FINAL REPORT | JUNE 2021

2020 Urban Water Management Plan

PREPARED FOR

Woodland-Davis Clean Water Agency

WOODLAND-DAVIS Clean Water Agency

PREPARED BY

WEST YOST
Water. Engineered.

2020 Urban Water Management Plan

Prepared for

Woodland-Davis Clean Water Agency

Project No. 376-40-20-14

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LIST OF ACRONYMS AND ABBREVIATIONS

◦F	Degrees Fahrenheit
AB	Assembly Bill
AF	Acre-Feet
AFY	Acre-Feet Per Year
Agency	Woodland-Davis Clean Water Agency

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Alternatives Evaluation	Water Supply Risk and Alternatives Evaluation
ASR	Aquifer Storage and Recovery
AWIA	America's Water Infrastructure Act
CFS	Cubic Feet Per Second
CPG	Conaway Preservation Group
CVP	Central Valley Project
CWC	California Water Code
Davis	City of Davis
DMM	Demand Management Measures
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
DWR Guidebook	2020 Urban Water Management Plans Guidebook for Urban Water Suppliers
DWWSP	Davis Woodland Water Supply Project
FEMA	Federal Emergency Management Agency,
GHG	Greenhouse Gas
GPCD	Gallons Per Capita Day
HMP	Hazard Mitigation Plan
kWh	Kilowatt Hours
ROConLTO COS	Re-Initiation of Consultation on Long Term Current Operations Scenario
RRA	Risk and Resilience Assessment
RUWMP	Regional Urban Water Management Plan
RWTF	Regional Water Treatment Facility
SB X7-7	Senate Bill X7-7
SP-1	Specific Plan 1
SP-2	Specific Plan 2
SP-3	Specific Plan 3
SWP	State Water Project
SWRCB	State Water Resources Control Board
UC Davis	University of California, Davis
UCERF III	Uniform California Earthquake Rupture Forecast
USBR	United States Bureau of Reclamation
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
Woodland	City of Woodland
WPCF	Water Pollution Control Facility
WSCP	Water Shortage Contingency Plan
WUE	Water User Efficiency

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 impact water supply availability and development is occurring throughout the State resulting in increased needs for reliable water supplies. The Urban Water Management Planning Act (Act) requires larger water suppliers that provide water to urban users (whether directly or indirectly) to develop UWMPs every five years. UWMPs evaluate conditions for the next 20 years, so these regular updates ensure continued long-term planning.

The Woodland-Davis Clean Water Agency (Agency) is a water wholesaler, meaning it sells water to other agencies who then sell it to individual water users (e.g., residents and businesses). The Agency's customers consist of the City of Woodland, the City of Davis, and University of California, Davis. These customers are collectively referred to as the Project Participants. Because the Agency provides over 3,000 acre-feet of water annually for municipal purposes, it is required to prepare a UWMP.

This Executive Summary serves as a Lay Description of the Agency's 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 City's water system and facilities, calculating how much water its customers use (i.e., water demand) and how much the City can supply, and detailing how the City 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 (also known as 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 has 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).

- 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 (WSCP): 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).
- Lay Description: Provide a lay description of the findings of the UWMP; this Executive Summary serves as the Lay Description for this 2020 UWMP.

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

AGENCY WATER SERVICE AREA AND FACILITIES

The Agency serves the City of Woodland, City of Davis, and University of California, Davis (Project Participants). The Agency's service area is located within the boundaries of Yolo County in Northern California, approximately 64 miles northeast of San Francisco and 15 miles west of the City of Sacramento.

The Agency uses entirely surface water supplies from the Sacramento River. The Agency is currently in possession of two sets of water rights under which surface water from the Sacramento River is diverted, treated, and delivered to the Project Participants. The Agency's water facilities include a raw water intake facility, raw water transmission pipeline, the Regional Water Treatment Facility (RWTF), and finished water transmission pipelines.

AGENCY WATER USE

Demographics and historical population estimates for the Agency's Project Participants can be found in Woodland's UWMP and Davis's UWMP. The Agency itself does not directly serve any urban water customers and, therefore, does not have any population.

The projected water use by the Agency's Project Participants is based on the best available information. Water demand projections for 2030 and 2040 are from the Agency's in-progress Water Supply Risk and Alternatives Evaluation (Alternatives Evaluation). The 2025 projection was interpolated from the 2020 actual water demand and the 2030 projection from the Alternatives Evaluation. The 2035 projection was interpolated from the 2030 and 2040 projections from the Alternatives Evaluation. The 2045 projection was calculated by extrapolating from the 2040 projections following the same trend line between 2030 and 2040.

AGENCY WATER SUPPLIES

The Agency currently relies on the Sacramento River for all of its water supply of 55,000 AFY. The 55,000 AFY of total water rights include:

- rights to divert up to 45,000 AFY from the Sacramento river (subject to Term 91 curtailments) under water right Permit 20281 (primary water right)
- rights to divert up to 10,000 AFY from the Sacramento River (subject to Lake Shasta curtailments) under water right Licenses 904A and 5487A and the Agency's Sacramento River Water Rights Settlement Contract (secondary water right)

To reliably meet current and future water demands, the Agency has tentative future plans to expand the RWTF if necessary. As described in the January 2021 draft Alternatives Evaluation, the Agency is currently contemplating a variety of water supply alternative scenarios. The expansion of the RWTF is one of the possibilities under consideration.

CONSERVATION TARGET COMPLIANCE

The Agency is a wholesale water supplier and, thus, is not required meet 20 percent reduction targets by 2020 in accordance with SB X7-7.

WATER SERVICE RELIABILITY

The California Water Code requires 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 must project available water supplies during a single dry year and five consecutive dry years using historical records.

The Agency is well-positioned to withstand the effects of a single dry year and a five-year drought at any period between 2025 and 2045. The Agency's drought risk was specifically assessed between 2021 and 2025, assuming that the next five years are dry years. In some years, water demands exceed the Agency's water supplies which means that the Project Participants must rely on their native or ASR groundwater wells during these times. This reliance by the Project Participants on supplemental groundwater supplies remains true whether the drought occurs in 2021, 2045, or any year between.

WATER SHORTAGE CONTINGENCY PLAN

A WSCP describes an agency's plan for preparing and responding to water shortages. The Agency updated its WSCP to include its process for assessing potential gaps between planned water supply and demands for current year and the next potentially dry year. It aligned its water service area's water shortage levels with the State 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 is adopted concurrently with this 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 Agency notified the Project Participants and other stakeholders (e.g., Yolo County and the general public) of its preparation, its availability for review, and the public hearing prior to adoption. Through its Project Participants, public notices, and web-based communication, the Agency has encouraged community and public interest involvement in the creation of this UWMP. 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 Agency water users and the general public to become familiar with the 2020 UWMP and ask questions about the Agency's water supply, its continuing plans for providing a reliable, safe, high-quality water supply, and its plans to address potential water shortages. Following the public hearing, the Agency Board adopted the 2020 UWMP on June 30, 2021. A copy of the adopted Plan was provided to the Department of Water Resources and is available on the Agency's website.

CHAPTER 1
Introduction

This chapter provides an introduction and overview of Woodland-Davis Clean Water Agency's (Agency) 2020 Urban Water Management Plan (UWMP) including the importance and extent of the Agency's water management planning efforts changes since the preparation of the Agency's 2015 UWMP, and the organization of the Agency's 2020 UWMP. This 2020 UWMP has been prepared jointly by Agency 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 10657 of the California Water Code, is provided in Appendix A of this plan.

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

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

The Agency has had a long history of providing clean and reliable water to its customers. The Agency's UWMP is a comprehensive guide for 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 2012 to 2016 drought has led to further amendments to the California Water Code (CWC) 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 CWC since the Agency'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 hydrological 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 is discussed in Chapter 7 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 Agency's seismic risk is discussed in Chapter 8 of this plan.
- **Energy Use Information [CWC §10631.2]**. The Water Code now requires urban water 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 City's energy use information is provided in Chapter 6 of this plan.
- **Water Shortage Contingency Plan [CWC §10632].** In 2018, the Legislature modified the UWMP laws to require a Water Shortage Contingency Plan (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 Agency's WSCP is presented in Chapter 8 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 go-to 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 next section below.

1.4 PLAN ORGANIZATION

This 2020 UWMP 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 2020 UWMP, 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 2020 UWMP is organized into the following chapters:

- Chapter 1: Introduction
- Chapter 2: Plan Preparation
- Chapter 3: System Description
- Chapter 4: Customer Water Use
- Chapter 5: SBX7-7 Baselines, Targets, and 2020 Compliance
- Chapter 6: System Supplies
- Chapter 7: Water System Reliability and Drought Risk Assessment
- Chapter 8: Water Shortage Contingency Plan
- Chapter 9: Demand Management Measures
- Chapter 10: Plan Adoption, Submittal and Implementation

This 2020 UWMP also contains the following appendices of supplemental information and data related to the Agency'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: Agency Water Rights
- Appendix F: West Sacramento Option Agreements
- Appendix G: Water Shortage Contingency Plan
- Appendix H: UWMP Adoption Resolution

Furthermore, this 2020 UWMP 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 Agency'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 of water annually (AFY).

The Agency provided more than 3,000 acre-feet (AF) of water supplies to its customers in 2020 and is, therefore, required to prepare an UWMP.

2.2 REGIONAL PLANNING

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

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

This 2020 UWMP has been prepared on an individual reporting basis covering only the Agency's service area, see Table 2-1(DWR Table 2-2). The Agency 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 Agency has notified and coordinated planning and compliance with appropriate regional agencies and constituents.

Table 2-1. Plan Identification (DWR Table 2-2)

Select Only One	Type of Plan		Name of RUWMP or Regional Alliance *if applicable* (select from drop down list)
☑	**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 Agency is a water wholesaler that sells water to other agencies who then sell it to individual water users (e.g., residents and businesses). The Agency's customers consist of the City of Woodland (Woodland), the City of Davis (Davis), and University of California, Davis (UC Davis), jointly referred to as Project Participants.

The Agency'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 2020 UWMP are reported in units of AF.

The Agency's reporting methods for this 2020 UWMP are summarized in Table 2-2 (DWR Table 2-3).

Table 2-2. Agency 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
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP * (select from drop down)	
Unit	AF
**** 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 Agency's inter-agency coordination and coordination with the general public. The UWMP Act requires the Agency to coordinate the preparation of its UWMP and WSCP with other appropriate agencies and all departments within the Agency, 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 2020 UWMP and WSCP, and are summarized below.

2.5.1 Wholesale and Retail Coordination

In accordance with CWC 10631, the Agency and its Project Participants (wholesale customers) have coordinated with each other regarding the projected water use for the period from 2020 to 2045, as summarized in Table 2-3 (DWR Table 2-4).

Table 2-3. Wholesale: Water Supplier Information Exchange (DWR Table 2-4)

☐	Supplier has informed more than 10 other water suppliers of water supplies available in accordance with Water Code Section 10631. Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.
	Provide page number for location of the list.
☑	Supplier has informed 10 or fewer other water suppliers of water supplies available in accordance with Water Code Section 10631. **Complete the table below.**
Water Supplier Name	
Add additional rows as needed	
City of Woodland	
City of Davis	
University of California, Davis	

The Agency is a major water purveyor in Yolo County, serving Woodland, Davis, and UC Davis.

2.5.2 Coordination with Other Agencies and the Community

The Agency coordinated the preparation of this UWMP, including the WSCP, with its retail customers and other local agencies and the community, including Yolo County and Reclamation District 2035.

The Agency coordinated the preparation of this UWMP with other agencies as discussed further in Chapter 10. As part of development of this UWMP, the Agency allowed a public review period, following noticing and prior to adoption, to allow ample time for public comments to be developed and received. Public noticing, pursuant to Section 6066 of the Government Code, was conducted prior to commencement of the public comment period.

Public hearing notices are included in Appendix D of this document.

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 prepared. In March 2021, a notice of preparation was sent to the cities and counties and other stakeholders, to inform them of the UWMP preparation process and schedule, and to solicit input for the 2020 UWMP, including the WSCP. The notifications to cities and counties, the public hearing notifications, and the public hearing and adoption are discussed in Chapter 10.

CHAPTER 3
System Description

This chapter provides a description of the Agency's service area, including a description of the water system facilities, climate, and population associated with municipal water use.

3.1 GENERAL DESCRIPTION

In September 2009, the Cities of Woodland and Davis established the Agency, a joint powers authority, to implement and oversee a regional surface water supply project. UC Davis and Yolo County are also participating, non-voting, agencies. UC Davis contracts with the Agency for 2,000 AFY of surface water supply to supplement its groundwater supplies. The Agency was formed with the goal of providing an improved and more reliable water supply that meets the current and future anticipated drinking water standards. The need to supplement and diversify supply was the driver for the creation of the Agency.

In early 2011, the Agency received approval of their Water Right Application from the State Water Resources Control Board (SWRCB), and subsequently, in April 2011, the SWRCB issued water-right Permit 20281 to the Agency.

Construction of a RWTF began in April 2014, and the distribution of surface water for use by the Agency's Project Participants's began in June 2016.

The Agency's service area is located within the boundaries of Yolo County in Northern California, approximately 64 miles northeast of San Francisco and 15 miles west of the City of Sacramento.

3.2 SERVICE AREA BOUNDARY MAPS

The following section provides brief descriptions of the geographical service area boundaries, water supplies and water system facilities for the Agency's Project Participants. For reference, the Agency's jurisdictional boundaries are shown on Figure 3-1.

3.2.1 City of Woodland

Woodland's water service area encompasses an area of approximately 14.5 square miles. Woodland serves the entire area encompassed by its city limits, including residential, commercial, industrial, and fire use. Additional service area information can be found in the Woodland 2020 UWMP.

3.2.2 City of Davis

Davis's water service area encompasses an area of approximately 10 square miles. Davis serves the entire area encompassed by its city limits, including residential, commercial, industrial, and fire use. Additional service area information can be found in the Davis 2020 UWMP.

3.2.3 University of California, Davis

UC Davis's water service area encompasses an area of approximately 5.75 square miles. Water is utilized for a variety of dormitory and building uses, landscape irrigation, fire suppression, research, and other miscellaneous uses.

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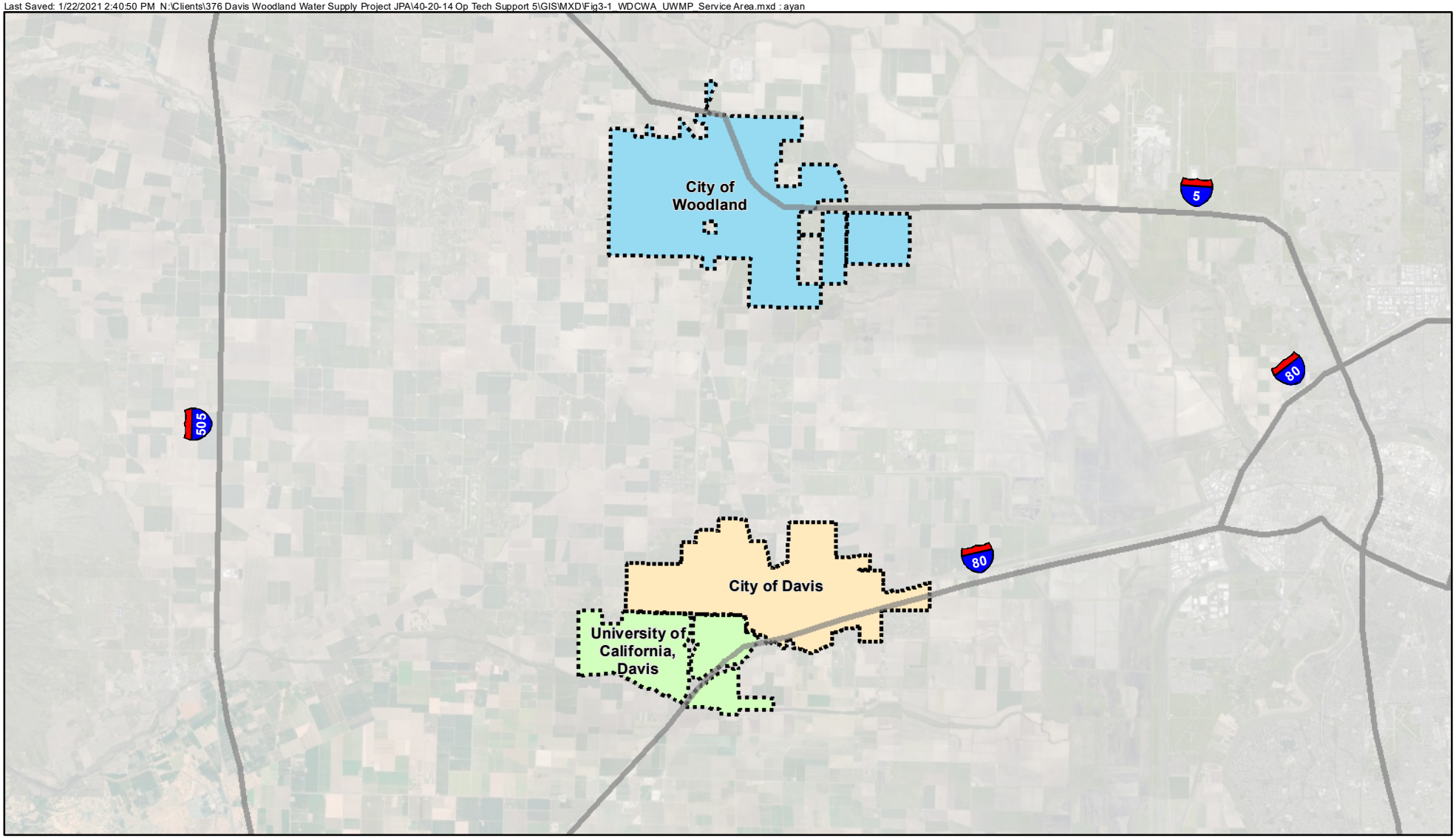

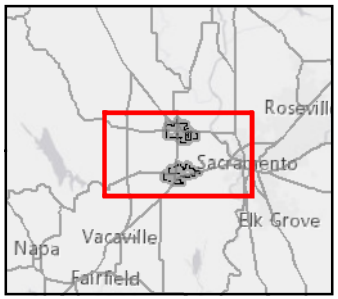

- WDCWA Service Area
- City of Davis
- City of Woodland
- University of California, Davis

N

0 1.5 3

Miles

Figure 3-1

Woodland-Davis Clean Water Agency
Water Service Area

WDCWA
2020 Urban Water Management Plan

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3.3 SERVICE AREA CLIMATE

The area surrounding the Agency is considered a Mediterranean climate, with mild to hot and dry summers, and cool and rainy winters. Table 3-1 presents climatic data for the Regional area.

Table 3-1. Climate Data Summary (Woodland, CA)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Average Eto, inches[(a)]	1.6	2.5	3.8	5.8	7.3	8.0	8.1	7.2	5.6	4.0	2.1	1.6	57.4
Average Max Temperature, °F[(b)]	54.5	60.8	66.8	74.0	82.5	90.5	96.2	94.9	90.1	79.5	65.2	55.2	75.9
Average Min Temperature, °F[(b)]	37.7	40.9	43.8	46.8	51.7	56.5	58.1	56.8	55.6	50.0	42.8	38.0	47.9
Average Rainfall, inches[(b)]	4.0	3.5	2.5	1.3	0.5	0.2	0.0	0.0	0.3	0.9	2.1	3.4	18.5

(a) CIMIS Website: www.cimis.water.ca.gov, Station 226 Woodland, California (May 2011 to November 2020), Monthly Average Et_o Report, Printed November 2020.

(b) Western Regional Climate Center (WRCC) , Station 049781 Woodland 1 WNW, California. Period of record: 3/1/1906 to 7/31/2020.

As shown, the annual average precipitation is approximately 18.5 inches, and the annual average of maximum daily temperature is 76.0 degrees Fahrenheit (◦F). The average rainfall over the last six years (2015-2020) was 18.4 inches. The region is subject to wide variations in annual precipitation. Water year 2017 (October 2016 through September 2017) and Water Year 2019 were relatively wet years with 34.5 and 34.3 inches of rainfall respectively, while Water Year 2020 was relatively dry with only 8.6 inches of rain.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

3.4.1 Service Area Population

The Agency provides water to Woodland, Davis, and UC Davis. Demographics and historical population estimates for the Agency's Project Participants can be found in Woodland's UWMP and Davis's UWMP and are summarized in Table 3-2. Since UC Davis is a university in Davis, the student population is accounted for in Davis's overall population.

Table 3-2. City of Davis and City of Woodland: Current and Projected Population

	2020	2025	2030	2035	2040	2045
Davis[(a)]	70,963	75,357	75,357	75,357	75,357	75,357
Woodland[(b)]	60,742	64,139	67,726	71,513	75,513	79,735

(a) Populations from Chapter 3 of City of Davis's 2020 Draft UWMP.

(b) Populations from Chapter 3 of City of Woodland's 2020 Draft UWMP.

The Agency itself does not directly serve any urban water customers, and therefore has no population of its own. The combined populations of the Agency's retail water suppliers are shown in Table 3-3 (DWR Table 3-1).

Table 3-3. Wholesale: Population – Current and Projected (DWR Table 3-1)

Population Served	2020	2025	2030	2035	2040	2045*(opt)*
	131,705	139,496	143,083	146,870	150,870	155,092

3.4.2 Other Social, Economic, and Demographic Factors

The social, economic, and demographic factors of the Agency's Project Participants can be found in Woodland's UWMP and Davis's UWMP. Excerpts from the Project Participants' UWMPs are included below.

Woodland's UWMP specifies the following regarding its social, economic, and demographic factors:

- The City serves a primarily residential and commercial area. The City completed implementation of its Water Metering Program in 2014 and thus water customers are billed based on consumptive water use. The City's single family residential and commercial users have been fully metered since 2012 and multi-family and parks have been fully metered since 2014. The increased awareness in water use, brought by the implementation of water meters, has led to more individual water conservation.
- The City has substantial agriculture basis in its economy. The City is surrounded on all sides by agricultural land producing corn, tomatoes, alfalfa, sugar beets, safflower, and wheat. Also, several companies in the City carry out significant seed research and development work. The local groundwater basin's natural recharge is supplemented by percolating irrigation water imported for farming surrounding the City's service area.

Davis's UWMP specifies the following regarding its social, economic, and demographic factors:

- Other demographic and socio-economic factors include UC Davis as well as the work force within the City. Due to its proximity to UC Davis, numerous students reside in the City for a portion of the year. The 2013 to 2021 Housing Element (2014) cites the UC Davis Office of Resource Management and Planning study of student population in 2012 which estimates 17,377 students residing in the Davis area or 60 percent of the UC Davis population. To what extent UC students and university-affiliated staff are represented in historical population estimates by the Census and DOF is unknown. No adjustments to determine the extent of inclusion of UC Davis students to historical or future population estimates are made, nor to water use estimates or the gallons per capita day (GPCD) target. It is assumed that the extent they were accounted in historical census estimates will be the extent they are accounted for in population projections.

- The City work force is primarily composed of professional, technical, and governmental occupations mainly due to the proximity to UC Davis and the professional and technical environment the university creates (City of Davis, 2021b). 97 percent of residents have a high school education or higher and 74 percent have a bachelor's degree or higher. Approximately 57 percent of the housing units in the City are rental properties inhabited by students attending UC Davis.

No other demographic factors affecting the Agency's water service area have been identified at this time. If additional demographic factors are identified, these will be addressed in subsequent updates to this UWMP.

3.5 LAND USES WITHIN SERVICE AREA

Details for the land uses within the service area for the Agency's wholesale customers can be found in Woodland's UWMP and Davis's UWMP. Excerpts from the Project Participants' UWMPs are included below.

Woodland's UWMP specifies the following regarding its land uses:

- The City's current land use is majority residential neighborhoods with commercial and employment centers to the north. Smaller land uses include green space and mixed-use corridors (City's 2035 General Plan).
- According to the City's 2035 General Plan Update, there are three new growth areas: Specific Plan 1 (SP-1), Specific Plan 2 (SP-2), and Specific Plan 3 (SP-3). Renewable energy sources and water conservation will be encouraged in all three growth areas. SP-1, located in the south, is divided into three sub-areas: SP-1A, SP-1B, and SP-1C. SP-1A and SP-1B will be developed into mixed use neighborhoods, while SP-1C will be residential only. Existing infrastructure within SP-1 will be resized to accommodate the development. SP-2 is located in the east and will be a mixed-use neighborhood with a town center. SP-3 is located in the northwest and is divided into two sub-areas: SP-3A and SP-3B. SP-3A will be mixed-use, while SP-3B will be mostly industrial.

Davis's UWMP specifies the following regarding its land uses:

- Most of the City's growth was in the residential and open space land categories, with a relatively small spurt of commercial development. Significant multifamily residential development occurred to meet increasing student population housing needs. In the commercial sector, there was some growth in high technology and tourist related businesses.
- The City continues to be primarily a residential community, with modest but growing commercial and industrial sectors. The City has a mix of commercial customers, ranging from restaurants, markets, retail stores, insurance offices, beauty shops, gas stations, office buildings, and some retail providing services in support of local resident and visitor populations. The City draws visitors from its close affiliation with UC Davis, proximity to the Interstate 80 corridor, and annual special events.
- The City has a very small industrial sector, primarily centered on technology and light manufacturing. The industrial sector has not grown relative to other sectors in the last decade. The City has a stable institutional/governmental sector, consisting primarily of local government, schools, public facilities, and hospitals.

3.6 WATER SYSTEM FACILITIES

This section describes water facilities to supply and deliver water supplies to the Agency's wholesale customers.

3.6.1 Surface Water Intake Facility

The Agency's raw water intake facility is located east of Woodland, CA along the Sacramento River just north of Interstate I-5. The intake facility is jointly owned and operated by both the Agency and Reclamation District 2035, a neighboring reclamation district that supplies irrigation water to the nearby Conaway Ranch. The intake facility is able to divert up to 400 cubic feet per second (CFS) of river water, with 80 CFS available to the Agency.

Water from the Sacramento River is drawn into the facility through perforated metal screens to ensure that the offspring of migrating salmon, steelhead, and other fish species will not be injured as they pass by the structure. Large pumps located just inside the screens pressurize the water and enable it to be conveyed through the raw water transmission pipeline.

3.6.2 Raw Water Transmission Pipeline

A 36-inch diameter water pipeline beginning at the intake facility conveys raw water 4.5 miles to a parcel located at the intersection of County Road 117 and County Road 22, where several pipeline operational facilities are located. From the operational facilities, the pipeline alignment is along the south side of County Road 22 to the Yolo Bypass. Through the Bypass, the pipeline is buried on the north side of County Road 22. After the Yolo Bypass, the pipeline crosses under Interstate I-5 and along farm roads to the RWTF. The total length of the raw water transmission main is about 4.5 miles.

3.6.3 Regional Water Treatment Facility

The RWTF currently has a capacity of 30 MGD and meets disinfection requirements through a combination of conventional treatment, ozone disinfection, and free chlorine disinfection when necessary.

Pressurized raw water from the raw water transmission pipeline first enters the RWTF at the flash mix facility. Following flash mix, water flows into the RWTF's sand ballasted clarification facility on its way to the ozone facility. After disinfection by ozone, water travels to the filter influent channel. Water is then filtered via gravity through granular media filters and passes into the wet well of the in-plant pump station, where it is pumped to the RWTF's clearwells. Finally, gravity flow carries the water to the finished water pump station where it enters the finished water transmission system.

3.6.4 Finished Water Transmission Pipelines

Finished potable water is pumped to the Agency's wholesale customers via Davis and Woodland's Finished Water Transmission Mains. Each main terminates at the boundary of each city's existing water system, with two connection points for Woodland, and one connection point for Davis. The UC Davis connection point is from a Davis transmission main at West Covell Boulevard and F Street.

3.7 REFERENCES

Brown and Caldwell (Prepared for City of Davis). March 2021. *Draft 2020 Urban Water Management Plan*.

West Yost (Prepared for City of Woodland). May 2021. *Draft 2020 Urban Water Management Plan.*

CHAPTER 4
Customer Water Use

This chapter describes and quantifies the Agency's past, current, and projected water use. Water demand projections are based on water purchase agreements with the Agency's wholesale customers (also referred to as the Project Participants). Accurately tracking and reporting water demands allows the Agency to properly analyze the use of water resources and conduct good water resource planning.

4.1 NON-POTABLE VERSUS POTABLE WATER USE

The Agency treats raw surface water from the Sacramento River to produce potable water for sale to its Project Participants. Potable water is water that is safe to drink and which typically has had various levels of treatment and disinfection. Raw water is untreated water (i.e. non-potable) that is used in its natural state or with minimal treatment. The Agency's Project Participants do not currently demand nor have future plans to demand raw water, and therefore the Agency neither delivers nor plans to deliver any raw water.

Recycled water is municipal wastewater that has been treated to a specified quality to enable it to be used again. The Agency does not currently, and has no future plans to, deliver recycled water to any customers in its water service area.

4.2 WATER USE BY SECTOR

This section describes the Agency's past, current, and projected water use by sector through the year 2045 in five-year increments.

Because the Agency does not deliver water to retail customers, the only DWR-defined sectors relevant to the Agency are "sales to other agencies" and "losses".

- **Sales to other agencies:** Water sales made to another agency. Projected sales may be based on projected water demand provided by the receiving agency. Future demand projections are inherently uncertain; therefore, any projected sales reported in the UWMP are for planning purposes only and are not considered a commitment on the part of the seller.
- **Losses:** System losses are the difference between the actual volume of water treated and delivered into the distribution system and the actual metered consumption.

4.2.1 Historical Water Use

The Agency has not delivered potable, raw, or recycled water directly to urban retail customers in the past and does not plan to do so in the future. The volume of water sold to the Agency's Project Participants (wholesale customers) for Calendar Years 2015-2019 are reported in Table 4-1. The volume of water sold to the Agency's Project Participants for calendar year 2015 was zero, as the Davis Woodland Water Supply Project (DWWSP) was not operational until June 2016.

Table 4-1. WDCWA Historical Water Sales	
Year	Total Volume, AF
2015	0
2016	9,160
2017	18,829
2018	20,381
2019	21,070

4.2.2 Current Water Use

The actual demands of the Agency's Project Participants for 2020 are reported in Table 4-2 (DWR Table 4-1). Losses are estimated based on the Agency's production and billing data by calculating the difference between total diversions and total deliveries.

Table 4-2. Wholesale: Actual Demands for Potable and Non-Potable Water (DWR Table 4-1)

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 WUE data online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume[2]
Add additional rows as needed			
Sales to other agencies		Drinking Water	19,574
Losses		Drinking Water	205
		TOTAL	19,779

[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 AF.

4.2.3 Projected Water Use

The projected water use by the Agency's Project Partners is based on the best available information. The Agency is currently engaged in the preparation of a Water Supply Risk and Alternatives Evaluation (Alternatives Evaluation) aimed at addressing potential future gaps between supplies and demands. This Alternatives Evaluation is currently in-progress and is anticipated to be completed sometime after adoption of the UWMP. Water demand projections for 2030 and 2040 are from the in-progress Alternatives Evaluation. The 2030 and 2040 projections in the evaluation are based on an assumed annual growth rate in Woodland of 1.7%, an assumed annual growth rate in Davis of 1.0%, and an assumed growth rate at UC Davis of 2.08% based on the campus Long-Range Development Plan. The 2025 projection was interpolated from the 2020 actual water demand and the 2030 projection, while the 2035

projection was interpolated from the 2030 and 2040 projections. The 2045 projection was calculated by extrapolating from the 2040 projections following the same trend line between 2030 and 2040. These results are summarized in Table 4-3 (DWR Table 4-2).

Table 4-3. Wholesale: Use for Potable and Raw Water - Projected (DWR Table 4-2)

Use Type	Additional Description (as needed)	Projected Water Use [2] Report To the Extent that Records are Available				
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)
Add additional rows as needed						
Sales to other agencies		20,024	20,269	21,095	21,921	22,747
TOTAL		20,024	20,269	21,095	21,921	22,747
[1] *Recycled water demands are NOT reported in this table. Recycled water demands are reported in Table 6-4.* *Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Table 2-3.*						[2]
NOTES: Volumes are in AF.						

Total and actual projected water demands are summarized in Table 4-4 (DWR Table 4-3).

Table 4-4. Wholesale: Total Water Use (Potable and Non-Potable) (DWR Table 4-3)

	2020	2025	2030	2035	2040	2045 (opt)
Potable and Raw Water From Tables 4-1W and 4-2W	19,779	20,024	20,269	21,095	21,921	22,747
Recycled Water Demand* From Table 6-4W	0	0	0	0	0	0
TOTAL WATER DEMAND	19,779	20,024	20,269	21,095	21,921	22,747
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES: Volumes are in AF.						

4.2.3.1 Characteristic Five-Year Water Use

Water Code Section 10635(b) requires urban suppliers to include a five-year DRA in their UWMP. A key component of the DRA is estimating demands for the next five years (2021-2025) without drought conditions (i.e., unconstrained demand) to account for climate change considerations. Chapter 7 details the DRA, but the five-year demand projections are summarized in Table 4-5. Demand projections for 2021 through 2025 are interpolated between 2020 actual water demands and 2025 projected demands.

Table 4-5. Projected Water Demands for Drought Risk Assessment					
	2021	2022	2023	2024	2025
Water Demand[a], AFY	19,779	20,373	20,966	21,560	22,153
(a) Demand projections were interpolated between 2020 actual water demands and 2025 projected.					

4.3 CLIMATE CHANGE CONSIDERATIONS

The potential climate change impacts to surface water resources within California in connection with the State Water Project (SWP) and Central Valley Project (CVP) include the following:

- Pumping less water south of the Delta
- Having less surplus in reservoirs that can be used during shortages
- Pumping more groundwater to augment reductions in surface water supplies
- Increased risk that insufficient water availability could interrupt SWP and CVP operations

The CalSim II model, developed by the California DWR and the United States Bureau of Reclamation (USBR), was used to assess the anticipated impacts of climate change on surface water supply availability for the Agency.

The conclusions presented here are based on a comparison of CalSim II model output between scenarios involving climate change hydrology and existing baseline conditions. For this evaluation, the following two CalSim II scenarios are compared:

- DWR Baseline: Historical input hydrology and existing Delta flow and water quality regulations. Model results were used in support of the Voluntary Agreement process.
- Re-Initiation of Consultation on Long-Term Operations, Current Operations Scenario (ROConLTO COS): Climate Change input hydrology and existing Delta flow and water quality regulations. Model results were used as the No Action Alternative for the Bureau of Reclamations Re-initiation of Consultation on the Long-Term Operations of the CVP and SWP.

In the case of the Agency and its respective participants (Woodland, Davis, and UC Davis), the most tangible effect of climate change hydrology is likely to be the timing and frequency at which the SWRCB imposes Term 91 curtailments. These curtailments apply to the Agency's primary water right. During Term 91 curtailment periods, no water may be diverted under this water right. The Agency's secondary water rights are not subject to Term 91 curtailments, but are subject to Lake Shasta critical year reductions, where the Lake Shasta designations for any given year are established by the USBR. The Agency's primary and secondary water rights are described in detail in Chapter 6 *System Supplies*.

Per the ongoing assessments for the Agency, the following general conclusions have been reached:

- Term 91 curtailments are predicted to occur approximately 15 to 20 percent more frequently under ROConLTO COS conditions as compared to DWR Baseline conditions.
- October is predicted to see the largest increase in Term 91 curtailment frequency, with October curtailments expected to occur 70 to 80 percent more often under ROConLTO COS conditions versus DWR Baseline conditions.

- Increases in the frequency of Term 91 curtailments are otherwise expected to be somewhat more common during the months of May through August under ROConLTO COS conditions versus DWR Baseline conditions.
- Term 91 curtailments during the month of November are not predicted to change significantly under ROConLTO COS conditions as compared to DWR Baseline conditions.
- While an overall increase in Term 91 curtailments is predicted during the months of December through April under ROConLTO COS conditions versus DWR Baseline conditions, such curtailments are expected to remain rare, with curtailment frequencies predicted to occur in less than 5 percent of years.

In addition, while Lake Shasta critical years follow a different pattern under ROConLTO COS conditions versus DWR Baseline conditions, the overall frequency of Lake Shasta critical years does not change between these two scenarios.

Additional details about the potential impacts of climate change and the Calsim II model are described in Chapter 6.

CHAPTER 5
SBX7-7 Baselines, Targets, and 2020 Compliance

In November 2009, Senate Bill X7-7 (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"). In order 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 GPCD.

5.1 WHOLESALE SUPPLIERS

Wholesale water suppliers are not required to establish and meet baselines and targets for daily per capita water use, nor are wholesalers required to complete the SB X7-7 Verification nor Compliance Forms; however, wholesale agencies are required to provide an assessment of present and proposed programs and policies that will help the retail water supplier achieve their SB X7-7 water use reduction targets. A discussion of the Agency's programs and policies for water conservation is provided in Chapter 9 of this plan.

CHAPTER 6
Water Supply Characterization

This chapter describes and reviews the sources of water available to the Agency. Supply sources such as surface water, supplies from other agencies, groundwater, stormwater, wastewater and recycled water, desalinated water, and exchanges or transfers are discussed in the sections that follow. The origin of the water supply, water quality, and quantity issues, as well as the anticipated actions to meet future demands are discussed.

In September 2009, Woodland and Davis established the Agency to implement and oversee a regional surface water supply project. Construction of the RWTF began in April 2014, and the distribution of surface water for use by the Agency's wholesale customers (also referred to as Project Participants) began in June 2016. A description of the water supplies for the Agency is as follows, with additional information on supply reliability included in Chapter 7.

6.1 WATER SUPPLY ANALYSIS OVERVIEW

The Agency's water supplies are used to meet treated water demands from the Project Participants. The Agency's water supply source is solely from the Sacramento River through its primary and secondary water rights. When diversion is constrained as discussed below, the Agency diverts supplemental water supply by agreement with West Sacramento. When the Agency is unable to meet its water demand through its surface water supplies, the Project Participants pump groundwater as described in their respective 2020 UWMPs.

In this chapter, the management of the Agency's supply in correlation with other supplies is discussed, along with the measures that the Agency has taken to acquire and develop additional sources of water.

Anticipated availability of the Agency's water supplies under a normal water year is provided in this chapter. The availability of the Agency's water supplies under a single dry year and a drought lasting five years, as well as more frequent and severe periods of drought are described in detail in Chapter 7 of this UWMP, along with the basis of those estimates.

6.2 WATER SUPPLY CHARACTERIZATION

The Agency uses entirely surface water supplies from the Sacramento River. However, future water supplies may also include water from Aquifer Storage and Recovery (ASR) wells. ASR wells would be used to inject surface water into a suitable aquifer during times when surplus surface water is available. The same wells would be used to withdraw the stored surface water from the aquifer when surface supplies are limited. The Agency is currently in possession of two sets of water rights under which surface water from the Sacramento River is diverted, treated, and delivered to the Project Participants. These water rights are referred to as the primary water right and the secondary water rights, respectively.

6.2.1 Surface Water

The Agency obtains all of its water supply from the Sacramento River. The Agency's water rights and related contract are described in the following two subsections.

6.2.1.1 Water Right Permit 20281

The Agency's Water Right Permit 20281 (also referred to as the Agency's primary water right) authorizes a 45,000 AFY maximum diversion from the Sacramento River. The SWRCB issued this permit in April 2011. A copy of the Agency Water Right Permit 20281 can be found in Appendix E.

Term 20 of Water Right Permit 20281 is the SWRCB's Standard Permit Term 91. This permit term prohibits diversions under Permit 20281 whenever "satisfaction of in basin entitlements requires releases of supplemental Project water by CVP or SWP". The CVP is a network of dams, reservoirs, canals, hydroelectric powerplants, and other facilities that extends 400 miles through Central California (USBR, 2020). The CVP has facilities along the Sacramento River that store, release, and intake water from the Sacramento River. The SWRCB provides notifications of curtailments under Standard Permit Term 91 as far in advance of the curtailment as practicable, based on information provided to the SWRCB by the CVP and its operators. Whether, and to what extent, Term 91 curtailments are imposed in any given year depends on hydrologic conditions, water demands of water right holders, water demands supporting environmental needs and water quality objectives in the Delta, and other factors. Term 91 and potential curtailments under it are discussed in Chapter 7.

6.2.1.2 Water Right Licenses 904A and 5487A and Agency's Sacramento River Water Rights Settlement Contract

In 2010, the Agency and Conaway Preservation Group (CPG) entered into a Water Agreement under which CPG conveyed its interests in some of its water rights and part of its Sacramento River Water Rights Settlement Contract to the Agency. To implement these conveyances, the SWRCB issued water right Licenses 904A and 5487A to the Agency in 2012 and the Bureau of Reclamation and the Agency executed a Sacramento River Water Rights Settlement Contract in 2014. These two licenses are referred to collectively as the Agency's secondary water rights, and are included in Appendix E of this UWMP.

The Sacramento River Water Rights Settlement Contract authorizes the Agency to divert 10,000 AFY between the months of April and October in normal years, with the limitation that total diversions during July through September may not exceed 7,500 AFY. The licenses do not contain the SWRCB's Standard Permit Term 91. Diversions under the agreement and licenses are not subject to Term 91 curtailments.

However, the Agency's rights under its Sacramento River Water Rights Settlement Contract are subject to the Lake Shasta Critical Year Reduction, which results in a 25 percent reduction of the total authorized diversion amount (and of the maximum authorized diversion during July through September) in years when inflow to Shasta falls below specified amounts. In addition, this water is subject to critical year reductions under article 5(a) of the contract. Potential critical year reductions are discussed in Chapter 7. Copies of water right Licenses 904A and 5487A and the Agency's Sacramento River Water Rights Settlement Contract can be found in Appendix E.

6.2.2 Purchased or Imported Water

In the event of a dry year or other water supply interruption, when the Agency's primary and secondary water rights are insufficient to meet all Project Participant demands, the Agency will consider the option of purchasing additional water supplies from other upstream agencies for diversion from the Sacramento River via the Agency's intake. Additional information regarding dry year water options can be found in Chapter 7.

Since, the DWWSP began operations in June 2016, the Agency's ability to meet all of its Project Participant demands has varied year-to-year. In 2018, the Agency exercised its temporary agreement option with the City of West Sacramento when a Term 91 curtailment was declared that lasted from November 16th to November 30th. During this period, the Agency used 704.5 acre-feet of water under the West Sacramento contract. In 2019, no Term 91 curtailments were declared during the November/December period, and accordingly the Agency did not exercise its option to use the West Sacramento water. In 2020, the Agency again exercised its option with West Sacramento when a Term 91 curtailment was in place from November 1st to December 24th. During this period, the Agency used 1,382.6 acre-feet of water under the

West Sacramento contract. The temporary agreements with West Sacramento from 2018 to 2020 are included in Appendix F.

The existing agreement with West Sacramento is short-term in nature, and the Agency has no other agreements in place for transfer of surface water. The possibility of the Agency acquiring additional surface water supplies is under consideration.

6.2.3 Groundwater

As shown in Table 6-1 (DWR Table 6-1), the Agency does not currently utilize, nor has future plans to utilize, groundwater as a water supply.

Table 6-1. Groundwater Volume Pumped (DWR Table 6-1)

☑	Supplier does not pump groundwater. The supplier will not complete the table below.

The Agency's service area overlies Yolo Sub basin (Sub basin 5 21.67) of the Sacramento Valley Groundwater Basin as defined in the California DWR Bulletin 118 update (DWR, 2003). The basin is not adjudicated and is identified as high priority. The Agency has not adopted a groundwater sustainability plan nor groundwater management plan because it is not an existing, historical, nor planned source of its water supply.

6.2.4 Stormwater

The Agency does not currently utilize, nor has future plans to utilize, stormwater as a water supply.

6.2.5 Wastewater and Recycled Water

As shown in Tables 6-2 (DWR Table 6-3), 6-3 (DWR Table 6-4), and 6-4 (DWR Table 6-5), the Agency does not currently utilize, nor has future plans to utilize, treated wastewater or recycled water as a water supply. The Agency, however, has coordinated with local wastewater agencies that operate within the Agency's service area. The wastewater agencies within the Agency's service area that collect, treat, and discharge municipal wastewater generated and treated in the Agency's service area include:

- City of Davis
- City of Woodland
- UC Davis

Table 6-2. Wastewater Treatment and Discharge Within Service Area in 2020 (DWR Table 6-3)

☑	Wholesale Supplier neither distributes nor provides supplemental treatment to recycled water. The Supplier will not complete the table below.

Table 6-3. Current and Projected Retailers Provided Recycled Water Within Service Area (DWR Table 6-4)

☑	Recycled water is not directly treated or distributed by the Supplier. The Supplier will not complete the table below.

Table 6-4. 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual (DWR Table 6-5)

☑	Recycled water was not used or distributed by the supplier in 2015, nor projected for use or distribution in 2020. The wholesale supplier will not complete the table below.

Although the Agency is not directly involved in recycled water, the City of Woodland produces and distributes recycled water within its service area as is described in the Woodland 2020 UWMP. An excerpt from Woodland's UWMP is included below.

Woodland's UWMP specifies the following regarding its recycled water use:

- The City operates its own recycled water program for customers within the City's service area. The City coordinates both internally, and externally with its recycled water customers. The Woodland WPCF is responsible for the treatment and disposal of the City's municipal wastewater. Since 2007, the WPCF has produced tertiary treated effluent which is adequate recycled water quality for the purposes of landscape irrigation at parks and industrial uses. The quantity available is more recycled water than year-round sites currently utilize. The WPCF is owned and operated by the City. The City coordinates with departments and agencies in its recycled water planning.
- The City's first recycled water project included an industrial user, Woodland Biomass, on the northeast side of town. The Woodland Biomass power generating plant was the City's largest potable water user prior to converting to recycled water use. The power plant uses cooling water as part of its power generation operation. The City designed facilities needed to deliver recycled water to this customer for the cooling water process and reduce the amount of potable water used.
- In the future, the City intends to construct Phase II of the Recycled Pipeline Project once grant funding is obtained. Phase II will provide irrigation water for two parks currently under construction and existing and future landscaping.

UC Davis has also been using recycled water to cool its cooling tower water at the central heating and cooling facility on campus.

Furthermore, as explained in the Davis 2020 UWMP, the City of Davis does not use any recycled water within its service area but produces and distributes recycled water for use in constructed wetlands outside of its service area.

6.2.6 Desalinated Water

The Agency does not currently utilize, nor has future plans to utilize, desalinated wastewater as a water supply.

6.2.7 Water Exchanges and Transfers

The Agency is currently exploring its long-term water supply reliability options as part of an Alternatives Evaluation (currently in progress as described in Chapter 4) and some of the alternatives considered include surface water acquisition. If the Agency choses to pursue this approach, the Agency will continue with current investigations regarding permanent acquisition of supplemental water to address surface

water shortfalls during Term 91 curtailments, especially during the wet season period of November through March. The Agency is seeking to acquire a minimum of 2,000 AF of additional surface water to address relatively frequent November curtailments, and possibly additional amounts to address curtailments extending throughout the November through March period. Multiple arrangements involving frequent use (November only) versus non-frequent use (December through March) may be preferred.

The Agency will also continue with investigations and negotiations regarding permanent acquisition of supplemental water to supplement the Agency's existing surface water supplies that are available during Term 91 curtailments during the dry season period of April through October. Multiple arrangements involving frequent use (common curtailment conditions) versus non-frequent use (prolonged curtailments and/or Lake Shasta critical years) may be preferred.

In the event of a catastrophic water supply emergency, the Agency's infrastructure may be used to wheel water between its Project Participants. Additional information regarding emergency exchanges or transfers can be found in the Agency's WSCP (Chapter 8).

6.2.8 Future Water Projects

As shown in Table 6-5 (DWR Table 6-7), the Agency has tentative future plans to expand the RWTF if necessary. If this option is exercised, the RWTF is anticipated to be expanded by 4,481 AFY (4.0 MGD) to reach full capacity in Phase 2 in 2040, with the ability to supply a maximum of 38,100 AFY (34.0 MGD) to its Project Participants.

Table 6-5. Expected Future Water Supply Projects or Programs (DWR Table 6-7)

☐	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.					
Page 6-4	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*
	Drop Down Menu	*If Yes, Supplier Name*				
Add additional rows as needed						
Woodland-Davis Clean Water Agency: Phase 2	*Yes*	City of Woodland, City of Davis, University of California, Davis	Phase 2 Expansion	2040	All Year Types	4,481
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Volumes are in AF. 100% of the additional supply obtained through the Phase 2 project is planned to be delivered entirely to the City of Davis or shared between the City of Davis and UC Davis.						

6.2.9 Summary of Existing and Planned Sources of Water

The Agency's existing and planned sources of water are summarized in Table 6-6 (DWR Table 6-8). The 55,000 AFY of total water rights include:

- Rights to divert up to 45,000 AFY from the Sacramento river (subject to Term 91 curtailments) under Water Right Permit 20281 (primary water right)
- Rights to divert up to 10,000 AFY from the Sacramento River (subject to Lake Shasta reductions) under Water Right Licenses 904A and 5487A and the Agency's Sacramento River Water Rights Settlement Contract (secondary water right)

Table 6-6. Wholesale: Water Supplies Actual (DWR Table 6-8)

Water Supply		2020		
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Actual Volume*	Water Quality Drop Down List	Total Right or Safe Yield* (optional)
Add additional rows as needed				
Surface water (not desalinated)	Diversion from Sacramento River	19,779	Drinking Water	55,000
	Total	19,779		55,000
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*				

NOTES: Volumes are in AF.
The 55,000 AFY of total water rights include:
1. The rights to divert up to 45,000 AFY from the Sacramento river (subject to Term 91 curtailments) under water right Permit 20281 (primary water right).
2. The rights to divert up to 10,000 AFY from the Sacramento River (subject to Lake Shasta curtailments) under water right Licenses 904A and 5487A and the Agency's Sacramento River Water Rights Settlement Contract (secondary water right).

The Agency's total projected supplies are summarized in Table 6-7 (DWR Table 6-9). The totals shown in this table reflect the maximum capacity of the RWTF of 30 MGD through 2035 and 34 MGD in 2040 and 2045.

Table 6-7: Wholesale. Water Supplies Projected (DWR Table 6-9)

Water Supply		Projected Water Supply* Report To the Extent Practicable									
		2025		2030		2035		2040		2045 (opt)	
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)	Reasonably Available Volume	Total Right or Safe Yield (optional)
Add additional rows as needed											
Surface water	Diversion from Sacramento River	33,604		33,604		33,604		38,085		38,085	
Total		33,604	0	33,604	0	33,604	0	38,085	0	38,085	0
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*											
NOTES: Volumes are in AF.											

6.2.10 Special Conditions

This section provides a detailed discussion of climate change impacts and regulatory conditions that may affect the availability and reliability of the Agency's water supply sources.

6.2.10.1 Climate Change Impacts

The potential climate change impacts to surface water resources within California in connection with the SWP and CVP include the following:

- Pumping less water south of the Delta
- Having less surplus in reservoirs that can be used during shortages
- Pumping more groundwater to augment reductions in surface water supplies
- Increased risk that insufficient water availability could interrupt SWP and CVP operations

The CalSim II model, developed by the California DWR and the USBR, was used to assess the anticipated impacts of climate change on surface water supply availability for the Agency. DWR and USBR developed the CalSim II simulation model to perform in-basin assessments of existing and future conditions based on varying assumptions about regulatory conditions, system operations, and hydrologic conditions. The CalSim II model uses historical hydrologic information for the Sacramento-San Joaquin Delta and tributary areas covering the period of water years 1922 through 2003.

The conclusions presented here are based on a comparison of CalSim II model output between scenarios involving climate change hydrology and existing baseline conditions. For this evaluation, the following two CalSim II scenarios are compared:

- DWR Baseline: Historical input hydrology and existing Delta flow and water quality regulations. Model results were used in support of the Voluntary Agreement process.
- ROConLTO COS : Climate Change input hydrology and existing Delta flow and water quality regulations. Model results were used as the No Action Alternative for the Bureau of Reclamations Re-initiation of Consultation on the Long-Term Operations of the CVP and SWP.

While these two scenarios involve some minor differences between assumptions about relevant regulations and operations, comparison of the two scenarios nevertheless provides a reasonable approximation of how climate change hydrology can be expected to impact surface water availability.

In the case of the Agency and its respective participants (Woodland, Davis, and UC Davis), the most tangible effect of climate change hydrology is likely to be the timing and frequency at which the SWRCB imposes Term 91 curtailments. These curtailments apply to the Agency's primary water right. During Term 91 curtailment periods, no water may be diverted under this water right. The Agency's secondary water rights are not subject to Term 91 curtailments, but are subject to Lake Shasta critical year reductions, where the Lake Shasta designations for any given year are established by the USBR.

Term 91 curtailments may be imposed on the Agency primary water right (and other appropriative water rights) when both of the following criteria are met:

- The Delta is in balanced water conditions
- Satisfaction of in-basin entitlements requires release of supplemental water by the CVP or the SWP

The CalSim II model output can be used to determine the timing of balanced water conditions in the Delta, and the timing and quantities of supplemental water releases. Therefore, Term 91 curtailments can be inferred from these results. It should be noted, however, that meeting both the above criteria does not necessarily mean the State Board will impose Term 91 curtailments. Accordingly, some subjective assessment is needed to determine when Term 91 curtailments would actually be imposed based on the CalSim II model output. Such assessments have been performed as part of ongoing studies for WDCWA.

Per the ongoing assessments for WDCWA, the following general conclusions have been reached:

- Term 91 curtailments are predicted to occur approximately 15 to 20 percent more frequently under ROConLTO COS conditions as compared to DWR Baseline conditions.
- October is predicted to see the largest increase in Term 91 curtailment frequency, with October curtailments expected to occur 70 to 80 percent more often under ROConLTO COS conditions versus DWR Baseline conditions.
- Increases in the frequency of Term 91 curtailments are otherwise expected to be somewhat more common during the months of May through August under ROConLTO COS conditions versus DWR Baseline conditions.
- Term 91 curtailments during the month of November are not predicted to change significantly under ROConLTO COS conditions as compared to DWR Baseline conditions.
- While an overall increase in Term 91 curtailments is predicted during the months of December through April under ROConLTO COS conditions versus DWR Baseline conditions, such curtailments are expected to remain rare, with curtailment frequencies predicted to occur in less than 5 percent of years.

In addition, while Lake Shasta critical years follow a different pattern under ROConLTO COS conditions versus DWR Baseline conditions, the overall frequency of Lake Shasta critical years does not change between these two scenarios.

Given these general conclusions, the projected long-term average decrease in primary water right diversions due to climate change are summarized in Section 8 for 2020, 2030, and 2040 demand conditions. The indicated results are expressed as annual averages that are based on the reduced availability of the primary water right at the indicated frequency. For example, if the climate change scenario indicates that a curtailment would happen in 20 percent of years versus 10 percent of years under existing hydrologic conditions, the additional 10 percent is applied to the average demand for the

given month. If an average demand of 1,000 AF existed for the given month, the 10 percent increase would equate to an average reduction of 100 AF in primary water right availability. All results are assumed to have a range of plus or minus 20 percent, and all results are rounded to the nearest 100 AF.

As indicated in Table 6-8, reductions in primary water right availability as a long-term annual average are expected to be on the order of 1,300 AFY for 2020 demand conditions, increasing to around 1,800 AF for 2040 demand conditions. On a year-to-year basis, the effects of climate change are expected to be highly variable. It should be noted that these results are dominated by the projected climate impact-related changes that would occur in the May through October period, with changes during the November through April period being comparatively minor.

Table 6-8. Projected Long-Term Average Reductions in Primary Water Right Diversions

Demand Condition	Reductions in Primary Water Right Diversions, acre-feet			
	Total	Woodland	Davis	UC Davis
2020	1,100–1,600	500–700	500–800	100–200
2030	1,300–1,800	600–800	600–900	100–200
2040	1,400–2,100	700–1,000	600–900	100–200

6.2.10.2 Regulatory Conditions

The expansion of the RWTF by 4 MGD would require the following anticipated permits shown in Table 6-9 below. It is assumed that the permit process for the expansion would take one to two months.

Table 6-9. Anticipated Regulatory Requirements and Permits for Project Implementation: 4 MGD Regional Water Treatment Facility Expansion Alternative

Agency	Type of Approval
Federal Agencies	
U.S. Fish and Wildlife Service	N/A – it is assumed any special-status species effects can be avoided
U.S. Army Corps of Engineers	N/A – it is assumed impacts to waters of the United States can be avoided
State Agencies	
State Water Resources Control Board	Permits required for water treatment expansion
Central Valley Regional Water Quality Control Board	National Pollutant Discharge Elimination System construction storm water permit
California Department of Fish and Wildlife	N/A – it is assumed any special-status species effects can be avoided
Local/Other Agencies	
Yolo County and City of Woodland	Building permits Road encroachment permits

6.3 ENERGY INTENSITY

In accordance with CWC §10631.2(a), the energy intensity to provide water service to the Agency's Project Participants 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 Agency's water supply to Woodland, Davis, and UC Davis is included.

Water energy intensity is the total amount of energy, calculated on a whole-system basis, used to deliver water to the Agency's Project Participants for use. Energy intensity is the total amount of energy in kilowatt hours (kWh) expended on a per AF basis to take water from the Agency's source to its points of delivery. Understanding the whole-system energy intensity allows the Agency 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; and
- Benchmarking of energy use at each water acquisition and delivery step and the ability to compare energy use among similar agencies.

In Table 6-10 (DWR Table O-1A) below, the energy intensity of the Agency's water service is calculated for 2020. The total energy intensity for the Agency's water service is 2,337.1 kWh/MG.

As discussed in Section 6.2.5, the Agency does not provide wastewater collection, treatment, or disposal services in its service area. Nor does it handle recycled water. Thus, the Agency has not included energy intensity data for those services.

Table 6-10. Energy Intensity (DWR Table O-1A)

Urban Water Supplier: *WDCWA*

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

Retail Potable Deliveries

Table O-1A: Recommended Energy Reporting - Water Supply Process Approach

Enter Start Date for Reporting Period: 1/1/2020

End Date: 12/31/2020

☐ Is upstream embedded in the values reported?

		Urban Water Supplier Operational Control							
		Water Management Process						Non-Consequential Hydropower (if applicable)	
	Water Volume Units Used	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	Total Utility	Hydropower	Net Utility
Volume of Water Entering Process	AF	*19779*	*0*	*0*	*19574*	*19574*	*19574*		*19574*
Energy Consumed (kWh)	*N/A*	*7805666*	*0*	*0*	*2199782*	*4900700*	*14906148*		*14906148*
Energy Intensity (kWh/vol. converted to MG)	*N/A*	*1211.1*	*0.0*	*0.0*	*344.9*	*768.4*	*2337.1*	*0.0*	*2337.1*

Quantity of Self-Generated Renewable Energy

0 kWh

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

Metered Data

Data Quality Narrative:

Water production and energy consumption data are based on metered data collected and provided by WDCWA.

Narrative:

WDCWA's water management processes that consume energy include raw water intake, raw water treatment, and treated water pumping.

6.4 REFERENCES

United States Bureau of Reclamation (USBR). 2020. *Central Valley Project*. Accessed at https://www.usbr.gov/mp/cvp/index.html on April 27, 2021.

CHAPTER 7
Water System Reliability and Drought Risk Assessment

This chapter describes the Agency's water service reliability under various hydrologic conditions, including severe drought conditions over a five-year period. The Agency's current and proposed water management tools to address the reliability of water supplies are also discussed. Responses to actual water shortage conditions are addressed in Chapter 8.

7.1 WATER SERVICE RELIABILITY ASSESSMENT

This section presents the constraints on the Agency's existing and planned water sources and describes the historical basis for projecting available supplies in various hydrologic conditions (i.e., normal year, single dry year, and five consecutive dry years). The Agency's water service reliability is then presented in five-year increments through 2045 based on previous analysis of water use (discussed in Chapter 4) and supply (Chapter 6). Finally, this section discusses the Agency's water management tools and options to promote regional supply reliability and minimize the need to import water from other regions.

7.1.1 Constraints on Water Sources

As described in Chapter 6, the Agency currently relies on the Sacramento River for all of its water supply. The quality of water from the Sacramento River is not of concern as the river water is treated at the RWTF to a level consistently exceeding drinking water standards. Therefore, the Agency's water management strategies and supply reliability are almost entirely dependent on water quantity rather than water quality. The following is a general discussion regarding the constraints on the Agency's water supplies and the associated management strategies that have been employed to address these constraints.

In general, the biggest factor in the availability of the Agency's water supplies is climatic variability and associated constraints imposed on the Agency's various water rights. Specifically, below average snowpack and/or prolonged periods of dry weather contribute to Term 91 curtailments and Lake Shasta critical year conditions.

The Agency possesses two sets of water rights under which they may divert surface water from the Sacramento River for transmission, treatment, and delivery. Water Right ID A030358 (Permit Number 020281) is referred to here as the Agency's primary water right. Under this water right, the Agency can divert up to 40,000 acre-feet in any given year. However, the Agency's primary water right is a junior water right under which diversions cannot occur when Term 91 curtailments are in effect.

In addition, the Agency possesses portions of two senior water rights that were purchased from Conaway Preservation Group. These two water rights are referred to here as the Agency's secondary water rights and include Water Right ID A001199A (Permit Number 000904A) and Water Right ID A012073A (Permit Number 005487A).The Agency's secondary water rights are not subject to Term 91 curtailments. In a Lake Shasta normal year, the Agency can divert up to 10,000 acre-feet under these water rights during Term 91 curtailment periods, but the availability of these water rights is reduced by 25 percent to 7,500 acre-feet in a Lake Shasta critical year. In addition, the Agency's secondary water rights are only available for diversion during the period of April–October. Accordingly, for any Term 91 curtailments that occur during the November–March period, the Agency has no surface water rights available. The allocation of the secondary water rights among the Project Participants in summarized in Table 7-1.

Table 7-1. Availability of Surface Water under the Agency's Secondary Water Rights

Condition/ Period	Surface Water Availability, acre-feet			
	Total	Woodland	Davis	UC Davis
Lake Shasta Normal Year				
April–October	10,000	5,210	4,440	350
Lake Shasta Critical Year				
April–October	7,500	3,908	3,330	263

The sections below discuss the vulnerability of the Agency's wholesale supplies to the aforementioned constraints and the management strategies for addressing these vulnerabilities.

7.1.2 Year Type Characterization

Water supplies can vary year to year depending on hydrologic conditions. Historical data, where available, were used to develop a projected yield under three conditions: (1) normal water year, (2) single dry water year, and (3) five consecutive dry water years. In accordance with the DWR Guidebook, each condition is defined as follows:

- **Normal Water Year**: The year or averaged range of years in the historical sequence most closely representing average water supply.
- **Single Dry Water Year**: The year with the lowest water supply in the historical sequence.
- **Five-Consecutive-Year Drought**: The driest five-year historical sequence.

In assessing normal, dry year, and five-year drought conditions, surface water diversion, treatment, and delivery to the Project Participants is constrained by the following three factors:

1. RWTF capacity
2. The timing and duration of Term 91 curtailments
3. Designated Lake Shasta conditions (normal versus critical)

The RWTF has a treatment capacity of 30 MGD. The allocation of this capacity among the Project Participants is as follows:

- Woodland: 18 MGD
- Davis: 10 MGD
- UC Davis: 1.8 MGD

Term 91 regulations have been in effect since 1984 and have generally become more severe in recent years. Over the past 15 years (2006–2020), the average number of Term 91 curtailments days per year has been 106 days, and all but three of the years (2013–2015) have been Lake Shasta normal years. Over that period, 2007 is the closest year to the 15-year average. During that year, there was a 109-day Term 91 curtailment that extended from May 15th to August 31st of that year. Accordingly, for purposes of this analysis, 2007 is used to represent normal year conditions.

Since the inception of Term 91 regulations, the most severe five-year period in terms of total curtailment days was the period of 2012–2016, when 828 days were curtailed over five years. The most severe single year condition on record was 2014 when 233 days were curtailed.

Estimated surface water availability for normal year (2007), single-dry year (2014), and five-consecutive-dry years (2012–2016) conditions are summarized in Table 7-2.

Table 7-2. Estimated Surface Water Availability for Normal Year, Dry Year, and 5-Year Drought Conditions

Year	Term 91 Curtailment		Shasta Condition	Surface Water Availability, acre-feet			
	Duration, days	Curtailment Dates		Total	Woodland	Davis	UCD
2007	109	5/15/07–8/31/07	Normal	32,541	19,351	11,425	1,764
2012	30	8/2/12–8/31/12	Normal	33,696	20,218	11,457	2,022
2013	200	5/7/13–9/20/13; 10/30/13–12/31/13	Critical	22,691	13,022	8,495	1,174
2014	233	1/1/14–2/11/14; 5/20/14–11/26/14	Critical	19,653	11,199	7,462	992
2015	230	4/30/15–12/15/15	Critical	19,929	11,365	7,556	1,008
2016	135	6/2/16–10/14/16	Normal	31,053	17,970	11,457	1,626

Table 7-3 (DWR Table 7-1) shows what the Agency's historical supply reliability would have been during the water years described above. The "Available Supplies if Year Type Repeats" columns specify the volume and percentage, respectively, of the Agency's total water supply expected to be available if the hydrology from that type of year were to repeat. Since the Agency was not delivering treated surface water supply to its Project Participants prior to 2016, the quantity shown is what the available supply would have been during the given hydrologic condition.

The Agency can potentially purchase supplemental surface water from senior Sacramento River water right holders during drought years. For example, in 2018 and 2020 the Agency exercised an option to use surface water from the City of West Sacramento when Term 91 curtailments were in effect after October. To be conservative in this analysis, those supplies are assumed not to be available in the future. Accordingly, supplemental surface water purchases are not included in Table 7-3 (DWR Table 7-1).

Table 7-3. Basis of Water Year Data (Reliability Assessment) (DWR Table 7-1 Wholesale)

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 1999-2000, use 2000	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	2007	32,541	100%
Single-Dry Year	2014	19,653	60%
Consecutive Dry Years 1st Year	2012	33,696	104%
Consecutive Dry Years 2nd Year	2013	22,691	70%
Consecutive Dry Years 3rd Year	2014	19,653	60%
Consecutive Dry Years 4th Year	2015	19,929	61%
Consecutive Dry Years 5th Year	2016	31,053	95%

Supplier may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a supplier uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. Suppliers may create an additional worksheet for the additional tables.

***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*

NOTES: Volumes are in AF.

7.1.3 Water Service Reliability

This section evaluates the Agency's water supply reliability for normal, single-dry, and five-consecutive dry years. Supply and demand information from the Agency's in-progress Alternatives Evaluation is used in these projections.

7.1.3.1 Water Service Reliability – Normal Year

The Agency's total supply to meet expected Project Participant demands is assumed to be approximately 33,604 AFY in 2025 and is planned to increase (up to 38,085 AFY in 2045) along with growth in its Project Participants' water service area. Table 7-4 (DWR Table 7-2) shows that in normal water years, the Agency's supply is adequate to meet projected demands.

The Agency's normal water year supplies include:

- Current supply capacity of 33,604 AFY; and
- Additional supply capacity of 4,480 AFY from an assumed RWTF Phase Two Expansion by 2040.

As described in Chapter 4, the Agency's normal water year demands have been projected based on the Agency's Project Participants' projected demands from the Agency's in-progress Alternatives Evaluation for 2030 and 2040. The 2025 projection was interpolated from the 2020 actual water demand and the 2030 projection from the Alternatives Evaluation. The 2035 projection was interpolated from the 2030 and 2040 projections from the Alternatives Evaluation. The 2045 projection was calculated by extrapolating from the 2040 projections following the same trend line between 2030 and 2040.

Table 7-4. Normal Year Supply and Demand Comparison (DWR Table 7-2 Wholesale)

	2025	2030	2035	2040	2045 *(Opt)*
Supply totals *(autofill from Table 6-9)*	33,604	33,604	33,604	38,085	38,085
Demand totals *(autofill fm Table 4-3)*	20,024	20,269	21,095	21,921	22,747
Difference	13,580	13,335	12,509	16,164	15,338
NOTES: Volumes are in AF.					

7.1.3.2 Water Service Reliability – Single-Dry Year

In a single-dry year, the Agency base supply is projected to be reduced to approximately 60 percent due to an expected 233 days of Term 91 curtailment coupled with Shasta Critical conditions, which will restrict both the Agency's primary and secondary water rights. The Agency would likely purchase additional surface water supplies from more senior water right holders during a single dry year if such supplies are available. However, for planning purposes, this supplemental purchased water is conservatively assumed to be unavailable.

Table 7-5 (DWR Table 7-3) shows that in single-dry years, the Agency's full available supply will be used to meet projected water demands. The wholesale water demand of the Agency's Project Participants is projected to be greater than the available Agency supply, indicating that the Project Participants will have to rely on their groundwater/ASR resources and/or the Agency will need to acquire supplemental surface water supplies. As Table 7-5 (DWR Table 7-3) indicates, as demand increases over the years, the gap between the Agency's surface water supply and Project Participant demand increases.

Table 7-5. Single Dry Year Supply and Demand Comparison (DWR Table 7-3 Wholesale)

	2025	2030	2035	2040	2045 (Opt)
Supply totals*	19,653	19,653	19,653	19,653	19,653
Demand totals*	20,024	20,269	21,095	21,921	22,747
Difference	(371)	(616)	(1,442)	(2,268)	(3,094)
***Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Table 2-3.*					
NOTES: Volumes are in AF.					

7.1.3.3 Water Service Reliability – Five-Consecutive-Dry Years

Based on the historical five-consecutive-dry year period between 2012 and 2016, the Agency base supply is not projected to be reduced in the first year of the five-consecutive-dry year period. However, in the second year of the dry period, the Agency base supply is projected to be reduced to approximately 70 percent availability, followed by a reduction down to 60 percent availability in the third year, 61 percent availability in the fourth year, and 95 percent availability in the fifth year. The Agency would likely purchase additional surface water supplies from more senior water right holders during a five-consecutive-dry year period if such supplies are available. However, for planning purposes, this supplemental purchased water is conservatively assumed to be unavailable.

As shown in Table 7-6 (DWR Table 7-4), during multiple-dry years, the Agency's full available supply will be used to meet projected water demands. The wholesale water demand of the Agency's Project Participants is projected to be greater than the available supply, indicating that the Project Participants will have to rely on their groundwater/ASR resources and/or the Agency will need to acquire supplemental surface water supplies. As Table 7-6 (DWR Table 7-4) indicates, as demand increases over the years and as drought conditions worsen, the gap between supply and demand increases. The Alternatives Evaluation currently in progress is expected to identify supplemental water supplies to fill-in these gaps in supply.

Table 7-6. Multiple Dry Years Supply and Demand Comparison (DWR Table 7-4 Wholesale)

		2025*	2030*	2035*	2040*	2045* (Opt)
First year	Supply totals	33,696	33,696	33,696	33,696	33,696
	Demand totals	20,024	20,269	21,095	21,921	22,747
	Difference	13,672	13,427	12,601	11,775	10,949
Second year	Supply totals	22,691	22,691	22,691	22,691	22,691
	Demand totals	20,024	20,269	21,095	21,921	22,747
	Difference	2,667	2,422	1,596	770	(56)
Third year	Supply totals	19,653	19,653	19,653	19,653	19,653
	Demand totals	20,024	20,269	21,095	21,921	22,747
	Difference	(371)	(616)	(1,442)	(2,268)	(3,094)
Fourth year	Supply totals	19,929	19,929	19,929	19,929	19,929
	Demand totals	20,024	20,269	21,095	21,921	22,747
	Difference	(95)	(340)	(1,166)	(1,992)	(2,818)
Fifth year	Supply totals	31,053	31,053	31,053	31,053	31,053
	Demand totals	20,024	20,269	21,095	21,921	22,747
	Difference	11,029	10,784	9,958	9,132	8,306
***Units of measure (AF, CCF, MG) m** ust remain consistent throughout the UWMP as reported in Table 2-3.*						
NOTES: Volumes are in AF.						

7.2 DROUGHT RISK ASSESSMENT

In accordance with CWC Section 10612, urban water suppliers must conduct a drought risk assessment (DRA), which evaluates the risk of a severe drought occurring for the next five consecutive years (2021-2025). Supply conditions for the DRA are based on the five driest consecutive years on record, with adjustments to consider plausible changes in climate, regulations, and other locally applicable criteria.

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. Finally, 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 Agency.

7.2.1 Data, Methods, and Basis for Water Shortage Condition

The data, methods, and basis for the water shortage condition for the DRA are the same as those discussed above for the five-consecutive-dry year drought described in Section 7.1.3.3. Accordingly, the drought conditions of the 2012–2016 period are used to estimate supplies during a five-year drought covering the period of 2021–2025.

7.2.2 DRA Water Source Reliability

The Agency's multiple dry year supplies include the Agency's primary and secondary water right surface water supplies from the Sacramento River as described in Section 7.1.2.1. Based on the historical five-consecutive-dry year period between 2012 and 2016, the Agency base supply is not projected to be reduced in the first year. However, in the second year of the dry period, the Agency base supply is projected to be reduced to approximately 70 percent availability followed by a reduction down to 60 percent availability in the third year, 61 percent availability in the fourth year, and 95 percent availability in the fifth year. The Agency would likely purchase additional surface water supplies from more senior water right holders during a five-consecutive-dry year period if such supplies are available. However, for planning purposes, this supplemental purchased water is conservatively assumed to be unavailable during.

Based on the historical 2012-2016 dry period, as shown in Table 7-2, for this DRA, a Shasta Critical Year condition is assumed in the second, third, and fourth year. As also shown in Table 7-2, during this five-year dry period, the number of days of Term 91 curtailments are assumed to be 30, 200, 233, 230, and 135 for the first through fifth year of the period, respectively.

Using these assumed conditions, Table 7-7 summarizes the resulting available supplies for each year of the DRA.

Table 7-7. Projected Supplies for Drought Risk Assessment

Supply Source	Available Supply, AFY				
	2021	2022	2023	2024	2025
Sacramento River – Primary Water Rights[a]	23,696	15,191	12,153	12,429	21,053
Sacramento River – Secondary Water Rights[b]	10,000	7,500	7,500	7,500	10,000
Total	**33,696**	**22,691**	**19,653**	**19,929**	**31,053**

(a) Water Right ID A030358 (permit number 020281) is referred to as the Agency's primary water right. Under this water right, the Agency can divert up to 40,000 acre-feet in any given year. However, the Agency's primary water right is a junior water right under which diversions cannot occur when Term 91 curtailments are in effect.

(b) Water Right ID A001199A (permit number 000904A) and Water Right ID A012073A (permit number 005487A) are referred to as the Agency's secondary water rights. The secondary water rights are not subject to Term 91 curtailments. In a Lake Shasta normal year, the Agency can divert up to 10,000 acre-feet under these water rights during Term 91 curtailment periods, but the availability of these water rights is reduced by 25 percent to 7,500 acre-feet in a Lake Shasta critical year. In addition, the Agency's secondary water rights are only available for diversion during the period of April–October. Accordingly, for any Term 91 curtailments that occur during the November–March period, the Agency has no surface water rights available.

7.2.3 Total Water Supply and Use Comparison

As shown in Table 7-8 (DWR Table 7-5), during a five-year drought beginning in 2021, the Agency's supplies fall just short of meeting projected demands through 2025. Under such conditions, some combination of demand reduction efforts, continued reliance on the Project Participants' existing groundwater/ASR resources, and possible Agency acquisition of alternative surface water supplies would be required.

Table 7-8. Five-Year Drought Risk Assessment Tables to Address Water Code Section 10635(b) (DWR Table 7-5)

2021	Total
Total Water Use	20,024
Total Supplies	33,696
Surplus/Shortfall w/o WSCP Action	13,672
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	13,672
Resulting % Use Reduction from WSCP action	0%

2022	Total
Total Water Use	20,024
Total Supplies	22,691
Surplus/Shortfall w/o WSCP Action	2,667
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	2,667
Resulting % Use Reduction from WSCP action	0%

2023	Total
Total Water Use	20,024
Total Supplies	19,653
Surplus/Shortfall w/o WSCP Action	(371)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	-371
Resulting % Use Reduction from WSCP action	0%

2024	Total
Total Water Use	20,024
Total Supplies	19,929
Surplus/Shortfall w/o WSCP Action	(95)
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	-95
Resulting % Use Reduction from WSCP action	0%

2025	Total
Total Water Use	20,024
Total Supplies	31,053
Surplus/Shortfall w/o WSCP Action	11,029
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	
WSCP - use reduction savings benefit	
Revised Surplus/(shortfall)	11,029
Resulting % Use Reduction from WSCP action	0%

7.3 WATER MANAGEMENT TOOLS AND OPTIONS

When shortfalls exist between surface water supplies and Project Participant demands, it is primarily the responsibility of the Project Participants to address those shortfalls through some combination of demand management measures and increased reliance on existing local groundwater/ASR supplies. Nevertheless, the Agency is currently engaged in an Alternatives Evaluation (as noted above) to increase the reliability of water supplies available to the Project Participants. Under this evaluation, the Agency is exploring various combinations of a regional ASR program, acquisition of additional surface water supplies, expansion of RWTF facilities, and potable reuse of highly treated wastewater.

CHAPTER 8
Water Shortage Contingency Plan

This chapter describes the Agency's WSCP, seismic risk to the Agency's facilities, and WSCP adoption procedures. The WSCP establishes actions and procedures for managing water supply and water demand during water shortages. The WSCP's purpose is to minimize non-essential uses of water and conserve remaining supplies for the benefit of the public.

8.1 WATER SHORTAGE CONTINGENCY PLAN BACKGROUND

A water shortage may occur due to a number of reasons, such as population growth, climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. A water shortage means that the water supply available is insufficient to meet the normally expected customer water use at a given point in time. A WSCP presents how an urban water supplier plans to act in response to an actual 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 Agency's WSCP has been prepared to be consistent with these requirements.

8.2 AGENCY WATER SHORTAGE CONTINGENCY PLAN

The Agency's WSCP describes its strategic plan for preparing and responding to water shortages. The WSCP includes water shortage stages and associated shortage response actions, as well as the Agency's legal authorities and communication protocols. Since the Agency is a water wholesaler, most compliance and enforcement efforts and monitoring/reporting is left to the Agency's retailers.

The Agency's WSCP is included in this plan as Appendix G to allow for updates independent of the UWMP preparation process. The Agency intends for its WSCP to be dynamic, so that it may assess response action effectiveness and adapt to foreseeable and unforeseeable events. 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 the UWMP include a seismic risk assessment and mitigation plan to assess and mitigate the vulnerability of the Agency's water system. Local or Multi-Jurisdictional Hazard Mitigation Plans (HMPs) may be incorporated in this UWMP to address this requirement if it addresses seismic risk. The *Yolo Operational Area Multi-Jurisdictional HMP* (Yolo HMP, updated in December 2018), addressed seismic risk and is incorporated herein by reference. The 2018 Yolo HMP is available on the Yolo County website (https://www.yolocounty.org/government/general-government-departments/office-of-emergency-services/reports-and-publications). The 2018 Yolo HMP was finalized in December 2018 and submitted to the Federal Emergency Management Agency (FEMA), which found it in conformance with Title 44 Code of Federal Regulations Part 201.6 Local Mitigation Plans.

Earthquakes are common, relatively well-tracked, and studied in California. While California experiences hundreds of earthquakes each year, most are below 3.0 on the Richter Scale (i.e., magnitude 3.0) and

cause minimal damage. The United States Geological Survey (USGS) roughly defines strong earthquakes (which can cause moderate damage to structures) as measuring greater than 5.0 on the Richter Scale, while major earthquakes measure more than 7.0 on the Richter Scale. In California, strong earthquakes occur every two to three years, and major earthquakes occur once a decade.

The 2018 Yolo HMP indicated that the only major active faults in the County are the Hunting Creek Fault, located in the sparsely populated far northwestern part of the County, and Dunnigan Hills Fault, located west of Interstate 5 between the town of Dunnigan and northwest of the town of Yolo.[1] Section 3.3.4 of the 2018 Yolo HMP provides a discussion of the hazard to the County. The only recent major earthquake that caused severe damage occurred in April 1982 with a 6.9 magnitude on the Richter Scale. However, ground shaking from earthquakes with epicenters elsewhere have been felt. The probability of a major earthquake is occasional: between 1 percent and 10 percent chance of occurrence in the next year.[1]

The Agency has implemented efforts in addressing its facilities' seismic vulnerabilities. In accordance with America's Water Infrastructure Act (AWIA), the Agency completed a Risk and Resilience Assessment (RRA) of its water system in March 2020. The RRA systematically evaluated the Agency's assets, threats, and risks, as well as countermeasures that might be implemented to minimize overall risk to the system. To ensure the security of the Agency's water facilities, the RRA is retained by the Agency as a confidential document. Finally, it should be noted that since the Agency's facilities were designed and constructed within the last decade, the facilities were constructed to meet and exceed some of the most recent seismic requirements in the building code.

8.4 WATER SHORTAGE CONTINGENCY PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

The WSCP (Appendix G) is adopted concurrently with the Agency's 2020 UWMP, by separate resolution. Prior to adoption, a 60-day notice of preparation was issued and a draft WSCP was made available for public review at least 14 days prior to adoption. A duly noticed public hearing was conducted. A hard copy of the WSCP will be submitted to DWR within 30 days of adoption, along with an electronic copy.

No later than 30 days after submittal to DWR, a copy of this WSCP will be available at the Agency's offices. A copy will also be provided to Yolo County. An electronic copy of the WSCP will also be available for public review and download on the Agency's website.

The Agency's WSCP is an adaptive management plan. It is subject to refinements as needed to ensure that the Agency's and its customers' 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 in this section for adoption by the Agency Board and distribution to Yolo County, the Agency's customers, and the general public.

[1] Yolo County, 2018 Yolo Operational Area Multi-Jurisdictional HMP, Section 3.3.4.

8.5 REFERENCES

Yolo County Office of Emergency Services (Yolo County OES). December 2018. *Yolo Operational Area Multi-Jurisdictional Hazard Mitigation Plan*.

CHAPTER 9
Demand Management Measures

The Agency implements demand management measures (DMMs) to sustainably manage its water resources and maintain the reliability of its water supply. This chapter describes the Agency's Water Conservation Program, the status of its DMMs, and projected future implementation of water conservation measures.

9.1 DEMAND MANAGEMENT MEASURES FOR WHOLESALE SUPPLIERS

Wholesale suppliers are required to discuss the following DMMs in their UWMP:

- Metering,
- Public education and outreach,
- Water conservation program coordination and staffing support, and
- Other DMMs.

In addition, a narrative of asset management and wholesale supplier assistance programs is required.

9.1.1 Metering

The Agency fully meters all water before and after treatment at the RWTF, as well as immediately before introduction into its wholesale customers' distribution systems. The Agency also compares these numbers to those measured by its wholesale customers to ensure parity. In the event that the Agency's meter readings do not match those of its wholesale customers, the Agency will inspect all meters to ensure that they are within tolerance limits. Since beginning water deliveries in June 2016, the Agency's water meter readings have matched that of their wholesale customers. To ensure continued meter reading accuracy, the Agency has outlined replacement guidelines, as described further in Section 9.10 of the "Service Contract for the Design, Construction, and Operation of the Woodland-Davis RWTF and Related Facilities" (DBO Service Contract) document available on the Agency's Website: (http://www.wdcwa.com/documents).

Although the Agency is "fully metered" this DMM does not directly result in reduced water demand. It does, however, allow the Agency to make informed decisions in managing their water resources for its customers.

9.1.2 Public Education and Outreach

In addition to its wholesale customers' own public education and outreach programs (which are described in their respective UWMPs), the Agency facilitates outreach through providing information on conservation on its website (https://www.wdcwa.com/water-conservation). The Agency's commitment to public education and outreach is furthered by the posting of monthly water quality reports on its website (https://www.wdcwa.com/current-operations).

Implementing this DMM allows the Agency to maximize its water supply for beneficial use.

9.1.3 Water Conservation Program Coordination and Staffing Support

The Agency's staff is closely integrated with the staff of its wholesale customers to facilitate communication and conservation objectives amongst stakeholders. All voting members of the Agency's Board of Directors are City Council members for the Agency's primary wholesale customers (i.e., Davis and Woodland). In addition, Agency staff holds bi-weekly status meetings with staff from its city wholesale

customers to ensure regular communication on many project issues including public outreach coordination. While the Agency does not have its own water conservation program staff, the Agency closely coordinates with staff from the wholesale customers which each have their own water conservation programs.

More information regarding the staff support of the conservation programs of the Agency's wholesale customers can be found in their respective UWMPs. More information on UC Davis's water conservation program and staff support can be found in UC Davis's Drought Response Action Plan: (https://www.ucdavis.edu/news/drought-response-action-plan).

This DMM provides for consistent water conservation messaging between the Agency and its customers.

9.1.4 Other Demand Management Measures

The Agency does not have any other DDMs to report.

9.1.5 Asset Management

The Agency uses a Maintenance, Repair, and Replacement Plan, which is included in Section 10.2 of the DBO Service Contract (available on the Agency's website: http://www.wdcwa.com/documents). This plan is effectively an asset management program to help manage and coordinate assets in its facilities. Routine preventive maintenance work, non-routine service, and work orders are tracked such that the Agency's Maintenance Supervisor can identify equipment issues that are starting to be problematic and proactively plan for replacement. The DBO Service Contract also describes periodic maintenance inspections (Section 10.4) and a computerized maintenance management system (Section 10.5). With regular annual and biennial inspections and a computerized maintenance management system, the Agency efficiently keeps up with asset management.

Implementation of this program minimizes water loss and improves efficiency in maintaining the Agency's water system.

9.1.6 Wholesale Supplier Assistance Programs

Although the Agency is not directly involved with urban water demand reduction, the Agency supports its wholesale customers through on-going and continuous coordination, and promotion of water conservation and public outreach activities as described in Sections 9.1.2 and 9.1.3.

This support helps the Agency and its customers in continuing water conservation efforts.

9.1.7 References

Woodland-Davis Clean Water Agency. October 2013. *Service Contract for the Design, Construction, and Operation of the Woodland-Davis RWTF and* Related *Facilities.*

CHAPTER 10
Plan Adoption, Submittal, and Implementation

This chapter provides information regarding the notification, public hearing, adoption, and submittal of the Agency'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 Agency uses a calendar year for water supply and demand accounting; and therefore, this 2020 UWMP includes data through December 2020.

10.2 NOTICE OF PUBLIC HEARING

The Agency provided 60-day notice of the preparation of its UWMP, and notice of the UWMP Public Hearing, to the cities and counties listed in Table 10-1 (DWR Table 10-1).

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

☐	Supplier has notified more than 10 cities or counties in accordance with Water Code Sections 10621 (b) and 10642. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
☑	Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Woodland	Yes	Yes
City of Davis	Yes	Yes
City of West Sacramento	Yes	Yes
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Yolo County	Yes	Yes

Other agencies notified included the following:

- Reclamation District 2035
- University of California, Davis
- Water Resources Association of Yolo County
- Westside Sacramento River Integrated Regional Water Management Group
- Woodland Chamber of Commerce, Water Task Force
- Yolo County Farm Bureau
- Yolo County Flood Control Water Conservation District
- Yolo Subbasin Groundwater Agency

10.2.1 Public Hearing and Adoption

Through its wholesale customers, public notices, and web-based communication, the Agency has encouraged community and public interest involvement in the creation of this UWMP, which includes the Agency's WSCP update. Copies of the Agency's outreach efforts to the cities, UC Davis, and other local stakeholders are included in Appendix D. The City of Woodland's UWMP outreach efforts will be included in their UWMP, which will be available on the City's website. The City of Davis' UWMP outreach efforts will be included in their UWMP, which will be available on the City's website.

The public notice included time and place of hearing, as well as the location where the plan is available for public inspection.

10.2.2 Public Hearing

A public hearing was held on June 30, 2021. The public hearing provided an opportunity for the Agency's water end-users and the general public to become familiar with the 2020 UWMP and WSCP and ask questions about their water supply, the Agency's continuing plans for providing a reliable, safe, high-quality water supply, and the plans to mitigate various potential water shortage conditions. An electronic copy of the Draft UWMP was made available for public review on the Agency's website.

10.2.3 Adoption

Subsequent to the public hearing, this 2020 UWMP and WSCP was adopted by the Agency Board on June 30, 2021. A copy of the adopted resolution is included in Appendix H.

10.3 PLAN SUBMITTAL

A hard copy of this 2020 UWMP will be submitted to DWR within 30 days of adoption and an electronic copy will be provided July 1, 2021. The adopted 2020 UWMP and WSCP will be submitted electronically to DWR using the Water User Efficiency (WUE) data submittal tool. A copy of the adopted 2020 UWMP and WSCP 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 WSCP, will be provided to the cities and counties to which the Agency provides water.

10.4 PUBLIC AVAILABILITY

No later than 30 days after submittal to DWR, copies of this Plan, including the adopted WSCP, will be made available to the public during normal business hours at the following location:

- Woodland-Davis Clean Water Agency (42929 County Road 24, Woodland CA 95776)

An electronic copy of the adopted UWMP and WSCP will also be available on the Agency's website.

10.5 AMENDING AN ADOPTED UWMP OR WATER SHORTAGE CONTINGENCY PLAN

The Agency may amend its 2020 UWMP and WSCP jointly or separately. If the Agency amends one or both documents, the Agency 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 any city or county within which the supplier provides water supplies within 30 days after adoption.