

3.10 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting within the County, including runoff, groundwater conditions, storm drainage, and flood control. Regulations and policies affecting local hydrology and water quality are discussed, and impacts are identified that may result from adoption and implementation of the CLUO, including issuance of subsequent Cannabis Use Permits pursuant to the adopted CLUO. This section identifies water demand resulting from cannabis uses and impacts to water supply and groundwater resources.

In response to the Notice of Preparation (NOP) for this EIR, comments were received from the Central Valley Regional Water Quality Control Board (RWQCB), which provided a list of water resources regulations; the Yocha Dehe Wintun Nation, which commented on water quality and surface water flows; and the California Department of Food and Agriculture (CDFA), which commented on cumulative effects on underlying aquifers and related streams associated with groundwater pumping. Hydrologic and water quality regulations applicable to the CLUO are discussed below, in Section 3.10.2, “Regulatory Setting.” Issues related to groundwater, water quality, and surface water flows associated with implementation of the CLUO are considered in the impact analysis below. The reader is referred to Appendix A for comment letters on the NOP.

3.10.1 Environmental Setting

Yolo County’s existing conditions related to water resources, hydrology, and water quality are described below and major hydrologic features are shown in Exhibit 3.10-1.

YOLO COUNTY CLIMATE AND TOPOGRAPHY

Yolo County has a Mediterranean climate characterized by hot, dry summers and temperate, rainy winters. Yolo County is comprised of two distinct climate zones. The northern and central areas of Yolo County experience hot summers and moderately cold winters, while the southeastern County receives marine air influence from the San Joaquin–Sacramento Delta (Delta) regions that reduce the temperature extremes. During winter, fair weather alternates with periods of extensive clouds and precipitation. During the summer, temperatures generally average a high of 95° F and a low in the mid-50s. Winter temperatures average a high in the 50s, and low of 38–40° F. Much of the precipitation received in Yolo County falls on the Vaca Mountains (part of the Coast Range geomorphic province) to the west of the County, annually averaging 34 inches along the western edge of the County. Rainfall in the eastern County averages approximately 20 inches. Precipitation occurs primarily in the form of rain from October through April, with very little precipitation during the hot, dry summers (Yolo County 2009).

The highest elevations in the County are found along Little Blue Ridge and Blue Ridge (approximately 3,100 feet above mean sea level), decreasing to 5 feet above sea level near the Sacramento River on the eastern edge of the County, with the lowest portions of the Yolo Basin just below sea level. The County is located such that approximately the western 30 percent is located in California’s Coast Ranges with the eastern remainder in the Great Valley. The Great Valley portion of the County consists of gently sloping to level alluvial areas, while the Coast Ranges part of the County consists of moderately sloping to very steep uplands and terraces and is characterized by northwest-southeast trending ridges and valleys (Yolo County 2009).

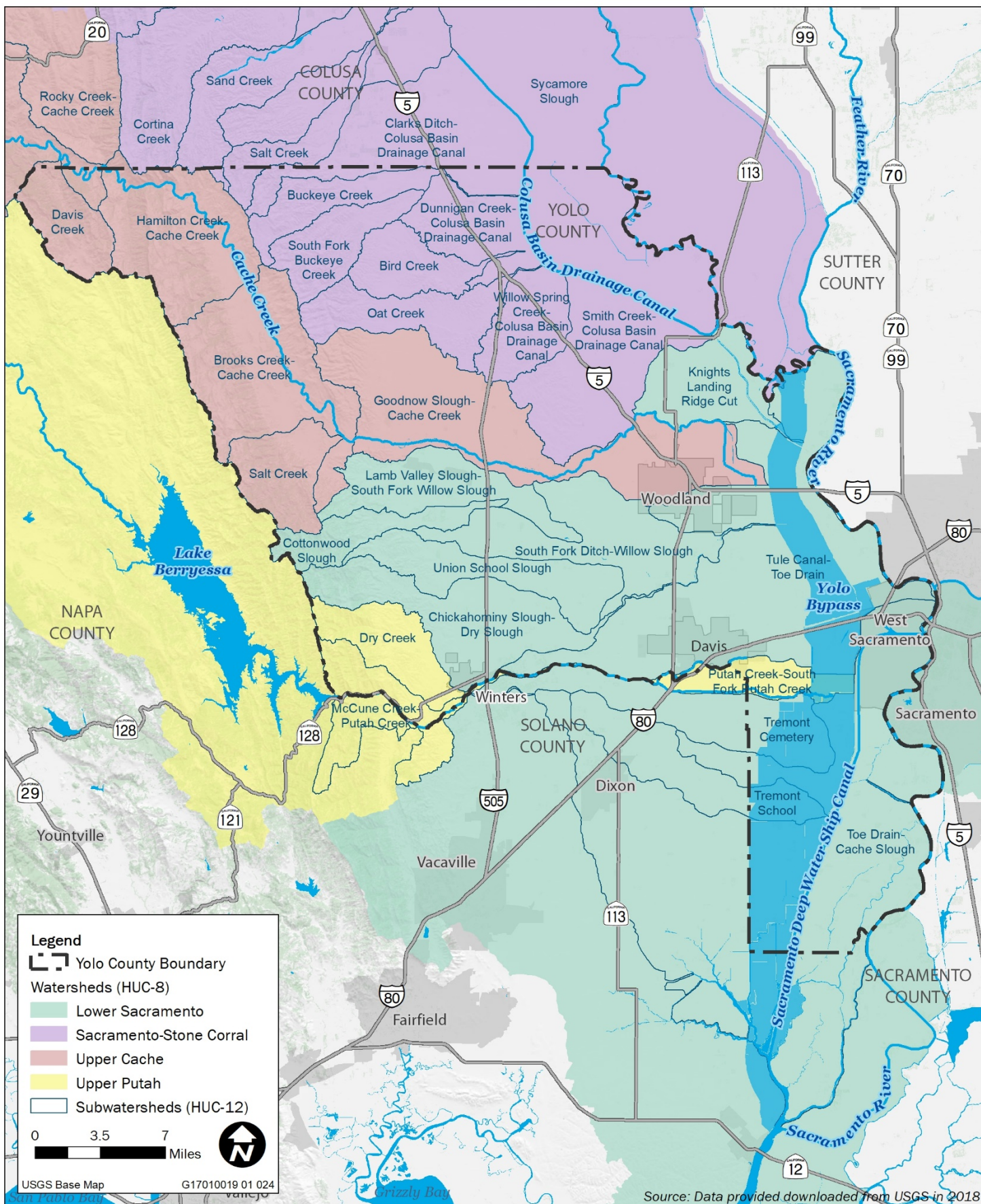


Exhibit 3.10-1

Yolo County Hydrologic Features

SURFACE WATER

Yolo County is located within the Sacramento Hydrologic Region, as defined by the California Department of Water Resources (DWR), and includes the lower portions of both the Putah Creek and Cache Creek watersheds, as well as the surrounding low-lying drainage basins in the region, including the Colusa Basin drain (a portion of the Sacramento-Stone Corral watershed) and Lower Sacramento watershed. The key water features in Yolo County are Cache Creek (which captures the Cache Creek watershed), Putah Creek (which captures the Putah Creek watershed), and the Sacramento River (which captures the Sacramento-Stone Corral and Lower Sacramento watersheds). The Yolo Bypass is used to manage the much larger Sacramento River watershed flood flows. Cache and Putah Creek watersheds contribute the majority of the water entering Yolo County (Water Resources Association of Yolo County 2018). Exhibit 3.10-1 depicts Yolo County watersheds.

Cache Creek Watershed

The Cache Creek watershed encompasses approximately 1,165 square miles, and about 248 square miles of the watershed is located in Yolo County (approximately 21 percent). Cache Creek provides numerous benefits, including habitat and water supply. The Yolo County Flood Control and Water Conservation District (YCFCWCD) owns the Cache Creek Dam, located on Cache Creek approximately 5 miles downstream of Clear Lake outlet, and operates both Cache Creek Dam and Clear Lake in accordance with the Solano and Gopcevic Decrees. The North Fork Cache Creek subwatershed drains the area north of Clear Lake and includes Long Valley Creek, Wolf Creek, and Bartlett Creek. YCFCWCD owns and operates the Indian Valley Dam on the North Fork Cache Creek, which forms the Indian Valley Reservoir. Indian Valley Reservoir has a total storage capacity of 300,600 acre-feet (af), of which 40,000 af is dedicated to flood control. Bear Creek drains the area to the east of the North Fork Cache Creek, and its watershed lies entirely within Colusa County. Bear Creek flows into the main stem of Cache Creek at the border of Colusa and Yolo Counties (Water Resources Association of Yolo County 2018).

After Cache Creek flows into Yolo County, it continues through the agriculturally intensive Capay Valley until it reaches the Capay Diversion Dam, where some flows are diverted into YCFCWCD's irrigation system. Cache Creek continues downstream of Capay Dam, where it terminates in an area known as the Cache Creek Settling Basin, just upstream of the Yolo Bypass. The portion of Cache Creek from generally the Capay dam to the town of Yolo is referred to as Lower Cache Creek. This portion is an area of active aggregate mining and creek restoration regulated by the County's Cache Creek Area Plan.

Cache Creek is considered an intermittent stream, in that flows in the creek are inconsistent, and there are periods particularly during the summer when no streamflow is present. The Cache Creek Settling Basin is a component of the Sacramento River Flood Control Project. It was designed to trap sediments carried by Cache Creek and prevent them from being deposited in the Yolo Bypass, thereby maintaining the flood capacity of the Yolo Bypass. The settling basin has an overflow into the Yolo Bypass, which allows flow to enter the Sacramento River upstream of Rio Vista in Solano County (Water Resources Association of Yolo County 2018).

Putah Creek Watershed

The Putah Creek watershed encompasses approximately 654 square miles and is 50 miles wide, extending from Cobb Mountain (elevation 4,700 feet) in Lake County to the Yolo Bypass (elevation a few feet above sea level). Approximately 48 square miles of the watershed are located in Yolo County (approximately 7 percent). Tributaries to Putah Creek within Lake County include Harbin Creek, Big Canyon Creek, St. Helena Creek, Dry Creek, Coyote Creek, and Soda Creek. From Lake County, Putah Creek flows into Napa County and Lake Berryessa. The major tributaries within Napa County include Pope Creek, Chiles Creek, Capell Creek, and Eticuera Creek. Lake Berryessa has a storage capacity of 1,602,000 af and is regulated by Monticello Dam, which is owned by the U.S. Bureau of Reclamation and operated by Solano County Water Agency. From the outlet of Monticello Dam, Putah Creek flows into Solano County and Yolo County, where it eventually discharges to the Yolo Bypass (Water Resources Association of Yolo County 2018).

The South Fork of Putah Creek is an artificial channel constructed over a period of several decades, beginning in the 1870s. It departs from the natural creek channel approximately 1 mile upstream of Interstate 80 and flows directly east to the Yolo Bypass. The creek eventually abandoned its original channel (the North Fork) entirely and was named the South Fork Putah Creek for practical purposes. In the 1940s, the U.S. Army Corps of Engineers (USACE) constructed levees along the lowermost 9 miles of the South Fork channel as part of the Sacramento River Flood Control Project (Water Resources Association of Yolo County 2018).

Sacramento-Stone Corral Watershed

The Sacramento-Stone Corral watershed encompasses 1,884 square miles, most of which is located outside of Yolo County. Flows in the watershed generally travel from the coastal ranges in the west towards the Sacramento River. The majority of water from the watershed is discharged to the Sacramento River outside the region; however, the southernmost portion of the watershed flows into the County via the Colusa Basin Drain. This drain is a human-made channel designed to convey irrigation drainage and storm runoff from 32 ephemeral streams to the Knights Landing outfall gates for discharge into the Sacramento River. Seven of these streams originate in the Dunnigan Hills of Yolo County. The Sacramento-Stone Corral watershed comprises approximately 1,884 square miles in the Sacramento Valley and includes portions of Glenn, Colusa, and Yolo Counties. Approximately 250 square miles of the watershed is located in Yolo County (approximately 13 percent) (Water Resources Association of Yolo County 2018).

Lower Sacramento River Watershed

The Sacramento River forms the easterly border of the County. The entire Sacramento River watershed covers approximately 27,000 square miles in Northern California, of which the Lower Sacramento River watershed makes up 1,229 square miles (approximately 4.6 percent). Yolo County, which is near the downstream end of the Sacramento River, encompasses around 39 percent (approximately 476 square miles) of the Lower Sacramento River watershed. Because of its location and relatively small drainage area, the portion of the Sacramento River located within the County is influenced by the areas outside it (Water Resources Association of Yolo County 2018).

SURFACE WATER QUALITY

The 1972 Clean Water Act (CWA) established strategies for managing water quality. To support these strategies, Section 303(d) of the CWA requires the identification of water bodies that do not meet, or are not expected to meet, water quality standards (i.e., impaired water bodies), and requires development of a total maximum daily load (TMDL) for each listing. The Central Valley RWQCB is the state agency responsible for identifying impaired water bodies within Yolo County. Impaired water bodies are published by the Central Valley RWQCB in an Integrated Report to be approved by both the State Water Resources Control Board (SWRCB) and the U.S. Environmental Protection Agency (EPA) and included on the Section 303(d) list of impaired waters requiring TMDLs.

On December 20, 2016, the Central Valley RWQCB approved and submitted the 2014 303(d) list to SWRCB, which will replace the current 303(d) list after being approved by SWRCB and EPA. The 2014 303(d) list includes updates to the Central Valley region which can be seen in Table 3.10-1. Exhibit 3.10-2 shows the impaired water bodies located within the Yolo County.

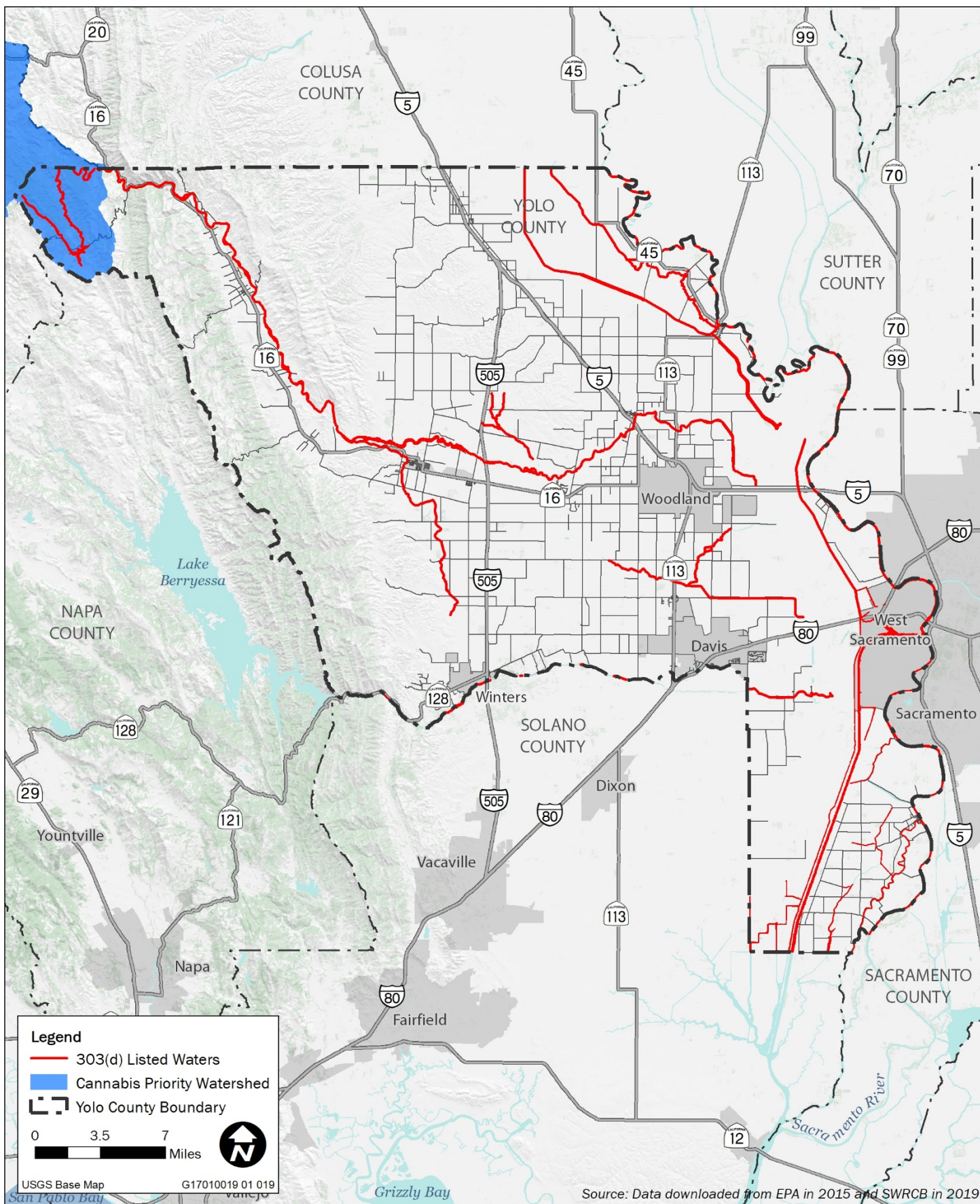


Exhibit 3.10-2

Impaired Water Bodies in Yolo County

Table 3.10-1 303(d) Listed Waterways in Yolo County

Waterway	Pollutants (TMDL Completion Date)	Potential Pollutant Sources
Cache Creek, Lower (Clear Lake Dam to Cache Creek Settling Basin near Yolo Bypass)	Boron (2021) Mercury (2007)	The source of mercury is abandoned mines in the area. Potential sources for other pollutants are listed as unknown.
Colusa Basin Drain	Azinphos-methyl (Guthion) (2019) Carbofuran (2021) Dieldrin (2021) Malathion (2010) Mercury (2021) DDT (2021) Diazinon (2008) E. coli (2021) Group A Pesticides (2019) Dissolved Oxygen (2021) Unknown Toxicity (2019)	Sources for pollutants are listed as unknown.
Davis Creek (downstream from Davis Creek Reservoir, Yolo County)	Mercury (2017)	Sources for pollutants are listed as unknown.
Davis Creek (upstream from Davis Creek Reservoir, Yolo County)	Mercury (2017)	Sources for pollutants are listed as unknown.
Davis Creek Reservoir	Mercury (2017)	Sources for pollutants are listed as unknown.
Delta Waterways (northern portion)	Mercury (2009) DDT (2011) Diazinon (2007) Group A Pesticides (2011) Chlordane (2011) Chlorpyrifos (2007) Invasive Species (2019) PCBs (2019) Unknown Toxicity (2019)	The source of mercury is abandoned mines in the area. Potential sources for other pollutants are listed as unknown.
Delta Waterways (northwestern portion)	Mercury (2009) DDT (2011) Diazinon (2007) Group A Pesticides (2011) Chlorpyrifos (2007) Invasive Species (2019) Salinity (2019) Unknown Toxicity (2019)	The source of mercury is abandoned mines in the area. Potential sources for other pollutants are listed as unknown.
Gordon Slough (from headwaters and Goodnow Slough to Adams Canal, Yolo County)	Dissolved Oxygen (2021)	Sources for pollutants are listed as unknown.
Knights Landing Ridge Cut (Yolo County)	Dissolved Oxygen (2021) Salinity (2021)	Sources for pollutants are listed as unknown.
Putah Creek (Solano Lake to Putah Creek Sinks; partly in Delta Waterways, northwestern portion)	Mercury (2017)	The source of mercury is abandoned mines in the area. Potential sources for other pollutants are listed as unknown.
Sacramento River (Red Bluff to Knights Landing)	Dieldrin (2021) Mercury (2021) DDT (2021) PCBs (2021) Unknown Toxicity (2019)	Sources for pollutants are listed as unknown.

Table 3.10-1 303(d) Listed Waterways in Yolo County

Waterway	Pollutants (TMDL Completion Date)	Potential Pollutant Sources
Sacramento River (Knights Landing to the Delta)	Dieldrin (2022) Mercury (2012) DDT (2021) Chlordane (2021) PCBs (2021) Unknown Toxicity (2019)	The source of mercury is abandoned mines in the area. Potential sources for other pollutants are listed as unknown.
Sycamore Slough (Yolo County)	Dissolved Oxygen (2021)	Sources for pollutants are listed as unknown.
Tule Canal (Yolo County)	Boron (2021) E. coli (2021) Salinity (2021) Fecal Coliform (2021)	Sources for pollutants are listed as unknown.
Willow Slough (Yolo County)	Boron (2021) Unknown Toxicity (date not yet set)	Sources for pollutants are listed as unknown.
Willow Slough Bypass (Yolo County)	Selenium (date not yet set) Malathion (date not yet set) Boron (2021) E. Coli (2021) Salinity (date not yet set) Fecal Coliform (2021) Unknown Toxicity (date not yet set)	Sources for pollutants are listed as unknown.
Winters Canal (Yolo County)	Diazinon (2021)	Sources for pollutants are listed as unknown.
Note: TMDL= total maximum daily load. Source: Water Resources Association of Yolo County 2018		

GROUNDWATER

Groundwater is a key component of the County's conjunctive water supply sources. Urban areas, agriculture, and the environment in Yolo County depend upon a reliable water supply, a combination of both groundwater and surface water. In a normal year, nearly all urban water users in the County rely on groundwater as a source of water supply. Farmers rely on groundwater for approximately 40 percent of their supply in a normal year but rely more heavily on groundwater during drought years (Water Resources Association of Yolo County 2018).

The California Water Code (Section 12924) requires DWR to identify California's groundwater basins, investigate patterns of groundwater extraction and recharge within those basins, and identify basins that are subject to critical conditions of overdraft. DWR published Bulletin 118, which provides this information, in 1975, 1980, and 2003. The Sustainable Groundwater Management Act (SGMA), discussed in Section 3.10.2, "Regulatory Setting," and other laws require DWR to establish a process for revising basin boundaries and to publish Bulletin 118 every 5 years. An interim 2016 report has been issued that redefines groundwater basin and subbasin boundaries; however, this discussion reflects the 2003 version of Bulletin 118 because it reflects the information provided in the 2014 SGMA prioritization results. At the time of release of this draft EIR the 2018 SGMA Basin Prioritization results were pending for subbasins underlying Yolo County. Thus, the best available and complete information is related to the 2003 Bulletin 118 Basin Descriptions.

According to the 2003 Bulletin 118 Basin Descriptions (DWR 2003), Yolo County lies over the Capay, Yolo, Colusa, and Solano Subbasins. These subbasins are described as follows and depicted in Exhibit 3.10-3. A summary of the area, number of wells, volume of groundwater, and currently irrigated acreage is provided in Table 3.10-2.

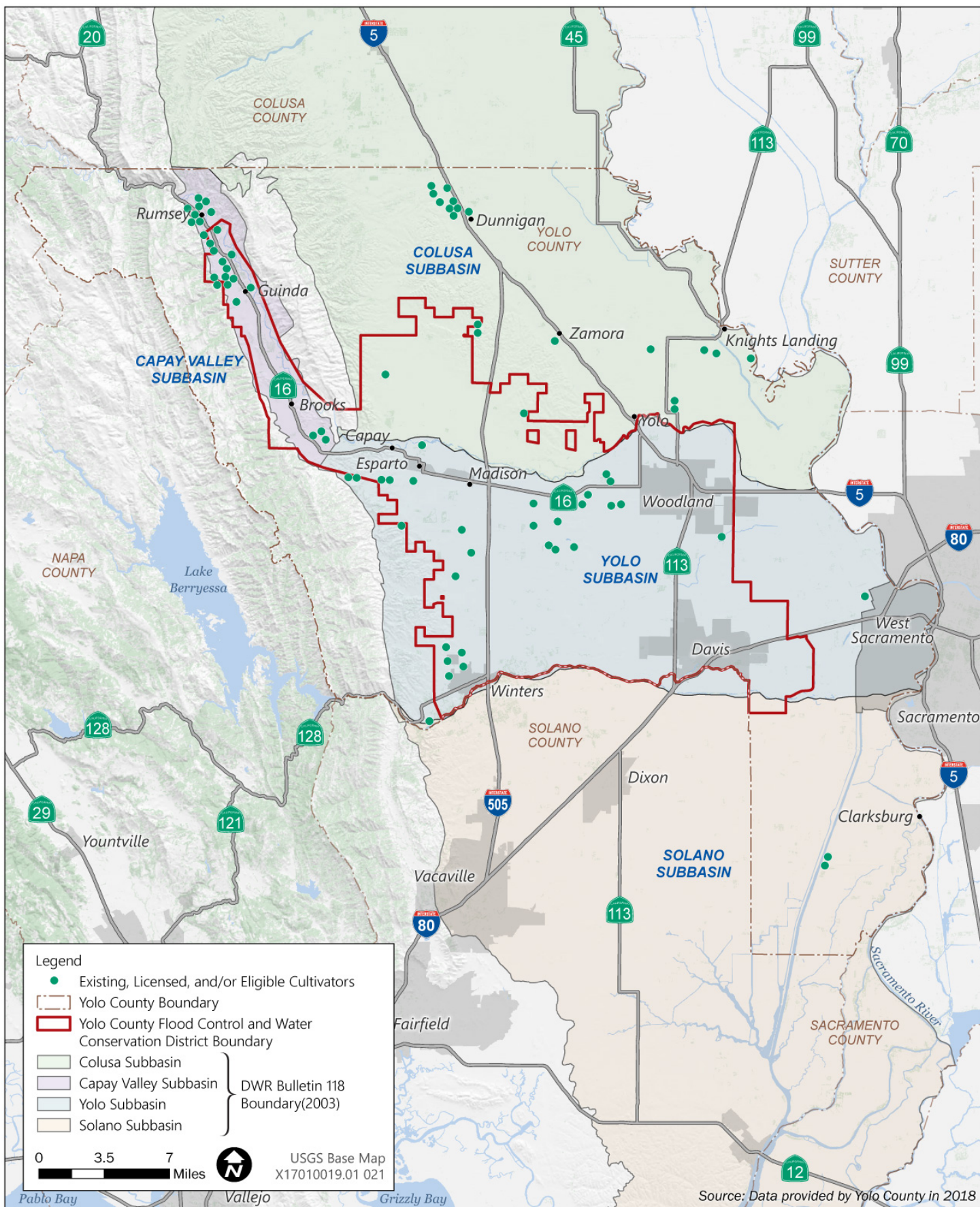


Exhibit 3.10-3

Groundwater Basins



Table 3.10-2 Groundwater Basin Prioritization (2014)

Subbasin	Area (acres)	Total Wells	Groundwater Volume	Irrigated Acreage	Percentage of Total Water Supply Provided by Groundwater	SGMA Prioritization
Solano ¹	424,832	6,790	69,149	258,208	10	Medium
Yolo	225,718	7,329	200,000	128,860	25	High
Capay Valley	24,970	501	5,500	6,066	40	Low
Colusa ¹	917,793	9,695	172,896	572,927	10	Medium

Notes: SGMA = Sustainable Groundwater Management Act.

¹. Only a portion of the Solano and Colusa Subbasins lies beneath Yolo County.

Sources: DWR 2003, 2015

Capay Valley Subbasin

The Capay Valley Subbasin is located within the Coastal Ranges in the western portion of Yolo County. The subbasin extends from the Yolo County boundary on the north end to the confluence of Salt Creek and Cache Creek on the south end. Structurally, the Capay Valley is a broad, elongated synclinal depression between the Blue Hills of the Vaca Mountains and the Rumsey Hills in the Coast Range Geomorphic Province. Annual precipitation ranges from approximately 17 inches in the valley floor to approximately 25 inches at the ridge tops (DWR 2003).

Recharge for the Capay Valley Subbasin comes primarily from Cache Creek. Additional recharge comes from surrounding minor tributaries, including Bear Creek. Bear Creek is the source of waters high in boron and has an influence on water quality within Cache Creek and on groundwater extracted from Cache Creek deposits within the Capay and Sacramento Valleys (DWR 2003).

Yolo Subbasin

The Yolo Subbasin is located in the southern portion of the Sacramento Valley Basin, primarily within Yolo County. It is bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south by Putah Creek. The basin is roughly bisected by an anticlinal structure, but otherwise is gently sloping from west to east with elevations ranging from approximately 400 feet at the base of the Coast Range to the west to nearly sea level in the eastern areas. Major cities within the subbasin include Davis, West Sacramento, Winters, and Woodland. Precipitation averages approximately 20–24 inches per year in the western portion of the subbasin, and approximately 18–20 inches per year in the eastern portion of the subbasin (DWR 2003).

Solano Subbasin

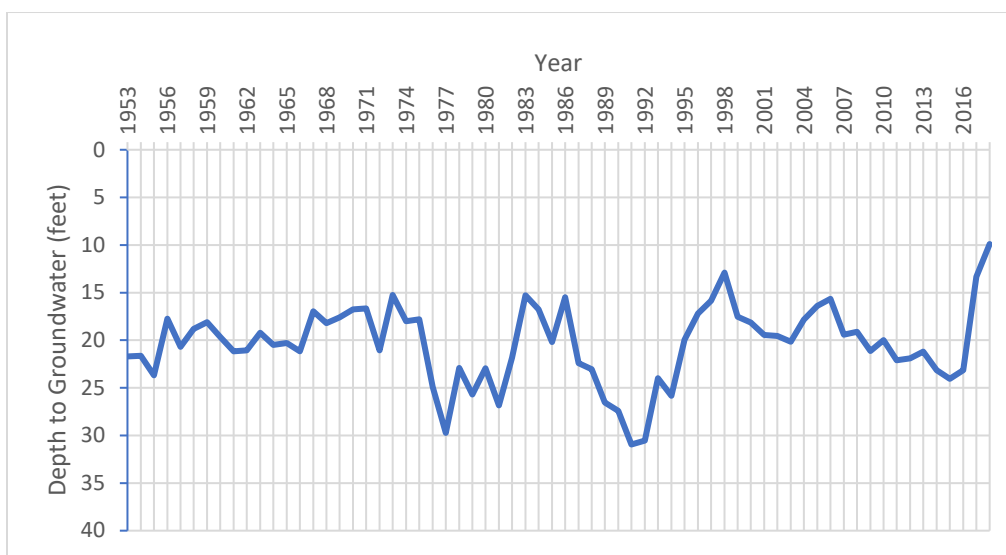
The Solano Subbasin lies in the southwestern portion of the Sacramento Basin and the northern portion of the Delta. The elevation varies from 120 feet in the northwest corner to sea level in the south. Subbasin boundaries are defined by Putah Creek on the north, the Sacramento River on the east (from Sacramento to Walnut Grove), the North Mokelumne River on the southeast (from Walnut Grove to the San Joaquin River), and the San Joaquin River on the south (from the North Mokelumne River to the Sacramento River). The western subbasin border is defined by the hydrologic divide that separates lands draining to the San Francisco Bay from those draining to the Delta. That divide is roughly delineated by the English Hills and the Montezuma Hills. Primary waterways in and bordering the basin include the Sacramento, Mokelumne and San Joaquin Rivers, the Sacramento River Deep Water Ship Channel, and Putah Creek. Annual precipitation averages in the basin range from approximately 23 inches in the western portion of the subbasin to 16 inches in the eastern portion of the basin.

Colusa Subbasin

The portion of the Sacramento Valley that comprises the Colusa Subbasin is bounded on the east by the Sacramento River, on the west by the Coast Range and foothills, on the south by Cache Creek, and on the north by Stony Creek. Annual precipitation ranges from 17 to 27 inches with higher precipitation occurring to the west.

Existing Groundwater Level Conditions

Although agencies have tried to improve the understanding of groundwater resources through preparation of groundwater management plans and monitoring programs, much work remains to quantify the reliable, sustainable groundwater supplies available (Water Resources Association of Yolo County 2018). However, records of depth to groundwater indicate that groundwater supplies have been available since 1953. Exhibit 3.10-4 shows fluctuations in the depth to groundwater during years of drought (such as 1977 when the average annual depth to groundwater was approximately 30 feet) and wet years (such as 2017 when the average annual depth to groundwater was approximately 13 feet). The average groundwater elevation from 1953 to 2018 is approximately 20 feet (CASGEM 2019). Groundwater within Yolo County is not defined as critically overdrafted by DWR (DWR 2019).



Source: CASGEM 2019

Exhibit 3.10-4 Average Depth to Groundwater in Yolo County

Subsidence

Sustaining groundwater resources is also important because heavy reliance on groundwater and groundwater pumping has resulted in subsidence (consolidation of the aquifer causing decreased ground levels). Lower land surfaces resulting from subsidence of peat soils behind levees, some of which can be attributed to groundwater pumping, also contribute to flood risk because of the reduced effectiveness of the levees. Subsidence due to groundwater pumping has been detected in the northern Yolo-Zamora area of Yolo County between Zamora and Knights Landing, where subsidence is reported to be on the order of 5 feet, and the vicinity of the cities of Davis and Woodland, where subsidence is estimated at 2 or 3 feet (Water Resources Association of Yolo County 2018).

Sustainable Groundwater Management Act Prioritization

The SGMA requires prioritization of groundwater basins as low, medium, and high, based on their importance of use. Medium- and high-priority groundwater basins in the state must be managed by local agencies that have formed a groundwater sustainability agency (GSA). The GSAs are charged with developing and implementing a groundwater sustainability plan (GSP) by January 31, 2022, to guide the sustainable management of its groundwater basin. Groundwater sustainability goals are to be achieved 20

years after adoption of the GSP. Because Yolo Subbasin is of high priority and Solano and Colusa are of medium priority, as shown in Table 3.10-2, they are subject to development of a GSP. The Yolo Subbasin Groundwater Agency was officially formed on June 19, 2017, for the purpose of acting as the GSA for the Yolo Subbasin, which underlies the majority of Yolo County under the 2016 Bulletin 118 definitions.

Bulletin 118 Update

With the passage of SGMA, Bulletin 118, California's official publication on the occurrence and nature of groundwater statewide must be updated by 2020 to contain groundwater basins information that includes: critical conditions of overdraft, basin boundaries, and basin priority. In February 2019, DWR released a list of critically overdraft basins map and modifications to groundwater basin boundaries. The groundwater basins boundary updates have been modified such that Yolo County overlies the Yolo Subbasin, and very small portions of the Colusa and Solano Subbasins. There are no critically overdrafted basins or subbasins beneath Yolo County. The prioritization of groundwater subbasins in Yolo County has not yet been updated (DWR 2019).

GROUNDWATER QUALITY

The groundwater in the Yolo subbasin is generally high in calcium (generally over 180 milligrams per liter [mg/L] calcium carbonate) and magnesium, with localized areas of high selenium and boron. Total dissolved solids are 574 parts per million on average. In the east Yolo subbasin, beneath the city of Davis and University of California, Davis, average concentration of arsenic in the Tehama formation is 0.04 mg/L, which exceeds EPA maximum contaminant level (MCL) of 0.01 mg/L. Elevated concentrations of selenium, nitrate, and boron have been detected in groundwater along Cache Creek and the Cache Creek Settling Basin area. The intrusion of saline or brackish water into freshwater aquifer systems is generally associated with coastal areas. However, the intrusion of saline or brackish water from the Delta area may occur in the Sacramento Valley, including eastern Yolo County if overdrafting of deep wells lowers the water levels in the groundwater basin. If saltwater intrusion were to occur on a widespread basis in this area, the local water supply would be adversely affected (Yolo Habitat Conservancy 2017).

GROUNDWATER USE

Public Water Systems

Public water supplies for the unincorporated area of the County consist of groundwater that is provided through private wells, small community and transient water service systems, and from community service districts (CSDs) that consist of Esparto CSD, Knights Landing CSD, Madison CSD, and Cacheville CSD. The reader is referred to Section 3.15, "Utilities and Service Systems," for a further description of these service providers and current water system capacities.

Agricultural Use

Irrigation water in Yolo County is primarily supplied from groundwater or through purchasing supplies from YCFCWCD. YCFCWCD, which includes approximately 216,000 acres, or nearly 40 percent of the valley lands in Yolo County, is located within the northern portion of Yolo County (see Exhibit 3.10-3). The YCFCWCD distribution system is comprised of approximately 160 miles of canals and laterals. Three dams—Cache Creek Dam, Indian Valley Dam, and the Capay Diversion Dam—are managed by YCFCWCD (YCFCWCD 2016).

In addition to YCFCWCD, there are various other irrigation water purveyors in Yolo County, including: Colusa County Water District, Colusa Drain Mutual Water Company, Dunnigan Water District, Rumsey Water Users' Association, and numerous reclamation districts (Yolo County 2018: Appendix C). These water purveyors supply much smaller quantities of water than YCFCWCD to various areas of the County.

YCFCWCD Service Area Water Supply

YCFCWCD's surface water supplies consist of water stored in Clear Lake under pre-1914 rights, water stored in Indian Valley Reservoir under appropriative rights issued by SWRCB, pre-1914 rights from Cache Creek and North Fork Cache Creek, and riparian rights along Cache Creek and North Fork Cache Creek (YCFCWCD 2016). The District does not own any groundwater wells or supply groundwater to its water users, nor does the District maintain records of groundwater pumped by privately owned groundwater wells (YCFCWCD 2016).

Yolo County contains extensive farmlands and produces several different types of crops, including field crops, vegetable crops, grapes, and seed crops. Each year in March, requests to YCFCWCD are made for water supply during the summer months. The amount of water distributed to individual farms is related to availability and the quantities requested.

Each type of crops has different application rates. Table 3.10-3 provides an overview of the annual irrigated area, water demands, and application rates of different crop types receiving water supplies from YCFCWCD from 2012 through 2015. Note that in addition to water use by crops, unquantified water is used for habitat, environmental benefits, and recreational water uses. YCFCWCD also provides water for municipal and industrial purposes, and to support groundwater recharge efforts (YCFCWCD 2016). Between one and three existing cannabis cultivation sites purchase water each year from YCFCWCD (Stevenson, pers. comms., 2019).

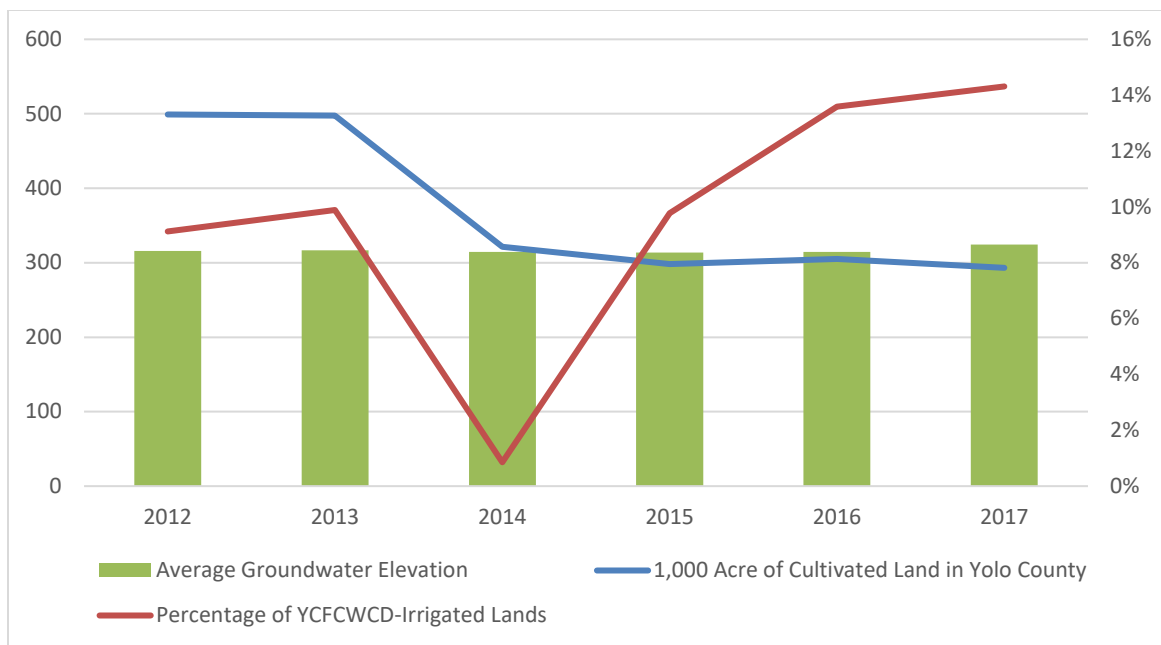
Table 3.10-3 Annual Irrigated Area, Water Demand, and Application Rates in Yolo County from YCFCWCD Supplies

Crop Type	2012			2013			2014			2015			Average Acre-Feet/Acre
	Irrigated Acreage	Water Demand (af)	Acre-Feet/Acre	Total Acreage	Total Crop Water Needs (af)	Acre-Feet/Acre	Total Acreage	Total Crop Water Needs (af)	Acre-Feet/Acre	Total Acreage	Total Crop Water Needs (af)	Acre-Feet/Acre	
Field Crops	24,909	79,487	3.19	27,367	92,674	3.39	769	1,823	2.37	11,351	37,326	3.29	3.06
Vegetable Crops	6,703	11,028	1.65	6,650	11,434	1.72	659	784	1.19	3,849	5,638	1.46	1.50
Fruit and Nut Crops	6,184	20,675	3.34	6,874	24,237	3.53	1,079	3,219	2.98	7,996	24,961	3.12	3.24
Grapes / Wine Grapes	1,747	4,105	2.35	2,065	5,142	2.49	69	164	2.38	2,022	4,752	2.35	2.39
Seed Crops	6,003	11,026	1.84	6,243	18,282	2.93	172	345	2.01	3,931	7,111	1.81	2.14
Miscellaneous	1,390	979	0.70	916	1,053	1.15	221	642	2.90	794	1,846	2.32	1.77
TOTAL	46,936	127,300	2.71	50,115	152,822	3.05	2,969	6,977	2.35	29,943	81,634	2.73	2.71

Notes: af = acre-feet; YCFCWCD = Yolo County Flood Control and Water Conservation District.

Source: YCFCWCD 2016

As noted above, countywide groundwater pumping data for Yolo County is not available; however, YCFCWCD maintains information related to agricultural water use in its service area. As depicted in Exhibit 3.10-5, from 2012 through 2017, water supplies in YCFCWCD vary from year to year depending on available resources. Notably, very little water was available for purchase in 2014 due to low rainfall and persistent drought conditions. Regardless of fluctuations in surface water supplies, which increase reliance on groundwater pumping, and changes to the countywide cultivated land area, groundwater elevation levels did not fluctuate substantially.



Sources: Stevenson, pers. comms., 2019; Yolo County 2014, 2016; YCFCWCD 2018

Exhibit 3.10-5 Change in Groundwater Elevation during Drought and Changing Water Supply Conditions

FLOODING

Within Yolo County, the Cache Creek Basin, the Sacramento River corridor, Willow Slough, Colusa Basin Drain, and Dry Slough are the primary areas with potential for flooding. Areas that are within the 100-year floodplain consist of residential and agricultural areas along Cache Creek, the Colusa Basin Drainage Canal, Knights Landing Ridge Cut, the Sacramento River, and the majority of the lower eastern portion of the County (Exhibit 3.10-6). The 500-year floodplain is most extensive north of the city of Woodland, west of the city of Davis, east of the Yolo Bypass, and through the city of West Sacramento south to Clarksburg (Yolo Habitat Conservancy 2017).

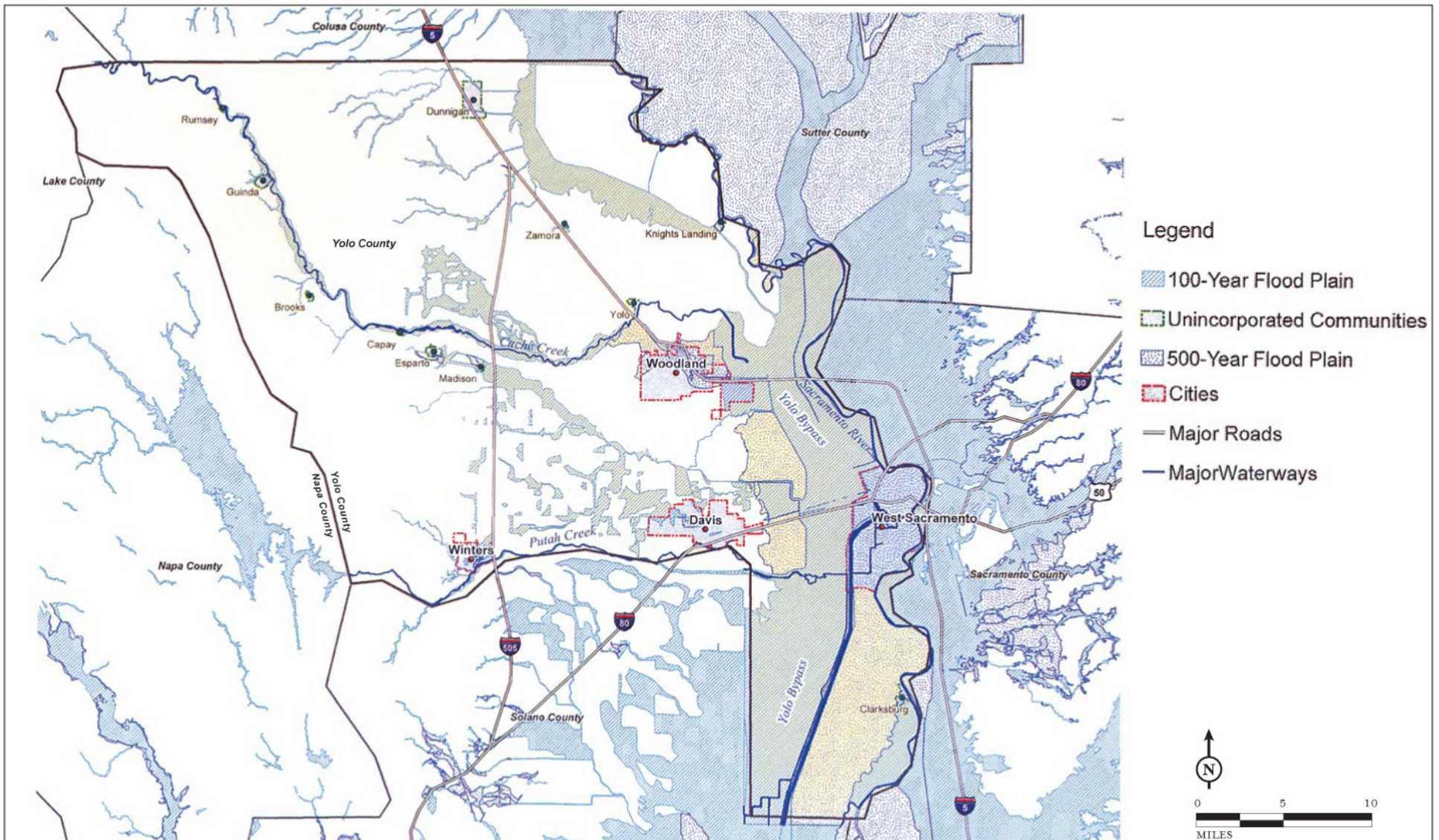
Yolo County has approximately 215 miles of levees that provide flood control, and are managed by various agencies including Reclamation Districts, flood control agencies (e.g., West Sacramento Flood Control Agency, DWR and USACE). Some of these levees were decertified by the Federal Emergency Management Agency and the California Department of Water Resources in 2010. As part of the Sacramento River Flood Control Project, high flows that pass over Fremont Weir and through the Sacramento Weir are diverted through the Yolo Bypass located in the Yolo Basin. To the west of Yolo County are the Indian Valley Dam and Reservoir, the Cache Creek Dam at Clear Lake, and the Monticello Dam on Putah Creek at Lake Berryessa. If any of these dams were to fail, or if the nearest upstream dams along the Sacramento, Feather, or American River failed, flooding would occur in Yolo County (Yolo Habitat Conservancy 2017).

3.10.2 Regulatory Setting

FEDERAL

Clean Water Act

EPA is the lead federal agency responsible for water quality management. The CWA is the primary federal law that governs and authorizes water quality control activities by EPA, as well as the states. Various elements of the CWA address water quality. These are discussed below.



Source: Image provided by LSA in 2019

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Exhibit 3.10-6

Floodplains in Yolo County



CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under 40 CFR. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the SWRCB and its nine RWQCBs have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. It is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives.

In California, implementation of TMDLs is achieved through water quality control plans, known as basin plans. Basin plans contain specific water quality standards, as well as a program of implementation for how those water quality standards may be achieved. A TMDL might be one component of that program. Basin plans, their contents, and the applicability of Section 303(d) are discussed in further detail in the section on state regulations, below.

EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. National Pollutant Discharge Elimination System (NPDES) permit limits for listed pollutants must be consistent with the waste load allocation prescribed by the TMDL. After implementation of a TMDL, it is anticipated that the environmental issues associated with the regulated pollutant that led to listing of a given waterbody on the Section 303(d) list would be remediated.

CWA Section 404

In accordance with Section 404 of the CWA, USACE regulates discharge of dredged or fill material into waters of the United States. Waters of the United States and their lateral limits are defined in Title 33, Part 328.3(a) of the CFR to include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the project will uphold water quality standards. Waters of the United States and wetland protection requirements of the CWA administered by USACE are further discussed in Section 3.4, "Biological Resources."

Because cannabis is not a legal crop at the federal level, and cannabis activities are legally prohibited, CWA permits cannot currently be issued for cannabis operations.

CWA Section 401 and 402 National Pollutant Discharge Elimination System

The NPDES permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. "Nonpoint source" pollution originates over a wide area rather than from a definable point. Nonpoint source

pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

National Toxics Rule

In 1992, EPA issued the National Toxics Rule (NTR) (40 CFR 131.36) under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The NTR established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule (CTR) in May 2000. The CTR establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the NTR.

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses of waters and water quality and national water resources. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- existing instream uses and the water quality necessary to protect those uses shall be maintained and protected;
- where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and
- where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. Formed in 1979 to merge many of the separate disaster related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or human-made disasters and providing disaster assistance to states, local governments, and individuals. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods.

FEMA prepares Flood Insurance Rate Maps that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on the maps. Special Flood Hazard Areas are the areas identified as having a 1-percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the

NFIP mandates that development is not to proceed within the regulatory 100-year floodplain, if the development is expected to increase flood elevation by 1 foot or more.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary MCLs. MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated responsibility for California's drinking water program to the California Department of Health Care Services, which is accountable to EPA for implementing the program and adopting standards and regulations that are at least as stringent as those developed by EPA.

STATE

State CEQA Guidelines

Section 15155 of the State CEQA Guidelines contains requirements associated with water supply analyses. A water supply analysis is required for a "water-demand project," which includes: a residential development of more than 500 dwelling units; a shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space; and, an industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 people, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area. If the project is considered to meet the definition of a water-demand project, as defined by Section 15155(a) of the CEQA Guidelines, a water assessment must be included in the related EIR, negative declaration, or mitigated negative declaration, or supplement. The lead agency must determine whether the projected water supplies would be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act, which grants SWRCB and each of the nine RWQCBs power to protect water quality, is the primary vehicle for implementation of California's responsibilities under the CWA. The applicable RWQCB for the proposed project is the Central Valley RWQCB. The SWRCB and the Central Valley RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its state water policy. The Porter-Cologne Act also provides that an RWQCB may include within its Basin Plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Basin Plan

The Water Quality Control Plan (Basin Plan) for the Central Valley Regional Water Quality Control Board (RWQCB) covers the entire area included in the Sacramento and San Joaquin River drainage basins. The basins are bound by the crests of the Sierra Nevada on the east and the Coast Range and Klamath Mountains on the west. They extend some 400 miles from the California - Oregon border southward to the headwaters of the San Joaquin River. The Basin Plan contains water quality objectives for inland surface water and groundwater, water quality concerns, actions to implement water quality objectives, and surveillance and monitoring programs. Water quality objectives are defined as limits or levels of water quality constituents and characteristics established for reasonable protection of beneficial uses or prevention of

nuisance. Two major water quality concerns are related to the CLUO: irrigated agriculture and municipalities and industries.

Waste Discharge Requirements

There are nine categories of discharges that are regulated by the Central Valley RWQCB through the Waste Discharge Requirements (WDRs) Program: sewage, wastewater, underground injection, Regional Water Board cleanup actions, gas condensate, soil amendments, drilling waste, reuse, and waste treatment in fully enclosed units. The following provides a non-exhaustive list of WDRs that are applicable to cannabis sites in Yolo County.

Community Services Districts

As discussed in Section 3.15, “Utilities and Service Systems,” cannabis facilities could discharge wastewater to wastewater treatment plants in the County if they are located within community services districts (CSDs): Esparto, Madison, and Knights Landing. The Madison CSD wastewater treatment facility (WWTF) operates under Order No. 5-00-039; Esparto CSD WWTF operates under Order No. 5-01-112; and the Knights Landing CSD WWTF operates under R5-007-0149. Each WDR includes an overview of the existing facility and discharge system, discharge prohibitions, and discharge specifications. Flows into the WWTFs are regulated by the CSDs.

Irrigated Lands Regulatory Program

Central Valley RWQCB also administers the Irrigated Lands Regulatory Program (ILRP) aimed at regulating waste discharges due to agricultural operations. The Yolo County Farm Bureau Irrigated Lands Program (Yolo ILP) is designed to help farmers in the County to protect water quality from discharges of irrigation water and storm water that enters surface water bodies and meet the requirements of the ILRP. The Yolo ILP group is part of the Sacramento Valley Water Quality Coalition (Coalition), which is responsible for fulfilling the conditions and requirements of the WDR General Order R5-2014-0030- R1 for waste discharges from irrigated lands, which includes surface water quality monitoring and analysis on the pesticides, herbicides, nutrients and other agricultural products. Growers under the Coalition are required to prepare and have certified a sediment and erosion control plan (SECP), which will help identify erosion sources and potential locations of sediment discharge that could affect the quality of storm water and irrigation water discharges from farmlands. The SECP includes identified parcels and/or corresponding field(s) the SECP applies to, on-farm sediment and erosion management practices, site evaluation, and SECP self-certification. Coverage under the ILRP may be obtained through joining a coalition or enrolling as an individual discharger. The coalition group conducts water quality monitoring on behalf of its growers; individual enrollment growers may be required to monitor runoff, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their action to comply with the WDR General Order R5-2014-0030- R1.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

The SWRCB adopted the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit) in August 1999. The state requires that projects disturbing more than 1 acre of land during construction file a Notice of Intent with the RWQCB to be covered under this permit. Construction activities subject to the General Construction Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A storm water pollution prevention plan (SWPPP) must be developed and implemented for each site covered by the permit. The SWPPP must include best management practices (BMPs) designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving off-site into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Phase I and II Municipal Separate Storm Sewer Systems Permits

The Phase I and II Municipal Separate Storm Sewer Systems (MS4) permits require that Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable. MS4 Permittees have their own development standards, also known as low impact development (LID)/post-construction standards that include a hydromodification

component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process. Yolo County is required to comply with the Small MS4 General Permit (Order No. 2013-0001-DWQ).

SWRCB Principles and Guidelines for Cannabis Cultivation

SWRCB has developed a policy for water quality control to establish principles and guidelines for cannabis cultivation as well as the Cannabis General Order (SWRCB Order WQ 2019-0001-DWQ). The principles and guidelines shall include measures to protect springs, wetlands, and aquatic habitats from negative impacts of cannabis cultivation. Principles and guidelines may include instream flow objectives, limits on diversions, and requirements for screening of diversions and elimination of barriers to fish passage. The principles and guidelines may include requirements that apply to groundwater extractions.

The SWRCB Order WQ 2019-0001-DWQ provides a statewide tiered approach for permitting discharges and threatened discharges of waste from cannabis cultivation and associated activities. The tier structure consists of two tiers:

- Tier 1 outdoor commercial cultivation activities disturb an area equal to or greater than 2,000 square feet and less than 1 acre (43,560 square feet).
- Tier 2 outdoor commercial cultivation activities disturb an area equal to or greater than 1 acre.

For the purposes of this regulation, “land disturbances” refers to areas where natural conditions have been modified in a way that may result in an increase in turbidity in water discharged from the site. Land disturbance includes all activities whatsoever associated with developing or modifying land for cannabis cultivation related activities or access. Land disturbance activities include, but are not limited to, construction of roads, buildings, water storage areas and excavation, grading, and site clearing.

Tier 1 and Tier 2 enrollees must characterize the risk designation based on the slope of disturbed areas and the proximity to a water body. Applicants must comply with the riparian setback and slope limits and are classified as low, moderate, or high risk, as described below:

- Low Risk: A cannabis cultivation site is classified as low risk if no part of the disturbed area is located on a slope of 30 percent or greater. Such cannabis cultivators shall register as low risk and submit a Site Management Plan.
- Moderate Risk: A cannabis cultivation site is classified as moderate risk if any part of the disturbed area is located on a slope greater than 30 percent and less than 50 percent. Such cannabis cultivators shall register as moderate risk and submit a Site Erosion and Sediment Control Plan.
- High Risk: A cannabis cultivation site is classified as high risk if any part of the disturbed area exists within the riparian setback limits. Such cannabis cultivators shall register as high risk, submit a Disturbed Area Stabilization Plan, and shall address the compliance issue as described below. Because such cannabis cultivators pose a higher risk to water quality and will require a higher level of RWQCB oversight, they are subject to a higher application and annual fee. When the cannabis cultivation site is reconfigured to comply with the riparian setbacks, the cannabis cultivator can request the RWQCB reclassify the site to a lower risk level and allow a lower annual fee to be assessed.

To obtain coverage under the waiver or enroll under the general order, the discharger is required to submit an online application and application fee and relevant technical reports. Technical report requirements are based on tier and risk level (Table 3.10-4).

Table 3.10-4 Technical Report Requirements by Tier

Tier	Risk Level	Technical Reports
Conditionally Exempt	N/A	Site Closure Report
Tier 1	All	Site Management Plan Site Closure Report
	Moderate	Site Erosion Sediment Control Plan
	High	Disturbed Area Stabilization Plan
Tier 2	All	Site Management Plan Nitrogen Management Plan Site Closure Report
	Moderate	Site Erosion Sediment Control Plan
	High	Disturbed Area Stabilization Plan

Source: SWRCB Order WQ 2019-0001-DWQ

A summary of the types of information included in the technical reports is provided as follows.

Site Management Plan

A Site Management Plan describes how the cannabis cultivator is complying with the requirements listed in Attachment A of the SWRCB Order WQ 2019-0001-DWQ. These requirements include a description of how the requirements are implemented property-wide, including requirements implemented to address discharges from legacy activities and water diversions, as well as waste discharge requirements related to cannabis cultivation. Dischargers must also indicate how the best practical treatment or control (BPTC) measures included in the Cannabis Policy will be implemented. The Site Management Plan may include a schedule to achieve compliance, but all work must be completed by the onset of the winter period each year.

Best Practical Treatment or Control

The requirements related to water diversion and waste discharge for cannabis cultivation cover the following 10 BPTC categories:

1. Riparian and wetland protection and management
2. Water diversion, storage, and use
3. Irrigation runoff
4. Land development and maintenance, erosion control, and drainage features
5. Soil disposal
6. Stream crossing installation and maintenance
7. Fertilizer and soil use and storage
8. Cultivation-related waste disposal
9. Refuse and human waste disposal
10. Winterization

Site Erosion and Sediment Control Plan

A Site Erosion and Sediment Control Plan describes how the cannabis cultivator will implement the site erosion and sediment control requirements listed in Attachment A of the SWRCB Order WQ 2019-0001-DWQ. The report must include an analysis of slope stability, and is subject to approval by RWQCB. When

required, the Site Erosion and Sediment Control Plan is to be prepared by a qualified individual (i.e., a registered professional per the Cannabis Policy requirements).

Disturbed Area Stabilization Plan

A Disturbed Area Stabilization Plan describes how BPTC measures will be implemented to achieve the goal of stabilizing the disturbed area to minimize the discharge of sediment off-site and complying with the riparian setback requirements. The report must be approved by the RWQCB Executive Officer before implementation. When required, the Disturbed Area Stabilization Plan shall be prepared by a qualified professional.

Nitrogen Management Plan

A Nitrogen Management Plan is required for the cannabis cultivation site. It provides calculations of all the nitrogen applied to the cannabis cultivation area (dissolved in irrigation water, originating in soil amendments, and applied fertilizers) and describes procedures to limit excessive fertilizer application.

Site Closure Report

A Site Closure Report describes how the site will be decommissioned to prevent sediment and turbidity discharges that degrade water quality. If construction activities are proposed in the Site Closure Report, a project implementation schedule shall be included in the report. A Notice of Termination must be submitted (Attachment C of Attachment A of the SWRCB Order WQ 2019-0001-DWQ) with the Site Closure Report.

Monitoring and Reporting Program

The monitoring and reporting program describes requirements for monitoring a cannabis cultivation site and its associated facilities. Tier 1 and Tier 2 facilities must report on issues pertaining to facility status, site maintenance status, and stormwater runoff monitoring. Tables 3.10-5, 3.10-6, and 3.10-7 provide an overview of these requirements.

Table 3.10-5 Facility Status

Monitoring Requirement	Description
Winterization Measures Implemented	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any change in the tier status. (Stabilization of disturbed areas may change the tier status of a facility. Contact the Regional Water Quality Control Board if a change in status is appropriate.)
Third Party Identification	Report any change in third party status as appropriate. Nitrogen Application Report generated monthly and annual total nitrogen use for bulk, solid, and liquid forms of nitrogen. Provide the data as pounds/canopy acre/time (month or year) as described in Attachment D, Nitrogen Management Plan. If plant tissue was collected to determine limited nitrogen availability, the results shall be submitted.

Table 3.10-6 Site Maintenance Status

Observations	Description	Monitoring Frequency
Surface Water Runoff	Report any conditions of surface water runoff, including location, duration, source of runoff (irrigation water, storm water, etc.).	Monthly
Soil Erosion Control	Report any indications of soil erosion (e.g., gully, turbid water discharge, landslide, etc.). Monthly Sediment Capture Report on the status of sediment capture measures (e.g., silt fence, fiber rolls, settling basin, etc.).	Monthly
Erosion/Sediment Capture Maintenance	Report maintenance activities to maintain the effectiveness of erosion control and sediment capture measures (e.g., reinstallation of straw mulch, hydroseeding, tarp placement, removal or stabilization of sediment captured, removal of settled sediment in a basin, etc.).	Monthly

Table 3.10-6 Site Maintenance Status

Observations	Description	Monitoring Frequency
Stabilization of Disturbed Areas	Dischargers characterized as high risk (with any portion of the disturbed area within the setbacks) shall provide a status report describing activities performed to stabilize the disturbed area within the setback.	Monthly
Material(s) Storage Erosion/ Spills Prevention	Report materials delivered or stored at the site that could degrade water quality if discharged off-site (e.g., potting soil, manure, chemical fertilizer, gasoline, herbicides, pesticides, etc.).	Monthly
Holding Tank, Septic Tank, or Chemical Toilet Servicing	Report the dates, activity, and name of the servicing company for servicing holding tanks or chemical toilets.	Monthly

Table 3.10-7 Stormwater Runoff Monitoring

Constituent	Frequency	Monitoring Frequency
Turbidity	Once per calendar month when precipitation exceeds 0.25 inch per day or when stormwater runoff from the site is generated	All months until winterization procedures are completed.
pH	Once per calendar month when precipitation amount is forecast to exceed 0.25 inch per day	All months until winterization procedures are completed.

Annual reports are required to be submitted to the Central Valley RWQCB. The Cannabis Policy includes informal and formal enforcement actions to address a violation or threatened violation of water rights and/or water quality law, regulations, policies, plans, or orders. These actions include a notice of violation, cleanup and abatement orders, cease and desist order, revocation of water rights permits, and modifications or rescission of waste discharge requirement permits.

Numeric and Instream Flow Requirements

Attachment A of the SWRCB Order WQ 2019-0001-DWQ establishes principles and guidelines (Requirements) for cannabis cultivation activities to protect water quality and instream flows, in consultation with the California Department of Fish and Wildlife (CDFW) and CDFA. The requirements are divided into five main categories:

- Section 1, General Requirements and Prohibitions, and Cannabis General Water Quality Certification
- Section 2, Requirements Related to Water Diversions and Waste Discharge for Cannabis Cultivation
- Section 3, Numeric and Narrative Instream Flow Requirements (including Gaging)
- Section 4, Watershed Compliance Gage Assignments
- Section 5, Planning and Reporting

Instream flow requirements were established by the SWRCB in consultation with CDFW for the protection of aquatic species life history needs, including endangered anadromous salmonids. Numeric instream flow requirements (minimum instream flows required to protect aquatic species) are established for each region in the state in Attachment A of SWRCB Order WQ 2019-0001-DWQ. Aquatic base flows have also been established to address instream flow impacts from groundwater diversions (further discussed below). The SWRCB's flow standards and diversion requirements were developed to protect fish spawning, migration, and rearing for endangered anadromous salmonids, and flows needed to maintain natural flow variability within each watershed. The diversion requirements would ensure that the individual and cumulative effects of water diversions and discharges associated with cannabis cultivation do not affect instream flows necessary for fish spawning, migration, and rearing for endangered anadromous salmonids, and flows needed to maintain natural flow variability. The policy was scientifically peer reviewed by four experts. The peer review determined that water quality, instream flow, and diversion requirements of the policy were based on sound scientific knowledge, methods, and data.

General Requirements and Prohibitions in Attachment A of the SWRCB Order WQ 2019-0001-DWQ implement existing SWRCB authorities and address issues such as compliance with state and local permits, discharge prohibitions, riparian setbacks, protection of tribal cultural resources, and the SWRCB's right to access properties for inspections.

Detailed information related to the requirements that pertain to hydrology and water quality is provided below.

Flow and Gaging Requirements

The instream flow requirements apply to cannabis cultivators throughout the state. The numeric instream flow requirements are developed at compliance gages statewide. The instream flow requirements may be updated over time, as reasonably necessary. Interested parties may submit scientifically defensible information (e.g. instream flow studies) that supports modification to the instream flow requirements to the Deputy Director of the SWRCB for consideration during updates to the Cannabis Policy. Table 3.10-8 provides representative gage instream flow requirements (described below) for watersheds in Yolo County.

Table 3.10-8 Gage Numeric Instream Flow Requirements

USGS Gage Number	Surface Water					
	Watershed	November (cfs)	December (cfs)	January (cfs)	February (cfs)	March (cfs)
11425500	Sacramento River	10,548	14,051	25,774	24,889	22,688
11451800	Cache Creek	437	645	1,346	1,300	979
11453500	Putah Creek	82	137	234	251	172

Notes: cfs = cubic feet per second; USGS = U.S. Geological Survey.

Source: Compiled by Ascent Environmental in 2019

Surface Water Diversion Forbearance Period

Absent restrictions on water diversion, the individual and cumulative effects of water diversions for cannabis cultivation during the dry season are likely to significantly decrease instream flow and, in some instances, reduce hydrologic connectivity or completely dewater the stream.

Minimum flows that provide habitat connectivity are needed to maintain juvenile salmonid passage conditions in late spring and early summer. Instream flows are also needed to maintain habitat conditions necessary for juvenile salmonid viability throughout the dry season, including adequate dissolved oxygen concentrations, low stream temperatures, and high rates of invertebrate drift from riffles to pools. Further, many species depend on spring recession flows as migratory or breeding cues. The SWRCB has established a surface water diversion forbearance period (April 1 to October 31 each year) to ensure adequate flows are maintained throughout the dry season and protect aquatic species, aquatic habitat, and water quality.

Wet Season Surface Water Instream Flow Requirements

Minimum instream flow requirements during the wet season are needed for the protection of aquatic species life history needs. For threatened and endangered anadromous salmonids, minimum flows are needed to address life history needs, such as:

1. maintaining natural abundance and availability of spawning habitat;
2. minimizing unnatural adult exposure, stress, predation, and delay during adult spawning migration; and
3. sustaining high-quality and abundant juvenile salmonid winter rearing habitat.

To meet the timeline, scale, and purpose of SWRCB Order WQ 2019-0001-DWQ, the SWRCB, in consultation with CDFW, has determined that the Tessmann Method is the best methodology to develop interim instream flow requirements. The Tessmann Method develops instream flow requirements by using percentages of historical mean annual and mean monthly natural streamflow. For the development of long-term instream flow

requirements, the SWRCB, in consultation with CDFW, will evaluate other scientifically robust methods that are more reflective of regional variability and the needs of target species. SWRCB applied the Tessmann Method to a predicted historical flow data set sourced from a flow modeling effort conducted by the U.S. Geological Survey (USGS) in cooperation with The Nature Conservancy and Trout Unlimited (USGS flow modeling data). The interim instream flow requirements were calculated for compliance gages throughout the state. The Tessmann Method and the USGS flow modeling data allow for instream flow requirements to be calculated at additional compliance points throughout the state. This allows the SWRCB to use the Tessmann Method and the USGS flow modeling data to calculate or adjust a flow requirement, as needed, throughout the state.

Maintain High-Flow Events

To preserve the annual first flush flow event, the surface water diversion period for cannabis cultivation will not occur until the real-time daily average flow is greater than the minimum monthly instream flow requirement at a compliance gage for 7 consecutive days or after December 15 when flows are greater than the numeric flow requirement, whichever occurs first. Surface water diversions must bypass a minimum of 50 percent of the streamflow past the point of diversion. The SWRCB will monitor other high-flow events that occur throughout the wet season to evaluate whether additional requirements are needed to maintain high-flow variability during other periods of the wet season.

Groundwater Requirements

To address potential impacts of groundwater diversions on surface flow, SWRCB's Deputy Director for Water Rights may require a forbearance period or other measures for cannabis groundwater diversions in areas where such restrictions are necessary to protect instream flows. Such areas may include watersheds with high surface water-groundwater connectivity, large numbers of cannabis groundwater diversions, and/or groundwater diversions in close proximity to streams. An aquatic base flow was developed at each compliance gage during the surface water forbearance period (dry season) to inform the need for additional actions to address impacts associated with cannabis groundwater diversions. The aquatic base flow was established in consultation with CDFW. The aquatic base flow is established using USGS flow modeling data to calculate mean monthly flows and applying the New England Aquatic Base Flow Standard (ABF Standard) methodology at the compliance gages in the nine priority regions. The aquatic base flow is the set of chemical, physical and biological conditions that represent limiting conditions for aquatic life in stream environments. This allows SWRCB to apply the ABF Standard to the USGS flow modeling data to calculate an aquatic base flow Requirement at additional compliance points, as needed, throughout the state. SWRCB will monitor instream flows during the dry season and evaluate the number and location of cannabis groundwater diversions to determine whether imposition of a groundwater forbearance period or other measures are necessary to address potential localized effects of groundwater diversions.

Compliance Gages and Requirements

Compliance gage assignments have been developed for all watershed areas throughout the state. Numeric instream flow Requirements are applied at a subset of existing gages reported on two websites: (1) the USGS – National Water Information System or (2) DWR – California Data Exchange Center.

Watershed areas that do not have existing gages are assigned a compliance gage for a different location in the same watershed or for a nearby watershed with similar flow characteristics. Cannabis cultivators in ungaged watersheds may be required to install a gage if information indicates that use of the assigned gage does not adequately protect instream flows. Cannabis cultivators in watersheds without an assigned gage may be required to install a gage if information indicates that a gage is necessary to adequately protect instream flows. SWRCB will monitor where cannabis cultivation diversions are located to track areas where locally concentrated cannabis cultivation water diversions within a watershed may adversely affect instream flows.

Many dams in California have existing instream flow requirements through the Federal Energy Regulatory Commission licensing program or through Biological Opinions issued by the National Marine Fisheries Service or the U.S. Fish and Wildlife Service, or through water right decisions. Cannabis cultivators shall comply with either existing instream flow requirements (e.g., SWRCB Orders, Biological Opinions, Federal Energy Regulatory Commission Licensing Program) or the Tessmann instream flow Requirements, whichever is greater.

The instream flow requirement compliance gages are located in areas that are generally representative of the water availability and total demand occurring upstream of the gaging location or in a similar watershed. However, impacts may still occur in areas where there is significant localized cannabis cultivation compared to water availability or where the compliance gage does not accurately reflect the demand in a paired watershed. To help ensure diversion of water for cannabis cultivation does not negatively affect the flows needed for fish spawning, migration, and rearing, or the flows needed to maintain natural flow variability, the cannabis cultivator shall maintain a minimum bypass of at least 50 percent of the streamflow past the cannabis cultivator's point of diversion, in addition to the applicable numeric instream flow requirements.

Land Development and Maintenance, Erosion Control, and Drainage Features

Section 2 of the requirements in Attachment A of the SWRCB Order WQ 2019-0001-DWQ address land development and maintenance, erosion control, and drainage features. These requirements place limitations on earthmoving, including prohibition of grading on slopes that exceed 50 percent; dust control measures; methods to limit the potential for leaks of hazardous or toxic materials into soils and waterways; erosion prevention and sediment capture measures; and standards for drainages associated with access roads, culverts, and land development.

Stream Crossing Installation and Maintenance

The requirements in Attachment A of the SWRCB Order WQ 2019-0001-DWQ place limitations of work in watercourses and permanently ponded areas. Standard practices are provided to address design of watercourse crossings and necessary maintenance activities. Guidance is also provided to address temporary watercourse diversion and dewatering.

Soil Disposal and Spoils Management

The Requirements address the storage of soil, construction, and waste materials associated with cannabis cultivation.

Exemptions

The SWRCB Order WQ 2019-0001-DWQ includes an exemption for when activities are considered to pose a low threat to water quality: personal use cannabis cultivators, indoor commercial cultivation activities, and outdoor commercial cultivation activities that disturb less than 2,000 square feet. Personal use cannabis cultivators are generally not subject to commercial cultivation regulations; indoor and operations that disturb less than 2,000 square feet are considered to be conditional exemption.

Cannabis cultivation activities that disturb an area (in aggregate) less than 2,000 square feet on one parcel or on contiguous parcels managed as a single operation may be conditionally exempt from enrolling under the order but are required to obtain coverage under the waiver of waste discharge requirements. This exemption does not limit the SWRCB's authority to inspect the site, evaluate the exemption status, or evaluate other water quality or water right regulatory requirements.

State Drinking Water Standards

Title 22, Division 4, Chapter 15, of the CCR establishes parameters for safe drinking water throughout the state. These drinking water standards are similar to, but in many cases more stringent than, federal standards. Title 22 contains both primary standards, and secondary standards related to aesthetics (taste and odor). These standards include limits for water quality parameters that may be found in runoff from permitted or unpermitted cultivation sites, such as heavy metals, pesticides, petroleum hydrocarbons, color, foaming agents, turbidity, and total dissolved solids/specific conductance.

Policy for Implementation of Toxics Standards in Inland Surface Waters, Enclosed Bays, and Estuaries of California

In 1994, SWRCB and EPA agreed to a coordinated approach for addressing priority toxic pollutants in inland surface waters, enclosed bays, and estuaries of California. In March 2000, SWRCB adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, commonly referred to as the State Implementation Policy. This policy implements NTR and CTR criteria and

applicable Basin Plan objectives for toxic pollutants. When an RWQCB issues any permit allowing the discharge of any toxic pollutant(s) in accordance with the CWA or the Porter-Cologne Act, the permit's promulgation and implementation must be consistent with the State Implementation Policy's substantive or procedural requirements. Any deviation from the State Implementation Policy requires the concurrence of EPA if the RWQCB is issuing any permit under the CWA. Consistency with the State Implementation Policy would occur when water permits are issued for Proposed Program activities.

California Pesticide Management Plan for Water Quality

The California Pesticide Management Plan for Water Quality is a joint effort between the California Department of Pesticide Regulation (CDPR), County agricultural commissioners, SWRCB, and the RWQCBs to protect water quality from pesticide pollution. To reduce the possibility of pesticides entering groundwater or surface water, a four-stage approach was designed by CDPR and SWRCB. Stage 1 involves educational outreach to the community to prevent pesticide contamination in water supplies. Stage 2 occurs after pesticides are detected in a water supply, and an appropriate response is selected that is safe and site specific. If Stage 2 is not effective, then Stage 3 tactics are employed, which include implementing restricted material use permit requirements, regulations, and other regulatory authority by CDPR and the County agricultural commissioners. In addition, SWRCB and the RWQCBs can employ Stage 4 and a variety of water quality control planning programs and other regulatory measures to protect water quality as necessary.

Surface Water Protection Program

CDPR implements the California Pesticide Management Plan for surface water protection through its Surface Water Protection Program, under a Management Agency Agreement with SWRCB. The Surface Water Protection Program is designed to characterize pesticide residues, identify contamination sources, determine flow of pesticides to surface water, and prepare site-specific mitigation measures. The program addresses both agricultural and nonagricultural sources of pesticide residues in surface waters. It has preventive and response components that reduce the presence of pesticides in surface waters. The preventive component includes local outreach to promote management practices that reduce pesticide runoff. Prevention also relies on CDPR's registration process, in which potential adverse effects on surface water quality, and particularly those in high-risk situations, are evaluated. The response component includes mitigation options to meet water quality goals, recognizing the value of self-regulating efforts to reduce pesticides in surface water as well as regulatory authorities of CDPR, SWRCB, and the RWQCBs.

Pesticide Contamination Prevention Act

The Pesticide Contamination Prevention Act, approved in 1985, was developed to prevent further pesticide contamination of groundwater from legal agricultural pesticide applications. The act defines pesticide pollution as "the introduction into the groundwaters of the state of an active ingredient, other specified product, or degradation product of an active ingredient of an economic poison above a level, with an adequate margin of safety that does not cause adverse health effects." CDPR has compiled a list of pesticide active ingredients on the Groundwater Protection List that have the potential to pollute groundwater. These various pesticides are reviewed and their use is modified when they are found in groundwater.

Groundwater Protection Program

CDPR implements the Pesticide Contamination Prevention Act through its Groundwater Protection Program, which is coordinated with SWRCB under the California Pesticide Management Plan. The Groundwater Protection Program evaluates and samples pesticides to determine whether they may contaminate groundwater, identifies areas sensitive to pesticide contamination, and develops mitigation measures to prevent the movement of pesticides. CDPR may adopt regulations to carry out these mitigation measures. CDPR conducts four groundwater monitoring programs. The first monitors whether pesticides on the Groundwater Protection List with the potential to pollute have been found in groundwater. The second type is four-section monitoring, which monitors wells near a contaminated well. The third monitoring type is sensitive-area monitoring that identifies areas sensitive to pesticide pollution. The fourth type is investigative monitoring, used to identify and understand the factors that affect pesticide movement into groundwater.

State Water Rights System

SWRCB administers a water rights system for the diversion of surface waters (springs, streams, and rivers), including diversion of water from subterranean streams flowing in known and definite channels. The granting of a water right provides permission to withdraw water from a river, stream, or groundwater source for a “reasonable” and “beneficial” use. Water right permits and licenses identify the amounts, conditions, and construction timetables for a proposed diversion. Before issuing the permit, SWRCB must consider all prior rights and the availability of water in the basin, as well as the flows needed to preserve instream uses such as recreation and fish and wildlife habitat. Water rights are administered using a seniority system based on the date of applying for the water right—commonly referred to as “first in time, first in right.” Junior water rights holders may not divert water in a manner that would reduce the ability of senior water rights holders to exercise their water right.

All surface water used for cannabis cultivation must be associated with a valid water right, whether the cultivator personally holds such a water right or it is held by the water purveyor supplying the cultivation operation (e.g., a municipal water system or a water delivery service).

Water Rights Administration for Cannabis Cultivation

Medical Cannabis Regulation and Safety Act and Adult Use of Marijuana Act contain provisions that are directly relevant to SWRCB’s water rights permit process. For example, Section 19332(d) of the Business and Professions Code requires that SWRCB, in accordance with Section 13149 of the California Water Code and in consultation with CDFW and CDFA, shall ensure that individual and cumulative effects of water diversion associated with cultivation of cannabis do not affect the instream flows needed for fish spawning, migration, and rearing or the flows needed to maintain natural flow variability. California Water Code Section 13149 goes on to describe that this is to be accomplished through adoption of principles and guidelines for diversion and use of water for cannabis cultivation in areas where cannabis cultivation may have the potential to substantially affect instream flows. The principles and guidelines adopted may include, but are not limited to, instream flow objectives, limits on diversions, and requirements for screening of diversions and elimination of barriers to fish passage. The principles and guidelines may include requirements that apply to groundwater extraction where SWRCB determines those requirements are reasonably necessary for purposes of this section. SWRCB, CDFW, and CDFA are actively coordinating on the development of draft principles and guidelines, which will be circulated for public review and comment prior to adoption.

Under the Medical Cannabis Regulation and Safety Act and Adult Use of Marijuana Act, applicants proposing to divert surface water must possess a valid water right. Specifically, an application for a license issued by CDFA must identify at least one of the following water sources:

- (1) Retail water supplier;
- (2) Groundwater well;
- (3) Rainwater catchment system; or
- (4) A diversion from a surface waterbody or an underground stream flowing in a known and definite channel

Section 8107 of the regulations describes the supplemental information requirements for water diversions:

- (1) A copy of any applicable statement, registration certificate, permits, licenses, or proof of a pending application issued under part 2 (commencing with section 1200) of division 2 of the California Water Code as evidence of approval of a water diversion by the State Water Resources Control Board; and
- (2) If the applicant has claimed an exception from the requirement to file a statement of diversion and use pursuant to section 5101 of the Water Code, the applicant shall provide a copy of the documentation submitted to the State Water Resources Control Board before January 1, 2019 demonstrating that the diversion is subject to subsection (a), (c), (d), or (e) of section 5101 of the Water Code.

California Water Code

The California Water Code is enforced by DWR. The mission of DWR is “to manage the water resources of California in cooperation with other agencies, to benefit the State’s people, and to protect, restore, and enhance the natural and human environments.” DWR is responsible for promoting California’s general welfare by ensuring beneficial water use and development statewide.

Diversion Water Use

California Water Code Section 5101 requires each person or organization that uses diverted surface water or pumped groundwater from a known subterranean stream after December 31, 1965, to file with SWRCB an initial Statement of Water Diversion and Use prior to July 1 of the following year. Supplemental Statements are required at 3-year intervals following the filing of an Initial Statement if there is continued diversion of water.

The main purpose of the Statement Program is to create a central repository for records of diversions of water. This repository differs from the records of appropriated water rights that are registered, permitted, and licensed. A Statement is not a confirmed water right; it is only a statement of diversion and use.

Sustainable Groundwater Management Act of 2014

The SGMA became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” for that basin (Water Code Section 10723). Local agencies had until January 1, 2017, to elect to become or form a groundwater sustainability agency. In the event a basin is not within the management area of a groundwater sustainability agency, the county within which the basin is located will be presumed to be the groundwater sustainability agency for the basin. However, the county may decline to serve in this capacity (Water Code Section 19724).

In exercising its authority under the SGMA, a groundwater sustainability agency must consider the interests of holders of overlying groundwater rights, among others, and may not make a binding determination of the water rights of any person or entity (Water Code Sections 10723.2, 10726.8). The SGMA also provides local agencies with additional tools and resources designed to ensure that the state’s groundwater basins are sustainably managed.

The SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority (Water Code Sections 10720.7, 10722.4). All basins designated as high- or medium-priority basins must be managed by a groundwater sustainability agency under a groundwater sustainability plan that complies with Water Code Section 10727 et seq. If required to be prepared, groundwater sustainability plans must be prepared by January 31, 2020, for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR, or by January 31, 2022, for all other high- and medium-priority basins. In lieu of preparation of a groundwater sustainability plan, a local agency may submit an alternative that complies with the SGMA no later than January 1, 2017 (Water Code Section 10733.6).

Water Conservation Act of 2009

The Water Conservation Act of 2009 (SB X7-7) requires agricultural water suppliers serving more than 25,000 irrigated acres (excluding recycled water deliveries) to adopt and submit to DWR an agricultural water management plan. These plans must include specific content, including reporting on the implementation status of specific Efficient Water Management Practices that were required under the Act. YCFCWD adopted an agricultural water management plan in 2016.

California Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

California Well Standards

DWR Bulletins 74-81 and 74-90 authorized the establishment of well standards and regulations pertaining to the construction, alteration, and destruction of wells. California Water Code Section 13750.5 requires that those responsible for the construction, alteration, or destruction of water wells, cathodic protection wells, groundwater monitoring wells, or geothermal heat exchange wells possess a C-57 Water Well Contractor's License. The Contractors State License Board issue this license. California Water Code Section 13751 requires that anyone who constructs, alters, or destroys a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well must file with DWR a report of completion within 60 days of the completion of the work.

State Cannabis Regulations**Cannabis Cultivation Licensing Requirements**

CCR Section 8102, Annual License Application Requirements, states:

- (dd) If applicable, the applicant shall provide evidence that the proposed premises is not located in whole or in part in a watershed or other geographic area that the State Water Resources Control Board or the Department of Fish and Wildlife has determined to be significantly adversely impacted by cannabis cultivation pursuant to section 8216.

CCR Section 8216, License Issuance in an Impacted Watershed, states:

If the State Water Resources Control Board or the Department of Fish and Wildlife notifies the department in writing that cannabis cultivation is causing significant adverse impacts on the environment in a watershed or other geographic area pursuant to section 26069, subdivision (c)(1), of the Business and Professions Code, the department shall not issue new licenses or increase the total number of plant identifiers within that watershed or area while the moratorium is in effect.

CCR Section 8307, Pesticide Use Requirements, states:

- (a) Licensees shall comply with all pesticide laws and regulations enforced by the Department of Pesticide Regulation.
- (b) For all pesticides that are exempt from registration requirements, licensees shall comply with all pesticide laws and Page 36 of 73 regulations enforced by the Department of Pesticide regulation and with the following pesticide application and storage protocols: (1) Comply with all pesticide label directions; (2) Store chemicals in a secure building or shed to prevent access by wildlife; (3) Contain any chemical leaks and immediately clean up any spills; (4) Apply the minimum amount of product necessary to control the target pest; (5) Prevent offsite drift; (6) Do not apply pesticides when

pollinators are present; (7) Do not allow drift to flowering plants attractive to pollinators; (8) Do not spray directly to surface water or allow pesticide product to drift to surface water. Spray only when wind is blowing away from surface water bodies; (9) Do not apply pesticides when they may reach surface water or groundwater; and (10) Only use properly labeled pesticides. If no label is available consult the Department of Pesticide Regulation.

Microbusiness Licensing Requirements

CCR Section 5504. License Issuance in an Impacted Watershed, states:

If the State Water Resources Control Board or the Department of Fish and Wildlife finds, based on substantial evidence, that a licensed microbusiness' cannabis cultivation is causing significant adverse impacts on the environment in a watershed or other geographic area, the Bureau shall not issue new microbusiness licenses that include cultivation activities or increase the total number of plant identifiers within that watershed or area.

LOCAL

Yolo County Code

Stormwater Management and Discharge Control

Chapter 9 of Title 10 the Yolo County Code implements requirements on land uses that discharge stormwater to be controlled in order to protect and enhance the water quality of watercourses and water bodies within the unincorporated areas of the County in a manner consistent with the CWA, the Porter-Cologne Act, and the County Stormwater Management Program, by reducing pollutants in stormwater discharges. Section 10-9.303 requires that construction activities for which a building permit has been issued to implement appropriate BMPs to prevent the discharge of pollutants, to the maximum extent practicable. These pollutants may include, but are not limited to, soils, construction wastes or debris, contaminants from construction materials, tools, and equipment. New development and redevelopment projects are required to implement postconstruction BMPs to control the volume, rate, and potential pollutant load of stormwater runoff, including, but not limited to, requirements to minimize the generation, transport and discharge of pollutants. The owners or operators of facilities required to implement postconstruction BMPs shall enter into a maintenance agreement with the County for maintenance of such features.

Flood Hazards

Chapter 4 of Title 8 of the Yolo County Code establishes development and flood protection standards in Sections 8-4.501 and 8-4.502 for buildings and facilities placed in areas of special flood hazard as defined by FEMA mapping (flood insurance rate mapping). Compliance with flood standards includes elevation of buildings 1 foot above the base flood elevation, floodproofing of the structure to allow passage of waters, and utilities designed to prohibit a discharge into floodwaters. Section 8-4.506 prohibits any activity that would increase the flood elevation over 1 foot.

Well Standards, Criteria, and Regulations

Well standards, criteria, and regulations are provided in Title 6, Chapter 8, Article 10 of the Yolo County Code. The Yolo County Code contains requirements associated with the construction, spacing, disinfection, and abandonment of wells. A permit for drilling or abandoning a well must be obtained from the Yolo County Environmental Health Division.

Stormwater Management Program

The County developed a Storm Water Management Program (SWMP) Planning Document in March 2003 (revised in October 2004) to address stormwater quality within the County's jurisdiction. The SWMP addresses a wide variety of activities conducted in urbanized areas of the County (outside of the incorporated cities) that are sources of pollutants in stormwater. The SWMP identifies BMPs and water quality control measures for construction and operation of development and County facilities (e.g., roadways and parks). The SWMP applies

to all dischargers and potential dischargers in the County that discharge to the County storm drain system, and discharges made directly to natural surface waters within the unincorporated area of the County. Prohibited discharges include pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater, into the County storm drain system, natural surface waters, or watercourses. The SWMP allows exceptions for any discharge regulated under a NPDES permit, waiver, or waste discharge order issued and administered by the state.

Yolo County Improvement Standards

Section 9 of the Yolo County Improvement Standards (Storm Water) includes requirements for stormwater detention and storage, fencing, outfall design, design runoff rates, and drainage diversions.

Section 10 of the Yolo County Improvement Standards (Grading) contains general requirements for grading permit, and addresses plan sheet details, boundary grading, grading near trees, and rolling terrain grading. Appendix J of the Building Code contains the local code used for issuing and enforcing grading permits. Yolo County Improvement Standards Section 11 (Stormwater Quality, Erosion, and Sediment Control) provide details on BMPs determined appropriate for construction and postconstruction activities for development that are used to comply with Yolo County Code requirements.

Yolo County 2030 Countywide General Plan

The following policies are applicable to the project:

- **Policy CC-4.11:** Require site specific information appropriate to each application to enable informed decision-making, including but not limited to the following: biological resources assessment, noise analysis, traffic and circulation assessment, air quality calculations (including greenhouse gases), cultural resources assessment, geotechnical study, Phase One environmental site assessment, title report, storm drainage analysis, flood risk analysis, water supply assessment, sewer/septic capacity and service analysis, and fiscal impact analysis.
- **Policy CO-2.22:** Prohibit development within a minimum of 100 feet from the top of banks for all lakes, perennial ponds, rivers, creeks, sloughs, and perennial streams. The setback will allow for fire and flood protection, a natural riparian corridor (or wetland vegetation), a planned recreational trail where applicable, and vegetated landscape for stormwater to pass through before it enters the water body. Exceptions to this action include irrigation pumps, roads and bridges, levees, docks, boat ramps, and similar uses.
- **Policy CO-5.1:** Coordinate with water purveyors and water users to manage supplies to avoid long-term overdraft, water quality degradation, land subsidence and other potential problems.
- **Policy CO-5.3:** Manage the County's groundwater resources on a sustainable yield basis that can provide water purveyors and individual users with reliable, high quality groundwater to serve existing and planned land uses during prolonged drought periods.
- **Policy CO-5.6:** Improve and protect water quality for municipal, agricultural, and environmental uses.
- **Policy CO-5.16:** Require all development to have an adequate water supply. Require significant discretionary projects to demonstrate adequate long-term and sustainable water supplies by preparing a verified water supply assessment. The assessment shall demonstrate a long-term, reliable water supply satisfactory under normal and above normal rainfall conditions, as well as drought conditions. Satisfy the requirements of CEQA Guidelines Section 15155 to consult with water agencies regarding water supply assessments.
- **Policy CO-5.17:** Require new development to be designed such that nitrates, lawn chemicals, oil, and other pollutants of concern do not impair groundwater quality.

- **Policy CO-5.19:** Strive for “water-neutral” development with new water demand offset by efficiency improvements elsewhere in the system. Require all new developments to offset new water demands to the greatest extent feasible.
- **Policy CO-23:** Support efforts to meet applicable water quality standards for all surface and groundwater resources.
- **Action CO-A93:** Require the implementation of Best Management Practices (BMPs) to minimize erosion, sedimentation, and water quality degradation resulting from new development and increases in impervious surfaces.
- **Policy PF-2-1:** Improve stormwater runoff quality and reduce impacts to groundwater and surface water resources.
- **Policy PF-2.2:** Construct on-site stormwater detention facilities that are designed so that runoff from the 100-year storm event does not: (1) result in an increase in peak release rate; (2) result in a time decrease associated with the time of concentration; (3) contribute to adjacent flood problems; and/or (4) significantly alter the direction of runoff.
- **Policy PF-2.4:** Encourage sustainable practices for stormwater management that provide for groundwater recharge and/or improve the quality of runoff through biological filtering and environmental restoration.
- **Action PF-A14:** Minimize pollution of stormwater, receiving water bodies and groundwater, and maximize groundwater recharge potential by:
 - Implementing planning and engineering design standards that use low impact development techniques and approaches to maintain and mimic the natural hydrologic regime.
 - Utilizing “infiltration” style low-impact development technologies.
 - Following stormwater Best Management Practices during and after construction.
- **Action PF-A15:** Continue to implement and enforce stormwater management requirements, guidelines and best practices, including the Yolo County Drainage Manual, that enable existing and new systems to meet applicable State and federal permit requirements.

Capay Valley Area Plan

The following policies and implementation measures are applicable to the project.

Agriculture

- **Policy 6:** Protect reliable and affordable ground water and aquifer supplies and recharge for agricultural uses.
- **Implementation Measure 1:** The County shall ensure that water resources in the Capay Valley area are reserved primarily for agricultural uses.
- **Implementation Measure 2:** The County shall continue to work with State Water Resources and other government water agencies to expand monitoring of groundwater quantity and quality to protect agricultural use of groundwater supplies.

Air, Groundwater, and Surface Water Pollution

- **Policy 1:** The County shall implement a plan to identify, monitor, and reduce the toxicity of each pollution factor.

3.10.3 Environmental Impacts and Mitigation Measures

METHODS AND ASSUMPTIONS

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the County. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects from implementing the CLUO under each of the five alternatives, based on the thresholds of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local regulations, ordinances, and regulations. Baseline, for the purposes of this analysis, assumes that new or relocated cannabis cultivation sites would be distributed as follows (see Appendix D):

- 33 percent of sites would be located on land areas currently in row crop production,
- 39 percent of sites would be located on land areas currently in orchard or vineyard production, and
- 28 percent of sites would be located on land areas currently used for grazing/pastureland.

The CLUO and state regulations require each commercial cannabis cultivation operation to obtain and disclose a legal water supply source. In Yolo County, possible water supplies include domestic water service from a local service provider (e.g., CSDs), water purchased from YCFCWCD, rainwater capture to storage facilities, and groundwater from on-site wells. While water supplies may be obtained from YCFCWCD or through riparian surface water rights, this analysis assumes that water would be supplied exclusively from groundwater because cannabis cultivation sites are generally located in rural areas and not in close proximity to where municipal water sources are available. It is possible that cannabis cultivation may use purchased water conveyed through agricultural canals; however, it is not considered likely because producing groundwater on-site is far more economically advantageous (i.e., no cost upon well completion) and not contingent on rainfall and other factors that limit surface water availability. It is also assumed that new cannabis uses would use farmlands that already use groundwater and have irrigation demands within the range of crop uses identified in Table 3.10-3.

The use of riparian water rights would be required to comply with the instream flow requirements and restrictions in Attachment A of SWRCB Order WQ 2019-0001-DWQ that provide protection of aquatic resources. The reader is referred to Section 3.15, “Utilities and Service Systems,” for an analysis of potential impacts to public water supply systems.

The following water demand factors were derived from information provided by existing cannabis cultivation operations in the County, estimates for indoor cannabis cultivation from Santa Cruz County (Santa Cruz 2017) and the 2015 City of Sacramento Urban Water Management Plan (water demands for commercial and industrial uses) and were considered when estimating annual water demand factors for each alternative:

- Outdoor Cultivation: 1.39 af per year (afy) per acre of cultivation
- Mixed-Light Cultivation: 2.65 afy per acre of cultivation
- Indoor Cultivation: 4.88 afy per acre of cultivation
- Nurseries: same water demand as 1 acre of indoor cannabis cultivation for each site
- Processing: 0.35 afy per site based on employment assumptions provided in Table 2-4 and industrial employee water use demands

- Manufacturing: 1.40 afy per site based on employment assumptions provided in Table 2-4 and industrial employee water use demands
- Testing: 0.84 afy per site based on employment assumptions provided in Table 2-4 and industrial employee water use demands
- Distribution: 0.18 afy per site based on employment assumptions provided in Table 2-4 and commercial employee water use demands
- Retail: 1.44 afy per site based on employment assumptions provided in Table 2-4 and commercial employee water use demands
- Microbusiness: 1.26 afy per site based on employment assumptions provided in Table 2-4 and industrial employee water use demands

Chapter 4, “Cumulative Impacts and Overconcentration,” contains a separate detailed analysis of the potential for cumulative effects not otherwise identified in this section, and effects from concentrations or clusters of multiple cannabis uses located in distinct subregions of the County.

THRESHOLDS OF SIGNIFICANCE

Thresholds of significance are based on Appendix G of the State CEQA Guidelines. These thresholds address hydrologic conditions of the County and are considered important by the state, CEQA, and Yolo County.

The project would result in a significant impact related to hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- substantially alter the existing drainage pattern of the County, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:
 - result in substantial on- or off-site erosion or siltation,
 - substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site,
 - create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or
 - impede or redirect flood flows;
- in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As described in Section 3.0, “Approach to the Environmental Analysis,” implementation of the CLUO would not result in the risk of releasing pollutants from tsunamis or seiches. The CLUO would also not impede a sustainable groundwater management plan. Therefore, these impact issue areas are not further evaluated.

IMPACT ANALYSIS

Impact HYDRO-1: Violate Any Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Surface Water or Groundwater Quality through Development or Alteration of Drainage Patterns

Operation of cannabis sites associated with adoption and implementation of the proposed CLUO, including subsequent Cannabis Use Permits pursuant to the adopted CLUO could have the potential to modify surface drainage conditions in such a manner that increased sedimentation and erosion could take place or result in discharge of other pollutants, leading to surface water and groundwater quality degradation. This could further affect waterways subject to the 303(d) list. Compliance with the CLUO and SWRCB Order WQ 2019-0001-DWQ performance standards would control potential construction and operational water quality impacts. This impact would be **less than significant** for all alternatives.

Construction and operation of cannabis cultivation and noncultivation uses have the potential to degrade water quality in various ways, including discharges of sediment to surface water from roads or other land improvements; discharges of fertilizers, pesticides, and other chemicals to surface waters or groundwater; discharges of fertilizers and pesticides to surface water or groundwater; spills or leaks of fuels, lubricants, hydraulic oil, or other chemicals associated with construction, pumps, or other equipment. In addition, construction of on-site improvements and buildings can lead to erosion and further degradation of surface water quality during construction. Waterways listed on the 303(d) list are reported to contain excessive levels of various pesticides and herbicide, such as group A pesticides, malathion, chlordane, DDT, and dieldrin. While it is generally stated that sources of these types of pollutants are unknown, in the 303(d), it is reasonable to assume that past and on-going agricultural practices have caused this contamination.

As described in Section 3.10.2, "Regulatory Setting," SWRCB Order WQ 2019-0001-DWQ contains requirements for cannabis cultivation sites. As shown in Table 3.10-4, these requirements vary based on the area of disturbance and risk level, which concerns slope of the cultivation area and proximity to a water body. For example, under the SWRCB Order WQ 2019-0001-DWQ, sites with a disturbed area of less than 2,000 square feet may be conditionally exempt and may obtain coverage under the waiver of discharge requirements, which contain minimal requirements. In contrast, sites that have a disturbed area that is greater than 1 acre (i.e., Tier 1), and located on a slope between 30 and 50 percent (moderate risk).

Because sites with disturbed areas covering less than 2,000 square feet may obtain coverage under the waiver of waste discharge requirements, many of the protective measures that are required for sites with larger disturbed area are not required under SWRCB Order WQ 2019-0001-DWQ. For instance, technical report preparation would be limited to a site closure report under the waiver, while depending on the size of the site and risk level, additional reports may be required, including a site management plan, site erosion sediment control plan, disturbed area stabilization plan, and nitrogen management plan. In addition, sites with a disturbed area of less than 2,000 square feet are not subject to monitoring and reporting programs under the Order.

However, Section 8-2.1408(V) of the CLUO includes the following soil stabilization requirements and performance standards for all cannabis uses, under all of the alternatives:

Grading/Land Clearing – No grading or land clearing for cannabis activities may occur without prior authorization pursuant to an approved Cannabis Use Permit, and a County Grading Permit, if applicable. Grading or land clearing in advance of approved permits is grounds for denial/revocation of any County Cannabis Use Permit and/or County Cannabis License. Grading and drainage shall be implemented in a manner that prevent soil erosion, and the accumulation of water, except in areas intended for retention. Grading and/or land clearing requires the issuance of a County Grading Permit and must be conducted subject to a State construction storm water permit, if applicable. CDFA licensees shall demonstrate compliance with the principles and guidelines for discharge and

water quality contained in the Cannabis Cultivation Policy of the State Water Resources Control Board. Excessive grading and disturbance shall be avoided. Cannabis activities on slopes of ten percent or greater require review and approval by the County Engineer to ensure the application of appropriate environmental protections and best management practices to control for erosion, sedimentation, and water quality to acceptable levels. A geotechnical analysis by a licensed civil engineer in the State of California may be required at the County's discretion, to minimize erosion, sedimentation, and water quality to acceptable levels.

Section 8-2.1408(J) of the CLUO provides the following performance standards for drainage improvements and water quality control:

Drainage and Storm Water Discharge – Drainage and storm water must be discharged into approved on-site stormwater management systems. Site drainage, runoff, and storm water discharge shall comply with the State Water Board Cannabis Policy and Cannabis General Order and the County Improvement Standards. Microbusiness permittees that include cultivation shall satisfy Section 5501(a) of the BCC Regulations. CDFA licensees shall demonstrate compliance with the principles and guidelines for discharge and water quality contained in the Cannabis Cultivation Policy of the State Water Resources Control Board.

These performance standards under the CLUO are consistent with water quality protection provisions under General Plan Policies CO-5.6, CO-5-17, CO-23, PF-2.1, and PF-2.4 and Actions CO-A93, PF-A14, and PF-A15.

While SWRCB Order WQ 2019-0001-DWQ contains various requirements that would protect against degradation of water quality, a waiver may be obtained for sites less than 2,000 square feet. The proposed performance standards listed above would extend to all sites, regardless of disturbance area, and require all cannabis uses to prevent erosion and to route discharge drainage and stormwater into a County-approved on-site stormwater management system. While sites that are greater than 2,000 square feet would be subject to more stringent requirements, appropriately, Sections 8-2.1408(J) and 8-2.1408(V) would ensure that discharge from smaller sites, less than 2,000 square feet, cannot reach waterways and cause or contribute to degraded water quality conditions.

In addition, outdoor commercial cultivation sites are required to comply with the Yolo County ILRP, which is designed to help farmers in the County to protect water quality from discharges of irrigation water and storm water that enters surface water bodies. The ILRP fulfills the conditions and requirements of the WDR General Order R5-2014-0030- R1 for waste discharges from irrigated lands, which includes surface water quality monitoring and analysis on the pesticides, herbicides, nutrients and other agricultural products. The required enrollment in this program protects against degrading of water that accepts runoff from agricultural activities.

Noncultivation uses would also be subject to the requirements of the County's Stormwater Management and Discharge Ordinance and the SWMP, which requires water quality controls (BMPs) for construction and operational stormwater discharges to prevent the discharge of pollutants (Yolo County Code Section 10-9.303). In addition, the Yolo County Improvement Standards (Section 9, Storm Water) includes requirements for stormwater detention and storage, fencing, outfall design, design runoff rates, and drainage diversions; and Section 11 of the Yolo County Improvement Standards contains details on BMPs determined appropriate for construction and post-construction activities. Nonagricultural activities within the County are also subject to grading permit requirements, which limits the potential for erosion to occur from development. These requirements provide protective measures that ensure that discharge related to construction and operation of individual projects associated with the CLUO would not degrade water quality.

Alternatives 1, 2, 3, and 5 assume that personal use outdoor cultivation may occur in any zoning district on a parcel with a legal residence. Personal use outdoor cultivation of up to six plants is assumed to occur within pots or garden areas on the grounds of the parcel. Alternative 4 would limit personal use cultivation to indoor only. These activities would likely involve no more than 100 square feet of land area and would be required to be outside of front yard and side yard setback areas that would provide land area that could

capture any soil erosion and sedimentation on-site. Given the minor extent of this potential ground disturbance contained within existing developed parcels, no significant water quality impacts are expected.

Alternative 1: Cultivation (Ancillary Nurseries and Processing Only) with Existing Limits (Existing Operations with CLUO) (CEQA Preferred Alternative)

Nine of the 78 existing and eligible cannabis cultivation sites are assumed to relocate under Alternative 1 due to zoning standards under the CLUO. While the total number of cultivation sites would not increase, relocation could result in the construction of sites is assumed involve approximately 18 acres of development that could result in soil erosion and potential operational water quality impacts (see Table 2-5).

As discussed above, compliance with the requirements of SWRCB Order WQ 2019-0001-DWQ, and Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, the Yolo County ILRP, and the County's Stormwater Management and Discharge Ordinance would place requirements on all cannabis use types that would reduce the potential to degrade water quality. Implementation of the CLUO Sections 8-2.1408(J) and 8-2.1408(V) is more stringent than the existing state and County regulations because it would ensure that discharge from smaller sites, less than 2,000 square feet, cannot reach waterways and cause or contribute to degraded water quality conditions. In addition, relocated sites would be required to comply with site closure procedures under SWRCB Order WQ 2019-0001-DWQ, which must describe, to the satisfaction of SWRCB, how the site would be decommissioned to prevent sediment and turbidity discharge.

This impact would be **less than significant** under Alternative 1.

Alternative 2: All License Types with Moderate Limits

Alternative 2 assumes the relocation of 30 sites of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning and buffer requirements and the additional 54 new cannabis uses that could develop approximately 164 acres (see Table 2-5). Exhibit 2-5 identifies the assumed distribution of cannabis uses.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffer requirements for personal use would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation.

This impact would be **less than significant** under Alternative 2

Alternative 3: All License Types with High Limits

Alternative 3 assumed the relocation of nine sites of the 78 existing and eligible cannabis cultivation sites and the additional 186 new cannabis uses could develop approximately 379 acres (see Table 2-5). As shown in Exhibit 2-6, these cannabis sites would be spread countywide.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffers requirements for personal use would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation.

This impact would be **less than significant** under Alternative 3

Alternative 4: Mixed-Light/Indoor License Types Only with Moderate Limits, No Hoop Houses or Outdoor Types

This alternative assumed the relocation of nine sites of the 78 existing and eligible cannabis cultivation sites. It also assumed that 75 of the existing and eligible cannabis sites with outdoor cultivation would convert entirely to indoor or mixed-light (greenhouse) cultivation. This alternative also assumed the construction of two new mixed-light or indoor cultivation sites and a total of 52 new noncultivation uses. The assumed relocations of nine cultivation sites and the development of the 54 new cannabis uses would develop approximately 122 acres (see Table 2-5). As shown in Exhibit 2-7, it is assumed that existing and new cannabis uses would generally be concentrated along the SR 16 corridor west of the City of Woodland.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, and Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation.

This impact would be **less than significant** under Alternative 4.

Alternative 5: All License Types with Moderate Limits, within Agricultural Zones Only, No Retail

Alternative 5 assumes relocation of 30 sites of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning and buffer requirements and the additional 52 new cannabis uses assumed under this alternative could develop approximately 163 acres (see Table 2-5). As shown in Exhibit 2-8, it is assumed existing and new cannabis uses would generally be concentrated along the SR 16 corridor west of the City of Woodland.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, and Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation.

This impact would be **less than significant** under Alternative 5.

Mitigation Measures

No mitigation is required for any of the alternatives.

Impact HYDRO-2: Decrease Groundwater Supplies or Interfere with Groundwater Recharge That May Impede Sustainable Groundwater Management and Increase Demand for Water Supply

Commercial cannabis operations in the County that may occur under the CLUO are assumed to use groundwater as the primary water supply source. Under Alternative 1, there would be no increase in current groundwater consumption. Water demand for new cannabis uses under Alternatives 2, 3, 4, and 5 would be less than or similar to that for other agricultural crop types grown in the agricultural areas of the County where most cannabis uses are assumed to be located. The estimated countywide demands under each alternative are not expected to result in the substantial loss of groundwater supplies under normal- and dry-year conditions that are used by agricultural uses and public water systems. Thus, Alternatives 2, 3, 4, and 5 would not result in substantially decreased groundwater supplies, interfere substantially with groundwater recharge in the County, or affect land subsidence at the ground surface. This impact would be **less than significant** for all alternatives.

Urban, rural, and agricultural land uses in the County depend upon a reliable water supply, a combination of both groundwater and surface water. Agricultural uses rely on groundwater for approximately 40 percent of their supply in a normal year but rely more heavily on groundwater during drought years (Water Resources Association of Yolo County 2018). Public water systems (e.g., Esparto CSD, Knights Landing CSD, Madison CSD, and Cacheville CSD) also rely on groundwater as their source of water supply. Commercial cannabis operations under the CLUO would use groundwater for water supply. Aquifer overdraft (or overpumping) could result in the loss of available water supply for agricultural and public water systems and can cause permanent damage to an aquifer if the aquifer materials settle, reducing its future storage capacity. In addition, overdraft can cause, and in the past in Yolo County has caused, land subsidence at the ground surface.

Although agencies have tried to improve the understanding of groundwater resources through preparation of groundwater management plans and monitoring programs, there is no information currently available related to quantities of reliable, sustainable groundwater supplies in Yolo County (Water Resources Association of Yolo County 2018). The best available information related to groundwater supplies consists of records of groundwater elevation in the County, which are available beginning in 1953. As depicted in Exhibit 3.10-5, from 2012 through 2017, water supplies in YCFCWCD vary from year to year depending on available resources. Notably, very little water was available for purchase in 2014 because of low rainfall and

persistent drought conditions. Regardless of fluctuations in surface water supplies, which can lead to increased reliance on groundwater pumping, and changes to the countywide cultivated land area, groundwater elevation levels did not fluctuate substantially. This indicates that the Yolo Subbasin maintains consistent depth to groundwater elevations even under dry-year conditions, indicating a substantial amount of available groundwater resources. These conditions are also expected for the Capay Valley, Solano, and Colusa Subbasins given their connectivity in the County.

Agricultural water in Yolo County is primarily supplied from groundwater or through purchasing of supplies from YCFCWCD, which distributes water through canals and laterals. Each crop type in the County, including cannabis, has a different application rate. Table 3.10-9 shows the comparative irrigation rate of these types of crops. (See Table 3.10-3 for additional irrigation rates for crops in Yolo County.)

Table 3.10-9 Comparative Irrigation Rates

Agriculture Type		Acre-Feet per Acre per Year
Row Crops	Field Crops	3.06
	Vegetable Crops	1.50
	Seed Crops	2.14
Orchard (Fruit and Nut Crops)		3.24
Vineyard (Grapes /Wine Grapes)		2.39
Grazing/Pastureland		0
Outdoor Cannabis Cultivation		1.39
Mixed-Light Cannabis Cultivation		2.65
Indoor Cannabis Cultivation		4.88
Compiled by Ascent Environmental 2019		

Alternatives 1, 2, 3, and 5 assume that personal use outdoor cultivation may occur in any zoning district on a parcel with a legal residence. Personal use outdoor cultivation of up to six plants is assumed to occur within pots or garden areas on the grounds of the parcel. Alternative 4 would limit personal use cultivation to indoor only. These activities would likely involve no more than 100 square feet of land area and would be required to be outside of front yard and side yard setback areas. Personal use cultivation would require approximately 2.8 gallons of irrigation water per day (0.003 afy) when the plants are being cultivated. This is a minor amount of water compared to typical household usage of approximately 80–100 gallons of water per day and would not constitute a substantial increase in groundwater pumping (USGS 2019).

Alternative 1: Cultivation (Ancillary Nurseries and Processing Only) with Existing Limits (Existing Operations with CLUO) (CEQA Preferred Alternative)

Under Alternative 1, no new cannabis uses are assumed in the County. With consideration of the water demand ratios for different cultivation sites, and the expected cultivation acreage, water demand under Alternative 1 would be approximately 132 afy (Table 3.10-10). With consideration of all cultivation types, under Alternative 1, the countywide water demand would be approximately 1.69 afy per acre. Water demand at cultivation sites can vary based irrigation practices. This groundwater demand per acre of cannabis cultivation area is currently below the County's annual average agricultural per acre water demands, which have ranged from 2.35 to 3.05 afy per acre of cropland from 2012 through 2015 (as reported in YCFCWCD's 2015 Agricultural Water Management Plan [YCFCWCD 2016]) (see Table 3.10-3).

Under Alternative 1, nine of the existing 78 outdoor cultivation sites are assumed to be relocated because of zoning requirements. Relocated cannabis cultivation operations would require groundwater production from one or more of the subbasins in the County. Consideration of the change in groundwater production associated with cultivation sites would depend on the existing uses on the parcel. As discussed in Appendix D, it is assumed that relocated sites would be on agricultural land.

Table 3.10-10 Alternative 1 Water Demand

Cultivation Type	Demand Ratio	Cultivation Acreage	Acre-Feet per Year
Outdoor Cultivation	1.39 acre-feet per acre per year	63	88
Mixed-Light Cultivation	2.65 acre-feet per acre per year	13	34
Indoor Cultivation	4.88 acre-feet per acre per year	2	10
Total			132
Overall acre-feet per acre per year ratio for the County			1.69
Note: Values are rounded.			
Source: Compiled by Ascent Environmental in 2019			

Although the overall quantity of groundwater production associated with cannabis cultivation would not change countywide, irrigation rates may change where cannabis sites are relocated to parcels currently in row crop, orchard, or vineyard production. As indicated in Table 3.10-9, water application rates (afy) would increase where outdoor cultivation activities replace grazing/pastureland or decrease where outdoor cultivation activities replace row crops, orchards, or vineyards. Relocated sites could increase or decrease the existing irrigation application rates. Because of uncertainties related to the location of relocated sites and current irrigation water demands and sources (i.e., purchased or pumped on-site), quantifying changes to groundwater pumping is not possible at the programmatic level of this analysis.

Countywide groundwater demand under Alternative 1 would be approximately 132 afy, which would be similar to the annual irrigation demand for approximately 41 acres of orchard. In 2017, approximately 86,130 acres of fruit and nut crops were harvested in Yolo County (Yolo County 2018). Although the quantities of water supplied from purveyors versus on-site groundwater pumping is unknown, orchards cannot be followed during dry years. As shown in Table 3.10-3, purchased water varies substantially from year to year, and it is reasonable to assume that during years when relatively little water was purchased from YCFCWCD, groundwater was used as irrigation. (Note that the extent of YCFCWCD-irrigated land, which covers nearly 40 percent of the valley lands in Yolo County, was 6,917 acres greater in 2015 than in 2014, indicating that 6,917 acres may have used groundwater as irrigation.) Thus, the equivalent increase in potential water demand to irrigate approximately 41 acres of orchard is reasonably considered to be insubstantial to countywide demands on the Yolo Subbasin given the area of orchards within the County and the wide range of groundwater pumping for orchard irrigation demand, as well as other crop types, that may occur from year to year. Furthermore, as discussed above, the groundwater conditions in the County have maintained consistent depth to groundwater elevations, regardless of production rates in recent years, indicating a substantial amount of available groundwater resources. Thus, groundwater pumping used to irrigate cannabis cultivation under Alternative 1 would not result in substantially decreased groundwater supplies under normal- and dry-year conditions or interfere substantially with groundwater recharge in the County.

This impact would be **less than significant** under Alternative 1.

Alternative 2: All License Types with Moderate Limits

Table 3.10-11 estimates total cannabis use water demands for assumed cannabis uses under Alternative 2, including water demand from existing cultivation sites.

As identified in Appendix D, over 90 percent of new cannabis uses are assumed to be located on agricultural lands. With consideration of all cultivation types the countywide water demand rate would be approximately 1.70 afy per acre (Table 3.10-11). Water demand at cultivation sites can vary based on irrigation practices. This groundwater demand per acre of cultivation area is below the County's typical agricultural per acre water demands, which range from 2.35 to 3.05 afy per acre of cropland (see Table 3.10-3). Noncultivation water demands under Alternative 2 would be 0.75 afy per acre (using site acreage assumptions in Table 2-5) and would also be below existing average agricultural water demands. It is assumed that Alternative 2 could create approximately 123 acres of impervious surfaces associated with buildings for cultivation and

noncultivation uses (see Table 2-4). This increase in impervious surface is minor and would not substantially interfere with countywide groundwater infiltration that occurs over approximately 545,000 acres of land designated as Agriculture under the General Plan.

Table 3.10-11 Alternative 2 Water Demand

Cannabis Use	Demand Ratio	Cultivation Acreage/Number of Sites	Acre-Feet per Year
Cultivation			
Outdoor Cultivation	1.39 acre-feet per acre per year	64	89
Mixed-Light Cultivation	2.65 acre-feet per acre per year	14	37
Indoor Cultivation	4.88 acre-feet per acre per year	2	10
Overall cultivation acre-feet per year ratio for the County			1.70
Noncultivation			
Nurseries	5.90 acre-feet per acre per site	5	30
Processing	0.35 acre-feet per year per site	5	2
Manufacturing	1.40 acre-feet per year per site	20	28
Testing	0.84 acre-feet per year per site	5	4
Distribution	0.18 acre-feet per year per site	10	2
Retail	1.44 acre-feet per year per site	2	3
Microbusiness	1.26 acre-feet per year per site	5	6
Overall noncultivation acre-feet per year ratio for the County			0.75
Countywide Total Groundwater Demand (acre-feet per year)			211
Note: Values are rounded.			
Source: Compiled by Ascent Environmental in 2019			

Assumed cannabis uses under Alternative 2 would increase cannabis-related groundwater demand. As discussed above for Alternative 1, because of uncertainties related to the location of sites and existing irrigation water demands and sources on the parcel accepting the relocation (i.e., purchased or pumped on-site), quantifying changes to groundwater pumping is not possible at the programmatic level of this analysis. Regardless of this uncertainty, countywide groundwater demand under Alternative 2 would be approximately 211 afy, which would be similar to the annual irrigation demand for approximately 65 acres of orchard (based on the irrigation demand data in Table 3.10-9). For the reasons described above for Alternative 1, although the relative quantities of water derived from groundwater or surface water purveyors is unknown, the equivalent increase in potential water demand to irrigate 65 acres of orchards is reasonably considered to be insubstantial to countywide demands on the County's groundwater basins given the area of orchards within the County and the wide range of groundwater pumping for orchard irrigation demand, as well as other crop types, that may occur from year to year. Furthermore, as discussed above, the County groundwater conditions have maintained consistent depth to groundwater elevations, regardless of production rates in recent years, indicating a substantial amount of available groundwater resources. Thus, groundwater pumping associated with cannabis activities under Alternative 2 would not result in substantially decreased groundwater supplies under normal- and dry-year conditions or interfere substantially with groundwater recharge in the County.

This impact would be **less than significant** under Alternative 2.

Alternative 3: All License Types with High Limits

Table 3.10-12 estimates total cannabis use water demand for assumed cannabis uses under Alternative 3, including water demand from existing cultivation sites.

Table 3.10-12 Alternative 3 Water Demand

Cannabis Use	Demand Ratio	Cultivation Acreage/Number of Sites	Acre-Feet per Year
Cultivation			
Outdoor Cultivation	1.39 acre-feet per acre per year	128	178
Mixed-Light Cultivation	2.65 acre-feet per acre per year	27	72
Indoor Cultivation	4.88 acre-feet per acre per year	5	24
Overall cultivation acre-feet per year ratio for the County			1.71
Noncultivation			
Nurseries	5.90 acre-feet per acre per site	10	59
Processing	0.35 acre-feet per year per site	10	4
Manufacturing	1.40 acre-feet per year per site	40	56
Testing	0.84 acre-feet per year per site	10	8
Distribution	0.18 acre-feet per year per site	20	4
Retail	1.44 acre-feet per year per site	4	6
Microbusiness	1.26 acre-feet per year per site	10	13
Overall noncultivation acre-feet per year ratio for the County			0.76
Countywide Total Groundwater Demand (acre-feet per year)			424
Note: Values are rounded.			
Source: Compiled by Ascent Environmental in 2019			

As identified in Appendix D, over 90 percent of new cannabis uses are assumed to be located on agricultural lands. As indicated in Table 3.10-12, the total cultivation water demand under Alternative 3 would be 1.71 afy per acre of cultivation area. Water demand at cultivation sites can vary based on irrigation practices. This irrigation application rate is below the County's typical agricultural per acre water demands, which range from 2.35 to 3.05 afy per acre of cropland (see Table 3.10-3). Noncultivation water demands would be approximately 0.76 afy per acre (using site acreage assumptions in Table 2-5) and would also be below existing agricultural water demands. It is assumed that Alternative 3 could create approximately 244 acres of impervious surfaces associated with buildings for cultivation and noncultivation uses (see Table 2-4). This increase in impervious surface is minor and would not substantially interfere with countywide groundwater infiltration that occurs over approximately 545,000 acres of land designated as Agriculture under the General Plan.

Assumed cannabis uses under Alternative 3 would increase cannabis-related groundwater demand. As discussed above for Alternative 1, because of uncertainties related to the location of sites and existing irrigation water demands and sources on the parcel accepting the relocation (i.e., purchased or pumped on-site), quantifying changes to groundwater pumping is not possible at the programmatic level of this analysis. Regardless of this uncertainty, countywide groundwater demand under Alternative 3 would be approximately 424 afy, which would be similar to the annual irrigation demand for approximately 131 acres of orchard (based on the irrigation demand data in Table 3.10-9). For the reasons described above for Alternative 1, although the relative quantities of water derived from groundwater or surface water purveyors is unknown, the equivalent increase in potential water demand to irrigate 131 acres of orchards is not substantial given the wide range of groundwater pumping for orchard irrigation demand that may occur from year to year. Furthermore, as discussed above, the County groundwater basins have maintained consistent depth to groundwater elevations, regardless of production rates in recent years, indicating a substantial amount of available groundwater resources. Thus, groundwater pumping associated with cannabis activities under Alternative 3 would not result in substantially decreased groundwater supplies under normal- and dry-year conditions or interfere substantially with groundwater recharge in the County.

This impact would be **less than significant** under Alternative 3.

Alternative 4: Mixed-Light/Indoor License Types Only with Moderate Limits, No Hoop Houses or Outdoor Use Types

Table 3.10-13 estimates total cannabis use water demand for assumed cannabis uses under Alternative 4, including water demand from the conversion of existing outdoor cultivation sites to mixed-light and indoor cultivation operations.

Table 3.10-13 Alternative 4 Water Demand

Cannabis Use	Demand Ratio	Cultivation Acreage/Number of Sites	Acre-Feet per Year
Cultivation			
Mixed-Light Cultivation	2.65 acre-feet per acre per year	68	180
Indoor Cultivation	4.88 acre-feet per acre per year	12	59
Overall cultivation acre-feet per year ratio for the County			2.99
Noncultivation			
Nurseries	5.90 acre-feet per acre per site	5	30
Processing	0.35 acre-feet per year per site	5	2
Manufacturing	1.40 acre-feet per year per site	20	28
Testing	0.84 acre-feet per year per site	5	4
Distribution	0.18 acre-feet per year per site	10	2
Retail	1.44 acre-feet per year per site	2	3
Microbusiness	1.26 acre-feet per year per site	5	6
Overall noncultivation acre-feet per year ratio for the County			0.75
Countywide Total Groundwater Demand (acre-feet per year)			314

Note: Values are rounded.

Source: Compiled by Ascent Environmental in 2019

Under Alternative 4, existing outdoor cultivation sites would be relocated and converted to indoor or mixed-light operations. These relocated sites would increase irrigation rates where mixed-light operations occur and decrease where indoor operations replace row, orchard, or vineyard production. Water application rates (af per acre per year) would increase where indoor and mixed-light cultivation activities replace grazing/pastureland.

As identified in Appendix D, over 90 percent of new cannabis uses are assumed to be located on agricultural lands. Total cultivation water demand under Alternative 4 would be approximately 2.99 afy per acre of cultivation area. Water demand at cultivation sites can vary based on irrigation practices. This groundwater demand per acre of cultivation area is within the County's typical agricultural per acre water demands, which range from 2.35 to 3.05 afy per acre of cropland (see Table 3.10-3). Noncultivation water demands under Alternative 4 would generate 0.75 afy per acre (using site acreage assumptions in Table 2-5) and would be below existing agricultural water demands. It is assumed that Alternative 4 could create approximately 209 acres of impervious surfaces associated with buildings for cultivation and noncultivation uses (see Table 2-4). This increase in impervious surface is minor and would not substantially interfere with countywide groundwater infiltration that occurs over approximately 545,000 acres of land designated as Agriculture under the General Plan.

Assumed cannabis uses under Alternative 4 would increase cannabis-related groundwater demand. As discussed above for Alternative 1, because of uncertainties related to the location of sites and existing irrigation water demands and sources on the parcel accepting the relocation (i.e., purchased or pumped on-site), quantifying changes to groundwater pumping is not possible at the programmatic level of this analysis. Regardless of this uncertainty, countywide groundwater demand under Alternative 4 would be approximately 314 afy, which would be similar to the annual irrigation demand for 97 acres of orchard (based on the irrigation demand data in Table 3.10-9). For the reasons described above for Alternative 1, although the relative quantities of water derived from groundwater or surface water purveyors is unknown, the equivalent

increase in potential water demand to irrigate 97 acres of orchards is not substantial given the wide range of groundwater pumping for orchard irrigation demand that may occur from year to year. Furthermore, as discussed above, the County groundwater basins have maintained consistent depth to groundwater elevations, regardless of production rates in recent years, indicating a substantial amount of available groundwater resources. Thus, groundwater pumping associated with cannabis activities under Alternative 4 would not result in substantially decreased groundwater supplies under normal- and dry-year conditions or interfere substantially with groundwater recharge in the County. This impact would be **less than significant** under Alternative 4.

Alternative 5: All License Types with Moderate Limits, within Agricultural Zones Only, No Retail

Table 3.10-14 estimates total cannabis use water demand for assumed cannabis uses under Alternative 5, including water demand from existing cultivation sites.

Table 3.10-14 Alternative 5 Water Demand

Cannabis Use	Demand Ratio	Cultivation Acreage/ Number of Sites	Acre-Feet per Year
Cultivation			
Outdoor Cultivation	1.39 acre-feet per acre per year	64	89
Mixed-Light Cultivation	2.65 acre-feet per acre per year	14	37
Indoor Cultivation	4.88 acre-feet per acre per year	2	10
Overall cultivation acre-feet per year ratio for the County			1.70
Noncultivation			
Nurseries	5.90 acre-feet per acre per site	5	30
Processing	0.35 acre-feet per year per site	5	2
Manufacturing	1.40 acre-feet per year per site	20	28
Testing	0.84 acre-feet per year per site	5	4
Distribution	0.18 acre-feet per year per site	10	2
Microbusiness	1.26 acre-feet per year per site	5	6
Overall noncultivation acre-feet per year ratio for the County			0.73
Countywide Total Groundwater Demand (acre-feet per year)			208
Note: Values are rounded.			
Source: Compiled by Ascent Environmental in 2019			

As identified in Appendix D, all cannabis uses are assumed to be located on agricultural. Total cultivation water demand under Alternative 5 would be approximately 1.70 afy per acre of cultivation area. Water demand at cultivation sites can vary based on irrigation practices. This groundwater demand per acre of cultivation area is below the County's typical agricultural per acre water demands, which range from 2.35 to 3.05 afy per acre of cropland (see Table 3.10-3). Noncultivation water demands under Alternative 5 would generate 0.73 afy per acre (using site acreage assumptions in Table 2-5) and would also be below existing agricultural water demands. It is assumed that Alternative 5 could create approximately 123 acres of impervious surfaces associated with buildings for cultivation and noncultivation uses (see Table 2-4). This increase in impervious surface is minor and would not substantially interfere with countywide groundwater infiltration that occurs over approximately 545,000 acres of land designated as Agriculture under the General Plan.

Assumed cannabis uses under Alternative 5 would increase cannabis-related groundwater demand. As discussed above for Alternative 1, because of uncertainties related to the location of sites and existing irrigation water demands and sources on the parcel accepting the relocation (i.e., purchased or pumped on-site), quantifying changes to groundwater pumping is not possible at the programmatic level of this analysis.

Regardless of this uncertainty, countywide groundwater demand under Alternative 5 would be approximately 208 afy, which would be similar to the annual irrigation demand for approximately 64 acres of orchard (based on the irrigation demand data in Table 3.10-9). For the reasons described above for Alternative 1, although the relative quantities of water derived from groundwater or surface water purveyors is unknown, the equivalent increase in potential water demand to irrigate approximately 64 acres of orchards is not substantial given the wide range of groundwater pumping for orchard irrigation demand that may occur from year to year. Furthermore, as discussed above, the County groundwater basins have maintained consistent depth to groundwater elevations, regardless of production rates in recent years, indicating a substantial amount of available groundwater resources. Thus, groundwater pumping associated with cannabis activities under Alternative 5 would not result in substantially decreased groundwater supplies under normal- and dry-year conditions or interfere substantially with groundwater recharge in the County.

This impact would be **less than significant** under Alternative 5.

Mitigation Measures

No mitigation is required for any of the alternatives.

Impact HYDRO-3: Impede or Redirect Drainage Patterns in a Manner That Would Result in Flooding

Operation of commercial cannabis sites associated with adoption and implementation of the proposed CLUO, including subsequent Cannabis Use Permits pursuant to the adopted CLUO would create new impervious surfaces, buildings, and other improvements that could affect drainage flows that could alter flooding conditions and generate increased flooding hazards. Compliance with the CLUO performance standards and Yolo County Code requirements would ensure stormwater flows are addressed on-site and changes in drainage flows do not increase flooding hazard impacts. This impact would be **less than significant** for all alternatives.

Exhibit 3.10-6 shows the extent of floodplain conditions in the unincorporated area of the County that includes most of the agricultural areas. Construction of new cannabis sites would create new impervious surfaces, buildings, and other improvements that could affect drainage flows that could alter and increase the extent of flooding conditions.

Chapter 4 of Title 8 of the Yolo County Code establishes development and flood protection standards in Sections 8-4.501 and 8-4.502 for buildings and facilities placed in areas of special flood hazard as defined by FEMA. Compliance with flood standards includes elevation of buildings 1 foot above the base flood elevation, floodproofing of the structure to allow passage of waters, and utilities designed to prohibit a discharge into flood waters. Section 8-4.506 prohibits any activity that would increase the flood elevation over 1 foot. CLUO Sections 8-2.1408(F) and 8-2.1408(NN) requires that all building and site designs comply with all applicable codes, standards, and regulations, including the County's flood control standards. CLUO Section 8-2.1408(J) also requires that site drainage be accommodated in an approved on-site storm management system. These performance standards would be consistent with General Plan Policy PF-2.2.

In addition, Section 9-6 of the Yolo County Improvement Standards states:

Sufficient stormwater detention volume shall be provided such that the probability of the post development release rate exceeding 0.1 cfs/acre of development shall be less than one percent (1.0%) per year. The stormwater detention volume shall not be less than the difference between pre- and post- development flows from the development site in the 100-year, 24 hour storm event.

Alternatives 1, 2, 3, and 5 assume that personal use outdoor cultivation may occur in any zoning district on a parcel with a legal residence. Personal use outdoor cultivation of up to six plants is assumed to occur within pots or garden areas on the grounds of the parcel. Alternative 4 would limit personal use cultivation to indoor only. These activities would likely involve no more than 100 square feet of land area and would be

required to be outside of front yard and side yard setback areas. Given minimal size of the cultivation area and its location within a developed parcel, no significant drainage or flooding impacts are expected.

Alternative 1: Cultivation (Ancillary Nurseries and Processing Only) with Existing Limits (Existing Operations with CLUO) (CEQA Preferred Alternative)

Nine of the 78 existing and eligible cannabis cultivation sites are assumed to relocate under Alternative 1 due to zoning standards under the CLUO. While the total number of cultivation sites would not increase, the assumed relocation could result in the construction of new cultivation sites that may involve 18 acres of development (see Table 2-5).

Relocations would be conducted in compliance with the requirements of Yolo County Code Sections 8-4.501, 8-4.502 and 8-4.506 (as required under CLUO Sections 8-2.1408[F] and 8-2.1408[OO] regarding building and site design). In addition, Section 8-4.506 of the Yolo County Flood Protection Ordinance, prohibits any development that would increase the base flood elevation over 1 foot. Section 8-2.1408(J) of the CLUO also requires that site drainage be accommodated in an approved on-site storm management system. Thus, compliance with these standards would ensure that drainage is managed on each cannabis site and avoid substantial increases in the base flood elevation.

This impact would be **less than significant** under Alternative 1.

Alternative 2: All License Types with Moderate Limits

Alternative 2 assumes the relocation of 30 of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning and buffer requirements and the additional 54 new cannabis uses that could develop approximately 164 acres (see Table 2-5). As shown in Exhibits 2-5 and 3.10-6, approximately 20 new cannabis sites would be located near floodplain areas.

Cannabis uses would be conducted in compliance with the requirements of Yolo County Code Sections 8-4.501, 8-4.502 and 8-4.506 (as required under CLUO Sections 8-2.1408[F] and 8-2.1408[OO] regarding building and site design). In addition, Section 8-4.506 of the Yolo County Flood Protection Ordinance, prohibits any development that would increase the base flood elevation over 1 foot. Section 8-2.1408(J) of the CLUO also requires that site drainage be accommodated in an approved on-site storm management system. Thus, compliance with these standards would ensure that drainage is managed on each cannabis site and substantial increases in the base flood elevation would be avoided.

This impact would be **less than significant** under Alternative 2.

Alternative 3: All License Types with High Limits

Alternative 3 assumed the relocation of nine sites of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning requirements and the additional 186 new cannabis uses could develop approximately 379 acres (see Table 2-5). As shown in Exhibits 2-6 and 3.10-6, it is assumed that approximately 55 new cannabis sites would be located near floodplain areas.

Cannabis uses would be conducted in compliance with the requirements of Yolo County Code Sections 8-4.501, 8-4.502 and 8-4.506 (as required under CLUO Sections 8-2.1408[F] and 8-2.1408[OO] regarding building and site design). In addition, Section 8-4.506 of the Yolo County Flood Protection Ordinance, prohibits any development that would increase the base flood elevation over 1 foot. Section 8-2.1408(J) of the CLUO also requires that site drainage be accommodated in an approved on-site storm management system. Thus, compliance with these standards would ensure that drainage is managed on each cannabis site to avoid substantial increases in the base flood elevation.

This impact would be **less than significant** under Alternative 3.

Alternative 4: Mixed-Light/Indoor License Types Only with Moderate Limits, No Hoop Houses or Outdoor Types

This alternative assumed the relocation of nine of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning requirements. It also assumed that 75 of the existing and eligible cannabis sites with outdoor cultivation would convert entirely to indoor or mixed-light (greenhouse) cultivation. Building restrictions in flood areas along the Sacramento River may also require five cultivation site relocations under this alternative. This alternative also assumed the construction of two new mixed-light or indoor cultivation sites and a total of 52 new noncultivation uses. Relocations of nine cultivation sites and the development of the 54 new cannabis uses would develop approximately 122 acres (see Table 2-5). As shown in Exhibits 2-7 and 3.10-6, approximately 45 new cannabis sites and new buildings associated with the conversion of outdoor cultivation to mixed-light or indoor operations would be located near floodplain areas.

Cannabis uses would be conducted in compliance with the requirements of Yolo County Code Sections 8-4.501, 8-4.502 and 8-4.506 (as required under CLUO Sections 8-2.1408[F] and 8-2.1408[OO] regarding building and site design). In addition, Section 8-4.506 of the Yolo County Flood Protection Ordinance, prohibits any development that would increase the base flood elevation over 1 foot. Section 8-2.1408(J) of the CLUO also requires that site drainage be accommodated in an approved on-site storm management system. Thus, compliance with these standards would ensure that drainage is managed on each cannabis site to avoid substantial increases in the base flood elevation.

This impact would be **less than significant** under Alternative 4.

Alternative 5: All License Types with Moderate Limits, within Agricultural Zones Only, No Retail

Alternative 5 assumes relocation of 30 sites of the 78 existing and eligible cannabis cultivation sites due to zoning and buffer requirements and the additional 52 new cannabis uses assumed under this alternative could develop approximately 163 acres (see Table 2-5). As shown in Exhibits 2-8 and 3.10-6, approximately 22 new cannabis sites would be located near floodplain areas.

Cannabis uses would be conducted in compliance with the requirements of Yolo County Code Sections 8-4.501, 8-4.502 and 8-4.506 (as required under CLUO Sections 8-2.1408[F] and 8-2.1408[OO] regarding building and site design). In addition, Section 8-4.506 of the Yolo County Flood Protection Ordinance, prohibits any development that would increase the base flood elevation over 1 foot. Section 8-2.1408(J) of the CLUO also requires that site drainage be accommodated in an approved on-site storm management system. Thus, compliance with these standards would ensure that drainage is managed on each cannabis site to avoid substantial increases in the base flood elevation.

This impact would be **less than significant** under Alternative 5.

Mitigation Measures

No mitigation is required for any of the alternatives.

Impact HYDRO-4: Conflict with a Water Quality Control Plan

The Central Valley RWQCB's Basin Plan includes areas within Yolo County, covering the Sacramento and San Joaquin river basins. Activities associated with the CLUO include irrigated agriculture and industrial uses, both of which are listed as major water quality concerns in the Basin Plan. Water quality control plans that are applicable to cannabis cultivation have been developed to meet the goals of the Basin Plan, including the ILRP, which regulates discharges due to agricultural operations; and, the SWRCB Order WQ 2019-0001-DWQ. Cannabis facilities, including indoor cultivation, microbusiness, retail, processing, manufacturing, testing, nursery, and distribution could be located in community service district (CSD) service areas or other municipal service district areas where disposal to wastewater treatment facilities (WWTFs) could be available. This impact would be **significant** for all alternatives.

The Central Valley RWQCB's Basin Plan includes areas within Yolo County, covering the Sacramento and San Joaquin river basins. Activities associated with the CLUO include irrigated agriculture and industrial uses, both of which are listed as major water quality concerns in the Basin Plan. Water quality control plans that are applicable to cannabis cultivation that help to meet the goals of the Basin Plan, and subject to uses identified in the CLUO, include:

- ILRP, which regulates discharges due to agricultural operations, and
- SWRCB Order WQ 2019-0001-DWQ.

Cannabis facilities, including indoor cultivation, microbusiness, retail, testing, nursery, and distribution could be located in CSD or municipal service areas where disposal to WWTFs could be available. According to Section 6-19.433 of the Yolo County Code, industrial wastewater is generated from any manufacturing, processing institution, commercial, or agricultural operation, or any operation that produces discharges other than domestic wastewater. Examples of domestic wastewater includes outflow from toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals (Section 6-19.421 of the Yolo County Code). Based on these definitions, indoor cultivation, microbusiness, retail, processing, manufacturing, testing, nursery, and distribution facilities would likely be considered industrial wastewater producers. Irrigation tail water or hydroponic wastewater from cultivation operations may contain nutrients (e.g., phosphate or nitrate), salinity constituents (e.g., sodium, chloride, potassium, calcium, sulfate, magnesium), and other constituents (e.g., iron, manganese, zinc, molybdenum, boron, and silver). Other sanitation based wastewaters may also be generated at indoor commercial cannabis cultivation sites. These miscellaneous industrial wastewaters may contain biocides, bleach mixtures, or other chemical waste streams. Manufacturing and testing uses share general similarities with other manufacturing, laboratory, and research development uses that use solvents (e.g., butane, ethanol, isopropanol, propane, etc.) to draw tetrahydrocannabinol (THC) from the flowers, leaves, and stems of cannabis plants. Disposal of treated wastewater from CSD WWTFs would be subject to WDRs associated with Madison CSD WWTF (Order No. 5-00-039), Esparto CSD WWTF (Order No. 5-01-112), the Knights Landing CSD WWTF (R5-007-0149), and the City of Woodland WWTF. Influent flows to WWTPs are managed by the CSDs and the City of Woodland, which are charged with meeting the requirements set forth under their WDRs.

CLUO Section 8-2.1406(L)(5) would require cannabis uses to meet the following finding for issuance of a Cannabis Use Permit to ensure adequate wastewater services are available to serve the site:

Adequate utilities, access roads, drainage, sanitation, and/or other necessary facilities will be provided, as required in applicable County and State regulations, standards, and specifications.

Alternatives 1, 2, 3, and 5 assume that personal use outdoor cultivation may occur in any zoning district on a parcel with a legal residence. Personal use outdoor cultivation of up to six plants is assumed to occur within pots or garden areas on the grounds of the parcel. Alternative 4 would limit personal use cultivation to indoor only. These activities would likely involve no more than 100 square feet of land area and would be required to be outside of front yard and side yard setback areas. Similar to other typical residential garden activities, no discharge to public wastewater systems would be expected to occur from outdoor personal grow activities.

Alternative 1: Cultivation (Ancillary Nurseries and Processing Only) with Existing Limits (Existing Operations with CLUO) (CEQA Preferred Alternative)

Nine of the 78 existing and eligible cannabis cultivation sites are assumed to relocate under Alternative 1 due to due to zoning standards under the CLUO. While the total number of cultivation sites would not increase, relocation could result in the construction of new cultivation sites that may involve 18 acres of development (see Table 2-5).

Compliance with the requirements of SWRCB Order WQ 2019-0001-DWQ, CLUO Sections 8-2.1408(J) and 8-2.1408(V), and the County's Stormwater Management and Discharge Ordinance would place requirements on all cannabis use types that would reduce the potential to degrade water quality. Implementation of the

CLUO Sections 8-2.1408(J) and 8-2.1408(V) is more stringent than the existing state and County regulations because it would ensure that discharge from smaller sites, less than 2,000 square feet, cannot reach waterways and cause or contribute to degraded water quality conditions. In addition, relocated sites would be required to comply with site closure procedures under SWRCB Order WQ 2019-0001-DWQ, which must describe, to the satisfaction of SWRCB, how the site would be decommissioned to prevent sediment and turbidity discharge. Thus, compliance with these regulations would ensure that runoff from cannabis operations cannot reach waterways and would not contribute to or cause substantial water quality degradation such that water quality control plans are adversely affected.

As shown in Exhibit 3.15-2, this alternative does not assume cannabis cultivation sites within CSD or other municipal district boundaries that provide public wastewater service. However, despite these analytical assumptions, future applicants may seek to locate in such areas. Given the possible impacts to wastewater facilities, and the potential to affect a WWTF's ability to meet its WDR, this impact would be **significant** under Alternative 1.

Alternative 2: All License Types with Moderate Limits

Alternative 2 assumes the relocation of 30 sites of the 78 existing and eligible cannabis cultivation sites due to CLUO zoning and buffer requirements and the additional 54 new cannabis uses that would include microbusiness, retail, processing, manufacturing, testing, nursery, and distribution facilities.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffer requirements would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation or adversely affect water quality control plans.

As shown in Exhibit 3.15-3, Alternative 2 assumes for analysis purposes that a cannabis retail site could be located in the Esparto CSD. Retail cannabis uses do not involve the processing or manufacturing of cannabis that could result in an industrial wastewater discharge to its wastewater treatment system. However, it is possible that other cannabis uses could be located in the Esparto CSD that could result in an industrial wastewater discharge that could damage WWTFs and violate the CSD WDR. Given the possible impacts to wastewater facilities, and the potential to affect a WWTF's ability to meet its WDR, this impact would be **significant** under Alternative 2.

Alternative 3: All License Types with High Limits

Alternative 3 assumed the relocation of nine sites of the 78 existing and eligible cannabis cultivation sites due to zoning restrictions in the CLUO and the additional 186 new cannabis uses that would include microbusiness, retail, processing, manufacturing, testing, nursery, and distribution facilities.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffer requirements would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation or adversely affect water quality control plans.

As shown in Exhibit 3.15-4, Alternative 3 assumes that a cannabis processing site could be located in the Esparto CSD, and three cultivation sites, three testing sites, and four manufacturing sites in the planning area of the City of Woodland that could obtain municipal wastewater service from the City. Wastewater produced at indoor cultivation and noncultivation facilities may contain various constituents that are not typically processed at the WWTFs (i.e., not domestic wastewater) that could damage WWTFs and violate their WDRs. Given the possible impacts to wastewater facilities, and the potential to affect a WWTF's ability to meet its WDRs, this impact would be **significant** under Alternative 3.

Alternative 4: Mixed-Light/Indoor License Types Only with Moderate Limits, No Hoop Houses or Outdoor Types

This alternative assumed the relocation of nine of the 78 existing and eligible cannabis cultivation sites. It also assumed that 75 of the existing and eligible cannabis sites with outdoor cultivation would convert entirely to indoor or mixed-light (greenhouse) cultivation. This alternative also assumed the construction of two new mixed-light or indoor cultivation sites and a total of 52 new noncultivation uses. Relocations of nine cultivation sites and the development of 54 new cannabis uses would include microbusiness, retail, processing, manufacturing, testing, nursery, and distribution facilities.

As shown in Exhibit 3.15-5, Alternative 4 assumes that a manufacturing site could be located in the Esparto CSD. Compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffer requirements would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation or adversely affect water quality control plans.

Similar to Alternative 2, wastewater produced at indoor cultivation and noncultivation facilities may contain various constituents that are not typically processed at the WWTFs (i.e., not domestic wastewater) that could damage WWTFs and violate their WDRs. Given the possible impacts to wastewater facilities, and the potential to affect a WWTF's ability to meet its WDRs, this impact would be **significant** under Alternative 4.

Alternative 5: All License Types with Moderate Limits, within Agricultural Zones Only, No Retail

Alternative 5 assumes relocation of 30 sites of the 78 existing and eligible cannabis cultivation sites and the additional 52 new cannabis uses that would include microbusiness, processing, manufacturing, testing, nursery, and distribution facilities.

As discussed above under Alternative 1, compliance with SWRCB Order WQ 2019-0001-DWQ, the Yolo County ILRP, existing County grading, stormwater, and drainage requirements, Sections 8-2.1408(J) and 8-2.1408(V) of the CLUO, and buffer requirements would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation or adversely affect water quality control plans.

As shown in Exhibit 3.15-6, this alternative does not assume cannabis uses within CSD or other municipal district boundaries that provide public wastewater service. However, despite these analytical assumptions, future applicants may seek to locate in such areas. Given the possible impacts to wastewater facilities, and the potential to affect a WWTF's ability to meet its WDR, this impact would be **significant** under Alternative 5.

Mitigation Measures

Mitigation Measure HYDRO-4: Prepare a Wastewater Pre-Treatment Program for Commercial Cannabis Activities Discharging to Public Wastewater Systems (Alternatives 1, 2, 3, 4, and 5)

The following shall be added to Section 8.2.1408(TT) of the CLUO:

- Applicants for indoor cultivation and noncultivation cannabis operations shall prepare a wastewater pre-treatment program that will characterize wastewater generated and will identify any additional treatment measures required to allow discharge to a public wastewater system without violating the waste discharge requirements of the facility.

Significance after Mitigation

Mitigation Measure HYDRO-4 would ensure that cannabis uses verify that the affected CSD or other municipal WWTF is capable of accepting wastewater service for the site and that anticipated wastewater effluent quality from indoor and non-cultivation operations would not adversely affect a WWTF's ability to comply with WDRs. This impact would be reduced to a **less-than-significant** level for all alternatives.