COUNTY of YOLO

Drought Resilience Plan

February 2026

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Abbreviations and Acronyms

°F	degrees Fahrenheit
ACS	American Community Survey
ALD	acoustic leak detection
ASR	Aquifer Storage and Recovery
CAAP	2030 Climate Action & Adaptation Plan
Cal Am	California-American
CalFire	California Department of Forestry and Fire Protection
CAO	County Administrator's Office
CDAG	County Drought Advisory Group
CIP	Capital Improvement Plan
CFCC	California Financing Coordinating Committee
County	Yolo County
CSA	County Services Area
CSD	Community Services District
CVFPB	Central Valley Flood Protection Board
CWC	California Water Code
DAC	disadvantaged community
DFA	Division of Financial Assistance
DRP	Yolo County Drought Resilience Plan
DWR	California Department of Water Resources
DWSRF	Drinking Water State Revolving Fund
ECWAG	Emergency Community Water Assistance Grants
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency

FAF	Financial Assistance Funding
FEMA	Federal Emergency Management Agency
GSA	groundwater sustainability agency
GSP	groundwater sustainability plan
HHSA	Health and Human Service Agency
HMAG	Hazard Mitigation Assistance Grants
HMP	Hazard Mitigation Plan
HOA	Homeowners Association
HSC	California Health and Safety Code
HUC	Hydrologic Unit Code
INC	Incorporated
IRWM	Integrated Regional Water Management
LTMS/A	long-term mitigation strategies/actions
M&I	Municipal and Industrial)
MCL	maximum contaminant level
MHI	Median Household Income
N/A	Not Applicable
NIDIS	National Integrated Drought Information System
NOAA	National Oceanic and Atmospheric Administration
PIO	Public Information Officer
PLSS	Public Land Survey Section
POE	Point of Entry
POU	Point of Use
RW	Recycled Water
SAFER	Safe and Affordable Funding for Equity and Resilience
SB	Senate Bill
SCFP	Small Community Funding Program
SGMA	Sustainable Groundwater Management Act
SSWEG	Small-Scale Water Efficiency Grants

SSWS	state small water system
State	State of California
STRA	short-term response actions
SWRCB	State Water Board
SWRCB	State Water Resources Control Board
Task Force	Yolo County Drought and Water Shortage Task Force
TM	Technical Memo
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Services
USGS	U.S. Geological Survey
VWC	Valley Water Collaborative
WSVE	Water Shortage Vulnerability Explorer
Yolo LAFCo	Yolo Local Agency Formation Commission
Yolo OES	Yolo County Office of Emergency Services
YSGA	Yolo Subbasin Groundwater Agency

Glossary

Term	Definition
Census Block Group (CBG)	A geographic unit with a population between 600 and 3,000 people; a CBG is the smallest geographical unit for which the U.S. Census Bureau publishes data collected from a fraction of households.
County Drought Advisory Group (CDAG)	The group convened in 2018 to assist in a vulnerability assessment and develop recommended actions for improving drought planning for small water suppliers and rural communities.
Department of Water Resources (DWR)	Established in 1956 by the California State Legislature, DWR protects, conserves, develops, and manages much of California's water supply.
Drought and water shortage risk assessment (Risk Assessment)	Evaluates how potential hazards intersect with the County's domestic well and SSWSs' assets and other community assets to characterize the vulnerability of domestic wells and SSWSs to water supply shortage.
DWR Water Shortage Vulnerability Explorer Tool (WSVE Tool)	An online geospatial tool that quantifies hazards using spatially visualized indicators
Federal Emergency Management Agency (FEMA)	Agency of the U.S. Department of Homeland Security to assist with disaster responses in the United States.
Groundwater Sustainability Agencies (GSA)	Local public agencies tasked with developing and implementing groundwater sustainability plans under SGMA.
Groundwater Sustainability Plan (GSP)	A plan developed by YSGA and other local agencies to manage groundwater extraction and recharge, aiming for long-term sustainability.
Long-term mitigation strategies and actions (LTMS/A)	Actions taken to reduce potential drought and water shortage impacts and to improve water supply resilience.
National Oceanic and Atmospheric Administration (NOAA)	An agency within the U.S. Department of Commerce charged with forecasting weather, monitoring oceanic and atmospheric conditions, and supporting marine commerce.
Pacific Gas and Electric (PG&E)	A utility company that provides natural gas and electrical service to residential and business customers in northern and central California.

Public Land Survey Section (PLSS)	A geographic delineation of an area equivalent to 1 square mile.
Short-Term Response Actions (STRA)	Proposed short-term response actions for emergency and interim drought solutions, including specific actions, local response triggers, and public engagement.
State Small Water Systems (SSWSs)	A system for the provision of piped water to the public for human consumption that serves at least five but not more than 14 service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year.
State Water Resources Control Board (SWRCB)	Government department that regulates water quality, water rights, and drinking water in California.
Sustainable Groundwater Management Act (SGMA)	A three-bill legislative package that requires local agencies to ensure better local and regional management of groundwater use and achieve sustainable groundwater management throughout California by 2042.
Westside Sacramento Integrated Regional Water Management (IRWM)	A group of public agencies spanning five counties – Yolo, Colusa, Lake, Solano, and Napa – established to develop a plan to address water management of water resources in the Westside Sacramento Region.
Yolo County Administrator's Office (CAO)	The Yolo County office that carries out the policies established by the Yolo County Board of Supervisors and services as the executive management for county departments and agencies.
Yolo County Drought and Water Shortage Task Force (Task Force)	The Task Force created to lead and facilitate drought and water shortage preparedness for SWSSs and domestic wells within Yolo County, and to coordinate government and community agencies and organizations in their respective role(s) in drought preparedness and response.

Yolo County Drought Resilience Plan (County DRP)	A plan detailing how the County, Task Force members, and other entities with water supply and drought management responsibilities intend to address the water supply vulnerabilities of water users protected under SB 552 within the County
Yolo County Office of Emergency Services (Yolo OES)	Yolo County's agency that coordinates the County's response to disasters.
Yolo Local Agency Formation Commission (Yolo LAFCo)	A regulatory agency within the countrywide jurisdiction to encourage orderly and efficient provision of services such as water, sewer, fire protection, etc., by review of local agency boundaries, formations, and dissolutions.
Yolo Subbasin Groundwater Agency (YSGA)	A group formed on June 19, 2017, for the purpose of acting as the Groundwater Sustainability Agency for the Yolo Subbasin.

1.0 Introduction

The Yolo County Drought Resilience Plan (County DRP) documents how Yolo County (County), its Drought and Water Shortage Task Force (Task Force) members, and other entities with water supply and drought management responsibilities will address water supply vulnerabilities for two types of systems in the County: domestic wells, as defined in California Health and Safety Code (HSC) Section 116275(n) and Section 10609.51(d); and state small water systems (SSWS), as defined in HSC Section 116275(n) and Section 10609.51(m). This County DRP was prepared pursuant to Senate Bill (SB) 552: Drought Planning for Small Water Suppliers, SSWSs, and Domestic Well Communities (Hertzberg; see Chapter 1, Section 1.2 for additional detail). This DRP was developed by the County with funding and technical support provided by the California Department of Water Resources (DWR) Drought Resilience Planning Assistance Program.

1.1 Document Organization

Organization of this document draws from the DWR's *County Drought Resilience Guidebook* (March 2023; Guidebook). The Guidebook is a resource for counties to use when developing a DRP specifically for SSWSs and domestic wells. Consistent with the Guidebook, this County DRP is organized into six chapters, as follows:

- **Chapter 1 Introduction** provides an overview of the legislation relating to SB 552 and the development of the County DRP. This chapter also includes background on County demographics, geography, and an overview of domestic wells and SSWSs within the County's jurisdiction.
- **Chapter 2 County Drought and Water Shortage Task Force** provides an overview of the Task Force, including its development process and charter, membership, roles, purpose, and meeting frequency.
- **Chapter 3: Drought and Water Shortage Risk Assessment** characterizes the vulnerability of domestic wells and SSWSs within the County to drought and water shortage. This chapter also presents the approach and data used to assess vulnerability by highlighting areas within the County that have a higher risk of drought and water shortage where domestic wells and SSWSs are present. Data gaps are identified to help inform potential long-term strategies.
- **Chapter 4: Short-Term Response Actions** details the proposed short-term response actions for emergency and interim drought solutions, including specific actions, local response triggers, and public engagement.
- **Chapter 5: Long-Term Mitigation Strategies and Actions** details the proposed long-term mitigation strategies and actions for improving the water supply resilience of domestic wells and SSWSs.
- **Chapter 6: Implementation Considerations** presents potential steps to address key challenges, as identified by the Task Force, for implementing short-term response actions (STRA) and long-term mitigation strategies/actions (LTMS/A) consistent with the mission and authority of

involved agencies. This includes an analysis of the steps necessary to implement the plan and an analysis of local, state and federal funding sources available to implement the plan.

- **Chapter 7: References** provides a list of references used in this plan.

1.2 Legislative Requirements

SB 552 (Hertzberg)[1] obligated the State of California (State) and local governments to share the responsibility in preparing for and responding to a water shortage event. SB 552 was signed into law in September 2021 by Governor Gavin Newsom. The law expects the new requirements to improve the ability of Californians to manage future droughts and help prevent catastrophic impacts on drinking water for communities vulnerable to the effects of climate change. The bill outlines the new requirements for small water suppliers, county governments, DWR, and the State Water Resources Control Board (SWRCB) to implement more proactive drought planning and prepare for future water shortage events or dry years.

SB552 also implements legislation on Water Conservation and Drought Planning (SB 606 [Hertzberg] and AB 1668 [Friedman], as amended; it is collectively referred to as the "2018 Legislation") passed by the State Legislature (Legislature). The 2018 Legislation provides a new framework for urban water use efficiency; directives for eliminating water waste; additional requirements for strengthening local drought resilience for urban areas, vulnerable small water suppliers, and rural communities; and recommendations for improving agricultural water use efficiency and drought planning.

Water users protected under SB 552 include:

- **Small Water Supplier:** A community water system serving 15 to 2,999 service connections, inclusive, and that provides less than 3,000 acre-feet of water annually (California Water Code (CWC) Section 10609.51(k)).
- **Community Water System:** A public water system that serves at least 15 service connections used by yearlong residents or that regularly serves at least 25 yearlong residents of the area served by the system, as defined in HSC Section 116275(i) and Section 10609.51(a).
- **State Small Water System:** A system for the provision of piped water to the public for human consumption that serves at least five but not more than 14 service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year, as defined in HSC Section 116275(n) and Section 10609.51(m).

[1] In 2018, DWR convened a County Drought Advisory Group (CDAG) to assist in a vulnerability assessment and to develop recommended actions for improving drought planning for small water suppliers and rural communities. The CDAG consisted of representatives from counties and other local agencies, small water systems, tribes, academics, non-profit organizations, and other interested parties. The CDAG's recommendations were provided to the Legislature in March 2021 and served as the basis for SB 552. DWR has also established a standing drought and water shortage interagency task force, in coordination with the SWRCB and other relevant state agencies, to facilitate proactive state planning and coordination for pre-drought planning, emergency response, and post-drought management, consistent with SB 552. The interagency task force, called the Drought Resilience Interagency and Partners Collaborative, serves as a public forum with state and non-state agency members to advance drought strategies and to continue building resilience to the increasingly arid conditions California faces. More information is available at: https://water.ca.gov/drip.

- **Domestic Well:** A groundwater well used to supply water for the domestic needs of an individual residence or a water system that is not a public water system and that has no more than four service connections, as defined in HSC Section 116275(n) and Section 10609.51(d).
- **Nontransient Noncommunity Water System:** A public water system that is not a community water system and that regularly serves at least 25 of the same persons over six months per year, as defined in HSC Section 116275(k) and Section 10609.51(f).

The County DRP addresses water shortage vulnerabilities for domestic wells and SSWSs for water users protected under SB 552. Other water users protected under SB 552 not included in this County DRP have separate requirements to address water shortage vulnerabilities.

1.2.1 County Agency Requirements

This County DRP fulfills the requirements for preparation of a plan that includes potential drought and water shortage risk and proposed interim and long-term solutions for domestic wells and SSWSs stems within the County's jurisdiction (CWC Section 10609.70). The County DRP considers integration opportunities consistent with the intent of SB 552. Measures to protect small water suppliers and nontransient noncommunity water systems are not within the scope of this document. Applicable County requirements are:

- Establish a standing County Drought and Water Shortage Task Force (CWC Section 10609.70(a))
- Develop a plan that considers, at a minimum, each of the following (CWC Section 10609.70(b)):
    1. Consolidations for existing water systems and domestic wells
    2. Domestic well drinking water mitigation programs
    3. Provision of emergency and interim drinking water solutions
    4. An analysis of the steps necessary to implement the plan
    5. An analysis of local, state, and federal funding sources available to implement the plan

1.2.2 State Agency Involvement and Implementation

SB 552 defined a series of requirements for the SWRCB and DWR which include the following:

State Water Resources Control Board (CWC Section10609.70(c)):

> *The state board shall work with counties, groundwater sustainability agencies, technical assistance providers, nonprofit organizations, community-based organizations, and the public to address state small water system and domestic well community drought and emergency water shortage resiliency needs, including both of the following:*
>
> *(1) Proactive communication to domestic well communities before a drought occurs, such as information on local packaged water and packed water providers.*
>
> *(2) Funding for installation of basic drought and emergency water shortage resiliency infrastructure, such as well monitoring devices.*

California Department of Water Resources (CWC Section 10609.80(a)):

> *The department shall take both of the following actions to support implementation of the recommendations of its County Drought Advisory Group:*
>
> *(1) Maintain, in partnership with the state board and other relevant state agencies, the risk vulnerability tool developed as part of the County Drought Advisory Group process and continue to refine existing data and gather new data for the tool, including, but not limited to, data on all of the following:*
>
> *(A) Small water suppliers and nontransient noncommunity water systems serving a school.*
>
> *(B) State small water systems and rural communities.*
>
> *(C) Domestic wells and other self-supplied residents.*
>
> *(2) Update the risk vulnerability tool for small water suppliers and rural communities periodically, by doing all of the following:*
>
> *(A) Revise the indicators and construction of the scoring as more data becomes readily available.*
>
> *(B) Make existing and new data publicly available on the California Open Data internet web portal.*
>
> *(C) In consultation with other relevant state agencies, identify deficits in data quality and availability and develop recommendations to address these gaps.*
>
> *(b) (1) The department, in collaboration with the state board and relevant state agencies, shall establish a standing interagency drought and water shortage task force to facilitate proactive state planning and coordination, both for predrought planning and post-drought emergency response, to develop strategies to enhance collaboration between various fields, and to consider all types of water users.*
>
> *(2) The interagency drought and water shortage task force shall include representatives from local governments, community-based organizations, nonprofit technical assistance providers, the public, and experts in land use planning, water resiliency, and water infrastructure.*

1.3 Purpose of the Yolo County Drought Resilience Plan

The County DRP documents how the County, Task Force members, and other entities with water supply and drought management responsibilities intend to address water supply vulnerabilities of water users protected under SB 552 in the County. It is a single document for ease of reference and future updates. It describes the water shortage vulnerabilities present in the County, the responses to identified vulnerabilities, and the policy, financial, and regulatory considerations necessary for the implementation of the County DRP. Implementation of the County DRP is led by the Yolo County Office of Emergency Services (Yolo OES) in close coordination with other departments, including the County Divisions of

Building and Planning, the County Division of Public Works, and the County Division of Environmental Health. All four Divisions are under the Department of Community Services.

The County developed the County DRP with funding and technical support provided by DWR's Drought Resilience Planning Assistance Program and conforms to the legislative requirements of SB 552.

1.4 Yolo County Overview

Yolo County is located in Northern California and the southwestern part of the Sacramento Valley on the ancestral land of the Patwin people. It includes four cities: Davis, West Sacramento, Winters, and Woodland. Woodland, its County seat, is located 20 miles from Sacramento.

1.4.1 Demographics

A summary of selected County demographics is provided below per the 2020 Census and 2022 American Community Survey (ACS) (USCB 2020):

- **Population:** The County has a population of 221,165 people and population density of 199.42 people per square mile. The population in Yolo County is concentrated in the eastern portion of the County and in urban and suburban areas; 88 percent of population resides in and around the cities of Davis, Winters, Woodland, and West Sacramento.
- **Age:** The County has a median age of 32.6. Around 21 percent of the population is under 18 years old, while 13.8 percent is 65 years and over.
- **Ethnicity:** The largest ethnic groups in the County are White Americans (45.8 percent), Latino Americans (31.9 percent), Asian Americans (14.4 percent), and African Americans (2.8 percent).
- **Household Income:** The median household income of the County, per the 2022 ACS Five-Year Estimates, is $93,203. From 2010 to 2021, the median household income for Yolo County increased by $7,715 (10.02 percent), as per the American Community Survey estimates.
- **Education:** The County has a higher-than-average percentage of residents 25 years or older with a bachelor's degree or higher at around 46.2 percent compared to 37 percent for California overall.
- **Poverty Level:** About 16 percent of the population in the County live below the poverty line, a number that is higher than the national average of 12.6 percent. Within Yolo County, 10.3 percent of the population under 18 years old and 10.8 percent of people older than 65 years old are living below the poverty line. Females experience poverty at a slightly higher rate than males.

1.4.2 Geography

The County has a total area of 1,024 square miles, of which 1,015 square miles is land and 8.9 square miles is water. Yolo County is surrounded by several neighboring counties as shown in Figure 1-1. To the east lies Sacramento County, home to the State capital. Solano County is situated to the south, while Napa County, famous for its vineyards, borders Yolo County to the west. To the north, Yolo County is neighbored by Colusa County, known for its agricultural heritage. Additionally, Lake County and Sutter County are situated to the northwest and northeast, respectively, completing the circle of neighboring counties around Yolo County.

Figure 1-1. Location of Yolo County and its Neighboring Counties

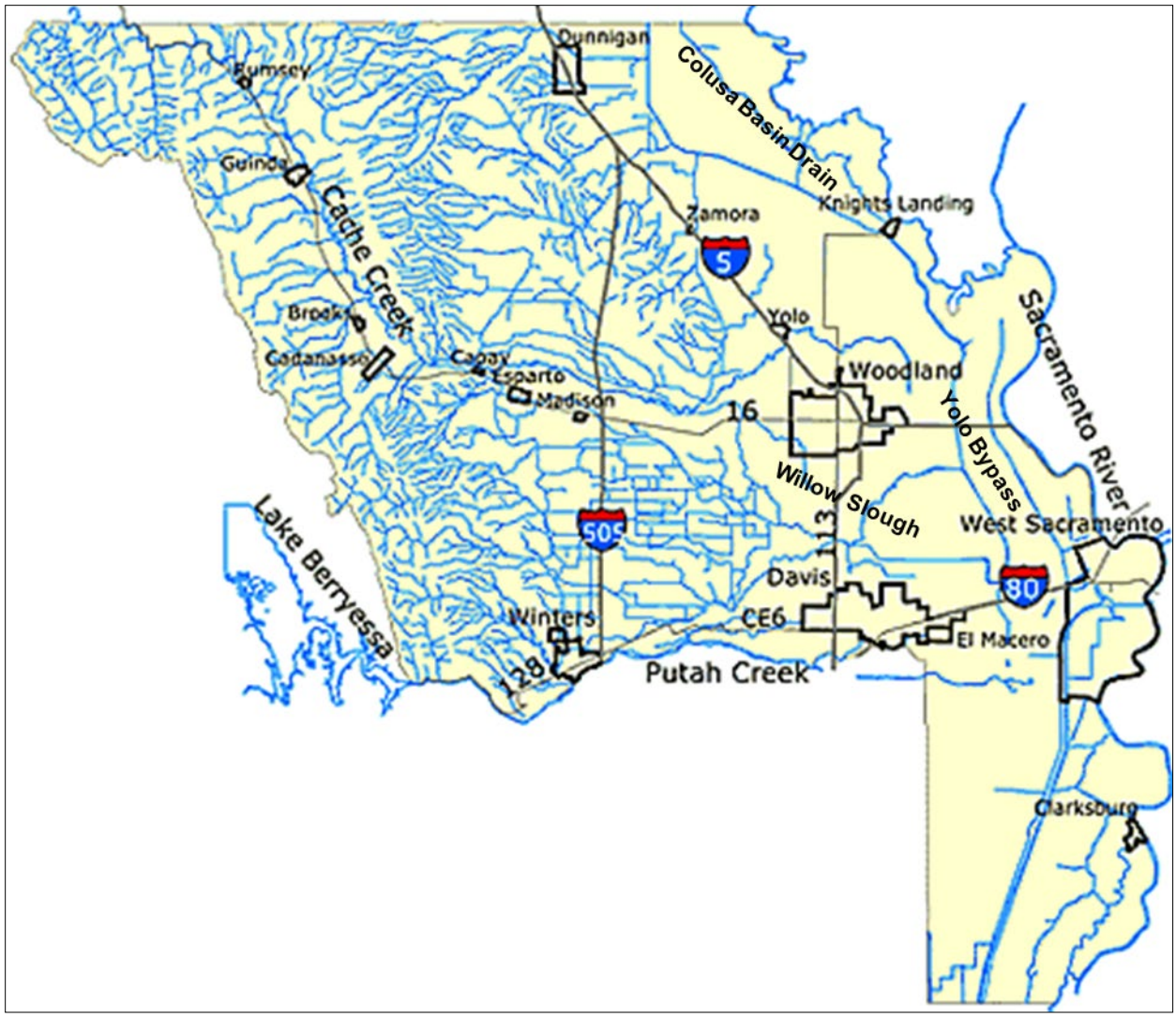
1.4.2.1 Hydrology

There are four Hydrologic Unit Codes (HUC) and eight hydrologic subregions in the County, as shown in Figure 1-2, including: the Lower Sacramento Basin, the Upper Putah Basin, the Upper Cache Basin, and the Sacramento-Stone Corral Basin (U.S. Geological Survey[2]).

Yolo County, located in the southwestern part of the Sacramento Valley, has a diverse range of hydrological features essential to its ecosystem. These include the Sacramento River, Tehama-Colusa Canal, Cache Creek, Putah Creek, Willow Slough, the Colusa Basin Drain, and the Yolo Bypass as shown in Figure 1-3. Cache Creek and Putah Creek are the primary streams in Yolo County, originating from the eastern slopes of the Coast Range. Cache Creek enters the County above the Capay Valley, flowing southward through the valley before veering eastward onto the Putah Plain section of the Sacramento Valley floor. Its journey continues eastward past the City of Woodland, eventually merging into the Yolo Bypass, which serves as a vital component of the Sacramento River Flood Control Project, safeguarding the City of Sacramento from potential flooding. Putah Creek begins in Lake and Napa Counties and flows into Yolo County, passing through Winters and Davis before joining the Yolo Bypass. Willow Slough, nestled between Cache and Putah Creeks, drains the valley floor area. The Sacramento River serves as the eastern boundary and plays a crucial role of draining the Sacramento Valley before converging with the Sacramento-San Joaquin Delta.

[2] Science in Your Watershed, 12-Digit HUC (https://water.usgs.gov/wsc/a_api/wbd/index_wbd.html)

Figure 1-2. Hydrologic Subregions within Yolo County



(Source: http://www.dcn.org/waterworks/yolomap.html)

Figure 1-3. Hydrologic Features in Yolo County

1.4.2.2 Precipitation

Yolo County experiences a Mediterranean climate characterized by a cool, wet season from November to March, and followed by a dry, hot season from May to September. Areas upstream along the Cache Creek watershed tend to be wetter and cooler compared to the valley floor. On average (from 1971 to 2000), annual rainfall in the uplands of Yolo County measures around 39 inches (±15) with an average temperature of 56 degrees Fahrenheit (±1). In the lower elevations of the County, rainfall and temperature average approximately 22 inches (±9) and 62 degrees Fahrenheit (±1.2), respectively. Snowfall is rare in the watershed, occurring only occasionally at higher elevations.

This precipitation pattern significantly influences drainage systems and related infrastructure in Yolo County. Drainage channels such as Cache Creek, Putah Creek, the Colusa Basin Drain, and the Yolo Bypass play crucial roles in managing excess water during the wet season, helping to prevent flooding and protect agricultural lands. Infrastructure such as dams, levees, and flood control projects, like the Sacramento River Flood Control Project, are essential for regulating water flow and minimizing flood

risks in the region. Additionally, groundwater recharge facilities and water storage reservoirs help to maintain water supplies during the dry season, ensuring sustainable water management practices in Yolo County.

1.4.2.3 Elevation

Elevation range within the County is shown in Figure 1-4. Yolo County's elevation ranges from near sea level (-12 feet) in the southeast near the Delta to 3,126 feet in the northwest Blue Ridge Mountains of the Coast Range. The average elevation within the County is 384 feet.

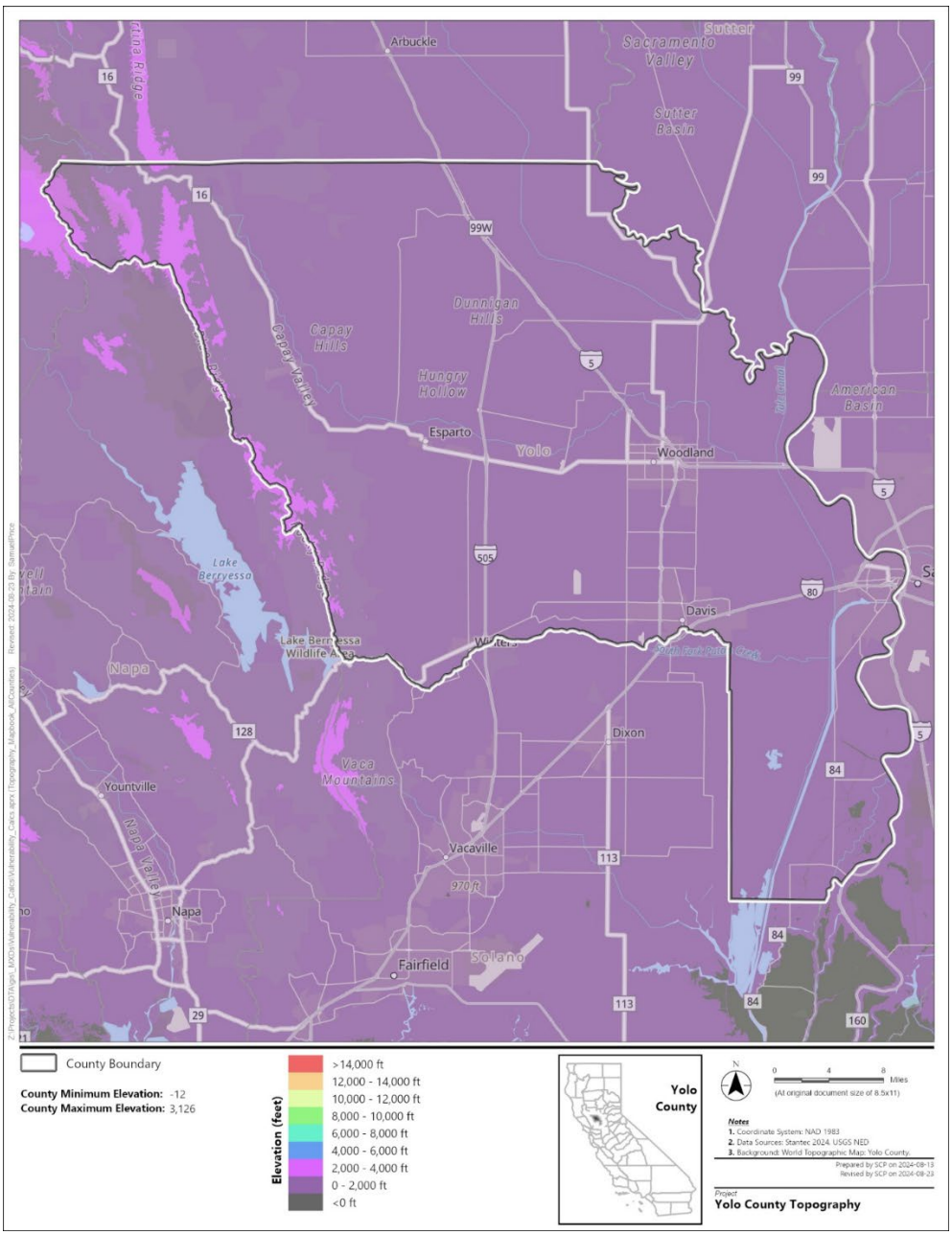


Figure 1-4. Elevation Map of Yolo County

Land Use

The majority of the land (1,015 square miles) in Yolo County is unincorporated agricultural and/or rural land in private ownership. Agriculture covers approximately 57 percent of the total land area, as shown in Figure 1-5. Agriculture occurs primarily in the eastern two-thirds of the County. Apart from agriculture, other significant land uses include urban and residential areas, transportation infrastructure, natural habitats, and water bodies. Urban and residential zones account for a notable portion of the landscape, accommodating the County's growing population and economic activities. Transportation infrastructure, including roads, highways, and railways, occupies a substantial percentage of land, facilitating connectivity within the County and beyond. Natural habitats such as forests, wetlands, and wildlife reserves contribute to biodiversity conservation and recreational opportunities. Additionally, water bodies like rivers, streams, and reservoirs play a vital role in supporting aquatic ecosystems and providing water resources for various purposes.

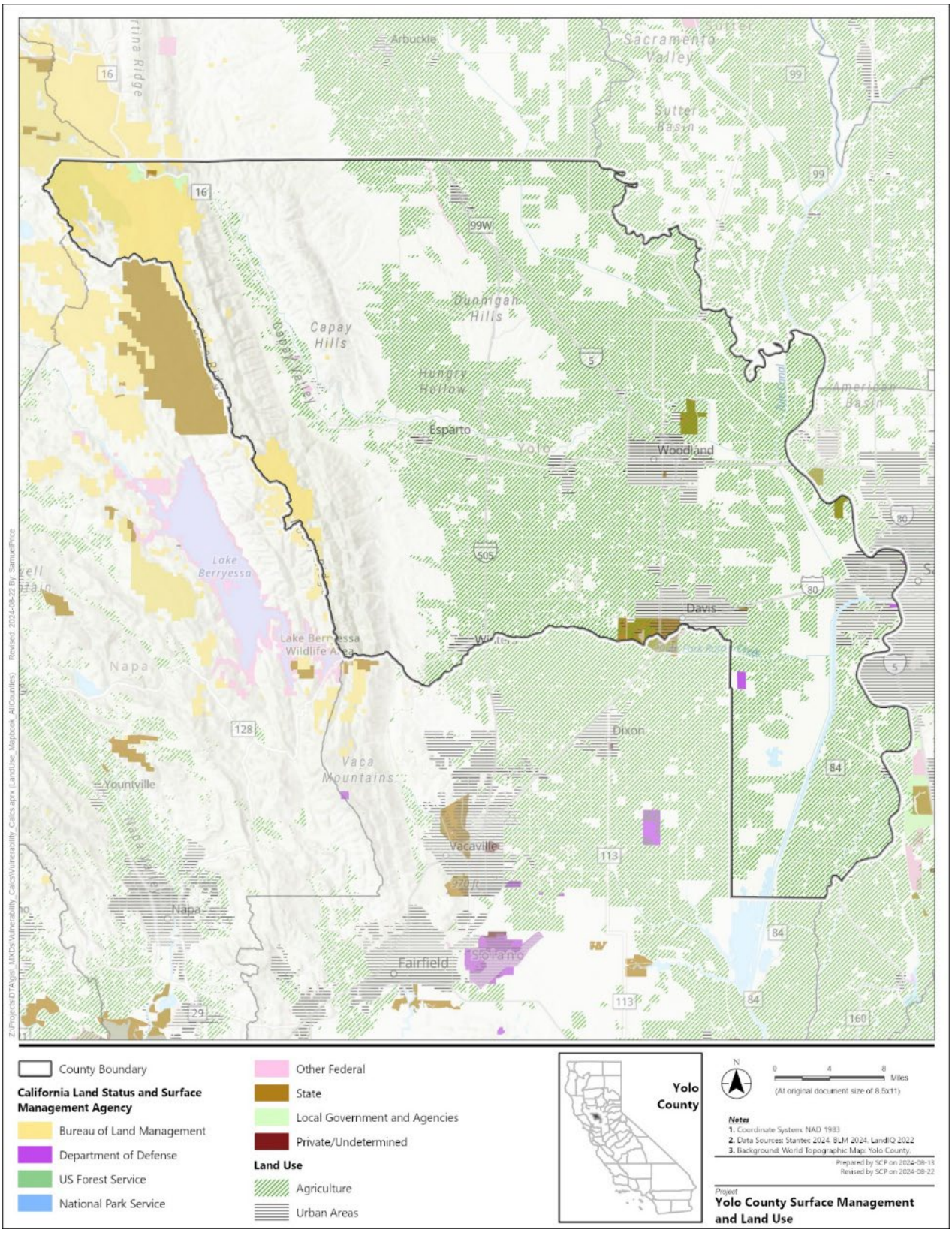


Figure 1-5. Land Use within Yolo County

1.4.2.4 Geology

Yolo County is situated within the Sacramento Valley, which is part of the Great Valley geomorphic province in California. The Sacramento Valley makes up the northern section of the Great Valley, a structural depression that trends northwest to southeast. This depression is bordered by the Great Valley Fault and the southern Coast Ranges to the west, and by the Sierra Nevada and Foothills Fault to the east. The valley's surface is predominantly covered by Holocene and Pleistocene alluvium, consisting mainly of sediments transported from the Sierra Nevada and Coast Ranges by rivers and deposited across the valley floor.

1.4.3 Water Landscape: Supply and Use

The County navigates a complex water landscape, balancing diverse water sources, managing competing demands, and adapting to a changing climate. Water supplies for domestic, industrial, agricultural, and environmental uses within the County are described below.

Water Supplies:

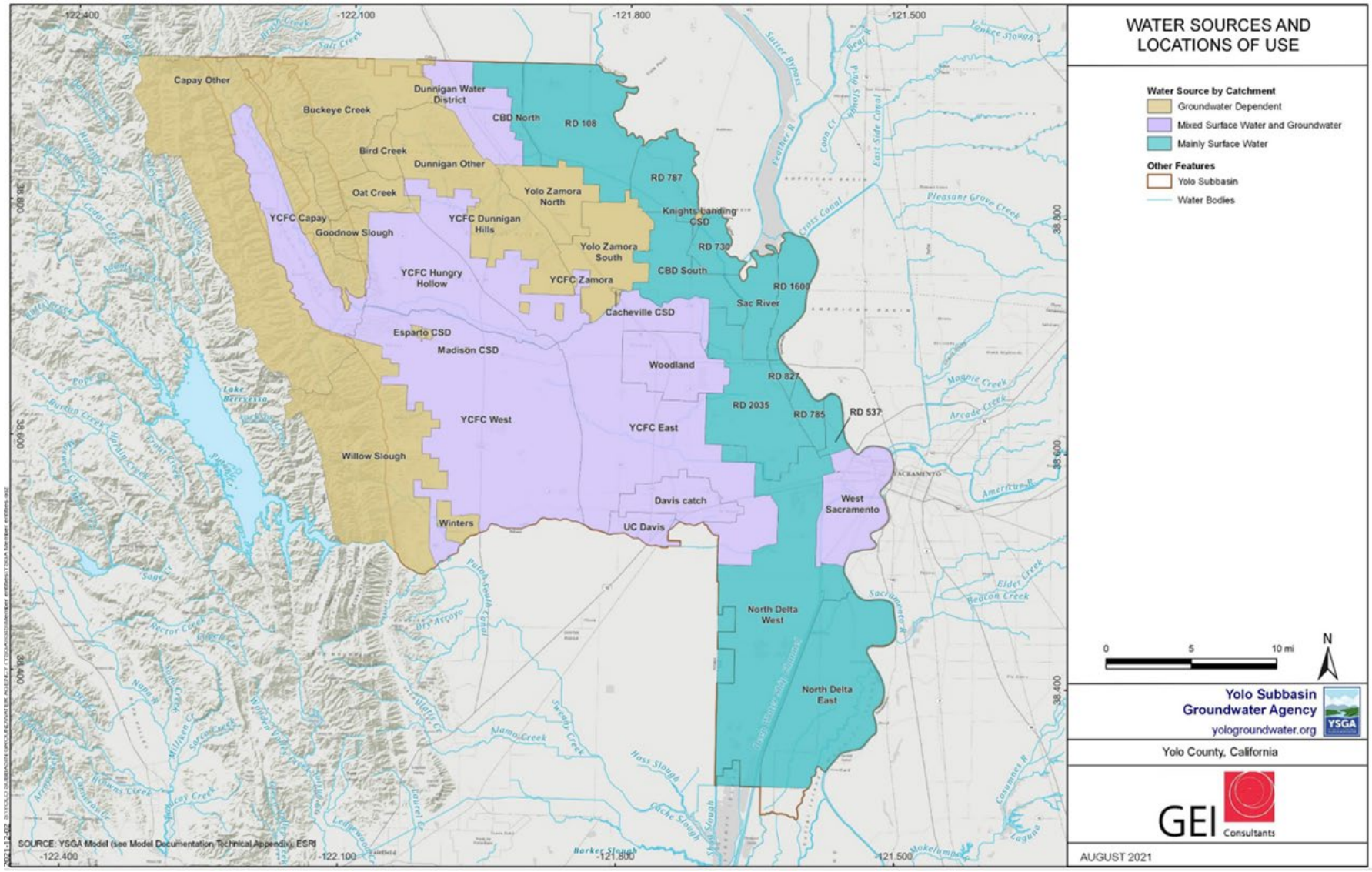
- Groundwater: Groundwater serves as a vital water source for the County, constituting a significant portion of the County's overall water supply. On average, groundwater accounts for 39 percent of water use annually. This proportion increases to 60 percent in dry years (YSSA 2023). Groundwater plays a crucial role in supporting domestic water uses in the County, particularly for the City of Winters, unincorporated communities, and rural residential households. The region includes three alluvial groundwater basins including the Sacramento Valley-Colusa Groundwater Basin, the Sacramento Valley-Solano Groundwater Basin, and the Sacramento Valley-Yolo Groundwater Basin. The remainder of the groundwater resources include fractured rock regions, whose supply is dependent on atmospheric conditions.
- Surface Water: In average supply conditions ("normal" year hydrologic conditions), surface water constitutes approximately 61 percent of the County's water supply, while in drier years, this proportion decreases to about 40 percent (YSGA 2023). The County's surface water resources derive primarily from three natural watercourses: the Cache Creek, Sacramento River, and Putah Creek watersheds. Notably, surface water from the Sacramento River watershed accounts for an estimated 41 percent of the County's water supply under normal hydrologic conditions (Jenkins 1992). This water is typically diverted into the County from various points along the Sacramento River and via the Tehama-Colusa Canal. Entitlements from Central Valley Project contracts, riparian water rights, or appropriative water rights facilitate these diversions. Water from Cache Creek is conveyed for agricultural use by the Yolo County Flood Control and Water Conservation District. Water from Putah Creek is diverted through riparian or appropriative water rights. Surface water is an important source of drinking water for the cities of West Sacramento, Woodland, and Davis.

Water Uses:

- Agriculture: Agriculture is the primary water user in the County, representing 96 percent of the total water consumption (Jenkins 1992). Agricultural lands rely on a combination of surface water and groundwater for their water sources, as shown in Figure 1-6. In average years, agriculture relies on surface water for 57 percent of its supplies, with the remaining 43 percent

sourced from groundwater. The cultivation of irrigated crops such as tomatoes, grapes, rice, almonds, and alfalfa plays a crucial role in driving the local economy.

- Municipal and Industrial (M&I): M&I water usage constitutes approximately 4 percent of the County's total water consumption and about 9 percent of groundwater extraction in average years (YSGA 2023). The cities of Davis, Woodland, and Winters contribute approximately 71 percent of the total M&I consumption.



(YSGA, 2022)

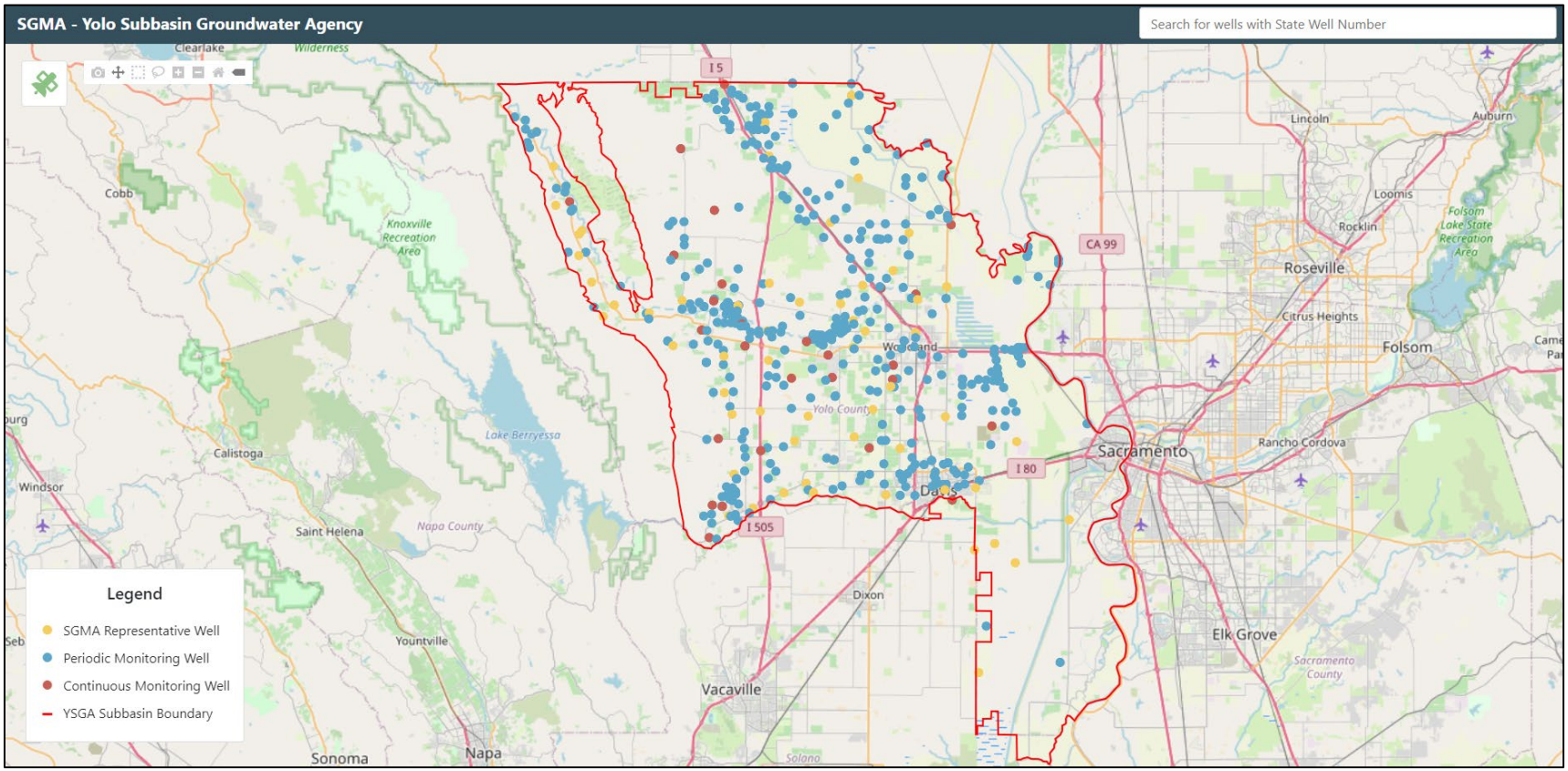
Figure 1-6. Water Sources and Locations of Use for Agricultural Lands in Yolo Subbasin

1.4.3.1 Groundwater Detail

The County contains three Bulletin 118 Subbasins: the Sacramento Valley-Yolo Groundwater Basin (DWR Basin Number 5-021.67), a small portion of the southern Sacramento Valley-Colusa Groundwater Basin (DWR Basin Number 5-021.52), and a small portion of the northern Sacramento Valley-Solano Groundwater Basin (DWR Basin Number 5-021.66). A DWR analysis to support implementation of the Sustainable Groundwater Management Act (SGMA) classified the Sacramento Valley-Solano Basin as a medium-priority subbasin, and the other basins as high-priority basins. The remainder of County groundwater supplies are in fractured rock regions (DWR 2024b).

Passed in 2014, SGMA represents a statewide framework to protect groundwater resources over the long-term. Pursuant to CWC Section 10721(n), local public agencies formed groundwater sustainability agencies (GSA) in high and medium-priority basins and developed groundwater sustainability plans (GSP) to avoid undesirable results and mitigate overdraft within 20 years.

The Sacramento Valley-Yolo Groundwater Basin (Yolo Subbasin) makes up the majority of Yolo County. The Yolo Subbasin is a relatively stable basin, with groundwater levels maintaining a relatively consistent long-term average elevation or depth-to-groundwater. Groundwater levels decline during dry conditions due to reduced recharge and increased groundwater demand, but levels substantially recover during wet years. There are currently 554 active monitoring wells in Yolo County, as shown in Figure 1-7. The Yolo Subbasin is managed by the Yolo Subbasin Groundwater Agency (YSGA) according to the 2022 approved GSP. The Colusa Subbasin borders the County to the north and is managed by the Colusa Groundwater Authority. The Solano Subbasin adjoins the County to the south and is managed by multiple GSAs in accordance with the 2022 approved Solano Subbasin GSP.



(SGMA-YSGA)

Figure 1-7. Current Active Monitoring Wells in the County

1.5 Related Water Management Planning Activities in the County

The County DRP was developed in alignment with other related water management planning activities in the County to ensure consistency and effectiveness.

- GSP: YSGA and other local agencies developed plans to manage groundwater extraction and recharge, aiming for long-term sustainability. The GSPs identify a broad range of actions, including but not limited to: The Continued and Improved Groundwater Monitoring Program, the Conjunctive Water Use Program, and the Domestic Well Impact Mitigation Program (YSGA 2022).
- Conservation Programs: Both urban and agricultural water conservation programs incentivize efficient water use through rebates, education, and improved irrigation practices (e.g., Water Education and Awareness, IRWM, and Yolo County Stormwater Resources Plan) (Yolo County, California).
- Recycled Water Initiatives: These initiatives explore and consider opportunities to expand the use of treated wastewater for non-potable purposes like irrigation and industrial processes (e.g., Esparto Community Service District Wastewater Infrastructure and Wastewater Treatment Plant Recycled Water System) (Yolo County, California (b)).
- Drought Preparedness: Regular updates to drought contingency plans and emergency response protocols promote water security during dry periods (Yolo County, California (c)).
- Yolo County Emergency Operations Plan: Updated in 2024, Yolo County's Emergency Operations Plan (EOP) serves as the primary guide for managing and responding to major incidents and disasters—including those caused by natural events, technological disruptions, or human-caused emergencies. The EOP outlines coordinated response strategies, operational procedures, and recovery protocols across County departments. While it cannot address every possible emergency scenario, the plan provides flexible guidelines for incident management and community-wide response efforts. The EOP also prioritizes equity and inclusivity by ensuring the needs of culturally diverse populations and individuals with disabilities or access and functional needs are integrated into emergency planning and response. It also emphasizes the continuity of government during crisis events.
- Wildfire Hazard Annex: The Yolo County Wildfire Hazard Annex, included in the EOP, outlines the plan for managing emergencies related to wildfires. It focuses on disaster mitigation, preparedness, response, and restoration.
- Multi-Jurisdictional Hazard Mitigation Plan (HMP): Yolo County's Multi-Jurisdictional Hazard Mitigation Plan identifies the region's most significant natural hazards, assesses risks to residents, infrastructure, and critical facilities, and outlines prioritized strategies to reduce those risks. This coordinated effort includes input from multiple jurisdictions and provides a countywide framework for long-term hazard resilience. The HMP is updated every five years and submitted to Federal Emergency Management Agency (FEMA) for approval, as required by the Federal Disaster Mitigation Act of 2000, to maintain eligibility for federal disaster mitigation funding programs such as the Hazard Mitigation Grant Program, Building Resilient Infrastructure and Communities, and Flood Mitigation Assistance. The most recent update—the 2023 Yolo

County HMP—received FEMA approval on October 15, 2024. Participating jurisdictions in this update included the City of West Sacramento, Yocha Dehe Wintun Nation, Reclamation District 108, the Sacramento River West Side Levee District, and the Knights Landing Ridge Drainage District, each of which submitted a separate Jurisdictional Annex.

- The 2030 Climate Action & Adaptation Plan (CAAP): Adopted by the Yolo County Board of Supervisors on December 3, 2024, the CAAP provides a strategic roadmap to reduce greenhouse gas emissions and enhance community resilience to climate change. Building on the County's 2011 Climate Action Plan and guided by the 2020 Climate Emergency Declaration, the CAAP sets an ambitious target to achieve net-negative emissions by 2030. The plan integrates both mitigation and adaptation strategies while centering equity and ensuring a just transition. CAAP focuses on empowering historically disadvantaged communities, creating inclusive economic opportunities, and ensuring that vulnerable populations are protected from climate impacts and meaningfully included in the decision-making process.

1.5.1 Water Systems Within Yolo County's Jurisdiction

CWC Section 10609.70 requires the County DRP to specifically focus on domestic wells and SSWSs. Figure 1-8 shows the distribution of domestic wells and locations of SSWSs within the County, and Table 1-1 summarizes where domestic wells and SSWSs are located within the Bulletin 118 basins and fractured rock areas. Both the figure and table account for domestic wells that are located outside the County but within the County's groundwater basins.

Table 1-1. Summary of Groundwater Basins, Domestic Wells, and State Small Water Systems in Yolo County

Bulletin 118 Basin ID	Groundwater Basin Name	SGMA Priority	Domestic Wells Drilled After 1977[1]	Domestic Wells Drilled Before 1977[1]	State Small Water Systems	Domestic Wells in Basin but Outside County
5-021.52	Sacramento Valley - Colusa	High	6	3	0	3,737
5-021.66	Sacramento Valley - Solano	Medium	3	1	0	2,962
5-021.67	Sacramento Valley - Yolo	High	1,831	1,871	4 Faye Properties INC Payne Farm Labor Camp Vega's Water System Delta HOA	7
N/A	Fractured Rock Aquifer	N/A	24	20	0	N/A
Total			**1,864**	**1,895**	**4**	

Notes:
[1] Well completion reports form the basis for the information in this table and figure. Geographic information on well completion reports may be inaccurate and/or place the well not at the actual well location. The number of domestic wells may be overestimated and the placement of wells may not reflect actual locations.
HOA = Homeowners Association INC = Incorporated N/A = Not Applicable

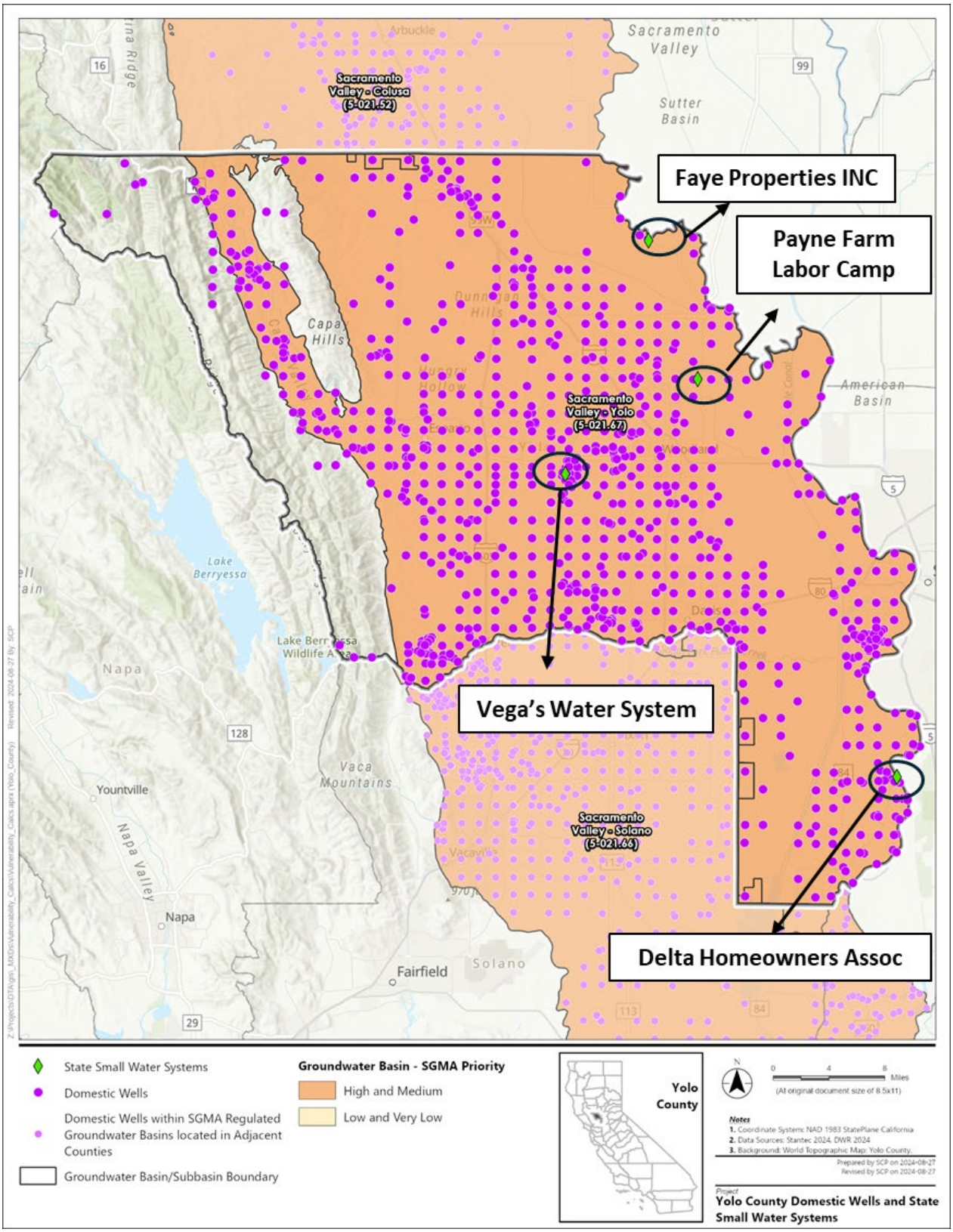


Figure 1-8. Locations of Domestic Wells and State Small Water Systems in Yolo County

2.0 County Drought and Water Shortage Task Force

SB 552 requires counties to establish a standing task force or an alternative process that facilitates drought and water shortage preparedness for SSWSs and domestic wells within each county's jurisdiction. The County has established the Task Force to meet this requirement and facilitate drought resilience planning and associated actions as required by SB 552 Chapter 3 (CWC Section 10609.70):

> *a) (1) A county shall establish a standing county drought and water shortage task force to facilitate drought and water shortage preparedness for state small water systems and domestic wells within the county's jurisdiction, and shall invite representatives from the state and other local governments, including groundwater sustainability agencies, and community-based organizations, local water suppliers, and local residents, to participate in the task force.*

2.1 Purpose

The purpose of the Task Force is to lead and facilitate drought and water shortage preparedness for SSWSs and domestic wells within the County, and to coordinate government and community agencies and organizations in their respective role(s) in drought preparedness and response, including hazard assessment, planning, operations, and community outreach as described in the County DRP.

The Task Force is not intended to infringe upon the authorities or obligations of its member agencies. The intent is to serve as a platform for a coordinated response effort among its member agencies in response to drought and water shortages.

2.2 Responsibilities

The Task Force will support the initial development, adaptive management, and implementation of the County DRP. Specifically, it will:

- Facilitate drought and water shortage preparedness for SSWSs and domestic wells within the County's jurisdiction.
- Coordinate and communicate with State and local government agencies, tribal, and community-based organizations including local water suppliers and residents during drought or water shortage emergencies.
- Coordinate a process for providing technical support and guidance to SSWSs.
- Monitor drought conditions to make recommendations for initiating reasonable STRAs to the Board of Supervisors according to established County DRP.
- Identify data gaps and necessary actions (including potential needed capacity development and resource acquisition) to gather missing data for better drought and water shortage planning.
- Communicate updates to the public on relevant regulatory requirements and the implementation status of the County DRP.

2.3 Membership Guidelines

Members of the Task Force will consist of representatives from key County departments and divisions as well as outside agencies and organizations that currently serve supporting roles in hazard assessment, monitoring, communication, short- and long-term response actions, or regulatory responses to drought or water shortage conditions within the County's jurisdiction.

County staff members are appointed by their respective departments whereas outside agencies or organizations elect members on a voluntary basis. Members are expected to actively participate in Task Force responsibilities including an annual review of the County DRP for relevant updates, annual meetings, communication, and drought response measures.

2.4 Governance Structure

Task Force Leadership: The Task Force will consist of a Task Force Chair/Co-Chairs (two-year term) who will set agendas and lead/facilitate Task Force meetings. The Task Force Chair/Co-Chairs will provide necessary updates to the County DRP and work with the Task Force Coordinator (two-year term) to ensure ongoing communication with Task Force members, including reporting of drought or water shortage stages. The Task Force Coordinator will schedule and host meetings, distribute meeting materials, and maintain membership and contact details.

Membership: Drought Task Force member departments and outside organizations are committed to sending representatives to all Task Force meetings. Participants will share relevant and updated information as it relates to the County DRP and actively participate and share expertise in discussions and implementation of the Plan.

Coordinating Committees: The Task Force will be composed of smaller committees made up of members who can serve specific functions as needed per Chapters 4 and 5 of this County DRP. Additional County divisions or external agencies and organizations who are not current members of the Task Force may be invited to serve on the committees as needed. Task Force members will serve a two-year term on committees (rotation may occur outside of drought or water shortage declaration).

1. **Drought Resilience Plan Updates**: The Committee will meet during the initial development of the Plan and annually or as needed thereafter to update the County DRP response measures. The Committee will provide updates to the Chair/Co-Chair.

   Committee members:

   - Yolo County Natural Resources Division
   - Yolo County Administrator's Office (CAO)
   - Yolo County Services Area (CSA) Manager Division
   - Yolo County Planning Division
   - Yolo County Flood Control and Water Conservation District/YSGA
   - Yolo County Environmental Health Division

2. **Drought Conditions and Monitoring Coordination:** The Committee will be responsible for monitoring conditions and forecasting for drought and water shortage conditions. The

Committee will provide regular updates to the Chair of the Task Force as it relates to response measures within the County DRP.

Committee members:

- Yolo County Flood Control and Water Conservation District/YSGA
- Yolo County Environmental Health Division
- Yolo County Natural Resources Division
- Yolo County CSA Manager Division
- Community Service Districts

3. **Impact Assessment and Hazard Response:** The Committee will coordinate in accordance with the HMP.

   Committee members:

   - Yolo County CAO
   - Yolo County Environmental Health Division
   - Yolo County Office of Emergency Services

4. **Public Engagement and Education:** The Committee will coordinate and develop unified public messaging as it relates to County DRP implementation. It will also share unified messaging with Task Force members and assist and coordinate with public engagement and education.

   Committee members:

   - Yolo County CAO
   - Yolo County Environmental Health Division
   - County Counsel

2.5 Meetings

Attendance at all meetings is expected. Task Force members may designate someone to attend in their place, if the alternate can productively engage in discussions and provide input on behalf of their respective department, division, or organization. Meetings will be scheduled with advance notification to the Task Force members and will include distribution of agendas and related materials for review in advance of each meeting.

During development of the County DRP, the Task Force met quarterly to discuss the technical information under review for inclusion in the County DRP. The meetings were scheduled with advance notification to the Task Force members and included distribution of agendas and related materials for review in advance of each meeting.

Quarterly Task Force meetings included:

Meeting 1: Convened the Task force, finalized the Task Force Charter, reviewed the process for developing the County DRP, and reviewed the initial Yolo County Risk Assessment results.

Meeting 2: Finalized the Yolo County Risk Assessment conclusions and discussed the approach for selecting short-term actions and long-term mitigation strategies to be included in the County DRP.

Meeting 3: Finalized short-term actions and long-term mitigation strategies and actions to be included in the County DRP.

Meeting 4: Reviewed and provided input on draft County DRP.

After the development of the County DRP, the Task Force will meet as specified in Chapter 4, Section 4.4.2.

2.6 Decision-Making Process

The Task Force serves as a function of the County DRP, adopted by the Yolo County Board of Supervisors as an Annex to the Multi-Jurisdictional HMP. Therefore, Task Force decisions will be made by Yolo County under the direction of Yolo County Board of Supervisors. The Task Force will consult all outside agency members for guidance as part of its decision-making process.

2.7 2024 Yolo County Drought and Water Shortage Task Force Membership

Task Force members represent diverse perspectives and include representation from local governments, GSAs, community-based organizations, local water suppliers, and local residents.

Chair(s): CAO

Drought Task Force Coordinator: CAO

Task Force Members:

- Yolo County
  - CAO
  - CSA Manager Division
  - Natural Resources Division
  - Yolo OES
  - Counsel
  - Environmental Health Division
  - Sustainability Division
  - Planning Division
- Yolo County Flood Control District
- City representation: Woodland, Davis, Winters, West Sacramento

- Yocha Dehe Wintun Nation
- Community Service Districts: Esparto, Madison, Knights Landing, Cacheville Community-Based Organizations
    - RISE Esparto, Winters Branch
    - Cal Am Dunnigan
- Domestic Well User
- State Small Water Provider
- Yolo County Farm Bureau
- University of California, Davis
- California Governor's Office of Emergency Services
- California DWR
- California SWRCB, Division of Drinking Water

3.0 Drought and Water Shortage Risk Assessment

Development of the County DRP was concurrent with the preparation of a drought and water shortage risk assessment (referred to as a risk assessment) as directed in CWC Section 10609.70(b). This risk assessment evaluated how potential hazards intersect with the County's domestic well and SSWS assets and other community assets, to characterize the vulnerability of domestic wells and SSWSs to water supply shortage. The outcomes from the risk assessment helped inform response plans with short-term actions to employ when a water supply shortage occurs. It also identified long-term mitigation strategies and actions that reduce the vulnerability to water shortages. This chapter presents the risk assessment results for Yolo County.

The risk assessment does not replace the regulatory requirements of FEMA. However, the County DRP may support eligibility for FEMA's Pre-Disaster Mitigation and Hazard Mitigation Grant Programs. If a jurisdiction intends to incorporate the risk assessment into its Local HMP, it must follow the requirements outlined in FEMA's *Local Mitigation Planning Handbook* (FEMA 2013).

3.1 Terminology

The County DRP adopts the following definitions from FEMA's *Local Mitigation Planning Handbook* (2013), as applied in the context of drought and water shortage planning:

- **Community Assets:** The people, structures, facilities, and systems that have value to the community. The minimum assets considered as part of the SB 552 plan include domestic wells, SSWSs, and populations relying on those water supplies.
- **Hazard:** A source of harm or difficulty created by meteorological, environmental, geological, hydrological, or other event conditions. In the context of SB 552, hazards are the natural, human-made, and social processes that can lead to water shortages in the County.
- **Impact:** The consequences or effects of a hazard related to drought and water shortages on the community and its assets.
- **Risk:** The potential for damage, loss, or other impacts (e.g., water shortage) created by the interaction of natural hazards with community assets and their physical and social vulnerabilities.
- **Risk Assessment:** Product or process that collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making.
- **Vulnerability:** Characteristics of community assets or populations that make them susceptible to damage from a given hazard. It includes both physical vulnerability and social vulnerability.

3.2 Risk Assessment Methodology

The nature and severity of hazards causing water shortages vary at regional and local scales due to differences in conditions such as precipitation patterns, groundwater levels, topography, geology, infrastructure, regulatory frameworks, and other conditions. Communities lacking access to reliable water sources are most vulnerable to water shortage caused by such hazards. The completion of a

thorough risk assessment highlights the many physical and social hazard indicators. The County and Task Force used the results and findings of the risk assessment to develop actions and strategies to address water shortages (see Chapters 4 and 5).

The risk assessment was completed following the four steps outlined below:

1. **Describe Major Hazards in the County:** Summarize and describe drought, climate change, and water quality hazards.
2. **Complete Draft Risk Assessment using the DWR Water Shortage Vulnerability Explorer:** Use the DWR Water Shortage Vulnerability Explorer Tool (WSVE Tool) to (a) identify areas within the County where domestic wells and SSWSs are vulnerable to water supply shortages, and (b) characterize the hazards driving vulnerability. The County and the Task Force reviewed the results of the draft risk assessment, provided feedback, identified data gaps, and offered additional local data and information to inform the risk assessment. Additional details on the WSVE Tool and its application used in the risk assessment are provided below.
3. **Revise the Draft Risk Assessment:** County and Task Force feedback on the draft risk assessment was incorporated to revise and finalize the risk assessment.
4. **Incorporate Results of Revised Risk Assessment into County DRP:** The County DRP integrates findings from the revised risk assessment (Chapter 3, Section 3.4). In response to key findings, the County and the Task Force developed short-term actions and long-term strategies to enhance water supply sustainability (Chapters 4 and 5).

Developed by DWR in collaboration with the County Drought Advisory Group (CDAG), the WSVE Tool is an online geospatial tool that quantifies risk based on indicators impacting drought and water shortage vulnerability risk for domestic wells and SSWSs. There are both indicators of physical vulnerability (Table 3-1) and social vulnerability (Table 3-2).

- The total physical vulnerability score was calculated at the PLSS[3] scale by normalizing the indicator value between 0 and 1, with 1 representing the highest possible vulnerability. Normalized scores were multiplied by a weighting factor from 1 to 5 that was assigned by DWR and CDAG to capture how some indicators contribute more to water shortage vulnerability than others.
- The total social vulnerability score was calculated at the CBG[4] scale by normalizing the indicator value between 0 and 1 and summing the values together without additional weighting.

DWR periodically revises the WSVE Tool to incorporate improved data and/or updated methodology. Data for the risk assessment was accessed in August 2025 and used the 2024 methodology[5]. The detailed methodology that describes the WSVE Tool indicators and corresponding values, data sources, and weighting factors are available on the WSVE Tool website (https://arcg.is/1LCKGO).

[3] A Public Land Survey Section is a geographic delineation of an area equivalent to 1 square mile.
[4] A Census Block Group is a geographic unit with a population between 600 and 3,000 people; it is the smallest geographical unit for which the U.S. Census Bureau publishes data collected from a fraction of households.
[5] https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552/SB-552-Tool

Table 3-1. Water Shortage Vulnerability Explorer Indicators Used in the Development of Physical Vulnerability Score

Indicator Name[1]	Indicator Description
Climate Change	
Temperature Shift (RC1a)	Projected change in max temperatures by midcentury
Saline Intrusion Projected (RC1b)	Spatial extent of projected 1-meter sea level rise by 2040 into coastal aquifers
Wildfire Risk (RC1c)	Projected area burned by 2035–2064
Current Environmental Conditions and Events	
2024 Precipitation (RC2a)	If water year 2024 precipitation was less than 70% of normal
Multiple Dry Years (RC2aa)	Count of dry years within the last 5 water years (2020-2024)
Wildfire Risk (RC2b)	USFS Wildfire Hazard Potential Zones
Geology (RC2c)	Fractured rock basin within the PLSS
Water Quality Aquifer Risk (RC2i)	SAFER Needs Assessment 2024 water quality composite score
Subsidence (RC2d)	Amount of subsidence as measured by remote sensing
Basin Salt (RC2e)	Presence of saltwater intrusion into coastal aquifer
Overdrafted Basin (RC2f)	SGMA critically overdrafted groundwater basin
Chronic Declining Water Levels (RC2g)	Amount of declining groundwater levels over the past 20 years (Water Year 2003-2023)
Surrounding Land Use (RC2j)	Proportion of irrigated agriculture in PLSS
Infrastructure Susceptibility	
Dry Domestic Well Susceptibility in basins (RC3a)	Dry well susceptibility
Domestic Well Density in Fractured Rock Areas (RC3c)	Density of Well Completion Reports
Record of Shortage	
Reported Household Outage on Domestic Well	Presence of one or more households with reported outages in PLSS

Notes:

[1] Abbreviations are included next to Indicator Name (i.e., "RC1a") for clarity to underlying methodology

Key:

PLSS = Public Land Survey Section

SAFER = Safe and Affordable Funding for Equity and Resilience Program

SGMA = Sustainable Groundwater Management Act

USFS = U.S. Forest Service

Table 3-2. Water Shortage Vulnerability Explorer Indicators Used in the Development of Social Vulnerability Score

Indicator Name	Indicator Description
Socioeconomic Status	
Poverty Level	Percent of persons below poverty level
Unemployment	Percent of persons aged 16 years of age or older that are unemployed
Per Capita Income	Per capita income
Language and Education	
Education Attainment	Percent of persons without a high school diploma
English Language Proficiency	Percent of persons who speak little to no English
Demographics	
Elderly Population	Percent of persons 65 years of age or older
Non-Adult Population	Percent of persons 17 years of age or younger
Disability	Percent of persons 5 years of age or older with a disability
Single Parent Households	Percent of single-parent households
Housing and Transportation	
Multi-Unit-Housed Population	Percent of persons living in a multi-unit structure
Mobile Home-Housed Population	Percent of persons living in a mobile home
Crowded Conditions	Percent of persons living in conditions with more than one person per room
No Vehicle Access	Percent of households with no vehicle available
Group Quarters	Percentile rank of the population living in group quarters
Race and Ethnicity	
Persons of Color	Percent of persons that identify with a race other than White or identify ethnically as Hispanic or Latino

3.2.1 Additional Resources Used to Inform the Risk Assessment

Other planning efforts and studies, alongside the DWR WSVE Tool results, informed and validated the risk assessment results. Integrating multiple data sources and planning documents enhances the physical vulnerability assessment, thus improving decision-making capabilities in the context of drought and water scarcity scenarios. Additional resources considered in drafting the risk assessment include:

- Tiered Well Permit Review Process Technical Memo (TM) (West Yost & YSGA 2024): This TM, jointly authored by West Yost and YSGA, designates "Focus Areas" within the Yolo Subbasin using hydrologic data and reported stakeholder concerns to delineate areas in the subbasin that may be sensitive to additional groundwater pumping. Relevant to this County DRP, the TM identifies previously reported dry wells and areas where domestic wells may be more vulnerable to future outages.

- Yolo Subbasin 2022 GSP (YSGA 2022): The GSP documents conditions, lists management criteria to avoid undesirable results, and identifies potential actions that will help maintain and/or achieve sustainable groundwater management.

The risk assessment covers seven distinct areas, each defined by unique land use patterns, water use characteristics, and potential vulnerabilities. These areas, following the YSGA management areas delineation, include Capay Valley, Central Yolo, Clarksburg, Dunnigan Hills, North Yolo, and South Yolo, as shown in Figure 3-1.

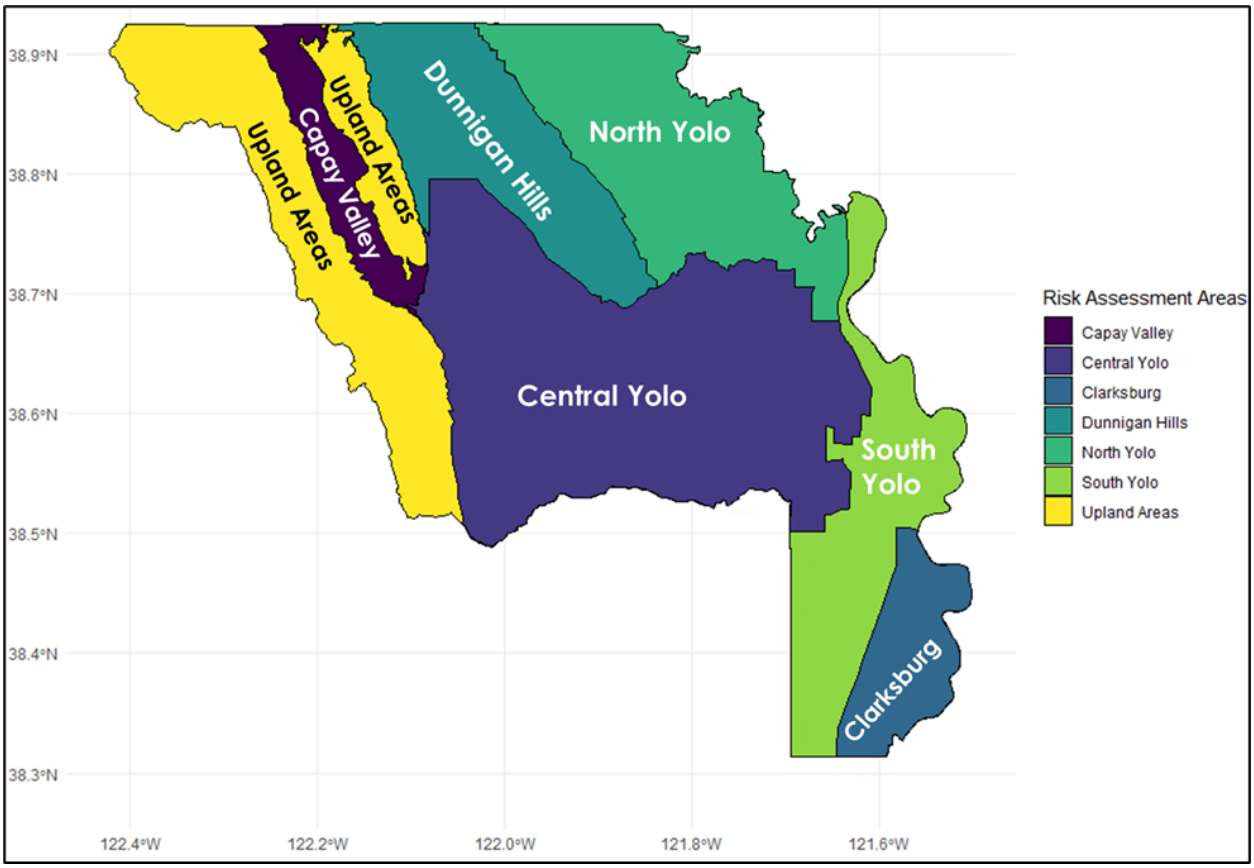


Figure 3-1. Delineated Risk Assessment Areas with the County

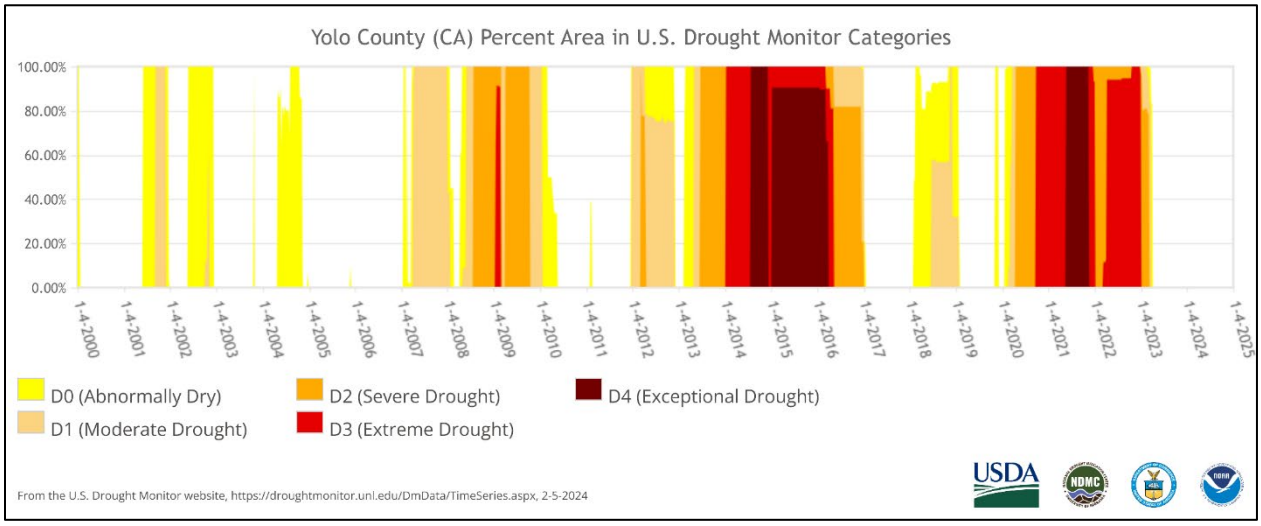
3.3 Hazards in Yolo County

This section summarizes the recent drought, projected climate change, current water quality, and groundwater hazards in the County. Chapter 3, Section 3.4 provides more detail on the vulnerabilities related to these hazards.

3.3.1 Drought

Drought data for the County in the 21st century, shown in Figure 3-2, shows periods of intense drought. Droughts in 2007–2009 and 2012–2016, which were the basis for the California 2018 Legislation (Bill Text - AB-1668 Water management planning. (ca.gov)), brought challenges, with the latter culminating in an "Exceptional Drought" classification for most parts of the County in late 2014 and 2015. Although the County experienced periods of drought reprieve (e.g., wetter stretches in 2005–2006, 2010–2011, and 2017–2020), the patterns and frequency of drought periods highlight the County's vulnerability to

drought. While the County is currently not in a drought, there are examples of drought rapidly onsetting (e.g., the 2021–2022 drought).



Source: https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx, Accessed: 05/2024

Figure 3-2. Occurrence of Drought in Yolo County

3.3.2 Climate Change

The California Fourth Climate Change Assessment reports that climate change has increased both average temperatures and the frequency and intensity of heat waves or extreme heat events. While global temperature increases are between 1.8 degrees Fahrenheit (°F) and 3.6°F, local observed increases that affect neighborhoods and ecosystems are far more variable and often of greater magnitude. The assessment predicted changes over this century to include higher average temperatures with more warming in the summer than the winter (with July–September increases of 2.7°F to 10.8°F) and greater warming inland than in coastal regions (by as much as 7.2°F). These expected changes translate into an increase in average daily maximum temperature in Yolo County of 8.5°F to 10°F by end of century.

A lack of large winter storms triggers droughts in California, and water shortages further exacerbated by high temperatures increase the evaporative loss of water from soils, rivers, canals, and reservoirs. Drought conditions, particularly when persisting for several years, can cause mental and physical stress in people, reduce the number of workable farm-labor days, and lead to deteriorating air and water quality (Greene 2018; Barreau et al. 2017).

Historical data show that daily precipitation extremes have intensified in most areas of the country, including California. Extreme precipitation events could become more frequent as the atmosphere continues to warm, given that storms can hold about 6 to 7 percent more water for each degree Celsius of warming. Climate model simulations that consider such effects suggest that this trend will continue. Simulations of future climate indicate only modest changes in annual precipitation accumulation, with some shifts in the seasonality of precipitation that may be relevant for water management, namely, less precipitation from November through January, and possibly more from February through May.

Anthropogenic climate change has contributed to the increase in areas burned in wildfires in the American West as rising temperatures and increased periodic droughts increase the likelihood of

wildfires. Wildfires can damage infrastructure and cause water quality issues, including those discussed in Chapter 3, Section 3.3.3.

3.3.3 Water Quality

Yolo County faces a range of water quality concerns affecting both surface and groundwater resources. Groundwater is generally safe for various uses, including drinking water, which is subject to strict regulatory standards. There are, however, water quality concerns related to groundwater including total dissolved solids, nitrate, arsenic, boron, and hexavalent chromium (chromium(VI)). Elevated concentrations of these constituents are found in localized areas throughout the County. In some cases, these levels are due to naturally occurring conditions; in others, they result from historical land use activities that have degraded groundwater quality. Multiple regulatory programs and agencies are responsible for monitoring these areas and implementing actions to address identified concerns. Key water quality concerns are summarized below:

Surface Water:

- Nutrient pollution: Excess agricultural runoff, urban wastewater, and other sources can contribute to high levels of nutrients like nitrogen and phosphorus, leading to algal blooms, oxygen depletion, and harm to aquatic ecosystems.
- Contaminants: Traces of pesticides, herbicides, and other chemicals from agricultural and industrial activities can contaminate surface water, with potential health risks and adverse impacts to aquatic life.
- Sedimentation: Erosion and land development can lead to increased sediment entering waterways, hindering fish spawning, clogging infrastructure, and reducing water clarity.

Groundwater:

- Nitrate, Arsenic, Boron, and Total Dissolved Solids: Similar to surface water, agricultural runoff and other sources can lead to elevated levels of nitrate and other contaminants in groundwater, posing health risks and impacting drinking water quality. Based on Yolo Subbasin 2022 water year annual report (YSGA 2023), among 114 measured wells for nitrate, 14 wells exceeded the nitrate maximum contaminant level (MCL). These wells are located mainly in rural areas bordering Davis and Winters.

  Of the 46 wells that were tested for arsenic concentrations, five exceeded the arsenic MCL. Two wells are located in the Monument Hill area, one well at the Yolo County central landfill, one well located at Knight Landing, and one well in the Dunnigan Hills area.

  The region that includes the Knights Landing area and the areas along Cache Creek between Esparto and Woodland have higher-than-average boron concentrations.

  Based on the annual report, none of the 33 wells that were tested for total dissolved solids exceeded the minimum threshold.

- Chromium(VI): Select areas in Yolo County (City of Davis, Woodland, Winters, Esparto, and Knights Landing) have been identified as having elevated levels of chromium(VI), a known carcinogen, in groundwater (California SWRCB 2022). This raises concerns for public health and necessitates treatment measures.

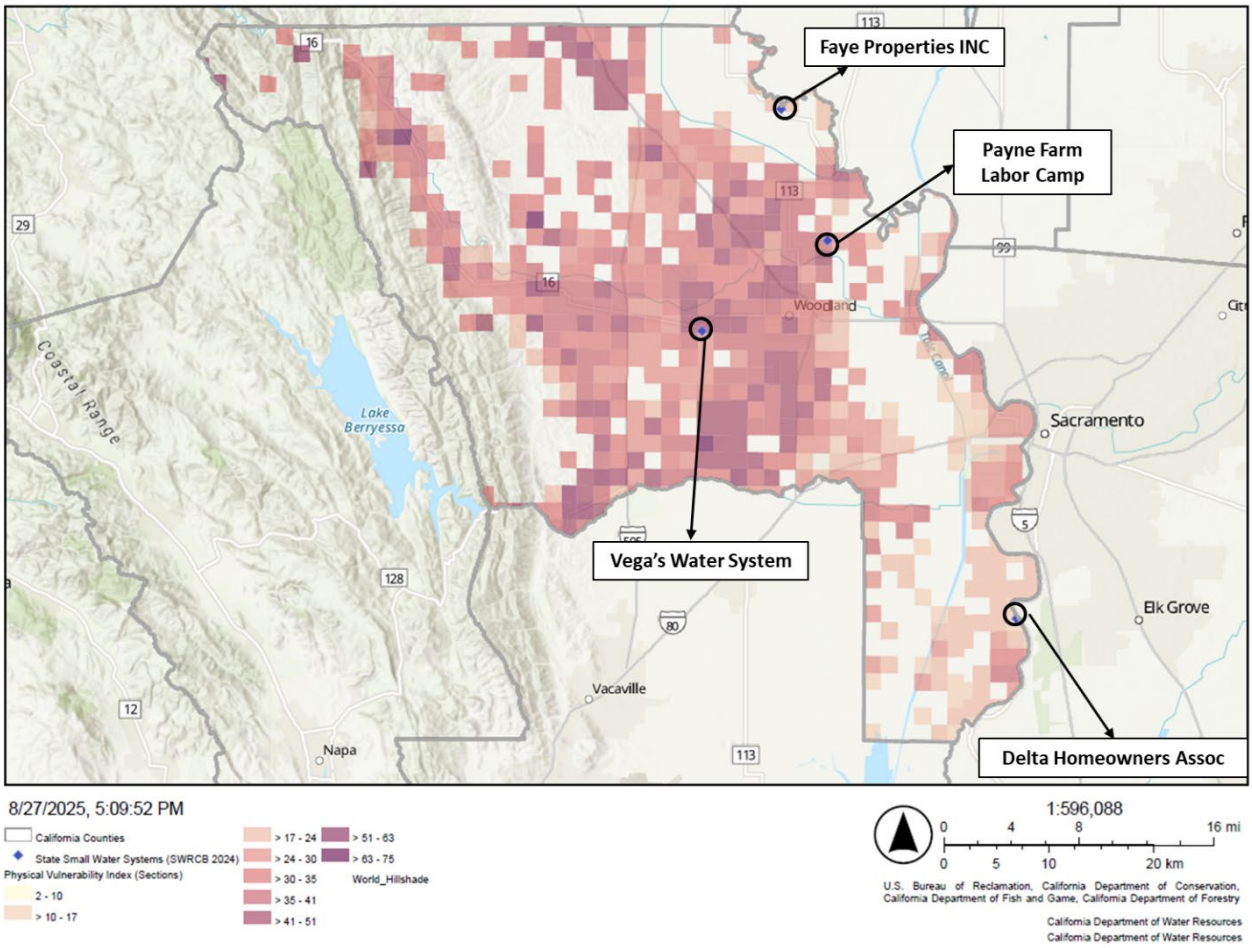
- Overdraft and land subsidence: Over-pumping groundwater without adequate recharge can lead to declining water levels and potential land subsidence, which can exacerbate groundwater contamination by altering the geological structure, potentially introducing pollutants into aquifers.

3.4 Risk Assessment Results

This section summarizes the results of the risk assessment, including the County's total physical and social vulnerability scores. It also provides a discussion of the individual indicators contributing to the total physical vulnerability score. This information was used to identify regions vulnerable to water supply shortages, which are described in greater detail in Chapter 3, Section 3.5.

3.4.1 Total Physical Vulnerability Scores

The distribution of total physical vulnerability scores throughout the County is shown in Figure 3-3, with darker shaded areas (or PLSS) indicating higher physical vulnerability scores. Physical and social vulnerability were scored for the entire State, but the figures in this DRP show PLSSs only containing domestic wells and SSWSs. Areas with high physical vulnerability are scattered throughout the County, with notable concentrations observed in Central Yolo near Esparto's eastern and western regions, as well as north, south, and west of Woodland. The highest physical vulnerability has been identified in the southern portion of Central Yolo in the vicinity of Winters and near the Yolo County Airport, in the northwestern areas of the County within Capay Valley in Rumsey and Guinda, in the northern areas of the County within northwest of North Yolo and northeast of Dunnigan Hills, and in the eastern portion of North Yolo in Knights Landing, as well as some portion of upland areas.

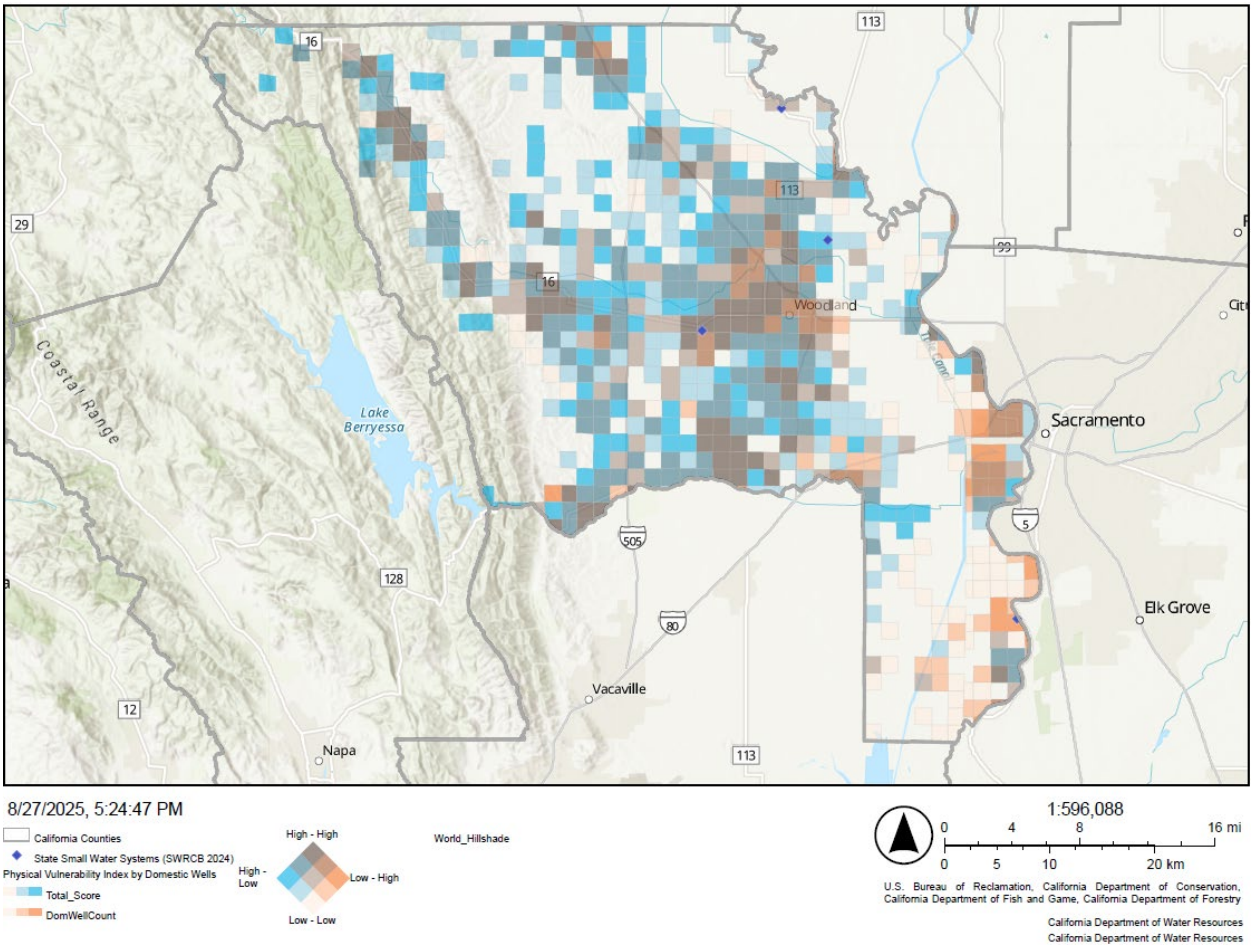


Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool Accessed: 08/2025

Figure 3-3. Physical Vulnerability to Drought and Water Supply Shortage in Yolo County

Figure 3-4 illustrates how physical vulnerability intersects with the distribution of domestic wells across the County. Darker brown shades indicate areas with both high physical vulnerability and a high density of domestic wells. Blue areas represent regions with high physical vulnerability but few domestic wells, while orange areas have a high density of domestic wells but low physical vulnerability. This figure helps identify where short-term actions and long-term mitigation strategies may be most needed.

Similar to the patterns shown in Figure 3-3, these areas are dispersed throughout the County. Notably, regions with a higher density of domestic wells often coincide with elevated physical vulnerability. These areas tend to cluster in the northern part of the County (northwest of North Yolo and northeast of Dunnigan Hills), the northwestern region (within Capay Valley, particularly Rumsey and Guinda), Central Yolo (around Esparto, Woodland, Winters, west of University of California (UC) Davis, and near the Yolo County Airport), and east of North Yolo (around Knights Landing).

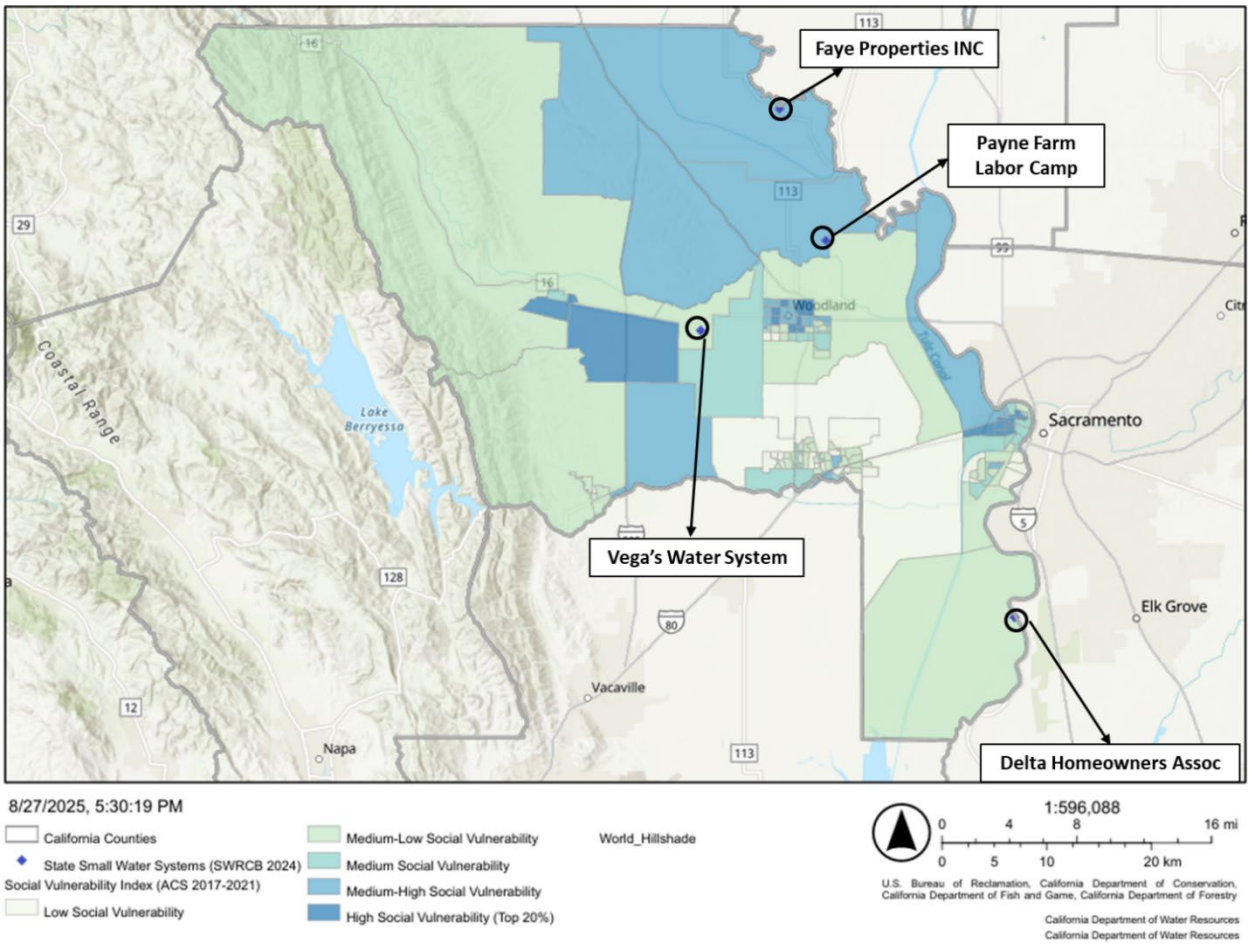


Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool , Accessed: 08/2025

Figure 3-4. Intersection of Physical Vulnerability and Density of Domestic Wells and State Small Water Systems in Yolo County

3.4.2 Total Social Vulnerability Scores

Social vulnerability is an important consideration when assessing the risk of water supply shortage and identifying both short-term actions and long-term strategies to effectively mitigate these risks. Figure 3-5 shows the distribution of social vulnerability scores within the County, with darker colors indicating increased vulnerability. Overlapping the social vulnerability scores with the impacted areas from Figure 3-4 further informs the potential risks experienced by domestic wells and SSWSs. The regions displaying high physical vulnerability and domestic well presence in the eastern and western parts of Central Yolo, Clarksburg, Capay Valley, upland areas, and western Dunnigan Hills show low to medium-low social vulnerability scores. Areas with high social vulnerability are more prominent in the northern and eastern parts of the County, particularly in Dunnigan Hills, North Yolo, north of South Yolo, and Central Yolo. Disadvantaged communities, identified per census definitions, around Woodland, Winters, and Davis, regardless of physical vulnerability, indicate the stronger influence of socioeconomic factors.



Source: WSVE Tool, [Water Shortage Vulnerability Explorer Tool](), Accessed: 08/2025

Figure 3-5. Social Vulnerability Scores by Census Block Group in Yolo County

3.4.3 Physical Vulnerability Indicators

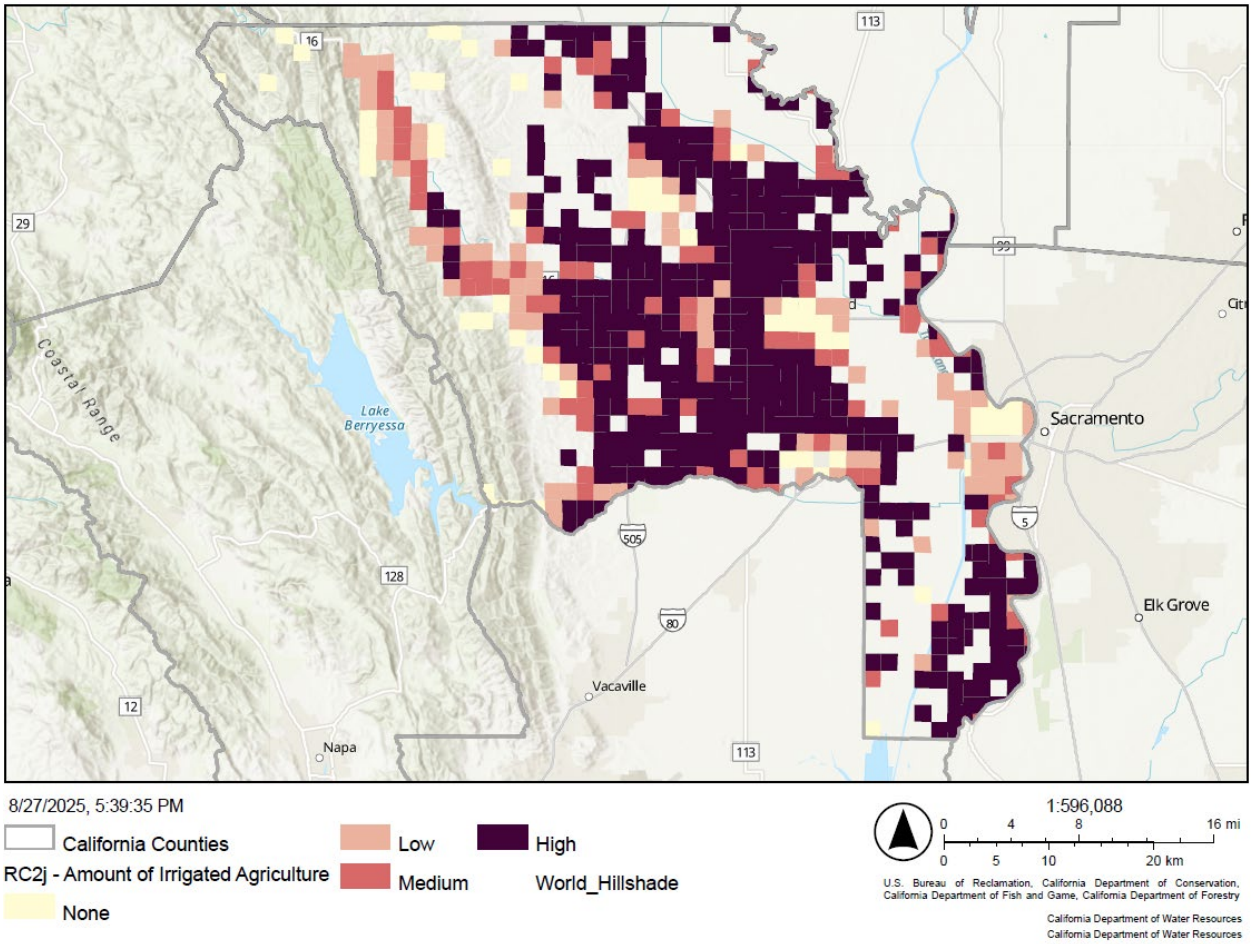
The risk assessment helps identify areas where water shortages may affect domestic wells and SSWSs. This section provides a more detailed evaluation of the physical vulnerabilities contributing to water shortage risks. Understanding and characterizing these drivers of physical vulnerability will assist the County in developing and implementing effective short-term actions and long-term strategies.

Based on DWR WSVE Tool results, the key indicators that drive physical vulnerability in the County are the presence and amount of irrigated agriculture, water quality degradation, multiple dry years within the past five water years, wildfire risk, and reported well outages. More details on the potential impact of these indicators are provided below.

Percentage of Land Use as Irrigated Agriculture

Figure 3-6 illustrates the percentage of land use as irrigated agriculture within the County in 2019. The map reveals that irrigated agriculture dominates the eastern, central, and southern regions of each PLSS unit, representing the primary land use pattern. Conversely, in upland areas on the western side of the County, the entire eastern side of the County, the southern and central areas of South Yolo specifically near West Sacramento, and the southern and western of Dunnigan Hills, there is minimal presence of

irrigated agriculture in each PLSS unit. The use of groundwater for agricultural water supplies heightens the susceptibility of domestic wells and SSWSs that share the same groundwater source, particularly during droughts or water scarcity events. As competing demands intensify, the pressure on groundwater resources increases, leading to a higher risk of over-extraction and depletion, further concentrating pollutants. Domestic wells and SSWSs, often the only water supply for rural communities, may become more vulnerable to water shortages. During droughts or water shortages, the limited availability of surface water increases the pressure on groundwater resources. Irrigated agriculture can also affect groundwater quality through leaching of fertilizers and pesticides into aquifers.



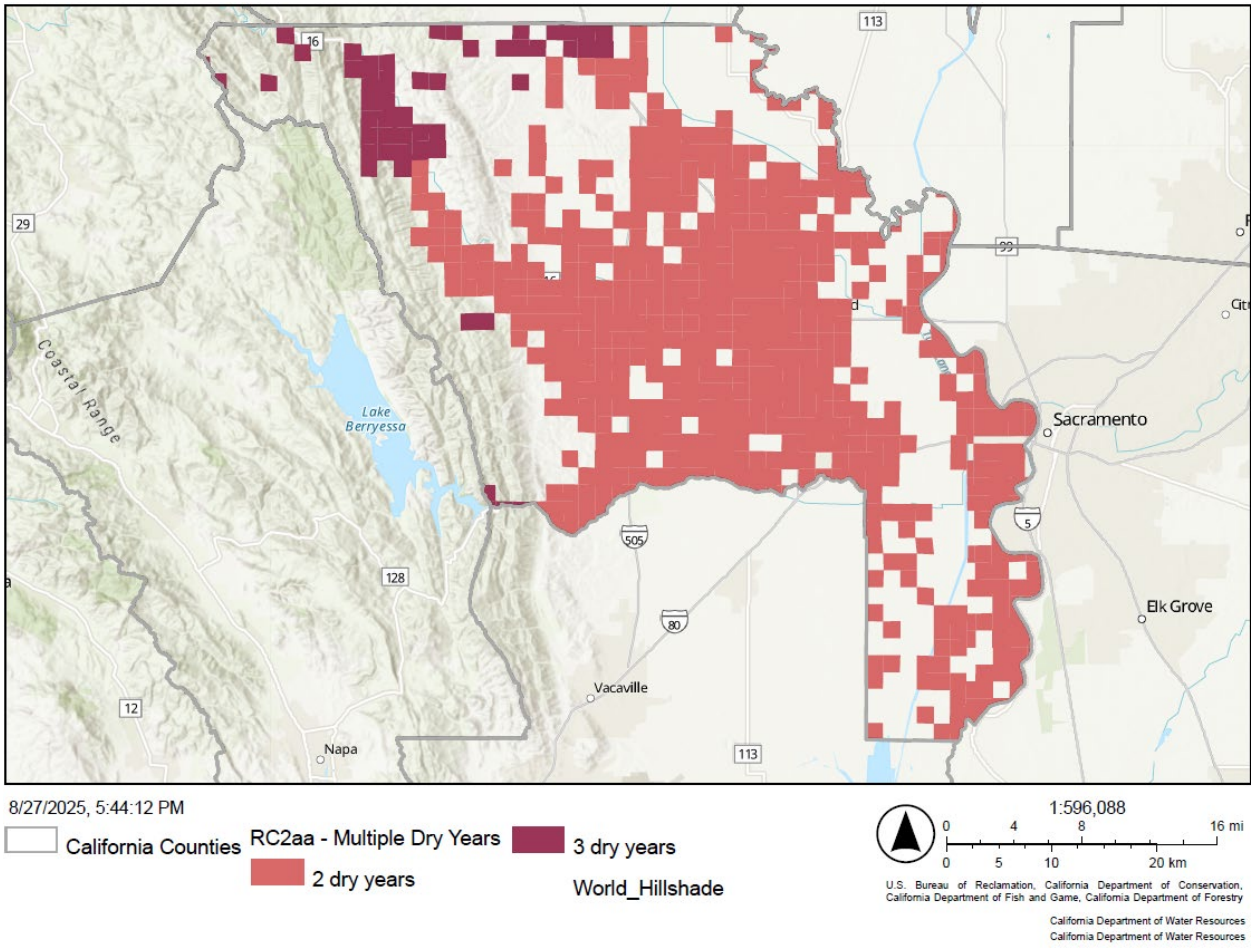
Source: WSVE Tool, [Water Shortage Vulnerability Explorer Tool](), Accessed: 08/2025

Figure 3-6. Percent Land as Irrigated Agriculture

Multiple Dry Years Within the Past Five Years

Figure 3-7 shows the results of the count of multiple dry years within the past five years indicator in the County, with darker shades indicating a higher number of years that are 70% below the 30-year normal of 1981 to 2010. A higher number of recent dry years may increase physical vulnerability of water supply conditions. Data show that almost more than two third of the County (eastern side; North Yolo, South Yolo, Clarksburg, and the eastern portion of Central Yolo) experienced two dry years in the last five years, and the remaining one third (western side; Upland Areas, Capay Valley, Dunnigan Hills, Central

Yolo) experienced three dry years in this period. Regions in the northwestern part and some western borders experienced a higher frequency of dry years.

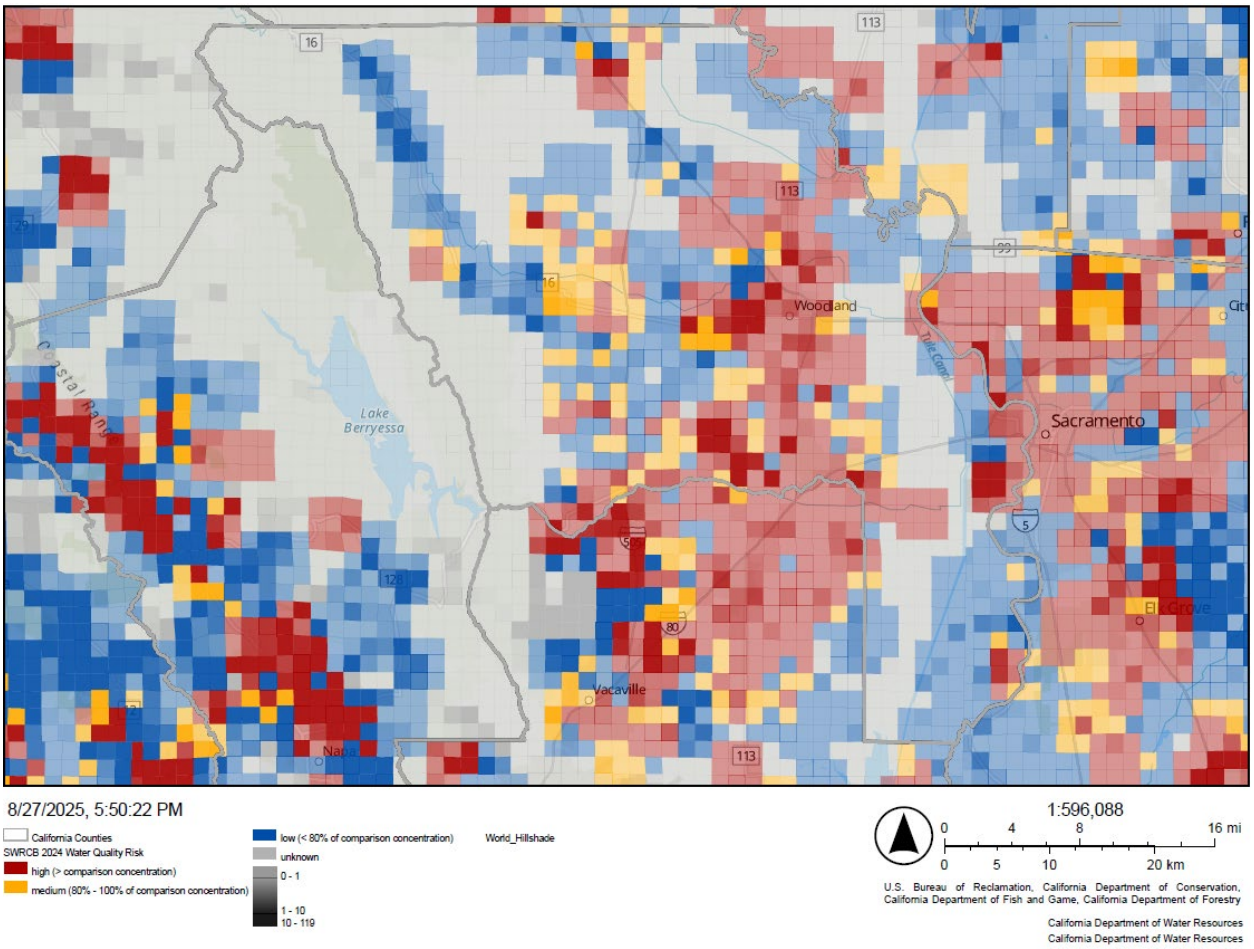


Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool, Accessed: 08/2025

Figure 3-7. Multiple Dry Years: Count of Multiple Dry Years Within the Past Five Years (2020 to 2024)

Water Quality Index

The results for the water quality index in the County are shown in Figure 3-8. A higher water quality risk contributes to higher physical vulnerability for water sources. Results do not exhibit a specific pattern, with variations observed across different regions. In a significant portion of the County, either there is no available data or there is no apparent potential risk for water quality issues. However, in specific regions, notably in the east (e.g., West Sacramento (South Yolo) and Knights Landing [North Yolo]) and Central Yolo (e.g., Woodland and Madison, Davis, and Winters), there is a higher potential water quality risk. The results are based on long-term and short-term water quality reports submitted for neighboring PLSSs and interpolated to identify potential risks for the areas shown in Figure 3-8. These areas with higher potential water quality issues are mostly located within or near urban areas. This could be attributed to higher population densities, more industrial activities, agricultural practices, and increased urban development, leading to the generation of more pollutants such as chemicals, heavy metals, and nutrients. Testing bias is another potential consideration since testing is conducted most frequently for public water systems, leading to a higher availability of data in these areas. In contrast, historically, there has been a lack of publicly available test results for areas outside of public water systems. Additional details regarding water quality in the County are provided in Chapter 3, Section 3.3.3.



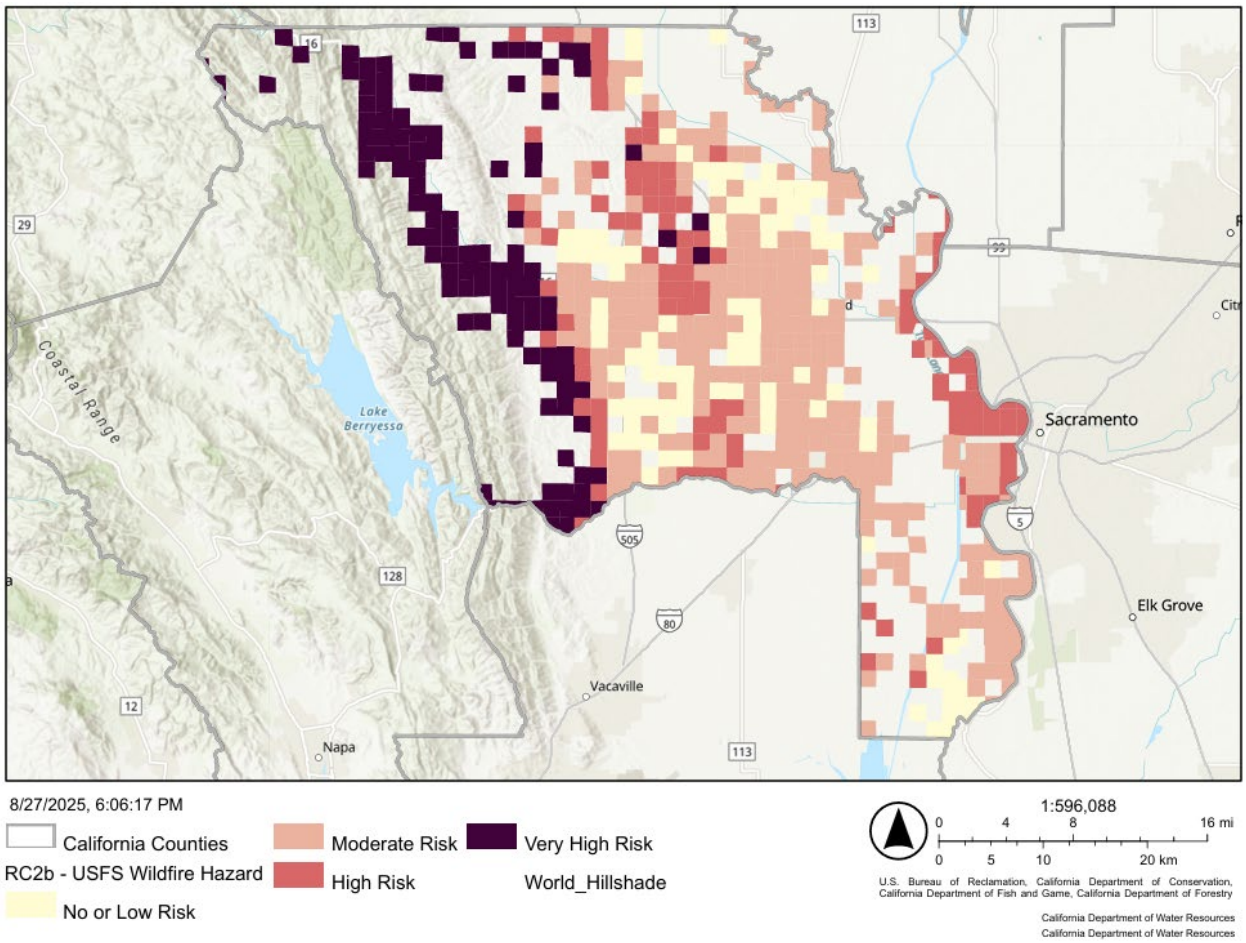
Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool, Accessed: 08/2025

Figure 3-8. Water Quality Index

Wildfire Hazard

Figure 3-9 shows the Wildfire Hazard Potential Zone maps as identified by the US Forest Service (USFS). Darker shades on the map indicate higher wildfire severity hazards. The eastern and central regions exhibit little to no risk of wildfires, while the western region, with the exception of a small area in the northwest, is at high risk. Topographic and ecological features determine an area's susceptibility to wildfires, potentially characterizing the risk of wildfire occurrence. Wildfires can damage or destroy natural infrastructure such as watersheds and natural reaches, as well as built infrastructure such as pipelines and reservoirs. These impacts can adversely affect watersheds, leading to increased sedimentation, altered water quality, and potential contamination. The heightened risk thus contributes to the physical vulnerability of water sources, including groundwater.

The Yolo County Wildfire Annex highlights that wildfire risk varies across the County, with flat valley floors in the south and east experiencing minimal fire behavior, while the rugged, hilly terrain in the north and west can potentially allow fires to spread rapidly, often in areas with limited suppression access. The County frequently experiences vegetation fires, particularly in summer, with risks exacerbated by extreme heat, low humidity, and high winds. According to USFS wildfire severity map shown in Figure 3-10, areas west of Esparto and Winters are classified as Very High fire severity zones.



Source: WSVE Tool, [Water Shortage Vulnerability Explorer Tool], Accessed: 08/2025

Figure 3-9. Wildfire Severity Zone Hazard

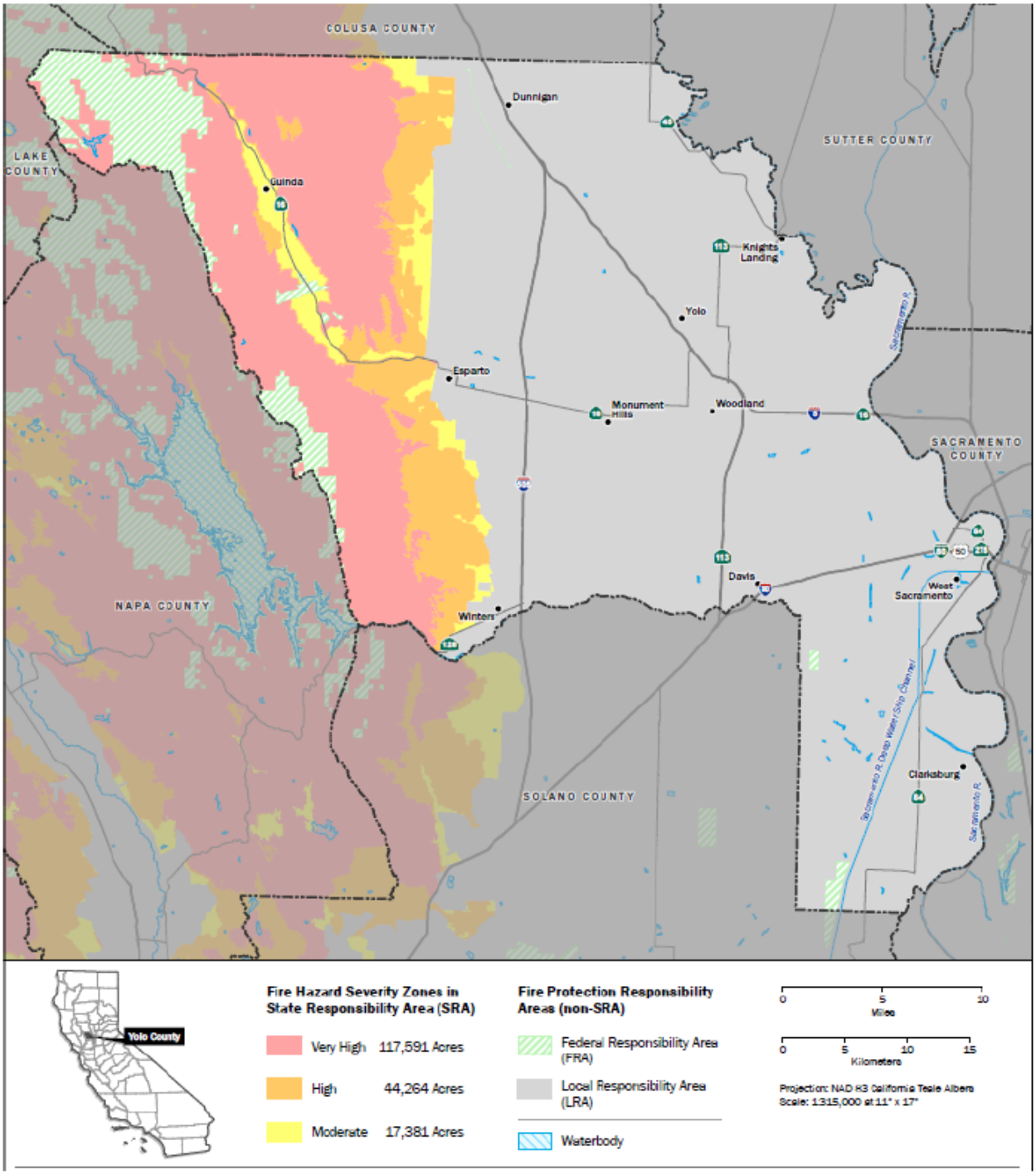
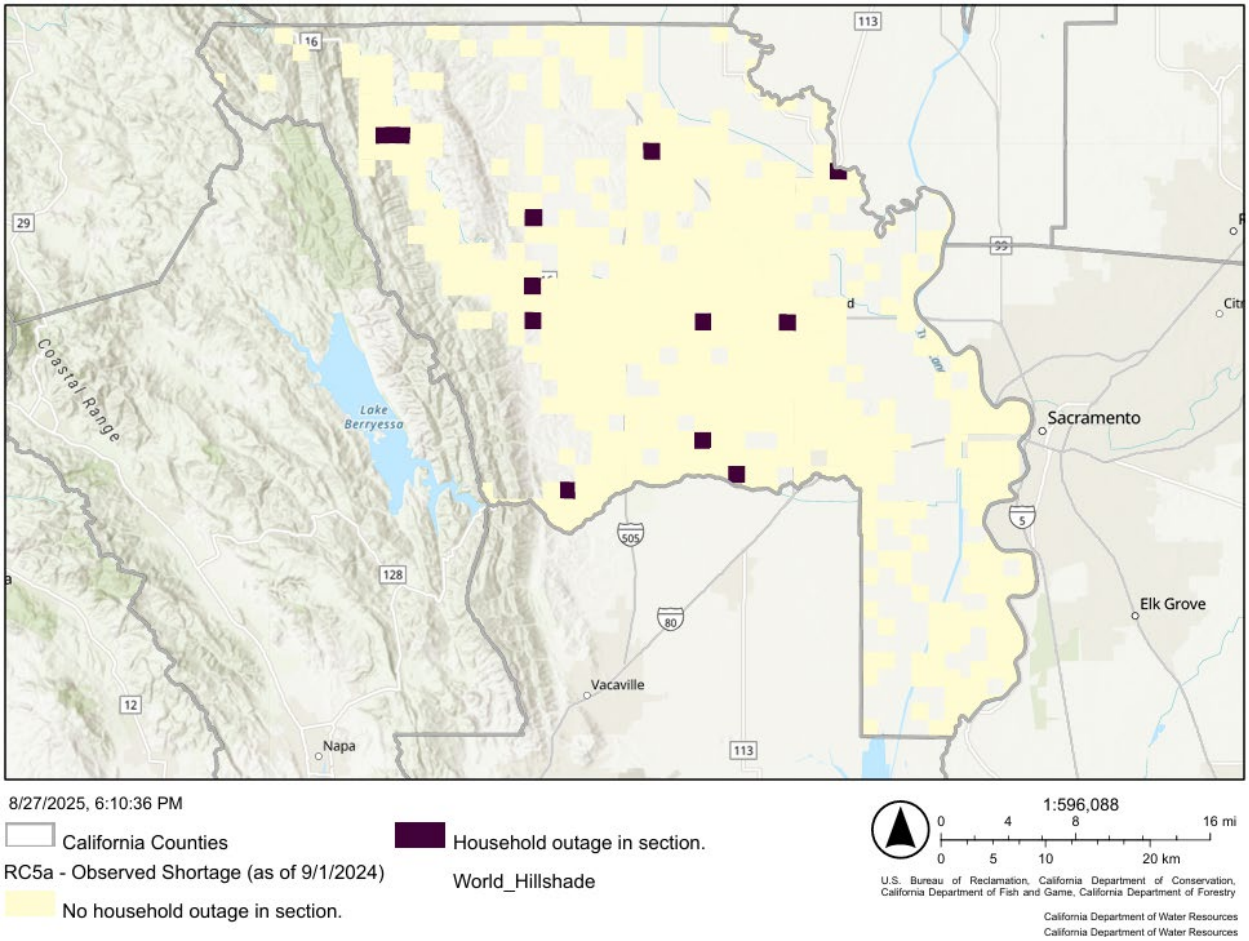


Figure 3-10. The Fire Hazard Severity Zones in Yolo County per CalFire

Observed Household Domestic Well Outages

Figure 3-11 shows the locations of observed household domestic well outages reported to DWR. Dry well reports scatter throughout the County but primarily concentrate in alluvial groundwater basins. Evaluating this data provides further insight into the nature of the reported well outages. Of the 19 well shortage reports, five are near Woodland, four in Davis, three in Capay, two in Guinda, two in Winters, and one each in Zamora, Esparto, and Knights Landing (https://data.cnra.ca.gov/dataset/dry-well-

reporting-system-data/resource/e1fd9f48-a613-4567-8042-3d2e064d77c8). The reported well outages primarily occurred during the drought periods in the spring and summer of 2015, 2021, and 2022. Although the WSVE Tool indicates that the majority of reported shortages were concentrated in Woodland, Davis, Capay, Guinda, Winters, Zamora, Esparto, and Knights Landing during the drought periods from 2015 to 2022, additional insights from the tiered well permit review process TM reveal that these shortages were primarily concentrated in Central Yolo and the southwestern and northern regions of Dunnigan Hills, with one report from the northwest of North Yolo. The observed shortage indicator, based on recent reports of domestic well outages, represents an increased vulnerability to future shortages. Areas that have already experienced well outages may face persistent challenges related to groundwater availability, recharge, or overall aquifer health. These reported outages highlight an existing strain on the water supply infrastructure or the aquifer system.



Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool, Accessed: 08/2025

Figure 3-11. Locations of Reported Well Outages Within the County

Summary of Physical Vulnerability Indicator Results

Table 3-3 summarizes all physical vulnerability indicators within the County.

Table 3-3. Summary of Observed Conditions for Physical Vulnerability Indicators in Yolo County

Physical Vulnerability Indicator	Observed Conditions[1]	Data Source
Climate Change		
Temperature Shift (RC1a)	Projected change in the maximum temperature by midcentury shows 4.6°F (northwestern and small areas in southeastern portions of the County) to 5.2°F (eastern portion) increase in average temperature throughout the County. Increased temperatures could increase water supply demands from users, evapotranspiration, and other issues, thereby increasing vulnerability to drought and/or water shortage impacts.	DWR WSVE Tool
Saline Intrusion Projected (RC1b)	No projected saltwater intrusion is foreseen in any part of Yolo County. Current and future saltwater intrusion into groundwater increases vulnerability of domestic wells and SSWSs.	DWR WSVE Tool
Wildfire Risk (RC1c)	County projections show less than 22% rise in small-area burns by 2064. Despite negligible fire susceptibility in most areas, the projected increase in burning, even in small areas, warrants inclusion in the vulnerability assessment due to inherent high risks involved. The most susceptible area is in the south and more specifically in the panhandle portion of Yolo County. Increasing wildfire frequency and severity can increase vulnerability of water sources.	DWR WSVE Tool
Current Environmental Conditions and Events		
2024 Precipitation (RC2a)	The most recent water year's status based on precipitation data in the beginning of the current water year (2024) remains above the historic precipitation in all areas, except for some areas in the northwestern part and some western border of the County (Blue Ridge and Rocky Ridge). A dry year increases physical vulnerability.	DWR WSVE Tool
Multiple Dry Years (RC2aa)	Data shows that more than two-thirds of the County have been experiencing 2 dry years in the last 5 years, and the other one-third has experienced 3 dry years in this period. A higher number of recent dry years may increase physical vulnerability of water supply conditions.	DWR WSVE Tool
Wildfire Risk (RC2b)	The western parts of the County, with the exception of a small region in the northwest, are assigned the Moderate to High and Very High USFS hazard severity zones. The eastern and central parts face little risk of wildfires. Research shows that a higher wildfire risk contributes to higher physical vulnerability for water sources.	DWR WSVE Tool
Geology (RC2c)	Fractured rock is present across the western border of the County along Blue Ridge and Rocky Ridge in upland areas. Water availability in fractured rock areas is more difficult to monitor and therefore more uncertain for those relying on it as a source of water. Areas with fractured rock are considered due to high susceptibility to drought impacts.	DWR WSVE Tool

Physical Vulnerability Indicator	Observed Conditions[1]	Data Source
Water Quality Aquifer Risk (RC2i)	This index shows that groundwater accessed by domestic wells may contain concentrations of constituents above regulatory levels. Wells in the central and eastern portions of the County have higher potential water quality risk and are more susceptible to water quality degradation. According to the YSGA report (YSGA 2022), it appears that some regulated constituents are present at elevated concentrations in the wells scattered throughout the County that could increase physical vulnerability for different communities.	DWR WSVE Tool & YSGA 2022
Subsidence (RC2d)	The map shows minor land subsidence in Yolo County. In the upland areas and on the western edge of the Yolo Subbasin, there is no record of land subsidence. Subsidence is present in Central and North Yolo. Higher subsidence creates higher vulnerable conditions. It is observed that a high density of domestic wells reside in areas with minimal subsidence.	DWR WSVE Tool
Basin Salt (RC2e)	No saltwater intrusion is foreseen in any part of Yolo County. Current and future saltwater intrusion into groundwater increases vulnerability of domestic wells and SWSSs.	DWR WSVE Tool
Overdrafted Basin (RC2f)	In the County, there is currently no evidence of an overdrafted basin, indicating that groundwater extraction rates are within sustainable limits. If the basin is considered overdrafted, this would increase physical vulnerability for water shortage and drought.	DWR WSVE Tool
Chronic Declining Water Levels (RC2g)	There are several wells in the central and southern regions of Central Yolo, the northwest of North Yolo and in the southeast of the Dunnigan Hills that have experienced significant groundwater declines. Declining levels in groundwater indicate increased vulnerability. This may put wells at higher risk of shortage.	DWR WSVE Tool & West Yost & YSGA 2024
Surrounding Land Use (RC2j)	Yolo County is heavily farmed except for upland and urban areas. The presence of agricultural activities could indicate competing demands on groundwater supplies and water quality concerns, both of which could create higher vulnerability for domestic wells and SWSSs, especially during a drought or water shortage event.	DWR WSVE Tool
Infrastructure Susceptibility		
Dry Domestic Well Susceptibility in basins (RC3a) – Alluvial Basin	This factor analyzes locations where there are many susceptible wells to going dry, if the current groundwater trends in the County continue. With the exception of a few small regions in the center, north, and west, the likelihood of areas experiencing dry well susceptibility due to combinations of aquifer sensitivity/fluctuations and shallow wells is minimal throughout the rest of the region. The County has had associated water shortages in each recent drought.	DWR WSVE Tool
Domestic Well Density in Fractured Rock Areas (RC3c)	The higher density of domestic wells in a single square mile within a fractured rock area tends to create a higher susceptibility for outages and increase competing demands, especially in a dry period. This indicator is based on density of domestic wells in a PLSS to proxy competing demands. Yolo County's data also partially show this trend in the fractured rock areas.	DWR WSVE Tool

Physical Vulnerability Indicator	Observed Conditions[1]	Data Source
Record of Shortage		
Reported Household Outage on Domestic Well	Areas that have already experienced outages are more likely to experience another outage during future dry years, due to combinations of aquifer sensitivity/fluctuations and shallow wells. Due to the presence of a handful of reports in the County, this indicator is included in the assessment. The majority of reports are from Central Yolo, followed by the southwestern and northern regions of Dunnigan Hills, with one report from the northwest of North Yolo.	DWR WSVE Tool & West Yost & YSGA 2024

Note:
[1] Abbreviations are included next to Indicator Name (i.e., "RC1a") for clarity to underlying methodology
°F = Degrees Fahrenheit
DWR = California Department of Water Resources
SWSS = State Small Water System
WSVE Tool = Water Shortage Vulnerability Explorer Tool

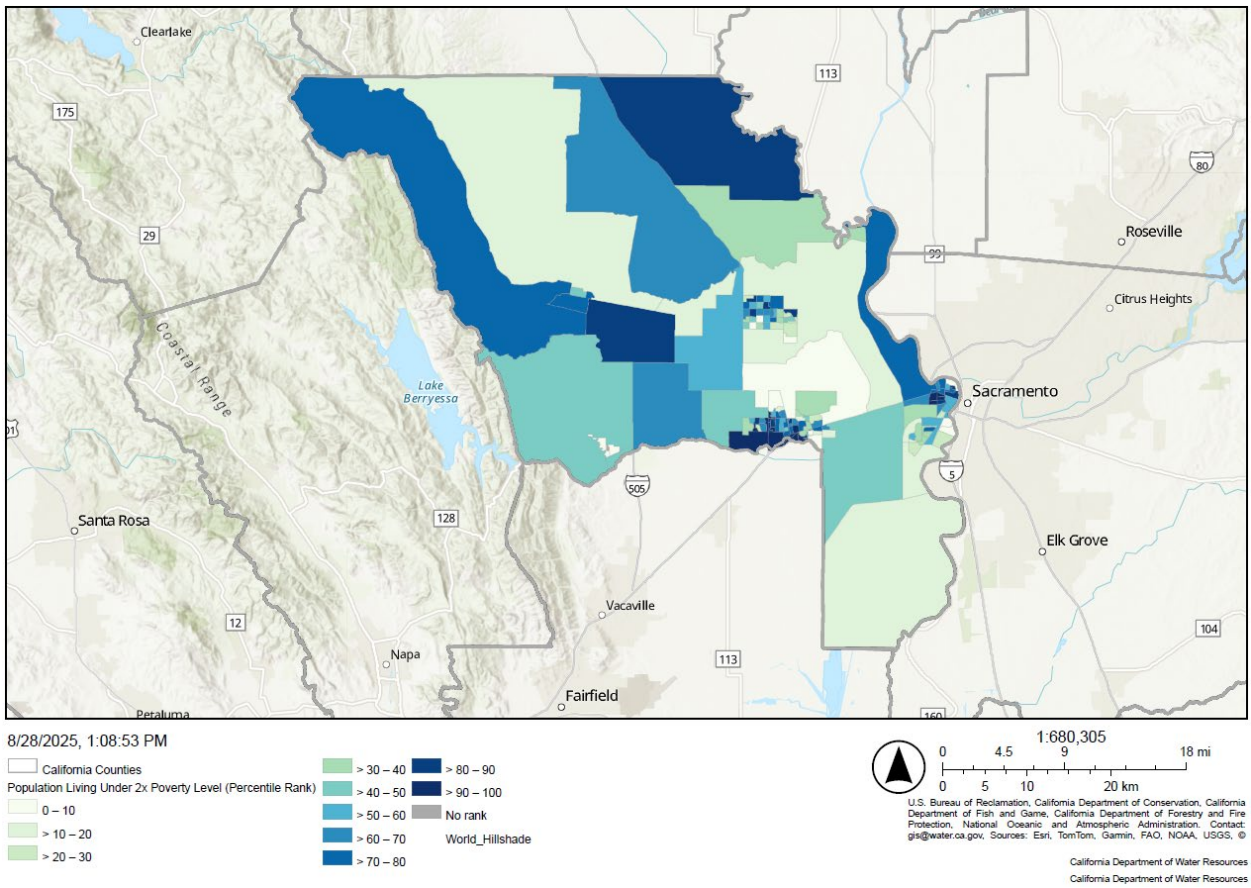
3.4.4 Social Vulnerabilities

This section provides a detailed evaluation of the social vulnerabilities contributing to water shortage risk. By identifying and characterizing these factors, the County can better understand the most effective short-term actions and long-term strategies, along with their implementation requirements.

The indicators driving social vulnerability include socioeconomic, language, and demographics factors.

Percentage of the Population Living in Poverty

Figure 3-12 shows the percentage of the population living in poverty. Households below the poverty line often lack the financial resources to secure essential supplies, invest in drought-resistant infrastructure, or recover from the economic impacts of prolonged water shortages. Consequently, these communities are more likely to experience severe hardship and slower recovery times during and after drought events. Areas with higher vulnerability are primarily located in Central Yolo (including some communities near Davis, Woodland, and south of Esparto), the eastern part of South Yolo (including some communities near West Sacramento), and the eastern portion of Dunnigan Hills, as illustrated in Figure 3-12.

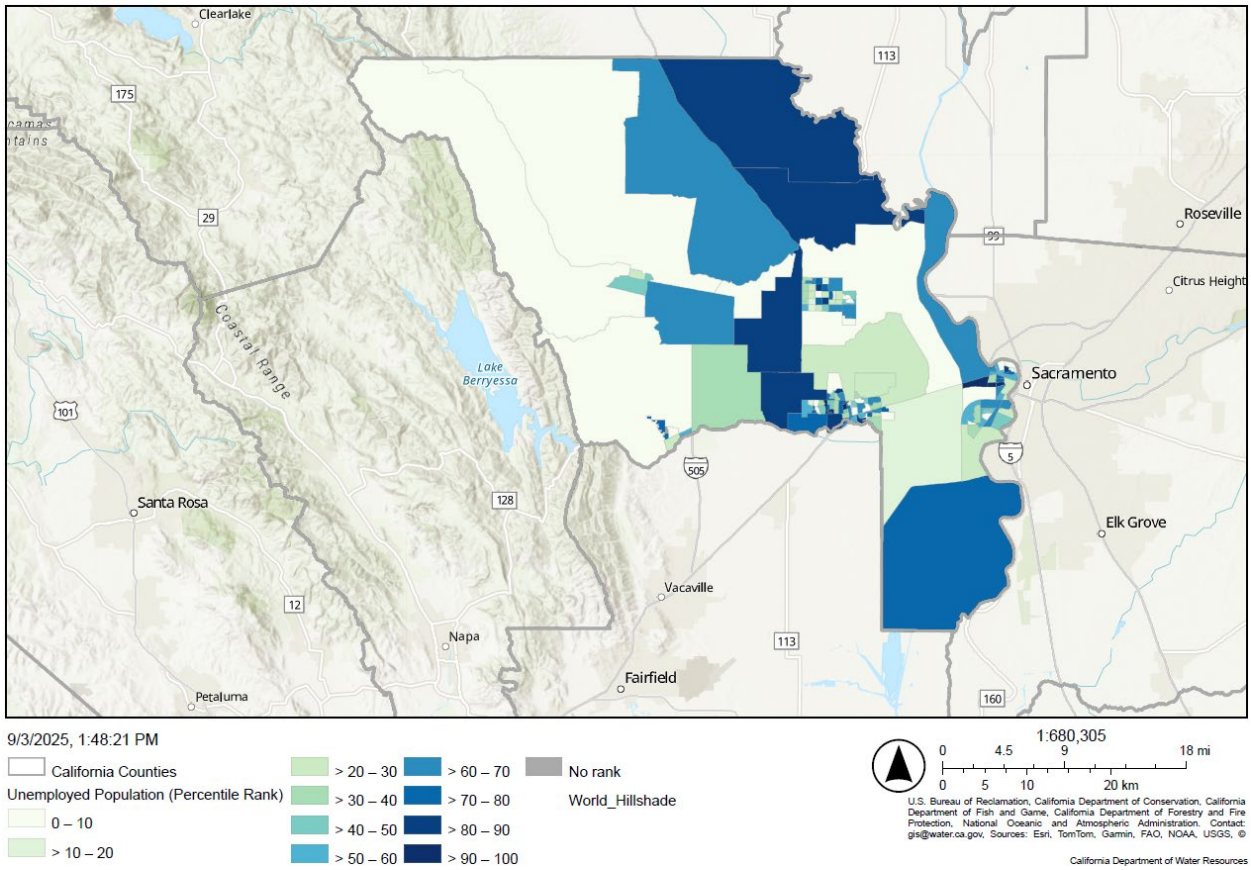


Source: WSVE Tool, [Water Shortage Vulnerability Explorer Tool](), Accessed: 08/2025

Figure 3-12. Percent of Population Living Below Poverty Level

Percentage of the Unemployed Population

Figure 3-13 shows the percentage of the unemployed population. Unemployed individuals often have limited financial resources and may struggle to access essential services and support during emergencies. This economic instability can hinder their ability to prepare for, respond to, and recover from disasters, thereby increasing their overall vulnerability. Areas with higher vulnerability (>12%) are predominantly located in the northern half of North Yolo, as well as in the vicinity of major cities such as Woodland, Davis, and West Sacramento, as illustrated in Figure 3-13.

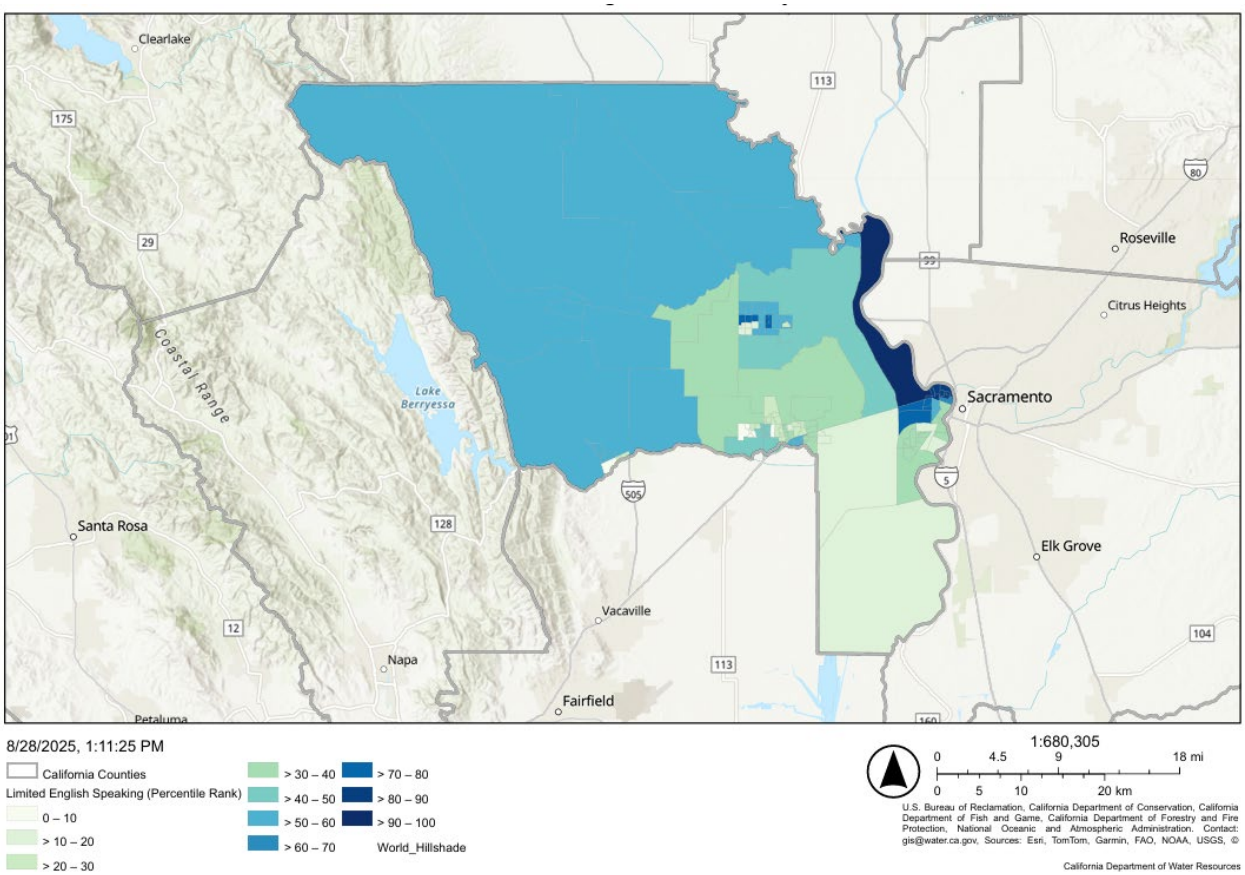


Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool, Accessed: 08/2025

Figure 3-13. Percent of Unemployed Population

Percentage of the Population with Limited English Proficiency

Figure 3-14 illustrates the percentage of the population with limited English proficiency, where darker colors denote higher percentages and, consequently, a greater need for multilingual communication resources. These areas are primarily situated in the northern half of South Yolo. Residents who use languages other than English may benefit from translated emergency instructions, accessible information, and interpretation services to ensure they can effectively communicate their needs and prepare for and respond to disasters. This language barrier underscores the importance of accessible communication and support services during emergencies.

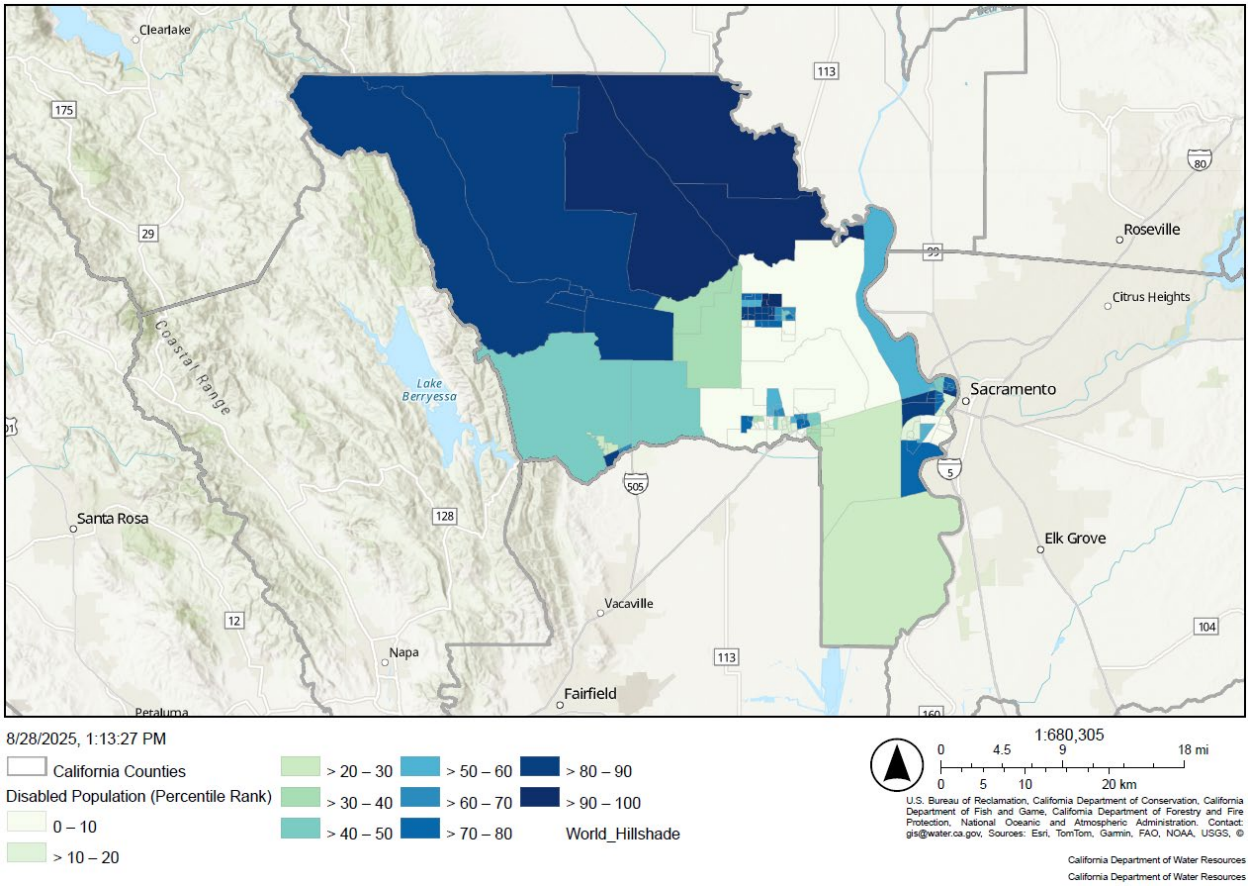


Source: WSVE Tool, Water Shortage Vulnerability Explorer Tool, Accessed: 08/2025

Figure 3-14. Percent of Population with Limited English Speakers

Percentage of the Population with Disabilities

Figure 3-15 illustrates the percentage of the population with disabilities, with darker colors indicating higher percentages and, therefore, greater need for inclusive planning. Areas with higher percentages (greater than 16 percent) are primarily located in the northern half of the County, including North Yolo, the Dunnigan Hills, upland areas, and Capay Valley. Higher concentration areas are also found in South Yolo (West Sacramento) and around cities such as Woodland, Esparto, Winters, and Davis. Residents with disabilities may encounter barriers in accessing emergency information, evacuating safely, and obtaining necessary medical care and support during emergencies. Ensuring that disaster planning and response efforts address accessibility helps create safer conditions for all community members.



Source: WSVE Tool, [Water Shortage Vulnerability Explorer Tool](), Accessed: 08/2025

Figure 3-15. Percent of Population with Disability

Summary of Social Vulnerability Indicators Results

Table 3-4 summarizes all social vulnerability indicators within the County. The data listed in Table 3-4, sourced from [2021 (census.gov)]() and [https://github.com/azh2/Social-Vulnerability-R](), was collected on April, 2024.

Table 3-4. Summary of Observed Conditions for Social Vulnerability Indicators

Social Vulnerability Indicator	Observed Conditions
Socioeconomic Status	
Per Capita Income	The lower-income population is more vulnerable to disasters. High-vulnerability areas are mainly in Central Yolo (east and south of Esparto, Madison, Cottonwood, and near Woodland and Davis) and the northern half of South Yolo.
Percent of Population Living in Poverty	Households living below poverty levels are often more vulnerable to and more impacted by disasters. Areas with higher vulnerability are primarily found in Central Yolo (including some communities near Davis, Woodland, and south of Esparto), the eastern part of South Yolo (including some communities near West Sacramento), and the eastern portion of the Dunnigan Hills.

Social Vulnerability Indicator	Observed Conditions
Percent of Population Unemployed	Unemployed individuals often have limited financial resources and may struggle to access essential services and support during emergencies. Areas with higher vulnerability are predominantly located in the northern half of North Yolo, as well as in the vicinity of major cities such as Woodland, Davis, and West Sacramento.
Language and Education	
Percent Persons without High School Diploma	Individuals without a high school diploma may face barriers to accessing information, resources, and assistance during emergencies. Areas with higher vulnerability are predominantly located in the northern part of North Yolo, the eastern half of Dunnigan Hills, Central Yolo (particularly around Woodland, Davis, and Winters), and West Sacramento in South Yolo.
Percent of Population Who Speak English Less than Well	Individuals with poor English skills may have difficulty understanding emergency instructions, accessing critical information, and communicating their needs, which can hinder their ability to effectively prepare for and respond to disasters. Areas with higher vulnerability are predominantly located in the northern half of South Yolo.
Demographics	
Percent Persons 65 Years of Age or Older	Older adults often face physical limitations, chronic health conditions, and reduced mobility, making them more susceptible to the impacts of disasters. Areas exhibiting higher vulnerability are primarily situated in North Yolo, upland areas, Capay Valley, Central Yolo (particularly in the central portions, Esparto, and some communities near Woodland and Davis), and South Yolo (specifically West Sacramento).
Percent Persons 17 Years of Age or Younger	Children and teenagers may require extra assistance and support, as they often have limited ability (such as limited decision-making capacity) to protect themselves and may face challenges in accessing essential services during emergencies. Areas displaying higher vulnerability are predominantly located in the northern half of the County, including North Yolo, upland areas, Capay Valley, some parts of Central Yolo (Woodland, Esparto, Winters, and Davis), and certain areas of South Yolo, particularly in West Sacramento.
Estimated Percent of the Population with Disability	Individuals with disabilities may face additional challenges in accessing emergency information, evacuating safely, and obtaining necessary medical care and support during emergencies. Areas with higher vulnerability are primarily located in the northern half of the County, including North Yolo, the Dunnigan Hills, upland areas, and Capay Valley, as well as in South Yolo (West Sacramento) and around cities such as Woodland, Esparto, Winters, and Davis.
Estimated Percent of single parent household	Households headed by single parents often face heightened social vulnerability during drought and water shortage events, as limited financial resources, time constraints, and caregiving responsibilities can reduce their capacity to adapt to disruptions in water access. Areas with higher vulnerability are primarily located in the south of upland areas and southwest of central Yolo as well as West Sacramento in South Yolo.
Housing and Transportation	

Social Vulnerability Indicator	Observed Conditions
Percent of Mobile Homes	Mobile home residents often face heightened risks during emergencies due to the structural vulnerabilities of their dwellings and limited access to resources and support networks. Areas with higher vulnerability are situated in the northern half of North Yolo, the eastern half of Dunnigan Hills, and small portions near Woodland, Davis, and West Sacramento.
No Vehicles Available	Individuals without access to transportation may face challenges evacuating from disaster-prone areas, accessing emergency shelters, and obtaining essential supplies and medical care during emergencies. Areas exhibiting higher vulnerability are primarily found in Dunnigan Hills and in small portions near Woodland, Davis, and West Sacramento.
Estimated Percent of the Homes with More than 10 Units	High-density housing complexes may present challenges in terms of evacuation logistics, emergency communication, and access to resources during disasters. Areas with increased vulnerability are primarily situated in West Sacramento, Davis, Woodland, and southwest of Esparto.
Estimated Percent of Occupied Homes	More occupied homes mean more people potentially affected by disasters, which can stress emergency services and evacuation plans. Areas with higher vulnerability (>99% occupied homes) are primarily located in the northern half of South Yolo, the southern portion of Central Yolo, as well as some areas of Woodland and southwestern Esparto.
Group Quarters	Areas with higher vulnerability are primarily located in the north of South Yolo and the east of Central Yolo.
Race and Ethnicity	
Persons of Color	Areas with higher percentage of persons of colors located in South Yolo and Central Yolo.

3.5 Risk Assessment Findings

The DWR WSVE Tool results and supplemental information from the TM and Yolo Subbasin GSP identified the following key findings to inform planning efforts for short-term response options and long-term mitigation strategies and actions:

- Domestic wells: Regions in Yolo County's upland areas might experience higher vulnerability and susceptibility to drought and water shortages due to the location of domestic wells in fractured rock areas. The number of domestic wells in these areas, however, is small (approximately 10) with minimal competing groundwater demands.

  In contrast, dry wells in the alluvial areas of the County may experience a much higher risk than in upland areas due to the large number of wells located there. During the 2021–2022 drought, 54 dry domestic wells were reported to Yolo OES in the west portion of Central Yolo, the north end and southeast of Dunnigan hills, and northeast of North Yolo. In addition, domestic wells located within these regions are experiencing a higher frequency of dry years and are at a greater risk during water shortages and drought. Furthermore, domestic wells that are within the regions including Dunnigan Hills, the center and north of Central Yolo, and communities living near Woodland, Davis, and Winters, and the northern part of South Yolo have high social

vulnerability. Table 3-5 provides a summary of identified vulnerabilities and risks that may impact domestic wells in the County.

- SSWSs: There are four SSWSs in the County. Regions with higher vulnerability related to frequency of dry years include Capay Valley, upland areas, and the central and western sections of Central Yolo. Aside from Vega's Water System, the other three SSWSs are situated within regions experiencing a lower frequency of dry years. These three SSWSs are located in regions characterized by higher susceptibility to subsidence with the exception of Faye Properties Inc. All four SSWSs are within regions with minimal to negligible risk of wildfires. Except for the Vega's Water System, the remaining SSWSs are situated within areas characterized by medium to high social vulnerability.

  The primary concern with SSWSs is their aging infrastructures and due to lack of redundancy, if the SSWS well goes down, it will become a public health concern issue.

    - Delta Homeowner Association: The well is a very old driven well, likely 1971.
    - Payne Farms: Well date 1998.
    - Vegas: Well date 1998. The well is at risk for water quality deterioration as the well does not meet the current setback standards for septic and animal enclosure. Due to the site restriction, it will be difficult to site a new well meeting the setback requirements.
    - Faye Properties: Well date is unknown as no well log was located.

Table 3-6 provides a summary of identified vulnerabilities and risks that may impact SSWSs in the County.

Additional considerations that may affect domestic wells and SSWSs vulnerabilities include:

- Irrigated agriculture: Areas exhibiting higher vulnerability in terms of the proportion of land used for irrigated agriculture are identified in Clarksburg, the southwest and north of South Yolo, the central and eastern sections of Central Yolo, all areas of North Yolo except for a small central portion, and some regions in northern and southern Dunnigan Hills. These regions include the four SSWSs and numerous domestic wells, potentially increasing their susceptibility to water scarcity and water quality. Refer to Figure 1-5 for water sources and locations of use for agricultural lands in the Yolo Subbasin.
- Water quality: Regions exhibiting heightened vulnerability in terms of water quality include West Sacramento, a small southeastern portion of Clarksburg, Central Yolo (including Monument Hill, Yolo County Central Landfill, Esparto, Woodland, and rural areas bordering cities like Davis and Winters), a small eastern portion of Dunnigan Hills, and Knights Landing. Domestic wells within these regions are especially vulnerable during droughts. It is important to highlight that water quality issues in Dunnigan Hills have been attributed to leaky septic tanks, with nitrate identified as the primary pollutant, unrelated to agricultural activities in this area. Among the SSWSs, Payne Farm Labor Camp has high water quality risk and Vega's water system has medium water quality risk, while Faye Properties, Inc. and the Delta Homeowners Association have low water quality risk.

Table 3-5. Key Risk Assessment Findings: Domestic Wells by Subbasin—Domestic Wells in Yolo County—1,727 Wells throughout the County

Subbasin	Physical Vulnerabilities	Social Vulnerabilities
Capay Valley	High physical vulnerabilities: Percent land as irrigated agriculture, multiple dry years within the last five years, wildfire risk, reported well outages	Medium to low social vulnerability: Percent of population with disability
Upland Areas	High physical vulnerabilities: multiple dry years within the past five years, wildfire risk	Medium to low social vulnerability in the northern half: Percent of population with disability Low social vulnerability in the southern half
Dunnigan Hills	High physical vulnerabilities in the northern half: Percent land as irrigated agriculture, multiple dry years within the past five years, groundwater water quality risk, reported well outages	High social vulnerability in the eastern half: Per capita income, percent of population living below poverty level, percent of population with disability Medium to low social Vulnerability in the western half
North Yolo	High physical vulnerabilities in the southeastern part as well as its northwestern border with Dunnigan Hills: Percent land as irrigated agriculture, water quality index, reported concerns on declining groundwater level, reported well outages	High social vulnerability in the northern half: Per capita income, unemployment, percent of population with disability Medium to high social vulnerability in the southern half
Central Yolo	Low to high physical vulnerability: Chronic decline of groundwater, percent land as irrigated agriculture, multiple dry years within the past five years, groundwater water quality risk, chronic declining groundwater levels, reported concerns on declining groundwater level, reported well outages	Low to high social vulnerability: Per capita income, percent of population living below the poverty level, unemployment, percent of population with poor English, percent of population with disability
South Yolo	Low to high physical vulnerability: Chronic decline of groundwater, percent land as irrigated agriculture, groundwater water quality risk	Low to high social vulnerability: Per capita income, percent of population living below poverty level, unemployment, percent of population with poor English
Clarksburg	High physical vulnerabilities in the southeastern part: Percent land as irrigated agriculture, groundwater water quality risk, wildfire vulnerability	Medium to low social vulnerability

Table 3-6. Key Risk Assessment Findings: State Small Water Systems

SSWS	Description	Physical Vulnerabilities	Social Vulnerabilities
Vega Water System	Located near Monument Hills on County Road 94B Population served: 15 Connections: 5 Water source: Groundwater	High physical vulnerability area. Multiple dry years within the last 5 years Irrigated agriculture impact At risk for water quality deterioration as the well does not meet the current setback standards for septic and animal enclosure. Due to the site restriction, it will be difficult to site a new well meeting the setback requirements.	Low social vulnerability
Faye Properties Inc.	Located in the northeastern part of the County Population served: 10 Connections: 12 Water source: Groundwater	Low physical vulnerability area. Irrigated agriculture impact Data unknow as no well log was located.	High social vulnerability: Percent of population unemployed, percent of population with disability
Delta Homeowners Associations	Located in the southeastern part of the County near Clarksburg Population served: 15 Connections: 6 Water source: Groundwater	Low physical vulnerability area. Irrigated agriculture impact Well is a very old driven well, likely 1971.	Medium to low social vulnerability
Payne Farm Labor	Situated between County Road 102 and 101 Population served: 23 Connections: 6 Water source: Groundwater	Low physical vulnerability area. Water quality index, irrigated agriculture impact	Medium to high social vulnerability: Percent of population with poor English, percent of population with disability

3.6 Risk Assessment Gaps

Identifying information gaps is essential for understanding vulnerabilities and assessing risks in the County. Addressing these gaps will support effective implementation and strategic planning to meet the County's needs. Recognizing data limitations also informs the development of long-term monitoring and future planning efforts. The risk assessment gaps outlined below were identified by the County and the Task Force during the development of the County DRP.

- Domestic Wells Status: It is important to identify, reevaluate, and exclude from analysis any domestic wells that are currently non-functional since incorporating non-functional domestic wells into the risk analysis could negatively impact the integrity of results.

- Small Water Systems: Current analysis and planning efforts do not account for small water systems like Rolling Acres, Brooks, Rumsey, Wild Wings, and North Davis Meadows. This omission limits the understanding of their needs and challenges, impacting the effectiveness of proposed strategies.
- Public Water Systems: Information and understanding of public water systems attributes (e.g., size, service area, water sources) and proximity of water systems to one another (e.g., domestic wells, SSWSs, public water systems) are important to properly prepare for emergency conditions during drought.
- Private Surface Water Intakes: Sufficient data does not exist to estimate quantity and locations of households who rely on private surface water intakes, serving one to four households.
- Surface Water–Groundwater Interaction and Hydrologic Modeling: It is important to consider the interconnection between surface and groundwater water availability. Key factors like land use, surface irrigation, and perennial crop practices are significant considerations. Currently, there is no use of hydrologic or groundwater models that simulate these interactions or reflect the temporal variability of hydrologic processes. Understanding these dynamics is crucial for effective water resource management. Addressing this gap will enhance the relevance of the plan and improve its utility for stakeholders involved in water management decision making for future considerations.
- Mutual Aid Agreements: There is no publicly available information on existing mutual aid agreements between water suppliers or between water suppliers and the County to support domestic well outages.
- Storage Tanks: There is no publicly available information on the location or availability of storage tanks, fill stations, and other infrastructure or arrangements to support interim drinking water solutions.

4.0 Water Shortage Emergency Response Process

4.1 Introduction

STRAs are designed to efficiently mitigate impacts during the early and ongoing stages of drought conditions and water shortages in Yolo County. These actions are intended to address immediate vulnerabilities, contrasting with long-term strategies that are aimed at reducing future risks. Results of the Yolo County's risk assessment provide insight into areas most susceptible to droughts and water shortages, including where shortages have occurred in past droughts, gaps in delivery capabilities, or water quality concerns. This chapter describes STRAs that Yolo County may implement to address water shortages needs.

The County drought risk and water shortage vulnerability assessment results and the Drought Support Annex to the Yolo County Emergency Operations Plan (EOP), serve as the foundation for the STRAs component of this County DRP. The assessment provides insights into areas within the County that are most susceptible to droughts and water shortages. The Drought Support Annex outlines the countywide multi-phased approach to responding to water shortages. Input provided by the Task Force members serves to inform, validate, and support the identification of specific STRAs that may be needed to address water shortage and drought-related water emergencies experienced by domestic wells owners and SSWSs communities in Yolo County.

4.2 Water Shortage Stages: Indicators and Triggers

The Yolo County Drought Support Annex outlines five water shortage stages and related planning and response actions. The necessary response actions and restrictions increase in frequency and significance as drought conditions worsen. As conditions worsen, all actions corresponding to earlier stages of water shortage should continue to be considered.

- **Stage 1—Planning and Coordination**: A preliminary preparedness stage that focuses on communication and initial coordination. Stage 1 serves to alert local officials and public water suppliers to prepare to respond to potentially worsening drought and water shortage conditions.
- **Stage 2—Incipient Drought/Water Shortage**: Stage 2 focuses on monitoring and preparedness activities.
- **Stage 3—Moderate Drought/Water Shortage**: Stage 3 focuses on outreach and promoting conservation measures as well as identification of alternative water supply sources.
- **Stage 4—Severe Drought/Water Shortage**: Stage 4 focuses on implementing water use restrictions, reliance on alternative water supply sources, State and Federal support, and consideration of declaring a disaster.
- **Stage 5—Extreme Drought/Water Shortage**: Stage 5 is the declaration of a public health disaster.

4.2.1 Indicators and Triggers

Key indicators are used to assess existing conditions and determine the water shortage stage. Indicators may include the following:

U.S. Drought Monitor: The U.S. Drought Monitor is a map updated every Thursday that classifies drought conditions across the United States into None, Abnormally Dry, Moderate, Severe, Extreme, and Exceptional.

Applications for New Well Permits: Monitor for an increase in new well permit applications (both domestic and others) to replace existing wells that are not providing sufficient water supply, even if there are no associated Dry Well Reports. The County can evaluate if these new applications are intended to replace existing wells as a proxy for water shortage.

A comparison of data from well permit applications that were submitted in Yolo County from 1998 to 2025 (Figure 4-1) and the U.S. Drought Monitor time series (Figure 3-2) indicates a strong correlation between increased well permit applications and periods of severe, extreme, and exceptional drought conditions. These trends also coincide with reported occurrences of dry wells, highlighting the relationship between drought severity and increased reliance on groundwater.

It is important to note that the timing and frequency of well permit applications are highly variable and reactive, making it difficult to establish consistent thresholds or triggers for different stages of water shortages based on permit data alone. Therefore, the U.S. Drought Monitor serves as a more reliable and standardized indicator for drought conditions and can also serve as a proxy for anticipating increased well permit demand.

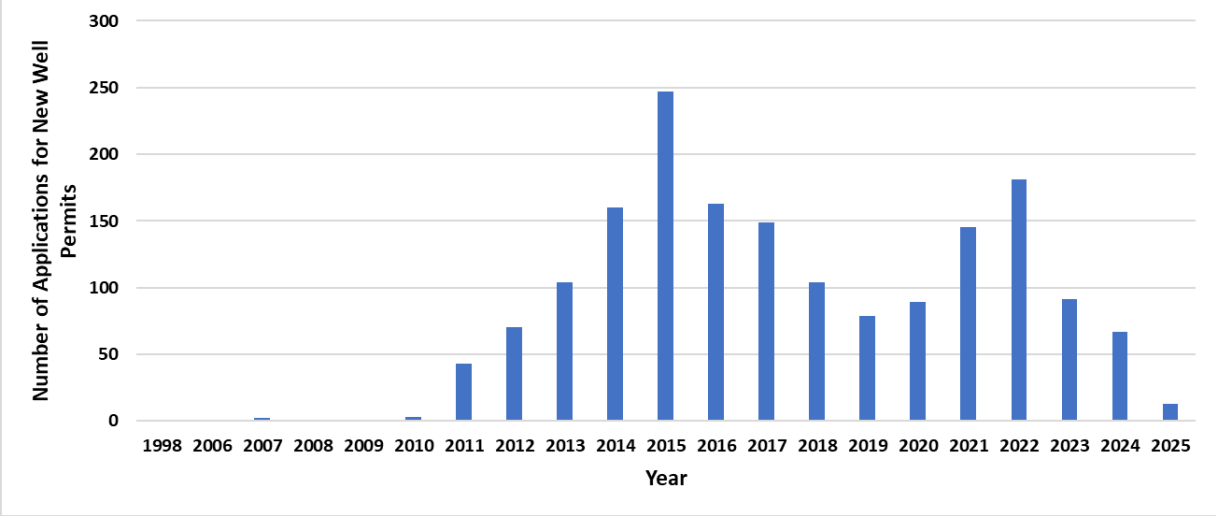


Figure 4-1. Number of Applications for New Well Permits

California Dry Well Reporting System**:** California has a dry well reporting system that well owners or operators can use to report a dry well. The County can use this to identify where a water shortage is occurring.

Water Quality: Areas with known water quality issues are typically monitored. However, the presence of potential water quality concerns that could render water supplies unusable can also serve as a basis for establishing a water shortage stage. It is important to note that other hazards, such as droughts or

wildfires, can worsen water quality conditions and should be considered in conjunction with this indicator.

GSA Monitoring: GSAs in SGMA priority basins are required to regularly monitor (typically in October and April) groundwater conditions as part of their reporting. The County can use these monitoring programs to inform a water shortage stage.

Non-Drought Hazards: There are other hazards that could result in a water shortage including wildfires, earthquakes, floods, and power outages (either planned or unplanned), and the County should monitor conditions following a hazard event. The water supply impacts of some of these hazards can be worsened by drought conditions, and such events can also influence other indicators such as water quality.

Table 4-1 summarizes the indicators (water-supply-related features) and associated triggers, where applicable, that can be used to determine water shortage stages. These thresholds are not absolute but are intended to serve as guidance for decision makers.

Table 4-1. Indicators and Related Triggers for Water Shortage Determination

Indicator	Stage 1 Planning and Coordination	Stage 2 Incipient Water Shortage	Stage 3 Moderate Water Shortage	Stage 4 Severe Water Shortage	Stage 5 Extreme Water Shortage
U.S. Drought Monitor	None/ Abnormally Dry	Abnormally Dry	Moderate	Severe	Extreme/ Exceptional
Application for New Well Permits	For consideration with other indicators				
California Dry Well Reporting System	Any dry well reports submitted within the County should trigger evaluating the cause of the water shortage. If the cause is due to an isolated issue (i.e., very shallow well, aging infrastructure, etc.) that was exacerbated by drought, the County could consider entering Stage 2 and monitor for additional dry well reports.		If, after evaluating the dry well reports, it is found the features of the dry well (i.e., depth, age, etc.) are consistent with other wells in the area, that may indicate the potential for widespread water shortages. This may require declaring a state of emergency.		
Water Quality		Water quality observations that are noted as being of concern (for unregulated chemicals or those without an established water quality level) or the measured water quality is outside of established standards (maximum contaminant levels, primary or secondary standards, etc.).		Observed water quality is outside public health standards (maximum contaminant levels, primary or secondary standards, etc.). and/or a boil water notice or intervention limiting use is in place.	

Indicator	Stage 1 Planning and Coordination	Stage 2 Incipient Water Shortage	Stage 3 Moderate Water Shortage	Stage 4 Severe Water Shortage	Stage 5 Extreme Water Shortage
GSA Monitoring		If monitoring or analysis by a GSA indicates a decline in groundwater levels below an established threshold that could cause water supply issues, the County could consider going into Stage 3.		If a monitoring or analysis by a GSA result in the GSA implementing response actions to avoid water shortages and SSWS or domestic well supplies could be impacted in that area, the County could consider going into Stage 4 or Stage 5.	
Non-Drought Hazards		Hazards that temporarily interrupt domestic well or SSWS supplies for up to two days could trigger Stage 3.		Hazards that interrupt domestic well or SSWS supplies for an extended period (3 or more days), including public safety power shutoffs, could require declaring a state of emergency (Stage 4 or Stage 5).	

Notes:
GSA = Groundwater Sustainability Agency
SSWS = State Small Water System

4.2.2 Process for Declaring a Shortage Stage

Per the Drought Support Annex, the County will make a corresponding water shortage stage declaration and notify the Task Force. Initial stage determination should align with State and USGS Water Year declarations of drought. Water Years run from October 1 through September 30. Determination of drought stages should be made sometime after the end of a water year when data on precipitation and reservoir levels are fully analyzed. However, the County will assess if local conditions indicate a risk of water shortage during dry periods of the year, and declare shortages as appropriate per the Drought Annex. .

4.3 Responding to a Water Shortage Stage

In consultation with the Task Force, the County developed a list of STRAs, organized into the following categories:

Communications and Public Engagement: Disseminate State or local water conservation or water shortage messaging to the public. Develop outreach and communication mechanisms and work with domestic well and SSWS users to encourage water conservation.

Coordination: Coordinate with Task Force member agencies, local, State, and federal entities to implement the identified actions.

Permit Streamlining and Coordination: Provide opportunities to enable implementation of STRAs.

Water Supply Mitigation Options/Tracking and Monitoring: Develop programs to improve water supply and water quality monitoring and testing to promote proactive mitigation. In Yolo County, there are several programs that provide testing and monitoring:

- The Yolo County Irrigated Lands Program provides guidance on Domestic Well Sampling for Nitrates.

- The Yolo County Farm Bureau provides water sampling collection and drop off.
- The YSGA operates a free sensor loan program for domestic well users to use to check their own wells.

Water Conserving Programs: Develop water conservation incentive programs and work with domestic well and SSWS users to implement conservation measures.

Emergency and Interim Potable Water Supply: Provide emergency water supplies as a last resort during a water shortage event. Interim drinking water supplies provide temporary solutions over an extended period until a permanent source is secured. Emergency and interim potable water options may include dedicated filling stations, bulk water delivery or hauling, above-ground storage tanks for non-potable use, treatment of alternative water sources not typically used, and packaged water.

- The Valley Water Collaborative (VWC) is a nonprofit organization based in California's Central Valley that supports communities impacted by groundwater contamination. In Yolo County, VWC offers free private well testing and provides bottled drinking water to households whose wells exceed the State's nitrate limit (10 milligrams per liter). It also tests for other contaminants such as arsenic and uranium, where services are available. In addition to assisting residents, VWC helps agriculture, municipalities, and industries comply with the Nitrate Control Program to protect groundwater quality.

4.3.1 Short-Term Response Actions for Five Water Shortage Stages

The County identified specific STRAs that may be used at each water shortage stage to support the needs of domestic well owners and SSWSs. The STRAs are summarized in Table 4-2 through Table 4-6 and represent a subset of the countywide actions that are listed in the Drought Support Annex. The lead agencies/County Departments are identified to ensure coordination in the event of a water shortage. New STRAs that are not listed in Tables 2-6 may be identified, added, and implemented, in response to shortage conditions and emerging needs.

Table 4-2. Stage 1—Preliminary Preparedness: Planning and Coordination

Category	STRA ID	Activities	Responsible Agency/ Department
Communications and Public Engagement	STRA_PP 01	Review communications protocol and coordinate on any public announcements (specific to domestic well owners and SSWS).	County PIO
	STRA_PP 02	Use established YSGA tools such as hydrologic models, Standardized Precipitation Index, or the Dry Well Susceptibility Tool (if applicable) and reports to assess drought conditions.	Environmental Health, CSD Manager
	STRA_PP 03	Communicate with municipalities and the State. Provide up-to-date contact information to Yolo County HHSA to ensure the communication of vital information and assess needed technical and financial assistance in an emergency.	Yolo OES
	STRA_PP 04	Maintain regular communications flow with local emergency services (Yolo OES).	Natural Resources Division, Environmental Health
	STRA_PP 05	Promote the County Well Owner's Guide, which includes a section about keeping valuable records of the domestic wells and SSWSs. Data such as pump test results and water quality measurements can provide an early indicator if a well is at risk of drying up. The Well Owner's Guide will be available on the County's website.	Environmental Health
Coordination	STRA_PP 06	Delegate duties and responsibilities as necessary to assure information flow among agencies.	Yolo OES
	STRA_PP 07	Plan what staff and/or funding could be made available, if necessary, to support increased monitoring activities.	Yolo OES
Tracking and Monitoring	STRA_PP 08	Monitor water conditions and share data with the Task Force.	YSGA
	STRA_PP 09	Identify geographic extent of dry conditions and determine potentially impacted areas.	YSGA and DWR
	STRA_PP 10	Update monitoring networks and drought information websites to include relevant, up-to-date information.	County PIO
	STRA_PP 11	Provide guidance on DW monitoring for nitrates control in Yolo Management zones.	The Yolo County Irrigated Lands Program provides guidance for Yolo County.
Water Conservation	STRA_PP 12	Promote water conservation best practices add County conservation resources information to public communication venues (website, bulletin board, public places, etc.).	CSD/CSA, CSA Manager, County PIO
Domestic Well Mitigation	STRA_PP 13	Well-sounding program: The County and YSGA will encourage domestic well owners to measure the depth-to-water. YSGA has a sounder that residents can borrow to measure their own wells.	County, YSGA

Category	STRA ID	Activities	Responsible Agency/ Department
Emergency Water Supplies	STRA_PP 14	Through approved procurement procedures, develop database of approved water haulers, approved packaged water purveyors, and licensed well drillers.	CAO, General Services
	STRA_PP 15	Packaged water: Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	Yolo OES in coordination with CAO, CSA/CSD, General Services

Notes:
CAO = County Administrator's Office
CSA = County Services Area
CSD = Community Service District
DW = Domestic Well
DWR = California Department of Water Resources
HHSA = Health and Human Services Agency
PIO = Public Information Officer
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 4-3. Stage 2—Incipient Drought

Category	STRA ID	Activities	Responsible Agency/ Department
Communications and Public Engagement	STRA_ID 01	Communicate with municipalities, the public, and key town officials about local conditions, concerns, and any changes to the status of available water supply.	Yolo OES
	STRA_ID 02	Review communications protocol and coordinate on any public announcements (specific to domestic well owners and SSWSs).	County PIO
	STRA_ID 03	Consider providing any relevant information to weather forecasters and other media to encourage public interest stories and facilitate dissemination of drought information to the public.	County PIO
	STRA_ID 04	Increase awareness and provide relevant local and State links to drought information.	County PIO
	STRA_ID 05	Review any local sources of data on wells and communicate with the appropriate State agencies.	Environmental Health and YSGA in coordination with Natural Resources Division
Coordination	STRA_ID 06	When potable water is at risk of shortage, coordinate with local health directors to determine level of promoting water conservation, monitoring of local situations, and reporting of problems.	HHSA, CSD/CSA Manager
Tracking and Monitoring	STRA_ID 07	Continue to monitor the primary indicators of drought.	YSGA
	STRA_ID 08	Use established YSGA tools and reports to assess drought conditions.	County

Category	STRA ID	Activities	Responsible Agency/ Department
Water Conservation	STRA_ID 09	Consider compiling information on water conservation tips to homeowners, e.g., "Water Efficiency Measures for Residents," and "Water Efficiency Measures for Landscaping," in preparation for distribution through the Internet, public service announcements, and other timely mailings, should the drought worsen.	County PIO
	STRA_ID 10	Consider issuing voluntary conservation appeals to domestic well owners.	County PIO
Domestic Well Mitigation	STRA_ID 11	Make available guidance documents for private well users who may require assistance with well repairs or enhancement and make this available via the Internet.	Environmental Health
Emergency Water Supplies	STRA_ID 12	Compile database of available water haulers, packaged water purveyors, and licensed well drillers.	CAO, General Services
	STRA_ID 13	Begin preparing for the possibility of bringing alternative/secondary supply systems online if they are available.	CSD/CSA Managers, Environmental Health (for small community public water systems)
	STRA_IS 14	Packaged water: Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	Yolo OES in coordination with CAO, CSA/CSD, General Services

Notes:
CAO = County Administrator's Office
CSA = County Services Area
CSD = Community Services District
HHSA = Health and Human Service Agency
PIO = Public Information Officer
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 4-4. Stage 3—Moderate Drought

Categories	STRA ID	Activities	Responsible Agency/ Department
Communications and Engagement	STRA_MD 01	Declare a Stage 3 Drought and notify Drought Task Force representatives.	Yolo OES
	STRA_MD 02	Disseminate press releases and notification for domestic well owners and SSWSs communities.	County PIO, Health Officer
	STRA_MD 03	Distribute press releases to announce drought status sources of information and how to obtain information on water supply status and conservation measures.	County PIO
Coordination	STRA_MD 04	Initiate contact with federal agencies (FEMA/EPA/USGS/USDA/USACE) to identify federal assistance capabilities.	Yolo OES

Categories	STRA ID	Activities	Responsible Agency/ Department
	STRA_MD 05	Evaluate potential funding needs for actions required under severe or extreme drought conditions to ensure the availability of adequate funding through budgets or emergency measures.	CSA Manager, CAO
Tracking and Monitoring	STRA_MD 06	Review the adequacy of water monitoring and consider investing in increased monitoring capabilities where needed.	CSA Manager
	STRA_MD 07	Track and publicly report problems related to the drought for both deep and shallow wells.	Environmental Health
Water Conservation	STRA_MD 08	Use the internet, public service announcements, or radio station broadcasts to promote and urge residents to conserve water (provide conservation tips such as “Water Efficiency Measures for Residents,” and “Water Efficiency Measures for Landscaping").	County PIO
	STRA_MD 9	Determine if County should send letters to officials requesting, they urge residents to curtail outdoor watering.	County PIO/CSD/CSA Managers, CAO
Domestic Well Mitigation	STRA_MD 10	Make available guidance documents for private well users who may require assistance with well repairs or enhancements and make this available via the Internet.	Environmental Health
Emergency Water Supplies	STRA_MD 11	Packaged water: Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	Yolo OES in coordination with CAO, CSA/CSD, General Services

Notes:
CAO = County Administrator’s Office
CSA = County Services Area
CSD = Community Services District
EPA = Environmental Protection Agency
FEMA = Federal Emergency Management Agency
HHSA = Health and Human Service Agency
PIO = Public Information Officer
SSWS = State Small Water System
USACE = U.S. Army Corps of Engineers
USDA = U.S. Department of Agriculture
USGS = U.S. Geological Survey
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 4-5. Stage 4—Severe Drought

Consideration	STRA ID	Activities	Responsible Agency/ Department
Communications and Engagement	STRA_SD 01	Declare a Stage 4 Drought and notify Drought Task Force representatives.	Yolo OES, CAO, County Counsel, Board of Supervisors
	STRA_SD 02	Increase the degree of public education and information; increase the tone of seriousness in public service announcements, press releases, etc.	County PIO
Coordination	STRA_SD 03	Coordinate with 211 to respond to public inquiries.	Yolo OES
	STRA_SD 04	Coordinate messaging with local, regional, and State partners.	County PIO
	STRA_SD 05	Consider requesting a local and presidential emergency disaster declaration if direct federal assistance is required.	Yolo OES
Tracking and Monitoring	STRA_SD 06	Continue to follow established monitoring plan.	YSGA
Water Conservation	STRA_SD 07	Continue to issue voluntary conservation appeals to domestic well owners.	County PIO
Domestic Well Mitigation	STRA_SD 08	Well replacement permits: Consider assisting owners of residences with dry wells with obtaining permits to construct wells or evaluate the feasibility of connecting to a public water supply.	Environmental Health
Emergency Water Supplies	STRA_SD 09	Consider assisting SSWSs and domestic well owners in exploring alternative sources of water for non-potable uses.	Environmental Health
	STRA_SD 10	Identify how to deliver drinking water to key distribution stations within each municipality.	Yolo OES in coordination with CAO, CSD/CSA, General Services
	STRA_SD 11	Packaged water: Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	Yolo OES in coordination with CAO, CSA/CSD, General Services

Notes:
CAO = County Administrator's Office
CSA = County Services Area
CSD = Community Services District
PIO = Public Information Officer
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 4-6. Stage 5—Extreme Drought

Consideration	STRA ID	Activities	Responsible Agency/ Department
Communications and Engagement	STRA_ED 01	Declare a Stage 5 Drought—a public drinking water supply emergency and notify Drought Task Force representatives.	Yolo OES, State
	STRA_ED 02	Consider preparing, based on available information and professional judgement, recommendations for the governor on additional action steps to take in a worse-case scenario if conditions do not improve and water supplies become critical.	Board of Supervisors, Yolo OES, Health Officer, Environmental Health, Natural Resources, Yolo GSA, CSD/CSA Manager
Tracking and Monitoring	STRA_ED 03	Track damages and costs related to drought for potential presidential major disaster declaration.	Yolo OES, State
Water Conservation	STRA_ED 04	Consider banning all non-essential water uses.	Board of Supervisors
Domestic Well Mitigation	STRA_ED 05	Make available a guidance document for private well users who may require assistance with well repairs or enhancement and make this available via the Internet.	Environmental Health Division
Emergency Water Supplies	STRA_ED 06	Evaluate needs for improvement for distribution and transmission of potable water	Yolo OES, State
	STRA_ED 07	Packaged water: Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	Yolo OES in coordination with CAO, CSA/CSD, General Services
	STRA_ED 08	Consider establishing mutual aid agreements with neighboring OES and State agencies. This includes water resource sharing, infrastructure support, personnel, communication, financial and logistical support, sharing of all resources including water hauling and delivery.	Yolo OES

Notes:
CAO = County Administrator's Office
CSA = County Services Area
CSD = Community Services District
GSA = Groundwater Sustainability Agency
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services

4.4 Responsibility and Coordination

Careful pre-planning, including identifying responsible departments or programs, as summarized in Table 4-2 through Table 4-6, are necessary for effective implementation and timely response to emergency or short-term water supply needs. Building and maintaining relationships among agencies and departments as well as the development of potential contracts and mutual aid agreements can help in response during water shortage emergencies.

4.4.1 Resources Acquisition

The acquisition of resources to implement this County DRP is subject to local and state policies and regulations. In the event of an emergency, counties may declare a local emergency, which authorizes resource acquisition under existing Emergency Procurement ordinance. This ordinance states that when a local emergency is declared by the Board of Supervisors, the Purchasing Agent may contract with independent contractors to provide services necessary to support the County's emergency response and recovery efforts. In situations where purchasing staff are unavailable, authorized personnel may make emergency purchases for items urgently required to maintain operations or protect life or property. Such emergency declarations though are time-limited, and counties must revert to traditional procurement practices at the earliest practicable opportunity.

Depending on requirements of other local public agencies, such agreements may include a memorandum of understanding (MOU) or a mutual aid agreement. A mutual aid agreement is a pre-arranged understanding between two or more entities, often govern agencies or organizations, to provide resources and assistance to each other during emergencies and disasters. Mutual aid agreements outline the terms for sharing personnel, equipment, facilities, and other resources that serve to (1) enhance response capabilities when a single entity's resources are insufficient, or (2) reduce the cost to deliver support through pooling of resources among participants.

Examples of mutual aid agreements related to drought and water shortage response could include:

- Coordination of potable and non-potable water distribution: Yolo County may procure an active list of available potable water supply sources in the event of a Stage 4 declaration. Potable water supply options may include the City of Woodland's municipal supply, packaged water deliveries, or the deployment of temporary water filling stations across the County.
- Infrastructure Support: Temporary water storage, pumping, or distribution asset transfer
- Personnel Support: Deployment of technical experts, engineers, and emergency management staff
- Public Communication and Education: Joint efforts in water conservation messaging and public outreach
- Financial and Logistical Support: Sharing grant opportunities and technical assistance for drought mitigation projects

4.4.2 Task Force Response

The Task Force will be informed and consulted at each water shortage stage. Table 4-7 lists the corresponding activities to be undertaken by the Task Force and the suggested frequency of Task Force meetings during each water shortage stage.

Table 4-7. Recommended Task Force Actions and Meeting Frequency by Drought Stage

Stage	Activities	Meeting Frequency/Schedule
Stage 1	Collectively review and update the County DRP and consider additional short-term response measures and long-term strategies.	Meet once a year
Stage 2	Review short-term response measures, prioritize and implement actions as needed.	Meet following a declaration of Stage 2 and as needed to follow up on emerging needs
Stage 3	Review short-term response measures, prioritize and implement actions based on emerging needs.	Meet as needed
Stage 4	Yolo OES will ensure appropriate staff, including Task Force members, are mobilized as necessary and coordinate with State and federal emergency response entities. Yolo OES will delegate action to ensure appropriate response measures are being taken.	Meet as needed
Stage 5	Yolo OES will ensure appropriate staff, including Task Force members, are mobilized as necessary and coordinate with State and federal emergency response entities. Yolo OES will delegate action to ensure appropriate response measures are being taken.	Report to Emergency Operations Center (In-Person or Virtual) per Yolo County EOP- Drought Support Annex.

Notes:
DRP = Drought Resilience Plan
EOP = Emergency Operations Plan
HMP = Hazard Mitigation Plan
Yolo OES = Yolo County Office of Emergency Services

5.0 Long-Term Mitigation Strategies and Actions

Yolo County, in consultation and coordination with the Task Force, developed a list of potential long-term mitigation strategies and actions (LTMS/A). LTMS/As are actions taken to reduce drought and water shortage impacts, improve water supply resilience, and reduce reliance on the STRAs described in Chapter 4.

5.1 Legislative Requirements

SB 552 requires each county to develop a drought and water shortage plan that considers opportunities for implementing LTMS/As for domestic well owners and SSWSs, per CWC Section 10609.70:

> *(b) A county shall develop a plan that includes potential drought and water shortage risk and proposed* ***interim and long-term solutions for state small water systems and domestic wells within the county's jurisdiction.*** *The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. A county shall consult with its drought task force or alternative coordinating process as established by this section in developing its plan. A county shall consider, at a minimum, all of the following in its plan:*
>
> *(1) Consolidations for existing water systems and domestic wells.*
>
> *(2) Domestic well drinking water mitigation programs.*
>
> *(3) Provision of emergency and interim drinking water solutions.*
>
> *(4) An analysis of the steps necessary to implement the plan.*
>
> *(5) An analysis of local, state, and federal funding sources available to implement the plan.*

5.2 Methodology

The STRAs and LTMS/As identified were developed in parallel. The County and its Task Force considered a variety of LTMS/As that could potentially assist vulnerable domestic wells and SSWSs. Examples of strategies considered for the County include addressing data gaps, drinking water well mitigation programs, regional water infrastructure investment, and system consolidation.

5.3 Long-Term Mitigation Strategies and Actions Categories

LTMS/A were considered under six broad categories for better organization, communication, and comparison. These six categories align with the legislation set by the State and are described below.

Data Gaps. This category aims to further develop and use accurate, complete, and accessible data related to domestic wells and SSWSs conditions to support effective drought response and resource management and improve water resource sustainability.

County Policies and Planning. This category includes the development, adoption, and enforcement of local regulations and ordinances that promote sustainable water use, safeguard resources, and support coordinated drought responses.

Communication and Outreach. This category seeks to create platforms and procedures to improve communication and information sharing with communities that rely on domestic wells and SSWSs.

Drinking Water Well Mitigation. This category includes technical, financial, and informational support actions to mitigate the impacts of water scarcity and enhance the resilience of domestic and SSWSs.

Regional Water Infrastructure Investment. This category encompasses actions focused on improving infrastructure, facilitating system consolidation when applicable, and promoting efficient water use to strengthen overall water management. Strategies may include identification of planning opportunities to develop emergency interties between the CSDs/CSAs and nearby cities when applicable.

System Consolidation. This category focuses on integrating smaller, independent water systems to improve reliability, efficiency, and resource management. The efforts laid out in the LTMS/A aim to strengthen water system reliance and foster collaboration for long-term sustainability.

5.4 Proposed Long-Term Mitigation Strategies and Actions for Yolo County

The County, in consultation with the Task Force, developed the list of LTMS/As, provided in Tables 5-1 through 5-6. The LTMS/As were identified with a specific aim to address the vulnerabilities that were identified through the risk assessment (refer to Chapter 3). The LTMS/A tables below include descriptions for the LTMS/As under each of the six categories, the lead and partner agencies who may be responsible for implementation and coordination, and implementation status.

Table 5-1. Data Gaps (DG) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_DG 01	High-Risk Groundwater Contamination Regional Identification	In established subbasins, coordinate and collaborate with DWR and GSAs through Valley Water Collaborative to identify areas with the highest risk for groundwater contamination and exceedance of minimum thresholds (CV Salts Program).	CAO	None (Valley Water Collaborative provides similar independent action in Yolo County)	In Progress
LTMS_DG 02	Create Local Small System Classification for Communities With 2–4 Connections	Evaluate well permits and well completion reports for small water system classification.	Community Services	DWR	Not Started
LTMS_DG 03	Domestic Well Reporting (dry wells)	Coordinate with DWR and other entities to improve the accuracy of dry well reporting. Includes evaluation of county well completion reports for additional wells installed for the purpose of supplementing low-performing wells (if any).	CAO, Community Services	YSGA	Not Started
LTMS_DG 04	Domestic Well Monitoring (abandoned wells)	Conduct comprehensive field investigation to identify abandoned wells. Ensure those abandoned wells are properly destroyed under the environmental health permit.	CAO, Community Services	YSGA	Not Started
LTMS_DG 05	Domestic Well Monitoring (wells in use)	Identify all domestic wells in use in the County.	CAO, Community Services	YSGA	Not Started

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_DG 06	Assistance with Domestic Well Monitoring	Assist domestic well operators who collect depth-to-water information of domestic wells. This could be done by connecting them to GSA resources, providing guidance on how to monitor wells, and/or direct assist to well operators. Efforts would be implemented in coordination with the overlying GSA.	CAO	YSGA	Not Started
LTMS_DG 07	Assistance with Domestic Well Monitoring	Integrate countywide GIS viewers or alike with an environmental health database to provide a real-time picture of the domestic well data, including well location, well depth and most recent water quality results.	CAO, Yolo County Innovation and Technology Services, Community Services	None	Not Started

Notes:
CAO = County Administrator's Office
DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
YSGA = Yolo Subbasin Groundwater Agency

Table 5-2. County Policies and Planning (CPP) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_CPP 01	Well Permitting Considering Impacts to Other Groundwater Users	Update and approve a well permitting urgency ordinance to incorporate aspects of the County temporary well permitting procedures adopted in response to State emergency orders (this includes setbacks to nearby well based on the proposed well's pumping capacity and written verification from the appropriate GSA that the proposed well is consistent with the adopted GSP).	Environmental Health	YSGA	In Progress

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_CPP 02	County Planning Integration	Update County Hazard Mitigation Plan and annexes to confirm interagency roles, responsibilities, and actions associated with implementation of the County DRP.	Yolo OES	None	In Progress
LTMS_CPP 03	Well Permitting Considering Future Growth	Update policy such that the Planning Department evaluates specific plans, vacant land in unincorporated regions zoned for residential use, other long-term development initiatives for groundwater basin/subbasin water demands at full build-out.	Community Services	YSGA, DWR	Not Started
LTMS_CPP 04	Capital Improvement Program Integration	Coordinate with public water systems and/or GSAs to evaluate if capital improvement programs have opportunities to provide improved water supply resilience for domestic wells and SSWSs through low-cost enhancements of projects identified in their CIPs; coordinate with State on funding for these projects.	CAO, Community Services	CSD	Not Started
LTMS_CPP 05	County Planning Integration	Coordinate with homeowners associations on aligning their rules and ordinances with water conservation strategies and ordinances.	CAO	None	Not Started
LTMS_CPP 06	County Planning Integration	Identify funding source to fund staff/resources dedicated towards the implementation of the Drought Resiliency Plan including public outreach and education on water efficiency, and coordination with the YSGA.	CAO	None	Not Started

Notes:
CIP = Capital Improvement Plan
CSD = Community Services District
DRP = Yolo County Drought Resilience Plan
DWR = California Department of Water Resources
GSA = Groundwater Sustainability Agency
GSP = Groundwater Sustainability Plan
HMP = Hazard Mitigation Plan
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 5-3. Communication and Outreach (CO) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_CO 01	Supply Interruption Notification: Proactive Power Outage for Wildfire Mitigation	Use Alert Yolo to notify groundwater users of power interruptions that impact operation of domestic wells during Stage 4 and Stage 5.	OES	NOAA, PG&E	In Progress
LTMS_CO 02	Create Single Online Location for Relevant Resources to Assist Domestic Wells and SSWSs	Maintain the web page with County information, permits, and forms for well permits.	Community Services, CAO	None	In Progress
LTMS_CO 03	Domestic Wells and SSWSs Water Quality Outreach	Prepare and implement a communication and engagement action that provides users with water quality information and data of their supply consistent with the California Safe Drinking Water Act (AB 664, Alex Lee). County to raise awareness among domestic well owners/operators of water quality levels at a site-specific or regional level through communication and engagement of County-maintained data. Includes providing data maintained by SWRCB pursuant to HSC 116772 (added SB 200) (b)(1) and (b)(2).	CAO, Community Services	SWRCB	In Progress

Notes:
CAO = County Administrator's Office
HSC = California Health and Safety Code
NOAA = National Oceanic and Atmospheric Administration
PG&E = Pacific Gas & Electric
SSWS = State Small Water System
SWRCB = State Water Resources Control Board
Yolo OES = Yolo County Office of Emergency Services

Table 5-4. Drinking Water Well Mitigation (DWWM) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_DWWM 01	Grant application assistance to domestic wells and SSWSs	Apply for grants to provide assistance to domestic well and SSWS operators for available federal, State, local and other funding sources that assist in replacement or remediation of existing wells.	CAO	None	In Progress
LTMS_DWWM 02	Non-Drought Hazard Assessment	Assess the potential risk for non-drought hazards (e.g. wildfires, earthquakes, landslides, etc.) that could interrupt domestic well or SSWS supplies and provide findings to appropriate planning efforts.	Yolo OES	FEMA, CalOES, NOAA	In Progress
LTMS_DWWM 03	SSWSs vulnerabilities assessment	Develop a revised risk assessment to address actions for: A) Dry well due to drought B) Aged out well casings, pumping system, and other infrastructural components that small water systems are not aware of, are not prepared for, or do not have financial resources to address.	CAO	DWR	In Progress
LTMS_DWWM 04	Water Meter Installation for CSAs	Coordinate and collaborate with State and local partners for the installation of water meters in areas subject to SGMA regulations (Note that the YSGA has not decided on whether meter installation will be required for SGMA implementation). County to coordinate on implementing use-based rates for groundwater, where applicable.	CAO, CSA	YSGA, DWR	Not Started
LTMS_DWWM 05	Storage Water Tank Installation Program	Coordinate and collaborate with DWR and other entities to assist domestic well and SSWSs operators with sizing and installing water storage tanks at existing wells.	CAO	DWR	Not Started

Notes:
CAO = County Administrator's Office
CSA = County Services Area
DWR = California Department of Water Resources
FEMA = Federal Emergency Management Agency
SGMA = Sustainable Groundwater Management Act
SSWS = State Small Water System
Yolo OES = Yolo County Office of Emergency Services
YSGA = Yolo Subbasin Groundwater Agency

Table 5-5. Regional Water Infrastructure Investment (RWII) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_RWII 01	Flood management project identification	Identify how flood management projects could contribute to water supply resilience for domestic wells and SSWSs.	Community Services	Westside Sacramento IRWM, YSGA, DWR, CVFPB	Not Started
LTMS_RWII 02 (see Table 5-7 for detailed components of this strategy under Chapter 5, Section 5.4.1)	County Planning Integration	Consider creating a community water system for communities that lack such important infrastructure, such as Dunnigan.	CAO, Community Services	None	Not Started
LTMS_RWII 03	Capital Improvement Program Integration	Encourage the City of West Sacramento to extend its water and sewer services to some neighborhoods within the city. Those neighborhoods have small lots and create a challenge to having onsite septic and well. As a result, this effort aims to improve both water quality and quantity for communities that previously relied on domestic wells or SSWSs.	CAO, Community Services	City of West Sacramento	Not Started
LTMS_RWII 04	Aging Infrastructure Assessment	Help domestic well and SSWSs identify potential grant sources.	CAO	Westside Sacramento IRWM	Not Started

Notes:
CAO = County Administrator's Office
CVFPB = Central Valley Flood Protection Board
DWR = California Department of Water Resources
IRWM = Integrated Regional Water Management
SSWS = State Small Water System
YSGA = Yolo Subbasin Groundwater Agency

Table 5-6. System Consolidation (SC) Long-Term Mitigation Strategies and Actions

LTMS ID	Action or Strategy	Description	Lead Agency	Partner Agency	Status
LTMS_SC 01	Dunnigan Water/Wastewater Consolidation Feasibility Study	Evaluating options to connect unserved households—currently reliant on domestic wells and septic systems—to the Cal Am-Dunnigan water and wastewater system. The study assesses various scenarios for integration, examining technical feasibility, costs, and long-term community benefits to improve drought resilience and infrastructure reliability.	Dunnigan Water District	Community Services	In Progress
LTMS_SC 02	Consolidation with Public Water Systems	Assist Yolo LAFCo in coordination and collaboration with DWR and other entities, to identify and implement annexation of willing domestic well and SSWSs that are within the existing service area or sphere of influence of large water systems.	CAO, Community Services	Yolo LAFCo	Not Started
LTMS_SC 03	System Consolidation Planning	Obtain funding to develop and implement a countywide system consolidation plan that better establishes potential opportunities for consolidation including the costs required and resources available. The County, in coordination with interested SSWSs, may identify managerial and/or physical consolidation opportunities. Also, the County, in coordination with interested domestic wells, may identify consolidation opportunities and formation of new SSWS or a small community system.	CAO	SWRCB	Not Started

Notes:
Cal Am = California-American
CAO = County Administrator's Office
DWR = California Department of Water Resources
LAFCo = Local Agency Formation Commission
SSWS = State Small Water Systems

5.4.1 Drinking Water Well Mitigation Program

Water Code Section 10609.70(b)(2) requires counties to consider the development of a Drinking Water Well Mitigation (DWWM) Program focused on domestic wells and SSWS communities as a component of its County DRP. The goal of the County's DWWM Program is to provide technical and financial solutions that prevent, mitigate, or respond to water shortage events in domestic wells and SSWS communities. While this DWWM Program applies countywide, the responsibilities and authorities for preparation and delivery of an identified action may be held by other parties with direct support of the County.

A DWWM Program typically includes four core elements: 1) identification of wells that may be impacted through drought and water shortage events; 2) development of options for mitigation, including, but not limited to, well rehabilitation and other potential mitigation strategies; 3) implementing community-supported solutions in collaboration with other local and State agencies; and 4) continued coordination on well monitoring for maintenance, assurance and adaptation for changes in conditions should they occur. Each of these core elements are components of well mitigation programs commonly included in GSPs by GSAs.

As described in Chapter 1, the County is home to three alluvial groundwater basins that are subject to SGMA (Sacramento Valley – Colusa, Sacramento Valley – Solano, and Sacramento Valley – Yolo (Yolo Subbasin)), however the majority of domestic wells and all four SSWSs are located in Yolo Subbasin. Consistent with CWC §10733.2(a)(1), DWR completes an evaluation of submitted GSPs and coordination agreements – where applicable – submitted by YSGA. Results of this evaluation are provided in a GSP Determination Letter that summarizes the department's findings of the submitted plan's adequacy to SGMA and any corrective actions, where identified. Below is a paraphrased summary of GSP Determination Letter findings and recommendations associated with well mitigation needs by DWR for GSAs within the County's jurisdiction.

Yolo Subbasin: The Yolo Subbasin GSP identifies a domestic well impact mitigation program as part of its Projects and Management Actions. Based on DWR's well impact analysis using the state's Online System of Well Completion Reports, approximately 285 out of 4,550 domestic wells (6 percent) could be at risk of going dry if groundwater levels were to drop below established minimum thresholds. To address this risk, the GSAs proposed a domestic well impact mitigation program that is specific to the YSGA's responsibilities under SGMA and expects completion around 2028. While the GSP does not yet provide detailed program elements, DWR staff recognized this management action as a positive step to assist well owners who may be impacted by groundwater level declines. DWR recommended that the GSAs provide updates on the program's progress during GSP implementation and utilize DWR's Drinking Water Guidance as appropriate to ensure effective protection of drinking water supplies.

Consistent with SB552, the County DWWM Program will coordinate and collaborate with GSAs for the conduct and implementation of drywell impact mitigation, for areas covered by this plan that are not identified and covered by the GSAs within the County. This collaboration may additionally include engagement with GSAs to evaluate potential implementation of the 16 LTMSAs identified as part of this County DRP.

The YSGA is working to create a domestic well impact mitigation program specific to the YSGA's scope, to mitigate any potential impacts to domestic well users. This program will identify potential funding

sources for both temporary and permanent domestic water solutions in cases where domestic well users are impacted due to changing groundwater conditions as a result of groundwater management actions. The minimum thresholds and measurable objectives established in the YSGA document are generally protective of domestic well users in the Yolo Subbasin and does not include all areas covered by the County DRP. The County will coordinate with the YSGA in further development of a County implemented DWWM Program.

5.4.2 System Consolidation

SB 552 requires counties, as part of the County DRP development process, to consider consolidation opportunities with the potential to improve water supply reliability for domestic wells and SSWSs. These opportunities may involve the administrative or physical consolidation of domestic wells and SSWSs into existing public water systems within their current service area boundaries. Related to this requirement, two evaluation efforts have been identified: The Wild Wings County Service Area and the consolidation of unserved households to the Cal Am-Dunnigan system.

5.4.2.1 The Wild Wings County Service Area (CSA) Water Regionalization Feasibility Study (2023)

The County performed an evaluation with a focus on the Wild Wings County Service Area (Wild Wings CSA) to help identify potential consolidation opportunities in 2023:

The *Wild Wings County Service Area (CSA) Water Regionalization Feasibility Study* (Oct. 2023) evaluates long-term solutions for addressing water quality, supply, and infrastructure challenges in the Wild Wings CSA, a Yolo County-operated system serving about 1,115 residents. The system faces reliability issues due to reliance on a single well, high arsenic concentrations in its standby well, insufficient storage, and aging infrastructure. The study reviews potential consolidation with nearby water systems—including the City of Woodland, Esparto CSD, Madison CSD, and Knights Landing CSD—alongside a no-action alternative, to determine the most feasible approach for ensuring safe and sustainable water service.

Methodology

The study combined technical, regulatory, and economic evaluations. It analyzed Wild Wings CSA's current facilities, water supply, and compliance record, along with deficiencies in storage capacity, water quality, and redundancy. Nearby public water systems were assessed for their source capacity, storage, governance, and socioeconomic eligibility for funding support. The alternatives considered included: (1) no consolidation, and (2) four consolidation options with varying levels of physical or managerial integration (into Woodland, Esparto, or multi-district arrangements). Cost estimates, environmental permitting needs, and construction feasibility (including pipeline alignments and hydraulic modeling) were also developed to compare scenarios.

Public Water Systems with Potential Consolidation Opportunities

Figure 5-1 presents the nearby water systems and their respective service areas that were evaluated. Based on the SWRCB's System Area Boundary Layer Look-up Tool and a review of utility maps, the nearby water systems are summarized in Table 5-8 (with consolidation potential) and Table 5-9, including type of water system (community water system or nontransient-noncommunity water system), type of governance, service connections, population, approximate distance from Wild Wings CSA, and existing permitted sources.

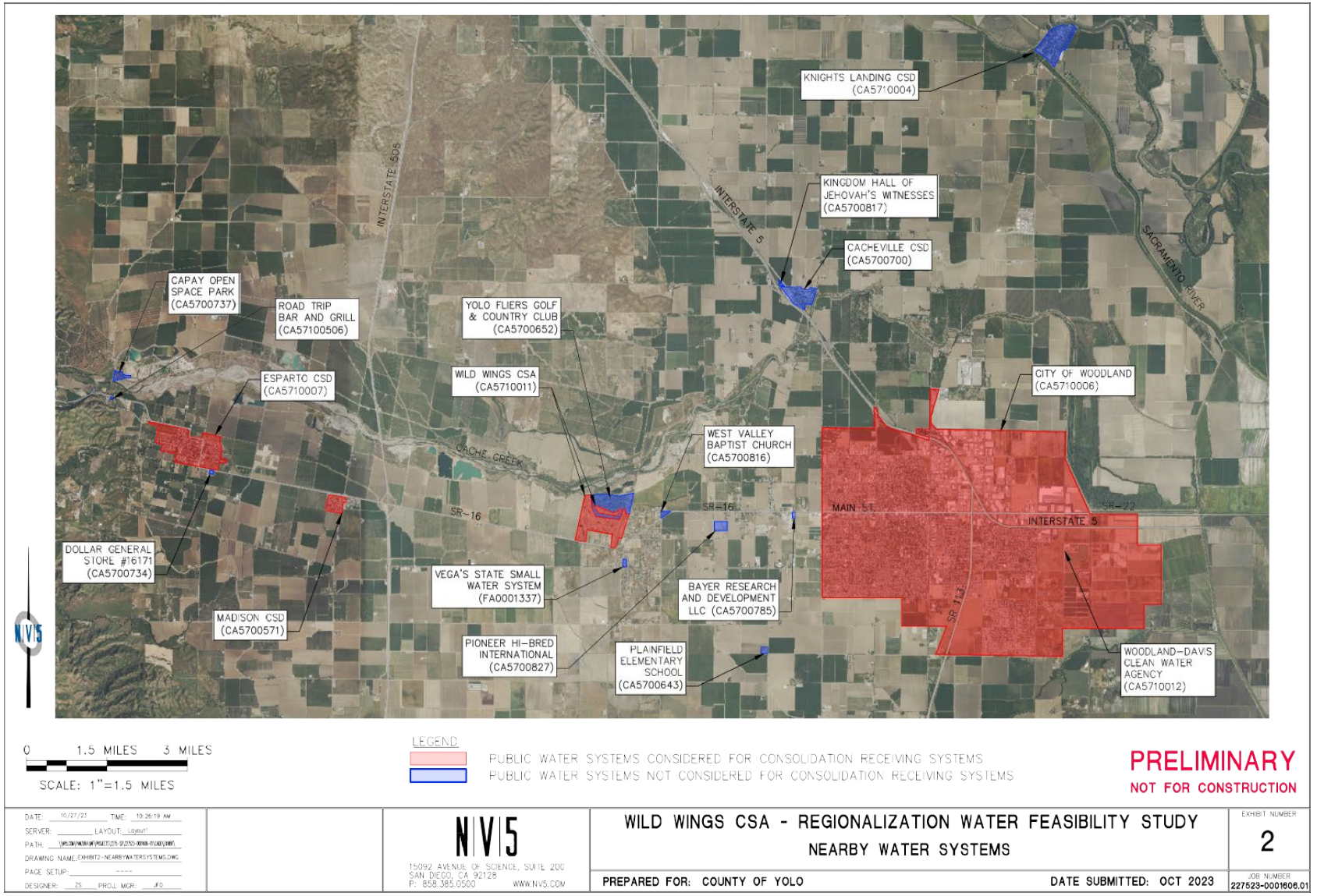


Figure 5-1. Nearby Water Systems

Table 5-7. Nearby Public Water Systems with Consolidation or Interconnection Potential

System Name	System No.	System Type	Governance	Regulator	Service Connections	Active Wells	Approx. Distance/ Direction (miles)
Wild Wings CSA	CA5710011	CWS	CSA	DDW	353	11	--
Yolo Fliers Club	CA5700652	NTNC	Business	LPA	3	1	0.2 (N)
City of Woodland	CA5710006	CWS	City	DDW	16,977	See Note 2	3.9 (E)
Madison CSD	CA5700571	CWS	CSD	LPA	149	13	4.5 (W)
Esparto CSD	CA5710007	CWS	CSD	DDW	1,007	4	7.0 (W)
Knights Landing CSD	CA5710004	CWS	CSD	DDW	300	3	11.6 (NE)
Cacheville CSD	CA5700700	CWS	CSD	LPA	139	2	5.2 (NE)

Notes:

1. Wild Wings CSA has a construction funding agreement with DWR to construct a new potable well, Wood Duck Well, and an arsenic treatment plant that would treat Pintail Well, Canvas Back Well, and Wood Duck Well.
2. The City of Woodland has 7 production wells, 2 standby wells, and primarily supplies customer with treated surface water with an intertie with the Woodland-Davis Clean Water Agency.
3. Madison CSD has one active well, one standby well, and two inactive wells.

Table 5-8. Other Nearby Public Water Systems

System Name	System No.	System Type	Governance	Regulator	Service Connections	Active Wells	Approx. Distance (miles)
Knights Landing CSD	CA5710004	CWS	CSD	DDW	300	3	11.6 (NE)
Plainfield Elementary School	CA5700643	NTNC	Public School	LPA	17	1	3.4 (SE)
Vega's Water System	CA5700722	SSWS	Residences	LPA	6	1	0.6 (SE)
West Valley Baptist Church[1]	CA5700816	NTNC	Church and Private School	LPA	3	1	1.0 (E)
Pioneer Hi-Bred International	CA5700827	NTNC	Business	LPA	9	1	3.3 (E)
Bayer Research/ Development LLC[1]	CA5700785	NTNC	Business	LPA	10	2	4.4 (E)
Pioneer Hi-Bred International	CA5700827	NTNC	Business	LPA	9	1	3.3 (E)
Kingdom Hall of Jehovah's Witnesses	CA5700817	TNC	Church	LPA	1	1	5.2 (NE)
Dollar General Store #16171	CA5700734	TNC	Business	LPA	1	1	7.0 (W)
Capay Open Space Park	CA5700737	TNC	Park	LPA	2	1	9.1 (W)
Road Trip Bar and Grill	CA5700506	TNC	Business	LPA	2	1	9.1 (W)

Notes:

1. These water systems are located along SR-16, and a stub-outs for these systems could be installed along a potential alignment consolidating Wild Wings CSA into the City.

Results

The study concludes that consolidation with the City of Woodland is the most feasible option, as Woodland has the capacity, infrastructure, and regulatory readiness to absorb Wild Wings CSA and provide safe, reliable water. Other alternatives were less viable: Madison CSD and Knights Landing CSD lacked capacity and managerial strength, while Esparto CSD would require significant expansion. The no-action alternative would leave Wild Wings CSA out of compliance until costly new facilities could be built. The report recommends moving forward with Woodland consolidation, pursuing environmental review, utility mapping, hydraulic modeling, and securing funding from state and federal sources to implement the project.

5.4.2.2 Dunnigan Water/Wastewater Consolidation Feasibility Study

A consolidation opportunity is being explored in Dunnigan through the Dunnigan Water/Wastewater Consolidation Feasibility Study, identified as LTMS_SC 01 in Table 5-6. Dunnigan is a rural community with approximately 1,390 residents, of whom around 800 residents in 350 dwelling units are not currently served by the existing Cal Am Dunnigan water and wastewater infrastructure. These households rely on domestic wells and septic systems, making them particularly vulnerable to water shortages and contamination risks, especially during prolonged drought conditions.

The feasibility study assesses the potential for connecting these unserved households to the Cal Am-Dunnigan system, which currently serves approximately 600 residents, 153 dwelling units, and 13 commercial units through groundwater supplied by two active wells. Expanding the Cal Am service area to include the remaining unserved population could significantly improve service reliability, address critical infrastructure deficiencies, and enhance the community's resilience to future drought conditions.

The study assesses multiple consolidation scenarios, including full integration of both drinking water and wastewater services, extending only drinking water services, or wastewater consolidation without water service expansion. Each scenario is analyzed based on technical feasibility, cost implications, and long-term benefits for the community. Financial projections are a key component of the study, evaluating capital improvement costs, operational expenses, and user rates to ensure a sustainable and equitable service model. By transitioning to a centralized system, Dunnigan could benefit from enhanced water treatment, improved wastewater management, and better resource planning, reducing the risks associated with individual well failures during droughts. This effort represents a proactive approach to securing long-term water reliability for rural communities, serving as a potential model for other areas facing similar challenges.

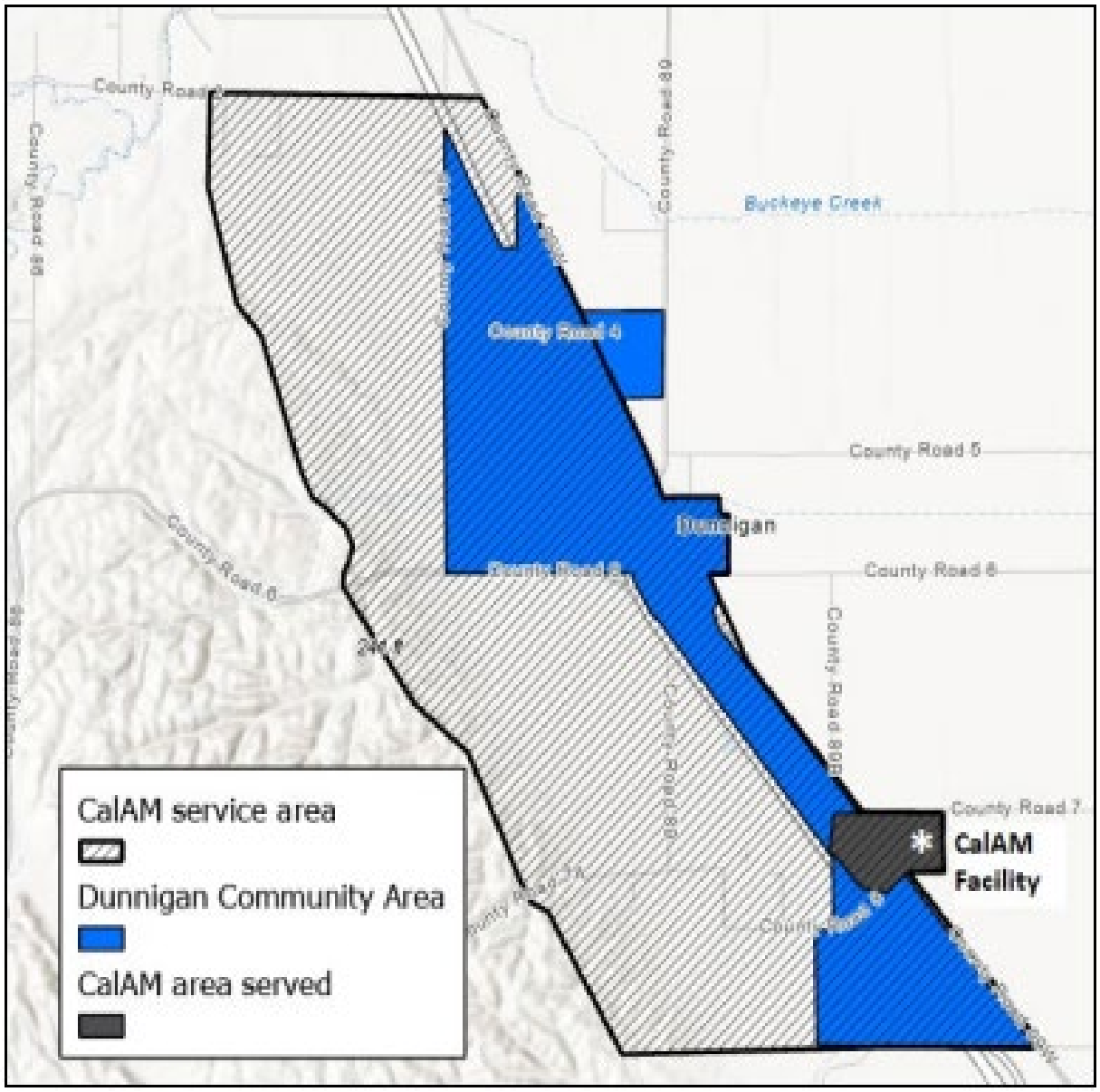


Figure 5-2. California-American Water Service Area

6.0 Implementation Considerations

The implementation of the County DRP is dependent on the coordination with external regional agencies. This chapter outlines considerations for successfully carrying out the actions and strategies identified in the County DRP. This chapter describes implementation steps to assist the County and includes:

- A recap of water supply monitoring, communications, and inter-agency collaboration activities at the five drought stages that were described in Chapter 4
- A summary of STRA implementation responsibility, status, and resource needs
- Opportunities to align the County DRP with other County policy and County and regional planning documents
- A DRP updates process
- A summary of local, state, and federal funding opportunities

6.1 Legislative Requirements

SB 552 requires each county to include an analysis of steps and funding needs for implementation of actions and strategies to support domestic wells and SSWSs, per CWC Section 10609.70:

> *(b) A county shall develop a plan that includes potential drought and water shortage risk and proposed interim and long-term solutions for state small water systems and domestic wells within the county's jurisdiction. The plan may be a stand-alone document or may be included as an element in an existing county plan, such as a local hazard mitigation plan, emergency operations plan, climate action plan, or general plan. A county shall consult with its drought task force or alternative coordinating process as established by this section in developing its plan. A county shall consider, at a minimum, all of the following in its plan:*
>
> *(1) Consolidations for existing water systems and domestic wells.*
>
> *(2) Domestic well drinking water mitigation programs.*
>
> *(3) Provision of emergency and interim drinking water solutions.*
>
> *(4) An analysis of the steps necessary to implement the plan.*
>
> *(5) An analysis of local, state, and federal funding sources available to implement the plan.*

6.2 Implementation Challenges and Barriers

Successful implementation of the actions and strategies outlined in the DRP will require careful planning and the ability to overcome key challenges identified by Task Force members during the DRP development process.

Community Buy-In and Public Education: Community acceptance is a critical factor, particularly in regions where skepticism toward government-led initiatives is high. Without strong public support,

efforts to improve water infrastructure or implement drought mitigation strategies may encounter resistance. To address this challenge, public education campaigns focused on drought preparedness and the long-term benefits of proposed actions are essential. These campaigns can help build trust, increase awareness, and foster community engagement, ultimately supporting the successful implementation of the DRP.

Rapid Response to Dry Wells: A recurring issue in short-term response action implementation during past droughts has been the urgent need to respond to wells running dry. Although grant programs may be available to support emergency response, the application and funding processes often take time, leaving affected households without immediate access to water. A mechanism to secure rapid financial assistance when dry wells are reported is needed.

Regulatory Barriers to Water System Consolidation: One of the most significant barriers to consolidation is the lack of incentives for larger public water systems to absorb domestic wells or SSWSs. This challenge is further aggravated by existing regulations and local ordinances that often restrict system expansion. For example, in Woodland, past voter decisions have limited the city's ability to extend its water service area. These constraints may merit reconsideration through broader discussions with municipal leaders to address evolving community needs and to explore potential policy changes that could facilitate future consolidation efforts.

Infrastructure and Consolidation Costs: Cost represents another major hurdle to consolidation. Extending water infrastructure to connect small or remote systems can be prohibitively expensive, often outweighing any potential financial return for the larger utility. Addressing this challenge will require the identification of sustainable funding sources and the development of targeted incentives to make consolidation a more viable and attractive option.

6.3 Implementation Roadmap

To advance the implementation of the DRP and address identified challenges, several activities may be considered. These activities aim to strengthen coordination, enhance readiness, and improve the likelihood of successful implementation of proposed actions and strategies.

Interagency Coordination: Improving coordination between County departments, municipal utilities, GSAs, and other regional and State partners can help streamline efforts and reduce duplication. Establishing clear roles, regular communication channels, and potential frameworks such as cooperative agreements may support a more unified approach.

Public Engagement and Communications: Community outreach can play a critical role in building trust and securing support for proposed actions. Planning efforts may include the development of multilingual materials, stakeholder meetings, and targeted education campaigns tailored to the needs of vulnerable populations.

Exploration of Local Funding Options: Identifying potential local funding mechanisms, such as emergency reserves or rate-based revenue, may help address immediate needs like rapid response to dry wells or interim water solutions. Local assessments or fees could also be evaluated for long-term system improvements.

Technical Assistance and Capacity Support: Partnering with technical assistance providers, nonprofit organizations, and academic institutions can help address capacity limitations among SSWSs and

domestic well owners. These partnerships may offer support with funding applications, feasibility analysis, and compliance with regulatory requirements.

6.3.1 Oversight, Responsibilities, Status, and Resource Needs

Individual STRAs identified in Chapter 4 of this County DRP have been assigned to County departments and agencies pursuant to each agency's regulatory and policy authorities. CAO shall provide administrative oversight/collaboration for all implementation activities with the support of the Task Force, as outlined in Chapter 2.

Tables 6-1 through 6-6 detail the type, status, and lead of County DRP STRAs. Activities described in these tables are subject to modification based on climate conditions, engagement with the Task Force, and other relevant factors. The "Status" of the mitigation and strategies are classified as: Available, In progress (for those currently being implemented), and Proposed (for those that require additional resources).

The "Resource Required" columns specify if the STRA would require additional staff time and funding beyond what is currently available to the County. Funding could include grants, financing, Federal funding, and future State funding to support DRP implementation.

Table 6-1. Communications and Public Engagement STRAs

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_PP 01	Review communications protocol and coordinate on any public announcements (specific to domestic well owners and SSWS).	1	County PIO	In Progress	NA
STRA_PP 02	Use established YSGA tools such as hydrologic models, Standardized Precipitation Index, or the Dry Well Susceptibility Tool (if applicable) and reports to assess drought conditions.	1	Environmental Health, CSD Manager	In Progress	NA
STRA_PP 03	Communicate with municipalities and the State. Provide up-to-date contact information to Yolo County HHSA to ensure the communication of vital information and assess needed technical and financial assistance in an emergency.	1	Yolo OES	In Progress	NA
STRA_PP 04	Maintain regular communications flow with local emergency services (Yolo OES).	1	Natural Resources Division, Environmental Health	In Progress	None
STRA_PP 05	Promote the County Well Owner's Guide, which includes a section about keeping valuable records of the domestic wells and SSWSs. Data such as pump test results and water quality	1	Environmental Health	In Progress	None

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
	measurements can provide an early indicator if a well is at risk of drying up. The Well Owner's Guide will be available on the County's website.				
STRA_ID 01	Communicate with municipalities, the public, and key town officials about local conditions, concerns, and any changes to the status of available water supply.	2	Yolo OES	In Progress	NA
STRA_ID 02	Review communications protocol and coordinate on any public announcements (specific to domestic well owners and SSWSs).	2	County PIO	In Progress	Funding towards PIO Staffing.
STRA_ID 03	Provide information to weather forecasters and other media to encourage public interest stories and facilitate dissemination of drought information to the public.	2	County PIO	In Progress	Funding towards PIO Staffing.
STRA_ID 04	Increase awareness and provide local and State links to drought information.	2	County PIO	In Progress	Funding towards PIO Staffing.
STRA_ID 05	Review any local sources of data on wells and communicate with the appropriate State agencies.	2	Environmental Health and YSGA in coordination with Natural Resources Division	In Progress	None
STRA_MD 01	Declare the specific Stage Drought and notify Drought Task Force representatives.	3-5	Yolo OES	In Progress	NA
STRA_MD 02	Disseminate generic press releases and notification letters to domestic well owners and SSWSs communities.	3	County PIO, Health Officer	In Progress	Funding towards PIO Staffing.
STRA_MD 03	Distribute press release to announce drought status sources of information and how to obtain information on water supply status and conservation measures.	3	County PIO	In Progress	Funding towards PIO Staffing.
STRA_SD 02	Increase the degree of public education and information; increase the tone of seriousness in public service announcements, press releases, etc.	4	County PIO	In Progress	Funding towards PIO Staffing.
STRA_ED 02	Consider preparing, based on available information and professional judgement, recommendations for the	5	Board of Supervisors, Yolo OES, Health	Not started	NA

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
	governor on additional action steps to take in a worse-case scenario if conditions do not improve and water supplies become critical.		Officer, Environmental Health, Natural Resources, Yolo GSA, CSD/CSA Manager		

Table 6-2. Coordination STRAs

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_PP 06	Delegate duties and responsibilities as necessary to assure information flow among agencies.	1	Yolo OES	Available	NA
STRA_PP 07	Plan what staff and/or funding could be made available, if necessary, to support increased monitoring activities.	1	Yolo OES	In Progress	NA
STRA_ID 06	When potable water is at risk of shortage, coordinate with local health directors to promote water conservation, monitor local situations, and report problems.	2	HHSA, CSD/CSA Manager	In Progress	NA
STRA_MD 04	Initiate contact with federal agencies (FEMA/EPA/USGS/USDA/USBR) to identify federal assistance capabilities.	3	Yolo OES	Available	NA
STRA_MD 05	Evaluate potential funding needs for actions required under severe or extreme drought conditions to ensure the availability of adequate funding through budgets or emergency measures.	3	CSA Manager, CAO	In Progress	Additional Funding Sources
STRA_SD 03	Coordinate with 211 to respond to public inquiries.	4	Yolo OES	Available	Additional funding for expanded 211 resources.
STRA_SD 04	Coordinate messaging with local, regional, and State partners.	4-5	County PIO	In Progress	NA
STRA_SD 05	Consider requesting a local emergency proclamation if direct state/federal assistance is required.	4-5	Yolo OES	Available	NA

Table 6-3. Tracking and Monitoring Short Term Response Actions

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_PP 08	Monitor water conditions and share data with the Task Force.	1-5	YSGA	In Progress	Additional staffing.
STRA_PP 09	Identify geographic extent of dry conditions and determine potentially impacted areas.	1	YSGA and DWR	In Progress	Additional staffing.
STRA_PP 10	Update monitoring networks and drought information websites to include relevant, up-to-date information.	1	County PIO	In Progress	Funding towards PIO Staffing.
STRA_PP 11	Provide guidance on DW monitoring for nitrate control in Yolo Management zone.	1	The Yolo County Irrigated Lands Program provides guidance for Yolo County.	In Progress	NA – Valley Water Collaborative Provides All Resources
STRA_ID 08	Use established YSGA tools and reports to assess drought conditions	2	CSD/CSA Managers, CAO	Proposed	Staffing resources
STRA_MD 06	Review the adequacy of water monitoring and invest in increased monitoring capabilities where needed.	3	CSA Manager	In Progress	Funding for additional meters and for additional staff to conduct monitoring and maintain meters.
STRA_MD 07	Track and report problems related to the drought for both deep and shallow wells.	3	Environmental Health	Not started	Staffing resources and equipment to collect data.
STRA_ED 03	Track damages and costs related to drought for potential presidential major disaster declaration.	5	Yolo OES, State	Available	NA

Table 6-4. Water Conservation Short Term Response Actions

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_PP 12	Promote water conservation best practices – Add County conservation resources information to public communication venues (website, bulletin board, public places, etc.).	1	CSD/CSA, CSA Manager, County PIO	In Progress	Funding towards PIO Staffing.

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_ID 09	Consider compiling information on water conservation tips to homeowners, e.g., "Water Efficiency Measures for Residents," and "Water Efficiency Measures for Landscaping," in preparation for distribution through the Internet, public service announcements, and other timely mailings, should the drought worsen.	2	County PIO	Proposed	Additional time for design and outreach. Funding towards PIO Staffing.
STRA_ID 10/ STRA_SD 07	Consider issuing voluntary conservation appeals to domestic well owners.	2-4	County PIO	Proposed	Funding towards PIO Staffing.
STRA_MD 08	Use the internet, public service announcements, and radio station broadcasts to promote and urge residents to conserve water	3	County PIO	In Progress	Funding towards PIO Staffing.
STRA_MD 9	Send letters to officials requesting they urge residents to curtail outdoor watering.	3	County PIO/CSD/CSA Managers, CAO	Proposed	Funding towards PIO Staffing.
STRA_ED 04	Consider banning all non-essential water uses.	5	Board of Supervisors		

Table 6-5. Domestic Well Mitigation Short Term Response Actions

STRA ID	Activities	Water Shortage Stage	Responsible Agency/ Department	Status	Resource Required
STRA_PP 13	Well-sounding program: The County and YSGA will encourage domestic well owners to measure the depth-to-water. YSGA has a sounder that residents can borrow to measure their own wells.	1	County, YSGA	In Progress	Additional staffing and program funding
STRA_ID 11	Make guidance documents available for private well users who may require assistance with well repairs or enhancement and make this available via the Internet.	2-5	Environmental Health	In Progress	None
STRA_SD 08	Well replacement permits: Consider assisting owners of residences with dry wells with obtaining permits to construct wells or evaluate the feasibility of connecting to a public water supply.	4-5	Environmental Health	In Progress	None

Table 6-6. Emergency Water Supplies Short Term Response Actions

STRA ID	Activities	Stage 1	Responsible Agency/ Department	Status	Resource Required
STRA_PP 14	Maintain database of approved water haulers, approved packaged water purveyors, licensed well drillers.	1	CAO	As needed	None
STRA_PP 15	Coordinate the procurement and delivery of packaged water to identified drop-off areas for communities that rely on domestic wells and SSWSs (as needed).	1-5	Yolo OES in coordination with CAO, CSA/CSD, General Services	In Progress	Possible grant funding assistance, staffing resources for procurement coordination and funding if grants are unavailable.
STRA_ID 12	Verify database accuracy of approved water haulers, approved packaged water purveyors, licensed well drillers, and upload lists to the State drought management website.	2	CAO	As needed	None
STRA_ID 13	Begin preparing for the possibility of bringing alternative/secondary supply systems online if they are available	2	CSD/CSA Managers, Environmental Health	As needed	None
STRA_SD 09	Consider assisting SSWSs and domestic well owners in exploring alternative sources of water for non-potable uses.	4	Environmental Health	As needed	None
STRA_SD 10	Identify how to deliver drinking water to key distribution stations within each municipality.	4	Yolo OES in coordination with CAO, CSD/CSA, General Services	In Progress	Possible grant funding assistance.
STRA_ED 06	Evaluate needs for improvement for distribution and transmission of potable water.	5	Yolo OES, State	As needed	None
STRA_ED 08	Consider establishing mutual aid agreements with neighboring OES and State agencies. This includes water resource sharing, infrastructure support, personnel, communication, financial and logistical support, sharing of all resources including water hauling and delivery.	5	Yolo OES	In Progress	None

Long-Term Mitigation Strategies and Actions – Implementation Considerations:
The implementation of Yolo County's Long-Term Mitigation Strategies and Actions, as outlined in Section 5, requires significant investment in staffing, data collection, and monitoring. Across multiple

focus areas—including data gaps, county policies and planning, communication and outreach, drinking water well mitigation, and regional water infrastructure investment—many critical actions remain in the "Not Started" or "In Progress" stages. Tasks such as identifying domestic wells in use, conducting abandoned well investigations, integrating countywide GIS systems for well monitoring, and coordinating capital improvement programs all rely on specialized personnel to plan, execute, and analyze complex datasets. Without additional staffing and technical resources, these initiatives risk delays, incomplete implementation, and reduced capacity to track progress toward measurable drought resiliency outcomes.

Despite budgetary constraints projected over the next several years, Yolo County is committed to advancing key actions with existing resources. The County will continue to coordinate with partner agencies—including the Yolo Subbasin Groundwater Agency, California Department of Water Resources, and local water districts—to support domestic well monitoring, water quality outreach, and grant application efforts. County staff will maintain and enhance public-facing resources, such as web-based tools and Alert Yolo notifications, to provide timely information to domestic well and small water system users. Additionally, the County will pursue incremental improvements, such as assisting well operators with depth-to-water monitoring and integrating available data into GIS tools, while leveraging external funding opportunities whenever possible. These targeted efforts will allow Yolo County to make meaningful progress toward drought resiliency, while laying the groundwork for more comprehensive actions when additional resources become available.

6.4 Drought Resilience Plan Updates

At least every five years, the County, in coordination with the Task Force Coordinating Committees, will lead the review and update of the County DRP to evaluate progress on STRA and LTMS/A implementation and to identify necessary revisions based on new information and progress made. The County is responsible for reporting on these updates to the Task Force to ensure transparent communication and coordination. The County DRP, including the risk assessment, STRAs, and LTMS/As will also be reviewed after major droughts, water shortage events, or if the GSA status within the County is elevated, as well as when new data, strategies, policies, or other triggering events as deemed necessary by the County.

As outlined in Chapter 2, the Task Force plays a central role in both monitoring drought conditions and guiding plan implementation. The Task Force's responsibilities include tracking drought indicators, coordinating response recommendations, and supporting adaptive management of the DRP. Through its standing committees, regular meetings, and active participation from County departments and external partners, the Task Force will provide a structured platform for engagement, ensuring that updates to the DRP reflect changing conditions, community needs, and new information over time.

6.4.1 Regional Planning Alignment

Yolo County will ensure that updates to the DRP align with and support existing planning efforts to promote consistency and maximize the effectiveness of initiatives across County departments. This includes identifying opportunities where information from other plans can be integrated into the DRP, fostering a cohesive and coordinated approach to drought resilience. Achieving this will require active collaboration among various County departments to ensure that all relevant data, strategies, and goals are harmonized to strengthen the County's overall preparedness and response capabilities.

The County's approved HMP also presents opportunities for grant funding. To maintain eligibility for FEMA funding, any new projects should be incorporated into the HMP on a rolling basis.

A summary of key planning efforts already underway in Yolo County and their relevance to the DRP is provided in Chapter 1, Section 1.5. These efforts include the GSP, CAAP, EOP, HMP, and other local and regional initiatives.

6.5 Funding Opportunities and Assistance Programs

The County DRP includes a variety of proposed activities that may require appropriation of additional funds as approved by the County Board of Supervisors or through other state or federal sources. Receipt of these additional funds could involve a variety of activities both for County Staff and domestic well and SSWS owners/operators including: plan administration, management, and updates; submitting funding applications and administering agreements; outreach and communications; coordination with other agencies and entities; Task Force engagement; managing assistance programs; development and construction of infrastructure and associated operations, maintenance, repair, rehabilitation, and eventual replacement; and other efforts. Those activities require funding—both short-term for projects with a finite schedule (for example, design and construct a new domestic well) and long-term for ongoing activities (for example, use and upkeep of that new well). As SB 552 does not provide funding for implementation activities, this County DRP analyzed local, state, and federal funding sources that may be available to support the County DRP's implementation.

A combination of funding sources could be used to support County DRP implementation—such as generated revenue (e.g., rates and assessments), grants, loans, agency staff time, services provided by others (e.g., in-kind work, technical or training assistance through a state or federal agency)—with various agencies and entities involved in securing and administering each source. The availability of these internal and external funding sources will impact the success and timeliness of County DRP implementation.

Although access to reliable funding is a challenge faced by agencies and entities when implementing any program or project, domestic well and SSWS owners/operators are some of the most acutely impacted due to limited staff, reserves, and requirements of the implementing agencies. Agencies and entities may find (1) it is cost- and resource-prohibitive to implement short-term response actions and long-term mitigation strategies and actions by themselves; (2) solutions frequently require participation or involvement of other entities; and (3) it is challenging to prepare for, navigate, apply for, and administer the various local, State, and Federal funding mechanisms that could be available at any given time. These system owners/operators will need assistance and support from the County and other agencies and entities.

Using the short-term response actions and long-term mitigation strategies and actions developed for the County (listed in Chapters 4 and 5, respectively), this County DRP investigated and analyzed potential funding sources for implementation. Note that this is not an exhaustive list and that available funding sources are constantly changing, and funding needs, timing, and potential opportunities should be periodically reassessed.

6.5.1 Local and Regional Funding Programs

The Westside Regional Water Management Group developed a small grant program to help accomplish the vision of the Westside IRWM Plan. The small grant program disperses funds as they are available to projects or programs that meet the goals and objectives of the IRWM Plan. Projects must be in the Westside Sac IRWM project list to be eligible.: https://westsideirwm.com/projects/

6.5.2 State Funding Programs

Resources available at the State level typically come in the form of technical assistance, grants, and loans. Given the continually evolving conditions surrounding grant availability, eligibility criteria, and application requirements, the County may continue to use the California Grants Portal to investigate available funding. State assistance programs include, but are not limited to, those listed in Table 6-7.

Table 6-7. State Funding and Resources

Resource	Agency	Description
California Grant Portal	California State Library	Searchable webpage with information on State grants and loans opportunities
Countywide and Regional Funding Programs (SAFER)	SWRCB	Grant funding to implement regional programs that address urgent drinking water needs, drought-related and/or contamination issues for SSWSs and domestic wells serving DACs and low-income households
SCFP	SWRCB-DFA, Office of Sustainable Water Solutions	Support for small disadvantaged communities (DACs)—those providing drinking water service to fewer than 10,000 people or wastewater service to fewer than 20,000 people, and with a median household income (MHI) below 80% of the statewide MHI—may include technical assistance, interim water supplies, and implementation of eligible drinking water or wastewater capital improvement projects.
DWSRF	SWRCB-DFA	Loans for consolidation and regionalization projects
FAF—Grants and Loans website	SWRCB-DFA	Information on and links to grant and loan programs (SWRCB and other agencies). Covers more than SSWSs and domestic wells.
Domestic Water Wells and State Smalls Program	SWRCB	Assistance to disadvantaged individuals or households served by an SSWS or domestic well with a water quality issue
Expedited Drinking Water Grant Funding Program	SWRCB	Grants for drinking water infrastructure projects, including Proposition 1, Proposition 68, the Safe and Affordable Drinking Water Fund, and the Budget Act of 2021
Technical Assistance	DWR	Resources to local and regional organizations through 4 regional offices
Grants and Loans	DWR	Grant and loan programs that support integrated watershed management activities addressing environmental stewardship, water supply reliability, flood risk, groundwater sustainability, drought, and more

Resource	Agency	Description
CFCC Funding Information	CFCC	Information on and links to grants, loans, and bond financing for infrastructure projects from State agencies (SWRCB, DWR, California Department of Housing and Community Development, California Infrastructure and Economic Development Bank) and 2 federal agencies (USBR, USDA Rural Development); also information on and links to California Rural Water Association and Rural Community Assistance Corporation; tabs for funding fairs, infrastructure funding programs, and additional funding programs
Integrated Climate Adaptation and Resiliency Program	California Governor's Office of Land Use and Climate Innovation	Information and links to planning and implementation grant programs, technical assistance, and other resources to support planning for and adapting to climate change.

Notes:
CFCC = California Financing Coordinating Committee
DAC = Disadvantaged Community
DFA = Division of Financial Assistance
DWR = California Department of Water Resources
DWSRF = Drinking Water State Revolving Fund
FAF = Financial Assistance Funding
MHI = Median Household Income
SAFER = Safe and Affordable Funding for Equity and Resilience
SCFP = Small Community Funding Program
SSWS = State Small Water Systems
SWRCB = State Water Board
USDA = U.S. Department of Agriculture
USBR = U.S. Bureau of Reclamation

6.5.3 Federal Assistance Programs

The majority of resources available at the federal level typically come in the form of grants and loans. Given the continually evolving conditions surrounding grant availability, eligibility criteria, and application requirements, the County may register with GRANTS.GOV to receive timely updates on active grants and their specifications. Federal assistance programs include, but are not limited to, those listed in Table 6-8.

Table 6-8. Federal Funding and Resources

Resource	Agency	Description
Grants.gov		Searchable webpage for federal funding opportunities (information, links, application forms, application submittals).
Drought in Action	NOAA, NIDIS	Information and links to funding offered by NIDIS and its partners related to drought early warning research across many sectors and fields.
HMAG	FEMA	Funding for eligible long-term solutions that reduce the impact of disasters in the future. Information on many funding/assistance opportunities.
Building Resilient Infrastructure and Communities	FEMA	Pre-disaster funding and technical assistance for hazard mitigation projects to reduce risks from disasters and natural hazards.
Hazard Mitigation Grant Program	FEMA	Post-disaster funding to develop HMPs and rebuild in a way that reduces, or mitigates, future disaster losses in a community.

Resource	Agency	Description
WaterSMART Program	U.S. Department of the Interior, USBR	Funding to support water management improvements, planning and design activities, water reclamation and reuse projects, collaborative watershed groups, watershed management projects, habitat restoration and improved fish passage, drought planning, implementation actions to proactively address water shortages, and other similar projects that contribute to sustainability.
Drought Response Program	USBR	Funding for drought contingency planning, drought resiliency projects, and emergency response actions.
SSWEG	USBR	Funding for small water efficiency improvements that have been identified through previous planning efforts.
Rural Utilities Service Water and Environmental Programs—Water and Environmental Grant and Loan funding	USDA, Rural Development	Technical assistance, training, and financing to develop drinking water and waste disposal systems in rural communities (populations of 10,000 or less).
ECWAG	USDA, Rural Development	Funding to prepare, or recover from, an emergency that threatens the availability of safe, reliable drinking water in rural areas and towns with populations of 10,000 or less. Check eligible addresses for funding Applications for this program are accepted year-round, online through RD APPLY

Notes:
ECWAG = Emergency Community Water Assistance Grants
FEMA = Federal Emergency Management Agency
HMAG = Hazard Mitigation Assistance Grants
HMP = Hazard Mitigation Plan
NIDIS = National Integrated Drought Information System
NOAA = National Oceanic and Atmospheric Administration
SSWEG = Small-Scale Water Efficiency Grants
USBR = U.S. Bureau of Reclamation
USDA = U.S. Department of Agriculture

In addition, the County's approved Hazard Mitigation Plan is a prerequisite for accessing federal and state hazard mitigation grant projects, and any new projects funded must align with the goals and priorities outlined in the HMP. Table 6-9 lists potential funding sources that may support the implementation of identified short-term actions and long-term strategies. It outlines relevant local, State, and federal funding programs that align with various needs, including emergency water supply provisions, infrastructure improvements, water conservation efforts, community outreach, administrative coordination, and system consolidation.

Table 6-9. Potential Resources to Consider for Short-Term Response Actions and Long-Term Strategies Implementation

Short-Term Actions/Long-Term Strategies	Local Funding	State Funding	Federal Funding
Emergency water supplies (packaged water, tanks and hauled water, kiosk filling stations)	Local financial assistance	SAFER, SCFP	Drought Response Program

Short-Term Actions/Long-Term Strategies	Local Funding	State Funding	Federal Funding
Emergency response—backup generators (funds backup generators to support continuous operations during power failures)		SCFP, FAF	Drought Response Program ECWAG
Conservation—water use efficiency measures (leak detection, dataloggers, flowmeters, conservation incentive rebates/audits, well testing)	Local financial assistance Local technical assistance	SAFER	SSWEG
Community outreach (information sharing and education)	Local technical assistance	SAFER	
Infrastructure installation, maintenance, repair, or rehab (well repairs and/or replacement) Drinking water infrastructure projects including schools and tribes water quality issues	Local financial assistance	SAFER, SCFP, FAF	ECWAG
Administration—grant and loan application and administration assistance, coordination (with other SSWSs, domestic wells, self-supplied; GSAs; State agencies; federal agencies, develop reserve funds to support SSWSs)	Local technical assistance	SCFP, FAF	
Consolidation or regionalization efforts Regional programs to assist SSWSs and domestic wells Consolidation planning and construction	Local rate changes and/or assessments	SAFER, SCFP, DWSRF	HMAG WaterSMART ECWAG
Interim solutions (POU/POE treatment device installation and maintenance)		SAFER, SCFP, FAF	

Notes:
DWSRF = Drinking Water State Revolving Fund
ECWAG = Emergency Community Water Assistance Grants
FAF = Financial Assistance Funding
GSA = Groundwater Sustainability Agency
HMAG = Hazard Mitigation Assistance Grants
POU/POE = Point of Use/Point of Entry
SAFER = Safe and Affordable Funding for Equity and Resilience
SCFP = Small Community Funding Program
SSWEG = mall-Scale Water Efficiency Grants
SSWS = State Small Water System

7.0 References

Bureau of Reclamation. (n.d.). WaterSMART. Retrieved from https://www.usbr.gov/watersmart/

Bureau of Reclamation. (n.d.). Drought Response Program. Retrieved from https://www.usbr.gov/drought/index.html

Bureau of Reclamation. (n.d.). Small-Scale Water Efficiency Projects. Retrieved from https://www.usbr.gov/watersmart/swep/index.html

California Financing Coordinating Committee. (n.d.). Retrieved from https://www.cfcc.ca.gov/

California SWRCB. (n.d.). Countywide and Regional Funding Program. Retrieved from https://www.waterboards.ca.gov/drought/funding_available.html

California SWRCB. (n.d.). Small Community Funding for Drinking Water and Wastewater Solutions. Retrieved from https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/

California SWRCB. (n.d.). Funding and Incentives for Consolidation and Regionalization Projects. Retrieved from https://water.waterboards.ca.gov/drinking_water/certlic/drinkingwater/fundingincentives.html

California SWRCB. (n.d.). Domestic Water Wells and State Smalls Programs. Retrieved from https://www.waterboards.ca.gov/water_issues/programs/grants_loans/drinking_water_well.html

California SWRCB. (n.d.). Expedited Drinking Water Grant Program. Retrieved from https://www.waterboards.ca.gov/drinking_water/services/funding/expedited-grant-funding.html

California SWRCB. (n.d.). Technical Assistance. Retrieved from https://water.ca.gov/Work-With-Us/Technical-Assistance

California SWRCB. (n.d.). Grants and Loans. Retrieved from https://water.ca.gov/Work-With-Us/Grants-And-Loans

California SWRCB. (n.d.). Retrieved from https://www.yolocounty.org/government/general-government-departments/county-administrator/county-service-areas-csa/wild-wings-csa/wild-wings-water-conservation

California Grant Portal. (n.d.). Retrieved from https://www.grants.ca.gov/

DWR (California Department of Water Resources). (2024). https://water.ca.gov/Programs/Water-Use-And-Efficiency/SB-552/SB-552-Tool

FEMA (Federal Emergency Management Agency). (2013). https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

FEMA (Federal Emergency Management Agency). (n.d.). https://www.fema.gov/grants/preparedness

Grants.gov. (n.d.). https://www.grants.gov/

Jenkins, M. (1992). Yolo County, California's Water Supply System, Conjunctive Use without Management. Department of Civil and Environmental Engineering, University of California, Davis. Retrieved from http://dcn.davis.ca.us/dcn/projects/conjunctiveuse/index.html

National Integrated Drought Information System. (n.d.). Rural Utilities Service Water and Environmental Programs. Retrieved from https://www.rd.usda.gov/programs-services/water-environmental-programs/emergency-community-water-assistance-grants

National Integrated Drought Information System. (n.d.). Emergency Community Water Assistance Grants. Retrieved from https://www.rd.usda.gov/programs-services/water-environmental-programs

SGMA-YSGA. (n.d.). Retrieved from https://sgma.yologroundwater.org/

U.S. Department of Agriculture. (n.d.). Water & Environmental Programs. Retrieved from

West Yost & YSGA (Yolo Subbasin Groundwater Agency). (2024). Tiered Well Permit Review Process Technical Memo.

YSGA (Yolo Subbasin Groundwater Agency). (2022). 2022 Groundwater Sustainability Plan, Yolo County, CA. Yolo Subbasin Groundwater Agency. Retrieved from https://www.yologroundwater.org/files/acff83c75/YoloGSP_Adopted.pdf

YSGA. (2023). Yolo Subbasin Annual Report, Water Year 2022. https://www.yologroundwater.org/files/5ebfd42ee/Annual+Report+2023+FINAL.pdf.

Yolo County, California (b). (n.d.). Retrieved from https://www.yolocounty.org/government/general-government-departments/county-administrator/american-rescue-plan/arp-funding-distribution-yolo-county/arp-water-wastewater-infrastructure-1-000-000

Yolo County, California (c). (n.d.). Retrieved from https://www.yolocounty.org/government/general-government-departments/office-of-emergency-services/reports-and-publications

Yolo County, California. (n.d.). Retrieved from https://www.yolocounty.org/government/general-government-departments/county-administrator/county-service-areas-csa/wild-wings-csa/wild-wings-water-conservation

Yolo County, California. (2023). *Wild Wings County Service Area Water Regionalization Feasibility Study*. Prepared for County of Yolo, Department of Community Services.

Appendix A: Response to Public Comments

Commentor	Comment #	Page #	Paragraph or Figure #	Comment		Response
Jim Flanigan	1	NA	NA	In a drought, will the citizens of Yolo County have a guaranteed allotment of water from the Sites Reservoir.		Communities within Yolo County do not receive water from Sites Reservoir, and there is no direct "guaranteed allotment" of Sites water for Yolo County residents. Sites Reservoir is an off-stream storage project, and the water stored there is owned and used by the public water agencies and agricultural districts that are participating financially in the construction of the Sites Project. This primarily includes Sacramento Valley water agencies, irrigation districts, and some urban suppliers outside of Yolo County. However, Yolo County residents are not left unprotected during droughts. Water reliability for Yolo County residents are addressed through a combination of existing local supplies and planning efforts, including each community's surface water and groundwater resources, local drought contingency plans, and the Yolo Subbasin Groundwater Sustainability Agency's (YSGA) Groundwater Sustainability Plan. Together, these tools are designed to ensure that essential community needs are met, even during prolonged dry periods. In addition, regional and state drought response actions provide further backstops when conditions are severe.
Lachi Richards	2	1-6	Paragraph 1	Just a typo. Page 1-6, 1st paragraph, 1st sentence. I suggest changing "…four Hydrologic Unit Code…" to "…four Hydrologic Unit Codes…"		Thank you for your attention to detail and for the suggested correction, the document has been updated with the suggested change to read as "four Hydrologic Unit Codes".
Lachi Richards	3	NA	Figure 1-8, 3-3, 3-4, 3-5	General comment for some of the figures. I found it hard to locate where the cities were on maps without many landmarks.		Thank you for your comment and suggestion. The figures were reviewed for legibility and accessibility and are consistent with County graphic standards.

				For instance, Figure 1-8, Figure 3-3, Figure 3-4, Figure 3-5, etc. Suggestion: Perhaps adding an overlay of the major roads on top of the information rather than underneath would be helpful.		
Lachi Richards	4	2-1, 2-4, 2-5	Paragraph 2	I notice that the county is to establish a task force that includes among others, local water suppliers and local residents. I see that on pages 2-4 and 2-5 that the task force members are listed. I notice that the Wild Wings community water supply operators are not yet included. I suggest reaching out to SUSP who operates the water supply for the 1,000 + residents of Wild Wings for inclusion on the task force. You may also want to reach out to the Wild Wings HOA to see if they would like to have a representative on the task force. North Davis Meadows also has a water supplier who doesn't seem to be represented on the task force. Just a note that the community of Golden Bear Estates in Winters had water supply issues during the past drought and may want to have representation also.		Thank you for your comment. The County Drought Task Force was established in accordance with SB 552 and is intentionally structured to include agencies and organizations with countywide drought response, coordination, and technical assistance responsibilities. An important member of the Drought Task Force is the County Service Areas (CSA) Manager for the County of Yolo, who actively represents the interests and drought- or water-shortage-related needs of the County Service Areas. This includes communities such as Wild Wings and North Davis Meadows. Residents of the County Service Areas are closely connected to the Drought Task Force through this representation and have ongoing opportunities to provide input via CSA Advisory Committee meetings, where the CSA Manager serves as a direct liaison between residents and the agencies responsible for drought and water shortage response. Thank you also for highlighting the water supply challenges experienced by the community of Golden Bear Estates during the previous drought. The Yolo Sustainable Groundwater Agency designated special areas of concern in 2023, including Golden Bear Estates in Winters, California. The Yolo Subbasin Groundwater Agency, which is responsible for planning and implementing the Sustainable Groundwater Management Act in Yolo County,

						includes 26 member agencies representing covered areas, including the City of Winters.
Lachi Richards	5	3-6	Paragraph 1	I notice here and in other sections of the report that while domestic wells and SSWS's are called out for risk assessment and other tasks that SWS's (Small Water Suppliers) such as Wild Wings or North Davis Meadows are not specifically included in the text. I understand that Small Water Suppliers are included in the legislation as stated on page 1-2. I also noticed after reading the legislation that the state may provide different drought planning requirements for communities with more than 15 but less than 1,000 connections. Is the counties intention to cover all the groups, SSWS's, SWS's, and domestic wells, in this Drought Plan, even if the state has an alternative method for complying for the group that is more than 15 and less than 1,000 connections? If so, it might be helpful to include the SWS's along with the SSWS's in the text throughout the report.		Thank you for your comment. SB 552 directs counties to prepare drought resilience planning with a particular focus on domestic wells and State Small Water Systems (SSWSs) that are most vulnerable to drinking water shortages and that lack centralized management, operational oversight, or response capacity. While the legislation also recognizes small water suppliers serving more than 15 but fewer than 1,000 connections, the County's risk assessment gap analysis is intentionally focused on domestic wells and SSWSs because these systems do not have adequate mechanisms in place for coordinated drought response.In contrast, small water suppliers such as Wild Wings and North Davis Meadows are operated through the County Service Areas (CSA) program and are served by organized community water systems with established governance, operational oversight, and drought response protocols. These systems benefit from existing planning, monitoring, and emergency response frameworks and are already addressed through other components of the County's water system management and emergency preparedness efforts.Accordingly, CSA-managed systems are not evaluated within the risk assessment component of the Drought Resiliency Plan in order to avoid duplicating analysis and planning efforts that are already in place. These systems are already well positioned to respond effectively to both short-term drought impacts and long-term water supply challenges, with safeguards in place to support timely response and long-term mitigation of drought and water shortages.
Lachi Richards	6	3-35	Paragraph 1	Other Small Water Systems in the county are listed but the list		Thank you for your comment, the document has been updated to read as "Small Water Systems: Current analysis and planning efforts do not account for small water

				does not include Wild Wings or North Davis Meadows.		systems like Rolling Acres, Brooks, Rumsey, Wild Wings, and North Davis Meadows."
Lachi Richards	7	3-35	Paragraph 2	Again, I suggest including Small Water Systems in the text.		Thank you for your comment. SB 552 directs counties to prepare drought resilience planning with a particular focus on domestic wells and State Small Water Systems (SSWSs) that are most vulnerable to drinking water shortages and that lack centralized management, operational oversight, or response capacity. While the legislation also recognizes small water suppliers serving more than 15 but fewer than 1,000 connections, the County's risk assessment gap analysis is intentionally focused on domestic wells and SSWSs because these systems do not have adequate mechanisms in place for coordinated drought response. In contrast, small water suppliers such as Wild Wings and North Davis Meadows are operated through the County Service Areas (CSA) program and are served by organized community water systems with established governance, operational oversight, and drought response protocols. These systems benefit from existing planning, monitoring, and emergency response frameworks and are already addressed through other components of the County's water system management and emergency preparedness efforts. Accordingly, CSA-managed systems are not evaluated within the risk assessment component of the Drought Resiliency Plan in order to avoid duplicating analysis and planning efforts that are already in place. These systems are already well positioned to respond effectively to both short-term drought impacts and long-term water supply challenges, with safeguards in place to support timely response and long-term mitigation of drought and water shortages.
Lachi Richards	8	3-35	NA	I notice that agricultural water users are not included under		Thank you for your comment. This Drought Resiliency Plan is prepared in response to SB 552, which directs counties

				Risk Assessment gaps. In particular, what happens to domestic ground water supply when the framers don't have access to surface water and they need to switch to ground water. Agricultural users switching to ground water had a large impact on the domestic wells around Monument Hills during the last drought.		to focus drought planning efforts on small community drinking water systems and domestic wells that serve households. Agricultural irrigation wells and agricultural water use are not included within the scope of SB 552 and therefore are not evaluated as part of the Risk Assessment gap analysis in this plan. The County recognizes the important connection between agricultural water use and domestic groundwater supplies, including the impacts that can occur when agricultural users shift from surface water to groundwater pumping during drought conditions. These groundwater-related impacts, including those experienced by domestic well users in areas such as Monument Hills during the previous drought, are addressed through groundwater sustainability planning and management rather than through SB 552 drought planning. In Yolo County, the Yolo Sustainable Groundwater Agency (YSGA) is responsible for implementing the Sustainable Groundwater Management Act (SGMA) and for managing groundwater use to avoid significant and unreasonable impacts, including impacts to domestic wells. Through its Groundwater Sustainability Plan and associated monitoring, mitigation, and demand management measures, YSGA evaluates agricultural pumping patterns, identifies areas of concern, and develops actions to protect domestic groundwater users during drought and other periods of increased groundwater reliance. As such, while agricultural groundwater use is not included as a risk assessment gap in this SB 552–focused plan, the County continues to coordinate closely with YSGA and other groundwater management entities to ensure that domestic well impacts related to agricultural pumping are identified and addressed through the appropriate regulatory and planning frameworks.

Lachi Richards	9	4-9	Table 4-4, Row 2	You may want to consider adding the CSD managers in addition to the CSA manager to the list of Responsible Agency's.		Thank you for your comment. County Service Areas (CSAs) are special districts governed directly by the Yolo County Board of Supervisors and are administered by the County to provide municipal services. Community Service Districts (CSDs), by contrast, are independent local agencies governed by their own elected boards of directors. As such, the County does not have regulatory or governing authority over CSDs, including the ability to assign or mandate specific actions in response to drought or water shortages. While the County does not directly govern CSDs, it works closely and collaboratively with them through the County Drought Task Force. The Task Force serves as a coordination and information-sharing forum that brings together CSAs, CSDs, and other water suppliers to support alignment on drought preparedness, response actions, technical assistance, and communication during drought and water shortage conditions. Through this collaborative structure, the County helps ensure that CSDs are informed of available resources, best practices, and regional conditions, and that local concerns are elevated and considered as part of countywide drought response planning.
Lachi Richards	10	4-9 through 5-1	NA	There may be a duplication of page numbering in Section 4. For instance, I see a page 4-3 whose first paragraph is "4.4 Responsibility and Coordination" and a page 4.3 who's first paragraph is "wildfires, can worsen water quality…"		Thank you for your comment and attention to detail, the document has been updated with a correction to the page numbering.