approximately 450 new housing units are projected per year through 2030 and 225 new housing units are projected per year for 2030 through 2045. This equates to an additional population of approximately 7,000 people every five years through 2030 (450 housing units/year x 5 years x 3.1 people/housing unit = 6,975 people) and 3,500 people every five years from 2030 through 2045 (225 housing units/year x 5 years x 3.1 people/housing unit = 3,488 people), for a total projected service area population of approximately 50,200 people by 2045. This is less than the projected population provided in the Yuba County 2030 General Plan[1] which projected an additional 48,000 people from 2010 to 2030, for a total population of 68,300 people in 2030. However, the current projections presented below and in Appendix E of this 2020 UWMP are more consistent with the current development trends and plans within the District's service area.

The District's current (2020) and projected service area population is shown in Table 3-2.

Table 3-2. Population – Current and Projected (DWR Table 3-1 Retail)

Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	25,697	32,697	39,697	43,197	46,697	50,197
NOTES: 2020 population is generally based on U.S. Census data for the Olivehurst CDP and Plumas Lake CDP, with minor adjustments to account for some additional connections served outside of the Olivehurst CDP and some connections not served within the Olivehurst CDP. Projected population is based on recent and anticipated development trends within the District's service area. See Appendix E for additional detail.						

It is important to note that new developments within the District's service area are required to install new wells and treatment facilities as necessary, with maintenance and ownership transferred to the District. Development must be located within the District's boundaries to receive water service. The District has ample groundwater available to support the continued growth of residential uses, however, existing infrastructure cannot support the future development.

[1] Yuba County 2030 General Plan, Table Community Development-3: New Development under 2030 General Plan for Unincorporated County.

3.4.2 Other Social, Economic, and Demographic Factors

The State now requires the inclusion of service area socioeconomic information as part of the system description in UWMPs. However, differences in household water use across different socio-demographic groups in the District's service area has not been studied. Therefore, the following social, economic, and demographic information is being provided to comply with the new regulation. The information was derived from the US Census Bureau's Quick Facts for 2015-2019 for the Olivehurst CDP and the Plumas Lake CDP.

Olivehurst CDP:

- The average number of people per household from 2015 to 2019 was 3.07
- The median household income was $48,598, while 15.1 percent lived in poverty
- The owner-occupied housing unit rate was 60.0 percent, with a median home value of $173,100
- The median gross rent was $988 per month
- Of persons 25 years or older, 73.9 percent had earned at least a high school diploma or equivalent and 8.7 percent had earned a bachelor's degree or higher
- Of persons under 65 years of age, 12.4 percent had a disability and 9.0 percent did not have health insurance
- 89.6 percent of households had a computer, and 83.7 percent had a broadband internet subscription
- By race/ethnicity, 74.9 percent of people were White, 1.9 percent were Black, 1.4 percent were American Indian or Alaska Native, 6.6 percent were Asian, 0.3 percent were Hawaiian Native or Pacific Islander, 6.0 percent were two or more races, and 38.7 percent were Hispanic or Latino
- 16.2 percent of residents were foreign born, and 37.4 percent of people age five years and older spoke a language other than English at home

Plumas Lake CDP:

- The average number of people per household from 2015 to 2019 was 3.42
- The median household income was $101,995, while 4.7 percent lived in poverty
- The owner-occupied housing unit rate was 87.6 percent, with a median home value of $321,900
- The median gross rent was $1,872 per month
- Of persons 25 years or older, 91.8 percent had earned at least a high school diploma or equivalent and 25.2 percent had earned a bachelor's degree or higher
- Of persons under 65 years of age, 5.1 percent had a disability and 5.1 percent did not have health insurance
- 95.3 percent of households had a computer, and 94.8 percent had a broadband internet subscription

- By race/ethnicity, 73.3 percent of people were White, 4.2 percent were Black, 0.9 percent were American Indian or Alaska Native, 8.6 percent were Asian, 0.2 percent were Hawaiian Native or Pacific Islander, 9.9 percent were two or more races, and 21.4 percent were Hispanic or Latino
- 11.0 percent of residents were foreign born, and 16.7 percent of people age five years and older spoke a language other than English at home

3.5 LAND USES WITHIN SERVICE AREA

Land use planning within the unincorporated communities of Olivehurst and Plumas Lake is undertaken by Yuba County. Yuba County's 2030 General Plan envisions reinvestment in existing developed areas, along with new developments in designated specific plan and community plan areas. Along with development, the County has provided for conservation of important land-based natural resources.

Yuba County has a number of specific plan areas, which are required to be consistent with the General Plan. Typically, specific plans describe future land use, provide for major infrastructure and public facilities, present standards for development and conservation, and outline implementation measures to carry out the plan. The Yuba County 2030 General Plan assumes development consistent with the following adopted Specific Plans within the District's service area:

- Olivehurst Avenue Specific Plan
- Plumas Lake Specific Plan

Yuba County is currently in the process of updating its Housing Element, which is developed to provide the county with a coordinated and comprehensive strategy for promoting the production of safe, decent and affordable housing. The updated Housing Element is an eight-year plan for the 2021-2029 period.

CHAPTER 4
Water Use Characterization

This chapter describes and quantifies the District's past, current, and projected water use. Accurately tracking and reporting current water demands allows the District to properly analyze the use of their resources and conduct accurate water resource planning.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

Potable water is water that is safe to drink and which typically has had various levels of treatment and disinfection. The District's potable water supply consists of only local groundwater.

Recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again. Recycled water usage is based on Title 22 designations. Currently, there is no infrastructure in place to deliver tertiary-treated recycled water to the District's customers. Because land use planning and development approvals within the District's service area are the responsibility of Yuba County, the District does not have the authority to approve the delivery of recycled water supplies to its customers.

Raw water is untreated water that is used in its natural state or with minimal treatment. The District does not currently provide any raw water supplies to its customers.

A complete description of the District's water supply is provided in Chapter 6.

4.2 WATER USE BY SECTOR

This section describes the District's past, current and projected water use by sector through the year 2045 in five-year increments. This section identifies the usage among water use sectors including single family residential, multi-family residential, commercial, industrial, institutional/governmental, landscape irrigation, agricultural, and others. These classifications were used to analyze current consumption patterns among various types of customers. The District uses similar definitions for each sector as outlined in the DWR Guidebook. The following definitions are from the DWR Guidebook:

- **Single Family Residential:** A single family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
- **Multi-family Residential:** Multiple dwelling units contained within one building or several buildings within one complex.
- **Commercial:** A water user that provides or distributes a product or service (CWC 10608.12(d)).
- **Industrial:** A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development (CWC 10608.12(h)).
- **Institutional (and Governmental):** A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions (CWC 10608.12(i)).

- **Landscape:** Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/ governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.
- **Agricultural:** Water used for commercial agricultural irrigation.
- **Other:** Any other water demand that is not adequately described by the water sectors defined above. Unlike previous UWMPs, system water losses are not to be reported in the "Other" category.

4.2.1 Historical Water Use

The District's past water use among water use sectors is presented in Table 4-1. These are the same values reported in the District's 2010 and 2015 UWMPs.

Table 4-1. Historical Water Use by Customer Type

Water Use Type	2010 Actual Volume, MG[a]	2015 Actual Volume[b]
Single Family Residential	908[c]	615
Multi-Family Residential	1	101
Commercial	20[d]	20
Industrial	--[d]	8
Institutional/Governmental	3	45
Landscape Irrigation	8	44
Unaccounted for Water (UAFW)/Losses[e]	47	63
Unmetered Accounts (Olivehurst System)	--[f]	116
Total	**987**	**1,012**

(a) Based on the District's 2010 UWMP, Table 7, converted to MG.
(b) Based on the District's 2015 UWMP, Table 4-3.
(c) 2010 Single Family Residential water use includes water use by metered and flat rate customers.
(d) The District's 2010 UWMP reported Commercial / Industrial combined water use.
(e) Losses in the District's 2010 UWMP were estimated to be 5 percent of total water demands. 2015 UAFW equals the sum of estimated losses and unbilled unmetered water use reported in the District's 2015 UWMP.
(f) The District's 2010 UWMP included unmetered account water use in the Single Family Residential water use.

4.2.2 Current Water Use

The District's actual 2020 water use for the Olivehurst system and the Plumas Lake system are presented in Table 4-2. Because the District's Olivehurst system is not yet fully metered, actual water losses are unknown.

Table 4-2. Actual 2020 Water Use by Customer Type

Water Use Type	Olivehurst System		Plumas Lake System	
	Volume, MG	Percentage of Total Supply	Volume, MG	Percentage of Total Supply
Single-Family[(a)]	483	60.2%	458	79.0%
Multi-Family[(a)]	46	5.7%	0	0.0%
Commercial / Institutional[(a)(b)]	71	8.9%	26	4.5%
Industrial[(a)]	10	1.2%	0	0.0%
Landscape Irrigation[(a)]	49	6.1%	34	5.9%
Unmetered[(c)]	59	7.4%	0	0.0%
Unbilled Unmetered[(c)]	2	0.2%	1	0.2%
Potable System Losses[(c)]	82	10.2%	60	10.4%
Total	**802**	**100%**	**580**	**100%**

(a) Volumes taken from the 2020 Electronic Annual Reports for the Olivehurst and Plumas Lake systems.
(b) The District tracks combined water use for Commercial and Institutional customers.
(c) Volumes taken from the 2020 American Water Works Association (AWWA) Water Loss Audits for the Olivehurst and Plumas Lake systems.

The District's total water use in 2020 is presented in Table 4-3. There are no existing or projected uses of saline barriers, groundwater recharge, or conjunctive use within the District's service area.

Table 4-3. Actual Demands for Potable and Non-Potable Water (DWR Table 4-1 Retail)

Use Type	2020 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Single Family		Drinking Water	941
Multi-Family		Drinking Water	46
Commercial	Includes Institutional demands.	Drinking Water	97
Industrial		Drinking Water	10
Landscape		Drinking Water	83
Other	Unmetered Accounts (Olivehurst system)	Drinking Water	59
Other	Unbilled Unmetered	Drinking Water	3
Losses		Drinking Water	142
		TOTAL	1,382

[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.*
[2] *Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: Volumes are in MG.

4.2.3 Projected Water Use

Water use projections in this plan are based on population projections and the current 2020 per capita water use for the District. Customer growth is assumed as the same rate as population growth. Customer growth in the District's service area will primarily come from the residential sector with small percentages of growth in commercial (retail) and industrial sectors to support the residential growth.

4.2.3.1 25-Year Planning Horizon

The water use projections for 2020 through 2045 assume that the District will continue its current 2020 per capita water use, equal to 147 gallons per capita per day (GPCD), through 2045. The District's projected water use is reported in Table 4-4.

The District is currently in the process of converting all its customers to meters, and the residential metering program is anticipated to be completed by the end of 2022. Therefore, there are no unmetered water uses in the District's service area from 2025 through 2045. Because the District's unmetered water accounts are all single family residential accounts, the District's unmetered water uses have been included in the District's projected single family accounts. The remaining projected water uses by use type are based on the 2020 percentages of total water use.

Table 4-4. Demands for Potable and Raw Water – Projected (DWR Table 4-2 Retail)

Use Type	Additional Description (as needed)	Projected Water Use				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2025	2030	2035	2040	2045 (opt)
Single Family		1,270	1,542	1,678	1,814	1,950
Multi-Family		58	71	77	83	90
Commercial	Includes Institutional demands.	123	150	163	176	189
Industrial		13	15	17	18	19
Landscape		105	128	139	151	162
Other	Unbilled Unmetered	4	5	5	5	6
Losses		181	219	239	258	277
	TOTAL	1,754	2,130	2,318	2,506	2,693
NOTES: Volumes are in MG.						

4.2.3.2 Characteristic Five-Year Water Use

CWC Section 10635(b) requires urban suppliers to include a five-year DRA in their 2020 UWMP. A key component of the DRA is estimating demands for the next five years (2021-2025) without drought conditions (i.e., unconstrained demand). Chapter 7 details the DRA, but the five-year demand projections are summarized in Table 4-5 by customer sector. These projections were developed by linearly interpolating between actual 2020 demands presented in Table 4-2 and 2025 demand projections presented in Table 4-3. As noted previously, it was assumed that all currently unmetered services will be fully metered by 2025.

Table 4-5. Projected Water Demands for Drought Risk Assessment

Water Use Category	Projected Demand[(a)], MG				
	2021	2022	2023	2024	2025
Single Family Residential	1,007	1,073	1,139	1,204	1,270
Multi-family Residential	48	51	53	56	58
Commercial/Institutional	102	108	113	118	123
Industrial	11	11	12	12	13
Landscape Irrigation	87	92	96	101	105
Unmetered	47	35	24	12	0
Unbilled Unmetered	3	3	3	4	4
Potable System Losses	150	158	165	173	181
Total Water Demand	**1,456**	**1,531**	**1,605**	**1,680**	**1,754**

(a) Demand projections for 2021-2024 are based on linear interpolation of actual 2020 demands presented in Table 4-3 and 2025 demand projections presented in Table 4-4.

4.3 DISTRIBUTION SYSTEM WATER LOSSES

System losses are the difference between the actual volume of water treated and delivered into the distribution system and the actual metered consumption. Such apparent losses are always present in a water system due to pipe leaks, unauthorized connections or use, faulty meters, unmetered services such as fire protection and training, and system and street flushing.

The estimated annual system losses for the District's water service area (i.e., the difference between the annual production and annual sales) for the most recent 12-month period available (beginning on January 1, 2020) are summarized in Table 4-6. The estimated system loss for the District's service area includes 82 MG of losses from the Olivehurst system and 60 MG of losses from the Plumas Lake system.

Actual water losses within the District's Olivehurst system cannot be confirmed until the District has completed its current efforts to implement metering throughout its service area. The District's meter retrofit program is expected to be completed by the end of 2022. The District's unmetered accounts are estimated to be approximately 7 percent of the Olivehurst system's total water production.

A copy of the District's Water Audit worksheets from 2016-2020 for the Olivehurst system and the Plumas Lake system are provided in Appendix F.

Table 4-6. 12-Month Water Loss Audit Reporting (DWR Table 4-4 Retail)

Reporting Period Start Date (mm/yyyy)	Volume of Water Loss [1,2]
01/2016	140
01/2017	265
01/2018	138
01/2019	157
01/2020	142
[1] Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet. *[2] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*	
NOTES: The water loss shown represents the combined water loss from the District's Olivehurst and Plumas Lake systems; volumes in MG; copies of the District's 2016-2020 Water Audits for the Olivehurst system and Plumas Lake system are provided in Appendix F.	

4.4 ESTIMATING FUTURE WATER SAVINGS

Water savings from codes, standards, ordinances, or transportation and land use plans (passive savings) can decrease the water use for new and future customers. The District has not independently calculated the impact of passive savings on future water use.

As indicated in Table 4-7, the water demands for the lower income households are included in the District's water demand projections.

Table 4-7. Inclusion in Water Use Projections (DWR Table 4-5 Retail)

Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections?	Yes

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

SB 1087 (2006) requires that water providers give priority to development that includes affordable housing to low-income households. The projected water demands shown in Table 4-4 include water use for single family and multi-family residential housing needed for low-income households, as identified in the Yuba County Housing Element.

A lower income household has an income below 80 percent of an Area Median Income, adjusted for family size. According to the Yuba County 2021-2029 Housing Element, adopted by the Yuba County Board of Supervisors in September 2021, approximately 43.9 percent of households in Yuba County are classified as Low, Very Low or Extremely Low income[1].

Therefore, based on the Yuba County Housing Element, it is estimated that approximately 43.9 percent of the District's residential water demands are attributed to lower income households. Table 4-8 presents these projected water demands for single family and multi-family residential households.

Table 4-8. Projected Water Demands for Lower Income Households

Water Use Sector	Water Demands for Low Income Households[(a)], MG				
	2025	2030	2035	2040	2045
Single Family	558	677	737	796	856
Multi-Family	26	31	34	37	39
Total	**583.2**	**708**	**771**	**833**	**895**

(a) Based on data from the Yuba County Housing Element (2021) indicating that 43.9 percent of households in the District's service area are classified as low, very low or extremely low income.

4.6 CLIMATE CHANGE CONSIDERATIONS

CWC now requires water suppliers to account for the impact of climate change on water supplies and supply reliability. The District's future water demand may be impacted by climate change, as increasing temperatures are expected to extend the growing season and increase landscaping and irrigation demand. In addition, climate change may increase the frequency and intensity of wildfires, which would increase the fire industry's water demands.

While future water demands presented in this plan do not specifically account for climate change impacts, the District is well positioned to mitigate the effects of climate change on its water demand. Water conservation remains integral to urban planning efforts.

Climate change may also impact the frequency of water shortages due to droughts. The effects of climate change on water supply and water supply reliability can be found in Chapter 6 and Chapter 7 of this plan, respectively.

[1] Table H-13: Household Income Distribution by Tenure in Unincorporated Yuba County. Yuba County Housing Element 2021-2029, adopted by the Yuba County Board of Supervisors on September 7, 2021.

CHAPTER 5
SB X7-7 Baselines, Targets, and 2020 Compliance

In November 2009, SB X7-7, the Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addressed both urban and agricultural water conservation. The legislation set a goal of achieving a 20 percent statewide reduction in urban per capita water use by December 31, 2020 (i.e., "20 by 2020"). To meet the urban water use target requirement, each retail supplier was required to determine its baseline water use, as well as its target water use for the year 2020. Water use is measured in gallons per capita per day (GPCD).

This chapter provides a review of the methodology the District used to calculate its 2020 Urban Water Use Target (target), its baseline, and how the baseline was calculated. The District calculated baselines and targets on an individual reporting basis in accordance with SB X7-7 legislation requirements and DWR *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (2016) (DWR *Methodologies*).

In this Chapter, it is demonstrated that the District has achieved its 2020 target reduction. Compliance with the urban water use target requirement is verified in the SB X7-7 Compliance Form, which is included as Appendix G in this plan.

5.1 OVERVIEW AND BACKGROUND

The District's compliance with SB X7-7 was first addressed in the District's 2010 UWMP. The District's baseline per capita water use was determined, and urban water use targets for 2015 and 2020 were established and adopted. Actual 2020 District water use data and 2020 Census population estimates were used to calculate the 2020 GPCD water use.

SB X7-7 included a provision that an urban water supplier may update its 2020 urban water use target in its 2015 UWMP, and may use a different target method than was used in 2010. Also, the SB X7-7 methodologies developed by DWR in 2011 noted that water suppliers may revise population estimates for baseline years when the 2010 Census information became available. The 2010 Census data was not finalized until 2012. In its 2015 UWMP, the District updated its population, baselines, and targets to reflect 2010 Census data. Additional adjustments were made to population estimates, as the District's service area only overlapped with approximately 92 percent of the CDP boundaries. The District demonstrated that it successfully achieved its 2015 interim target and confirmed its 2020 target.

In this 2020 UWMP, the District verifies that it achieved its 2020 target per capita water use.

5.2 GENERAL REQUIREMENTS FOR BASELINE AND TARGETS

SB X7-7 required each urban water retailer to determine its baseline daily per capita water use over a 10-year or 15-year baseline period. The 10-year baseline period is defined as a continuous 10-year period ending no earlier than December 31, 2004 and no later than December 31, 2010. SB X7-7 also defined that for those urban water retailers that met at least 10 percent of their 2008 water demand using recycled water, the urban water retailers can extend the baseline GPCD calculation for a maximum of a continuous 15-year baseline period, ending no earlier than December 31, 2004 and no later than December 31, 2010. In 2008, the District delivered no recycled water; therefore, the District's baseline GPCD was calculated over a 10-year period. In its 2015 UWMP, the 10-year baseline period that the District selected was 2001 through 2010. This is the same 10-year baseline period reported in the District's 2010 UWMP.

SB X7-7 and DWR provided four different methods for calculation of an urban water retailer's 2020 target. Three of these methods are defined in Water Code Section 10608.20(a)(1), and the fourth method was developed by DWR. The 2020 water use target may be calculated using one of the following four methods:

- **Method 1**: 80 percent of the District's base daily per capita water use;
- **Method 2**: Per capita daily water use estimated using the sum of performance standards applied to indoor residential use; landscaped area water use; and commercial, industrial, and institutional uses;
- **Method 3**: 95 percent of the applicable State hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan; or
- **Method 4**: An approach that considers the water conservation potential from: 1) indoor residential savings, 2) metering savings, 3) commercial, industrial and institutional savings, and 4) landscape and water loss savings.

The District selected Method 3 to calculate its 2020 target in its 2015 UWMP.

The District's baselines and targets are summarized in Section 5.5. The District's 2020 compliance water use is provided in Section 5.6.

5.3 SERVICE AREA POPULATION

To correctly calculate its compliance year GPCD, the District must determine the population that it served in 2020. 2020 Census results for the Olivehurst CDP and Plumas Lake CDP were used to determine the population served by the District, as indicated in Table 5-1. As described in Section 3.4.1, approximately 291 homes in the Wheeler Ranch area are not included in the Olivehurst CDP but are served by the District. Conversely, approximately 20 houses in the northwestern area of the Olivehurst CDP boundary are not served by the District. To adjust the Olivehurst CDP population, the average 3.6 persons-per-connection estimated in Chapter 3 was multiplied by the number of connections and added/subtracted from the reported census population.

The 2020 census population for Olivehurst is 16,595 people, while the population of Plumas Lake is 8,126 people. There are approximately 1,048 people served in the Wheeler Ranch area (outside of the Olivehurst CDP boundary) and about 72 people not served inside the Olivehurst CDP boundary. Therefore, in 2020, the total population in the District's Olivehurst system water service area is approximately 17,571 people (16,595 + 1,048 – 72 = 17,571). Table 5-2 presents the District's 2020 combined service area population of 25,697 people.

Table 5-1. Method for Population Estimates (SB X7-7 Table 2)

☑	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☑	**2. Persons-per-Connection Method**
☐	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES: Combined 2020 census results for Olivehurst CDP and Plumas Lake CDP, with adjustments for connections outside the Olivehurst CDP boundary that are served by the District and connections inside the Olivehurst CDP boundary that are not served by the District.	

Table 5-2. Service Area Population (SB X7-7 Table 3)

2020 Compliance Year Population	
2020	25,697

5.4 GROSS WATER USE

Annual gross water use, as defined in CWC §10608.12 (h), is the water that enters the District's distribution system over a 12-month period (calendar year) with certain exclusions. This section discusses the District's annual gross water use for 2020 in accordance with DWR's *Methodologies* document.

Annual gross water use for 2020 is summarized in Appendix G. The District's 2020 actual gross water use for Calendar Year 2020 is 1,382 MG as presented in Chapter 4 of this plan.

5.5 BASELINES AND TARGETS SUMMARY

Daily per capita water use is reported in GPCD. Annual gross water use is divided by annual service area population to calculate the annual per capita water use. As discussed in Section 5.1, the District updated its population data, adjusted its baselines, and confirmed its 2020 target in its 2015 UWMP. The District's 10-year baseline daily per capita water use is 178 GPCD. Using Method 3 for the 2020 water use target calculation as described in Section 5.2, the District's confirmed 2020 compliance target is 167 GPCD. The District's baseline and target are summarized in Table 5-3.

Table 5-3. Baseline and Targets Summary (DWR Table 5-1 Retail)

Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target
10-15 year	2001	2010	178	167
5 Year	2003	2007	190	

5.6 2020 COMPLIANCE DAILY PER CAPITA WATER USE

In Sections 5.3 and 5.4, the District's 2020 population and gross water use are presented, respectively. The District calculated its actual 2020 water use for the 2020 calendar year in accordance with Methodology 4 of DWR's *Methodologies* document. As shown in Table 5-4, urban per capita water use in 2020 was 147 GPCD, which is well below the confirmed 2020 water use target of 167 GPCD. Therefore, the District has met its 2020 final water use target. The SB X7-7 tables used to document this compliance are included in Appendix G.

Table 5-4. 2020 Compliance (DWR Table 5-2 Retail)

2020 GPCD				
Actual 2020 GPCD	2020 TOTAL Adjustments	Adjusted 2020 GPCD *(Adjusted if applicable)*	2020 Confirmed Target GPCD	Did Supplier Achieve Targeted Reduction for 2020? Y/N
147			167	Y

As detailed in DWR's *Methodologies* document, adjustments are allowed that can be made to an agency's gross water use in 2020 for unusual weather, land use changes, or extraordinary institutional water use. The District has elected not to make the adjustments allowed by Water Code Section 10608.24 because these exceptions are not needed to demonstrate compliance with SB X7-7 for 2020. Water use in 2020 in the District's service area was significantly reduced as compared to baseline years as a result of increased and on-going water conservation efforts by the District and its customers.

5.7 REGIONAL ALLIANCE

The District has chosen to comply with the requirements of SB X7-7 on an individual basis. The District has elected not to participate in a regional alliance.

CHAPTER 6
Water Supply Characterization

This chapter describes the water supplies currently available to the District, as well as future anticipated water supplies. Local groundwater from the South Yuba Subbasin is currently the only source of water supply for the District.

A description of this groundwater source, along with the limitations of other possible water supplies, are described in this chapter.

6.1 WATER SUPPLY CHARACTERIZATION

6.1.1 Purchased or Imported Water

The District currently does not receive any purchased or imported water supplies, nor does it expect to receive purchased supplies by the year 2045.

6.1.2 Groundwater

Groundwater is currently the only source of potable water supply for the District. The District's groundwater resource is further described in the sections below.

6.1.2.1 Groundwater Basin Description

The South Yuba Subbasin (Basin Number 5-21.61) is a subbasin of the Sacramento Valley Basin (Basin Number 5-21) contained within DWR Sacramento River Hydrologic Region. The Sacramento Valley Basin is the second largest in California and includes a total of 18 subbasins. The Sacramento Valley consists of a large northwest-trending, elongated, asymmetric structural trough that extends 150 miles north from the Sacramento-San Joaquin Delta to the City of Red Bluff. The valley is dominated by sedimentary water-bearing deposits that are thickest west of the Valley axis. These deposits thin in the eastern portion of the Valley where they overlie the crystalline rocks of the Sierra Nevada basement complex.

The South Yuba Subbasin is located in the southern portion of the Sacramento Basin Hydrologic Study Area and is described in the DWR's Bulletin 118 (see basin description in Appendix H). The subbasin encompasses about 107,000 acres and is bounded on the east by the Sierra Nevada, on the west by the Feather River, on the north by the Yuba River, and on the south by the Bear River. Prior to development, groundwater flowed to the west and southwest from the Sierra Nevada toward the Feather River. Water bearing alluvial deposits range in thickness from less than 300 feet near the Sierra Nevada in the east to approximately 1,000 feet along the Feather River in the west. Two geologic units provide the majority of water to wells: the Laguna Formation deposits and the overlying and more productive Older Alluvium deposits. Most domestic wells pump from the shallower Older Alluvium (100 to 150 feet below ground surface (bgs)), while irrigation and public supply wells tend to be deeper and may pump from both deposits for additional well yield.

This groundwater basin is not adjudicated, and DWR has not identified the South Yuba Subbasin as either in overdraft, or expected to be in overdraft.

6.1.2.1.1 Subbasin Geology

The South Yuba Subbasin is bounded to the east by the relatively impermeable Sierra Nevada complex. These rocks extend beneath the subbasin and are overlain by younger consolidated and unconsolidated rocks at a gradually increasing depth toward the Feather River and beyond to the Sacramento Valley

trough. The resulting wedge-shaped body of stratified alluvial deposits dips gently to the west and stores fresh groundwater to depths of up to 1,000 feet in the west and less than 300 feet in the east (Bookman-Edmonston Engineering (BE), 1992). Saline groundwater may exist in consolidated rocks beneath the alluvial deposits.

As indicated above, the Laguna Formation and the overlying Older Alluvium are the principal water-bearing formations in the South Yuba Subbasin. These formations are described below in order from oldest to youngest. Several geologic and hydrogeologic studies have been conducted in the area, including Bryan (1923), Olmstead and Davis (1961), DWR (1978), and BE (1992).

The geologic structure of the South Yuba Subbasin is relatively simple, with no faults or folds. The Sutter Buttes, located just west of Yuba County, consist of an intrusive volcanic plug, which caused the uplift and faulting of older marine sediments in the central portion of the Sacramento Valley. This intrusion may have resulted in slightly uplifted marine-deposited sediments in the vicinity of Marysville, but the magnitude of the deformation is minor. The principal geologic units that underlie the Subbasin are summarized below.

Sierra Nevada Bedrock: Metamorphic and igneous granitic rocks dominate the bedrock that forms the eastern boundary of the groundwater basin. Where exposed in the foothills, this sequence of rocks can supply small quantities of water from weathered and fractured zones. Metamorphic rocks contain volcanics with high manganese and iron content.

Eocene and Cretaceous Rocks: Cretaceous marine deposits that overlie the bedrock in most of the subbasin originally contained saline, connate water. Most of the saline water has been flushed out toward the valley trough (BE, 1992), but water quality is still poorer in the marine deposits. The marine deposits are overlain by Eocene non-marine deposits, including the Ione Formation, which also has poorer water quality than overlying formations.

Mehrten Formation: This Tertiary volcanic rock sequence is dominated by alluvial, andesitic sand and gravel intervals interbedded with clay and silt. These rocks include conglomerate, sandstone, and tuff-breccia of mud flow origin that extend westward from their exposure in the vicinity of Beale Air Force Base. Sand and gravel lenses in the Mehrtens are highly permeable and tapped by wells throughout the Sacramento Valley.

Laguna Formation: This Pliocene formation is the thickest and most extensive water-bearing unit in the South Yuba Subbasin. It is exposed along the foothills from Oroville south to Stockton and intermittently in the eastern portion of the Sacramento Valley. Detritus from the weathered Sierras was transported into the Valley by slow-flowing streams and deposited on low sloping broad alluvial fans, concentrating coarser grained materials in river and stream channels and depositing finer-grained materials laterally. This heterogeneous formation contains silt to sandy silt with abundant clay and minor lenticular gravel beds. The sand and gravel layers are thin, discontinuous, compact, and commonly cemented with calcium carbonate, reducing their overall permeability. Considerable amounts of coarse materials occur in the vicinity of the Yuba River at depths of 150 to 600 feet, but decrease north and south of the river. The thickness of the Laguna Formation is highly variable, from 400 feet near the Yuba River to up to 1,000 feet in the southwest portion of Yuba County (BE, 1992).

Older Alluvium and Victor Formation: In the early Pleistocene, uplift of the Sierra Nevada block resulted in increased erosive power and transport capacity of rivers and streams draining to the west. This higher-energy alluvial system increased the proportion of sand and gravel deposited in lenticular beds along with lesser amounts of silt and clay. The Older Alluvium unit is exposed over much of the South Yuba Subbasin with varying thicknesses from less than 100 feet to over 150 feet atop the highly eroded surface of the Laguna Formation. Gravels are located at shallower depths and are thickest near the foothills and the Yuba River. These deposits provide overall moderate permeability, with increased permeability in sand and gravel lenses and reduced permeability where hardpan soils have developed.

Older Floodplain Deposits: Along the Feather River and its tributaries, gravelly sand, silt, and clay were deposited from flood events during the Pleistocene. The thickness of this unit ranges from 5 to 15 feet. Its moderate permeability allows for infiltration of precipitation and irrigation water to the water table unless prevented by buried hardpan soils at its lower contact with the Older Alluvium.

Recent Stream Channel and Floodplain Deposits: These Holocene age alluvial deposits are found along Honcut Creek and the Yuba, Bear, and Feather Rivers. Dominated by coarse sand and gravels, these highly permeable deposits have a thickness of up to 110 feet. Grain size and thickness decrease as the distance from streams increases. This unit also occurs as abandoned overflow channels two to five miles south of the Yuba River. The greatest volume of these deposits is found along the channel of the Yuba River and is about 3.5 miles wide. The coarse-grained and highly permeable nature of these deposits allows for significant groundwater recharge, and the unit can yield large quantities of water to shallow wells.

Dredge Tailings: Tailings from hydraulic mining completely obscured the original channel of the Yuba River during the 1870s and 1880s. Several thousands of acres of the Yuba River floodplain upstream of Marysville were excavated by gold dredges, and parallel ridges of coarse gravel characterize the resulting topography. Piles of coarse gravel and cobbles up to 125 feet thick can be located in the upper reaches of the Yuba and Bear Rivers.

6.1.2.1.2 Aquifer Characteristics

Aquifer characteristics refer to the ability of aquifers to transmit and store groundwater. Calculations based on data from long-term, constant rate pumping tests are the preferred method for estimating aquifer characteristics. However, other methods can be used when aquifer test data are limited, as is the case in the South Yuba Subbasin.

6.1.2.1.2.1 Well Yields

Well yields and aquifer characteristics in Yuba County were summarized by BE (1992). A review of drillers' logs indicated that wells in the South Yuba Subbasin range in depth from a few hundred to over 700 feet. Most of the well yield is derived from the Older Alluvium, which is much more permeable than the underlying Laguna Formation. Well yields in the subbasin typically range from 1,000 to 3,000 gpm, with an average of 1,650 gpm. Wells in the western and northern portions of the subbasin near the Feather and Yuba River had the highest yields (1,500 to 3,000 gpm), and wells in the southern and eastern portions of the subbasin generally had lower yields (1,000 to 1,500 gpm).

6.1.2.1.2.2 Specific Capacity

Specific capacity is the ratio of well yield to drawdown and provides a measure of productivity for both the aquifer and the well. Specific capacity is calculated as Q/s, where Q is the yield of the well in gpm and s is the drawdown in feet. The BE (1992) report contains a summary of specific capacity in the South Yuba

Subbasin based on drillers logs and Pacific Gas & Electric (PG&E) pump efficiency tests. Specific capacities based on pump tests conducted immediately after wells are drilled tend to be lower because permanent pumps have not been installed and the wells may not be fully developed. Based on drillers reports, BE (1992) reported that specific capacities in the South Yuba subbasin range from 16 to 65 gpm/feet, with an average of 40 gpm/feet. Specific capacities calculated from PG&E tests in the subbasin ranged from 18 to 95 gpm/feet, with an average of 55 gpm/feet.

6.1.2.1.2.3 Transmissivity

The ability of an aquifer to transmit water is measured by the transmissivity, which can be defined as the permeability times the saturated thickness. The U.S. Geological Survey (USGS) estimated transmissivity in the central portion of the South Yuba Subbasin to be about 260,000 gallons per day per foot (gpd/feet) (Bloyd, 1978). Transmissivity estimates were higher (390,000 gpd/feet) along the Feather River due to the presence of over 100 feet of highly permeable stream channel sediments. Transmissivity estimates were lower (65,000 gpd/feet) for the southeastern portion of the subbasin because the primary aquifer in this area is comprised of the less permeable Laguna Formation.

Transmissivity estimates for the District's newest wells (Wells 29 and 30) are based on aquifer tests conducted by KASL Consulting Engineers (KASL, 2005). The estimated transmissivities were 127,000 and 239,000 gpd/feet at Wells 29 and 30, respectively. Aquifer test data are not available for the District's other wells, but transmissivity was estimated from specific capacity using an empirical equation for a confined aquifer: T = Q/s * 2000, where T is the transmissivity in gpd/feet and Q/s is the specific capacity in gpm/feet. In the subbasin, the transmissivities estimated from specific capacity range from 69,000 to 234,000 gpd/feet.

6.1.2.1.2.4 Storage Coefficient

The ability of an aquifer to store groundwater is measured by the storage coefficient, which is defined as the volume of water that is released from or added to storage per unit surface area and per unit change in hydraulic head. For unconfined aquifers, a change in head means a change in the elevation of the water table, and the storage coefficient is called the specific yield. Specific yields of common aquifer materials range from 3 percent for clay to 20 percent for unconsolidated sand or sand and gravel (Olmstead and Davis, 1961). BE (1992) estimated specific yield for the South Yuba Subbasin ranging from 8 percent for the shallowest zone (20-50 feet bgs) to 6.2 percent for the 100 to 200 feet depth zone, with an average of 6.8 percent (Grinnell, 2005).

In confined aquifers, storage coefficients are much smaller, and accurate estimates are only possible based on aquifer tests in which drawdown is measured in an observation well located at some distance from the pumped well. The District's monitoring well MW-1D was used as an observation well during the aquifer tests of the District's Wells 29 and 30 conducted in March 2005. The estimated storage coefficients are 3.7 x 10-4 and 8.6 x 10-4 for Wells 29 and 30, respectively (KASL, 2005). Data were not available to estimate storage coefficients for the District's other wells.

6.1.2.1.2.5 Water Quality

Regional groundwater quality in the Yuba Subbasins is considered good to excellent for municipal, domestic, and agricultural uses and does not have a significant adverse impact on the beneficial uses of groundwater in the subbasins. There is naturally occurring arsenic, iron, and manganese in some areas

that may have concentrations that exceed the associated drinking water thresholds, although such occurrences are limited.[1]

Water delivered by the District to its customers meets all applicable drinking water standards. The District has several iron and manganese treatment plants within its water systems (three in the Olivehurst system and two in the Plumas Lake system) to address iron and manganese levels that exceed the respective secondary maximum contaminant levels.

The District prepares and provides an annual Consumer Confidence Report (CCR) to its customers that summarizes the water quality of the District's water supplies. A copy of the 2020 CCR is provided in Appendix I and can be found on the District's website.

6.1.2.2 Groundwater Management and Sustainability

The Sustainable Groundwater Management Act of 2014 (SGMA), a three-bill legislative package composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), was passed in September 2014. The legislation provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention when necessary to protect the resource. The legislation lays out a process and a timeline for local authorities to achieve sustainable management of groundwater basins. It also provides tools, authorities and deadlines to take the necessary steps to achieve the goal. For local agencies involved in implementation, the requirements are significant and can be expected to take years to accomplish. The State Water Resources Control Board may intervene if local agencies do not form a Groundwater Sustainability Agency (GSA) and/or fail to adopt and implement a Groundwater Sustainability Plan (GSP).

SGMA applies to basins or subbasins designated by the DWR as high- or medium-priority basins, based on a statewide ranking that uses criteria including population and extent of irrigated agriculture dependent on groundwater. Ninety-four of the State's 515 groundwater basins were identified as medium- or high-priority basins through the basin prioritization technical process and were required to form GSAs and develop GSPs. The South Yuba Subbasin was ranked as a high-priority basin as part of the SGMA 2019 Basin Prioritization project. The South Yuba Subbasin had been previously ranked as a medium-priority basin under the 2014 California Statewide Groundwater Elevation Monitoring (CASGEM) Basin Prioritization project.

The GSP for the North and South Yuba Subbasins was developed through coordination between three GSAs: the Yuba Water Agency (YWA) GSA, the Cordua Irrigation District (CID) GSA, and the City of Marysville GSA. The GSAs actively worked to communicate with stakeholders and include them in decision-making processes. Key to this communication was the development of the Groundwater Sustainability Committee (GSC). The GSC was the advisory body that made recommendations regarding development and implementation of the GSP to the YWA Board of Directors. GSC members included 17 local districts and regional stakeholders, including the District.

The Yuba Subbasins GSP was completed in December 2019. The Yuba Subbasins have a long history of successful groundwater management, and the water budget analysis conducted as part of the GSP estimates sustainable groundwater conditions into the future. As the Yuba Subbasins are currently being sustainably managed, there are no projects or management actions that are required to achieve

[1] Yuba Subbasins Groundwater Management Plan: A Groundwater Sustainability Plan, December 2019.

sustainability. However, projects and management actions have been identified to assist in enhancing management capability and improving the understanding of the groundwater system. The identified projects and management actions allow for maintaining sustainable groundwater conditions and allow for the GSAs to respond to unexpected changes in conditions in the Yuba Subbasins so that undesirable results can be prevented. Given the nature of the need, most projects and management actions will be implemented with an as-needed, opportunistic approach, with decisions based on funding availability and identified need at a given time.

The Executive Summary of the December 2019 Yuba Basins Groundwater Management Plan: A GSP, and a link to the entire GSP, are included in Appendix H.

6.1.2.3 Groundwater Well Capacity

As shown in Table 6-1, the total groundwater pumping capacity for the District's service area is 19,640 gpm (10,323 MG/year), of which 10,590 gpm (5,566 MG/year) is in the Olivehurst system and 9,050 gpm (4,757 MG/year) is in the Plumas Lake system. However, currently, the District's groundwater wells are constrained by the filter capacity of the water treatment plants. As shown in Table 6-1, the total groundwater filter capacity for the District's service area is 16,600 gpm (8,725 MG/year), of which 10,000 gpm (5,256 MG/year) is in the Olivehurst system and 6,600 gpm (3,469 MG/year) is in the Plumas Lake system.

Table 6-1. Summary of Groundwater Well Capacity[a]

Well No.	Status	Pump Capacity, gpm	Filter Capacity, gpm
Olivehurst Distribution System			
1	Active	750	3,000
4	Active	2,420	
10	Standby[b]; planned to be abandoned	1,500	3,500
28	Active	2,400	
29	Active	2,500	3,500
30	Active	2,520	
	Total (Active)[c]	**10,590**	**10,000**
Plumas Lake Distribution System			
31	Active[d]	5,550	3,100
32	Active[d]		
34	Active	3,500	3,500
33	Does not supply water	0	--
	Total (Active)[c]	**9,050**	**6,600**

(a) Based on data received from the District on December 21, 2021.
(b) Standby wells are currently off-line and not treated.
(c) Total capacities do not include standby wells.
(d) Individual capacities of Wells 31 and 32 are about 3,100 gpm each, but combined capacity is reduced to about 5,550 gpm when both are operated due to their close proximity to each other.

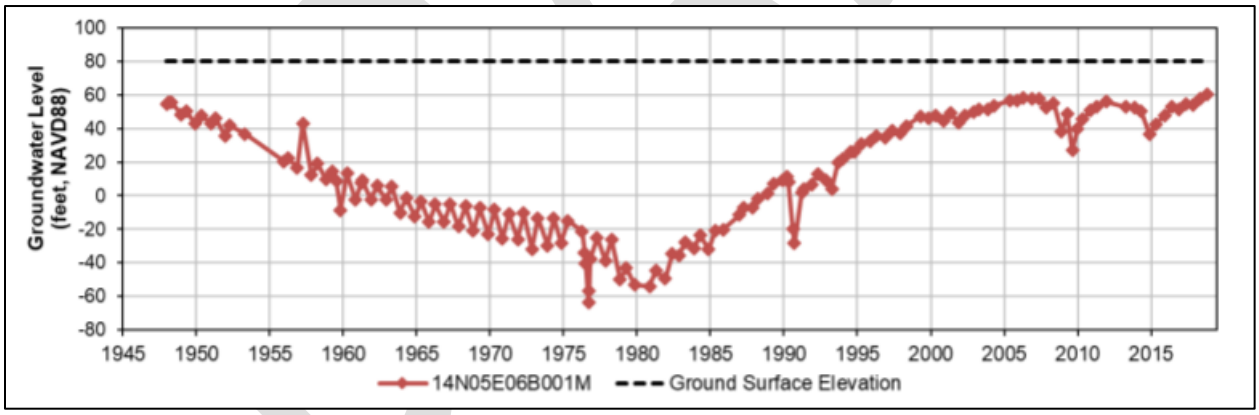
6.1.2.4 Historical Groundwater Production

Prior to construction of the South Yuba Canal, groundwater was the primary source of supply for both agricultural and municipal use in the South Yuba Subbasin. Although municipal use has increased in recent years, the majority of the total pumpage in the subbasin is used for agriculture.

Groundwater pumpage declined after surface water deliveries via the South Yuba Canal began to Brophy Water District and South Yuba Water District in 1983 (YCWA, 2005). Surface water deliveries to the South Yuba Subbasin totaled about 55,000 MG/year (170,000 AFY) in 2004, which represents about 62 percent of the total estimated water supply (NCWA, 2006). Total groundwater pumpage in the South Yuba Subbasin in 2004 was estimated to be 36,000 MG/year (110,000 AFY), of which 79 percent (86,800 AFY) was for agricultural use and the remainder (23,200 AFY) was used for municipal, domestic, industrial, commercial, and semi-agricultural uses.

The evaluation of groundwater level data in the South Yuba Subbasin conducted for water supply studies in the District's service area also show large groundwater level declines prior to 1983 and a similar amount of recovery since 1983. The magnitude of the declines and subsequent recovery ranged from 10 feet or less at the edges of the basin to 85 feet in the center of the cone of depression. By 2005, water levels in most wells had recovered to 1950s levels or higher, and the cone of depression was no longer present. The water level data show no indication of overdraft occurring in the subbasin at present. Typical long-term groundwater trends in the South Yuba Subbasin as presented in the December 2019 GSP are shown in Figure 6-1.

Figure 6-1. Typical Long-Term Groundwater Level Trends in the South Yuba Subbasin



The South Yuba Subbasin is also not expected to become overdrafted in the future based on projected groundwater pumpage and surface water deliveries. Unlike many medium- and high-priority basins and subbasins managed under GSPs, groundwater extraction in the Yuba Subbasins does not exceed the sustainable yield, and the average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions. Therefore, the South Yuba Subbasin is expected to be reliable in all years and over the 25-year planning horizon of this 2020 UWMP.

Historical groundwater pumpage by the District from 2016 through 2020 is shown in Table 6-2. Average groundwater pumpage by the District over the last five years has been about 1,200 MG/year.

Table 6-2. Groundwater Pumped in Last Five Years (DWR Table 6-1 Retail)

Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	South Yuba Subbasin (Olivehurst System)	692	710	704	710	802
Alluvial Basin	South Yuba Subbasin (Plumas Lake System)	381	447	483	504	580
	TOTAL	1,073	1,157	1,187	1,214	1,382
NOTES: Volumes are in MG.						

6.1.3 Surface Water

The District currently does not receive any surface water supplies, nor does it expect to receive any surface water supplies by the year 2045.

6.1.4 Stormwater

Stormwater can be beneficially reused as a water supply source to meet local water supply demands. Beneficial reuses include blending with other water supplies for groundwater recharge, redirecting it into constructed wetlands or landscaping, and diverting it to a treatment facility for subsequent reuse. Currently, the District does not implement any stormwater recovery systems.

6.1.5 Wastewater and Recycled Water

The District is the wastewater and recycled authority in the unincorporated community of Olivehurst and Plumas Lake. The District operates an activated sludge, tertiary wastewater treatment facility currently permitted for 3 million gallons per day (MGD).

6.1.5.1 Recycled Water Coordination

The District's wastewater service area coincides with the District's water service area, and the District does not receive any water supplies from a wholesale agency. Therefore, there are no other local water or wastewater planning agencies that operate in the District's service area. As described in Chapter 2, the District has coordinated the development of this plan with other neighboring water agencies as well as the public.

Currently, there is no infrastructure in place to deliver tertiary treated recycled water to the District's customers. Because land use planning and development approvals within the District's service area are the responsibility of Yuba County, the District does not have the authority to approve the delivery of recycled water supplies to its customers.

6.1.5.2 Wastewater Collection, Treatment, and Disposal

The District provides wastewater services to its water service area. The District operates an activated sludge, tertiary wastewater treatment facility currently permitted for 3 MGD discharge. The wastewater treatment facility has an average dry weather flow of 1.2 MGD and average wet weather flow of 1.3 MGD. The wastewater collection system consists of approximately 32 miles of gravity sewer main collection lines, 8 miles of force main sewer collection lines, and 18 lift stations (with two new lift stations anticipated to be on-line by mid 2022). The District's wastewater treatment facility discharges into the Clark Lateral which flows into the Western Interceptor Drainage Canal which flows into the Bear River.

6.1.5.2.1 Wastewater Collected Within Service Area

Table 6-3 summarizes the information on the collection of wastewater generated within the District's service area in 2020.

Table 6-3. Wastewater Collected Within Area in 2020 (DWR Table 6-2 Retail)

Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Olivehurst Public Utility District	Metered	588	Olivehurst Public Utility District	OPUD Wastewater Treatment Facility	Yes	No
Total Wastewater Collected from Service Area in 2020:		588				
NOTES: Volumes are in MG.						

6.1.5.2.2 Wastewater Treatment and Discharge Within Service Area

The District's wastewater service area is the same as the District's water service area. Table 6-4 identifies the treated wastewater disposed of within the service area in 2020.

Table 6-4. Wastewater Treatment and Disposal Within Area in 2020 (DWR Table 6-3 Retail)

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)* [2]	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area? *Drop down list*	Treatment Level *Drop down list*	2020 volumes [1]				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Olivehurst Public Utility District Wastewater Treatment Facility	Western Interceptor Drainage Canal	Bear River		River or creek outfall	Yes	Tertiary	547	547			
						Total	547	547	0	0	0

[1] **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.
[2] If the **Wastewater Discharge ID Number** is not available to the UWMP preparer, access the SWRCB CIWQS regulated facility website at https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/CiwqsReportServlet?inCommand=reset&reportName=RegulatedFacility

NOTES: Volumes are in MG.

6.1.5.3 Recycled Water System Description

The District's wastewater treatment plant produces tertiary treated effluent (1.2 MGD) that could be utilized as recycled water for parks, streetscape, and residential irrigation.

Currently, the District does not have infrastructure in place to deliver tertiary treated effluent to its customers. In addition, the ability to utilize recycled water in the District's service area is heavily dependent on cooperation of Yuba County because they are the land use authority for the District's service area. The District does not include recycled water in its supply projections in this UWMP.

6.1.5.4 Potential, Current, and Projected Recycled Water Uses

Recycled water can be used for parks irrigation, streetscape irrigation, residential landscape irrigation, agricultural irrigation, school irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable use and other appropriate uses. The most technically and economically feasible uses for recycled water in the District's service area are parks and streetscape irrigation. Future developments in the District's service area could utilize recycled water for other uses if the infrastructure is installed ahead of time. Because the District is not the local land use authority for the District's water service area, approval for the use of recycled water by future developments is not within the District's jurisdiction. The use of recycled water in the District's service area is dependent on approval from Yuba County.

As shown in Table 6-5, the District does not include recycled water in its supply projections in this plan.

As shown in Table 6-6, recycled water was not projected for use in 2020, nor used in 2020.

Table 6-5. Current and Projected Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4 Retail)

☑	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.
Name of Supplier Producing (Treating) the Recycled Water:	
Name of Supplier Operating the Recycled Water Distribution System:	
Supplemental Water Added in 2020 (volume) *Include units*	
Source of 2020 Supplemental Water	

Beneficial Use Type *Insert additional rows if needed.*	**Potential** Beneficial Uses of Recycled Water (Describe)	Amount of **Potential** Uses of Recycled Water (Quantity) *Include volume units*	General Description of 2020 Uses	Level of Treatment *Drop down list*	2020	2025	2030	2035	2040	2045 (opt)
Agricultural irrigation										
Landscape irrigation (exc golf courses)										
Golf course irrigation										
Commercial use										
Industrial use										
Geothermal and other energy production										
Seawater intrusion barrier										
Recreational impoundment										
Wetlands or wildlife habitat										
Groundwater recharge (IPR)										
Reservoir water augmentation (IPR)										
Direct potable reuse										
Other (Description Required)										
				Total:	0	0	0	0	0	0
				2020 Internal Reuse						

Table 6-6. 2015 Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5 Retail)

☑	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below. If recycled water was not used in 2020, and was not predicted to be in 2015, then check the box and do not complete the table.

Beneficial Use Type	**2015 Projection for 2020**	**2020 Actual Use**
Insert additional rows as needed.		
Agricultural irrigation		
Landscape irrigation (exc golf courses)		
Golf course irrigation		
Commercial use		
Industrial use		
Geothermal and other energy production		
Seawater intrusion barrier		
Recreational impoundment		
Wetlands or wildlife habitat		
Groundwater recharge (IPR)		
Reservoir water augmentation (IPR)		
Direct potable reuse		
Other (Description Required)		
Total	0	0

6.1.5.5 Actions to Encourage and Optimize Future Recycled Water Use

The District is committed to the use of recycled water. The following water recycling objectives have been developed to meet the water recycling goals for the Yuba-Sutter region:

- Identify recycled water projects that reduce the regional potable water demand, thereby improving regional water supply reliability. This is specifically true for areas expecting future growth and increased water demand such as the District and Yuba City.
- Identify projects with a high supply reliability that may help local agencies avoid the costs associated with the development of additional groundwater wells and the costs of additional treatment to reach potable water quality standards as they continue to become more stringent.

In the future, the District may choose to participate in a regional project with neighboring agencies and/or Yuba County as it may allow the District to expand its recycled water use sooner as participants work collaboratively to produce and distribute recycled water throughout the southern Yuba County area.

Currently, the District does not offer recycled water to its customers primarily due to the fact that the District is not the local land use authority, and the use of recycled water by future developments would require approval from the local land use authority (Yuba County).

As shown in Table 6-7, the District does not include recycled water in its supply projections in this plan.

Table 6-7. Methods to Expand Future Recycled Water Use (DWR Table 6-6)

☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
		Total	0

6.1.6 Desalinated Water

Desalination is a process that removes dissolved minerals from seawater, brackish water or treated wastewater. The District does not have access to ocean water and thus cannot participate in seawater desalination as a source of supply. In addition, the District's groundwater supply source does not contain brackish groundwater, and therefore the District cannot participate in brackish groundwater desalination as a source of supply.

6.1.7 Water Exchanges and Transfers

The District has no current or future planned agreements for short-term or long-term transfer and exchange within the District's service area.

6.1.8 Future Water Projects

There are no expected future water supply projects or programs within the District's service area, as indicated in Table 6-8. The District's current water supply sources more than adequately meet the projected water use identified in the water supply and demand assessment.

Table 6-8. Expected Future Water Supply Projects or Programs (DWR Table 6-7 Retail)

☑	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Supplier *This may be a range*
	Drop Down List (y/n)	*If Yes, Supplier Name*				

6.1.9 Summary of Existing and Planned Sources of Water

Table 6-9 summarizes the actual water supplies for the District.

The District's projected groundwater supply is assumed to provide 100 percent of the District's potable water demand during Normal Years. Table 6-10 summarizes the future projected water supplies for the District.

Table 6-9. Water Supplies Actual (DWR Table 6-8 Retail)

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality Drop Down List	Total Right or Safe Yield (optional)
Groundwater (not desalinated)	South Yuba Subbasin	1,382	Drinking Water	
	Total	1,382		0

Table 6-10. Retail. Water Supplies Projected (DWR Table 6-9 Retail)

Water Supply	Additional Detail on Water Supply	Projected Water Supply Report To the Extent Practicable				
		2025	**2030**	**2035**	**2040**	**2045** (opt)
Groundwater (not desalinated)	South Yuba Subbasin	6,544	6,544	6,544	6,544	6,544
Total		6,544	6,544	6,544	6,544	6,544
NOTES: The District's reasonably available volume is assumed to be equal to 75 percent of the District's current groundwater filter capacity.						

6.2 CLIMATE CHANGE IMPACTS TO SUPPLY

There is evidence that a warming trend that occurred during the latter part of the twentieth century will likely continue through the twenty-first century. These changes will have a direct effect on water resources in California, and numerous studies have been conducted to determine the potential impacts to water resources. Based on these studies, climate change could result in the following types of water resource impacts to California:

- Reductions in the average annual snowpack due to a rise in the snowline and a shallower snowpack in the low and medium elevation zones, such as in the Tuolumne River basin, and a shift in snowmelt runoff to earlier in the year
- Changes in the timing, intensity and variability of precipitation, and an increased amount of precipitation falling as rain instead of as snow
- Long-term changes in watershed vegetation and increased incidence of wildfires that could affect water quality
- Sea level rise and an increase in saltwater intrusion
- Increased water temperatures with accompanying potential adverse effects on some fisheries and water quality
- Increases in evaporation and concomitant increased irrigation need
- Changes in urban and agricultural water demand

6.3 ENERGY INTENSITY

In accordance with CWC §10631.2(a), the energy intensity to provide water service to the District's customers over a one-year period is presented in this section to the extent that the information is available. The amount of energy to divert, pump, treat, and distribute the District's water supply within the system it owns and operates is included.

Water energy intensity is the total amount of energy, calculated on a whole-system basis, used to deliver water to the District's customers for use. Energy intensity is the total amount of energy in kilowatt hour (kWh) expended on a per million gallon basis to take water from the District's source to its point of delivery. Understanding the whole-system energy intensity would allow the District to make informed strategies in managing its water supplies and operating its system as follows:

- Identifying energy saving opportunities as energy consumption is often a large portion of the cost of delivering water
- Calculating energy savings and greenhouse gas (GHG) emissions reductions associated with water conservation programs
- Potential opportunities for receiving energy efficiency funding for water conservation programs
- Informing climate change mitigation strategies
- Benchmarking of energy use at each water acquisition and delivery step and the ability to compare energy use among similar agencies

In Table 6-11 below, the energy intensity of the District's water service is calculated for 2020. The total energy intensity for the District's water service is 1,429 kWh/MG.

Table 6-11. Recommended Energy Reporting – Total Utility Approach (DWR Table O-1B)

Water Delivery Product (If delivering more than one type of product use Table O-1C)

Retail Potable Deliveries

Table O-1B: Recommended Energy Reporting - Total Utility Approach

Enter Start Date for Reporting Period	1/10/2020	**Urban Water Supplier Operational Control**		
End Date	1/9/2021			
☐ Is upstream embedded in the values reported?		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
Water Volume Units Used	*MG*	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process (MG)		*1,382*	*0*	*1,382*
Energy Consumed (kWh)		*1,973,956*	*0*	*1,973,956*
Energy Intensity (kWh/MG)		*1,429*	*0*	*1,429*

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality *(Estimate, Metered Data, Combination of Estimates and Metered Data)*

Metered Data

Data Quality Narrative:

2020 water production was provided for the Olivehurst and Plumas Lake systems. 2020 energy consumption was provided in a monthly summary of metered consumption at each facility.

Narrative:

Energy consumption was provided for the following facilities:
- Wells #1, #10, #14, #29, and #34
- Wells/Water Treatment Plants #4, #28, and #30
- Lindhurst Water Storage Tank

CHAPTER 7
Water Service Reliability and Drought Risk Assessment

This chapter describes the long-term reliability and vulnerability of the District's water supplies. The District's implemented, or planned to be implemented, water management tools for increasing the reliability of water supplies are also addressed.

7.1 WATER SERVICE RELIABILITY ASSESSMENT

7.1.1 Constraints on Water Sources

The amount of groundwater available to the District may be constrained by seasonal conditions or changes in climatic patterns in the region. As the District finds a need to expand its water supply and capability in the future, finding new water sources that have satisfactory water quality will be important criteria for selection. The District's water sources receive treatment in accordance with applicable Federal and State standards.

Each year the District reports water quality test results to its customers through the Consumer Confidence Report, also known as the Annual Water Quality Report. A copy of the District's 2020 Consumer Confidence Report is provided in Appendix I. The report includes water sampling results from groundwater wells located in the Olivehurst and Plumas Lake water systems. At this time, the District does not anticipate any changes in supply availability as a result of water quality.

Climate change could constrain the District's long-term sustainability of water supplies by increasing variability in floods and droughts. Over the past several decades, the California water community as a whole has focused their attention on determining the effects of climate change, but there is no clear scientific consensus on exactly how climate change will quantitatively affect the State's water supplies. Therefore, being prepared for a wet water year, a critically dry water year, or somewhere in between, will give the District a better sense of the degree to which they may need to conserve or expand existing water supplies.

7.1.2 Reliability of Groundwater Supplies

The District's pumping records clearly demonstrate the District's ability to deliver reliable supplies under all hydrologic conditions. Groundwater supply is assumed to be drought resistant; therefore, no reduction in supply during dry years is anticipated.

As described in Chapter 6, the Yuba Subbasins have a long history of successful groundwater management, and the water budget analysis conducted as part of the GSP estimates sustainable groundwater conditions into the future. The South Yuba Subbasin is not expected to become overdrafted in the future based on projected groundwater pumpage and surface water deliveries. Unlike many medium- and high-priority basins and subbasins managed under GSPs, groundwater extraction in the Yuba Subbasins does not exceed the sustainable yield, and the average annual groundwater storage is stable or increasing under all scenarios, suggesting sustainable conditions. Therefore, the South Yuba Subbasin is expected to be reliable in all years over the 25-year planning horizon of this 2020 UWMP.

7.1.3 Year Type Characterization

The quantity of supply available from different water supply sources can vary from one year to the next depending on hydrologic conditions. Historical data, where available, were therefore used to develop a projected yield for each water supply source under three conditions: (1) normal water year, (2) single dry year, and (3) multiple dry years. In accordance with the DWR Guidebook, each condition is defined as follows:

- **Normal Water Year***:* The year in the historical sequence most closely representing average runoff or allocation levels and patterns
- **Single-Dry Year:** The year with the lowest annual runoff or allocation in the historical sequence
- **Multiple-Dry Year***:* The lowest average runoff or allocation for a consecutive 5-year period in the historical sequence

Table 7-1 lists the years that the District identifies as their historical average, single driest year, and driest multi-year period. These years are also known as the "Base Years." The available supplies column specifies the percentage and volume of the water supply expected if there were to be a repeat of the hydrology from that type of year.

As discussed in Section 6.1.2.3 (Groundwater Well Capacity), the District's current groundwater supply is constrained by a filter capacity of 16,600 gpm (8,725 MG/year). However, new developments within the District's service area are required to install new wells and treatment facilities as necessary, with maintenance and ownership transferred to the District. Since water delivery and treatment infrastructure will be developed and funded by developers, it is assumed that adequate water service will be available for planned growth in the District's service area.

As shown in Table 7-1, the District's average year supply is assumed to be 75 percent of the District's current groundwater filter capacity (75 percent of 16,600 gpm). Because the District's groundwater supply is assumed to be drought resistant, no reduction in supply during dry years is anticipated. Therefore, the District's dry year supplies are assumed to equal the District's average year supplies.

Table 7-1. Basis of Water Year Data (Reliability Assessment) (DWR Table 7.1 Retail)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2019-2020, use 2020	Available Supplies if Year Type Repeats	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2005	6,544	100%
Single-Dry Year	1977	6,544	100%
Consecutive Dry Years 1st Year	1987	6,544	100%
Consecutive Dry Years 2nd Year	1988	6,544	100%
Consecutive Dry Years 3rd Year	1989	6,544	100%
Consecutive Dry Years 4th Year	1990	6,544	100%
Consecutive Dry Years 5th Year	1991	6,544	100%
NOTES: The District's average year supply is assumed to be equal to 75 percent of the District's current groundwater filter capacity. Because the District's groundwater supply is assumed to be drought resistant, the District's dry year supply is not subject to reduction during dry years and is assumed to be 100% of the District's normal year supply. Volumes are in MG.			

7.1.4 Water Service Reliability

The District's projected supply and demand for Normal Years, Single Dry Years and Multiple Dry Years are quantified and discussed below.

7.1.4.1 Water Service Reliability – Normal Year

The District's potable water supply is expected to continue to be supplied by groundwater from the South Yuba subbasin. The District's projected groundwater supply is assumed to be 6,544 MG/year during Normal Years.

As described in Chapter 4, the District's Normal Year demands have been projected based on anticipated growth within the District's service area and are consistent with the District's per capita water use in 2020.

As shown in Table 7-2, the District's Normal Year supplies are adequate to meet projected Normal Year demands.

Table 7-2. Normal Year Supply and Demand Comparison (DWR Table 7-2 Retail)

	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	6,544	6,544	6,544	6,544	6,544
Demand totals *(autofill from Table 4-3)*	1,754	2,130	2,318	2,506	2,693
Difference	4,790	4,414	4,226	4,038	3,851
NOTES: Volumes are in MG; table numbers refer to DWR table numbers.					

7.1.4.2 Water Service Reliability – Single Dry Year

The District's projected groundwater supply is assumed to be 6,544 MG/year during Single Dry Years. This assumes no reduction in available supply compared to Normal Years.

Demand reductions are not assumed during dry years. Therefore, the District's Single Dry Year demands are assumed to be the same as Normal Year demands.

As shown in Table 7-3, the District's Single Dry Year supplies are adequate to meet projected Single Dry Year demands.

Table 7-3. Single Dry Year Supply and Demand Comparison (DWR Table 7-3 Retail)

	2025	2030	2035	2040	2045 (Opt)
Supply totals	6,544	6,544	6,544	6,544	6,544
Demand totals	1,754	2,130	2,318	2,506	2,693
Difference	4,790	4,414	4,226	4,038	3,851
NOTES: Volumes are in MG.					

7.1.4.3 Water Service Reliability – Five Consecutive Dry Years

The District's projected groundwater supply is assumed to be 6,544 MG/year during Multiple Dry Years. This assumes no reduction in available supply compared to Normal Years.

Demand reductions are not assumed during dry years. Therefore, the District's Multiple Dry Year demands are assumed to be the same as Normal Year demands.

As shown in Table 7-4, the District's Multiple Dry Year supplies are adequate to meet projected Multiple Dry Year demands.

Table 7-4. Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4 Retail)

		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
Second year	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
Third year	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
Fourth year	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
Fifth year	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
Sixth year *(optional)*	Supply totals	6,544	6,544	6,544	6,544	6,544
	Demand totals	1,754	2,130	2,318	2,506	2,693
	Difference	4,790	4,414	4,226	4,038	3,851
NOTES: Volumes are in MG.						

7.2 REGIONAL SUPPLY RELIABILITY

To minimize the District's vulnerability to groundwater quality issues, the District will continue to coordinate with YWA and other local agencies and stakeholders to evaluate groundwater withdrawals in support of continued groundwater management efforts.

In addition, the District has and continues to participate with YWA and other local agencies to implement water conservation measures. The District is responsible for water conservation marketing and outreach to the District's customers.

With these available management tools, the District does not currently foresee a need to import water from other regions.

7.3 DROUGHT RISK ASSESSMENT

CWC Section 10635(b) requires that the District prepare a Drought Risk Assessment (DRA) based on the supply condition associated with the five driest consecutive years on record. This supply condition is to be assumed to occur over the next five years, from 2021 through 2025.

This section reviews the data and methods used to define the DRA water shortage condition and evaluates each water source's reliability under the proposed drought condition. Total water supplies during the five-year drought are compared to projected demands, accounting for any applicable supply augmentation or demand reduction measures available to the District.

This DRA would allow the District to prepare for a potential water shortage and implementation of its WSCP, if necessary. Findings show that, should the District experience five consecutive dry years starting in 2021, adequate water supplies are available to meet projected demands.

7.3.1 Data, Methods, and Basis for Water Shortage Condition

The DRA was performed for 2021 through 2025 using the same Multiple Dry Year conditions presented in Section 7.1.4,3. The 2025 projected water demand is based on normal year water demand projections developed in Section 4.2.3 of this plan, which considered population growth and the District's 2020 per capita water use. As presented in Section 4.2.3.2, water demands for 2021 through 2024 were linearly interpolated between the actual 2020 water demand and the projected 2025 water demand.

7.3.2 DRA Water Source Reliability

Groundwater is the District's sole water supply source. Therefore, the District's projected available water supply for each year of the DRA is assumed to be equal to the full Normal Year supply. No reductions in available groundwater are expected during Multiple Dry Years, as discussed in Section 7.1.3.

7.3.3 Total Water Supply and Use Comparison

As shown in Table 7-5, during a five-year drought beginning in 2021, the District's supplies are adequate to meet projected demands through 2025, even without water conservation. It is anticipated that implementation of conservation measures would reduce the 2021 through 2025 projected demands.

Table 7-5. Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	1,456
Total Supplies	6,544
Surplus/Shortfall w/o WSCP Action	5,088
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	5,088
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	1,531
Total Supplies	6,544
Surplus/Shortfall w/o WSCP Action	5,013
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	5,013
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	1,605
Total Supplies	6,544
Surplus/Shortfall w/o WSCP Action	4,939
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	4,939
Resulting % Use Reduction from WSCP action	0%

2024	Total
Total Water Use	1,680
Total Supplies	6,544
Surplus/Shortfall w/o WSCP Action	4,864
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	4,864
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use	1,754
Total Supplies	6,544
Surplus/Shortfall w/o WSCP Action	4,790
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	4,790
Resulting % Use Reduction from WSCP action	0%

CHAPTER 8
Water Shortage Contingency Plan

This chapter discusses the District's WSCP, seismic risk to District facilities, and WSCP adoption procedures. To allow for WSCP updates to be made outside of the UWMP preparation process, the District's WSCP is included in this plan as Appendix J.

8.1 WATER SHORTAGE CONTINGENCY PLAN BACKGROUND

Water shortages occur whenever the available water supply cannot meet the normally expected customer water use. This can be due to several reasons, including climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. A WSCP presents how an urban water supplier plans to respond to a water shortage condition and helps prevent catastrophic service disruptions.

In 2018, the California State Legislature enacted two policy bills, (SB 606 (Hertzberg) and AB 1668 (Friedman)) (2018 Water Conservation Legislation), to establish a new foundation for long-term improvements in water conservation and drought planning to adapt to climate change and the resulting longer and more intense droughts in California. The 2018 Water Conservation Legislation set new requirements for water shortage contingency planning; the District's WSCP has been prepared to be consistent with these requirements.

8.2 DISTRICT WATER SHORTAGE CONTINGENCY PLAN

The District's WSCP was developed to provide a strategic plan for preparing and responding to water shortages. The WSCP includes water shortage stages and associated shortage response actions, as well as the District's legal authorities, communication protocols, compliance and enforcement, and monitoring and reporting.

The District intends for its WSCP to be dynamic, so that it may assess response action effectiveness and adapt to foreseeable and unforeseeable events. Therefore, the District's WSCP is included in this plan as Appendix J to allow for updates to be made outside of the UWMP preparation process. When an update to the WSCP is proposed, the revised WSCP will undergo the process described in Section 8.4.

8.3 SEISMIC RISK ASSESSMENT AND MITIGATION PLAN

CWC §10632.5(a) requires that UWMPs include a seismic risk assessment and mitigation plan to assess and mitigate a water system's seismic vulnerabilities. Details of the District's seismic risk assessment and mitigation plan are provided in Appendix J, Section 4.6.

8.4 PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The District's WSCP (Appendix J) is adopted concurrently with this plan, by separate resolution. Prior to adoption, a duly noticed public hearing was conducted. An electronic copy of the WSCP will be submitted to DWR within 30 days of adoption.

No later than 30 days after adoption, a copy of this WSCP will be available at the District's offices. A copy will also be provided to Yuba County. An electronic copy of the WSCP will also be available for public review and download on the District's website (www.opud.net).

The District's WSCP is an adaptive management plan and is subject to refinements as needed to ensure that the District's shortage response actions and mitigation strategies are effective and produce the desired results. When a revised WSCP is proposed, the revised WSCP will undergo the process described above for adoption by the District Board of Directors and distribution to Yuba County, the District's customers, and the general public.

CHAPTER 9
Demand Management Measures

This chapter describes the District's historical and existing water conservation program, status of implementation of DMMs, and projected future water conservation implementation. The CWC requires that UWMPs include a comprehensive description of historical, current, and projected water conservation programs.

9.1 WATER CONSERVATION PROGRAM OVERVIEW

Water conservation plays a significant role in the District's 2020 UWMP and its long-term strategy for meeting the water needs of the District's current customers and future service area expansions. The goals of the District's water conservation program are to:

- Promote water use efficiency and beneficial uses of potable water
- Ensure a reliable water supply
- Seek improvements to reduce system losses
- Demonstrate commitment to the DMMs

9.2 EXISTING DEMAND MANAGEMENT MEASURES

The six DMMs required to be discussed in the 2020 UWMP include the following:

- Water waste prevention ordinances
- Metering
- Conservation pricing
- Public education and outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support

For each DMM, the current program is described, followed by a description of how the DMM was implemented over the previous five years to meet the water use targets required by SB X7-7 (see Chapter 5 SB X7-7 Baselines, Targets and 2020 Compliance) and proposed future implementation to meet future water use objectives.

9.2.1 Water Waste Prevention Ordinances

The District has a water conservation ordinance which establishes rules and regulations for water service and provides procedures and penalties for enforcement. For dry year conditions, or during other water supply shortages, the District has a Water Shortage Contingency Plan which includes specific water use restrictions. The District's Water Shortage Contingency Plan is described in Chapter 8 and Appendix J and the District's water conservation ordinance is included in Appendix K of this 2020 UWMP.

Continued implementation of this DMM is expected to help the District achieve its water use targets by minimizing the non-essential uses of water so that water is available to be used for human consumption, sanitation, and fire protection.

9.2.2 Metering

Although the District is currently installing water meters on all new connections, the District's water system is not yet fully metered. The District's Plumas Lake water system is totally metered; however, of the 4,609 residential connections in the Olivehurst water system in 2020, approximately 395 residential connections are not yet metered. The District's on-going meter installation program is on track to convert the remaining unmetered accounts to metered accounts by the end of 2022, and therefore satisfy the 2025 State deadline.[1]

Under the District's normal (non-drought) water rates, the District's metered water connections are billed a fixed monthly service charge based on meter size plus a water usage fee based on metered consumption. The District's unmetered water connections are billed based on a monthly flat rate based on service size and are converted to the metered rate once a water meter has been installed.

Effectiveness of the metering program will be monitored by tracking the number of retrofits installed per year. By implementing the on-going meter installation and replacement program, the District is developing a more focused and direct monitoring tool allowing the District and their customers to better monitor and track water use and help identify high water usage and/or leaks.

9.2.3 Conservation Pricing

As discussed above, the District's water system is not yet fully metered. Under the District's current normal (non-drought) water rates (included in Appendix L), metered customers are billed a fixed monthly service charge based on meter size plus a uniform water usage fee based on metered consumption. As soon as the current unmetered (flat rate) customers have a meter installed, they will also be converted to the uniform metered rate. Table 9-1 shows the District's current normal (non-drought) water rates.

Table 9-1. Current Normal (Non-Drought) Water Rates[(a)]

Metered Rate Accounts	
¾-inch Meter Accounts	Fixed Monthly Charge: $19.50 Water use included (not billed): 6 ccf Consumption Charge ($/ccf): $1.95
1-inch to 4-inch Meter Accounts	Fixed Monthly Charge: $32.50 Water use included (not billed): 10 ccf Consumption Charge ($/ccf): $1.95
Flat Rate Accounts	
¾-inch Service	Fixed Monthly Charge: $46.80
1-inch Service	Fixed Monthly Charge: $75.40

(a) Water Service Charges, effective January 1, 2021 (Resolution 2332).

[1] In 2004, the California Legislature passed AB 2572, requiring all water suppliers to install water meters on all customer connections by January 1, 2025.

The District is dedicated to providing reliable water services in a cost-effective manner while protecting water resources and the public's health. The District regularly reviews its current water rates to ensure that the rates are fair and equitable. Once all of the District's customers are metered, the District's current water rate structure and water rates will be reviewed, and any required adjustments to the water rate structure or water rates will be proposed. Any proposed change in the District's water rate structure or water rates will be subject to public review in accordance with the requirements of Proposition 218 and approval by the District Board of Directors.

In October 2015 the District adopted Resolution 2300, which provided for drought emergency water service surcharges and the adoption of a tiered drought emergency water rate system (see Table 9-2 below and Appendix L). For the District's metered customers, this rate structure encouraged further water conserving behavior by incorporating a tiered volumetric surcharge in addition to the normal (non-drought) unit service charge. Consequently, water usage reductions directly reduced the surcharge to the metered customer, while excessive water use resulted in increased surcharges to the metered customer. If current drought conditions continue and there is a need to re-enact drought emergency surcharges to encourage further water conservation and address the financial impact of a drought, a drought emergency rate system will again be evaluated and will be subject to public review in accordance with the requirements of Proposition 218 and approval by the District Board of Directors.

Continued implementation of this DMM is expected to help the District achieve its water use targets by ensuring water customers pay the true cost of water and to adequately fund water system operations and maintenance, including repair and replacement programs, and water conservation programs.

9.2.4 Public Education and Outreach

The District has an active public information and outreach program. The District has participated in public outreach activities through the YUBA FIRST 5 communication efforts, and anticipates developing a water conservation program that would include various components of a public and school outreach program as funding and staffing resources are available. The District anticipates distributing information to the public about water saving programs and conservation measures through monthly bill messages. In addition, monthly water bills are designed to show water used over the last billing period with a summary of water usage by each billing period for the previous year.

Table 9-2. 2015-2017 Drought Emergency Water Rates[a]

Quantity Charge for Metered Accounts					
2015 Emergency Drought Water Rates, $/ccf[b]					
Meter Size	Tier Water Use	Stage 1 (20%)	Stage 2 (30%)	Stage 3 (40%)	Stage 4 (50%)
¾"	0-12 ccf	0.00	0.20	0.50	0.90
¾"	13-30 ccf	0.30	0.50	0.90	0.40
¾"	Over 30 ccf	0.70	0.80	1.40	2.20
1" and larger	All Water Use	0.21	0.39	0.72	1.10
2016 Emergency Drought Water Rates, $/ccf[c]					
Meter Size	Tier Water Use	Stage 1 (20%)	Stage 2 (30%)	Stage 3 (40%)	Stage 4 (50%)
¾"	0-9 ccf	0.00	0.25	0.50	0.95
¾"	10-30 ccf	0.30	0.50	1.00	0.45
¾"	Over 30 ccf	0.70	0.80	1.45	2.45
1" and larger	All Water Use	0.25	0.45	0.82	1.24
2017 Emergency Drought Water Rates, $/ccf[d]					
Meter Size	Tier Water Use	Stage 1 (20%)	Stage 2 (30%)	Stage 3 (40%)	Stage 4 (50%)
¾"	0-6 ccf	0.00	0.30	0.60	1.00
¾"	7-30 ccf	0.30	0.55	0.95	1.50
¾"	Over 30 ccf	0.70	0.80	1.60	2.50
1" and larger	All Water Use	0.28	0.50	0.90	1.37
Revised Emergency Drought Water Rates, $/ccf[e]					
Meter Size	Tier Water Use	Stage 1a (10%)	-	-	-
¾"	0-20 ccf	0.00	-	-	-
¾"	21-30 ccf	0.30	-	-	-
¾"	Over 30 ccf	0.70	-	-	-
1" and larger	All Water Use	0.16	-	-	-
Fixed Monthly Surcharge for Flat Rate Accounts, $					
Service Size	-	-	Stage 2 (30%)	Stage 3 (40%)	Stage 4 (50%)
¾"	-	-	0.37	2.28	3.10
1"	-	-	0.56	3.50	4.76
1 ½"	-	-	0.85	5.31	7.22
2"	-	-	1.22	7.65	10.40
3"	-	-	2.55	15.92	21.66
4" and larger	-	-	3.57	22.29	30.31

(a) Proposed maximum emergency drought rates adopted by the District on October 1, 2015 (Resolution 2300).
(b) Effective on or after November 1, 2015.
(c) Effective on or after January 1, 2016.
(d) Effective on or after January 1, 2017.
(e) Revision 1 to Resolution 2300 approved by District Board of Directors on September 15, 2016; effective on or after October 1, 2016.
ccf = one hundred cubic feet or approximately 748 gallons

The District is working hand-in-hand with the Yuba Water Agency and their consulting team to expand outreach and education on the need for and importance of water use efficiency and water conservation. Efforts by the District and the Yuba Water Agency have three primary objectives:

- To identify issues of concern from water customers and solicit their feedback
- To provide information and education on efficient water use and conservation through public events, demonstrations, workshops, social media and other means
- To increase awareness of current and future water supply issues and engage the public's interest in planning for the future

Specific planned actions include:

- Providing additional customer education
- Identifying issues of concern within the District's water customer base that may not have been previously voiced due to lack of awareness or understanding
- Providing the annual required Consumer Confidence Report in a more user-friendly format, in English and Spanish, highlighting important issues for customers, explaining how to read the report and what the information means to the customers, and providing background on the District and its mission

Continued implementation of this DMM is expected to help the District achieve its water use targets by educating water users about the importance of improving water use efficiency and avoiding water waste.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

A water audit is a process of accounting for water use throughout a water system to quantify the efficiency of the water distribution system. Unaccounted-for water is the difference between metered production and metered consumption on a system-wide basis. A leak detection program typically consists of both visual inspection as well as audible inspection. Visual inspection includes the inspection of distribution system appurtenances (e.g., fire hydrants, valves, meters, etc.) to identify obvious signs of leakage. To perform audible leak detection, specialized electronic listening equipment is used to detect the sounds associated with distribution system leakage. This process allows the agency to pinpoint the location of suspected leaks.

Repair and maintenance of the water distribution systems are priorities for the District. The District has a Capital Improvement Plan that outlines maintenance programs for maximizing the efficiency of water distribution system operations and minimizing water losses. These programs include using Supervisory Control and Data Acquisition (SCADA) systems to monitor groundwater production, quick responses to water main leak detection and repair, recalibration of each well meter every four years, annual pump efficiency testing, and water quality efforts including main flushing and water quality testing.

The District recently applied for a grant for saddle replacement for roughly 1,203 homes throughout Olivehurst. Olivehurst contains a large portion of residential homes that were built prior to the 1950's and one of the previous practices for water connections from the main to the lateral were to connect them via a cast iron saddle. Cast iron is known to rust, corrode, and disintegrate over time, which is what has occurred for most of the older homes with this type of fitting. The cast iron saddles currently in place were made of cheap material and have reached or exceeded their life expectancy and are in need of

replacement per current industry standards and practices. The District plans to replace the cast iron saddles with brass saddles which are more effective, longer lasting, and resistive to corroding. It is estimated that approximately 12 MG of water is being wasted each year due to leaks, cracks, and broken infrastructure related to the cast iron saddles, and would be saved with the replacement of the saddles.

In addition, the District has an ongoing pipe replacement program to replace the Olivehurst system's aging steel pipelines. The District will be replacing approximately 14,000 feet of steel mains with 8-inch diameter C-900 PVC plastic pipe throughout historic Olivehurst via the Integrated Regional Water Management Plan (IRWMP) Project 4 Grant. This project will also replace approximately 25 fire hydrants, 69 8-inch diameter valves and 40 tie-in locations to existing water mains. The project will prevent loss of approximately 78 MG of water each year through system leaks and inefficiencies, increase public safety of a disadvantaged community by increasing water supply flow for fire-fighting, improve the water supply system that supports 10,000 residents of a disadvantaged community, and assist the District in increasing its ability to manage dry periods. The project is planned to be completed by March 1, 2024.

Ongoing analysis of unaccounted for water is one of the most effective means to achieve conservation by reducing leaks from the system. Actual losses in the District's Olivehurst system are unknown until the Olivehurst system becomes fully metered. As mentioned previously, the District's metering program is anticipated to be completed by the end of 2022. Once the conversion to metered water use is complete, the District will be able to determine actual water use and better estimate losses based on metered usage. In 2020, water losses in the District's Plumas Lake system were approximately 10 percent. The District's Plumas Lake system is relatively new; therefore, water loss percentages are expected to be low. Whenever it appears that leaks may exist on the customer's side of the meter, customers in the District's service area are notified to investigate and conduct a repair. District staff continually monitor leak repairs to ensure losses are minimized.

Concurrent with completion of the District's metering program, continued implementation of this DMM is expected to help the District achieve its water use targets by identifying sources of water loss quickly so repairs can be made and losses minimized.

9.2.6 Water Conservation Program Coordination and Staffing Support

The District does not have a full-time Water Use Efficiency Practitioner, as the District's size does not warrant a full-time position. However, the District does have a full-time staff member who is responsible for implementing and monitoring the District's water conservation activities. The Water Use Efficiency Practitioner's role is to develop, implement and manage the District's water conservation program and to coordinate on-going conservation programs with other agencies. District staff also support conservation efforts through enforcement and monthly billing mailers.

Implementation of this DMM is expected to help the District achieve its water use targets by making water conservation and implementation of the District's water conservation program a priority.

9.2.7 Other Demand Management Measures

In addition to the six DMMs described above, the District also implements the following programs:

- Residential conservation programs
- Commercial, industrial, institutional customer conservation programs

These programs are described below.

9.2.7.1 Residential Conservation Programs

The District's service area is demographically diverse and located in an area (Yuba County) with a median household income of about $58,054 per year[2] which is much lower than the neighboring counties (Sutter County and Placer County). Furthermore, according to U.S. Census data, the median household income in Olivehurst is $48,598 per year[3], which is lower than the county-wide median. As such, District customers are very sensitive to water rates and the District's revenues are constrained. Consequently, the District has limited personnel and funding to exhaustively support residential assistance programs and current water rates cannot support the costs associated with performing water surveys; therefore, water surveys are not part of the approved operating budget. In addition, District management and its Board of Directors are also concerned about the personal safety of its staff performing on-site residential audits; therefore, at this time, residential audits are not conducted.

As discussed above, the District has partnered with the Yuba Water Agency to expand outreach and education on the need for and importance of water use efficiency and water conservation.

Implementation of this DMM is expected to help the District achieve its water use targets by reducing the amount of water consumed by its residential customers.

9.2.7.2 Commercial, Industrial, Institutional Customers Conservation Programs

The District may choose to pass a resolution to require the future construction projects to use water conservation methods for plumbing fixtures, including Ultra-Low Flush Toilets (ULFT), low-flow showerheads, and waterless urinals.

Implementation of this DMM is expected to help the District achieve its water use targets by reducing the amount of water consumed by its Commercial Industrial Institutional (CII) customers.

[2] Median household income for Yuba County, United States Census Bureau, 2015-2019: American Community Survey 5-Year Estimates Data Profiles.

[3] Median household income for Olivehurst CPD, United States Census Bureau, 2015-2019: American Community Survey 5-Year Estimates Data Profiles.

9.3 IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

Water conservation measures are a vital part of the District's overall plan to achieve reliable, high quality, and cost-effective water supply for its customers. As described above, the District has implemented mandatory potable water use restrictions and conservation pricing. The District found its drought rate structure to be extremely effective at reducing customer water use during the most recent drought.

9.4 WATER USE OBJECTIVES (FUTURE REQUIREMENTS)

In 2018, the State Legislature enacted two policy bills, (SB 606 (Hertzberg) and AB 1668 (Friedman)), to establish long-term water conservation and drought planning to adapt to climate change and the associated longer and more intense droughts in California. These two policy bills build on SB X7-7 and set authorities and requirements for urban water use efficiency. The legislation sets standards for indoor residential use and requires the State Water Board, in coordination with DWR, to adopt efficiency standards for outdoor residential use, water losses, and CII outdoor landscape areas with dedicated irrigation meters. At the time of preparation of this UWMP, DWR and the State Water Board are in the process of adopting new standards for water loss and indoor and outdoor residential water use. These standards will require urban water retailers to develop agency-wide water use objectives and provide annual reports to DWR.

The State Legislature established indoor residential water use standards as 55 gpcd until January 2025, 52.5 gpcd from 2025 to 2029, and 50 gpcd in January 2030, or a greater standard recommended by DWR and the State Water Board. By June 30, 2022, the State Water Board is anticipated to adopt an outdoor residential use standard, a standard for CII outdoor landscape area with dedicated irrigation meters, and performance measures for CII water uses. At that time, the State Water Board will adopt guidelines and methodologies for calculating the water use objectives. In accordance with CWC §10609.20(c), the water use objective for urban water retailers will be based on the estimated efficient indoor and outdoor residential water use, efficient outdoor irrigation of CII landscaped areas, estimated water losses, and estimated water use for variances approved by the State Water Board aggregated across the population in its water service area.

An urban supplier shall submit a report to DWR no later than January 1, 2024, and by January 1 every year thereafter, reporting on its progress towards meeting its urban water use objective (California Water Code §10609.24).

CHAPTER 10
Plan Adoption, Submittal, and Implementation

This chapter provides information regarding the notification, public hearing, adoption, and submittal of the District's 2020 UWMP. It also includes discussion on plan implementation and the process of amending the UWMP and the WSCP.

10.1 INCLUSION OF ALL 2020 DATA

Because 2020 is the final compliance year for SB X7-7, the 2020 UWMPs must contain data through the end of 2020. If a water supplier bases its accounting on a fiscal year (July through June) the data must be through the end of the 2020 fiscal year (June 2020). If the water supplier bases its accounting on a calendar year, the data must be through the end of the 2020 calendar year (December 2020).

As indicated in Section 2.4 of this plan, the District uses a calendar year for water supply and demand accounting, and therefore this plan includes data through December 2020.

10.2 NOTICE OF PUBLIC HEARING

In accordance with the UWMP Act, the District must provide an opportunity for the public to provide input on this 2020 UWMP. The District must consider all public input prior to its adoption. There are two audiences to be notified for the public hearing: cities and counties, and the public.

10.2.1 Notices to Cities and Counties

The District provided greater than a 60-day notice regarding the preparation of its 2020 UWMP to Yuba County as discussed in Section 2.5 of this plan. In addition, the District provided notices to the following agencies:

- Yuba Water Agency
- Linda County Water District
- Marysville Joint Unified School District
- Plumas Lake School District

The District coordinated the preparation of its UWMP internally, with Yuba County, and with the above listed agencies. The notices of preparation are included as Appendix D. Upon substantial completion of this plan, the District provided the agencies listed above, including Yuba County, notice of public hearing (see Appendix D).

Notifications to Yuba County, in accordance with the UWMP Act, are summarized in Table 10-1.

Table 10-1. Retail: Notification to Cities and Counties (DWR Table 10-1)

County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Yuba County	Yes	Yes

10.2.2 Notice to the Public

The District issued a notice of public hearing to the public and provided a public review period following the notice, and prior to adoption, to allow ample time for public comments to be prepared and received.

A notice of public hearing was issued in accordance with Government Code Section 6066 and was published twice in the (_____) newspaper to notify all customers and local governments of the public hearing. In addition, the notice was posted on the District's website (www.opud.org). A copy of the published Notice of Public Hearing is included in Appendix D.

10.3 PUBLIC HEARING AND ADOPTION

The District encouraged community participation in the development of this 2020 UWMP, including its WSCP, using public notices and web-based communication. The notice included the time and place of the public hearing, as well as the location where the plan is available for public inspection.

The public hearing provided an opportunity for District water users and the general public to become familiar with the 2020 UWMP and ask questions about the District's water supply, its continuing plans for providing a reliable, safe, high-quality water supply, and plans to mitigate various potential water shortage conditions. Copies of the Draft UWMP were made available for public inspection at the District's offices and on the District website.

10.3.1 Public Hearing

A public hearing was held on _____, 2022. As part of the public hearing, the District provided a report on the District's compliance with the Water Conservation Act of 2009. The report included information on the District's baseline, water use targets, compliance, and implementation, as discussed previously in Chapter 5 of this plan.

10.3.2 Adoption

Subsequent to the public hearing, this 2020 UWMP was adopted by the District Board of Directors on _____, 2022. A copy of the adopted resolution is included in Appendix M.

10.4 PLAN SUBMITTAL

This 2020 UWMP will be submitted to DWR within 30 days of adoption. The adopted 2020 UWMP will be submitted electronically to DWR using the Water Use Efficiency (WUE) data portal. A CD or hardcopy of the adopted 2020 UWMP will also be submitted to the California State Library.

No later than 30 days after adoption, a copy of the adopted 2020 UWMP, including the Water Shortage Contingency Plan, will be provided to Yuba County in which the District provides water.

10.5 PUBLIC AVAILABILITY

No later than 30 days after submittal to DWR, copies of this plan, including the adopted Water Shortage Contingency Plan, will be available at the District's offices for public review during normal business hours. An electronic copy of this plan will also be available for review and download on the District's website.

10.6 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN

The District may amend its 2020 UWMP and Water Shortage Contingency Plan jointly or separately. If the District amends one or both documents, the District will follow the notification, public hearing, adoption, and submittal process described in Sections 10.2 through 10.4 above. In addition to submitting amendments to DWR through the WUE data portal, copies of amendments or changes to the plans will be submitted to the California State Library and Yuba County within 30 days after adoption.