2.11 Hydrology and Water Quality

This section identifies the regulatory context and policies related to hydrology and water quality, describes the existing hydrologic conditions in San Diego County, and evaluates potential hydrology and receiving water-quality impacts of the proposed Cannabis Program. Potential effects on the capacity of municipal water supply, sewer/wastewater, and drainage/stormwater facilities are addressed in Section 2.18, “Utilities and Service Systems.”

Comments regarding hydrology and water quality submitted in response to the notice of preparation (NOP) were received from the San Diego Regional Water Quality Control Board, the California Department of Fish and Wildlife, as well as organizations and individuals. Comments pertained to impacts on water supply, groundwater management, and water quality degradation. These issues are addressed in the impact analysis below. All comments received in response to the NOP are presented in Appendix A of this Draft PEIR.

A summary of impacts evaluated in this section is provided in Table 2.11.1.

Table 2.11.1 Hydrology and Water Quality Summary of Impacts

Issue Number	Issue Topic	Project Direct Impact	Project Cumulative Impact	Impact after Mitigation
1	Water Quality Standards and Requirements and Consistency with Water Quality Control Plans	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant	Alternatives 1–5: Less than Significant
2	Substantial Decrease of Groundwater Supplies or Interfere Substantially with Groundwater Recharge	Alternative 1: Less than Significant Alternatives 2–5: Significant	Alternative 1: Less than Significant Alternatives 2–5: Significant	Alternative 1: Less than Significant Alternatives 2–5: Significant and Unavoidable
3	Consistency with Sustainable Groundwater Management Plans	Alternative 1: No Impact Alternatives 2–5: Less than Significant	Alternative 1: No Impact Alternatives 2–5: Less than Significant	Alternative 1: No Impact Alternatives 2–5: Less than Significant

2.11.1 Existing Conditions

The following section examines existing groundwater resources, surface water resources, stormwater drainage systems, groundwater quality, surface water quality, and flooding and dam inundation areas within the unincorporated county.

2.11.1.1 *Groundwater Hydrology*

San Diego County overlies a complex groundwater resource that varies greatly throughout the county. Within unincorporated San Diego County, several hydrogeologic environments exist. These different environments can be grouped into 2 generalized categories: fractured-rock aquifers and alluvial and sedimentary aquifers.

The western portion of San Diego County is mostly supplied with imported water from member agencies of the San Diego County Water Authority (SDCWA). The remaining portion of the county (approximately 65 percent in area) is completely dependent on groundwater resources.

Within the county, 3 groundwater basins have been designated as medium- and high-priority basins by the state under the Sustainable Groundwater Management Act (SGMA) (see Section 2.11.2, "Regulatory Framework"). Figure 2.11.1 depicts the type of underlying groundwater aquifer across the county (i.e., fractured crystalline rock, desert basin, coastal marine and nonmarine granular formations, alluvial river valleys and basins). Figure 2.11.2 depicts groundwater basins and the associated priority rating under SGMA. Figures are presented at the end of this section.

Aquifer Characteristics

Fractured-Rock Aquifers

Fractured rock underlies approximately 73 percent of the unincorporated area of the county and is generally found within the foothills and mountains. Because these areas generally receive more precipitation than the lower elevations, the recharge rates are relatively high. However, the storage capacity of fractured-rock aquifers is low; thus, pumping from wells can cause the water table to decline much more quickly than alluvial or sedimentary aquifers. In addition, drought conditions contribute to less reliable recharge conditions. Wells drilled in a fractured-rock aquifer typically yield relatively low volumes of water. General Plan Update Final EIR Figure 2.8-2 identifies areas of potential groundwater yield in fractured rock conditions (County of San Diego 2011). In some instances, wells may derive water from only a few water-bearing fractures. In addition, it is difficult to estimate potential production rates for any new wells drilled in fractured-rock aquifers, and wells drilled close together may have significantly different water production rates. This is because water-producing fracture locations are difficult to identify and predict, and fractures intersected by one well may not be intersected by nearby wells (County of San Diego 2010).

Alluvial and Sedimentary Aquifers

Alluvial and sedimentary aquifers are found in approximately 27 percent of the unincorporated area of the county. Alluvial and sedimentary aquifers are typically found in river and stream valleys, around lagoons, near the coastline, and in the intermountain valleys. Sediments in these aquifers are composed of mostly consolidated (defined as sedimentary rock) or unconsolidated (defined as alluvium or colluvium) gravel, sand, silt, and clay. Because of the high hydraulic conductivity, porosity, and storage, alluvial and sedimentary aquifers are considered good aquifers. However, while alluvial and sedimentary aquifers usually have greater storage than fractured-rock aquifers, they sometimes have low recharge rates because they are located in areas of the county that receive less precipitation, such as the eastern desert region. Many alluvial basins occur in low-lying areas of a watershed; thus, surface water runoff accumulates in streams, lakes, or other surface depressions within alluvial basins and provides additional recharge sources. Wells in an alluvial or sedimentary aquifer typically yield relatively high volumes of water. Coarse-grained sediments, such as sand or gravel, typically produce higher volumes of water than finer-grained sediments, such as silts or clays. In coarse-grained sediments, well yields may be hundreds of gallons per minute and limited by inefficiencies in the well itself, rather than by limitations in the aquifer's ability to produce water. Overall, alluvial and sedimentary aquifers are more reliable and desirable as a groundwater source compared to fractured-rock aquifers (County of San Diego 2010).

Groundwater Hydrology Issues

The following section summarizes the existing groundwater hydrology issues facing the groundwater dependent portion of the unincorporated county by examining 3 categories: (1) well yield, (2) large quantity/clustered groundwater users, and (3) groundwater sustainability for designated SGMA Basins (County of San Diego 2010).

Well Yield

Wells in a fractured-rock aquifer typically yield relatively low volumes of water. In some instances, wells may derive water from only a few water-bearing fractures. In addition, it is difficult to estimate production rates for any new wells drilled in fractured-rock aquifers, and wells drilled close together may have significantly different water production rates due to underlying bedrock and fracture conditions. In addition, although low well yields are possible anywhere within fractured-rock aquifer areas, steep slope areas above the valley floor are particularly prone to having lower well yield. Notable areas within the county that have low well yields include areas in Lakeside and Morena Village. In addition, according to the General Plan Update Groundwater Study (Appendix D to the General Plan Update Draft EIR), of the 750 well logs reviewed in fractured-rock aquifers for the study, approximately 11 percent reported well yields of less than 3 gallons per minute (gpm), a rate that may not be sufficient to meet the demand of a single-family residence (i.e., 0.5 acre-feet per year, less than the annual quantity of a typical cannabis cultivation site). However, wells were also reported to have well yields greater than 100 gpm (County of San Diego 2010).

In contrast, wells in an alluvial or sedimentary aquifer typically yield high volumes of water. Coarse-grained sediments, such as sand or gravel, typically produce higher volumes of water than finer-grained sediments, such as silts or clays. In coarse-grained sediments, well yields may be hundreds of gpm (County of San Diego 2010).

In desert basins with lower precipitation, there is potential to pump more water from the basin than will be naturally recharged. Excessive pumping that exceeds the rate of recharge results in a groundwater overdraft situation, which is not sustainable for long-term groundwater use. Such a condition currently exists in the Borrego Valley area of the county (County of San Diego 2010).

Large Quantity/Clustered Groundwater Users

Areas of the county that are underlain by fractured-rock aquifers that have large groundwater users (e.g., agricultural or other large operations) may experience localized groundwater supply problems. Water demand from a single large groundwater use can cause impacts to neighboring wells. Some areas of the groundwater-dependent portion of the county contain dense residential development, which has resulted in clustering groundwater demand that makes these areas susceptible to decreased levels of localized groundwater and associated interference with nearby well yields (County of San Diego 2010).

Sustainable Groundwater Management Act Basins

Of the 33 basins or subbasins in San Diego County identified in California Department of Water Resources' (DWR's) *California's Groundwater* (Bulletin 118), the state has designated 3 as medium- or high-priority and subject to the SGMA: Borrego Valley (Borrego Springs Subbasin), San Luis Rey Valley (Upper San Luis Rey Valley Subbasin), and San Pasqual

Valley. The state designated the rest of the basins and subbasins as very low to low priority and are not currently being managed under the SGMA. Figure 2.11.2, presented at the end of this section, depicts the groundwater basins in the county. A summary of sustainability groundwater management plans associated with medium- and high-priority areas is provided below.

Borrego Valley (Borrego Springs Subbasin)

The Borrego Valley Groundwater Basin (Borrego Basin) underlies Borrego Valley in eastern San Diego County and western Imperial County. The portion of the Borrego Basin in San Diego County extends southwest from the San Ysidro Mountains to the eastern boundary with Imperial County. The Borrego Basin is divided into 2 subbasins: Borrego Springs and Ocotillo Wells (San Diego County 2024). The Borrego Springs Subbasin is designated by DWR as high priority and critically overdrafted, whereas the Ocotillo Wells Subbasin is designated as very low priority and not critically overdrafted (Borrego Valley Groundwater Sustainability Agency 2019).

The Borrego Springs Subbasin, located entirely in San Diego County, is bounded by the Santa Rosa Mountains to the north and the San Ysidro Mountains on the west. The eastern boundary is represented by the Coyote Creek and Superstition Mountain Faults. The southern border of the subbasin is characterized by the San Felipe/Yaqui Ridge anticline and San Felipe Fault. These geologic structures compartmentalize the deep alluvial sediments in Borrego Springs from the alluvial sediments to the southeast of the San Felipe Wash, which provides a physical barrier to groundwater and stifles flow between the subbasins. This barrier reduces the effect of groundwater pumping in Borrego Springs Subbasin on groundwater storage in the Ocotillo Wells Subbasin (Borrego Valley Groundwater Sustainability Agency 2019).

Groundwater Sustainability Plan and Adjudication

The Borrego Springs Subbasin was designated by the state as a critically overdrafted high-priority basin under the SGMA. Consistent with requirements under the SGMA, the County and the Borrego Water District, acting together as the groundwater sustainability agency (GSA) for the Borrego Springs Subbasin, developed a draft final groundwater sustainability plan (GSP). The GSP noted that approximately 75 percent of the maximum baseline pumping in the subbasin will need to be reduced to bring the conditions to balance (i.e., recharge equals extraction). The County withdrew from the Borrego Valley GSA effective December 31, 2019, while groundwater pumpers within the community of Borrego Springs sought adjudication. The adjudication of groundwater pumping rights in the Borrego Springs Subbasin was approved by the Superior Court of California on April 8, 2021 (Case No. 37-2020-00005776) [2021 Judgment]). The 2021 Judgment provided for holders of groundwater rights in Borrego Springs to work together alongside the County and the Borrego Water District to manage the Borrego Basin through a court-approved process. To accomplish this, the 2021 Judgment established the Borrego Springs Watermaster (Watermaster) as the entity responsible for managing groundwater resources in the Borrego Basin. On June 25, 2021, the Watermaster submitted the 2021 Judgment to the DWR that included a groundwater management plan (GMP), constituting a “physical solution” for DWR’s review and approval to serve as an alternative to a GSP for the subbasin in compliance with the SGMA. The 2021 Judgment established an initial sustainable yield (i.e., the amount of water that may be produced), as well as Watermaster rules and regulations (initially 5,700 acre-feet per year [afy]) by 2040. The pumping reduction program associated with the judgment capped the pumping allowance to 22,600 afy in 2020

and required a gradual reduction of the cap to a level that matches the sustainable yield of the subbasin (Borrego Valley Groundwater Sustainability Agency 2019).

The Watermaster most recently updated baseline pumping allocations on October 1, 2023. The pumping allocations provide specific quantities available to specific landowners (Borrego Springs Watermaster 2023). The most recent annual report for the Borrego Springs Subbasin was published in March 2024 and addressed water year 2023. This report, prepared to satisfy requirements of the 2021 Judgment described above, provides a summary of Watermaster activities, water right accounting, hydrologic conditions, and the status of the progress associated with the implementation of the groundwater monitoring plan. As discussed in this report, annual pumping has been less than the annual allocation for each year since the start of GMP implementation. In Water Year 2023, total pumping of 10,430 acre-feet (af) was approximately 50 percent less than the annual allocation of 20,694 af. (West Yost 2024).

San Luis Rey Valley (Upper San Luis Rey Valley Subbasin)

San Luis Rey Valley Groundwater Basin, located in San Diego County, extends from the confluence of the San Luis Rey River and Paradise Creek, continuing downstream through 4 valleys (Pauma, Pala, Bonsall, and Mission) and ending at the Pacific Ocean in the city of Oceanside. The Upper San Luis Rey (USLR) Valley Groundwater Subbasin can be further subdivided into 2 subbasins: the Pauma Subbasin and the Pala Subbasin. The Pauma Subbasin extends from the confluence of the San Luis Rey River and Paradise Creek to the Agua Tibia Narrows near the confluence of the San Luis Rey River and Frey Creek. The Pala Subbasin extends from the Agua Tibia Narrows to Monserate Narrows. According to prior decisions by the State of California, groundwater in Pala Subbasin, located downstream of Frey Creek, has been determined to be a subterranean stream flowing through known and definite channels. While subterranean streams are generally excluded from the SGMA, Assembly Bill (AB) 1944 was put forth to include the area of the subbasin downstream from Frey Creek (i.e., Pala Subbasin) as part of the SGMA for the purposes of groundwater sustainability. Therefore, the GSP components address both the Pauma and Pala Subbasins.

The USLR Valley Groundwater Subbasin is a medium-priority basin. As a result, the Pauma Valley GSA was formed and consists of Yuima Municipal Water District, Pauma Municipal Water District, Pauma Valley Community Services District, San Luis Rey Municipal Water District, and the Upper San Luis Rey Resource Conservation District. The GSA was created to guide effective use of groundwater for achieving long-term groundwater sustainability in the basin. The goal of the GSP is to ensure that groundwater continues to be available to everyone who uses it far into the future. The plan considers the best available scientific data and local knowledge of the basin to describe basin conditions, including the geology of the basin and groundwater levels within it. The plan also establishes sustainability goals for the basin, outlines steps and potential management actions to ensure sustainability, and identifies a sustainable annual yield of 13,600 afy. The USLR Sustainable Groundwater Management Plan (SGMP) was approved on January 18, 2024 (DWR 2024a).

The *Water Year 2023* (October 2022 through September 2023) report indicates that a total of 9,424 af of groundwater was extracted from the Upper San Luis Rey Valley Groundwater Basin, of which 2,269 af were produced for urban uses, 5,029 af were used for agricultural uses, and 2,126 af were used for native vegetation (DWR 2024b). Using the provided information, DWR determined that the San Luis Rey Valley Groundwater Basin was operating in a sustainable manner (Gosselin 2024a).

San Pasqual Valley

The San Pasqual Valley Groundwater Basin is located approximately 25 miles northeast of downtown San Diego within the San Pasqual Valley. Approximately 90 percent of the San Pasqual Valley Basin is city-owned and designated and managed as an agricultural preserve (as documented in City of San Diego Council Policy 600-45). The basin underlies portions of Cloverdale Canyon, Rockwood Canyon, and Bandy Canyon along State Route 78. The San Pasqual Valley is sparsely populated and includes row crop, orchard, nursery, and dairy operations. Guejito Creek flows into Santa Ysabel Creek, and Santa Maria and Ysabel Creeks coincide with the start of the San Dieguito River, which flows southwest into Hodges Reservoir.

DWR has identified the San Pasqual Valley Groundwater Basin as a medium-priority basin. The GSA consists of the City of San Diego, which has land use and water supply authority, and owns the land within its jurisdiction, and the County, which has land use responsibilities and implements the County's Groundwater Ordinance outside of the city's jurisdiction in the basin. While the city will implement the GSP within city jurisdiction (90 percent of the basin) and the County will implement the GSP within county-only areas (10 percent of the basin), the city and County remain committed to collaboratively implementing a single GSP for the entire basin. A "core team" comprised of GSA staff is responsible for developing and implementing the GSP for the basin. As identified in the San Pasqual Valley GSP, the sustainable yield for the San Pasqual Valley Groundwater Basin ranges from 5,199–6,428 afy, depending on the type of water year (e.g., dry, average, wet) (Woodard & Curran 2021). The San Pasqual Valley GSP was approved on October 26, 2023 (DWR 2023).

The Water Year 2023 (October 2022 through September 2023) report indicates that a total of 4,928 af of groundwater was extracted from the San Pasqual Valley Groundwater Basin, of which 3 af were produced for urban uses, and 4,925 af were used for agricultural uses (DWR 2024c). Using the provided information, DWR confirmed that the San Pasqual Valley Groundwater Basin was operating in a sustainable manner (Gosselin 2024b).

2.11.1.2 *Surface Water Hydrology*

San Diego County's surface waters are characterized by estuaries, lagoons, bays, lakes, reservoirs, rivers, and creeks. These water bodies capture the flow of the region's surface water runoff and become a blend of natural runoff and imported water. Many of these water bodies support natural habitat and recreational areas in addition to acting as storage reservoirs for the county's water supply. An inventory of these surface water resources is provided below.

The Laguna Mountains divide San Diego County into 2 hydrologic regions that can be used to further evaluate surface water characteristics in the county: (1) Colorado Hydrologic Region and (2) San Diego Hydrologic Region. The Colorado Hydrologic Region has small portions of 5 hydrologic units located within the east county. These units are collectively referred to as desert units and contained within the Salton Sea Transboundary Watershed Management Area, which is discussed further below. The San Diego Hydrologic Region contains 11 hydrologic units within the unincorporated county: San Juan, Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, Peñasquitos, San Diego, Pueblo San Diego, Sweetwater, Otay, and Tijuana. Figure 2.11.3, presented at the end of this section, shows the boundaries of the hydrologic units within the county.

For the purpose of this section, the hydrologic units in the county are discussed in terms of watershed management areas (WMAs). A watershed is an area of land that drains to a common waterway, such as a stream, lake, estuary, wetland, aquifer, or ocean. WMAs are grouped according to hydrologic units and have been developed to implement federal and state statutes for the management of water quality in the region. There is a total of 10 WMAs in the unincorporated county. All WMAs in the unincorporated county, with 2 exceptions, include only 1 hydrologic unit and are named accordingly. One exception includes the San Diego Bay WMA, which includes the Pueblo San Diego, Sweetwater, and Otay hydrologic units. The other exception is the Salton Sea Transboundary WMA, which includes 5 hydrologic units located in portions of San Diego and Imperial Counties. The WMAs are discussed below.

San Juan WMA

The San Juan WMA covers 317,440 acres in San Diego, Orange, and Riverside counties. Approximately 96,000 acres of this area are located in northwestern San Diego County, almost entirely within the Camp Pendleton military base. This WMA includes the San Juan hydrologic unit and 5 hydrologic areas but only 2, San Onofre and San Mateo, are located within San Diego County. Major stream systems from these 2 hydrologic areas include San Mateo Creek, San Onofre Creek, and Las Flores Creek. The topography of these areas is varied, ranging from coastal plains in the western portion to the Santa Margarita Mountains in the east, which rise over 2,000 feet above mean sea level. The mouth of San Mateo Creek forms a saltwater tidal marsh that is entirely within the Camp Pendleton Marine Corps Base. The land uses within the San Onofre and San Mateo hydrologic areas include open space, military base operation areas, and agriculture. In addition, there is a state beach along the Interstate-5 corridor near the northern boundary of Camp Pendleton and a golf course near the southern boundary. Nearby jurisdictions include the city of Oceanside to the south, the city of San Clemente to the north, and the unincorporated community of Fallbrook to the east.

Santa Margarita River WMA

The Santa Margarita River WMA is the second largest in the San Diego Hydrologic Region. It covers over 473,971 acres, with about three quarters of the watershed located in Riverside County and about one quarter located in San Diego County. It includes portions of Camp Pendleton, as well as the unincorporated communities of Fallbrook, Palomar/North Mountain, Pala-Pauma, Pendleton/De Luz, and Rainbow. The watershed includes the Santa Margarita hydrologic unit and 9 hydrologic areas: Ysidora, De Luz, Murrieta, Auld, Pechanga, Wilson, Cave Rocks, Aguanga, and Oak Grove. The Ysidora hydrologic area is located entirely within San Diego County, whereas De Luz, Pechanga, Aguanga, and Oak Grove cover portions of both San Diego and Riverside counties. The remainder of the hydrologic areas in the Santa Margarita WMA are located entirely in Riverside County.

The WMA contains the Santa Margarita River, Temecula Creek, Murrieta Creek, Rainbow Creek, De Luz Creek, Sandia Creek, Santa Margarita Lagoon, Vail Lake, Skinner Reservoir, and Diamond Valley Lake Reservoir. There are 9 dams located in the watershed with 92 percent of the river miles categorized as free flowing. Annual precipitation for the portion of the watershed in San Diego County ranges from 10.5 inches in the coastal areas to more than 16.5 inches in the eastern portion of the watershed. The southwestern portion of the watershed is dominated by the Camp Pendleton military base. About 66 percent is undeveloped. Other land uses include agriculture (18 percent), military uses (8 percent), residential uses (4 percent), and parks (4 percent).

San Luis Rey WMA

The San Luis Rey WMA, at 359,887 acres, is the third largest of the watersheds entirely or partially within the San Diego County. It is located along the northern border of the county and includes the unincorporated areas of Bonsall, Desert, Fallbrook, North County Metro, Palomar/North Mountain, Pala-Pauma, Pendleton/De Luz, Rainbow, and Valley Center. In addition, there are several Indian reservations in the WMA. This WMA consists of the San Luis Rey hydrologic unit and 3 hydrologic areas: Lower San Luis Rey, Monserate, and Warner Valley. The watershed contains 2 major water bodies. Lake Henshaw is the main reservoir for the San Luis Rey WMA and is the third largest in San Diego County. The San Luis Rey River is the major stream system. Annual precipitation in this WMA is heavier than in other areas, ranging from less than 12 inches near the ocean to 45 inches near Palomar Mountain. Approximately 95 percent of the WMA consists of lands within the County's jurisdiction. The city of Oceanside comprises about 4 percent of the watershed and small portions of the cities of Escondido and Vista, and Riverside County makes up the remainder of the WMA. Land use within the watershed is classified primarily as undeveloped (54 percent). Other land uses include agriculture (15 percent), residential (15 percent), parks (9 percent), military (3 percent), transportation (2 percent), and commercial recreation (1 percent). Commercial, industrial, and public facilities land uses make up less than 1 percent of the land use acreage.

Carlsbad WMA

The Carlsbad WMA encompasses 135,322 acres and extends from Lake Wohlford on the east to the Pacific Ocean on the west and from the cities of Vista and Oceanside on the north to Cardiff-by-the-Sea on the south. The Carlsbad WMA is primarily located in the jurisdictional boundaries of incorporated cities, including the cities of Oceanside, Carlsbad, Encinitas, Solana Beach, San Marcos, Vista, and Escondido. However, approximately 31 percent of the WMA is located in unincorporated areas under the jurisdiction of the County, including the North County Metro, Valley Center, and San Dieguito Community Planning Areas. It includes the Carlsbad hydrologic unit and 6 hydrologic areas: Loma Alta, Buena Vista Creek, Agua Hedionda, Encinas, San Marcos, and Escondido Creek. The watershed contains 5 coastal lagoons: Loma Alta Slough, Buena Vista Lagoon, Agua Hedionda Lagoon, Batiquitos Lagoon, and San Elijo Lagoon. The WMA also includes 2 small reservoirs: Dixon Lake, and Lake Wohlford. The San Marcos Dam controls approximately 53 percent of the San Marcos hydrologic area. The area is drained by Buena Vista, Agua Hedionda, San Marcos, and Escondido Creeks. Annual rainfall over the watershed varies from 10.5 inches near the coast to 19.5 inches in the inland areas. The most common land use in the watershed management area is residential (35 percent), followed by undeveloped land (21 percent), parks (14 percent), transportation (12 percent), and agriculture (7 percent). Industrial, commercial, public facilities, commercial recreation, water, and lands under construction make up the remaining 11 percent of land uses in the watershed. The Carlsbad WMA contains the largest percentage of privately owned land in San Diego County—approximately 75 percent. The remainder of the WMA is owned by local and state governments. The Carlsbad WMA is the second most densely populated WMA in the San Diego Region.

San Dieguito River WMA

The San Dieguito River WMA covers 221,307 acres and includes portions of the cities of Del Mar, Escondido, Poway, San Diego, and Solana Beach, as well as the unincorporated communities of Julian, North County Metro, North Mountain, Pala-Pauma, Ramona, San

Dieguito, and Valley Center. The WMA consists of the San Dieguito hydrologic unit and 5 hydrologic areas: Solana Beach, Hodges, San Pasqual, Santa Maria Valley, and Santa Ysabel. The watershed contains the San Dieguito River and its tributaries, along with Santa Ysabel and Santa Maria Creeks. It also contains the following reservoirs: Lake Hodges, Lake Ramona, Lake Poway, Sutherland Reservoir, Olivenhain Reservoir, and the San Dieguito Reservoir. There are several important natural areas in the WMA that sustain a number of threatened and endangered species. Annual precipitation ranges from 13.5 inches near the coast to nearly 35 inches in the eastern portion of the watershed. The San Dieguito River WMA is largely located within the unincorporated area (79.8 percent). Land use in the watershed is primarily undeveloped land (42 percent). Other major uses are residential (19 percent), parks (17 percent), and agriculture (15 percent). Transportation, commercial, industrial, public facilities, and water comprise the remaining 7 percent of the watershed. Over 60 percent of the watershed is privately owned land. The remaining portions are mostly federally or locally owned with a small percentage of land being state owned.

Los Peñasquitos Creek WMA

The Los Peñasquitos Creek WMA includes 60,418 acres of land that extends easterly to Iron Mountain and westerly to Los Peñasquitos Lagoon. This WMA includes portions of the cities of Del Mar, Poway, and San Diego, as well as the unincorporated areas of Lakeside, Ramona, and the Miramar County Island. This WMA contains the Peñasquitos hydrologic unit and 5 hydrologic areas: Miramar Reservoir, Poway, Scripps, Miramar, and Tecolote. The major receiving waters for the Los Peñasquitos Creek WMA are the Los Peñasquitos Lagoon and Mission Bay. Los Peñasquitos Creek WMA is drained by Los Peñasquitos Creek, which flows into Los Peñasquitos Lagoon near the northern border of the city of San Diego in the Torrey Pines State Reserve. Los Peñasquitos Lagoon also receives inputs from Carroll Canyon, just south of Los Peñasquitos Creek, and McGonigle Canyon to the north. This Lagoon is a 630-acre wetland that lies near the mouth of the Los Peñasquitos Creek and provides coastal wetland habitat. Rose Creek and Tecolote Creek are the main tributaries to Mission Bay. Mission Bay is the largest human-made aquatic park in the country, consisting of 4,235 acres, approximately 46 percent land and 54 percent water. Mission Bay was converted into an aquatic park from a coastal marshland in the 1940s after the completion of a large dredging project. There are no major streams in this WMA although it is drained by numerous creeks. Annual precipitation ranges from 10.5 inches near the coast to 16.5 inches in the eastern portion of the watershed. Approximately 83 percent of the Los Peñasquitos Creek WMA is located in the city of San Diego. Land uses in the watershed include parks and recreation (30 percent), residential (27 percent), and vacant/undeveloped land (15 percent). Other uses are comprised of transportation (12 percent), industrial (7 percent), public facilities/utilities (3 percent), commercial (3 percent), and agriculture (2 percent). Over 60 percent of the watershed is privately owned land. The remaining portions are locally owned or state and federally owned.

San Diego River WMA

The San Diego River WMA covers 277,543 acres and includes portions of the Cities of El Cajon, La Mesa, Poway, San Diego, and Santee. The watershed also covers portions of the unincorporated areas of Alpine, Central Mountain, Crest/Dehesa, Harbison Canyon/Granite Hills, Julian, Lakeside/Pepper Drive-Bostonia, North Mountain, Ramona, Valle de Oro, and the Barona Indian Reservation. The watershed contains the San Diego River, Boulder Creek, El Capitan Reservoir, San Vicente Reservoir, Lake Jennings, Lake Cuyamaca, and Lake Murray.

Much of the impounded water in the reservoirs is used to serve major population centers in the county. The watershed is drained by the San Diego River, which discharges into the Pacific Ocean between Mission Beach and Ocean Beach in the city of San Diego. Annual precipitation ranges from 10.5 inches near the coast to nearly 35 inches in the eastern portion of the watershed. Approximately 74 percent of the San Diego River WMA is located in the unincorporated area of the county. Land uses in the watershed include undeveloped land (48 percent), parks and recreation (22 percent), and residential (18 percent). Other uses include transportation (6 percent), agriculture (2 percent), commercial (2 percent), and industrial (2 percent). Approximately half of the watershed is privately owned land. The remaining portions are federally, state, or locally owned.

San Diego Bay WMA

The San Diego Bay WMA covers 282,580 acres and consists of 3 major watersheds: Pueblo San Diego, Sweetwater, and Otay, which are described as follows.

Pueblo San Diego Watershed

The Pueblo San Diego Watershed covers nearly 36,000 acres. It is comprised of the Pueblo hydrologic unit and 3 hydrologic areas: Point Loma, San Diego Mesa, and National City. Major water bodies in the watershed are Chollas Creek, Paleta Creek, and San Diego Bay. Rainfall for the watershed averages 10.5 inches in coastal areas and 13.5 inches in the eastern areas. The Pueblo San Diego Watershed is the most developed and most densely populated watershed in the San Diego Bay WMA. Land use in the watershed includes residential (40 percent), transportation (28 percent), parks (7 percent), public facilities (6 percent), commercial (5 percent), undeveloped land (5 percent), military (4 percent), industrial (3 percent), and commercial recreation (2 percent). Most of the watershed (84 percent) falls under the jurisdiction of the City of San Diego. Other jurisdictions include the cities of La Mesa, Lemon Grove, and National City; the Port of San Diego; the US Navy; and unincorporated land.

Sweetwater Watershed

The Sweetwater Watershed encompasses over 148,000 acres and includes the Sweetwater hydrologic unit and 3 hydrologic areas: Lower Sweetwater, Middle Sweetwater, and Upper Sweetwater. Major water bodies are the Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay. Rainfall in the watershed widely varies from 10.5 inches near the coast to approximately 35 inches in the far inland areas. Much of the Sweetwater Watershed is occupied by the undeveloped lands in the Cleveland National Forest, Cuyamaca Rancho State Park, and the unincorporated communities of Pine Valley, Descanso, Alpine, and the Viejas Indian Reservation. Land uses in the watershed include undeveloped land (36 percent), parks (25 percent), residential (25 percent), and transportation (6 percent). Other land uses are comprised of agriculture (2 percent), public facilities (1 percent), commercial recreation (1 percent), water (1 percent), commercial (1 percent), industrial (1 percent), and land under construction (1 percent). Land ownership is mostly private with the remaining areas controlled by local, state, and federal governments and Native American Indian Tribes. The upper watershed contains large undeveloped areas in the Cleveland National Forest and Cuyamaca Rancho State Park.

Otay Watershed

The Otay Watershed is nearly 98,500 acres in size and consists of the Otay hydrologic unit and 3 hydrologic areas: Coronado, Otay Valley, and Dulzura. Major water bodies are the Upper and Lower Otay Reservoirs, Otay River, and San Diego Bay. The 2 major reservoirs in the watershed supply water, important wildlife habitat, and recreational opportunities. The Lower Otay Reservoir lies at the end of the San Diego Aqueduct. Annual rainfall varies from 8.3 inches at the coast to 19.5 inches in the inland areas. Over 69 percent of the Otay Watershed is located in the unincorporated area with the remaining portions located in the following jurisdictions: Port of San Diego and cities of Chula Vista, Coronado, Imperial Beach, and San Diego. Land uses in the watershed include parks (38 percent), undeveloped land (32 percent), residential (14 percent), transportation (5 percent), industrial (3 percent), public facilities (2 percent), military (2 percent), agriculture (1 percent), commercial recreation (1 percent), water (1 percent), and commercial (1 percent). Land ownership is predominantly private with a small percentage of local, state, and federally owned lands. The Otay Watershed includes the San Diego National Wildlife Refuge, the Rancho Jamul Ecological Reserve, and approximately 23,000 acres that provide habitat for endangered plant and animal species as part of the Multiple Species Conservation Program (MSCP).

Tijuana River WMA

The Tijuana River WMA is the largest of the San Diego watersheds and covers over 1.1 million acres. The Tijuana River is formed by 2 drainage networks that merge in the city of Tijuana, and then flow across the US-Mexico international border into the Tijuana River Estuary in Imperial Beach and ultimately to the Pacific Ocean. The watershed is divided by the US-Mexico international border with just over 27 percent lying in the San Diego region. The watershed is comprised of the Tijuana hydrologic unit and the following hydrologic areas: Tijuana Valley, Potrero, Barrett Lake, Monument, Morena, Cottonwood, Cameron, and Campo. Major water bodies in this WMA are the Tijuana River, Cottonwood Creek, and the Tijuana River Estuary. Annual precipitation varies from less than 10.5 inches near the coast to more than 22.5 inches in the inland areas. Mexico governs 73 percent of the Tijuana River WMA. The remaining areas fall within the jurisdiction of the United States. Dominant land uses in the US portion of the watershed are undeveloped/vacant areas (61 percent) and parks (26 percent). Other land uses include residential (7 percent), agriculture (3 percent), and transportation (3 percent). The combination of commercial, recreation, industrial, military, public facilities, land under construction, and water land uses equals less than 2 percent of the land area in the US portion of the watershed. Mexico's land uses in the WMA are predominately undeveloped/vacant uses (82 percent). It should be noted that much of Mexico's land that is classified as undeveloped is used for low-intensity cattle and goat grazing. The Tijuana River Watershed also includes the Tijuana River Estuary, which is a National Estuarine Sanctuary.

Salton Sea Transboundary WMA

The Salton Sea Transboundary WMA includes hydrologic units located in the Colorado Hydrologic Region. The Salton Sea Transboundary WMA contains parts of 5 hydrologic units located in the eastern desert portion of the county: Anza- Borrego, Clark, Whitewater, West Salton, and Imperial Watersheds. The Anza-Borrego Watershed is the largest hydrologic unit, covering about 80 percent of the desert portion of San Diego County and extending into Imperial and Riverside Counties. Portions of the Clark, Whitewater, and West Salton

Watersheds are located at the extreme northeast corner of the county. The Imperial Watershed is located at the southeast edge of San Diego County and extends into Imperial County. Water is limited in all of these areas. The surface water that intermittently exists flows toward the Salton Sea and the Colorado River. Average annual precipitation for this WMA ranges from less than 3 inches along the eastern boundary, near Imperial Valley, to 25 inches in the mountain divide between the Salton Sea and Pacific Ocean drainages. Runoff occurs from winter precipitation especially in the higher elevations and from summer thunderstorms. Approximately 98 percent of the land uses located in the San Diego County portion of the Salton Sea Transboundary WMA is parkland, undeveloped land, and agriculture. The remaining portions are sparsely populated with single-family residential units and a small number of other uses.

2.11.1.3 *Water Quality*

Surface Water Quality

As discussed in more detail below, in Section 2.11.2, "Regulatory Framework," agencies that administer the Clean Water Act (CWA) must submit the CWA Section 303(d) list of impaired waters to the US Environmental Protection Agency (EPA). CWA Section 305(b) requires each state to report biennially to EPA on the condition of its surface water quality. EPA guidance to the states recommends the 2 reports be integrated. For California, this integrated report is called the *California Integrated Report* and combines the State Water Resources Control Board (SWRCB) Sections 303(d) and 305(b) reporting requirements.

The California Integrated Report is developed in "listing cycles." Each listing cycle consists primarily of assessments from the 3 Regional Water Quality Control Boards (RWQCBs) that are "on-cycle." The other 6 RWQCBs that are "off-cycle" may also assess high-priority data and make new listing or delisting recommendations or changes to the Section 305(b) categories. The RWQCBs rotate cycles, and every region is fully assessed once every 6 years. Each listing cycle builds on assessments from the previous listing cycle. The listing decisions and 305(b) waterbody category assignments from the prior cycle for all waterbodies in the state are first carried over into the current cycle. All readily available data and information received during the data solicitation period for the current listing cycle are assessed and the listings and categories are revised, as appropriate. Thus the *2020-2022 California Integrated Report* is a revised version of the *2018 California Integrated Report* and contains all prior assessments, as well as any new or revised assessments based on the data received prior to the end of the data solicitation period for the 2020–2022 listing cycle.

San Diego County overlaps with both the San Diego and Colorado River RWQCB. As part of the *2022 California Integrated Report*, waterbodies in San Diego County were listed as impaired under CWA Section 303(d) due to the presence of metals, nuisance, nutrients, pathogens, pesticides, salinity/total dissolved solids/chlorides/sulfates, sediment, total toxics, toxic organics, trash, and other causes. These types of impairments are described in more detail below (DWR 2022). Table 2.11.2, presented at the end of this section, provides an overview of the types of impairments associated with waterbodies in the county.

Table 2.11.2, presented at the end of this section, shows the most recent list of impaired waterways (Section 303(d)) in San Diego County. Listing is primarily associated with metals, nuisance, nutrients, pathogens, pesticides, salinity/total dissolved solids/chlorides/sulfates,

sediment, total toxics, toxic organics, trash, and other causes. These pollutants are attributed to various sources, including agriculture storm runoff, hazardous waste, industrial point sources, wastewater, and urban runoff.

Cannabis Priority Watersheds

SWRCB, in coordination with CDFW, has identified "Cannabis Priority Watersheds" throughout the state. All Cannabis Priority Watersheds contain a high concentration of commercial cannabis cultivation; noncompliant commercial cannabis cultivation in these high-value areas has the potential to cause severe environmental impacts. Pursuant to Business and Professions Code Section 26060(a)(1), if SWRCB or CDFW notifies the Department of Cannabis Control (DCC) in writing that commercial cannabis cultivation is causing significant adverse impacts on the environment in a watershed or other geographic area, DCC shall not issue new licenses or increase the total number of plant identifiers in that watershed or area while the moratorium is in effect. There are currently no Cannabis Priority Watersheds designated in San Diego County.

Groundwater Quality

Traditionally, groundwater supplies in the county have produced high-quality drinking water. However, naturally occurring and, more recently, anthropogenic sources of contamination have caused the quality of groundwater to be adversely affected in localized areas. The most common anthropogenic sources of groundwater contamination include leaking underground fuel tanks, sewer and septic systems, agricultural applications, and facilities producing animal wastes (County of San Diego 2009).

Small parcels with septic systems in areas of shallow groundwater, agricultural applications, and feed lots are the most common sources of nitrate impacts in the county. Naturally occurring radionuclides (atoms with unstable nuclei and which may emit gamma rays or subatomic particles during the process of decay) are present to some extent in nearly all rocks and soil throughout the world and leach into groundwater from natural mineral deposits. Total dissolved solids (TDS) originate naturally from the dissolution of rocks and minerals and also can be from septic systems, agricultural runoff, and stormwater runoff. Elevated bacteria levels in groundwater occur primarily from human and animal wastes. Old wells with large openings and wells with inadequate seals are most susceptible to bacteriological contamination from insects, rodents, or animals entering the wells. Groundwater contaminants of concern that may result from agricultural operations, including cannabis cultivation, could include herbicides, pesticides, and other complex organics; petroleum products, volatile organic compounds, and metals.

Flooding

Flood Mapping

The Federal Insurance Rate Map (FIRM) is the official map created and distributed by the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP) that delineates the Special Flood Hazard Areas (SFHAs), which are the areas subject to inundation by the base flood (1 percent annual chance, or a 100-year flood) for every county and community that participates in the NFIP. FIRMs contain flood risk information based on

historic, meteorological, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. It should be noted that alluvial fans are designated as SFHAs on FIRMs. In addition to the FEMA FIRMs, the County of San Diego has developed its own flood maps that account for additional areas of known risk. The county flood maps delineate 1 percent annual chance (100-year) riverine flood boundaries and elevations for areas not studied by FEMA.

Flood Prone Areas

The potential for flooding in San Diego County is generally considered to be high. The climate is semiarid, and the seasonal precipitation is highly variable in frequency, magnitude, and location. Infrequent large bursts of rain can rush down steep canyons and flood areas unexpectedly. Flooding in San Diego County and the rest of southern California most frequently occurs during winter storm events between the months of November and April and occasionally during the summer when a tropical storm makes landfall in the region. Most flooding events occur over several days but can also develop within a matter of hours, particularly in narrow valleys or in desert alluvial fans that are prone to sheet flow (flooding of a depth of 1 to 3 feet that occurs on sloping land).

Tsunamis

Tsunamis are long-wavelength, long-period sea waves generated by an abrupt movement of large volumes of water. These waves can be caused by underwater earthquakes, landslides, volcanic eruptions, meteoric impacts, and onshore slope failures. In San Diego County, wave heights and run-up elevations from tsunami have historically fallen within the normal range of tides. At the most risk for tsunamis is the coast of San Diego, all of which is incorporated or federal land (Camp Pendleton). The historic record and the location of unincorporated lands away from the coastline indicate that no projects in the unincorporated county have probable potential to be inundated by a tsunami (County of San Diego 2009).

Seiches

A seiche is a standing wave in a completely or partially enclosed body of water. Areas located along the shoreline of a lake or reservoir are susceptible to inundation by a seiche. High winds, seismic activity, and changes in atmospheric pressure are typical causes of seiches. The size of a seiche and the affected inundation area are dependent on different factors, including size and depth of the water body, elevation, source, and if human-made, the structural condition of the body of water in which the seiche occurs.

In San Diego's semiarid climate, naturally occurring enclosed water bodies are not common. Instead, most enclosed water bodies are reservoirs built by local municipalities and water districts to provide water service to local residents and businesses. Typically, all land around the reservoirs' shorelines are in public holdings, such as the city of San Diego or Helix Water District, which restrict private land development and minimize risk of inundation from seiches. Moreover, the public land holdings are not within the jurisdiction of the unincorporated county (County of San Diego 2009).

2.11.2 Regulatory Framework

2.11.2.1 *Federal*

Clean Water Act

EPA is the lead federal agency responsible for water quality management. The CWA (33 US Code Section 1251 et seq.) 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.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under the Code of Federal Regulations (CFR) Title 40. 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) of the CWA 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, SWRCB and its 9 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) of the CWA requires that the state develop a total maximum daily load (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. The TMDL 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, of the RWQCBs. See the “State” section, below.

CWA Section 404

In accordance with Section 404 of the CWA, the US Army Corps of Engineers (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 CFR Title 33, Part 328.3(a) to include navigable waters of the United States, interstate waters, and 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, or 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 2.5, "Biological Resources."

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (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 of 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 "State" section, below).

Federal Antidegradation Policy

The federal antidegradation policy, established in 1968, is designed to protect existing uses of waters, water quality, and national water resources. The 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

FEMA is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the NFIP and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares FIRMs that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of the NFIP. Floodplains are divided into flood hazard areas, which are areas designated according to their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a 1-percent chance of flooding 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's primary and secondary maximum contaminant levels (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 Services, which is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA.

2.11.2.2 *State*

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) (Water Code Section 13000 et seq.). The Porter-Cologne Act grants SWRCB and each of the 9 RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. San Diego County overlies the San Diego RWQCB and the Colorado River RWQCB. SWRCB and the RWQCBs have the authority and responsibility to adopt plans and policies, regulate discharges to surface water 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 Basin Plan for its region. The Basin Plans must conform to the policies set forth in the Porter-Cologne Act and established by 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.

NPDES Construction General Permit for Stormwater Discharges Associated with Construction Activity

SWRCB adopted the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (General Permit Order WQ 2022-0057-DWQ) in August 1999, and it has been subsequently updated. 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 stormwater 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.

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 commercial cannabis 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 the National Toxics Rule and California Toxics Rule 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 4-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 the 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 (Food and Agricultural Code Sections 13145–13152) requires CDPR to:

- obtain environmental fate and chemistry data for agricultural pesticides before they can be registered for use in California;
- identify agricultural pesticides with the potential to pollute groundwater;
- sample wells to determine the presence of agricultural pesticides in groundwater;
- obtain, report, and analyze the results of well sampling for pesticides by public agencies;
- formally review any detected pesticide to determine whether its use can be allowed; and
- adopt use modifications to protect groundwater from pollution if formal review indicates that continued use can be allowed.

The act requires CDPR to develop numerical values for water solubility, soil adsorption coefficient, hydrolysis, aerobic and anaerobic soil metabolism, and field dissipation of pesticides to protect groundwater based in part on data submitted by pesticide registrants.

The act also states that CDPR shall establish a list of pesticides that have the potential to pollute groundwater, called the Groundwater Protection List. Any person who uses a pesticide that is listed on the Groundwater Protection List is required to file a report with the county agricultural commissioner, and pesticide dealers are required to make quarterly reports to CDPR of all sales of pesticides on the list to persons not otherwise required to file a report. The Pesticide Contamination Prevention Act ensures that pesticides allowed for use in California, including those that may be used in commercial cannabis cultivation, will have been studied by CDPR for their potential to contaminate groundwater and the environment.

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 4

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 4-section monitoring, which monitors wells near a contaminated well. The third monitoring type is sensitive-area monitoring, which identifies areas sensitive to pesticide pollution. The fourth type is investigative monitoring, which is used to identify and understand the factors that affect pesticide movement into groundwater.

State Surface 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 the application 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 commercial 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 commercial cannabis cultivation operation (e.g., a municipal water system or a water delivery service).

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. 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.

In addition, SWRCB regulates the state's Cannabis Cultivation Program's Water Rights, including a Cannabis Small Irrigation Use Registration (Cannabis SIUR), which is a streamlined option to obtain a small appropriative water right to divert and store surface water

for commercial cannabis. Furthermore, the Cannabis SIUR prohibits cannabis cultivators from diverting surface water during the dry season forbearance period, from April 1 through October 31 of each calendar year. This means that water used for cannabis cultivation activities must be diverted to off-stream storage during the wet season to be used during the dry season.

Groundwater Management

Groundwater management is outlined in the Water Code Sections 10750–10755.4. The Groundwater Management Act was first introduced in 1992 as AB 3030 (Chapter 947, Statutes of 1992) and has since been modified by Senate Bill (SB) 1938 (Chapter 983, Statutes of 2002), AB 359 (Chapter 572, Statutes of 2011), the SGMA (SB 1168) (Chapter 346, Statutes of 2014), SB 1319 (Chapter 348, Statutes of 2014), and AB 1739 (Chapter 347, Statutes of 2014). The intent of the act is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

Sustainable Groundwater Management Act of 2014

The SGMA became effective on January 1, 2015 (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).

The SGMA requires DWR to categorize each groundwater basin in the state, identified in *California's Groundwater* (Bulletin 118), 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 GSA under a GSP that complies with Water Code Section 10727 et seq. As discussed above, Borrego Valley, San Luis Rey Valley, and San Pasqual Valley have prepared a GSP or Alternative Submittal (Water Code Section 10733.6) in compliance with the SGMA.

California Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, SWRCB adopted a nondegradation policy aimed at maintaining high quality 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 Administrative Code

The Administrative Code (CCR, Title 24, Part 1) defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues (CCR, Title 24, Section 64449).

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 issues 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 Water Resources Control Board Regulations for Cannabis Cultivation

Discharges related to cannabis cultivation must be covered under the SWRCB Cannabis Policy under Order WQ 2023-0102-DWQ, General Waste Discharge Requirements and Waiver of Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities.

SWRCB Order WQ 2023-0102-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 2 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.

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 and are summarized in Table 2.11.3, presented at the end of this section.

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 commercial cannabis cultivator is complying with the requirements listed in Attachment A of SWRCB Order WQ 2023-0102-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 commercial cannabis cultivation. Dischargers must also indicate how the best practical treatment or control measures included in SWRCB Order WQ 2023-0102-DWQ 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 Categories

The requirements related to water diversion and waste discharge for commercial cannabis cultivation cover the following 10 best practical treatment or control 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 SWRCB Order WQ 2023-0102-DWQ. The report must include an analysis of slope stability and is subject to approval by the RWQCB. When required, the site erosion and sediment control plan is to be prepared by a qualified individual (i.e., a registered professional per SWRCB Order WQ 2023-0102-DWQ requirements).

Disturbed Area Stabilization Plan

A disturbed area stabilization plan describes how the best practical treatment or control 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 commercial cannabis cultivation sites. The plan provides calculations of all the nitrogen applied to the commercial 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 SWRCB Order WQ 2023-0102-DWQ) with the site closure report.

Monitoring and Reporting Program

The monitoring and reporting program describes requirements for monitoring a commercial 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 2.11.4, 2.11.5, and 2.11.6, presented at the end of this section, provide an overview of these requirements.

Annual reports are required to be submitted to the San Diego RWQCB. SWRCB Order WQ 2023-0102-DWQ includes informal and formal enforcement actions to address a violation or threatened violation of water rights 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 SWRCB Order WQ 2023-0102-DWQ establishes principles and guidelines (Requirements) for commercial cannabis cultivation activities to protect water quality and instream flows, in consultation with California Department of Fish and Wildlife (CDFW) and DCC. The Requirements are divided into 5 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 Gauging)
- Section 4: Watershed Compliance Gauge Assignments

- Section 5: Planning and Reporting

Instream flow requirements were established by 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 2023-0102-DWQ. Aquatic base flows have also been established to address instream flow impacts from groundwater diversions (further discussed below). 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 commercial 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 (SWRCB 2017a). 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 (SWRCB 2017b).

General Requirements and Prohibitions in Attachment A of SWRCB Order WQ 2023-0102-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 SWRCB's right to access properties for inspections.

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

Instream Flow Requirements

Flow and Gauging Requirements

The instream flow requirements apply to cannabis cultivators throughout the state. The numeric instream flow requirements are developed at compliance gauges 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 SWRCB for consideration during updates to the Cannabis Policy under SWRCB Order WQ 2023-0102-DWQ. The gauges associated with San Diego County include San Luis Rey River, San Mateo Creek, Cristianitos Creek, Fallbrook Creek, Santa Ysabel Creek, Guejito Creek, Santa Maria Creek, Los Peñasquitos, Los Coches, Jamul Creek, and Sweetwater River.

Surface Water Diversion Forbearance Period

Absent restrictions on water diversion, the individual and cumulative effects of water diversions for commercial 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. Furthermore, many species depend on spring

recession flows as migratory or breeding cues. 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:

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

To meet the timeline, scale, and purpose of SWRCB Order WQ 2023-00102-DWQ, 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, 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 US 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 gauges 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 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 commercial cannabis cultivation will not occur until the real-time daily average flow is greater than the minimum monthly instream flow requirement at a compliance gauge 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. 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, or groundwater diversions in close proximity to streams. An aquatic base flow was developed at each compliance gauge 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 methodology at the compliance gauges in the 9 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 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 Gauges and Requirements

Compliance gauge assignments have been developed for all watershed areas throughout the state. Numeric instream flow requirements are applied at a subset of existing gauges reported on 2 websites: (1) the USGS National Water Information System and (2) DWR's California Data Exchange Center.

Watershed areas that do not have existing gauges are assigned a compliance gauge for a different location in the same watershed or for a nearby watershed with similar flow characteristics. Cannabis cultivators in ungauged watersheds and in watersheds without an assigned gauge may be required to install a gauge if information indicates that use of the assigned gauge does not adequately protect instream flows. SWRCB will monitor commercial cannabis cultivation diversions to track areas where locally concentrated commercial 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, which issued by the National Marine Fisheries Service, the US 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 gauges are located in areas that are generally representative of the water availability and total demand occurring upstream of the gauging location or in a similar watershed. However, impacts may still occur in areas where there is significant localized commercial cannabis cultivation compared to water availability or where the compliance gauge does not accurately reflect the demand in a paired watershed. To help ensure diversion of water for commercial 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 SWRCB Order WQ 2023-0102-DWQ addresses land development and maintenance, erosion control, and drainage features. These requirements place limitations on earth-moving, 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 SWRCB Order WQ 2023-0102-DWQ place limitations of work in watercourses and permanently ponded areas. Standard practices are provided to address the 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

SWRCB Order WQ 2023-0102-DWQ includes an exemption for activities that 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 exemptions but are still subject to compliance with the regulations.

Commercial cannabis cultivation activities that disturb an area (in aggregate) less than 2,000 square feet on 1 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 SWRCB's authority to inspect the site, evaluate the exemption status, or evaluate other water quality or water right regulatory requirements.

California Forest Practice Rules of 2017

The California Forest Practice Rules of 2017 (CCR; Title 14; Chapters 4, 4.5, and 10) implements the provision of the Z'berg-Nejedly Forest Practice Act of 1973. The Cannabis Policy requires access roads to be constructed consistent with the requirements in CCR, Title 14, Chapter 4. *The Handbook for Forest Ranch and Rural Roads* (Road Handbook) describes how to implement these regulations and provides a guide for planning, designing, constructing, reconstructing, upgrading, maintaining, and closing wildland roads. Development of the Road Handbook was funded in part by SWRCB, EPA, and the California Department of Forestry and Fire Protection.

The Road Handbook recommends limited road slopes for safety, maintenance, and drainage issues. Road alignments should be designed with gentle to moderate slopes to minimize damage to the roadbed, allow for frequent and effective road surface drainage, and for safety. Roads with a slope of less than 1 percent can be difficult to drain and may develop potholes and other signs of impaired drainage. Steep roads are more likely to suffer from erosion and road surface damage, especially if they are used when wet. Steep roads can be more difficult to drain because surface runoff may flow down the road in wheel ruts rather than off the outside edge where it can be discharged and dissipated. In snow zones, steep roads may

represent a safety hazard if they are used during cold weather periods. New road alignments should be constructed with slopes of 3–8 percent or less wherever possible. Forest roads should generally be kept below 12 percent except for short pitches of 500 feet or less where road slopes may go up to 20 percent. These steeper road slopes should be paved or rock surfaced and equipped with adequate drainage. Existing roads that do not comply with these limits require additional inspection by a qualified professional, as defined in the policy, to determine if improvements are needed.

California Code of Regulations

Cannabis Cultivation Licensing Requirements

CCR, Title 4, Section 15011(a), "Additional Information," states:

(11) 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 26060(a)(2) of the Business and Professions Code.

CCR, Title 4, Section 16307, "Pesticide Use Requirements," states:

(a) Licensed cultivators shall comply with all applicable pesticide statutes and regulations enforced by the Department of Pesticide Regulation.

(b) For all pesticides that are exempt from registration requirements, licensed cultivators shall comply with all applicable pesticide statutes and regulations enforced by the Department of Pesticide Regulation and 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.

CCR, Title 4, Section 16311, "Supplemental Water Source Information," states:

The following information shall be provided for each water source identified by the applicant:

(a) Retail water supply sources:

(1) If the water source is a retail water supplier, as defined in section 13575 of the Water Code, such as a municipal provider, provide the following:

(A) Name of the retail water supplier; and

(B) A copy of the most recent water service bill or written documentation from the water supplier stating that service will be provided at the premises address.

(2) If the water source is a small retail water supplier, such as a delivery service, and is subject to section 26060.1(a)(1)(B) of the Business and Professions Code and the retail water supplier contract is for delivery or pickup of water from a surface water body or an underground stream flowing in a known and definite channel, provide all of the following:

(A) The name of the retail water supplier under the contract;

(B) The water source and geographic location coordinates, in either latitude and longitude or the California Coordinate System, of any point of diversion used by the retail water supplier to divert water delivered to the commercial cannabis business under the contract;

(C) The authorized place of use of any water right used by the retail water supplier to divert water delivered to the commercial cannabis business under the contract;

(D) The maximum amount of water delivered to the commercial cannabis business for cannabis cultivation in any year; and

(E) A copy of the most recent water service bill.

(3) If the water source is a small retail water supplier, such as a delivery service, and is subject to section 26060.1(a)(1)(B) of the Business and Professions Code and the retail water supplier contract is for delivery or pickup of water from a groundwater well, provide all of the following:

(A) The name of the retail water supplier under the contract;

(B) The geographic location coordinates for any groundwater well used to supply water delivered to the commercial cannabis business, in either latitude and longitude or the California Coordinate System;

(C) The maximum amount of water delivered to the commercial cannabis business for cannabis cultivation in any year;

(D) A copy of the well completion report filed with the Department of Water Resources pursuant to section 13751 of the Water Code for each percolating groundwater well used to divert water delivered to the commercial cannabis business. If no well completion report is available, the applicant shall provide evidence from the Department of Water Resources indicating that the Department of Water Resources does not have a record of the well completion report. When no well completion report is available, the State Water Resources Control Board may request additional information about the well; and

(E) A copy of the most recent water service bill.

(b) If the water source is a groundwater well, provide the following:

(1) The groundwater well's geographic location coordinates, in either latitude and longitude or the California Coordinate System; and

(2) A copy of the well completion report filed with the Department of Water Resources pursuant to section 13751 of the Water Code. If no well completion report is available, the applicant shall provide evidence from the Department of Water Resources indicating that the Department of Water Resources does not have a record of the well

completion report. If no well completion report is available, the State Water Resources Control Board may request additional information about the well.

(c) If the water source is a rainwater catchment system, provide the following:

(1) The total square footage of the catchment footprint area(s).

(2) The total storage capacity, in gallons, of the catchment system(s).

(3) A detailed description and photographs of the rainwater catchment system infrastructure, including the location, size, and type of all surface areas that collect rainwater. Examples of rainwater collection surface areas include a rooftop and greenhouse.

(4) Geographic location coordinates of the rainwater catchment infrastructure in either latitude and longitude or the California Coordinate System.

(d) If the water source is a diversion from a waterbody (such as a river, stream, creek, pond, lake, etc.), provide any applicable water right statement, application, permit, license, or small irrigation use registration identification number(s), and a copy of any applicable statement, registration certificate, permit, license, 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.

2.11.2.3 *Local*

To protect, preserve, and maintain groundwater resources in the county, the San Diego County Groundwater Ordinance was enacted in 1991 to ensure that development would not occur in groundwater-dependent areas of the county unless adequate groundwater resources are available to serve both the existing users and the proposed development. In addition to the Groundwater Ordinance, CEQA requires that certain findings be made in order for a proposed project to be approved. *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources* provides guidance for evaluating potential environmental effects that a proposed project may have on groundwater resources in the unincorporated county.

San Diego Basin Water Quality Control Plan

The Basin Plan for the San Diego Basin, most recently amended in 2021, is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan (1) designates beneficial uses for surface and ground waters, (2) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy, (3) describes implementation programs to protect the beneficial uses of all waters in the region, and (4) describes surveillance and monitoring activities to evaluate the effectiveness of the Basin Plan. The Basin Plan incorporates by reference all applicable SWRCB and RWQCB plans and policies (CA RWQCB 2021).

Rainbow Creek Total Maximum Daily Loads

The San Diego RWQCB adopted Resolution Number R9-2005-0036, A Resolution Adopting an Amendment to the Water Quality Control Plan for the San Diego Region (9) to Incorporate

Total Maximum Daily Loads (TMDLs) for Total Nitrogen and Total Phosphorus in the Rainbow Creek Watershed, San Diego County (Rainbow Creek TMDL) on February 9, 2005. The Rainbow Creek TMDL was approved by SWRCB on November 16, 2005; the Office of Administrative Law (OAL) on February 1, 2006; and EPA on March 22, 2006. The Rainbow Creek TMDL became effective on February 1, 2006, and is described as follows:

a. Nitrate and phosphorus concentrations in the Rainbow Creek Watershed exceed the water quality objective for some municipal supply beneficial uses and threaten several additional beneficial uses. Runoff from agriculture, nursery, and residential land uses contribute to increased nitrate and phosphorus in Rainbow Creek as a result of storm water runoff, irrigation return flows, and groundwater contributions to the creek.

b. The objectives of the Rainbow Creek TMDL Implementation Plan requires the use of effective management practices and best management practices to reduce the loading of nitrogen and phosphorus to attain numeric targets for total nitrogen (1.0 mg/L) and total phosphorus of (0.1 mg/L).

The best practical treatment or control measures included in SWRCB Order WQ 2023-0102-DWQ represent effective management practices limiting nitrogen and phosphorus discharges.

Revised Total Maximum Daily Loads for Indicator Bacteria

The San Diego RWQCB adopted Resolution Number R9-2010-0001, A Resolution Amending the Water Quality Control Plan for the San Diego Basin (9) to Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Bacteria TMDL) on February 10, 2010. The Bacteria TMDL was approved by SWRCB on December 14, 2010; OAL on April 4, 2011; and EPA on June 22, 2011. The Bacteria TMDL became effective on April 4, 2011, and is described as follows:

a. Bacteria in the waters of the beaches and creeks addressed by this TMDL have exceeded numeric water quality objective for total, fecal, and/or enterococci bacteria (collectively referred to as indicator bacteria). Beaches have been posted with health advisories and/or closed threatening and impairing beneficial uses.

b. Watersheds with agricultural operations (Lower San Juan hydrologic sub area, San Luis Rey hydrologic unit, San Marcos hydrologic area, and San Dieguito hydrologic unit) are required to reduce their wet weather and dry weather bacteria loading. The objectives of the Bacteria TMDL Implementation Plan requires the use of effective management practices and best management practices to reduce the loading of bacteria containing discharges to achieve the load allocations and waste loads specified in the Bacteria TMDL.

The best practical treatment or control measures included in SWRCB Order WQ 2023-0102-DWQ represent effective management practices limiting bacteria-containing discharges to waters covered by the Bacterial TMDL (SWRCB 2023).

Colorado River Basin Plan

Similar to the San Diego Basin Plan, the Colorado River Basin Plan (most recently amended in March 2023) sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the Colorado River Basin

Plan lists and defines the various beneficial water uses of water bodies within its boundaries; describes the water quality that must be maintained to support such uses; describes the necessary programs, projects and other actions to achieve the standards established in the plan; and summarizes the various plans and policies that protect water quality (CA RWQCB 2023).

San Diego County Stormwater Resource Plan

The San Diego Stormwater Resource Plan is a regional stormwater planning document prepared in accordance with SWRCB's Stormwater Resource Plan Guidelines to encourage multi-benefit stormwater, water quality, and beneficial use project development and to meet the requirements for application of projects in San Diego County for state grant funding under Proposition 1 and other future funding opportunities. The County of San Diego and the San Diego Municipal Separate Storm Sewer Systems (MS4) co-permittees prepared the Stormwater Resource Plan, which includes 9 of the WMAs in the county (described above in Section 2.11.1, "Existing Conditions").

Water Quality Improvement Plans

There are 10 watershed Water Quality Improvement Plans in the San Diego Region. These plans include descriptions of the highest priority pollutants or conditions in a specific watershed, goals and strategies to address those pollutants or conditions, and time schedules associated with those goals and strategies. The watersheds subject to Water Quality Improvement Plans consist of the following watershed management areas in San Diego County:

- Carlsbad
- Los Peñasquitos
- Mission Bay
- San Diego Bay
- San Diego River
- San Dieguito River
- San Luis Rey River
- Santa Margarita River
- Tijuana River

San Diego Integrated Regional Water Management Plan

The San Diego Integrated Regional Water Management (IRWM) Region extends east from the Pacific Ocean, through one of the most populous areas in the nation, to the ridgeline of a forested mountain range. The IRWM Plan was most recently updated in 2019 and addresses sustainable water development, valuing stormwater as a resource, investing in marginalized communities' water systems, and optimizing regional and local infrastructure. The IRWM Program in the San Diego Region is now well established, and its processes and procedures are formalized in the *2019 IRWM Plan Update* to reflect the evolution of the IRWM Program. The *2019 IRWM Plan Update* further strengthens the region's commitment to comprehensive regional water resource planning.

County of San Diego Watershed Protection, Stormwater Management, and Discharge Ordinance

The San Diego County Code of Regulatory Ordinances (Regulatory Code) Section 67.801 et seq. provides requirements to protect water resources and to improve water quality by controlling the stormwater conveyance system and receiving waters; to cause the use of management practices by the county and its citizens that reduce the adverse effects of non-stormwater and polluted stormwater discharges to the stormwater conveyance system and receiving waters; to secure benefits from the use of stormwater as a resources; and to ensure the county is compliant with state requirements.

The 1987 amendments to the Federal Water Pollution Control Act (also known as the CWA) established a framework for regulating MS4 discharges under the NPDES. In 1990, the San Diego RWQCB issued Order No. 90-42, a regional NPDES permit for urban stormwater discharges from the jurisdictions in the urbanized portions of San Diego County. The MS4 Permit was revised in February 2001, January 2007, and May 2013. The 2013 MS4 Permit requires each co-permittee to develop a Jurisdictional Runoff Management Program and model best management practices (BMPs). Consistent with the County's Watershed Protection, Stormwater Management, and Discharge Ordinance, as districted by federal and state requirements, the County has prepared a Jurisdictional Runoff Management Program (JRMP) in compliance with 2013 MS4 Permit. The JRMP, approved in 2015, includes management measures to prevent discharges to the stormwater system and receiving waters (County of San Diego 2015). The *County of San Diego BMP Design Manual* (updated in 2020) provides guidance for land development and public improvement projects to comply with the MS4 Permit through project design requirements and related post-construction requirements (County of San Diego 2020).

County of San Diego Well Ordinance

Wells are addressed in County Regulatory Code Section 67.401 et seq. This chapter of the code includes standards for well construction, repair, reconstruction, and destruction. The requirements include the permit conditions, inspection requirements, and permits terms.

County of San Diego Flood Hazard Reduction Ordinance

Flood hazard reduction standards are provided in Regulatory Code Section 811.501 et seq. This chapter contains standards for construction and development in flood hazard areas. Section 811.506 limits encroachments, structures, fill, new construction, substantial improvements, additions, development, storage or placement of vehicles, debris or other materials or other uses that may increase flood levels during a base flood discharge.

County of San Diego Resource Protection Ordinance

San Diego County's Resource Protection Ordinance is provided in Regulatory Code Section 86.601 et seq. Generally, under these ordinances, a development permit and other approval mechanisms may not be granted if development is of permanent structures for human habitation or as a place of work in a floodway. Uses permitted in a floodway pursuant to Section 86.604(c) of this ordinance include agricultural, recreational, and other such low-intensity uses provided that no use shall be permitted that will substantially harm the environmental values of a particular

floodway area. In addition, uses in the floodplain fringe are allowed if they are permitted by zoning and are allowable in the floodway as long as specific criteria are met.

County of San Diego Grading, Clearing, and Watercourses Ordinance

The San Diego County Grading, Clearing, and Watercourses Ordinance (Grading Ordinance) is contained Section 87.101 et seq. of the Regulatory Code. Under these ordnances, no grading is allowed in the county without issuance of a grading permit, except under certain conditions, including if an excavation or fill is less than 8 feet in vertical height, requires less than 200 cubic yards of materials movement, and activities occur within an existing roadway. Standards for issuance of a grading permit include compliance with the County's Watershed Protection, Stormwater Management, and Discharge Control Ordinances, described above, for activities that do not decrease groundwater supply; cause insufficient water supply; or involve unreasonable geological, flood, or other hazards. In addition to permit requirements, the Grading Ordinance contains design standards and performance requirements to prevent erosion and ensure appropriately designed drainage systems.

County of San Diego Groundwater Ordinance

The San Diego County Groundwater Ordinance is contained in Section 67.701 et seq. of the Regulatory Code. This ordinance contains regulations for the protection, preservation, and maintenance of groundwater resources. It provides standards for implementation and review of groundwater studies, as well as countywide studies, assessments, and monitoring of groundwater resources in the county. The purpose of this ordinance is not to limit or restrict agricultural activities but to ensure that development will not occur in groundwater-dependent areas of the county unless adequate groundwater supplies are available to serve both the existing uses in the affected groundwater basin and the proposed uses. The economic, social, and environmental benefits of maintaining viable agriculture in San Diego County are expressly recognized in the adoption of this ordinance. Also, the Groundwater Ordinance does not apply to by-right agricultural uses or operations.

This ordinance does not limit the number of wells or the amount of groundwater extraction from existing landowners. However, the ordinance does identify specific measures to mitigate potential groundwater impacts of projects requiring specified discretionary permits. Administrative permits, which would be required for certain proposed cannabis activities, would not be subject to the Groundwater Ordinance.

San Diego County General Plan

The following General Plan Update policies are applicable to the proposed Cannabis Program.

- **Policy COS-4.1: Water Conservation.** Require development to reduce the waste of potable water through use of efficient technologies and conservation efforts that minimize the County's dependence on imported water and conserve groundwater resources.
- **COS-5.1: Impact to Floodways and Floodplains**. Restrict development in floodways and floodplains in accordance with policies in the Flood Hazards section of the Safety Element.

- **COS-5.2: Impervious Surfaces**. Require development to minimize the use of directly connected impervious surfaces and to retain stormwater run-off caused from the development footprint at or near the site of generation.
- **COS-5.3: Downslope Protection**. Require development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources.
- **COS-5.5: Impacts of Development to Water Quality**. Require development projects to avoid impacts to the water quality in local reservoirs, groundwater resources, and recharge areas, watersheds, and other local water sources.
- **Policy LU-8.1: Density Relationship to Groundwater Sustainability.** Require land use densities in groundwater dependent areas to be consistent with the long-term sustainability of groundwater supplies, except in the Borrego Valley.
- **Policy LU-8.2: Groundwater Resources.** Require development to identify adequate groundwater resources in groundwater dependent areas, as follows:
  - In areas dependent on currently identified groundwater overdrafted basins, prohibit new development from exacerbating overdraft conditions. Encourage programs to alleviate overdraft conditions in Borrego Valley.
  - In areas without current overdraft groundwater conditions, evaluate new groundwater-dependent development to assure a sustainable long-term supply of groundwater is available that will not adversely impact existing groundwater users.
- **Policy LU-13.1: Adequacy of Water Supply.** Coordinate water infrastructure planning with land use planning to maintain an acceptable availability of a high quality sustainable water supply. Ensure that new development includes both indoor and outdoor water conservation measures to reduce demand.
- **Policy LU-13.2: Commitment of Water Supply.** Require new development to identify adequate water resources, in accordance with State law, to support the development prior to approval.
- **Policy S-9.2: Development in Floodplains.** Limit development in designated floodplains to decrease the potential for property damage and loss of life from flooding and to avoid the need for engineered channels, channel improvements, and other flood control facilities. Require development to conform to federal flood proofing standards and siting criteria to prevent flow obstruction.
- **Policy S-10.4: Stormwater Management.** Require development to incorporate low impact design, hydromodification management, and other measures to minimize stormwater impacts on drainage and flood control facilities.
- **Policy S-10.6: Stormwater Hydrology.** Ensure development avoids diverting drainages, increasing velocities, and altering flow rates to off-site areas to minimize adverse impacts to the area's existing hydrology.

2.11.3 Analysis of Project Impacts and Determination of Significance

2.11.3.1 *Thresholds of Significance*

According to Appendix G of the State CEQA Guidelines, an impact on hydrology or water quality is considered significant if implementation of the Cannabis Program would do any of the following:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water 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 site or area, including through the alteration of the course of a stream or river, in a manner that would:
    - result in substantial erosion or siltation on- or off-site;
    - result in flooding on-site 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;
    - 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.

2.11.3.2 *Issues Not Discussed Further*

Release of Pollutants in Flood Hazard Zone

Regulatory Code Section 811.501 et seq. contains standards for construction and development in flood hazard areas. Section 811.506 limits encroachments, structures, fill, new construction, substantial improvements, additions, development, storage or placement of vehicles, debris or other materials, or other uses that may increase flood levels during a base flood discharge. In addition, the San Diego County Grading Ordinance, contained Section 87.101 et seq. of the Regulatory Code, requires issuance of a grading permit, except under certain conditions. Standards for issuance of a grading permit include compliance with the County's Watershed Protection, Stormwater Management, and Discharge Control Ordinances, described above, for activities that do not decrease groundwater supply; cause insufficient water supply; or involve unreasonable geological, flood, or other hazards. Thus, no significant impacts associated with flooding hazards or alteration of drainage conditions or associated water quality would occur. These issues are not further discussed below.

Release of Pollutants in Tsunamis and Seiches

Environmental impact analyses under CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents, but when a proposed project risks exacerbating environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment and not the environment's impact on the project that compels an evaluation of how future residents or users could be affected by exacerbated conditions (*California Building Industry Association v. Bay Area Air Quality Management District* [2015] 62 Cal.4th 369). Implementation of the Cannabis Program in the county would not exacerbate any existing conditions related to the potential for tsunami or seiche. This issue is not further discussed below.

2.11.3.3 *Approach to Analysis*

This analysis evaluates the effect of cannabis cultivation operations countywide based on the information provided in Chapter 1, "Project Description, Location, and Environmental Setting," as well as Figure 1.2, on the potential locations of future cannabis uses. Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects based on the standards 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 laws, ordinances, and regulations.

The estimated water demands identified in Table 2.11.7, presented below, were used in the groundwater impact discussions below for future new licensed commercial cannabis uses by type for each alternative evaluated. According to the demand ratios presented in Table 2.11.7, future new cannabis uses in the county would demand a total of approximately 667 afy of water (323 afy for outdoor, mixed-light, and indoor cultivation facilities and 613 afy for noncultivation facilities), a portion of which would be derived from groundwater sources. Water demand factors are presented in Table 2.11.7.

This PEIR relies on Northern California data, included in the Yolo County Cannabis Ordinance PEIR, to estimate water needs for outdoor cultivation. However, San Diego County's warmer, drier climate and lower annual precipitation likely increase water demand. The absence of peer-reviewed studies on cannabis water use underscores the need for ongoing research. Site-specific evaluation during discretionary permit reviews for cannabis cultivation applications are needed to refine water demand estimates based on updated research and regional conditions.

2.11.3.4 *Issue 1: Water Quality Standards and Requirements and Consistency with Water Quality Control Plans*

Guidelines for Determination of Significance

According to Appendix G of the CEQA State Guidelines, the Cannabis Program would have a significant impact if it would violate any water quality standards, otherwise degrade water quality or violate any water quality standards or waste discharge requirements; or 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 or provide substantial additional sources of polluted runoff.

Impact Analysis

Construction and operation of cannabis cultivation and noncultivation uses have the potential to degrade water quality in various ways. Generally, cannabis cultivation-related discharges to water are associated with the following activities (SWRCB 2023):

- discharges of sediment from land disturbance activities (e.g., road construction, grading), improper construction or maintenance of road stream crossings and drainage culverts; or improper stabilization and maintenance of disturbed areas, unstable slopes, and construction material (e.g., spoil piles, excavated material);
- discharges from land disturbance and development within and adjacent to wetlands and riparian zones;
- discharges of fertilizers and pesticides;
- spills or leaks of fuels, lubricants, hydraulic oil, or other chemicals associated with water diversion pumps, construction equipment, or other equipment; and
- discharges of trash, household refuse, domestic wastewater, and cannabis wastewater.

Outdoor cannabis cultivation in California typically occurs on undeveloped parcels. In addition to the cannabis cultivation area, there is also typically a nursery and other support facilities (e.g., water supply and distribution, storage bays for soil amendments, generators for power supply, storage sheds, access roads). Site grading is often a necessary first step to construct these facilities, and the resultant disturbed area is vulnerable to increased erosion and sedimentation.

Within San Diego County, waterways are listed on the 303(d) list for pesticides, including bifenthrin, chlordane, diazinon, and malathion. In addition, waterbodies in San Diego County are on the 303(d) list for nutrients, including nitrate and nitrite, nitrogen, dissolved oxygen, phosphate, and phosphorus. These contaminants are generally related to pesticides and fertilizers and may be associated with past and ongoing agricultural operations.

As discussed above in Section 2.11.2, “Regulatory Framework,” SWRCB Order WQ 2023-0102-DWQ contains requirements for commercial cannabis cultivation. These requirements include plans that address site erosion and sediment control, disturbed areas stabilization, nitrogen management, implementation of best practical treatment or control measures, site closure procedures, and monitoring and reporting requirements. In addition, the order contains requirements for land development maintenance, erosion control, drainage features, stream-crossing installation and maintenance, soil disposal and spoils management, and roadway design and maintenance. Cannabis cultivation operations that cover less than 2,000 square feet are conditionally exempt, are required to obtain coverage under the waiver, and are still subject to standards in SWRCB Order WQ 2023-0102-DWQ. These requirements include implementation of the best practical treatment or control measures provided in Attachment A of SWRCB Order WQ 2023-0102-DWQ, which address:

- riparian and wetland protection and management;
- water diversion, storage, and use;
- irrigation runoff;
- land development and maintenance, erosion control, and drainage features;
- soil disposal;
- stream crossing installation and maintenance;
- fertilizer and soil use and storage;
- pesticide and herbicide application and storage;
- petroleum products and other chemical use and storage;
- cultivation-related waste disposal (including cannabis wastewater);
- refuse and human waste disposal; and
- winterization.

These required best practical treatment or control measures contain specific procedures, associated with the topics listed above, to prevent direct discharge of waste to surface waters and stormwater mobilization of constituents of concern (e.g., nitrogen, pathogens, phosphorus, salinity, and turbidity) to waters of the state, which includes groundwater and surface waterbodies.

Furthermore, the San Diego County Grading Ordinance requires issuance of a grading permit for earth-moving activities if excavation or fill is more than 8 feet in vertical height, for more than 200 cubic yards of materials movement, and outside an existing roadway. The Grading Ordinance also requires design standards and performance requirements to prevent erosion and ensure appropriately designed drainage systems.

As discussed above in Section 2.11.2.3, “Local,” there are 2 water quality control plans that overlap with San Diego County: the San Diego Basin Water Quality Control Plan and the Colorado River Basin Plan. Activities associated with the proposed Cannabis Program include irrigated agriculture and industrial uses, both of which are listed as major water quality concerns in the Basin Plans and have been noted as contributors to waterway impairments on the 303(d) list. However, because the above-listed requirements would prevent direct discharge of waste to surface waters and stormwater mobilization of constituents of concern (e.g., nitrogen, pathogens, phosphorus, salinity, and turbidity) to waters of the state, the Cannabis Program would not conflict with implementation of the San Diego Basin Water Quality Control Plan or the Colorado River Basin Plan.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate under the existing ordinances as well as expand their existing facilities and operations to a total of 10,000 square feet of building area for each site. Based on review satellite imagery, these 5 sites have been developed with buildings, parking areas, and infrastructure. Given the disturbed conditions of these sites, no significant impacts on water

resources are anticipated. Any on-site improvements would subject to compliance with County's Grading Ordinance regarding water quality control features during construction.

This impact would be less than significant under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers.

Under Alternative 2, required compliance with SWRCB Order WQ 2023-0102-DWQ (as described in detail in Section 2.11.2, "Regulatory Framework") would prevent direct discharge of cannabis cultivation waste to surface waters and stormwater mobilization of constituents of concern (e.g., nitrogen, pathogens, phosphorus, salinity, and turbidity) to waters of the state, which includes groundwater and surface waterbodies. In addition to the County's Grading Ordinance, cannabis facilities would be required to comply with NPDES permits for cannabis noncultivation projects covering an area greater than 1 acre. These requirements would mitigate potential polluted runoff into waterways from development and operations through implementation of a SWPPP, BMPs, and other drainage and design standards to prevent erosion and ensure appropriately designed drainage systems and permit conditions for larger operations (i.e., for excavation or fill of more than 8 feet in vertical heigh or more than 200 cubic yards of materials movements). These requirements would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation. Moreover, County and state requirements ensure consistency with General Plan Policies COS-5.2, COS-5.3, COS-5.5, S-10.4, and S-10.6 because they require developed uses to avoid adverse impacts to stormwater quality.

This impact would be less than significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting," for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As discussed above under Alternative 2, compliance with SWRCB Order 2023-0102-DWQ, the County's Grading Ordinance, and NPDES permits for cannabis noncultivation projects covering an area greater than 1 acre (as described in detail in Section 2.11.2, "Regulatory Framework,") would ensure that runoff from cannabis cultivation and noncultivation operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation. Moreover, County and state requirements ensure consistency with General Plan Policies COS-5.2, COS-5.3, COS-5.5, S-10.4, and S-10.6 because they require developed uses to avoid adverse impacts to stormwater quality.

This impact would be less than significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

Under Alternative 4, because no outdoor cannabis uses would be allowed, potential impacts would be limited to development of new permanent buildings to support indoor cannabis cultivation and noncultivation uses. While it is considered unlikely that new cannabis uses would involve development of new buildings, construction and development plans would be subject to the SWRCB Order 2023-0102-DWQ and the County's Grading Ordinance (as described in detail in Section 2.11.2, "Regulatory Framework") and would be required to comply with NPDES permits for projects covering an area greater than 1 acre. These requirements would ensure that waterways do not receive polluted runoff from development through implementation of a SWPPP, BMPs, and other drainage and design standards. Moreover, County and state requirements ensure consistency with General Plan Policies COS-5.2, COS-5.3, COS-5.5, S-10.4, and S-10.6 because they require developed uses to avoid adverse impacts to stormwater quality.

This impact would be less than significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

As discussed above under Alternative 2, compliance with SWRCB Order 2023-0102-DWQ, the County's Grading Ordinance, and NPDES permits for cannabis noncultivation projects covering an area greater than 1 acre (as described in detail in Section 2.11.2, "Regulatory Framework") would ensure that runoff from cannabis operations cannot reach waterways and thus would not contribute to or cause substantial water quality degradation. Moreover, County and state requirements ensure consistency with General Plan Policies COS-5.2, COS-5.3, COS-5.5, S-10.4, and S-10.6 because they require developed uses to avoid adverse impacts to stormwater quality.

This impact would be less than significant under Alternative 5.

2.11.3.5 *Issue 2: Substantial Decrease of Groundwater Supplies or Interfere Substantially with Groundwater Recharge*

Guidelines for Determination of Significance

According to Appendix G of the CEQA Guidelines, the proposed Cannabis Program would have a significant impact if it would substantially decrease groundwater supplies or interfere substantially with groundwater recharge.

Impact Analysis

As discussed above in Section 2.11.1, "Existing Conditions," groundwater aquifers in San Diego County may be characterized as either fractured-rock aquifers or alluvial and sedimentary aquifers. Alluvial and sedimentary aquifers are found within approximately 27 percent of the of the county and are generally located in river and stream valleys, around lagoons, near the coastline, and in the intermountain valleys. Fractured-rock aquifers, found within the remaining 73 percent of the county, are generally located in the foothills and mountains. Generally, alluvial and sedimentary aquifers are considered to be more reliable groundwater sources than fractured-rock aquifers.

Under the proposed Cannabis Program, new cannabis uses could be developed throughout the county in areas zoned for agricultural, commercial, and industrial uses (see Table 1.1). While some of these areas may be served by imported water, particularly within the CWA service area, groundwater would be the only source for any cannabis use within the groundwater-dependent portion of the county. As depicted in Figure 2.11.1, presented at the end of this section, the majority of the program area is located within areas that contain fractured-rock aquifers. Fractured-rock aquifers generally have lower well yield and less reliability than wells drawing from alluvial aquifers. There are a number of factors that determine the long-term yield for a well in fractured-rock aquifers, including the number of fractures intersected; aperture (fracture-opening sizes), spacing, orientation, and interconnectivity of fractures; the amount of recharge; the amount of groundwater in storage in the surrounding aquifer; other nearby groundwater extraction; and the installation techniques of the well. In addition, while low well yields are possible anywhere within fractured-rock aquifer areas, steep slope areas above the valley floor are particularly prone to having lower well yield. This is largely due to storage values in steep slope areas often being substantially lower than valley areas and having a smaller tributary watershed than wells located in valley areas.

Excessive pumping that exceeds the rate of recharge results in a groundwater overdraft situation, which is not sustainable for long-term groundwater use. In addition, because production wells for residential and agricultural water uses are typically not metered or regulated for water quantity by the County, future localized groundwater problems are possible anywhere in the county from large quantity groundwater users or in areas where there is clustering of groundwater demand from dense development. Furthermore, due to the low storage capacity of fractured-rock aquifers, excessive use of groundwater by a single user in a fractured-rock aquifer can cause localized impacts on neighboring property well yields. These areas are also potentially susceptible to localized groundwater problems, especially if underlain by fractured-rock aquifers with little to no residuum or alluvium.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate under the existing ordinances as well as expand their existing facilities and operations to a total of 10,000 square feet of building area for each site. Assuming that these expansions involve new indoor cannabis cultivation uses, the potential expansion of the 5 sites could result as much as 5.6 acre-feet per year of total water demand (based on water demand ratios identified in Table 2.11.7). All of the existing sites are supplied water through municipal services districts; thus, there would not be site-specific wells used for these operations.

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

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers. The proposed zoning ordinance changes under the proposed Cannabis Program (see Appendix B) establish use types that would require issuance of a zoning verification that meet specified criteria. For zoning verification of use types that include distribution, manufacturing, testing laboratories and retail, this would require a letter report signed by a California Professional Geologist which concludes that extraction of groundwater is not likely to interfere with production and functioning of existing nearby wells and not likely to substantially decrease groundwater supplies.

According to the demand ratios presented in Table 2.11.7, included at the end of this section, future new cannabis uses in the county would demand approximately 668 afy of water, a portion of which would be derived from groundwater sources. Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. While it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because of the uncertainty of available groundwater resources in fractured-rock aquifer conditions, additional groundwater use associated with a project under the proposed Cannabis Program may result in potential impacts, including a groundwater overdraft condition, low well yield, or well interference. It cannot be known at this time where new wells may be constructed or where groundwater production may increase; thus, this impact would be potentially significant.

This impact would be potentially significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As identified in Table 2.11.7, presented at the end of this section, future new cannabis uses in the county would demand approximately 668 afy of water, a portion of which would be derived from groundwater sources. Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because of the uncertainty of available groundwater resources in fractured-rock aquifer conditions, additional groundwater draw down associated with a project approved under the proposed Cannabis Program may result in a groundwater overdraft condition, low well yield, or well interference. It cannot be known at this time where new wells may be constructed or where groundwater production may increase; thus, this impact would be potentially significant.

This impact would be potentially significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

As identified in Table 2.11.7, presented at the end of this section, future new cannabis uses in the county would demand approximately 613 afy of water, a portion of which would be derived from groundwater sources. Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because of the uncertainty of available groundwater resources in fractured-rock aquifer conditions, additional groundwater draw down associated with a project approved under the proposed Cannabis Program may result in a groundwater overdraft condition, low well yield, or well interference. It cannot be known at this time where new wells may be constructed or where groundwater production may increase; thus, this impact would be potentially significant.

This impact would be potentially significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, "Project Description, Location, and Environmental Setting" for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

According to the demand ratios presented in Table 2.11.7, future new cannabis uses in the county would demand approximately 668 afy of water, a portion of which would be derived from groundwater sources. Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. While it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because of the uncertainty of available groundwater resources in fractured-rock aquifer conditions, additional groundwater draw down associated with a project approved under the proposed Cannabis Program may result in a groundwater overdraft condition, low well yield, or well interference. It cannot be known at this time where new wells may be constructed or where groundwater production may increase; thus, this impact would be potentially significant.

This impact would be potentially significant under Alternative 5.

2.11.3.6 *Issue 3: Consistency with Sustainable Groundwater Management Plans*

Guidelines for Determination of Significance

According to Appendix G of the State CEQA Guidelines, the proposed Cannabis Program would have a significant impact if it would conflict with a sustainable groundwater management plan.

Impact Analysis

As previously described in Section 2.11.1, "Existing Conditions," the county contains fractured-rock and alluvial and sedimentary basins. Most of the alluvial basins have been identified by DWR as low- to very low-priority basins, as defined by SGMA. However, there are 3 groundwater basins within the county that are designated by DWR as a medium-priority basins. Two of these basins are subject to an approved GSP (San Luis Rey Valley and San Pasqual Valley), and one is adjudicated (Borrego Valley).

Under the proposed Cannabis Program, new cannabis uses could be developed in these 3 SGMA-designated medium- and high-priority groundwater basins in areas zoned for agricultural, commercial, and industrial uses. While San Luis Rey Valley and San Pasqual Valley have portions of land that may be served by imported water from CWA member

agencies, groundwater is the only source for cannabis use over most of these basins and all of Borrego Valley.

Each of the 3 SGMA-designated medium- and high-priority groundwater basins has a GSP or GMP that includes a technical analysis that includes an estimate of sustainable yield and a framework for how groundwater is to be sustainably managed. The implementing rules or requirements are different for each basin. In the case of San Luis Rey Valley and San Pasqual Valley basins, groundwater pumping was found to be just below the sustainable yield, and there may be the ability to support a modest amount of additional groundwater use without exceeding the sustainable yield. The Borrego Valley basin is critically overdrafted, requiring a 75 percent reduction in groundwater use by the year 2040.

Alternative 1: No Project—Retention of Current Cannabis Regulations

Under Alternative 1, the Cannabis Program would not be adopted. The existing 5 commercial cannabis facilities in the unincorporated areas of El Cajon, Escondido, and Ramona would be allowed to continue to operate under the existing ordinances as well as expand their existing facilities and operations to a total of 10,000 square feet of building area on each site. None of these 5 sites are located within the 3 SGMAs.

This impact would be no impact under Alternative 1.

Alternative 2: Proposed Project—Cannabis Program Consistent with State Requirements

The Cannabis Program under Alternative 2 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 2 would include 600-foot buffers from cannabis uses from certain state-defined sensitive uses, including schools, daycares, and youth centers.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. Regardless of the conditions within the groundwater basins, new wells within the county are subject to the San Diego County Well Ordinance (Regulatory Code Section 67.401 et seq.), which includes standards for well construction, repair, reconstruction, and destruction. The proposed zoning ordinance changes under the proposed Cannabis Program (see Appendix B) establish use types that would require issuance of a zoning verification that meet specified criteria. For zoning verification of use types that include distribution, manufacturing, testing laboratories and retail, this would require a letter report signed by a California Professional Geologist which concludes that extraction of groundwater is not likely to interfere with production and functioning of existing nearby wells and not likely to substantially decrease groundwater supplies.

According to the demand ratios presented in Table 2.11.7, included at the end of this section, future new cannabis uses in the county would demand approximately 667 afy of water, a portion of which would be derived from groundwater sources. As discussed above in Section 2.11.1, “Existing Conditions,” San Diego County overlies the South Coast and Colorado River hydrologic regions. Groundwater users within the Borrego Valley Groundwater Basin would be subject to Watermaster approval, while San Pasqual Valley and San Luis Rey Valley Groundwater Basins are operating within their sustainable yield levels (Gosselin 2024a,

2024b). The remaining groundwater basins in the county were determined to have low- to very low-priority (see Figure 2.11.2 at the end of this section).

Because water rights must be obtained that are recognized by the Watermaster for groundwater production within the Borrego Valley Groundwater Basin and because the projected water demand for all future cannabis sites would be allowable within the remaining sustainable yield of San Pasqual Valley (1,500 afy remaining within its sustainable yield as of 2022) and San Luis Rey Valley Groundwater Basins (4,176 afy remaining within its sustainable yield as of 2022), there would be no conflicts with a sustainable GMP. Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield in San Pasqual Valley and San Luis Rey Valley, and development would not substantially affect aquifer recharge, the Cannabis Program would be consistent with San Diego County General Plan Policies LU-8.1, LU 8.2, LU-13.1, LU-13.2, and COS 4.1.

This impact would be less than significant under Alternative 2.

Alternative 3: Cannabis Program with Expanded County Regulations

The Cannabis Program under Alternative 3 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 3 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. Regardless of the conditions within the groundwater basins, new wells within the county are subject to the San Diego County Well Ordinance (Regulatory Code Section 67.401 et seq.), which includes standards for well construction, repair, reconstruction, and destruction. The proposed zoning ordinance changes under the proposed Cannabis Program (see Appendix B) establish use types that would require issuance of a zoning verification that meet specified criteria. For zoning verification of use types that include distribution, manufacturing, testing laboratories and retail, this would require a letter report signed by a California Professional Geologist which concludes that

extraction of groundwater is not likely to interfere with production and functioning of existing nearby wells and not likely to substantially decrease groundwater supplies.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. As identified in Table 2.11.7, presented at the end of this section, future new cannabis uses in the county would demand approximately 667 afy of water, a portion of which would be derived from groundwater sources. Because water rights must be obtained that are recognized by the Watermaster for groundwater production within the Borrego Valley Groundwater Basin and because the projected water demand for all future cannabis cultivation sites would be allowable within the remaining sustainable yield of San Pasqual Valley (1,500 afy remaining within its sustainable yield as of 2022) and San Luis Rey Valley Groundwater Basins (4,176 afy remaining within its sustainable yield as of 2022), there would be no conflicts with a sustainable groundwater management plan.

Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because the potential demand for groundwater resources would not exceed current sustainable yield levels and development would not substantially affect aquifer recharge, the Cannabis Program would be consistent with San Diego County General Plan Policies LU-8.1, LU 8.2, LU-13.1, LU-13.2, and COS 4.1.

Because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield levels in San Pasqual Valley and San Luis Rey Valley and development would not substantially affect aquifer recharge, the Cannabis Program would be consistent with San Diego County General Plan Policies LU-8.1, LU 8.2, LU-13.1, LU-13.2, and COS 4.1.

This impact would be less than significant under Alternative 3.

Alternative 4: Cannabis Program with Outdoor Cannabis Cultivation Prohibition

The Cannabis Program under Alternative 4 is anticipated to accommodate up to 212 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 4 would allow mixed-light and indoor cannabis cultivation only when contained within a building. Alternative 4 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. Regardless of the conditions within the groundwater basins, new wells within the county are subject to the San Diego County Well Ordinance (Regulatory Code Section 67.401 et seq.), which includes standards for well construction, repair, reconstruction, and destruction. The proposed zoning ordinance changes under the proposed Cannabis Program (see Appendix B) establish use types that would

require issuance of a zoning verification that meet specified criteria. For zoning verification of use types that include distribution, manufacturing, testing laboratories and retail, this would require a letter report signed by a California Professional Geologist which concludes that extraction of groundwater is not likely to interfere with production and functioning of existing nearby wells and not likely to substantially decrease groundwater supplies.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. As identified in Table 2.11.7, presented at the end of this section, future new cannabis uses in the county would demand approximately 613 afy of water, a portion of which would be derived from groundwater sources. Because water rights must be obtained that are recognized by the Watermaster for groundwater production within the Borrego Valley Groundwater Basin and because the projected water demand for all future cannabis cultivation sites would be allowable within the remaining sustainable yield of San Pasqual Valley and San Luis Rey Vally Groundwater Basins, there would be no conflicts with a sustainable groundwater management plan.

Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield levels in San Pasqual Valley and San Luis Rey Valley and development would not substantially affect aquifer recharge, the Cannabis Program would be consistent with San Diego County General Plan Policies LU-8.1, LU 8.2, LU-13.1, LU-13.2, and COS 4.1.

This impact would be less than significant under Alternative 4.

Alternative 5: Cannabis Program with Maximum 1 Acre of Outdoor Cannabis Cultivation Canopy

The Cannabis Program under Alternative 5 is anticipated to accommodate up to 372 cultivation and 170 noncultivation sites/licenses within the county in 2044 (refer to Table 1.4 in Chapter 1, “Project Description, Location, and Environmental Setting” for a full list of development assumptions). Alternative 5 additionally prohibits the development of cannabis facilities within 1,000 feet of sensitive uses, including other cannabis facilities. Advertising of cannabis on billboards would also be prohibited within 1,000 feet of sensitive uses. Alternative 5 also limits the size of outdoor cannabis cultivation canopy to 1 acre.

Under Alternative 5, requirements set forth under by the county require compliance with the San Diego County Well Ordinance (Regulatory Code Section 67.401 et seq.), which includes standards for well construction, repair, reconstruction, and destruction.

It is currently not known under this alternative how many future cannabis uses under the Cannabis Program may be located in any one groundwater basin. As identified in Table 2.11.7, presented at the end of this section, future new cannabis uses in the county would demand approximately 667 acre-feet of water, a portion of which would be derived from groundwater sources. Because water rights must be obtained that are recognized by the Watermaster for

groundwater production within the Borrego Valley Groundwater Basin and because the projected water demand for all future cannabis cultivation sites would be allowable within the remaining sustainable yield of San Pasqual Valley (1,500 afy remaining within its sustainable yield) and San Luis Rey Valley Groundwater Basins (4,176 afy remaining within its sustainable yield), there would be no conflicts with a sustainable groundwater management plan.

Groundwater recharge may be affected by increased areas of impervious surfaces that would impede percolation of water into underlying basins. Although it is anticipated that noncultivation facilities would be located within existing buildings, this analysis assumes that new construction may occur to support indoor cultivation and noncultivation uses. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1.

Because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield levels in San Pasqual Valley and San Luis Rey Valley and development would not substantially affect aquifer recharge, the Cannabis Program would be consistent with San Diego County General Plan Policies LU-8.1, LU 8.2, LU-13.1, LU-13.2, and COS 4.1.

This impact would be less than significant under Alternative 5.

2.11.4 Cumulative Impacts

The geographic scope of cumulative impact analysis for hydrology and water quality consists of drainage basins, watersheds, water bodies, and groundwater basins, depending on the location of the potential impact and its tributary area.

2.11.4.1 *Issue 1: Water Quality Standards and Requirements and Consistency with Water Quality Control Plans*

The San Diego County General Plan Update Draft EIR identified cumulatively considerable impacts associated with water quality standards and requirements from implementation of the General Plan (County of San Diego 2009).

As described above, there are waterways in the county included on the 303(d) list, which have been reported to contain excessive levels of various metals, pesticides, and nutrients (see Table 2.11.2, presented at the end of this section). The county is also subject to the San Diego Basin Water Quality Control Plan and the Colorado River Basin Plan. Past and ongoing agricultural practices have likely contributed to this contamination. Future land use activities have the potential to contribute to this cumulative impact.

Alternatives 1, 2, 3, 4, and 5 could result in construction and operational water quality impacts that could contribute to cumulative water quality impacts in impaired waterways in the county. These potential impacts would be offset through compliance with the requirements of SWRCB Order WQ 2023-0102-DWQ and, as applicable, the County's Grading Ordinance and NPDES permits for cannabis noncultivation projects covering an area greater than 1 acre, which would ensure that runoff from cannabis operations cannot reach waterways, and thus would not contribute to or cause substantial water quality degradation or affect implementation of a water quality control plan. Thus, this impact would not be cumulatively considerable under Alternative 1, 2, 3, 4, or 5.

2.11.4.2 *Issue 2: Substantial Decrease of Groundwater Supplies or Interfere Substantially with Groundwater Recharge*

The San Diego County General Plan Update Draft EIR identified cumulatively considerable impacts associated with groundwater supplies and recharge from implementation of the General Plan (County of San Diego 2009).

Under Alternative 1, there would be no increase in groundwater use because the existing cannabis facilities are supplied water via water districts; thus, there would be no contribution to cumulative impacts on groundwater supplies. Locations of existing adverse groundwater resources conditions, such as declines in the groundwater table, low well yield, and poor groundwater quality, are described in the General Plan Update Groundwater Study (County of San Diego 2010). However, localized groundwater supply problems are not limited to these areas and are possible throughout the county where there is excessive groundwater use by a single user or due to the unique physical geologic properties affecting the groundwater storage for a particular site (e.g., fractured-rock aquifer conditions).Under Alternatives 2, 3, 4, and 5, the extent to which cannabis facilities approved under the proposed Cannabis Program would rely on groundwater as the primary water source is unknown; however, the Cannabis Program may cause or contribute to depletion of groundwater supplies where supplies are limited or yields of groundwater are low. Consequently, this impact would be cumulatively considerable under Alternatives 2, 3, 4, and 5.

2.11.4.3 *Issue 3: Consistency with Sustainable Groundwater Management Plans*

The San Diego County General Plan Update Draft EIR did not address consistency with sustainable groundwater managements plans; however, as noted above, the San Diego County General Plan Update Draft EIR indicated that there would be cumulatively considerable impacts associated with groundwater supplies and recharge from implementation of the General Plan (County of San Diego 2009).

Groundwater is produced within San Diego County as a water supply for urban, rural, and agricultural land uses. Within the county, 3 groundwater aquifers have been identified as medium- or high-priority basins under SGMA. Of these aquifers, Borrego Valley is adjudicated and requires groundwater producers to be identified by the Watermaster, and San Luis Rey Valley and San Pasqual Valley are subject to GSPs. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1. As discussed above under Issue 2, because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield levels in San Pasqual Valley and San Luis Rey Valley and development would not substantially affect aquifer recharge, under Alternatives 2, 3, 4, and 5, there would not be conflicts with approved sustainable groundwater management plans. Thus, this impact would not be cumulatively considerable under Alternative 1, 2, 3, 4, or 5.

2.11.5 Significance of Impacts Prior to Mitigation

2.11.5.1 *Issue 1: Water Quality Standards and Requirements and Consistency with Water Quality Control Plans*

The proposed Cannabis Program would result in less than significant direct impacts to hydrology or water quality under Alternatives 1 through 5. It would not result in significant cumulative impacts associated with hydrology or water quality.

2.11.5.2 *Issue 2: Substantial Decrease of Groundwater Supplies or Interfere Substantially with Groundwater Recharge*

The proposed Cannabis Program would result in a less than significant impact to groundwater supplies under Alternative 1. The Cannabis Program would result in potentially significant direct impacts and significant cumulative impacts to groundwater supplies under Alternatives 2 through 5.

2.11.5.3 *Issue 3: Consistency with Sustainable Groundwater Management Plans*

The Cannabis Program would have no direct impacts to sustainable groundwater management plans under Alternative 1. The proposed Cannabis Program would result in less than significant direct impacts related to consistency with approved sustainable groundwater management plans under Alternatives 2 through 5. It would not result in significant cumulative impacts associated with consistency with approved sustainable groundwater management plans.

2.11.6 Mitigation

2.11.6.1 *Issue 1: Water Quality Standards and Requirements and Consistency with Water Quality Control Plans*

No mitigation measures are required.

2.11.6.2 *Issue 2: Substantial Decrease of Groundwater Supplies or Interfere Substantially with Groundwater Recharge*

M-HYD.2-1: Establish No Net Increase in Groundwater Use

If it can be demonstrated to the satisfaction of the County that the project would not have a net increase in groundwater production from existing baseline groundwater use in accordance with CEQA, no further action is needed. This documentation shall take the form of a groundwater analysis or memorandum.

M-HYD.2-2: Additional Groundwater Use

If a new or additional groundwater supplies are needed to support a project, a groundwater analysis shall be prepared by a California Professional Geologist and provided with the cannabis facility application that is consistent with the *County's Guidelines for Determining Significance and Report Format and Content Requirements: Groundwater Resources*. The

analysis shall identify whether groundwater use would be sustainable in accordance with County guidelines and if needed, provide mitigation measures to the extent feasible to reduce potential adverse effects on groundwater. This could include design modifications, such as limiting cultivation or using imported water if available. The groundwater analysis shall be submitted to the County for review and approval as part of the application process.

2.11.6.3 *Issue 3: Consistency with Sustainable Groundwater Management Plans*

No mitigation measures are required.

2.11.7 Conclusion

The discussion below provides a synopsis of the conclusion reached in each of the above impact analyses and the level of impact that would occur after mitigation measures are implemented.

2.11.7.1 *Issue 1: Water Quality Standards and Requirements and Consistency with Water Quality Control Plans*

As described above, there are waterways in the county on the 303(d) list that are reported to contain excessive levels of various metals, pesticides, and nutrients (see Table 2.11.2, presented at the end of this section). The county is also subject to the San Diego Basin Water Quality Control Plan and the Colorado River Basin Plan. Past and on-going agricultural practices have likely contributed to this contamination. Future land use activities have the potential to contribute to this cumulative impact. Under Alternative 1, there would be no changes to the existing conditions; thus, there would be no program-level or cumulative impact on water quality. Alternatives 1, 2, 3, 4, and 5 would result in construction and operational water quality impacts that could contribute to cumulative water quality impacts in impaired waterways in the county. These potential impacts would be offset through compliance requirements of SWRCB Order WQ 2023-0102-DWQ, the County's Grading Ordinance, and NPDES permits for cannabis noncultivation projects covering an area greater than 1 acre, which would ensure that runoff from cannabis operations cannot reach waterways and therefore would not contribute to or cause substantial water quality degradation or affect implementation of a water quality control plan. Thus, direct and cumulative impacts would be less than significant for Alternatives 1, 2, 3, 4, and 5.

2.11.7.2 *Issue 2: Groundwater Resources*

Under Alternative 1, there would be no increase in groundwater use because the existing cannabis facilities are supplied water via water districts; thus, impacts on groundwater supplies would be less than significant. Development and operation of cannabis facilities under Alternatives 2 through 5 could require groundwater resources as a water supply. The use of groundwater resources could result in reduced groundwater storage, groundwater overdraft conditions, and well interference. These types of impacts are possible throughout the county where there is excessive groundwater use by a single user or due to the unique physical geologic properties affecting the groundwater storage for a particular site (e.g., fractured-rock aquifer conditions). Mitigation Measure M-HYD.2-2 would require applicants to provide a groundwater study or memorandum for review and approval by the County that would address groundwater overdraft, low well yield, and well interference. As appropriate, recommendations

to reduce potential adverse effects on groundwater would be implemented by the applicant to reduce impacts. However, establishing sufficient groundwater supplies in fractured-rock aquifer conditions is problematic because storage capacity is generally considered low (County of San Diego 2011). In some instances, wells may derive water from only a few water-bearing fractures. Furthermore, it is difficult to estimate potential production rates for any new wells drilled in fractured-rock aquifers, and wells drilled close together may have substantially different water production rates. This is because water-producing fracture locations are difficult to identify and predict, and fractures intersected by one well may not be intersected by nearby wells. For these reasons, it cannot be stated with certainty that a groundwater analysis could establish or provide sufficient project modifications to eliminate the potential for groundwater overdraft, low well yield, and well interference. Therefore, any use of groundwater resources in the county could contribute to depletion of groundwater supplies where supplies are already limited or yields of groundwater are low. Consequently, program and cumulative impacts would be significant and unavoidable under Alternatives 2 through 5.

2.11.7.3 *Issue 3: Consistency with Sustainable Groundwater Management Plans*

Under Alternative 1, there would be no changes to the existing conditions within areas subject to a sustainable groundwater management plan; thus, there would be no program or cumulative impacts related to consistency with sustainable groundwater management plans.

Alternatives 2, 3, 4, and 5 would result in construction and operation of cannabis facilities that may demand groundwater resources. New construction to accommodate cannabis facilities would be located within agricultural, commercial, and industrial zones within the county, as indicated in Table 1.1. Because the potential demand for groundwater resources would require water rights in Borrego Valley and not exceed current sustainable yield levels in San Pasqual Valley and San Luis Rey Valley and development would not substantially affect aquifer recharge, under Alternative 2, 3, 4, or 5, there would not be conflicts with approved sustainable groundwater management plans. Program and cumulative impacts would be less than significant under Alternatives 2, 3, 4, and 5.

Table 2.11.2 Impaired Waterbodies in San Diego County

Contaminant	Listed Waterbodies[1]	
Metals	Agua Hedionda Creek	Otay River
	Alvarado Creek	Paleta Creek
	Barrett Lake	Paradise Creek
	Buena Vista Creek	Poway Creek
	Chollas Creek	Rainbow Glen
	Cottonwood Creek	Rose Creek
	El Capitan Lake	San Diego Bay
	Encinitas Creek	San Diego Bay Shoreline
	Escondido Creek	San Marcos Creek
	Felicita Creek	San Marcos, Lake, drain to central
	Forester Creek	southwest fork of lake
	Green Valley Creek	Santa Ysabel Creek
	Keys Creek	Soledad Canyon
	Lake Hodges	Sutherland Reservoir
	Lake Jennings	Sweetwater River
	Lake San Marcos	Switzer Creek
	Loma Alta Creek	Tecate Creek
	Los Coches Creek	Tecolote Creek
	Loveland Reservoir	Telegraph Canyon Creek
	Mission Bay	Tijuana River
	Morena Reservoir	Tijuana River Estuary
	Oceanside Harbor	Via Milpas
	Otay Reservoir, Lower	
Nuisance	Barrett Lake	Otay Reservoir, Lower
	El Capitan Lake	San Diego River (Lower)
	Lake Hodges	San Vicente Reservoir
	Morena Reservoir	Sutherland Reservoir
		Tijuana River
Nutrients	Agua Hedionda Creek	Loma Alta Creek
	Alpine Creek	Loma Alta Slough
	Alvarado Creek	Los Coches Creek
	Barrett Lake	Los Peñasquitos Creek
	Buena Creek	Loveland Reservoir
	Buena Vista Creek	Lusardi Creek
	Buena Vista Lagoon	Margarita Glen
	Campo Creek	Mission Bay
	Carmel Valley Creek	Moosa Canyon Creek
	Chocolate Creek	Morena Reservoir
	Chollas Creek	Murphy Canyon
	Cloverdale Creek	Otay Reservoir
	Cottonwood Creek	Otay River
	El Capitan Lake	Paradise Creek
	Encinitas Creek	Poggi Canyon Creek
	Escondido Creek	Poway Creek
	Famosa Slough and Channel	Rainbow Glen
	Forester Creek	Reidy Canyon Creek
	Gomez Creek	Rose Creek
	Green Valley Creek	San Diego River
	Guajome Lake	San Dieguito River
	Keys Creek	San Elijo Lagoon
	Lake Hodges	San Luis Rey River
	Lake San Marcos	San Marcos Creek

Contaminant	Listed Waterbodies[1]	
	San Vicente	Sweetwater River
	San Vicente Reservoir	Sycamore Canyon
	Santa Margarita Lagoon	Tecate Creek
	Santa Margarita River	Tecolote Creek
	Santa Ysabel	Telegraph Canyon Creek
	Shepherd Canyon East	Tijuana River
	Soledad Canyon	Tijuana River Estuary
	Sutherland Reservoir	Via Milpas
	Sweetwater Reservoir	Willow Glen
Pathogens	Agua Hedionda Creek	Los Peñasquitos Creek
	Alpine Creek	Lusardi Creek
	Buena Creek	Mexican Canyon Creek
	Buena Vista Creek	Mission Bay Shoreline
	Buena Vista Lagoon	Moosa Canyon Creek
	Campo Creek	Moosa Canyon, South Fork
	Carmel Valley Creek	Otay River
	Chocolate Creek	Pacific Ocean Shoreline
	Chollas Creek	Pine Valley Creek (Lower)
	Cottonwood Creek above Morena Reservoir	Reidy Canyon Creek
	Couser Canyon Creek	Rose Creek
	East Channel Creek	San Diego Bay Shoreline
	Encinitas Creek	San Diego River
	Escondido Creek	San Dieguito River, unnamed tributary below Hodges Dam
	Eucalyptus Hills Creek	San Elijo Creek
	Felicita Creek	San Elijo Lagoon
	Forester Creek	San Luis Rey River, Upper
	Gopher Creek	San Marcos Creek, Upper
	Green Canyon Creek	San Marcos, Lake, drain to central southwest fork of lake
	Harbison Canyon	San Mateo Creek
	Jamacha Creek	San Vicente Creek
	Keys Creek	Santa Margarita River
	La Zanja Canyon	Steele Canyon
	Live Oak Creek (San Diego County)	Sweetwater River
	Loma Alta Creek	Tavern Road
	Loma Alta Slough	Tecolote Creek
	Long Canyon Creek (Lower Sweetwater Watershed)	Tijuana River
	Los Coches Creek	Tijuana River Estuary
Pesticides	Agua Hedionda Creek	Otay River
	Buena Creek	Rose Creek
	Buena Vista Creek	San Diego Bay Shoreline, near Switzer Creek
	Carmel Valley Creek	San Diego River
	Carroll Canyon	San Dieguito River
	Chollas Creek	San Luis Rey River
	Cottonwood Creek (San Marcos Creek watershed)	San Marcos Creek
	Escondido Creek	Santa Margarita River
	Eucalyptus Hills Creek	Sweetwater River
	Green Valley Creek	Tecolote Creek
	Loma Alta Creek	Tijuana River
	Los Peñasquitos Creek	Tijuana River Estuary

Contaminant	Listed Waterbodies[1]	
Salinity/Total dissolved solids/Chlorides/Sulfates	Agua Hedionda Creek Buena Vista Creek Campo Creek Carmel Valley Creek Chollas Creek Cloverdale Creek Escondido Creek Felicita Creek Green Valley Creek Kit Carson Creek Los Peñasquitos Creek Margarita Glen	Otay River Rainbow Glen Rose Creek San Diego River San Dieguito River San Luis Rey River San Marcos Creek San Vicente Reservoir Santa Ysabel Creek Sweetwater River Via Milpas Willow Glen
Sediment	Agua Hedionda Creek Buena Vista Lagoon Escondido Creek Forester Creek Lake Hodges Los Peñasquitos Lagoon Rainbow Glen	San Diego River San Elijo Lagoon Sweetwater River, Middle Tecolote Creek Tijuana River Tijuana River Estuary Via Milpas
Total Toxics	Agua Hedionda Creek Aqua Hedionda Lagoon Batiquitos Lagoon Buena Vista Creek Buena Vista Lagoon Carroll Canyon Chollas Creek Cottonwood Creek (San Marcos Creek watershed) Encinitas Creek Escondido Creek Green Valley Creek Jamul Creek Loma Alta Creek Los Peñasquitos Creek Los Peñasquitos Lagoon Oceanside Harbor Otay River Poggi Canyon Creek Poway Creek Rose Creek San Diego Bay Shoreline	San Dieguito River San Elijo Lagoon San Luis Rey River, Lower San Marcos Creek San Vicente Creek Santa Margarita River Santa Ysabel Creek Soledad Canyon Sweetwater River Tecolote Creek Tijuana River Tijuana River Estuary Toxic Inorganics: Buena Creek Escondido Creek Green Valley Creek Margarita Glen Rainbow Glen San Vicente Reservoir Via Milpas Willow Glen
Toxic Organics	Barrett Lake Felicita Creek Green Valley Creek Kit Carson Creek Mission Bay	Pacific Ocean Shoreline San Diego Bay San Diego Bay Shoreline Tijuana River
Trash	Chollas Creek Mission Bay Shoreline Pacific Ocean Shoreline	Tijuana River Tijuana River Estuary

Contaminant	Listed Waterbodies[1]	
Other Causes	Agua Hedionda Creek	Murphy Canyon
	Barrett Lake	Otay Reservoir, Lower
	Buena Creek	Otay River
	Buena Vista Creek	Rose Creek
	Carmel Valley Creek	San Diego Bay Shoreline
	Carroll Canyon	San Diego River
	Chollas Creek	San Dieguito River
	Cottonwood Creek (San Marcos Creek watershed)	San Luis Rey River
		San Marcos Creek
	Encinitas Creek	San Vicente Reservoir
	Escondido Creek	Santa Margarita River
	Forester Creek	Santa Ysabel Creek (below Sutherland Reservoir)
	Green Valley Creek	
	Lake Hodges	Soledad Canyon
	Loma Alta Creek	Sutherland Reservoir
	Los Peñasquitos Creek	Sweetwater River
	Loveland Reservoir	Loveland Reservoirs)
	Lusardi Creek	Tecolote Creek
	Moosa Canyon Creek	Tijuana River
	Morena Reservoir	

[1] More detailed information related to the specific segment of the impaired waterbodies is provided in the *2022 California Integrated Report* (DWR 2022).

Source: DWR 2022.

Table 2.11.3 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 Site Management Plan
	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 2023-0102-DWQ.

Table 2.11.4 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.

Source: SWRCB 2018.

Table 2.11.5 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., gullying, 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
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

Source: SWRCB 2018.

Table 2.11.6 Stormwater Runoff Monitoring

Constituent	Frequency	Monitoring Frequency
Turbidity	Once per calendar month when precipitation exceeds 0.25 inches/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/day.	All months until winterization procedures are completed.

Source: SWRCB 2018.

Table 2.11.7 Estimated Project Irrigation Water Demand for Future New Commercial Cannabis Cultivation, Processing, and Distribution Uses

Cannabis Facility Type	Demand Ratio	Estimated Demand for Alternatives 2, 3, and 5	Estimated Demand for Alternative 4
Outdoor	1.39 acre-feet per acre per year	181	0
Mixed-light	2.65 acre-feet per acre per year	122	186
Indoor	4.88 acre-feet per acre per year	20	83
Nursery	4.88 acre-feet per acre per year	188	188
Processing	0.35 acre-feet per site per year	2	2
Manufacturing	1.4 acre-feet per site per year	35	35
Testing	0.84 acre-feet per site per year	2	2
Distribution	0.18 acre-feet per site per year	9	9
Retail	1.44 acre-feet per site per year	89	89
Microbusiness	1.26 acre-feet per site per year	20	20
Total		**668**	**614**

Note: It is assumed that nursery water demands would be similar to indoor commercial cannabis cultivation water demands.

Sources: Compiled by Ascent in 2024. Acreages and associated square footages derived from Table 1.4. Demand ratio provided by Table 3.10-9 of the Yolo County Cannabis Land Use Ordinance Draft EIR (Yolo County 2019). These demands ratios were developed based on water demand factors were derived from information provided by existing cannabis cultivation operations in the in other counties in northern and central California (Yolo, Humboldt, Trinity, and Santa Cruz counties) and commercial and industrial water demand factors for noncultivation uses.

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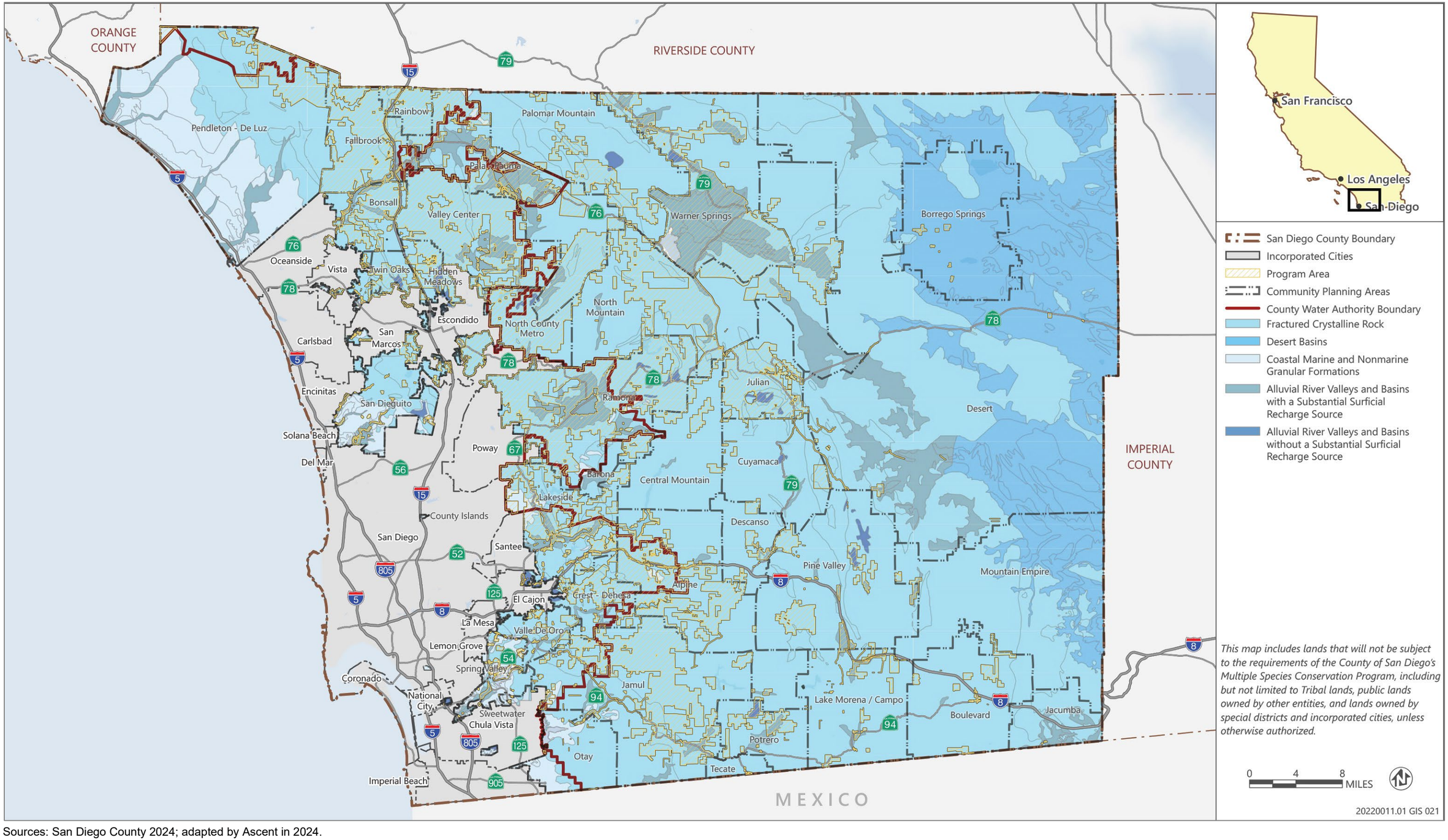
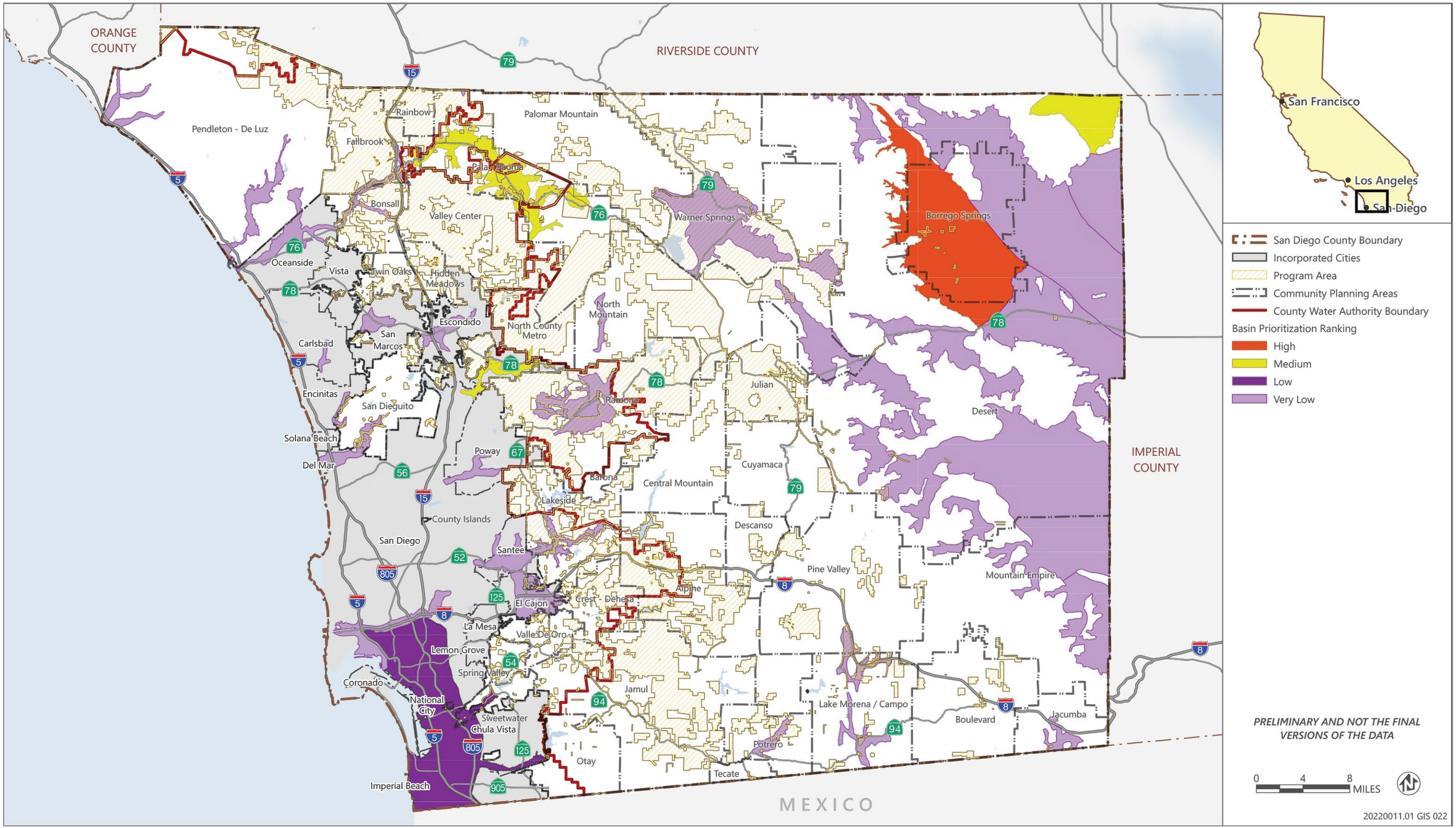


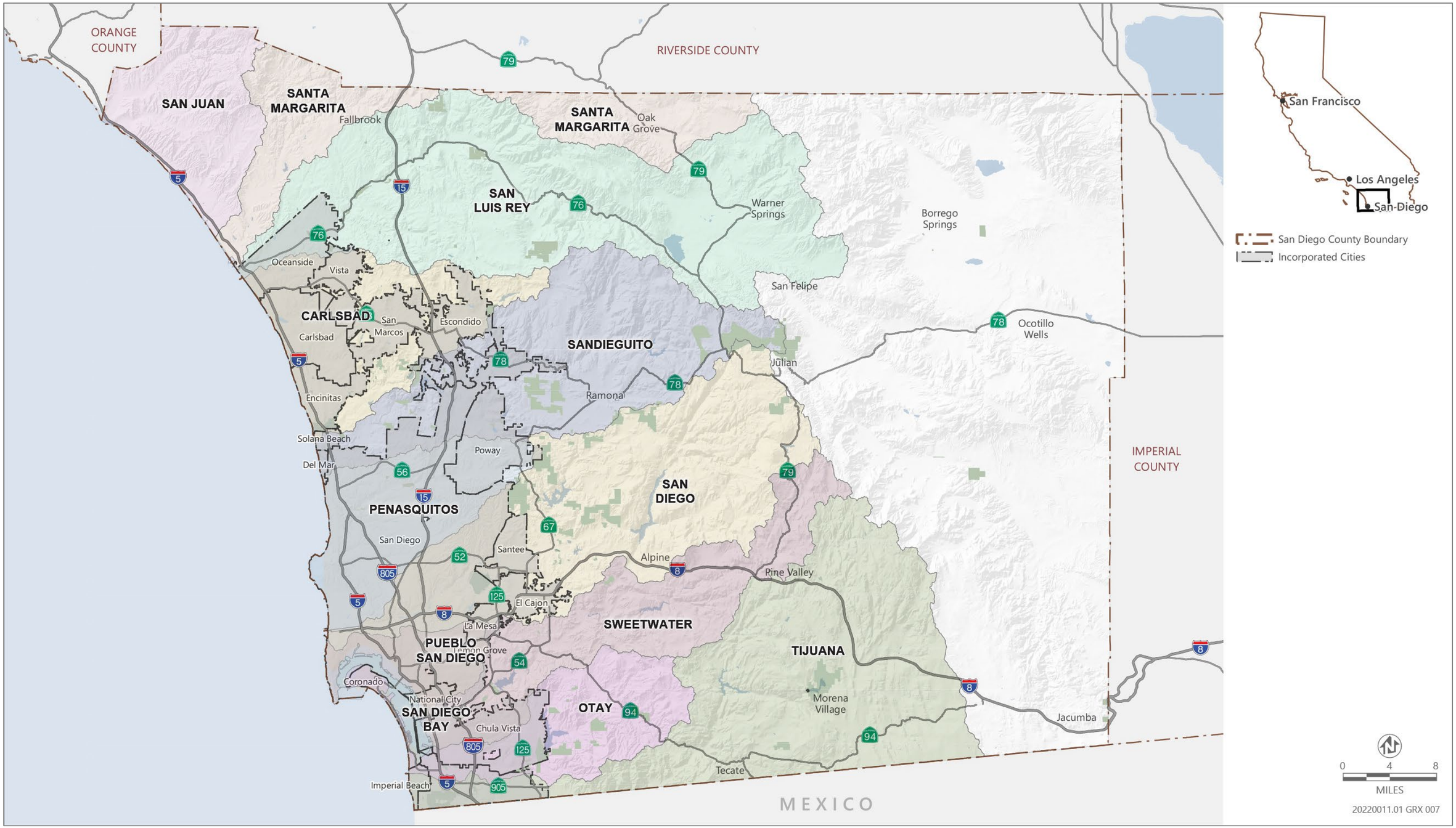
Sources: San Diego County 2024; adapted by Ascent in 2024.

Figure 2.11.1 **Groundwater Aquifer Type**



Sources: Data downloaded from DWR in 2024, SanGIS in 2021 and San Diego County in 2023; adapted by Ascent in 2024.

Figure 2.11.2 **2019 SGMA Basin Prioritization**



Source: Data downloaded from SanGIS in 2021; adapted by Ascent in 2024.

Figure 2.11.3 **San Diego County Watersheds**