

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3298



April 12, 2022

Kenneth Smith, Senior Rates Analyst
Regulatory Policy & Compliance
California Water Service Co.
1720 North First Street
San Jose, CA 95112

Dear Mr. Smith,

The Water Division of the California Public Utilities Commission has approved California Water Service Company's Advice Letter No. 2442, filed on February 2, 2022, regarding authority to make Service Area Map Extension for the Willows District.

Enclosed are copies of the following revised tariff sheets, effective March 4, 2022, for the utility's files:

P.U.C. Sheet	
No.	Title of Sheet
12896-W	Service Area Map, Willows
12897-W	Table of Contents – Page 11
12898-W	Table of Contents – Page 1

Please contact Kevin Truong at VT4@cpuc.ca.gov or 415-703-1353, if you have any questions.

Thank you.

Enclosures

**CALIFORNIA PUBLIC UTILITIES COMMISSION
DIVISION OF WATER AND AUDITS**

Advice Letter Cover Sheet

Utility Name: California Water Service Company **Date Mailed to Service List:** 2/2/2022
District: Willows
CPUC Utility #: U-60-W **Protest Deadline (20th Day):** 2/22/2022
Advice Letter #: 2442 **Review Deadline (30th Day):** 3/4/2022
Tier: ☐ 1 X 2 ☐ 3 ☐ Compliance **Requested Effective Date:** 3/4/2022
Authorization: G.O. 96-B, Water Industry Rules
7.3.2(8) and 8.1
Description: Service Area Map Extension for the **Rate Impact:** \$ None
Willows District % None

The protest or response deadline for this advice letter is 20 days from the date that this advice letter was e-mailed to the service list. Please see the "Response or Protest" section in the advice letter for more information.

Utility Contact: Kenneth Smith

Phone: 916-329-1854

Email: ksmith@calwater.com

Utility Contact: Natalie Wales

Phone: 408-367-8566

Email: Nwales@calwater.com

DWA Contact: Tariff Unit

Phone: (415) 703-1133

Email: Water.Division@cpuc.ca.gov

DWA USE ONLY

DATE

STAFF

COMMENTS

[] APPROVED

[] WITHDRAWN

[] REJECTED

Signature: _____

Comments: _____

Date: _____



CALIFORNIA WATER SERVICE COMPANY
1720 NORTH FIRST STREET
SAN JOSE, CA 95112 • (408) 367-8200 • F (408) 367-8428

February 2, 2022

Advice Letter No. 2442

To the California Public Utilities Commission:

California Water Service Company ("Cal Water") respectfully submits this Tier 2 advice letter requesting authority to make the following changes to tariffs applicable to Cal Water's Willows District.

Please note that, consistent with the Commission's guidelines during the COVID-19 pandemic, this advice letter is only being distributed electronically to the Water Division and the attached service lists.

New/Revised CPUC Sheet No.	Title of Sheet	Schedule No.	Cancelling CPUC Sheet No.
12896-W	Service Area Map, Willows		11133-W
12897-W	Table of Contents – Page 11	TOC 11	12884-W
12898-W	Table of Contents – Page 1	TOC 1	12895-W

Summary

Cal Water requests modifications to the service area boundary and map for the Willows District to reflect a service area extension (through a main line extension) into an area within a city in which Cal Water is already providing service.

Background

Water Industry Rule 8.1 of General Order 96-B states as follows:

A service area extension is into a contiguous area for purposes of this Industry Rule if (1) the distance between the existing service area and the new area does not exceed 2,000 feet at the points of closest proximity, or (2) service will be provided by the extension of line, plant, or system from the Utility's existing service area. If entirely separate sources of supply and distribution are used in the new area, and the separation is over 2,000 feet, the extension is not contiguous, and the Utility must seek authority by means of a formal application to serve the new area.



At least 30 days before (1) commencing service in an area within a city in which the Utility is already providing service, (2) extending service to a contiguous area, or (3) taking ownership of a mutual or municipal water company, the Utility shall submit a service area map delineating the added area, and proof that the utility already has a water supply adequate to serve the areas or a plan to obtain such a supply. (See Standard Practices U-14-W and U-18-W.)

Discussion

Cal Water currently provides service to part of the City of Willows ("City"), and requests a service area map extension consistent with Water Industry Rule 8.1. Expanding the Willows service area map to the areas identified in yellow on the proposed map would allow Cal Water to provide service to another part of the City via an extension of a main line from Cal Water's existing service area.

Approximately 2,700 feet of the main line required to reach these customers was built in 2019 and currently serves an industrial customer, Rumiano Cheese Company. (Due to staffing changes and procedural errors, Cal Water did not timely file an advice letter requesting a service area extension to include this customer in its service area.) In addition to the 2,700 feet of existing main line which serves Rumiano Cheese Company, approximately 3,000 feet of new main line is needed to serve the three industrial customers previously mentioned. The yellow areas on the proposed map are the lots on which these four customers are located. Cal Water anticipates completing this project by the end of Q3 2022.

The City of Willows currently owns and operates one well which serves three industrial customers. The water from this well contains hexavalent chromium and will likely require treatment as early as May 2022, when the State Water Board is expected to adopt a maximum contaminant level for hexavalent chromium in drinking water.¹ Based on Cal Water's prior experience with hexavalent chromium treatment at other wells in the Willows area, treating this well would likely cost the City of Willows over a million dollars,² an expensive proposition for an already-subsidized district.³ In lieu of treating the well, the City of Willows has agreed to sell both the well and the surrounding land to Cal Water for a nominal fee, and Cal Water has agreed to serve these three customers via a City-funded main extension which will be deeded to Cal Water upon completion. In a recent interview, the Vice Mayor of Willows, Gary Hansen, described this approach as "cost-saving" and further stated that "the City of Willows wants to get out of the water business."⁴ In addition, this approach is encouraged under the recently-passed City-supported AB 850, which "will help

¹ See "Expected Date of State Water Board Hearing" section on page 2 of document linked here:

https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2022/hexavalent_chromium/pr-request.pdf

² Estimate for installing hexavalent chromium treatment confirmed by Cal Water engineering staff and district management. Actual cost would depend on hexavalent chromium contamination level and well flow rate. In addition to installation costs, the City of Willows would also incur additional monthly waste handling expenses to transport removed hexavalent chromium to a metals recycling facility.

³ In 2022, the Willows District will receive a subsidy of \$711,852 from Cal Water's Rate Support Fund to mitigate high capital expenditures. See link here: https://www.calwater.com/docs/rates/rates_tariffs/all/20220101-Schedule_RS_Fund_Support_Fund.pdf

⁴ See televised interview with Vice Mayor Gary Hansen at this link:

<https://www.actionnewsnow.com/content/news/New-law-helps-fast-track--575561061.html>



facilitate access to safe, clean and affordable drinking water for the City of Willows,” according to the bill’s author California State Assemblyman James Gallagher.⁵

In lieu of the Water Supply and Certification Questionnaires (WSQs), Cal Water is providing excerpts from Willows’ 2020 Urban Water Management Plan (UWMP) in **Attachment A** below. In doing so, Cal Water provides proof that it “already has a water supply adequate to serve the areas or a plan to obtain such a supply,” as required by GO 96-B, Rule 8.1.

Chapter 3 of the UWMP provides a description of the system. Chapter 4 focuses on system water use, with a breakdown of actual water demand by use type in Table 4-1, projections through 2050 for baseline water demand in Table 4-2, and a historical water loss summary from 2016 through 2020 in Table 4-4.

Chapter 6 discusses system supplies and provides a summary of actual water supplies in Table 6-8 as well as projected water supplies in Table 6-9.

Together, Table 4-1 and Table 6-8 demonstrate that developments added to the district’s service area have had sufficient water supplied.

Together, Table 4-2 and Table 6-9 demonstrate that projected growth will have sufficient water supplied.

The UWMP was adopted in June 2021 and submitted to the California Department of Water Resources in July 2021. The next UWMP will be available sometime in 2026, as the study is completed on a five-year cycle.

Authority

Cal Water submits this as a Tier 2 advice letter according to General Order 96-B, Water Industry Rule 7.3.2(8) and Rule 8.1.

Requested Effective Date

Cal Water requests that the attached tariffs in this Tier 2 advice letter become effective on **March 4, 2022**.

Notice

Customer Notice: Customer notice of this advice letter is not required.

Service List: In accordance with General Order 96-B, General Rules 4.3 and 7.2, and Water Industry Rule 4.1, a copy of this advice letter will be transmitted **electronically** on **February 2, 2022**, to

⁵ See Assemblyman James Gallagher’s press release dated October 13, 2021 linked here:
https://www.facebook.com/AssemblymanJamesGallagher/posts/2656410404653833?_tn_&K-R



competing and adjacent utilities and other utilities or interested parties having requested such notification, including the Local Agency Formation Commission (LAFCO). ***Please note that, due to limitations on non-essential travel because of the COVID-19 virus, this advice letter will only be distributed electronically.***

Response or Protest

Anyone may respond to or protest this advice letter. A response supports the filing and may contain information that proves useful to the Commission in evaluating the advice letter. A protest objects to the advice letter in whole or in part and must set forth the specific grounds on which it is based. These grounds are:

- (1) The utility did not properly serve or give notice of the advice letter;
- (2) The relief requested in the advice letter would violate statute or Commission order, or is not authorized by statute or Commission order on which the utility relies;
- (3) The analysis, calculations, or data in the advice letter contain material error or omissions;
- (4) The relief requested in the advice letter is pending before the Commission in a formal proceeding; or
- (5) The relief requested in the advice letter requires consideration in a formal hearing, or is otherwise inappropriate for the advice letter process; or
- (6) The relief requested in the advice letter is unjust, unreasonable, or discriminatory (provided that such a protest may not be made where it would require relitigating a prior order of the Commission.)

A protest shall provide citations or proofs where available to allow staff to properly consider the protest. A response or protest must be made in writing or by electronic mail and must be received by the Water Division within 20 days of the date this advice letter is filed. The advice letter process does not provide for any responses, protests, or comments, except for the utility's reply, after the 20-day comment period. The address for mailing or delivering a protest is:

Tariff Unit, Water Division 3rd floor
California Public Utilities Commission
505 Van Ness Avenue, San Francisco, CA 94102
water.division@cpuc.ca.gov

On the same date the response or protest is submitted to the Water Division, the respondent or protestant shall send a copy by mail (or e-mail) to:



CALIFORNIA WATER SERVICE COMPANY

Advice Letter 2442 Willows Service Area Map Extension

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Natalie Wales
California Water Service Company
1720 North First Street
San Jose, California 95112
cwsrates@calwater.com

Cities and counties that need Board of Supervisors or Board of Commissioners approval to protest should inform the Water Division within the 20-day protest period so that a late filed protest can be entertained. The informing document should include an estimate of the date the proposed protest might be voted on.

Replies

The utility shall reply to each protest and may reply to any response. Each reply must be received by the Water Division within 5 business days after the end of the protest period and shall be served on the same day to the person who filed the protest or response. If you have not received a reply to your protest within 10 business days, contact California Water Service Company at 408-367-8200, and ask for the Rates Department.

CALIFORNIA WATER SERVICE COMPANY

A handwritten signature in blue ink that reads "Kenneth Smith".

Kenneth Smith
Senior Rates Analyst

cc: Syreeta Gibbs (Public Advocates Office)
PublicAdvocatesWater@cpuc.ca.gov

Attachment A

Excerpts from Willows District Urban Water
Management Plan

Chapter 3

System Description

☒ CWC § 10631 (a)

A plan shall be adopted in accordance with this chapter that shall do all of the following:

Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

This chapter provides a description of the Willows District (also referred to herein as the "District") water system and service area, including climate, population, demographics, and land uses to help in understanding various elements of water supply and demand. This chapter includes the following sections:

- 3.1 General Description
- 3.2 Service Area Boundary Map
- 3.3 Service Area Climate
- 3.4 Service Area Population and Demographics
- 3.5 Land Uses within Service Area

3.1 General Description

The District has served the City of Willows in Glenn County since 1927. The District is owned and operated by California Water Service Company (Cal Water), an investor-owned water utility regulated by the California Public Utilities Commission (CPUC).

The District's water supply comes from local groundwater. The District currently operates seven wells, two storage tanks, and 36 miles of pipeline to pump and delivers approximately one million gallons of local groundwater per day. The District delivers water to residential, commercial, industrial, and governmental customers. Residential customers account for most of the District's service connections and nearly three-quarters of its water demands.

3.2 Service Area Boundary Map

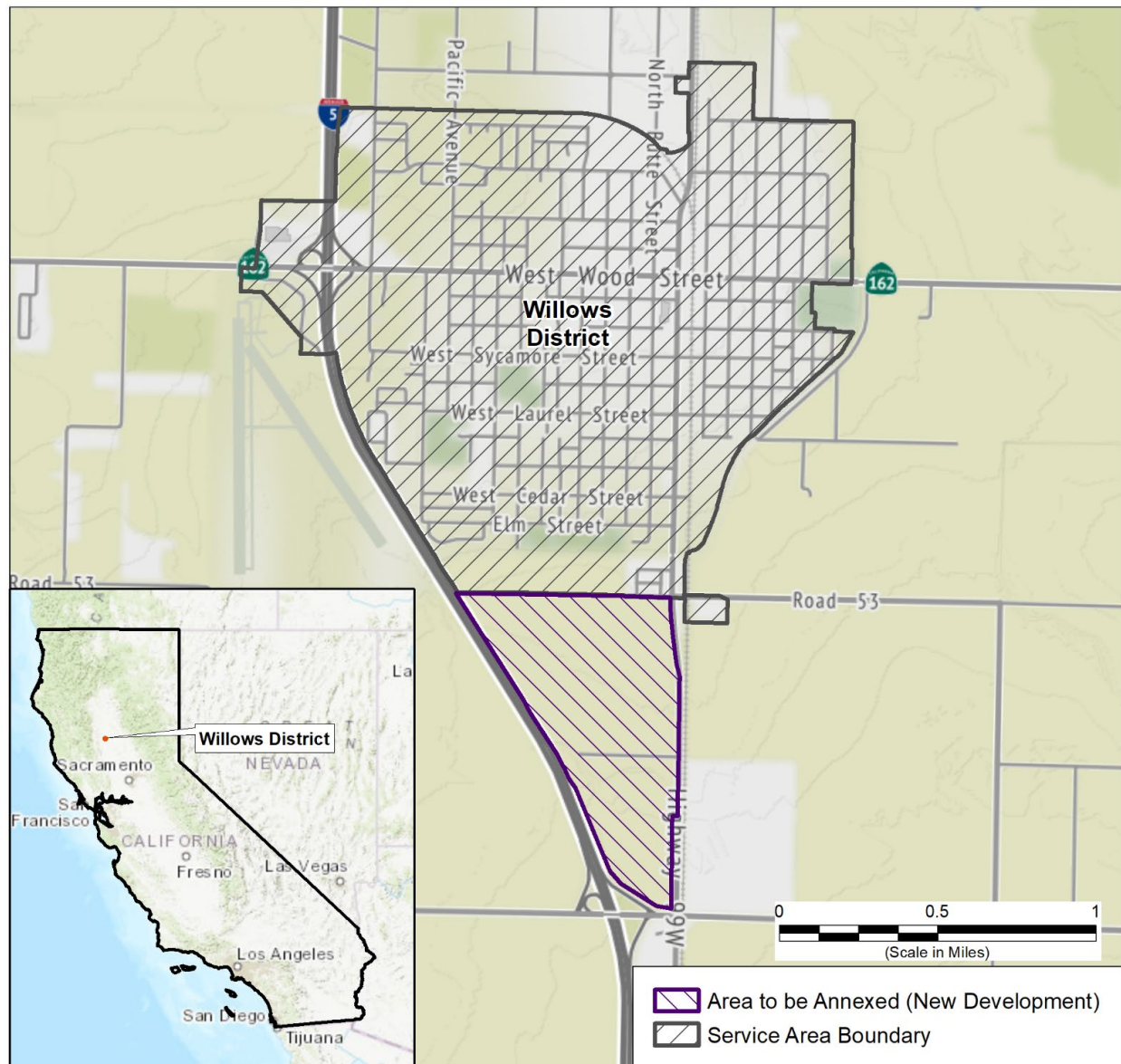
Figure 3-1 shows the location of the District and its current service area boundaries. Figure 3-1 also shows a currently undeveloped area on the District's southern boundary, i.e., the South Willows Project. This approximately 298-acre area has been proposed for residential and commercial development that would be served by the District in the future.⁵

The City of Willows is the county seat for Glenn County and is located in the Sacramento Valley about 10 miles west of the Sacramento River, approximately 90 miles north of Sacramento on Interstate 5. The community is primarily rural surrounded by agricultural land that produces mostly rice and row crops. The District's service area comprises the City of Willows and adjacent unincorporated territory in Glenn County. The City of Willows Water Department owns and operates a very small water system south of the District. Major transportation corridors in the District include Interstate 5, State Route 162, and rail lines operated by the Southern Pacific Railroad.

Situated in the Sacramento River hydrological region, within the Central Valley West sub-area, the District's service area is built upon alluvium of the Sacramento River Delta. The Sacramento River, the principal drain for the region, lies to the east of the District. This river collects storm runoff, snowmelt, and agricultural drain water from the Sacramento Valley, Sierra Nevada Range, and the Coast Range.

⁵ California Water Service, 2020. Draft Water Supply Assessment for the South Willows Project, Willows District, prepared by EKI Environment & Water, Inc., dated November 2020.

Figure 3-1. District Location and Service Boundaries



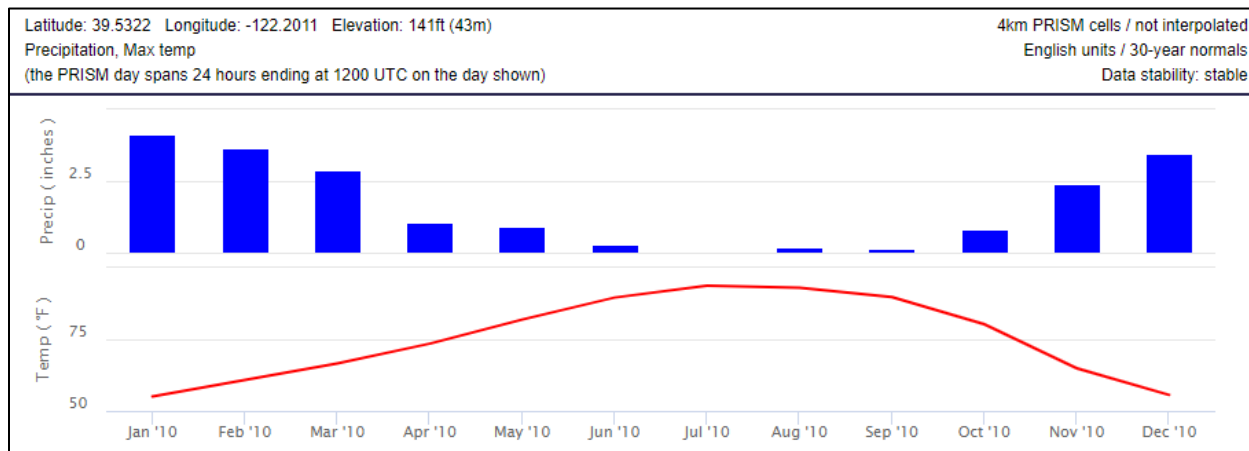
3.3 Service Area Climate

The District's climate is characterized by hot dry summers and cool wet winters (see Figure 3-2).⁶ Most rainfall occurs between October and May. Precipitation totals in the summer months are negligible. On average, the District receives 20 inches of rainfall annually. Maximum daily air

⁶ Precipitation and temperature data downloaded from: <https://prism.oregonstate.edu/explorer/>. These data represent a 30-year period from 1980 through 2010. The x-axis reflects the end of the 30-year time series.

temperature averages more than 90 degrees Fahrenheit during the summer months. In the winter, it averages 60 degrees Fahrenheit.

Figure 3-2. 30-Year Normals, Precipitation and Maximum Daily Air Temperature



Based on a review of data downloaded from the Oregon State PRISM dataset for 1895 to 2019, rainfall varies significantly from year-to-year, as it does in most of California.⁷ The standard deviation in annual rainfall is 6.7 inches, or about 34 percent of the average.⁸ Consecutive years of below average rainfall are fairly common. Since 1895, runs of below average rainfall lasting three or more years have occurred eight times and runs lasting five or more years have occurred four times. The longest run lasted seven years, from 1928 through 1934. While there has been no statistically significant trend in annual rainfall since 1895, variance has been increasing. Thus, annual rainfall totals have become somewhat more erratic over the last century.

The District's climate has been warming. Since 1895, average daily temperature has increased at a rate of 0.008 degrees Fahrenheit per year. This trend has been accelerating. Since 1950, for example, the rate of increase has been 0.025 degrees Fahrenheit per year, and since 1980 it has been 0.066 degrees Fahrenheit per year.

3.4 Service Area Population and Demographics

It is estimated that the District's service area population was 7,183 in 2020.

The District estimates its service area population using Census Block population counts from decadal Census data. The decadal Census estimates are converted to average population per single- and multi-family service, which are applied to service counts for years between the

⁷ Based on a review of annual weather data from the Oregon State PRISM dataset for 1895 to 2019. Downloaded from: <https://prism.oregonstate.edu/explorer/>. The x-axis reflects the end of the 30-year time series.

⁸ The standard deviation measures the typical, or average, year-to-year variation in annual rainfall.

decadal Censuses. This method is similar to the approach used by the California Department of Water Resources (DWR) Population Tool and population estimates generated by the two methods have been shown to differ by less than a percent in most cases.⁹

Current and projected service area population are shown in Table 3-1. Projected population is based on historical rates of service area growth plus future development identified in the South Willows Project Draft Water Supply Assessment (WSA). Historically, the District has grown very slowly. Since 2000, new services have increased by only 0.3 percent per year. However, at full buildout, the South Willows Project is anticipated to increase the District's service area population by approximately 21 percent relative to its 2020 population.

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

Population Served	2020	2025	2030	2035	2040	2045
	7,183	8,244	8,850	8,939	9,028	9,117
NOTES:						

Demographics for the City of Willows are summarized in Table 3-2, based on the U.S. Census American Community Survey 2019 5-Year Estimates.¹⁰ Relative to the rest of California, the District's population is slightly older and more racially homogenous. Educational attainment is lower, as is median household income.

The District's stock of housing is older compared to California as a whole. Eleven percent of homes in the District were built after 1990 compared to 25.5 percent for all of California. Homes built after 1990 are more likely to be fitted with federally compliant plumbing fixtures.

⁹ California Water Service, 2016. 2015 Urban Water Management Plan: Willows District, dated June 2016.

¹⁰ U.S. Census Bureau, 2019. 2015-2019 American Community Survey 5-year Estimates, dated 2019. Retrieved from: <https://data.census.gov/cedsci/>.

Table 3-2. Demographic and Housing Characteristics

Demographics	City of Willows	California
Median Age (years)	38.5	36.5
Racial Makeup (%)		
White	75.8	63.8
Black or African American	3.5	7.0
American Indian and Alaska Native	3.5	1.9
Asian	11.3	16.7
Native Hawaiian	0.0	0.8
Some other race	11.3	15.1
Hispanic or Latino (of any race) (%)	33.1	39.0
Educational Attainment (%)		
Bachelor's Degree or Higher	14.2	33.9
Primary Language Spoken at Home (%)		
English Only or Speak English "very well"	78.6	82.2
Limited English-Speaking Households	10.5	8.9
Median Household Income (\$)	43,220	75,235
Population below Federal Poverty Level (%)	19.7	13.4
Housing	City of Willows	California
Median Year Built	1969	1975
Year Housing Built (%)		
2010 or Later	3.0	3.5
2000 to 2009	1.5	11.2
1990 to 1999	6.9	10.9
Before 1990	88.6	74.5

3.5 Land Uses within Service Area

The majority of the District's service area is designated for low-density residential and general commercial land uses, as illustrated in Figure 3-3 which shows the City of Willows General Plan

designated land uses.¹¹ An interactive version of the current zoning designations is available on the County of Glenn's website: <http://gis.gcppwa.net/zoning/>.

The currently undeveloped southern section of the City of Willows is zoned for residential, general commercial, light and heavy manufacturing, public facilities and services, and open space. As noted above, the District has completed a WSA for the future development of this area. The proposed South Willows Project development comprises approximately 298 acres located in the southern portion of the City of Willows between Interstate Highway 5 and California Highway 99W (Figure 3-1), and consists of four separate phases with the following land uses:¹²

- South Willows Residential Development
 - 418 Single Family Residential (SFR) units,
 - 162 Multi-Family Residential (MFR) units,
 - 28.3 acres of open space (including irrigated and non-irrigated areas), and
 - Neighborhood park
- South Willows Commercial and Industrial Center
 - 64.6 acres of commercial land
- Taylor 88 Commercial Development
 - 81.73 acres of highway commercial land
- Starkweather Commercial Development
 - 8.61 acres of commercial land

The northern portion of the proposed development is located within the District's current service area. Cal Water will be the water service provider for the proposed development. Providing water service to the proposed development will necessitate an expansion of the District's service area, which will be accomplished pending approval by the CPUC of a Certificate of Public Convenience and Necessity. Currently, portions of the land proposed for development are used for agricultural production. According to information provided by the City of Willows, the South Willows Residential Development and the South Willows Commercial and Industrial Center are currently dry farmed (i.e. not irrigated), and the Taylor 88 development property is used for rice production and irrigated with water from the Glenn-Colusa Canal.¹³ As noted in the WSA, the District also may annex the City of Willows Water System, located just south and west of the proposed development at the same time that it annexes the proposed development. The City of Willows Water System served six connections in 2019 and is therefore classified as a state small water system that is regulated by Glenn County.¹⁴ A funding source for the City of Willows Water

¹¹ City of Willows General Plan Land Use Map, June 2010: downloaded from <https://www.cityofwillows.org/assets/resources/General-Plan-Landuse-Map-June-2010.pdf>

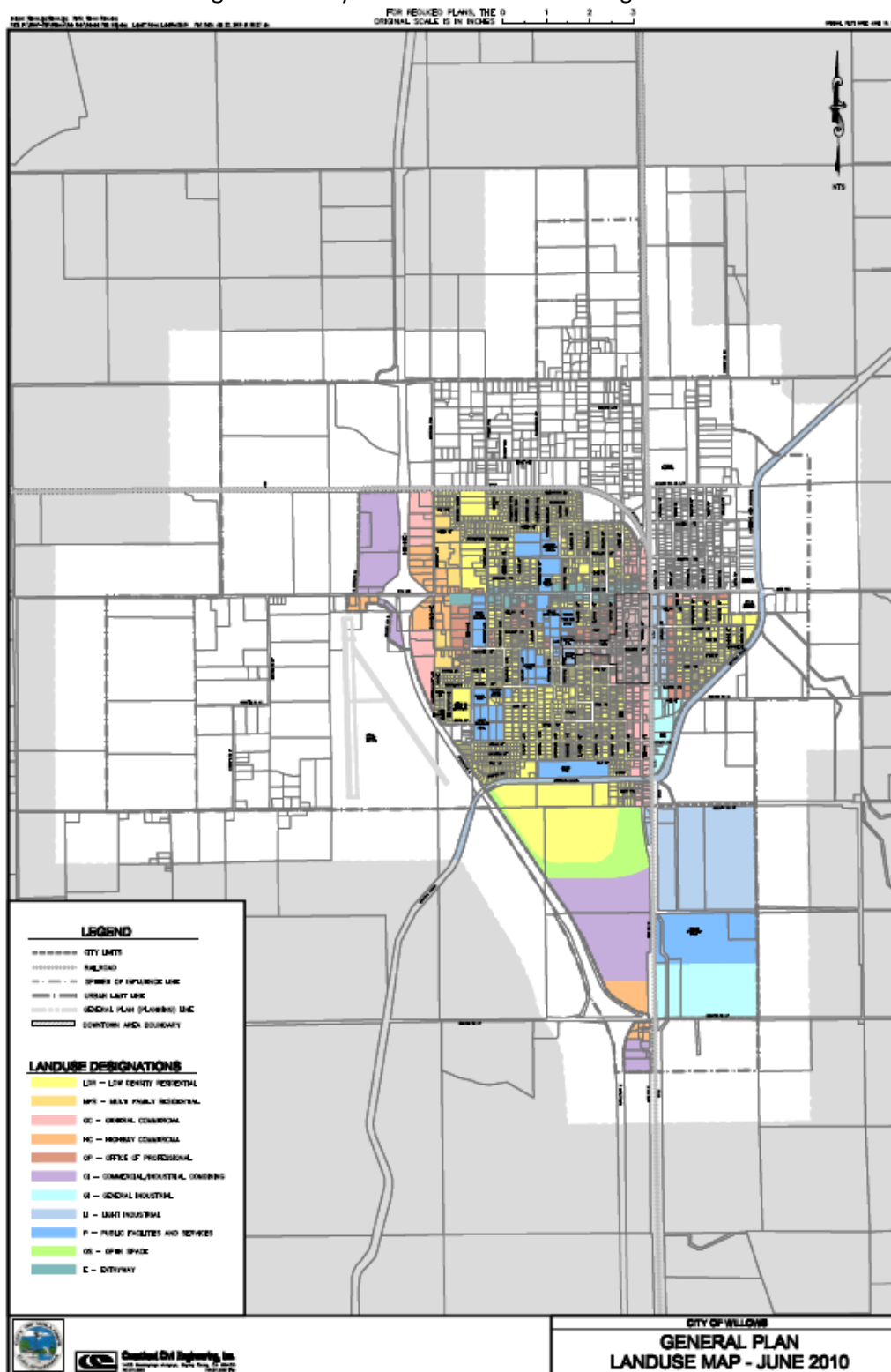
¹² California Water Service, 2020. Draft Water Supply Assessment for the South Willows Project, Willows District, prepared by EKI Environment & Water, Inc., dated November 30, 2020.

¹³ Ibid.

¹⁴ Ibid.

System annexation has not yet been identified, and therefore it is not known when or if this annexation will be completed. Therefore, the water system annexation is not included in the demand and supply projections of this UWMP; however, if the annexation moves forward, it will be fully addressed in future UWMP updates, as appropriate.

Figure 3-3. City of Willows Land Use Designations



Chapter 4

Water Use Characterization

☒ **CWC § 10631 (d) (1)** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

This chapter provides a description and quantifies the Willows District's (also referred to herein as the "District") past, current, and projected water uses through 2045. For the purposes of the Urban Water Management Plan (UWMP or Plan), the terms "water use" and "water demand" are used interchangeably. This chapter is divided into the following subsections:

4.1 Non-Potable Versus Potable Water Use

4.2 Past, Current, and Projected Water Uses by Sector

4.3 Climate Change Considerations

Appendix D provides additional information and data related to the development of the water demand projections presented in this chapter.

4.1 Non-Potable Versus Potable Water Use

This Plan maintains a clear distinction between recycled, potable, and raw water uses and supplies. Recycled water is addressed comprehensively in Chapter 6, but a summary of recycled

water demand is included in Table 4-3 of this chapter. The primary focus of this chapter is the historical and projected potable water uses in the District.

4.2 Past, Current, and Projected Water Uses by Sector

☒ CWC § 10631 (d)

For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

4.2.1 Past and Current Water Use

Table 4-1 shows water use in 2016-2020 by use type (referred to as “sector” in CWC §10631). Water use has been decreasing in the District since the early-2000s. Several factors have contributed to this reduction. First, in 2000 roughly half of the District’s residential customers were unmetered. All of these residential customers have since been converted to metered water service. A study completed by San Jose State University found that after six months of metering, previously unmetered households in similar unmetered California Water Service Company (Cal Water) districts reduced their water use by an average of 17 percent.¹⁵ Second, Cal Water implemented conservation pricing starting in 2009, providing stronger financial incentives to use water efficiently. Third, starting around 2012, Cal Water roughly tripled the level of expenditure on conservation programs aimed at helping customers use water more efficiently. Fourth, appliance efficiency standards and plumbing codes have contributed to significant improvement over time in the average water use efficiency of the installed base of appliances and plumbing

¹⁵ Tanverakul, S. and J. Lee, 2015. Impacts of Metering on Residential Water Use in California, Journal AWWA 107:2, dated February 2015.

fixtures. For example, a new toilet uses roughly one-third the amount of water that a toilet manufactured in the 1980s used.¹⁶ Per capita water use in 2020 was 38 percent below its peak in the early 2000s.

Water use in 2020 was 1,316 acre-feet (AF). Residential customers accounted for most of the District's service connections and 67 percent of its water uses. Non-residential water uses accounted for 22 percent of total demand, while distribution system losses accounted for 11 percent.

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

Use Type	Additional Description (as needed)	Level of Treatment When Delivered	Volume (a)				
			2016	2017	2018	2019	2020
Single Family		Drinking Water	599	656	688	665	786
Multi-Family		Drinking Water	81	88	95	94	98
Commercial		Drinking Water	188	218	219	218	225
Institutional/Gov't		Drinking Water	62	62	64	67	63
Industrial		Drinking Water	0	0	0	0	0
Other Potable		Drinking Water	3	5	1	5	5
Landscape		Drinking Water	0	0	0	0	0
Losses	(b)	Drinking Water	104	124	84	98	139
TOTAL			1,037	1,154	1,152	1,147	1,316
NOTES:							
(a) Volumes are in units of AF.							
(b) Real and apparent losses.							

4.2.2 Projected Water Use

Projected water use through 2045 is summarized in Table 4-2. Projected water use is estimated as a function of expected service growth and a forecast of average water use per service for each of the use types shown in the table.

As discussed in Chapter 3, the District's population and service growth projections include development identified in Water Supply Assessments (WSAs) that is expected to occur outside the District's current service boundary and be annexed into the service area. This includes the South Willows Project, which is projected to add approximately 901 new residential and commercial services over the forecast period and roughly 641 acre-feet per year (AFY) of

¹⁶ Water Research Foundation, 2016. Residential End Uses of Water, Version 2, prepared by DeOreo, William B., Peter Mayer, Benedykt Dziegielewski, and Jack Kiefer, dated April 2016.

additional water demand.¹⁷ Since this development will entail annexation of currently undeveloped land, it is treated as additive to the District's baseline population and service growth projections. The baseline population and service growth projections are based on the historical rate of increase in District services since 2000.

As described later in the chapter, average water use per service is adjusted over the forecast period to account for anticipated reductions in water use due to the ongoing effects of appliance standards and plumbing codes, the District's conservation and customer assistance programs, and growth in the inflation-adjusted cost of water service and household income. These factors, in combination, are projected to somewhat attenuate the projected increase in water use associated with proposed new development. Despite a 33 percent projected increase in service area population between 2000 and 2045, water use in 2045 is projected to be 4 percent less than total water use in 2000.

Table 4-2. Use for Potable and Non-Potable Water – Projected (DWR Table 4-2)

Use Type	Additional Description (as needed)	Projected Water Use (a)				
		2025	2030	2035	2040	2045
Single Family		849	922	924	926	933
Multi-Family		103	101	99	99	99
Commercial		384	425	422	624	622
Institutional/Gov't		62	61	60	59	59
Industrial		0	0	0	0	0
Other Potable		4	4	4	4	4
Landscape		0	0	0	49	49
Losses	(b)	125	105	106	115	116
TOTAL		1,527	1,617	1,615	1,876	1,881
NOTES: (a) Volumes are in units of AF. (b) Real and apparent losses.						

Future water demands are expected to be comprised entirely of potable water use, as shown in Table 4-3. Potential opportunities for recycled water use in the District are discussed in Chapter 6. At this time, recycled water use is not an economically viable option for the District.

¹⁷ California Water Service, 2020. Draft Water Supply Assessment for the South Willows Project, Willows District, prepared by EKI Environment & Water, Inc., dated November 30, 2020.

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

	2020	2025	2030	2035	2040	2045
Potable Water, Raw, Other Non-potable <i>From DWR Tables 4-1 and 4-2</i>	1,316	1,527	1,617	1,615	1,876	1,881
Recycled Water Demand <i>From DWR Table 6-4</i>	0	0	0	0	0	0
Optional Deduction of Recycled Water Put Into Long-Term Storage						
TOTAL WATER USE	1,316	1,527	1,617	1,615	1,876	1,881
NOTES: (a) Volumes are in units of AF.						

4.2.3 Distribution System Water Loss☒ **CWC § 10631 (3)**

(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Table 4-4 shows distribution system water losses for the previous five years. Water loss is the sum of apparent and real losses. Apparent loss is associated with metering inaccuracies, billing and administrative errors, authorized unmetered uses (e.g., system flushing and firefighting), and unauthorized uses. Real loss is associated with physical water lost through line breaks, leaks and seeps, and overflows of storage tanks. Since 2016, urban retail water suppliers have been required under CWC §10608.34 and California Code of Regulations (CCR) §638.1 et seq to quantify distribution system water losses using the American Water Works Association (AWWA) Free Water Audit Software (referred to as “water loss audit reports”). The water loss audit reports the District submits to DWR provide the basis for the 2016-2019 estimates shown in Table 4-4 and are available through DWR’s Water Use Efficiency Data Portal.¹⁸ The District’s 2020 water loss audit report had not been completed at the time this Plan was prepared.¹⁹ The 2020

¹⁸ DWR’s Water Use Efficiency Data Portal: https://wuedata.water.ca.gov/awwa_plans

¹⁹ The District’s regulatory deadline for filing its 2020 water loss audit report to the state is October 1, 2021.

estimate shown in Table 4-4 is therefore drawn from the District's preliminary draft water loss audit results.

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

Reporting Period Start Date	Volume of Water Loss (a)
01/2016	104
01/2017	124
01/2018	84
01/2019	98
01/2020	139
NOTES: (a) Volumes are in units of AF.	

CWC §10631 (3)(c) requires that this UWMP demonstrate whether the distribution loss standards enacted by the State Water resources Control Board (SWRCB) pursuant to §10608.34 have been met. However, the SWRCB has yet to establish these standards, and thus consistency with these standards cannot be demonstrated herein.

4.2.4 Future Water Savings in Projected Water Use

☒ CWC § 10631 (d) (4)

(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

As affirmed in Table 4-5, both future water savings (discussed below) and lower income residential demands (discussed in Section 4.2.5) are included in the projections of future water use.

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

Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found.	Section 4.2.4
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

As noted above, the District has adjusted the forecast of average water use per service for the effects of appliance standards and plumbing codes, conservation programs, and increases in the real cost of water service and household income. These adjustments are described below.

The District uses forecasts of per capita water savings from appliance standards and plumbing codes prepared for DWR to adjust its projections of average water use per service.²⁰ These forecasts incorporate the effects of the following codes and regulations:

- Assembly Bill (AB) 715, enacted in 2007, requires that any toilet or urinal sold or installed in California on or after January 1, 2014 cannot have a flush rating exceeding 1.28 and 0.5 gallons per flush, respectively. AB 715 superseded the state's previous standards for toilet and urinal water use set in 1991 of 1.6 and 1.0 gallons per flush, respectively. On April 8, 2015, in response to the Governor's Emergency Drought Response Executive Order (EO B-29-15), the California Energy Commission approved new standards for urinals requiring that they not consume more than 0.125 gallons per flush, 75 percent less than the standard set by AB 715.
- Water use standards for residential and commercial clothes washers and dishwashers are established by the U.S. Department of Energy through its authority under the federal Energy Policy and Conservation Act. Water use efficiency is summarized by the water factor for the appliance which measures the gallons of water used per cycle per cubic foot of capacity. A typical top-loading residential clothes washer manufactured in the 1990s had a water factor of around 12. In 2015, the allowable water factor for top- and front-loading residential clothes was reduced to 8.4 and 4.7, respectively. In 2018, water factor standard for top-loading residential clothes washers will be reduced to 6.5. In 2010 the allowable water factor for top- and front-loading commercial clothes washers was reduced to 8.5 and 5.5, respectively. The maximum water factor for Energy Star compliant top- and front-loading washers is 3.7 and 4.3, respectively. The U.S. Environmental Protection Agency estimates that Energy Star

²⁰ M.Cubed, 2016. Projected Statewide and County-Level Effects of Plumbing Codes and Appliance Standards on Indoor GPCD, technical memorandum prepared for the California Department of Water Resources, dated August 2016.

washers made up at least 60 percent of the residential market and 30 percent of the commercial market in 2011.²¹ An Energy Star compliant washer uses about two-thirds less water per cycle than washers manufactured in the 1990s. Federal dishwasher water use efficiency standards were last updated in 2013. The maximum water use for standard and compact sized dishwashers is 5.0 and 3.5 gallons per cycle, respectively.

- New construction and renovations in California are now subject to CalGreen Code requirements. CalGreen includes prescriptive indoor provisions for maximum water consumption of plumbing fixtures and fittings in new and renovated properties. CalGreen also allows for an optional performance path to compliance, which requires an overall aggregate 20 percent reduction in indoor water use from a calculated baseline using a set of worksheets provided with the CalGreen guidelines.
- Senate Bill (SB) 407, enacted in 2009, mandates that all buildings in California come up to current State plumbing fixture standards within this decade. This law establishes requirements that residential and commercial property built and available for use on or before January 1, 1994 replace plumbing fixtures that are not water conserving, defined as “noncompliant plumbing fixtures.” This law also requires effective January 1, 2017 that a seller or transferor of single-family residential property show to the purchaser or transferee, in writing, the specified requirements for replacing plumbing fixtures and whether the real property includes noncompliant plumbing. Similar disclosure requirements went into effect for multi-family and commercial transactions January 1, 2019. SB 837, passed in 2011, reinforces the disclosure requirement by amending the statutorily required transfer disclosure statement to include disclosure about whether the property follows SB 407 requirements.

The District’s 2015 Conservation Master Plan forms the basis for the forecast of water savings from conservation programs. Cal Water used the Alliance for Water Efficiency’s Water Conservation Tracking Tool to estimate expected water savings from planned program implementation.²²

Projected increases in water service costs and household income form the basis for the adjustments to average water use due to changes in the real cost of water service. The forecast uses the historical rate of increase in District water rates to project future water service costs. It uses Caltrans income projections for Glenn County to estimate changes in household income. It uses empirically derived estimates of price and income demand elasticity to adjust future water demand for changes in these variables.²³

²¹ EPA Energy Star Unit Shipment and Market Penetration Report Calendar Year 2011 Summary.

²² Alliance for Water Efficiency Water Conservation Tracking Tool:

<https://www.allianceforwaterefficiency.org/resources/topic/water-conservation-tracking-tool>

²³ M.Cubed, 2018. California Water Service 2020 Test Year Sales Forecast: 2018 General Rate Case, prepared for California Water Service by M.Cubed, dated January 2018.

Table 4-6 shows the total water savings from plumbing codes and appliance standards, conservation programs, and increases in the real cost of water service.

Table 4-6. Future Conservation Savings (AF)

2025	2030	2035	2040	2045
39	64	81	97	107

4.2.5 Water Use by Lower Income Households in Water Use Projections

☒ CWC § 10631.1

(a) The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirements under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

California Senate Bill No. 1087 (SB 1087), Chapter 727, passed in 2005, amended Government Code § 65589.7 and CWC § 10631.1. This law requires that local governments supply a copy of their adopted housing element to water and sewer providers. Additionally, it requires that water providers grant priority for service allocations to developments that include housing units for lower income families and workers. The UWMP Act requires that water providers estimate water demands by lower income single and multi-family households.

Cal Water must serve all development that occurs within its service area, regardless of the income level of the future residents. Cal Water does not keep records of the income level of its customers and does not discriminate when supplying water to any development. It is the responsibility of the city or county with land use authority over a given area to approve or not approve developments within Cal Water's service areas. Cal Water has a Customer Assistance Program (CAP) to help with water service affordability. CAP discounts the monthly service charge of qualifying lower income households.

Table 4-7 shows projected water use by lower income households. These demands are part of the projected residential water use in Table 4-2. Cal Water used the General Plan Housing

Element from the City of Willows to estimate the number of lower income households which is the basis for the estimates in Table 4-7.²⁴

Table 4-7. Residential Demands of Lower Income Households (AF)

2025	2030	2035	2040	2045
391	419	419	420	423

4.2.6 Characteristic Five-Year Water Use

☒ CWC § 10635(b)(3)

(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following...

*(3) A comparison of the total water supply sources available to the water supplier with **the total projected water use for the drought period.** (Emphasis added).*

CWC §10635(b) is a new requirement for 2020 UWMPs. A critical part of this new statutory language is the requirement to prepare a five-year Drought Risk Assessment (see Section 7.5). As a first step, DWR suggests that water suppliers estimate their unconstrained water demand for the next five years (2021-2025). Unconstrained water demand is water use in the absence of drought water use restrictions. Drought conditions cause unconstrained demands to increase. The Drought Risk Assessment presented in Section 7.5 accounts for this increase in unconstrained water demand. Cal Water's demand forecast model separately estimates water use for normal, wet, and dry weather conditions. Table 4-8 shows unconstrained demands for 2021-2025 for normal weather and multiple-dry-year scenarios.

Table 4-8. Characteristic Five-Year Water Use (AF)

Weather Scenario	2021	2022	2023	2024	2025
Multi-Year Dry	1,425	1,470	1,517	1,563	1,610
Normal	1,350	1,394	1,438	1,482	1,527
NOTES: The table shows unconstrained demand (i.e., demand in the absence of drought water use restrictions).					

²⁴ City of Willows 2014-2019 Housing Element, Table 34. Accessed from:
<https://www.cityofwillows.org/assets/resources/Housing-Element-Adopted-2015.pdf>

4.3 Climate Change Considerations

☒ **CWC § 10635(b)**

(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Climate strongly influences the level and seasonal pattern of District water demands. Cal Water has analyzed the effect of climate and weather variability on both aspects of demand.²⁵ Using this information, Cal Water has estimated the effect of alternative climate warming scenarios on future water demand.²⁶ Table 4-9 summarizes the results of this analysis. It shows that for plausible emission scenarios and corresponding temperature increases, climate change may, on average, increase future District demands by 2 to 3 percent compared to current climate conditions. Two points are worth noting. First, this is the average effect. There is significant variation about the mean. Second, this is a *ceteris paribus*, or all else equal, result. It assumes existing levels and types of landscaping. However, landscaping choices are partly a function of climate and as the climate changes, so too may these choices. It is reasonable to think households and businesses will adapt their landscaping as the climate warms. This adaptation may mitigate some of the expected demand increase shown in the table.

²⁵ A&N Technical Services, 2014. Cal Water Long-Term Water Demand Forecast Model. Report prepared for California Water Service Company. December 2014.

²⁶ Table 4-9 uses climate scenarios for the southwestern United States. These in turn rely on alternative greenhouse gas emission scenarios. Emissions under scenario A2 are higher than under scenario B2. The 80th percentile scenario is the 80th percentile temperature change for the full suite of emission scenarios. For further information, see Kunkel, K.E, L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Wuebbles, K.T. Redmond, and J.G. Dobson, 2013. Regional Climate Trends and Scenarios for the U.S. National Climate Assessment. Part 5. Climate of the Southwest U.S., NOAA Technical Report NESDIS 142-5, dated 2013.

Table 4-9. Climate Change Effect on Demand

Emissions Scenario	Change in Mean Temperature by 2040 (degree F)	Change from Current Mean Temperature (%)	Effect on Demand (%)
Lower Emissions Scenario (B1)	2.5	3.4%	2.0%
Higher Emissions Scenario (A2)	2.7	3.7%	2.1%
80%ile Temperature Scenario	3.6	4.9%	2.8%
<p>NOTES:</p> <p>(a) Predicted temperature increases for Southwest United States for alternative emission scenarios reported in Kunkel et al. (2013). Predicted effect on demand derived from weather response models estimated with historical monthly water use, temperature, and rainfall data.</p> <p>(b) The physical climate framework for the 2013 National Climate Assessment is based on climate model simulations of the future using the high (A2) and low (B1) Special Report Emissions Scenarios (SRES). The A1B emission scenario reflects a middle case between the A2 and B1 scenarios. The 80%ile scenario is the 80th percentile temperature change across the family of emissions scenarios. Further description of emission scenarios can be found at https://www.ipcc.ch/site/assets/uploads/2018/03/sres-en.pdf</p>			

Chapter 6

Water Supply Characterization

☒ **CWC § 10631 (b)** *A plan shall be adopted in accordance with this chapter that shall do all of the following:*

Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).

This chapter provides a description of the Willows District's (also referred to herein as "District") current water supplies, including a discussion of the underlying groundwater basin and its management, and potential supply sources, such as surface water, stormwater, and recycled water, as well as assessment of the energy intensity used to operate the District treatment and distribution system. This chapter includes the following sections:

6.1 Purchased Water

6.2 Groundwater

6.3 Surface Water

6.4 Stormwater

6.5 Wastewater and Recycled Water

6.6 Desalinated Water Opportunities

6.7 Water Exchanges and Transfers

6.8 Future Water Projects

6.9 Summary of Existing and Planned Sources of Water

6.10 Special Conditions

6.11 Energy Intensity

6.1 Purchased Water

☑ **CWC § 10631 (h)** *A plan shall be adopted in accordance with this chapter and shall do all of the following:*

An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).

California Water Service Company (Cal Water) does not currently purchase any imported water to meet demands in its Willows District.

6.2 Groundwater

☑ **CWC § 10631**

(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Groundwater is the sole source of water supply for the Willows District. This section includes information regarding the basin description, groundwater management, and Cal Water coordination with Groundwater Sustainability Agencies (GSAs), followed by a discussion of historical pumping and supply sufficiency, which is further supported by Appendix F.

6.2.1 Basin Description and Status

As shown on Figure 6-1, the Willows District overlies the Colusa Subbasin (also referred to herein as the “Basin”) of the Sacramento Valley Basin (California Department of Water Resources [DWR] Basin No. 5-021.52). The Colusa Subbasin is not adjudicated and, in its recent evaluation of California groundwater basins, DWR determined that the Basin is not in a condition of critical overdraft.²⁹

The Colusa Subbasin is, however, designated as a high priority basin under DWR’s 2019 Phase 2 Basin Prioritization.³⁰ Under this prioritization process, basins are ranked on eight components, and if a basin is assigned more than 21 total points, it is defined as “high priority.” The main factors driving this designation in the Colusa Subbasin include irrigated acreage per square mile (4 out of 5 possible points), declining water levels (4 out of 5 possible points), and groundwater reliance (3.5 out of 5 possible points). Additional factors include population density (1 out of 5 possible points), public supply well density (1 out of 5 possible points), and documented impacts including subsidence, and habitat and streamflow impacts (2 out of 2 possible points).³¹

The Colusa Subbasin covers an area of approximately 723,824 acres (1,131 square miles) and is bounded on the north by Stony Creek, on the east by the Sacramento River, on the south (generally) by the southern boundary of Colusa County, and on the west by the Mesozoic rocks of the Coast range and foothills.³² The Basin’s extent was revised as part of the 2016 Basin Boundary Modification process wherein the northern boundary of the Basin was redefined to follow the Glenn-Tehama County line jurisdictional boundary and the southern boundary of the Basin was redefined to follow the Colusa-Yolo County line jurisdictional boundary.³³

²⁹ DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.

³⁰ DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.

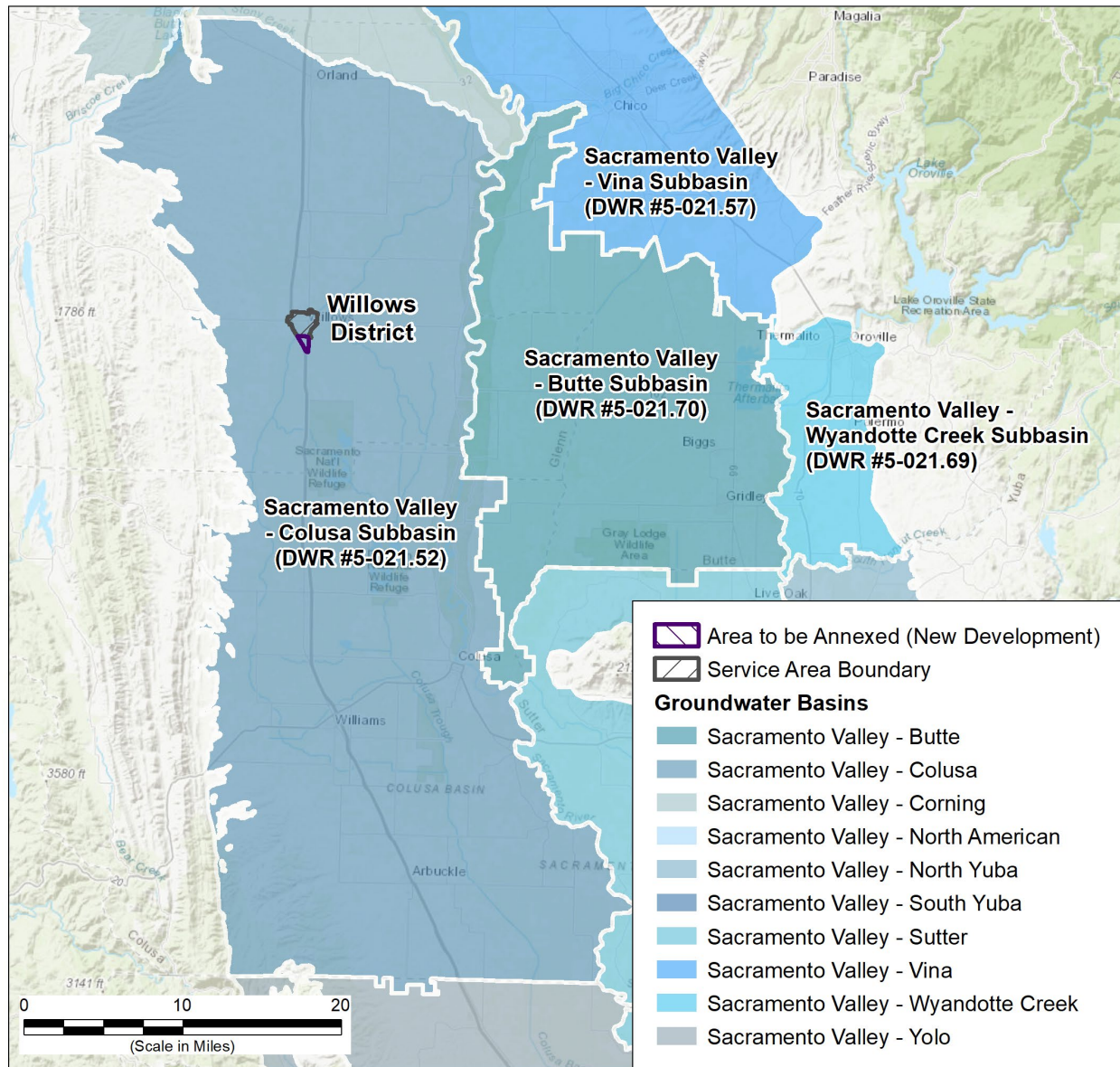
³¹ DWR’s 2019 Phase 2 Basin Prioritization used the basin’s total possible ranking points assigned to each of the eight components to determine the priority. A basin is defined as High Priority if it has more than 21 total ranking points.

³² DWR, 2018. B118 Basin Description, Colusa Subbasin, dated March 2018.

³³ DWR SGMA Portal – Basin Boundary Modification Request System:

<https://sgma.water.ca.gov/basinmod/modrequest/preview/227>, accessed November 6.

Figure 6-1. Groundwater Basin Underlying the Willows District



A Groundwater Sustainability Plan (GSP) for the Colusa Subbasin is currently under development (as discussed further below). Until this GSP is adopted, the Basin is being managed pursuant to previously adopted Assembly Bill (AB) 3030 Groundwater Management Plan (GMP). Additional details on the Colusa Subbasin are given in the DWR's Groundwater Bulletin 118, as well as in the key documents described below related to groundwater management of the Basin, which are incorporated into this Urban Water Management Plan (UWMP) by reference:

- The Glenn County GMP was adopted by the County Board of Supervisors in 2000 as No.

1115 in the Glenn County Code of Ordinances. This GMP includes information regarding basin management objectives for water levels and groundwater monitoring practices, and is available on the Glenn County Website:

<https://www.countyofglenn.net/committee/water-advisory-committee/management-plan>

- Draft chapters of the Colusa Subbasin GSP will be made available as they are completed on the Colusa GSA website:

<https://colusagroundwater.org/projects/groundwater-sustainability-plan/>

- It is anticipated that following adoption (anticipated by January 31, 2022), the final GSP for the Colusa Subbasin will be available on the DWR website:

<https://sgma.water.ca.gov/portal/gsp/all>

5.2.2 Non-SGMA Groundwater Management

The Glenn County Water Advisory Committee (GCWAC) was established in 1997 to cooperatively manage the groundwater resource, prior to the passage of the Sustainable Groundwater Management Act (SGMA). The Glenn County GMP was adopted by the board of supervisors in 2000 as No. 1115 in the Glenn County Code of Ordinances. The stated goal of this GMP is “to establish an effective policy concerning groundwater and coordinated resource management that will assure the overall health, welfare, safety, economy and environment of County is not adversely affected by excessive groundwater use.”³⁴

The six key elements for successful groundwater management in Glenn County identified by the GCWAC and stated in the GMP include: (1) management areas and sub-areas; (2) Basin Management Objectives (BMO) parameters; (3) public input; (4) monitoring; (5) adaptive management; and (6) enforcement/conflict resolution. The GMP emphasizes locally driven groundwater management and coordination with other water management practices.

These key elements were then used to inform and develop BMOs for 17 sub-areas within the County. The BMOs were formally adopted in 2001, with subsequent amendments for selected sub-areas in 2010 and 2012.³⁵ The BMOs include groundwater elevation thresholds (i.e., “Alert Stage 1”, “Alert Stage 2”, and “Alert Stage 3”) established at “key wells” in each sub-area and for spring and fall conditions that, if exceeded, trigger corresponding management responses including increased outreach to stakeholders, evaluation by a Technical Advisory Committee

³⁴ County of Glenn, 2000. Glenn County Code Directory, Title 20 Water, Chapter 30 Groundwater Coordinated Resource Management Plan via County of Glenn Website, accessed 23 December 2020:

<https://www.countyofglenn.net/govt/county-code/title-20/chapter-30>.

³⁵ County of Glenn, 2001. Basin Management Objectives (BMOs) page via County of Glenn Website, accessed 23 December 2020: <https://www.countyofglenn.net/committee/water-advisory-committee/basin-management-objectives-bmos>.

(TAC), and potential adaptive management activities. Per the BMOs, adaptive management activities may include voluntary water conservation measures and redistribution or reduction of groundwater extraction.³⁶ The majority of Cal Water’s existing service area lies within sub-area 10 (Board of Supervisors District Three Private Pumps); however, the South Willows Project site which is planned to be served by the District in the future is located in sub-area 11 (Glenn-Colusa Irrigation District).

6.2.3 SGMA Groundwater Management

In 2014, the California State Legislature enacted SGMA with subsequent amendments in 2015. The SGMA requires the formation of GSAs and the development and implementation of GSPs for groundwater basins that are designated by DWR as medium or high priority. As a high priority, non-critically overdrafted and non-adjudicated basin, the Basin is subject to the requirements of SGMA, including the requirement to be covered by one or more GSAs and to prepare and submit to DWR one or more GSPs by January 31, 2022.

Pursuant to these SGMA requirements, two GSAs were formed in the Basin – the Glenn Groundwater Authority (GGA) and the Colusa Groundwater Authority (CGA). The Willows District is located in the portion of the Basin covered by the GGA, which was formed under a Joint Powers Agreement (JPA) by and between nine member entities: City of Orland, City of Willows, County of Glenn, Glenn-Colusa Irrigation District, Glide Water District, Kenawha Water District, Orland-Artois Water District, Princeton-Codora-Glenn Irrigation District, and Provident Irrigation District, dated June 20, 2017. The CGA was formed under a JPA, dated June 29, 2017, by and between twelve member entities.

The GGA and CGA are working together to develop a single GSP for the Colusa Subbasin. The GSP development process for the Basin is ongoing and is anticipated to be complete and submitted to DWR by the statutory deadline of January 31, 2022.

6.2.4 Cal Water Coordination with Groundwater Sustainability Agencies

Cal Water is actively participating in GSP development for the Colusa Subbasin. A representative from Cal Water serves as an alternate GGA board member for the City of Willows. Additionally, a Cal Water representative serves on the Technical Advisory Committee (TAC) for the GGA.

Cal Water’s groundwater basin management philosophy continues to be to work collaboratively with all stakeholders in the basins where we operate and to do what is best for the groundwater basin including the sharing of burden(s) and benefits on an equitable basis with said stakeholders. Cal Water recognizes and deeply supports the goals, objectives, and intended outcomes of the

³⁶ County of Glenn, 2001. Basin Management Objective (BMO) For Groundwater Surface Elevations in Glenn County, California, dated 2001. Via County of Glenn Website, accessed 14 October 2020:

https://www.countyofglenn.net/sites/default/files/Water_Advisory_Committee/GlennCoBMOdocument_000.pdf.

SGMA. Moreover, the company recognizes the numerous challenges of implementing the legislation along a variety of technical, legal, political, and financial/economic dimensions, particularly when the geographical diversity of the Cal Water's service territory is considered. None-the-less, Cal Water intends to take an active role in the local and state-wide management of groundwater resources over the next 5 to 25+ years by fully supporting and participating in the principal edicts of SGMA. A number of specific steps that Cal Water intends to take with respect to this position and role include (among others):

- Coordination with public agencies to ensure that Cal Water's presence, rights and interests, as well as historical and current resource management concerns are honored/incorporated within the GSA and GSP formulation process(es);
- Coordination with applicable local and regulatory agencies to ensure that Cal Water is at full participation, while also meeting the requirements and expectations set forth by SGMA;
- Enhanced use of digital/electronic groundwater monitoring equipment and other new technology aimed at measuring withdrawal rates, pumping water levels, and key water quality parameters within the context of day-to-day operations;
- Full participation in the development of GSP's and formulation of groundwater models being constructed in basins where Cal Water has an operating presence;
- Participation in individual and/or joint projects aimed at mitigating seawater intrusion and other "undesirable results" where appropriate;
- Inclusion of sound groundwater management principles and data in all applicable technical reports, studies, facility master plans, and UWMPs (including this 2020 update), particularly as these undertakings relate or pertain to water resource adequacy and reliability; and,
- Inclusion of sound groundwater management principles and data in all general rate case (GRC) filings and grant applications to ensure that resource management objectives remain visible and central to Cal Water's long-term planning/budgeting efforts.

6.2.5 Historical Pumping and Supply Sufficiency

The groundwater used by the Willows District is extracted from the Colusa Subbasin which underlies the District. The District has a total of seven wells (four active, three standby) located within the District service area boundaries shown in Figure 6-1.

There are two surface storage structures, enabling the groundwater wells to pump to storage during non-peak demand periods and provide peak day demand. The District has sufficient production capacity to supply all of the District's current annual average day and maximum day demand.

As noted above, groundwater is the only source of supply for the Willows District. Table 6-1 lists the amount of groundwater pumped by Cal Water over the past five years. The available groundwater supply has been sufficient to meet all of the District's demands in the past five years and all prior years (see Appendix F).

Appendix F presents an analysis of the availability of groundwater supply for the District based on historical groundwater use and review of relevant assessments conducted by the CGA and GGA GSAs as part of GSP development to date. Based on the available information, the available groundwater supply is expected to be sufficient to meet the projected future demands of the District in normal and multiple dry year periods through 2045. It should be noted that the Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

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

	Supplier does not pump groundwater. The supplier will not complete the table below.					
	All or part of the groundwater described below is desalinated.					
Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Colusa Subbasin	1,037	1,154	1,152	1,147	1,316
TOTAL		1,037	1,154	1,152	1,147	1,316
NOTES: (a) Volumes are in units of AF. (b) The Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.						

6.3 Surface Water

Cal Water does not impound or divert surface water as a means to meet demands in the Willows District.

6.4 Stormwater

There are no plans to divert stormwater for beneficial uses in the Willows District.

6.5 Wastewater and Recycled Water

☑ CWC § 10633

The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.

The recycling of wastewater potentially offers several potential benefits to Cal Water and its customers. Perhaps the greatest of these benefits is to help maintain a sustainable groundwater supply either through direct recharge, or by reducing potable supply needs by utilizing recycled water for appropriate uses (e.g., landscape irrigation) now being served by potable water. Currently, however, no wastewater is recycled for direct reuse within the Willows District.

6.5.1 Recycled Water Coordination

The Willows Wastewater Treatment Plant (WWTP) is operated by the City of Willows (City) and provides wastewater treatment service for the Willows District service area. Cal Water coordinated with the City as part of this Plan preparation process.

6.5.2 Wastewater Collection, Treatment, and Disposal

☑ CWC § 10633 (a)

A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

☑ CWC § 10633 (b)

A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

The City of Willows operates and maintains the sewer system and provides wastewater treatment service for the Willows District service area. A summary of wastewater collection for the Willows District is shown in Table 6-2, including estimates of the volume of wastewater collected from Willows District customers in 2020. The estimate is calculated by annualizing 90 percent of January water use in the service area. As shown in Table 6-3, no wastewater is treated or disposed of within the District.

The City's sewer system consists of gravity sewers and pumping stations to collect wastewater from residential and commercial customers. The collected wastewater is discharged to trunk sewers and interceptors owned and operated by the City and conveyed to the Willows WWTP for treatment.

In 2007, the Willows WWTP upgraded its facilities to provide tertiary treatment to meet California Title 22 Water Recycling Criteria. The Willows WWTP has a capacity to treat 1.2 million gallons per day (MGD) but currently receives 600,000 gallons per day from residential and commercial customers. Approximately 95 percent of the wastewater flow is attributed to the District. Currently, no wastewater is recycled for direct reuse within the Willows District service area.

The tertiary-treated wastewater from the Willows WWTP is discharged to Agricultural Drain C. A portion of the recycled water is then used by the Glenn-Colusa Irrigation District for agricultural irrigation and the Sacramento National Wildlife Refuge. The City has expressed interest in finding additional recycled water customers.

The Willows WWTP is located approximately a half mile southwest of the nearest potential customer within the District, with schools and parks scattered throughout the City/District. However, some of the parks within the City/District are currently served by City-owned irrigation wells. Irrigation of these parks using recycled water would not provide Cal Water with any direct potable water offset.

Implementation of a recycled water program would require new distribution infrastructure between the Willows WWTP and potential District customers. The cost of this infrastructure is not justified at the present time. Based on these conditions, a recycled water system in the Willows District will likely only be considered if conditions related to District supply change significantly in the future.

As such, as shown in Table 6-4, there is no projected recycled water supply for the Willows District, and given the afore-mentioned constraints, Cal Water has not implemented any incentive programs to encourage recycled water use.

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

	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2020 service area covered by wastewater collection system <i>(optional)</i>					
	Percentage of 2020 service area population covered by wastewater collection system <i>(optional)</i>					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? <i>(optional)</i>
City of Willows	Estimated	688	City of Willows	Willows Wastewater Treatment Plant	No	
Total Wastewater Collected from Service Area in 2020:		688				
NOTES: (a) Volumes are in units of AF. (b) The volume of wastewater collected from the Willows District service area in 2020 is estimated by annualizing 90 percent of January water use in the District.						

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

X	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number <i>(optional)</i>	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
						Total					
NOTES:											

6.5.3 Recycled Water System and Recycled Water Beneficial Uses☒ **CWC § 10633 (c-g)**

(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.

(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.

Currently, as shown in Table 6-4 and Table 6-5, no wastewater is recycled for direct reuse at the wastewater treatment plants that operate within the Willows District and there is no current or projected beneficial use of recycled water in the District.

Table 6-4. Recycled Water Direct Beneficial Uses Within Service Area (DWR Table 6-4)

X	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.									
Name of Supplier Producing (Treating) the Recycled Water:										
Name of Supplier Operating the Recycled Water Distribution System:										
Supplemental Water Added in 2020 (volume)										
Source of 2020 Supplemental Water										
Beneficial Use Type	Potential Beneficial Uses of Recycled Water (Describe)	Amount of Potential Uses of Recycled Water (Quantity)	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040	2045
				Total:						
2020 Internal Reuse										
NOTES:										

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

X	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below.		
Beneficial Use Type		2015 Projection for 2020	2020 Actual Use
Total			
NOTES:			

6.5.4 Actions to Encourage and Optimize Future Recycled Water Use

At this time, as shown in Table 6-6, Cal Water does not have plans to initiate/expand the use of recycled water within the Willows District. Cal Water's supply portfolio in some districts already includes recycled water; elsewhere, Cal Water is participating in studies of the possibility of adding this supply source. Cal Water is eager to expand its portfolio to provide recycled water to its customers wherever feasible, and to form partnerships with other agencies and jurisdictions to accomplish this. However, any such project must be economically feasible and approval of such an investment by the California Public Utilities Commission (CPUC) is contingent on a demonstration that it is beneficial to ratepayers.

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

X	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.5.4	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Total			
NOTES:			

6.6 Desalinated Water Opportunities

☑ **CWC § 10631 (g)** A plan shall be adopted in accordance with this chapter and shall do all of the following:

Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.

The Willows District is located in the inland Sacramento Valley, many miles from the nearest source of saline water. As such, there are no opportunities for the development of desalinated water in the District.

6.7 Water Exchanges and Transfers

☑ **CWC § 10631 (c)** A plan shall be adopted in accordance with this chapter and shall do all of the following:

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

Groundwater has proven to be a reliable source of supply in the Willows District (see Appendix F). Because of this there has not been a need to acquire additional supplies. Also, Cal Water does not hold any surface water rights in this area that could be transferred to other agencies. Therefore, Cal Water is not pursuing water transfers or exchanges at this time.

6.7.1 Exchanges

Cal Water is not pursuing water exchanges involving the Willows District and other entities at this time.

6.7.2 Transfers

Cal Water is not pursuing water transfers involving the Willows District and other entities at this time.

6.7.3 Emergency Interties

Cal Water does not have any interties, emergency or otherwise, with any other agencies.

6.8 Future Water Projects

☒ **CWC § 10631** A plan shall be adopted in accordance with this chapter and shall do all of the following:

(b) (3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.

(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

Future water projects in the Willows District will primarily fall within a number of programmatic efforts, largely framed around addressing and achieving asset management benefits. Specific programs of note relate to programmatic pipeline renewals, meter replacements, supervisory control and data acquisition (SCADA) equipment upgrades and replacements, and panel board and electrical equipment replacements. As shown in Table 6-7, there are no planned future water supply projects or programs that are expected to provide a quantifiable increase to the District's water supply.

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

X	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier
	Y/N	If Yes, Supplier Name				
NOTES:						

6.9 Summary of Existing and Planned Sources of Water

- ☑ **CWC § 10631 (b)** *Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*
- ☑ **CWC § 10631 (b) (2)** *When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.*
- ☑ **CWC § 10631 (b) (4) (D)** *A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

Table 6-8 summarizes the actual volumes of purchased water and groundwater production for calendar year 2020, as applicable. As discussed above, groundwater will be used to serve all projected District demands through 2045. Therefore, the groundwater supply amounts shown in Table 6-9 equal the projected demand in each year (see Appendix F).

It should be noted that supply volumes in Table 6-9 do not represent the total amount of groundwater supply that may be available to the District in a given year, but rather reflect the fact that supply has always been sufficient to meet demands in normal years, and is projected to continue to be sufficient to meet demands in the future. It should also be noted that the Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.

Table 6-8. Water Supplies – Actual (DWR Table 6-8)

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield <i>(optional)</i>
Groundwater (not desalinated)	Colusa Subbasin	1,316	Drinking Water	
Total		1,316		
NOTES: (a) Volumes are in units of AF. (b) The Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.				

Table 6-9. Water Supplies – Projected (DWR Table 6-9)

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		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)
Groundwater (not desalinated)	Colusa Subbasin	1,527		1,617		1,615		1,876		1,881	
Total		1,527		1,617		1,615		1,876		1,881	
NOTES: (a) Volumes are in units of AF. (b) The Colusa Subbasin is not adjudicated, and the projected groundwater supply volumes are not intended to and do not determine, limit or represent Cal Water's water rights or maximum pumping volumes. Any determination of Cal Water's water rights, as an overlying owner, appropriator, municipal water purveyor or otherwise, is beyond the scope of this report and the UWMP statutes and regulations.											

6.10 Special Conditions

6.10.1 Climate Change Effects

Cal Water is committed to incorporating climate change into its ongoing water supply planning. Section 4.3 of this Urban Water Management Plan (UWMP or Plan) includes a description of plausible changes to projected demands under climate change conditions, and Cal Water is currently working to consider the effects of climate change in future demand modeling. The impact of climate change on District supplies is addressed in detail in the key resources described below, which are incorporated into this Plan by reference:

- Cal Water is currently in the process of developing a multi-phase climate change study. Phase 1, which primarily consisted of a literature and tools review of previous and complementary studies, was completed in December 2020.³⁷ Phase 2 will include District-level vulnerability assessments of Cal Water's facilities and operations, including developing an assessment approach that evaluates climate impacts to Cal Water, identifies asset vulnerabilities, and prioritizes climate risks. Phase 3 will focus on an assessment of climate-driven impacts to water supply resources and demand. Phase 2 is expected to be completed by December 2021. The executive summary of Phase 1 of this study is included in this Plan in Appendix G.
- In 2016, Cal Water completed a study of climate change impacts on a representative subset of its districts, to gain a better understanding of the potential impacts of climate change on the availability of its diverse supplies.³⁸ The 2016 study relied on the best available projections of changes in climate (temperature and precipitation) through the end of the century to examine how surface water flows and groundwater recharge rates may change. The executive summary of this study is included in this Plan in Appendix G.
- Appendix F of this Plan assesses the sufficiency of the Willows District's groundwater supplies to meet projected demands under dry year conditions, including during single dry years and an extended five-year drought period, based on historical drought hydrology and projected future climate change conditions. Appendix F includes an assessment of the overall Basin sustainability based on initial results of water budget modeling being conducted in support of the forthcoming Colusa Subbasin GSP, which includes the effects of climate change.

³⁷ ICF, 2020. California Water Service Climate Change – Water Resource Monitoring and Adaptation Plan – Phase 1, prepared by ICF, dated December, 17, 2020.

³⁸ California Water Service Company, 2016. Potential Climate Change Impacts on the Water Supplies of California Water Service, prepared by Gary Fiske and Associates, Inc. and Balance Hydrologics, Inc., dated January 2016.

- SGMA dictates that GSPs include basin-wide water budget models under various climate change scenarios, including 2070 future conditions which account for the effects of estimated climate change. Draft chapters of the Colusa Subbasin GSP will be made available as they are completed on the Colusa Groundwater Sustainability Agency (GSA) website:

<https://colusagroundwater.org/projects/groundwater-sustainability-plan/>

It is anticipated that following adoption (anticipated by January 31, 2022), the final GSP for the Colusa Subbasin will be available on the DWR website:

<https://sgma.water.ca.gov/portal/gsp/all>

6.10.2 Regulatory Conditions and Project Development

Emerging regulatory conditions (e.g., issues surrounding the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary [Bay-Delta Plan]) may affect planned future projects and the characterization of future water supply availability and analysis. The District does not have any current plans to develop additional supply sources. If the District does move forward with any plans to develop supply projects, emerging regulatory conditions will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

6.10.3 Other Locally Applicable Criteria

Other locally applicable criteria may affect characterization and availability of an identified water supply (e.g., changes in regional water transfer rules may alter the availability of a water supply that had historically been readily available). The District does not have any current plans to develop additional supply sources. If the District does move forward with any plans to develop supply projects, locally applicable criteria will be considered, and the associated water supply reliability impacts will be assessed in future UWMP updates.

Under SGMA, GSAs have the authority to implement projects and management actions that help basins reach their sustainability goal, including such actions as setting allocations for groundwater pumping, prohibiting development of new groundwater wells, or implementing fees for pumping volumes. As described in Section 6.2, the GSP development process in the Colusa Subbasin is still underway, and Cal Water is actively participating in this process. If such actions are implemented by the GSA, Cal Water will consider these actions as a part of its future supply planning efforts.

6.11 Energy Intensity**☑ CWC § 10631.2**

- (a) *In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:*
- (1) *An estimate of the amount of energy used to extract or divert water supplies.*
 - (2) *An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.*
 - (3) *An estimate of the amount of energy used to treat water supplies.*
 - (4) *An estimate of the amount of energy used to distribute water supplies through its distribution systems.*
 - (5) *An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.*
 - (6) *An estimate of the amount of energy used to place water into or withdraw from storage.*
 - (7) *Any other energy-related information the urban water supplier deems appropriate.*
- (b) *The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.*
- (c) *The Legislature finds and declares that energy use is only one factor in water supply planning and shall not be considered independently of other factors.*

The “Total Utility Approach” as defined by DWR in the UWMP Guidebook 2020 is used to report water-related energy-consumption data for the Willows District. Calendar year 2019 is selected as the one-year reporting period, and utility bills for the associated time period are used as the source for energy consumption data. Utility bills reported the following energy consumption data for the Willows District during calendar year 2019:

Total Energy Consumed by the Willows District = 568,950 kilowatt hour (kWh)

Table 6-10 shows the energy consumed for each acre-foot (AF) of water entering the distribution system in the Willows District, including energy associated with the pumping, treatment, conveyance, and distribution of drinking water, but not including energy associated with the treatment of wastewater. Based on this, the energy intensity is estimated to be 496 kilowatt hours per acre-foot (kWh/AF).

Table 6-10. Recommended Energy Intensity – Total Utility Approach (DWR Table O-1B)

Urban Water Supplier:

Willows District

Water Delivery Product

Retail Potable Deliveries

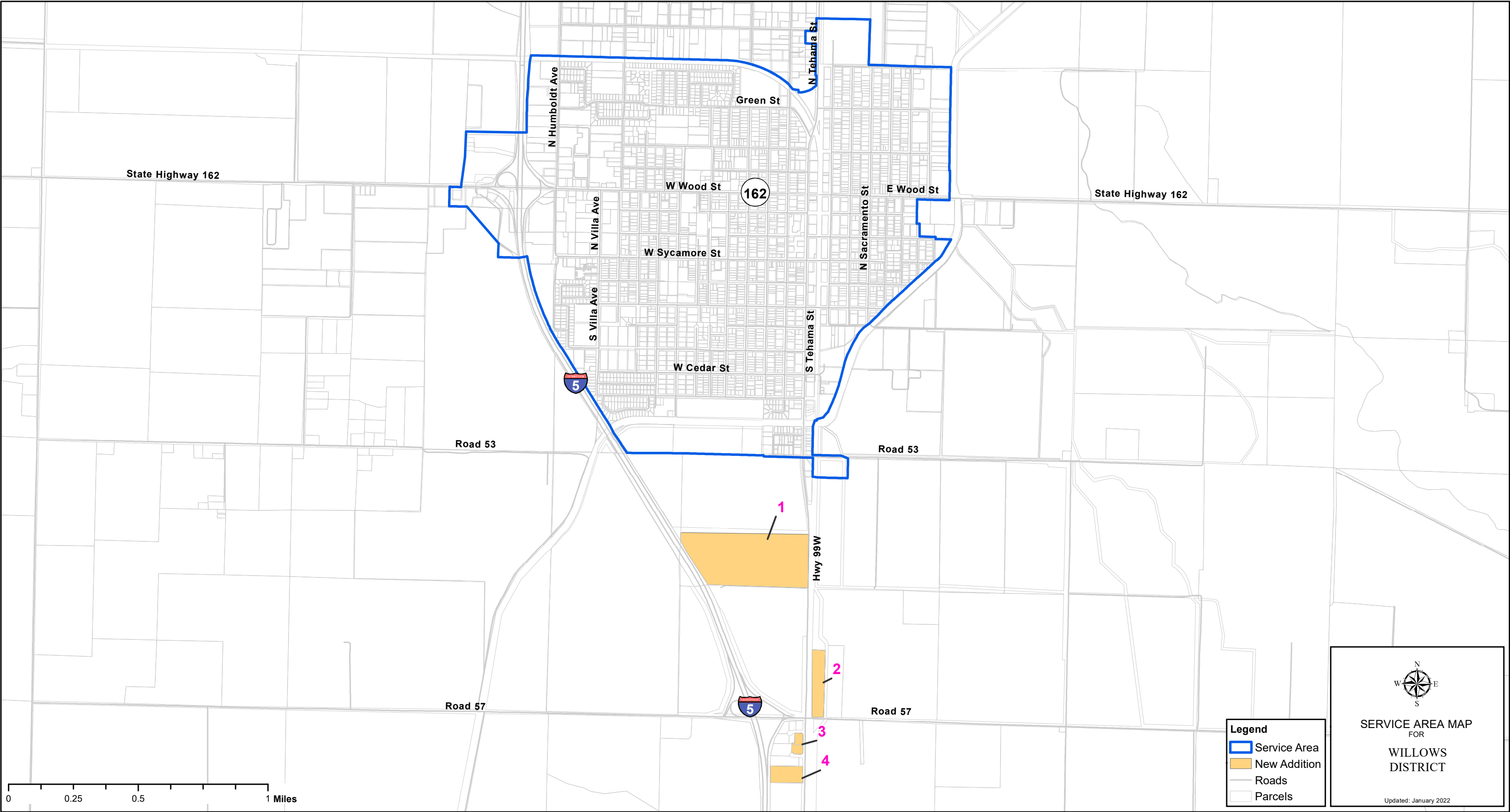
Enter Start Date for Reporting Period	1/1/2019	Urban Water Supplier Operational Control		
End Date	12/31/2019			
Is upstream embedded in the values reported?		Sum of All Water Management Processes	Non-Consequential Hydropower	
<i>Water Volume Units Used</i>	AF	Total Utility	Hydropower	Net Utility
<i>Volume of Water Entering Process (volume unit)</i>		1,147	0	1,147
<i>Energy Consumed (kWh)</i>		568,950	0	568,950
<i>Energy Intensity (kWh/volume)</i>		496.0	0.0	496.0
Quantity of Self-Generated Renewable Energy				
N/A		kWh		
Data Quality				
Metered Data				
Data Quality Narrative:				
Utility bills for the associated time period are used as the source for energy consumption data.				
Narrative:				
Total energy consumption represents the energy consumed during pumping, treatment, conveyance, and distribution.				



CALIFORNIA WATER SERVICE
1720 North First Street, San Jose, CA 95112
(408) 367 - 8200

Revised Cal. P.U.C. Sheet No. 12896-W

Cancelling Cal. P.U.C. Sheet No. 11133-W



NOTE :
This map may not be considered by the Public Utilities Commission of the State of California as a final conclusive determination or establishment of the dedicated area of service or any other portion thereof.

(To be inserted by Utility)
Advice Letter No. : 2442
Decision No. : _____

Issued By
Greg Milleman
NAME
Vice President of Rates
TITLE

(To be inserted by Cal. P.U.C.)
Date Filed : 02/02/2022
Effective : 03/04/2022
Resolution No. : _____



SERVICE AREA MAP
FOR
WILLOWS
DISTRICT
Updated: January 2022

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(continued)

Sheet Subject Matter

Cal. P.U.C.
Sheet No.

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Leona Valley	11158-W
Lake Hughes	11157-W
Lancaster	11156-W
Bakersfield District	12336-W
Bayshore District	
Mid Peninsula District	10196-W
South San Francisco District	9017,3245-W
Bear Gulch District	11344-W
Chico – Hamilton City District	12883-W
Dixon District	10189-W
Dominguez	11617-W
East Los Angeles District	11153-W
Grand Oaks District	6824-W
Hermosa-Redondo District	11152-W
King City District	11151-W
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Arden, Poderosa Pines, Split Mtn. and Mt. Shadows	11150-W
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Rancho Del Paradiso	11137-W
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Travis District	12078-W
Visalia District	12319-W
Westlake District	9018-W
Willows District	12896-W (C)

(continued)

Issued by

GREG A. MILLEMAN

NAME

Vice President

TITLE

(To be inserted by Cal. P.U.C.)

Date Filed 02/02/2022

Effective 03/04/2022

Resolution No. -

(To be inserted by utility)

Advice Letter No. 2442

Decision No. -

Table of Contents - Page 1

The following listed tariff sheets contain all effective rates and rules affecting the rates and service of the Utility together with information relating thereto:

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(continued)

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Issued by
GREG A. MILLEMAN
Name
Vice President
TITLE

(To be inserted by CPUC)
Date Filed 02/02/2022
Effective 03/04/2022
Resolution No.



Willows District

ADVICE LETTER FILING MAILING LIST
PER SECTION III (G) OF GENERAL ORDER NO. 96-A

WAYNE PEABODY, INTERIM CITY
MANAGER

City of Willows Civic Center

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wpeabody@cityofwillows.org

ONLY FOR SERVICE AREA MAPS:

CHRISTY LEIGHTON, EXECUTIVE
OFFICER

**County of Glenn Local Agency
Formation Commission**

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City of Willows Fire Department

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