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Maps are located at the end of the section.

3 REGION DESCRIPTION

This section describes the region description for the development and implementation of the *San Luis Obispo County Integrated Regional Water Management (IRWM) Plan*.

3.1 ORGANIZATION OF SECTION

The 2016 State Guidelines for this section include the following elements:

IRWM Plan Standard from November 2016 IRWM Guidelines (pg. 38): ***An IRWM Plan must include a description of the region being managed by the RWMG. This description should include a comprehensive inclusion of the following:***
• *A description of the **watersheds** and the **water systems**, natural and anthropogenic (i.e. "man-made"), including **major water related infrastructure, flood management infrastructure,** and **major land-use divisions.** Also include a description of the **quality and quantity of water resources** within the region (i.e. surface waters, groundwater, reclaimed water, imported water, and desalinated water). As relevant, describe **areas and species of special biological significance and other sensitive habitats,** such as **marine protected areas** and **impaired water bodies** within the region.*
• *A description of **internal boundaries** within the region including the **boundaries of municipalities, service areas of individual water, wastewater, flood control districts, and land use agencies**. The description should also include those not involved in the Plan (i.e. **groundwater basin boundaries, watershed boundaries, county**, State, and international boundaries).*
• *A description of **water supplies and demands for a minimum 20-year planning horizon.** Include a discussion of important **ecological processes and environmental resources** within the regional boundaries and the associated **water demands to support environmental needs**. This includes a description of the **potential effects of climate change** on the region.*
• *A descriptive comparison of **current and future (or proposed) water quality conditions** in the region. Describe any water quality protection and improvement needs or requirements within the area of the Plan. If the IRWM Region has areas of nitrate, arsenic, perchlorate, or hexavalent chromium contamination, the plan must include a description of location, extent, and impacts of the contamination; actions undertaken to address the contamination, and a description of any additional actions needed to address the contamination (Water Code §10541.(e)(14)).*
• *A description of the **social and cultural makeup** of the regional community. Identify important **cultural or social values**. Identify **DAC**s in the management area. Describe **economic conditions and important economic trends** within the region. Describe efforts to effectively **involve and collaborate with Tribal government representatives** to better sustain Tribal and regional water and natural resources (if applicable).*
• *A description of **major water related objectives and conflicts** in the defined management region, including clear identification of problems within the region that lead to the development of the objectives, implementation strategies, and implementation projects intended to provide resolution.*

• *An explanation of **how the IRWM regional boundary was determined** and why the region is an appropriate area for IRWM planning.*
• *Identification of **neighboring and/or overlapping IRWM efforts** (if any) and an explanation of the **planned/working relationship that promotes cooperation and coordination between regions***
• *For IRWM regions that receive water supplied from the Sacramento-San Joaquin Delta, an explanation of **how plan will help reduce dependence on the Sacramento-San Joaquin Delta** for water supply (SB 855 (Committee on Budgets), Section 31.(c)(1)).*

In an effort to fully address each of the State Guideline requirements and maintain a concise amount of section content, thereby minimizing the number of pages, the section relies heavily on providing data in a tabular format; in most cases, a table is used to summarize more detailed information located in the IRWM Plan's Appendices. The following appendices support this section:

- Appendix E – Supply and Demand
- Appendix G – Detailed Description of Groundwater Basins
- Appendix H – San Luis Obispo County Watershed Management Planning Project Report

Section 3 is organized to assist in the understanding for splitting the IRWM Region up into three Sub-Regions, 6 Water Planning Areas (WPAs), and 25 watersheds. Completion of the *San Luis Obispo County Watershed Management Planning Project Report* (Coastal San Luis RCD 2014 & Upper Salinas-Las Tablas RCD, January 2014), included as **Appendix H**, provides the first phase of describing the region at the watershed level. The next phase improves this description by populating areas identified in the report as prioritized data gaps. For purposes of the IRWM Plan Update, the WPAs are still the primary boundaries for purposes of water supply planning and summarizing water supplies and demands; whereas, watershed-level descriptive information is provided in **Section 3.10** with reference to **Appendix H** if additional details are needed.

3.2 Regional Planning Area

The San Luis Obispo County IRWM Region is co-terminus with the boundaries of both the County of San Luis Obispo (County) and the San Luis Obispo County Flood Control and Water Conservation District (District) as shown on. The Region encompasses a total area of 3,304 square miles and is located within the Central Coast Hydrologic Region as shown on **Map 3-1**.

The Region's geographic features and composition are appropriate for integrated regional water management planning and generally contain the same physical, political, environmental, social, and economic boundaries needed to facilitate active stakeholder involvement at the local and regional levels. Communities can better balance economic well-being, social equity, and environmental protection needs by linking water resources management to land use

planning. The Region's boundary effectively links land use and water management planning efforts within the context of local shared values and sense of place.

Using the County/District boundary to define the IRWM Region boundary enables the local agencies, communities, and stakeholders to use existing infrastructure, management systems, funding mechanisms, partnerships, and planning documents as a scaffold upon which to build the IRWM Plan.

Water management agencies and other stakeholders within the county participate on the Water Resources Advisory Committee (WRAC) and other local advisory committees that ensure broad coordination for all aspects of water resources management. These efforts have resulted in overall efficiencies in integrating strategies at local, sub-regional, regional, and interregional levels and among participating agencies and organizations across a variety of management authorities, interests, and concerns.

3.3 Sub-Regional Planning Areas

The Region was divided into three sub-regions to facilitate collaboration among stakeholders for integrated regional water management planning efforts:

- North Coast Sub-Region
- South County Sub-Region
- North County Sub-Region

Sub-regions generally share climatic features as well as common watershed and groundwater basin characteristics that facilitates water resources management. Major water infrastructure projects, such as the Nacimiento Water Pipeline (North County) and the State Water Coastal Branch and Lopez Reservoir systems (South County), generally benefit communities at a sub-regional level.

Sub-regional planning provides an opportunity for stakeholders with agricultural, environmental and development interests to address their unique water management challenges. Project sponsors are encouraged to shape their programs and projects to meet both sub-regional priorities and regional objectives.

3.3.1 North Coast Sub-Region

The North Coast Sub-Region spans along the coast from the San Luis Obispo/Monterey County line southward to the community of Los Osos, bounded to the west by the Pacific Ocean, and to the east by the crest of the Santa Lucia Range. Urban areas include, but are not limited to, San Simeon, Cambria, Cayucos, Morro Bay, and Los Osos.

3.3.2 South County Sub-Region

The South County Sub-Region spans from the City of San Luis Obispo south to the San Luis Obispo/Santa Barbara County line, east to the Cuyama valley, and west to the community of Avila Beach. Urban areas include, but are not limited to, San Luis Obispo, Avila Beach, Pismo Beach, Arroyo Grande, Grover Beach, Oceano, and Nipomo.

3.3.3 North County Sub-Region

The North County Sub-Region spans from the inland San Luis Obispo/Monterey County line southward, bounded to the east by Kern and Fresno Counties and to the west and south, in part, by the Santa Lucia range. Urban areas include, but are not limited to, Paso Robles, Templeton, Atascadero, Santa Margarita, San Miguel, Heritage Ranch, Creston, and Shandon.

3.4 Water Planning Areas

The Region was subdivided into six Water Planning Areas (WPA) to organization water resource management data collection, analysis, and reporting. The 2018 IRWM Plan WPAs were redefined as six areas compared to the sixteen areas defined in the 2014 IRWM Plan and 2012 Master Water Report.

Delineation of the WPAs considered the following information:

- Watershed boundaries
- Groundwater basin boundaries
- Water supply systems
- Urban growth boundaries
- Water supplies and management practices

The sub-regions, WPAs, watersheds, groundwater basins, communities, places of interests, and water suppliers within the IRWM region are summarized in **Table 3-1** and depicted in **Map 3-3**.

Table 3-1: *San Luis Obispo County IRWM Region – Water Planning Areas*

Watersheds	Groundwater Basins	Communities & Places of Interest
NORTH COAST SUB-REGION		
WPA 1 - San Simeon/Cambria		
• San Carpoforo Creek • San Simeon Area • Santa Rosa Creek Area	• San Carpoforo Valley • Arroyo De La Cruz Valley • Pico Creek Valley • San Simeon Valley • Santa Rosa Valley • Villa Valley	• San Simeon • Cambria • Hearst Ranch

Watersheds	Groundwater Basins	Communities & Places of Interest
WPA 2 - Cayucos/Morro Bay/Los Osos		
• Cayucos Creek – Whale Rock Area • Morro Bay • Coastal Irish Hills	• Cayucos Valley • Old Valley • Toro Valley • Morro Valley • Chorro Valley • Los Osos Valley	• Cayucos • Morro Bay • Los Osos • California Men's Colony • Camp San Luis Obispo (National Guard) • County Office of Education • County Operational Center • Morro Bay Estuary
SOUTH COUNTY SUB-REGION		
WPA 3 - San Luis Obispo/South County		
• San Luis Obispo Creek • Pismo Creek • Arroyo Grande Creek • Oso Flaco – Black Lake Area • Nipomo Creek – Santa Maria River Area	• San Luis Obispo Valley • Santa Maria River Valley	• San Luis Obispo • California Polytechnic State University • Port San Luis Harbor District • Edna • Los Ranchos • Avila Beach • Pismo Beach • Arroyo Grande • Grover Beach • Oceano • Nipomo • Black Lake • Callender-Garrett • Los Berros • Woodlands • Palo Mesa
WPA 4 - Cuyama River		
• Alamo Creek • Huasna River • Cuyama River	• Huasna Valley • Cuyama Valley Basin	

Watersheds	Groundwater Basins	Communities & Places of Interest
NORTH COUNTY SUB-REGION		
WPA 5 – North County		
• Upper San Juan Creek • Lower San Juan Creek • Cholame Creek • Estrella River • Upper Salinas River – Santa Margarita Area • Mid Salinas River – Atascadero Area • Huer Huero Creek • Lower Salinas River – Paso Robles Area • Nacimiento Area	• Paso Robles • Paso Robles • Atascadero • Rafael Valley • Big Spring Area • Pozo Valley • Rinconada Valley • Cholame Valley	• Paso Robles • Camp Roberts • Templeton • Atascadero • Garden Farms • Santa Margarita • Pozo • Creston • Whitley Gardens • Lake Nacimiento • San Miguel • Shandon • Heritage Ranch • Oak Shores • Cholame
WPA 6 – Carrizo Plain		
• Soda Lake • Black Sulphur Spring	• Carrizo Plain	• California Valley

3.4.1 WPA 1 - San Simeon/Cambria

WPA 1 – San Simeon/Cambria encompasses the communities of San Simeon and Cambria, Hearst Ranch, agricultural, and other rural overlying users in the northern area of the North Coast Sub-Region. See **Map 3-4**. The primary groundwater supplies include the San Carpoforo, Arroyo De La Cruz, Pico Creek Valley, San Simeon, Santa Rosa, and Villa Valley Groundwater Basins.

Primary water issues include seawater intrusion and tidal influences affecting water quality, drought impacts to groundwater supplies, and limited groundwater basin yield.

Community of San Simeon

The unincorporated community of San Simeon is located along Highway 1, north of Cambria. San Simeon Community Services District (CSD) serves an area of about 100 acres, which includes approximately 320 residential dwelling units and over twice that number of hotel/motel units. Though the permanent residential population is estimated at 247, the tourist population can outnumber locals and varies with the season.

San Simeon meets the definition as Severely Disadvantaged Community (SDAC), which is a community with a medium household income (MHI) less than 60 percent of the statewide average (Public Resource Code Section 75005(g)). San Simeon has an annual MHI of $33,889 based on the US Census American Community Survey (ACS) 5-Year Data (2010-2014). The statewide annual MHI is $61,489 and the calculated DAC and SDAC thresholds are $49,191 and $36,893, respectively.

Motel rooms, restaurants, and other tourist facilities are a major component in the San Simeon CSD water and sewer usage. According to the Draft Community Plan, there were 706 existing hotel/motel units (rooms) in the District service area. The tourist population varies with the season. The majority of jobs for local residents are in the hotel/motel and service industries.

The build-out population is projected to reach 740 residents. The build-out population is the upper range from the San Simeon Community Plan, which assumes 530 dwelling units (DU) and 1.4 persons per DU. The commercial/retail sector constitutes over 70% of the annual demand. Build-out water demand is based on 3,426 gpd/acre for the non-residential sector and 72 gallons per capita per day (gpcd) consumption for residents.

Hearst Ranch

In 2005, the Hearst Corporation created a conservation easement over their lands just north of the community of San Simeon, ensuring that San Simeon's 82,000 acres Hearst Ranch remains a family cattle ranch in perpetuity and largely undeveloped. They also donated thirteen miles of pristine coastline to the people of California, protecting the shoreline from commercial development. Hearst Ranch also includes the well-known Hearst Castle State Park. Their water use is primarily related to the State's maintenance and operations of Hearst Castle and on-site ranching activities. Historically, Hearst Ranch has also accessed natural spring water sources northeast of the castle's location.

Community of Cambria

Cambria is an unincorporated town bisected by Highway 1. The Cambria Community Services District (CSD) provides water and wastewater services to an area of about 4 square miles, including approximately 3900 residential dwelling units and many hotels and other visitor serving businesses. Cambria CSD also provides water and wastewater services to the San Simeon State Park Campground. Tourism is a major contributor to the economy and tends have a greater impact during the summer.

The areas surrounding the Cambria CSD services area are devoted to agricultural uses, primarily grazing. Cambria's existing population is 6,284 residents and the build-out population ranges between 8,257 and 13,547 depending on assumptions.

3.4.2 WPA 2 - Cayucos/Morro Bay/Los Osos

The Cayucos/Morro Bay/Los Osos WPA encompasses the City of Morro Bay, communities of Cayucos, Los Osos, Chorro Valley Water System, agricultural, and other rural overlying users. See **Map 3-5.**

Community of Cayucos

Cayucos is a small oceanfront community with a mixture of vacation homes and full-time residences. A commercial sector serves both the residential and tourist population. The Cayucos Area Water Organization (CAWO) members include the Morro Rock Mutual Water Company, Cayucos Beach Mutual Water Company, County Service Area 10/10A, and the Cayucos Cemetery District. CAWO members receive potable water predominantly from Whale Rock Reservoir.

The primary groundwater supplies include the Cayucos, Old and Toro Valley Groundwater Basins. CAWO members receive potable water predominantly from Whale Rock Reservoir. The issues in this WPA include drought impacts to groundwater supplies and limited groundwater basin yield.

Wastewater service is provided by the Cayucos Sanitary District.

City of Morro Bay

The only groundwater supplies include the Morro and Chorro Valley Groundwater Basins. Other major supply sources include the State Water Project, ocean water desalination (City of Morro Bay), Whale Rock Reservoir, Chorro Reservoir, and future recycled water from the Morro Bay wastewater treatment plant.

The issues in this WPA include drought impacts to groundwater supplies and groundwater quality due to high nitrates stemming from private septic systems and salinity intrusion, and availability/reliability of State Water from year to year.

The City of Morro Bay provides water service to over 5,500 connections, including over 10,000 residents, businesses, industrial facilities, and public facilities. The population estimate in 2005 was 10,270 according to the 2005 Urban Water Management Plan (2005 UWMP). Its coastal location attracts a large number of tourists during the summer and on weekends. The motels, hotels, restaurants, State Parks, and other facilities serving the tourist population add a significant water demand to the local population living primarily in single-family residences. The 2005 UWMP assumed a build-out population of 12,900, estimated to be achieved in 2028.

Chorro Valley Water System

The Chorro Valley Water System includes:

- California Men's Colony
- Cuesta College
- Camp San Luis Obispo (National Guard)

- County Office of Education
- County Operations Center

The California Men's Colony is a medium-security prison north of Highway 1. Including both the East and West Facilities, the total current inmate capacity of the prison is 6,452 persons. Total staff is about 1,700. Significant expansion of the prison is not anticipated.

The Cuesta College campus on Highway 1 provides community college services and associate of arts degrees. Enrollment in 1994 was 7,880 students. Additional campuses of the college are planned, one in the northern and one in the southern areas of the county.

Camp San Luis Obispo (National Guard) provides operational, training and logistical support to a wide variety of civilian and military agencies at federal, state and local levels. These agencies include: 1) the United States Property and Fiscal Office, 2) the California Army and National Guard, 3) the United States Army reserve, 4) the United States Coast Guard Reserve, 5) the California Conservation Corps, 6) the California Specialized Training Institute, 7) Cuesta Community College, and 8) Caltrans. Units of the National Guard, Army Reserve and Active Army occupy facilities at Camp San Luis Obispo for two- to three-week periods of training duty, primarily during the summer months. In the past, the camp has also provided temporary housing and an operational base for firefighting crews during a major wildfire - the Las Pilitas fire. Facilities at the site include training fields, offices, barracks, and a heliport.

The San Luis Obispo County Office of Education has its administrative office across Highway 1 from the westerly entrance to Cuesta College. The narrow watershed of Pennington Creek contains intensive development near Highway 1 and more extensive outdoor-related educational activities upstream.

The San Luis Obispo County Operational Center is adjacent to Camp San Luis Obispo. Existing and proposed facilities include: sheriff and county jail complex (including the honor farm), sheriff's pistol range, emergency operations center, storage and maintenance areas for county departments, environmental garage, vehicle maintenance, fuel facility, road yard, animal control center, and a juvenile services center

Community of Los Osos

The Los Osos area includes the community of Los Osos, agricultural and other rural overlying users. The primary groundwater supply is the Los Osos Valley Groundwater Basin. The issues in this WPA include drought impacts to groundwater supplies, groundwater quality and documented seawater intrusion.

The unincorporated community of Los Osos is just south of the City of Morro Bay. Los Osos is bordered on the northwest by the Morro Bay Estuary and Morro Bay State Park; to the east by Los Osos Creek and its riparian corridor; and to the south and southwest by the Irish Hills and Montana de Oro State Park. The Los Osos Valley lies to the east of the community.

The community of Los Osos has been subject to a building moratorium since 1988, which has resulted in only limited entitled development since that time. Upon completion of the wastewater project by the County, the moratorium may be lifted (subject to availability of other resource issues such as water supply and habitat conservation).

3.4.3 WPA 3 - San Luis Obispo/South County

The San Luis Obispo/South County WPA encompasses the Cities of San Luis Obispo, Pismo Beach, Arroyo Grande and Grover Beach, communities of Avila Beach, Oceano and Nipomo, Cal Poly San Luis Obispo, Port San Luis Harbor, agricultural, and other rural overlying users. See **Map 3-6.**

Cal Poly San Luis Obispo

Cal Poly is located to the north of the City of San Luis Obispo. Cal Poly occupies 1,321 acres with a campus core of 155 acres. The university also owns ranches and other outlying properties comprising an additional 7,857 acres. Cal Poly's population is last reported as:

- Students: 21,812 (2018)
- Faculty: 1,473 (2017)
- Staff: 1,670 (2017)
- Total: 24,955

Community of Avila Beach

The unincorporated community of Avila Beach includes an area bounded on the east by Highway 101, the city of Pismo Beach on the south, the coastal zone on the west and the Irish Hills to the north. It includes the Avila Valley area and most of the San Luis Bay Estates residential development. Development in outlying portions of the urban area could lead to substantial population increases that could alter the community character.

Port San Luis

The Port San Luis Harbor District (Harbor District or District) is the governing agency that provides public services and improvements for the Port and regulates the various commercial and recreational uses at the harbor. The Harbor District shares authority over land uses and development under its ownership with two regulatory agencies: the County of San Luis Obispo and the California Coastal Commission.

City of San Luis Obispo

The City of San Luis Obispo is located in a coastal valley approximately 10 miles inland from the Pacific Ocean. Historically, the City of San Luis Obispo has been the sole water purveyor within its limits. This allowed the city to maintain uniformity of water service and distribution standards, and to be consistent in developing and implementing water policy. The City also serves the County Regional Airport and Cal Poly. Since Cal Poly has its own allocation of water

from the Whale Rock Reservoir and has water resources that do not pass through the City's treatment plant, the University is discussed separately.

The City of San Luis Obispo has an existing (2010) population of 44,948 and a 1 percent residential growth cap which assists in projecting future annual water needs. The current General Plan estimates that the build-out population for the City will be approximately 57,200 people.

South Coast

The South Coast area includes Edna Valley (Golden State Water Company); the Northern Cities Management Area (NCMA), which includes the Cities of Pismo Beach, Arroyo Grande, and Grover Beach, Oceano Community Services District, agricultural and rural overlying users; the Nipomo Mesa Management Area (NMMA), which includes the Golden State Water Company, Nipomo Community Services District (NCSD), Rural Water Company, Woodlands Mutual Water Company (Woodlands MWC), ConocoPhillips, agricultural and rural overlying users; the Santa Maria Valley Management Area (SMVMA), which includes the City of Santa Maria, agricultural, and rural users; and agricultural and rural users outside of the three management areas.

The primary groundwater supplies include the Edna, Pismo Creek, and Arroyo Grande Valley Sub-basins, the Santa Maria Valley Groundwater Basin, and the Pismo Formation. Other major supply sources include the State Water Project, Lopez Lake Reservoir, and recycled water from the City of Pismo Beach Wastewater Treatment Plant. The issues in this WPA include adjudicated groundwater basins, limited groundwater supply, and to some extent groundwater quality.

Community of Nipomo

The town of Nipomo is an unincorporated area located in southern San Luis Obispo County.

Community of Oceano

The community of Oceano is located immediately south of Grover Beach and Arroyo Grande and is about 1,150 acres. Oceano includes residential, commercial, industrial, agricultural, and public facility land uses. Existing population (as of July 2009) is estimated at 8,137 and the forecast population is estimated at 12,855.

The unincorporated community of Oceano qualifies under the State's definition as a disadvantaged community. The Oceano Community Services District, with funding provided by the State Water Resources Control Board's Technical Assistance Program, completed an income study in 2017 and found the MHI to be $39,000.

Palo Mesa Village

The Palo Mesa village reserve line encompasses approximately 918 acres on the northwest corner of the Nipomo Mesa around the intersection of Halcyon Road and Highway 1.

City of Pismo Beach

The City of Pismo Beach supplies its customers with domestic water service. The dominant economic activity in Pismo Beach is tourism, and as a result, the population of Pismo Beach can more than double during summer holidays. The 2010 population was 7,676 and the forecast build-out population is 11,854.

City of Arroyo Grande

The City of Arroyo Grande supplies its customers with domestic water service. Arroyo Grande is located in the southern portion of San Luis Obispo County along the banks of the Arroyo Grande Creek. Land use is primarily residential and agriculture with a small commercial sector. There are no agricultural or industrial water service connections. In 2010, the service population was 16,901 and the forecast build-out population is 20,000.

City of Grover Beach

The City of Grover Beach supplies its customers with domestic water service. Grover Beach is primarily a residential community, with a small commercial/industrial sector. Approximately 80 percent of the water consumers are residents. No agricultural consumers are served by the City water system, though landscape irrigation consumes approximately 90 AFY. In 2010, the population was 13,156. The build-out population is expected to reach 15,000.

3.4.4 WPA 4 - Cuyama River

WPA 4 includes the Huasna Valley and Cuyama Valley areas as shown in **Map 3-7**.

The Huasna Valley area includes agricultural and rural users only. There are no large population centers with urban demands in this WPA. The primary groundwater supply is the Huasna Valley Groundwater Basin. The issue in this WPA includes limited available data on the groundwater supply's safe yield.

The Cuyama Valley area includes agricultural and rural users, and some oil fields. There are no large population centers with urban demands in this WPA. The primary groundwater supply is the Cuyama Valley Groundwater Basin. Twenty-two percent of the groundwater basin is in San Luis Obispo County, and the remainder of the basin resides in the counties of Santa Barbara, Kern, and Ventura. There is no separate yield estimate for the San Luis Obispo County portion. The primary issues in this WPA include critical overdraft of the groundwater basin and degrading water quality.

3.4.5 WPA 5 – North County

WPA 5 includes what is collectively known as "North County". This entire area drains to the Salinas River, eventually flowing through Monterey County to the Pacific Ocean. **Maps 3-8** and **3-9** depict this area.

Village of Pozo

The village of Pozo consists of approximately 42 acres along Pozo Road in an agricultural area originally known as San Jose Valley.

Community of Santa Margarita

Santa Margarita has a population of approximately 1,400 and covers an area of approximately 265 acres.

Santa Margarita Ranch

The Santa Margarita Ranch (Ranch) encompasses approximately 14,000 acres and is located immediately east of U.S. Highway 101 and surrounds the community of Santa Margarita. The land currently functions as ranch and vineyard with minimal residential water use. Approximately 96 percent of the water is used by vineyards and other farm operations. An Agricultural Residential Cluster Subdivision (ARCS) is proposed, including 3,778 acres near the middle of the Ranch, southeast of the community of Santa Margarita. A Future Development Program (FDP) is planned in various locations throughout the balance of the property. The proposed ARCS includes 111 large-lot residential units and agricultural reserves. The FDP covers a variety of development types, including 402 residences, a golf course, guest ranch, wineries, and other commercial and recreational facilities.

Atascadero/Templeton

The Atascadero/Templeton area includes the Templeton Community Services District (Templeton CSD), Atascadero Mutual Water Company, Garden Farms Community Water District, agricultural, and rural users. The primary sources of water supply for this WPA are the Atascadero Groundwater Sub-basin (Paso Robles Formation and Salinas River Underflow), recycled water, and the Nacimiento Water Project. The issues in this WPA include limited basin yield and State managed water rights to the Salinas River underflow (alluvial deposits underlying the Salinas River).

Community of Templeton

Templeton is an unincorporated community located along Highway 101 between the City of Paso Robles and City of Atascadero. Templeton consists of a mix of residential, commercial, agriculture, and recreational areas. The Templeton area has a number of homes on larger lots, and thus exhibits a relatively large per capita water demand as a result.

Community of Garden Farms

Garden Farms is a small residential community of 240 residents with 113 water service connections. Besides two small commercial establishments, all connections are residential.

City of Atascadero

The City of Atascadero is located along Highway 101, between the City of Paso Robles and City of San Luis Obispo. The City of Atascadero consists of a mix of residential, commercial, agriculture, and recreational areas.

Community of San Miguel

San Miguel grew from the founded Mission San Miguel Arcangel in 1797 to a small community in 2010 of 698 households over a 1,705 square mile area. With a 2000 census population of 1,427, San Miguel experienced an annual average 6.4% growth rate to achieve a 2010 population of 2,336. Governance for the small community comes from the San Miguel Community Services District (SMCSD) started by Gregory B. Campbell, a local resident.

The SMCSD is responsible for water, wastewater, fire protection, and street lighting to the community of San Miguel. The majority of the District's residents are low-income households, as shown in Figure C-58, meeting the criteria for federal funding (CDBG, USDA, and others) as a Disadvantaged Community (DAC) by having incomes of $42,176, well below the State's DAC threshold of $48,706.

Community of Shandon

Within the existing community of Shandon, build-out service is expected to reach up to 547 service connections. However, the Shandon Community Plan is being updated that could result in a total of 2,200 residential connections and over 50 commercial and public authority service connections. The projected population is approximately 8,125.

Village of Whitley Gardens

The village of Whitley Gardens is a suburban residential settlement located on a relatively flat plain alongside Highway 46 adjacent to the Estrella River. Situated midway between Shandon and Paso Robles, it occupies about 606 acres.

Village of Creston

Creston is a small community of a 2010 population of less than 100 and is located approximately 12 miles east of Atascadero. Creston (named after Calvin J. Cressy) was founded in 1884 on the Rancho Huerhuero Mexican land grant.

Camp Roberts

Camp Roberts is operated by the California Army National Guard and covers 42,784 acres. Camp Roberts, located north of the community of San Miguel, is situated in both San Luis Obispo and Monterey Counties. When fully mobilized, the base supports 8,500 people. In the event of a nuclear disaster at Diablo Canyon Nuclear Power Plant, Camp Roberts is an evacuation and staging area for about 23,000 residents within San Luis Obispo County. Base population can be a combination of on-base personnel and civilian personnel that do not live on Base.

City of Paso Robles

The City of Paso Robles is located along Highway 101 in northern San Luis Obispo County. Paso Robles is situated on the upper Salinas River. Paso Robles encompasses a total area of 11,985

acres on both sides of the Salinas River. The City also is situated on the western margin of the Paso Robles Groundwater Basin.

Paso Robles has a strong agricultural base and remains the major service center for ranching and agriculture in the North County, particularly areas to the east along Highway 46. The City proper is a mix of residential, commercial and industrial land uses, with significant areas devoted to parks and open space. Paso Robles, with a 2005 population of 27,361, is a growing community that could attain a population of 44,000 at build-out.

Cholame

The Cholame are includes agricultural and rural users only. There are no large population centers with urban demands in this WPA. The primary groundwater supply is the Cholame Valley Groundwater Basin. The issue in this WPA includes limited available data on the groundwater quality and basin safe yield.

Nacimiento

The Nacimiento area includes Oak Shores, Heritage Ranch Community Services District, agricultural, and rural users. The primary source of water supply for this area is Lake Nacimiento.

Heritage Ranch

Heritage Ranch is an unincorporated community located on the east side of Lake Nacimiento, approximately 15 miles northwest of the City of Paso Robles. Land use at Heritage Ranch consists mostly of residential, recreational, and open space areas with some commercial and public facility areas. A community that was originally started as a remote vacation destination with the vast majority of part-time residents has now become a bedroom community to neighboring cities with full-time residents.

Community of Oak Shores

The Community of Oak Shores is on the banks of Nacimiento Lake with a 2010 population of 337.

Rafael/Big Spring

The Rafael/Big Spring area includes agricultural and rural users only. There are no large population centers with urban demands in this WPA. The primary groundwater supplies are the Rafael and Big Spring Valley Groundwater Basins. The issue in this WPA includes limited available data on the groundwater basin's safe yield.

3.4.6 WPA 6 – Carrizo Plain

The Carrizo Plain area includes agricultural and rural users, and potentially future solar farms. See **Map 3-10**. There are no large population centers with urban demands in this WPA. The

primary groundwater supply is the Carrizo Plain Groundwater Basin. The primary issues in this WPA include water quality and limited groundwater supply.

Community of California Valley

The California Valley village area is home to approximately 2,735 residents (2010) and is located in the Carrizo planning area. It is an undeveloped village settlement encompassing 24,083 acres located on the Carrizo Plain, about 60 miles east of San Luis Obispo. It came into being in 1960, when part of the El Chicote Ranch was subdivided into more than 7,200, 2.5 acre "ranchos" and sold through nationwide advertising as "the geographic center of this spectacular California growth area with unbounded future." This proposed new town has never developed and each year many of the subdivided parcels are sold at tax auctions.

3.5 Groundwater Basins

There are 22 groundwater basins and 3 sub-basins in the San Luis Obispo IRWM Region. See **Map 3-2** for a comprehensive view of both DWR-listed groundwater basins in relation to the region at-large. This section condenses the highly detailed descriptions of the groundwater resources based on the 2012 Master Water Report and 2014 Watershed Management Planning Project Study (Watershed Snapshot Study).

Groundwater is essential to the region's water supply portfolio. As shown in **Map 3-2**, the largest urban areas all overly High priority or adjudicated groundwater basins.

Table 3-2 provides a list of the various groundwater basins and sub-basins within the IRWM region and is organized based on Sub-Region and WPA. A thorough description of each basin and sub-basin is included as **Appendix G – Groundwater Basin Descriptions.**

Additional information of the region's geology can be found in **Section 3.10 - Watersheds**.

***Table 3-2**: Groundwater Basins and Sub-Basins within the IRWM Region*

Sub-Region	WPA	Basin ID	Bulletin 118 Groundwater Basin Name	Prioritization (2019)*	Subject to Critical Conditions of Overdraft (y/n)*
North Coast	1	3-033	San Carpoforo Valley	Very Low	-
		3-034	Arroyo De La Cruz Valley	Very Low	-
		3-035	San Simeon Valley	Very Low	-
		3-036	Santa Rosa Valley	Very Low	-
		3-037	Villa Valley	Very Low	-
	2	3-038	Cayucos Valley	Very Low	-
		3-039	Old Valley	Very Low	-
		3-040	Toro Valley	Very Low	-
		3-041	Morro Valley	Very Low	-

Sub-Region	WPA	Basin ID	Bulletin 118 Groundwater Basin Name	Prioritization (2019)*	Subject to Critical Conditions of Overdraft (y/n)*
		3-042	Chorro Valley	Very Low	-
		3-008.01	Los Osos Valley - Los Osos Area	Very Low**	**Yes**
		3-008.02	Los Osos Valley - Warden Creek	Very Low	-
South County	3	3-009	San Luis Obispo Valley	High	-
		3-012.01	Santa Maria River Valley - Santa Maria	Very Low**	-
		3-012.02	Santa Maria River Valley - Arroyo Grande	Very Low	-
	4	3-045	Huasna Valley	Very Low	-
		3-013	Cuyama Valley	High	**Yes**
North County	5	3-047	Big Spring Area	Very Low	-
		3-046	Rafael Valley	Very Low	-
		3-044	Pozo Valley	Very Low	-
		3-043	Rinconada Valley	Very Low	-
		3-004.06	Salinas Valley - Paso Robles Area	High	**Yes**
		3-004.11	Salinas Valley - Atascadero Area	Very Low	-
		3-005	Cholame Valley	Very Low	-
	6	3-019	Carrizo Plain	Very Low	-

** Groundwater basins are identified (and as appropriate, designated as subject to critical conditions of overdraft) in DWR's Bulletin 118, Interim Update 2016 and prioritized in DWR's release of the SGMA 2019 Basin Prioritization Process and Results. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization*

*** denotes a basin under adjudication.*

3.5.1 Sustainable Groundwater Management Act (SGMA)

The "Sustainable Groundwater Management Act" (SGMA) took effect on January 1, 2015. SGMA provides for the preparation and implementation of Groundwater Sustainability Plans (GSP) for High and Medium priority groundwater basins.

Implementation of SGMA is on-going. The Salinas Valley - Paso Robles Area GSAs have completed and adopted their GSP. All other basins & GSAs are currently in the planning phase. Groundwater Sustainability Agencies (GSA) have been formed throughout the County to first create the GSPs and then to implement them. See **Section 12.4.4 – Groundwater Sustainability Plans (GSPs)** for a detailed breakdown of GSA's for the basins requiring GSPs.

Because this effort is on-going and GSPs are not yet complete, most SGMA-related information is to-be-determined by GSPs and how they will be implemented. For most up-to-date information regarding SGMA planning and implementation, see the County's SGMA website: http://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-(SGMA).aspx

3.6 Wastewater Service Areas

There are seven City Wastewater Service Areas, nine Community Service Districts (CSDs), six Community Service Areas (CSAs) and two Sanitation Districts (SDs) that provide wastewater service in the San Luis Obispo IRWM Plan. **Table 3-3** below is a limited summary of the location of these agencies relative to the WPAs.

Table 3-3: *Wastewater Service Areas by WPA*

Sub-Region	WPA	Wastewater Districts
North Coast	1 – San Simeon / Cambria	San Simeon CSD
		Cambria CSD
	2 – Cayucos / Morro Bay / Los Osos	CSA 10 Cayucos
		Cayucos Sanitary District
		City of Morro Bay
		Los Osos CSD
South County	3 – San Luis Obispo / South County	City of San Luis Obispo
		Avila Beach CSD
		CSA 18 Los Ranchos
		City of Arroyo Grande
		City of Pismo Beach
		City of Grover Beach
		Nipomo CSD
		Oceano CSD
		CSA 1 Nipomo
		South County Sanitation District
	4 - Cuyama River	
North County	5 –North County	CSA 23 Santa Margarita
		City of Atascadero
		Templeton CSD
		City of Paso Robles
		San Miguel CSD
		CSA 16 Shandon
		Heritage Ranch CSD
		CSA 7 Oak Shores
	6 - Carrizo Plain	

3.7 Flood Control Districts

The only Flood Control District in the Region is the San Luis Obispo Flood Control and Water Conservation District. The District was established by the State Legislature in 1945 with the passage of the "San Luis Obispo County Flood Control and Water Conservation District Act". The District is governed by a Board of Supervisors; its boundaries are co-terminus with the County of San Luis Obispo and its board members and staff are the same as those who act separately on behalf of the County of San Luis Obispo. Pursuant to the 1945 legislation, the primary services of the District include or cover:

1. Flood and storm waters
2. Conserving waters for beneficial purposes
3. Protecting life and property
4. Preventing waste or diminution of the water supply
5. Obtaining, retaining, and reclaiming waters for beneficial use, including the purchase and sale of water within the district
6. Providing for incidental recreation activities

As the primary agency with responsibility for regional water planning and the implementation of regional water supply projects, the District essentially acts in two capacities.

First, District and its Board of Supervisors functions as a regional water resource planning agency to gather data, identify issues, coordinate stakeholder review, and make recommendations on water resource solutions to the San Luis Obispo County Board of Supervisors. Second, it implements specific projects and programs, typically on a sub-regional basis, relating to the services identified above. The general regional data gathering, planning and coordination efforts are funded by the District's budget from its general property tax allocations. The sub-regional projects, programs and services are typically funded by participating agencies, organizations, and other parties benefiting from the services.

In addition to the preparation of this IRWM Plan and leading the RWMG, the District's other regional priorities include the following:

- Groundwater recharge efforts
- Regional environmental permitting
- Hydrological data gap analysis – with special emphasis on environmental needs and natural groundwater recharge areas
- Flood management planning
- Optimization of the Nacimiento Water Project
- Digital and electronic conversion of historical hydrological data
- Preliminary efforts on web-based data retrieval
- Stakeholder efforts on Six-Community drainage study
- Monthly Meetings with the Water Resources Advisory Committee to review and develop recommendations on the items listed above, among others

3.8 Land Use Agencies

Land use agencies in the San Luis Obispo County Region include the County, 7 incorporated cities and the US Forest Service. Coordination with these agencies, their planning efforts and more is included in **Section 12 – Relation to Local Water and Land Use Planning.** See **Map 3.11** for a depiction of the Land Use areas of the County.

Through participation and representation in the WRAC and RWMG, the land use agencies interests are well represented in the IRWM planning process (see **Table 3-4**).

Table 3-4: *Summary of Land Use Agency Participation in WRAC and RWMG within the IRWM Region*

Land Use Planning Area	Unincorporated Communities and Cities	Land Use Agency	WRAC Participation	RWMG Participation
North Coast	San Simeon, Cambria	SLO County	✓	✓
Nacimiento	Nacimiento, Heritage Ranch, Oak Shores	SLO County	✓	✓
Adelaida	Adelaida	SLO County	✓	✓
Estero	Cayucos, Morro Bay, Los Osos, Baywood Park	SLO County	✓	✓
		Morro Bay	✓	✓
Salinas River	Paso Robles, Atascadero, Garden Farms, Templeton, San Miguel, Santa Margarita	SLO County	✓	✓
		Paso Robles	✓	✓
		Atascadero	✓	
El Pomar/Estrella	Creston, Linne	SLO County	✓	✓
San Luis Bay Coastal, Inland North and Inland South	Avila Beach, Pismo Beach, Arroyo Grande, Grover Beach, Oceano, Halcyon	SLO County	✓	✓
		Pismo Beach	✓	✓
		Arroyo Grande	✓	✓
		Grover Beach	✓	✓
San Luis Obispo North and South	San Luis Obispo, Los Ranchos, Edna Valley	SLO County	✓	✓
		San Luis Obispo	✓	✓
Las Pilitas	Pozo	SLO County	✓	✓
Los Padres North and South	Los Padres National Forest	US Forest Service		
Carrizo and Shandon/Carrizo North and South	Shandon, Whitley Gardens, Cholame, California Valley	SLO County	✓	✓
Huasna – Lopez	Huasna, Lopez Lake Recreation Area	SLO County	✓	✓
South County Coastal and Inland	Nipomo	SLO County	✓	✓

3.9 Major Infrastructure

This section describes the major infrastructure that provides water throughout the San Luis Obispo IRWM Plan Region. Many of the projects covered in this section have been presented in their respective WPA or watershed above. Provided herein is a short description of the larger regional water-related infrastructure, their purpose, and capacity.

This includes raw surface water transmission lines and reservoirs. **Map 3-13** shows the major conveyance and storage facilities. **Map 3-14** shows the local reservoir locations with a photo of each.

3.9.1 Nacimiento Water Project

The Monterey County Flood Control and Water Conservation District (now known as the Monterey County Water Resources Agency (MCWRA)) constructed the Nacimiento Dam in 1956. The dam and reservoir continue to be operated by MCWRA. The lake has a capacity of 377,900 acre-feet (AF) and a surface area of 5,727 acres. Water is collected from a 365 square mile watershed that is comprised of grazing lands and rugged wilderness.

In 1959, the District secured the rights to 17,500 AFY from Lake Nacimiento, with 1,750 AFY reserved for lakeside users and the Heritage Ranch Community Services District (Heritage Ranch CSD). The Nacimiento Water Project (NWP) was initiated in 2004 with the District's Board of Supervisors adopting the Final Environmental Impact Report. The NWP is the single largest project that the District has ever undertaken. The total project cost, including administration, design, construction, construction management, environmental permitting, and right-of-way, was approximately $174 million (project budget was $176 million). Water deliveries began in 2011. The project delivers raw lake water from Lake Nacimiento to communities within San Luis Obispo County. The current participating entities and their contracted water amounts are listed below in **Table 3-5**. The District does not have storage rights at Nacimiento Reservoir, so the unused portion of annual water supply cannot be carried over for use in the next water year.

Table 3-5: *Nacimiento Water Project Entitlement Contract Values, 2018-2019 Water Year*

Participating Agency	Contracted AFY
City of Paso Robles	6,488
Templeton CSD	406
Atascadero MWC	3,244
SMR MWC	80
City of San Luis Obispo	5,482
CSA 10A	40
Bella Vista MHP	10
TOTAL	***15,750***

3.9.2 Whale Rock Reservoir

Whale Rock Reservoir is located on Old Creek Road approximately one-half mile east of the community of Cayucos. The State Department of Water Resources supervised the project's planning, design, and construction. Construction took place between October 1958 and April 1961. The reservoir is jointly owned by the City of San Luis Obispo, the California Men's Colony, and Cal Poly. These three agencies, with the addition of a representative from the Department of Water Resources, form the Whale Rock Commission, which is responsible for operational policy and administration of the reservoir and related facilities. Day-to-day operation is provided by the City of San Luis Obispo.

Whale Rock reservoir is formed by an earthen dam and was able to store an estimated 40,662 acre-feet of water at the time of construction. The calculation of the yield available is coordinated with Salinas Reservoir using a safe annual yield computer model. The model also evaluates the effect of siltation. The Whale Rock Commission has budgeted for a siltation study to be undertaken in the near future.

The tables below summarize the current capacity rights for the joint right-holders (downstream water rights are accounted for separately) for both the reservoir and downstream. Each rights-holder manages reservoir withdrawals individually from their available water storage allocation. The Whale Rock Commission tracks withdrawals and reports available volume on a monthly basis.

***Table 3-6**: Whale Rock Reservoir Allocations*

Participating Agency	Contracted AFY
City of San Luis Obispo	21,451
Cal Poly San Luis Obispo	13,136
California Men's Colony	4,380
TOTAL	***38.967***

***Table 3-7**: Whale Rock Downstream Entitlements*

Participating Agency	Contracted AFY
Cayucos Area Water Organization (CAWO)[1]	582
TOTAL	***582***

Notes:
1. The referenced agreement establishes the amount of 582 AFY to CAWO. The allocations to CAWO members are part of an internal agreement amongst the members.
2. The agencies generally receive their entitlements via pipeline from the reservoir, while the land owners' entitlement is released from the reservoir.

3.9.3 Lopez Lake/Reservoir

The District completed the Lopez Dam in 1968 to provide a reliable water supply for agricultural and municipal needs. Although flood protection was not one of the reasons for the construction of the dam, it has proven its value to that consideration. Lopez Reservoir has a capacity of 49,388 AF. The lake covers 950 acres and has 22 miles of oak covered shoreline. Allocations for Lopez Lake water are based on a percentage of the safe yield of the reservoir, which is 8,730 AFY. Of that amount, 4,530 AFY are for pipeline deliveries and 4,200 AFY are reserved for downstream releases. The dam, terminal reservoir, treatment and conveyance facilities are a part of Flood Control Zone 3 (Zone 3).

The agencies that contract for Lopez water in Zone 3 include the communities of Oceano, Grover Beach, Pismo Beach, Arroyo Grande, and County Service Area (CSA) 12 (including the Avila Beach area). Their allocations are shown in the table below.

The District, in coordination with the Zone 3 Advisory Committee, continues to develop a Habitat Conservation Plan for the system and evaluate opportunities to operate more effectively and/or modify the system for water supply, water quality, ecosystem and flood management purposes.

***Table 3-8**: Lopez Lake Allocations*

Participating Agency	Contracted AFY
City of Pismo Beach	896
Oceano CSD	303
City of Grover Beach	800
City of Arroyo Grande	2,290
CSA 12	241
TOTAL	***4,530***

3.9.4 Santa Margarita Lake/Salinas Reservoir

The Salinas Dam was built in 1941 by the War Department to supply water to Camp San Luis Obispo and, secondarily, to meet the water needs of the City of San Luis Obispo. The Salinas Reservoir (Santa Margarita Lake) captures water from a 112 square mile watershed and can currently store up to 23,843 acre-feet (AF). In 1947, the Salinas Dam and delivery system was transferred from the regular Army to the U.S. Army Corps of Engineers. Shortly thereafter, the District began operating this water supply for the City under a lease from the U.S. Army Corps of Engineers. Water from the reservoir is pumped through the Cuesta Tunnel (a one-mile long tunnel through the mountains of the Cuesta Ridge) and then flows by gravity to the City's Water Treatment Plant on Stenner Creek Road.

The District, in coordination with the City of San Luis Obispo and downstream interests continues to evaluate opportunities to operate the dam more effectively and/or modify the system for water supply, water quality, ecosystem and flood management purposes.

3.9.5 Chorro Reservoir

The Chorro Reservoir is less than one-mile northeast of the California Men's Colony in the upper Chorro watershed. The Chorro Reservoir is part of the Chorro Valley Water System operated by CMC. The system provides storage, treatment and distribution to four major users:

- The California Men's Colony
- Camp San Luis Obispo (California National Guard)
- County Operations Center/Office of Education
- Cuesta Community College (Cuesta College)

The reservoir and treatment plant were constructed by the U.S. Army Corps of Engineers to provide water to Camp San Luis Obispo at the beginning of World War II. The net storage capacity of the Chorro Reservoir has decreased since it was constructed due to siltation, and was estimated to be 105 AF, based on a study prepared by DWR in 1989. More recent studies indicate that the capacity is currently closer to 90 acre-feet. Safe annual yield is considered to be 140 AFY, as the watershed provides more than can be stored in the reservoir, even in drought years. It is worth noting that water demand at Camp San Luis Obispo, both during the war and subsequently, has been met almost exclusively through surface flows to the reservoir from the Chorro watershed and from groundwater wells on the Camp property. Although the Salinas Reservoir waterline was extended from the Cuesta Water Tunnel to the Chorro Reservoir as part of the original improvements in World War II, the pipeline has only been used to convey water from the Salinas Reservoir to the Camp twice since construction.

Camp San Luis Obispo has priority rights to water from Chorro Reservoir, with 140 AFY of entitlement. CMC has right to any excess. The Mainini Ranch has an agreement with the Camp for a delivery of up to 25 AFY but has only used an average of 5 to 7 AFY over the past decade. For further discussion on agreements related to the Chorro Reservoir, see the description of the Chorro Valley Water System in the Water Planning Area Number 4 discussion below.

3.9.6 State Water Project Facilities

The California Department of Water Resources (DWR) owns and operates the State Water Project (SWP). In 1963 the District contracted with DWR for 25,000 AFY of State Water. The SWP began delivering water to the Central Coast in 1997 upon completion of the Coastal Branch conveyance and treatment facilities, serving Santa Barbara and San Luis Obispo Counties.

The treatment facility for State Water delivered through the Coastal Branch, known as the Polonio Pass Water Treatment Plant (PPWTP), is owned, operated and maintained by the Central Coast Water Authority (CCWA) for users in San Luis Obispo and Santa Barbara Counties. DWR owns the Coastal Branch transmission system, and they operate and maintain the raw water portion of the system. CCWA operates and maintains the treated water portion of the Coastal Branch. Agreements between CCWA, Santa Barbara County Flood Control and Water Conservation District and DWR are in place to establish these roles and relationships.

Table 3-9 summarizes the sub-contractor Water Service Amounts and Drought Buffer for the various turnouts along the Coastal Branch in San Luis Obispo County. See **Map 3-13** for a location of these facilities.

Table 3-9: *Sub-contractor Water Service Amounts and Drought Buffer, by turnout, in San Luis Obispo County*

Turnout Location	Subcontractor	Water Service Amount (AFY)	Drought Buffer (AFY)	Total (AFY)
SHANDON				
	CSA 16 (Shandon)	100	0	100
	Subtotal	*100*	*0*	*100*
CHORRO VALLEY	City of Morro Bay	1,313	2,290	3,603
	CMC	400	400	800
	County Ops Center	425	425	850
	Cuesta College	200	200	400
	Subtotal	*2,338*	*3,315*	*5,653*
LOPEZ	City of Pismo Beach	1,240	1,240	2,480
	Oceano CSD	750	750	1,500
	San Miguelito MWC	275	275	550
	Avila Beach CSD	100	100	200
	Avila Valley MWC	20	20	40
	San Luis Coastal USD	7	7	14
	Subtotal	*2,392*	*2,392*	*4,784*
	Total Subcontracted*	**4,830**	**5,707**	**10,537**
			**Contracted Delivery Capacity in Coastal Branch (AFY)*	*4,830*
			District's "Table A" Allocation (AFY)	25,000
			Total "Table A" Subcontracted (AFY)	10,537
			"Unsubscribed" Allocation (AFY)	14,463

3.9.7 Reducing Reliance on the Delta

The RWMG MOU (**Appendix B**) includes the need to update the Plan to comply with new State guidelines. Since the new State guidelines include eligibility standards for including addressing reduction in dependence on Delta water in the Plan, future updates to the Region's Plan retain applicable goals and objectives.

Additionally, San Luis Obispo County's Conservation and Open Space Element (COSE) of the General Plan includes Water Resources Policy 1.3, which says use of reclaimed water, interagency cooperative projects, desalination of contaminated groundwater supplies, and groundwater recharge projects should be considered prior to using imported sources of water or seawater desalination, or dams and on-stream reservoirs. See **Appendix E – Supply and Demand** for more information on the Region's use of the State Water Project, and past deficiencies in their water contract in drought years with an allocation of 5% beginning in 2014.

With the desire to not only reduce reliance on the Delta, but reduce water costs, many communities have engaged in aggressive water conservation measures. These include the Paso Robles Groundwater Basin Area, City of San Luis Obispo, the Community of Los Osos and others. Los Osos for example, set a goal of 50 gal/person/day and in the calendar year of 2017 saw the actual use as 41.8 gal/person/day. This is documented in post-performance report #2 for the Los Osos Community Wastewater Project, project 2 of IRWM grant Agreement No. 4600009717.

3.9.8 Desalination Projects

Pacific Gas & Electric maintains a desalination facility as part of the Diablo Canyon Power Plant (DCPP) site. This unit provides potable water for all staff and visitors to the site, as well as cooling water for the power generation processes. With the scheduled decommissioning of the DCPP, the future use, owner and operator of the desalination facility is to be determined.

The City of Arroyo Grande, the City of Grover Beach, and the Oceano Community Services District participated in the evaluation of a desalination project to supplement their existing potable water sources. Currently, all three agencies receive water from various sources, including the California State Water Project, Lopez Lake Reservoir, and groundwater from the Arroyo Grande Plain Hydrologic Subarea that is part of the Santa Maria Valley Groundwater Basin. Recent projections of water supply shortfalls in the region motivated the agencies to conduct a more detailed study of desalination as a supplemental water supply. The study focused on utilizing the existing South San Luis Obispo County Sanitation District's (SSLOCSD) wastewater treatment plant to take advantage of utilizing the existing ocean outfall, while having the plant located near the ocean seawater source. The feasibility study, completed in 2008, was based on a 2,300 AFY seawater desalination facility. Some of the major points of interest and concern of this study include:

- Some 20 or more beach wells may be needed to provide enough seawater to produce the 2,300 AFY potable water.
- Permitting and environmental issues could be complex, and implementation could take 8 years or longer.

Initial capital cost could be in the range of $35 million, and customer rates could be impacted by 18 percent to over 100 percent to fund the project and would cost in the neighborhood of $2,300 per AF or more, on a 20-year life cycle basis.

3.10 WATERSHEDS

The following section provides information on the 25 defined watersheds within the San Luis Obispo IRWM Planning Region. This information was gathered from an extensive effort by the Upper Salinas – Las Tablas and Coastal San Luis Resource Conservation Districts completed in 2013 resulting in the January 2014 final report titled, San Luis Obispo County Watershed Management Planning Project. This report is included as **Appendix H** of the IRWM Plan.

The watershed names and locations attached identify with the USGS Hydrologic Unit 8 and 12. Locally, "San Luis Obispo County Watershed" name is the District's own grouping of HU-12 watersheds, within the context of HU-8 boundaries.

The detailed descriptions, called "Watershed Snapshots", provide information relating to area geology, surface and groundwater quality, land use, areas and species of biological significance, areas of cultural significance, water resources management issues, and available hydrologic (i.e., rainfall, streamflow, groundwater, temperature, etc.) information. The Watershed Snapshot information provided below provides the area and description of the watersheds. Important detailed information is listed in **Appendix H**.

The watersheds are aligned with the Subregions and WPAs as shown in **Table 3-10** and **Map 3-12**.

The information provided below each of the watershed summaries are tabularized data (i.e., data relevant to meeting the State Guidelines) collected for each watershed as part of the Watershed Snapshots. This information comes from the SLO Watershed Database (**See Section 9 – Data Management**), populated by the Watershed Snapshots and to be maintained over time, and includes the following informational topics:

- Hydrology
- Water Supply
- Water Uses
- Flora and Fauna
- Land Use
- Demographics
- Unique Characteristics
- Climate Change Considerations

Critical Issues

Other information contained within the Watershed Report includes:

- Geology
- Beneficial Uses
- Flood Management

Table 3-10: *Watershed Area Names, Numbers by WPA*

WPA (2018)	Watershed No.	San Luis Obispo County Localized Watershed Group Name
1 - San Simeon / Cambria	1	San Carpoforo Creek
	2	San Simeon Area
	3	Santa Rosa Creek Area
2 - Cayucos / Morro Bay / Los Osos	4	Cayucos Creek - Whale Rock Area
	5	Morro Bay
	6	Coastal Irish Hills
3 - San Luis Obispo / South County	7	San Luis Obispo Creek
	8	Pismo Creek
	9	Arroyo Grande Creek
	10	Oso Flaco - Black Lake Area
	11	Nipomo Creek - Santa Maria River Area
4 - Cuyama River	12	Alamo Creek
	13	Huasna River
	14	Cuyama River
5 - North County	15	Upper San Juan Creek
	16	Lower San Juan Creek
	17	Cholame Creek
	18	Estrella River
	19	Upper Salinas River - Santa Margarita Area
	20	Mid Salinas River - Atascadero Area
	21	Huer Huero Creek
	22	Lower Salinas River - Paso Robles Area
	23	Nacimiento Area
6 - Carrizo Plain	24	Soda Lake
	25	Black Sulphur Spring

3.10.1 Watersheds in WPA 1 – San Simeon / Cambria

The USGS HU-12 Watersheds for WPA-1 are listed in **Table 3-11**.

Table 3-11: *USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 1 – San Simeon/Cambria*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
1 - San Simeon / Cambria	San Carpoforo Creek	San Carpoforo Creek	180600060306
		Salmon Creek - Frontal Pacific Ocean	180600060307
	San Simeon Area	Burnett Creek	180600060401
		Arroyo De La Laguna	180600060402
		Pico Creek	180600060403
		San Simeon Creek	180600060404
		Little Pico Creek - Frontal Pacific Ocean	180600060407*
	Santa Rosa Creek Area	Perry Creek	180600060405
		Santa Rosa Creek	180600060406
		Frontal Pacific Ocean	180600060407*
		Villa Creek	180600060408

** denotes where multiple watershed groups contain "Frontal Pacific Ocean" areas from same HU-12 designation*

3.10.1.1 San Carpoforo Creek

The San Carpoforo Creek Area Watershed straddles San Luis Obispo County and Monterey County with 13,046 acres out of 264,552 total acres within SLO County. The watershed lies along the Pacific Ocean with the southernmost outfall at Ragged Point, north of San Simeon. The most notable waterway within the San Luis Obispo portion of the watershed is San Carpoforo Creek, which has its headwaters in the Los Padres National Forest at the Santa Lucia Range in southern Monterey and Northern San Luis Obispo County. Pacific Ocean outfall of San Carpoforo Creek is designated as State Marine Conservation Area and State Marine Reserve within the Monterey Bay National Marine Sanctuary. Mt. Mars Creek also independently drains into the Pacific Ocean just north of the San Carpoforo Creek drainage. Peak elevation for the watershed is approximately 2610 feet high with the low being roughly 16 feet above sea level in Monterey County. A portion of the San Carpoforo Creek drainage is located within the boundaries of the Hearst Ranch property and is currently under the provisions of a conservation easement. The dominant land use is Los Padres National Forest and rangeland agriculture, with a majority of rangeland concentrated in

the area of Hearst Ranch. A rugged shoreline and mountainous eastern ridge characterize the northern portion of the watershed. The creek was the route of the historic Portola Expedition and was identified as an area of high ecological significance by the Forest Service.

3.10.1.2 San Simeon Area

The San Simeon-Arroyo de la Cruz area watershed grouping is located within the North Coast region of the county. The watershed drains approximately 51,500 acres and originates on the western slopes of the Santa Lucia Mountains, flowing to the Pacific Ocean at San Simeon State Beach. The watershed contains two major drainages – Arroyo de la Cruz and San Simeon Creek. Recharge of the aquifer comes from percolation of stream flow, deep percolation of precipitation and irrigation return flows. San Simeon Creek headwaters occur in the Coast Ranges to the northeast of Cambria. Elevations in the watershed range from 3,559 feet above sea level in the Santa Lucia Range at the eastern most watershed boundary to sea level along the coast. The dominant land use throughout the watershed is agriculture, specifically rangeland. The watershed includes the disadvantaged community of San Simeon, the northern portion of Cambria and the Hearst San Simeon State Historical Monument. San Simeon Estuary is located within San Simeon State Beach and is the home to several biotic communities including salt and freshwater marshes, grasslands, Monterey pine forest, as well as estuarine habitats. The watershed also contains multiple creeks that support critical Steelhead Trout habitat.

3.10.1.3 Santa Rosa Creek Area

Santa Rosa Creek Watershed lies within the southern portion of the California Coast Ranges. The watershed is bounded to the east by the Santa Lucia Mountain Range and to the west by the Pacific Ocean. The watershed contains two major sub-watersheds: Villa Creek and Santa Rosa Creek, which contains Santa Rosa Creek and Green Valley (Perry Creek). Santa Rosa Creek and its tributaries flow mostly unobstructed down steep hill-slopes, mantled with shallow soils and sparse shrub vegetation, through

agricultural areas and the small town of Cambria before reaching the Pacific Ocean. Villa Creek begins in the Santa Lucia range flowing to the Pacific Ocean, encompassing a majority of the coastal area within the total watershed. The town of Cambria is near the mouth of Santa Rosa Creek, downstream of the confluence with Perry Creek – the largest tributary in the Santa Rosa Creek sub-watershed. Topography includes steep upland areas and low gradient valley bottoms bordering the reaches of Santa Rosa, Green Valley, Perry, and Villa Creeks. Cypress Mountain, the highest peak, lies in the Upper Santa Rosa creek watershed and reaches an elevation of approximately 3,411 feet. At its lowest elevation (sea level), Santa Rosa Creek flows through a lagoon contained by an annually formed sandbar at Moonstone Beach. The dominant land use is agriculture.

3.10.2 Watersheds in WPA 2 – Cayucos / Morro Bay / Los Osos

A list of the USGS HU-12 watershed names and numbers for WPA - 2 are found in **Table 3-12**.

Table 3-12: *USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 2 – Cayucos/Morro Bay/Los Osos*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
2 - Cayucos / Morro Bay / Los Osos	Cayucos Creek - Whale Rock Area	Old Creek	180600060409
		Cayucos Creek - Frontal Pacific Ocean	180600060410
		Toro Creek	180600060411
		Morro Creek	180600060412
		Willow Creek - Frontal Pacific Ocean	180600060413
	Morro Bay	Los Osos Creek	180600060501
		Chorro Creek	180600060502
		Morro Bay	180600060503
	Coastal Irish Hills	Islay Creek - Frontal Pacific Ocean	180600060504

3.10.2.1 Cayucos Creek - Whale Rock Area Watershed

The Cayucos Creek – Whale Rock Area Watershed lies within the southern portion of the California Coast Range. The watershed is bounded to the west by Pacific Ocean and the east by the Santa Lucia Mountain Range. The watershed area contains five major drainages that independently reach the Pacific Ocean: Cayucos Creek, Old Creek, Toro Creek, Willow Creek and Morro Creek, the latter of which borders and shares some attributes with the Morro Bay watershed. The headwaters of the watershed are in Santa Lucia Range, reaching a maximum elevation of approximately 2,345 feet with the lowest elevation at around at sea level, draining in to the Pacific Ocean. Whale Rock reservoir is located in the watershed approximately ½ mile east of the community of Cayucos. The dominant land use in the watershed is Agriculture with the sea side town of Cayucos providing an urban core area with tourist-oriented opportunities.

3.10.2.2 Morro Bay Watershed

The Morro Bay Watershed is located in the central area of coastal San Luis Obispo County. It is composed of two major sub-watersheds that drain into Chorro and Los Osos Creeks. The Chorro Creek sub-watershed accounts for about 60 percent of the total land area draining into the estuary.

Much of the watershed remains in open space that is used primarily for agriculture and a range of public uses, including parks, golf courses, nature preserves, a military base, and university-owned rangeland. The developed portions of the watershed include the community of Los Osos/ Baywood Park, parts of the City of Morro Bay, Cuesta College, Camp San Luis Obispo, the California Men's Colony, and various facilities of the County of San Luis Obispo.

Due to the uniqueness of Morro Bay, the watershed has been studied since the late 1980's with watershed plans from that era being completed.

3.10.2.3 Irish Hills Coastal Watersheds

The Irish Hills Coastal Watersheds are remote coastal basins located in southern San Luis Obispo County. The drainage rises to a maximum elevation of 1,819 feet above sea level at Saddle Peak. Creeks flow to the Pacific Oceano and has 4 major tributary basins with their headwaters in the Coastal Range Mountains: Hazard Canyon, Islay Creek, Coon Creek, Diablo Creek, Irish Creek, Rattlesnake Creek, Hanford Creek and Wild Cherry Canyon.

The watersheds are dominated by grazing lands some in conservation or agricultural easements and public lands. Other land uses include a regional nuclear power plant, passive recreation, natural resource preservation and limited oil drilling.

3.10.3 Watersheds in WPA 3 – San Luis Obispo / South County

The names and numbers for the USGS HU-12 watersheds in WPA 3 are listed in **Table 3-13**.

Table 3-13: *USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 3 – San Luis Obispo/South County*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
3 - San Luis Obispo / South County	San Luis Obispo Creek	Upper San Luis Obispo Creek	180600060701
		Lower San Luis Obispo Creek	180600060702
	Pismo Creek	Pismo Creek	180600060703
	Arroyo Grande Creek	Lopez Canyon	180600060601
		Upper Arroyo Grande Creek	180600060602
		Tar Spring Creek	180600060603
		Los Berros Creek	180600060604
		Lower Arroyo Grande Creek	180600060605
		Meadow Creek - Frontal Pacific Ocean	180600060705
	Oso Flaco - Black Lake Area	Oso Flaco Creek	180600060704
	Nipomo Creek - Santa Maria River Area	Nipomo Creek	180600080601
		Upper Santa Maria River	180600080602
		Lower Santa Maria River	180600080603

3.10.3.1 San Luis Obispo Creek Watershed

The San Luis Obispo Creek Watershed is a coastal basin located in southern San Luis Obispo County. The drainage rises to a maximum elevation of approximately 2,500 feet above sea level in the Santa Lucia Range. San Luis Obispo Creek flows to the Pacific Ocean and has six major tributary basins: Stenner Creek, Prefumo Creek, Laguna Lake, East Branch San Luis Obispo Creek, Davenport Creek, and See Canyon.

The watershed is dominated by agricultural land uses including ranches and open space. The urban core of the City of San Luis Obispo is at the confluences of several tributaries with the mainstem starting in the upper watershed and bisecting the City. The unincorporated community of Avila Beach is adjacent to the mouth of San Luis Obispo Creek at the Pacific Ocean. Other land uses include the California Polytechnic State University, rural residential, a regional airport and two wastewater treatment plants.

3.10.3.2 Pismo Creek Watershed

The Pismo Creek Watershed is a coastal basin located in southern San Luis Obispo County. The drainage rises to a maximum elevation of almost 2,865 feet above mean sea level. Pismo Creek flows to the Pacific Ocean and has three major tributary basins with their headwaters in the Santa Lucia Mountains: West Corral de Piedra, East Corral de Piedra, and Cañada Verde. A fourth significant tributary, Cuevitas Creek, enters Pismo Creek from the west in lower Price Canyon. The mouth of Pismo Creek is in the dune region known locally as Pismo Beach.

The watershed is dominated by agricultural land uses in its upper reaches including vineyards, ranches and row crops. The urban core of the City of Pismo Beach is adjacent to the Pismo Creek Estuary. Other land uses include a regional landfill, oil exploration and a wastewater treatment plant.

3.10.3.3 Arroyo Grande Creek Watershed

The Arroyo Grande Creek Watershed is a coastal basin located in southern San Luis Obispo County. The drainage rises to a maximum elevation of approximately 3,100 feet above sea level. The watershed includes the tributaries of Tally Ho (Corbett), Tar Springs and Los Berros Creeks. Meadow Creek is a remnant marsh drainage system that enters Arroyo Grande Creek, just upstream of the confluence with the ocean. Arroyo Grande Creek empties into an estuary adjacent to the Oceano lagoon.

The watershed is dominated by agricultural land uses including vineyards, ranches and row crops. The urban core of the City of Arroyo Grande is at the confluence of Tally Ho Creek with Arroyo Grande Creek. Other land uses include Lake Lopez Reservoir and a regional airport in Oceano.

3.10.3.4 Santa Maria River Watershed

The Santa Maria River Watershed is located in southern San Luis Obispo County and northern Santa Barbara County. The watershed includes the major tributaries of the Cuyama and Sisquoc Rivers as well as a number of smaller tributaries. The Santa Maria River (downstream of the confluence with Cuyama and Sisquoc Rivers) rises to a maximum elevation of approximately 390 feet and flows to the Pacific Ocean. Drainage in the watershed is linked to the soils and geology with a dune lake complex, Black Lake Canyon slough, Oso Flaco Creek and portions of the Santa Maria River within the County of San Luis Obispo.

The watershed is dominated by residential and agricultural land uses including ranches, row crops, greenhouses and orchards. Other land uses include recreation and oil refinery.

3.10.3.5 Nipomo – Suey Creeks Watershed

The Nipomo - Suey Creeks Watershed are basins located in southern San Luis Obispo County and northern Santa Barbara County. The watershed rises to a maximum elevation of approximately 1,800 feet above mean sea level. The area includes two tributary basins to the Santa Maria River with their headwaters in the foothills of the Coast Range: Nipomo Creek and Suey Creek.

The watershed is dominated by agricultural land uses including ranches, row crops, greenhouses and orchards. Other land uses include residential.

3.10.4 Watersheds in WPA 4 – Cuyama River

The USGS HU-12 names and numbers for the watersheds in WPA 4 are listed in **Table 3-14**.

***Table 3-14**: USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 4 – Cuyama River*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
4 - Cuyama River	Alamo Creek	Upper Alamo Creek	180600070401
		Lower Alamo Creek	180600070402
	Huasna River	Arroyo Seco	180600070501
		Upper Huasna River	180600070502
		Carrie Creek	180600070503
		Huasna Creek	180600070504
		Lower Huasna River	180600070505
	Cuyama River	Tennison Canyon - Cuyama River	180600070203
		The Wash	180600070204
		New River - Cuyama River	180600070208
		Bitter Creek - Cuyama River	180600070209
		Schoolhouse Canyon - Cuyama River	180600070302
		Red Rock Canyon	180600070303
		Powell Canyon	180600070304
		Cottonwood Canyon - Cuyama River	180600070305
		Mustang Canyon - Cuyama River	180600070306
		Carrizo Canyon	180600070601
		Sycamore Creek - Cuyama River	180600070602
		Aliso Creek-Cuyama River	180600070604
		Twitchell Reservoir - Cuyama River	180600070605
		Canada de Los Coches - Cuyama River	180600070606

3.10.4.1 Alamo Creek Watershed

The Alamo Creek Watershed is an inland basin located in southern San Luis Obispo County. The drainage rises to a maximum elevation of approximately 3,800 feet above sea level. Alamo Creek flows to the Cuyama River at Twitchell Reservoir. Twitchell dam is downstream in the Cuyama Watershed, but its presence affects habitats, hydrology, and land use in Alamo Creek Watershed. Major tributary basins with their headwaters in the La Panza Mountain Range: Little Jollo, Sheep, Kennel, Los Machos, and Branch Creeks.

The watershed is dominated by the Los Padres National Forest which permits recreation including camping, hunting, and off-highway vehicle uses. The watershed also has agricultural land uses.

3.10.4.2 Huasna River Watershed

The Huasna River Watershed is an inland basin located in southern San Luis Obispo County. The drainage rises to a maximum elevation of approximately 3,000 feet above sea level. Huasna River flows to the Cuyama River at the downstream end of the Huasna River watershed above Twitchell Dam, which is in the Cuyama River Watershed downstream. Huasna River watershed has a number of tributary basins with their headwaters in the Santa Lucia and La Panza Mountain Ranges: Huasna Creek, Carrie Creek, Haystack Creek and Arroyo Seco Creek.

Agriculture is the principal land use in the area, ranging from small irrigated farms to large cattle ranches. A substantial portion of the area consists of hilly and mountainous land with chaparral and oak woodlands, suitable only for limited grazing. Other land uses includes oil exploration and recreation on. the Los Padres National Forest.

3.10.4.3 Cuyama River Watershed

The Cuyama River Watershed starts in Ventura County. The river generally flows northward, and then in a westerly direction to a point of confluence with the Sisquoc River near the town of Garey where it joins the Santa Maria River. The San Luis Obispo County line approximately follows the Cuyama River. A portion of the northern tributaries and part of the Cuyama River are within the southwestern part of San Luis Obispo County. These northern tributaries rise to a maximum elevation of almost 4,950 feet above sea level at Caliente Mountain with their headwaters in the La Panza and Caliente Mountain Ranges.

Twitchell Reservoir is near the downstream end of the Cuyama River Watershed, formed behind Twitchell Dam.

The watershed is dominated by rural and agricultural land uses including ranches, orchards, vineyards and row crops. Other land uses include oil and gas production, Los Padres National Forest and Bureau of Land Management lands.

3.10.5 Watersheds in WPA 5 – North County

Table 3-15 lists the USGS HU-12 watersheds located in WPA 5.

Table 3-15: *USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 5 – North County.*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
5 - North County	Upper San Juan Creek	Big Spring	180600040101
		Barrett Creek - San Juan Creek	180600040102
		Rogers Creek - San Juan Creek	180600040103
		Placer Creek -San Juan Creek	180600040104
		Navajo Creek	180600040105
		Sandy Canyon	180600040106
		Carnaza Creek - San Juan Creek	180600040107
	Lower San Juan Creek	Long Canyon - San Juan Creek	180600040301
		Shell Creek	180600040302
		Gillis Canyon -San Juan Creek	180600040303
		McDonald Canyon - San Juan Creek	180600040304
	Cholame Creek	(unnamed)	180600040205
		Middle Cholame Creek	180600040206
		Lower Cholame Creek	180600040207
	Estrella River	Indian Creek	180600040401
		McMillan Canyon - Estrella River	180600040402
		Shimmin Canyon	180600040403
		Mason Canyon	180600040404
		Pine Creek - Estrella River	180600040405
		Hog Canyon	180600040406
		Keyes Canyon - Estrella River	180600040407
		Ranchito Canyon	180600040408
		San Jacinto Creek	180600040409
		Town of Estrella - Estrella River	180600040410
	Upper Salinas River - Santa Margarita Area	Pozo Creek	180600050101
		Big Spring - Salinas River	180600050102
		Toro Creek - Salinas River	180600050103
		San Margarita Lake - Salinas River	180600050104
	Mid Salinas River - Atascadero Area	Rinconada Creek	180600050201
		Santa Margarita Creek	180600050202
		Pilitas Creek - Salinas River	180600050203
		Atascadero Creek	180600050204
		Paloma Creek - Salinas River	180600050205

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
	Huer Huero Creek	East Branch Huer Huero Creek	180600050301
		Middle Branch Huer Huero Creek	180600050302
		(unnamed)	180600050303
		Upper Huer Huero Creek	180600050304
		(unnamed)	180600050305
		Dry Creek	180600050306
		Lower Huer Huero Creek	180600050307
	Lower Salinas River - Paso Robles Area	Santa Rita Creek	180600050401
		Paso Robles Creek	180600050402
		Graves Creek - Salinas River	180600050403
		Town of Templeton - Salinas River	180600050404
		Mustard Creek - Salinas River	180600050405
		San Marcos Creek	180600050406
		Bridge Canyon - Salinas River	180600050407
		Vineyard Canyon	180600050801
		Portuguese Canyon - Salinas River	180600050802
	Nacimiento Area	Little Burnett Creek	180600050605
		Salmon Creek - Nacimiento River	180600050606
		Town Spring	180600050607
		Las Tablas Creek	180600050608
		Kavanaugh Creek - Nacimiento River	180600050609
		Nacimiento Reservoir - Nacimiento River	180600050610
		Nacimiento River	180600050611
		Harris Creek	180600050709
		San Antonio Reservoir- San Antonio River	180600050710
		Kemp Canyon - San Antonio River	180600050711

3.10.5.1 Upper San Juan Creek Watershed

The Upper San Juan Creek Watershed is located in the eastern portion of the County directly adjacent to the Carrizo Plain. The headwaters are located in the La Panza range with the highest point at approximately 3900-feet. The confluence of San Juan Creek with the Estrella River occurs north of Creston. San Juan Creek, a permanent stream, affords recreational possibilities. The mountain slopes are excellent for hiking and riding. Wildlife is abundant, and geology and natural vegetation are of special interest. A spectacular view of the Carrizo Plain is provided from these mountains. The San Juan Creek Valley is generally used most intensively because of better soils and water availability. Irrigated production has increased during the last 10 years, particularly in vineyards and alfalfa. Dry farming and grazing operations encompass the rest of the agricultural uses.

3.10.5.2 Lower San Juan Creek Watershed

The Lower San Juan Creek watershed is located in the eastern portion of the county to the north-west of the Carrizo Plains. The headwaters are located in the La Panza range with the highest point at approximately 3600-feet. The confluence of San Juan Creek with the Estrella River occurs north of Creston. The dominant land use is agriculture. The San Juan Creek Valley is generally used most intensively for agriculture because of better soils and water availability. Irrigated production has increased during the last 10 years, particularly in vineyards and alfalfa. Dry farming and grazing operations encompass the rest of the agricultural uses. The riparian forest and a portion of the adjacent upland areas associated with the Estrella River and San Juan Creek in the vicinity of Shandon are important wildlife habitat for the San Joaquin kit fox, Western burrowing owl and other wildlife species, and serve as important corridors for wildlife movement. Another important wildlife movement corridor is located near the base of the hillside near the eastern edge of Shandon.

3.10.5.3 Cholame Creek Watershed

The Cholame Watershed is located in the North easterly portion of San Luis Obispo County and crosses the county line entering Monterey County to the North. 47,300 acres of the total 151,701 acres are located in SLO County. The watershed is drained by Cholame Creek and its tributaries southeastward and westward into the Estrella River (a tributary to the Salinas River)

with the confluence of the Estrella River and Cholame Creek occurring at the town of Shandon. The Cholame Creek watershed is a lightly-populated rural setting and drains into an alluvial valley and surrounding mountains within an ecosystem characterized of grassland, chaparral, oak woodland, and sagebrush and minor amounts of cropland, primarily consisting of grain or hay crops. The dominant land use is agriculture. The area around Shandon Valley is generally used most intensively for agriculture because of better soils and water availability. Irrigated production has increased during the last 10 years, particularly in vineyards and alfalfa. Dry farming and grazing operations encompass the rest of the agricultural uses. The highest watershed elevation within the County limits is at approximately 2,476-feet with the lowest elevation occurring at approximately 1,017-feet. The watersheds headwaters are in Diablo Range in Monterey County.

3.10.5.4 Estrella River Watershed

The Estrella River watershed is located in the Northern part of the County east of the Salinas River. A portion of the watershed is located in Monterey County with a majority of the acreage located within SLO County. The Estrella River is a perennial underground flowing river that is a tributary of the Salinas River. The Estrella River forms from the confluence of San Juan Creek and Cholame Creek near Shandon, in the foothills of the Coast Ranges. The confluence of the Salinas and Estrella Rivers occurs in Northern San Luis Obispo County, within the town of San Miguel. The highest elevation in the watershed is approximately 2,854 feet, and the lowest elevation is around 607 feet. Vineyards slightly predominate over oak woodlands and grassland communities. Tree species such as blue oak, and valley oak dominate the oak woodland, while western sycamore, Fremont's cottonwood, and willows are found in the riparian woodlands along the Estrella River. Agriculture is the dominant use. The Estrella River Valley is generally used most intensively for agriculture because of better soils and water availability. Irrigated production has increased during the last 10 years, particularly in vineyards and alfalfa. Dry farming and grazing operations encompass the rest of the agricultural uses.

3.10.5.5 Upper Salinas River - Santa Margarita Area Watershed

The Upper Salinas River – Santa Margarita Area Watershed is located in northern San Luis Obispo County and includes a portion of the Salinas River and adjacent tributaries. The drainage rises to a maximum elevation of approximately 2,800 feet above mean sea level with steep topography categorizing much of the western portion of the watershed. The watershed contains two major drainages; Atascadero Creek and Parole Canyon. The watershed contains a mix of urban and rural residential land uses as well as agricultural land uses. A portion of the Los Padres National Forest is also contained within the watershed along the western boundary. The City of Atascadero is located at the northern end of the watershed boundary and the community of Santa Margarita is located within the central and southern portions of the watershed. Other land uses include two quarries, Atascadero Lake, and a wastewater treatment plant. Water supply for the watershed area is dominated by wells, including those used by the Atascadero Mutual Water Company to supply urban residents and commercial uses.

3.10.5.6 Mid Salinas - Atascadero Creek Area Watersheds

The Atascadero Creek - Mid Salinas Watershed is located in northern San Luis Obispo County and includes a portion of the Salinas River and adjacent tributaries. The drainage rises to a maximum elevation of approximately 2,800 feet above mean sea level with steep topography categorizing much of the western portion of the watershed. The watershed contains two major drainages; Atascadero Lake and Parole Canyon. The watershed contains a mix of urban and rural residential land uses as well as agricultural land uses. A portion of the Los Padres National Forest is also contained within the watershed along the western boundary. The City of Atascadero is located at the northern end of the watershed boundary and the community of Santa Margarita is located within the central and southern portions of the watershed. Other land uses include two quarries, Atascadero Lake, and a wastewater treatment plant. Water supply for the watershed area is dominated by wells, including those used by the Atascadero Mutual Water Company to supply urban residents and commercial uses.

3.10.5.7 Huer Huero Creek Watershed

The Huer Huero watershed is located in the eastern portion of San Luis Obispo's North County region. The Huer Huero creek is an ephemeral underground stream which flows to directly to the Salinas River. The headwaters occur in the Coast Ranges, south of Creston and reach elevations of approximately 3312 feet. The confluence of the Huer Huero with the Salinas River occurs in Paso Robles. The dominant land use in the watershed is agriculture, with vineyards comprising a large percentage. The watershed is divided into two main drainages, the Upper Huer Huero and the Lower Huer Huero. Highway 41 East bisects the watershed. A portion of the Los Padres National Forest is located in the southeast portion of the watershed and contains the highest elevations in the watershed.

3.10.5.8 Lower Salinas-Paso Robles Creek Area Watershed

The portion of the Salinas River Watershed classified here is located centrally within San Luis Obispo's North County region and encompasses Paso Robles Creek. A majority of the City of Paso Robles, approximately one-half of the City of Atascadero (northern portion), the town of San Miguel, and the community of Templeton are all located within this watershed. It is within this watershed that most development has occurred along the Salinas River, both urban and rural agricultural. The western portion of the watershed is characterized by higher elevations with more dense oak woodlands whereas east of the Salinas River is characterized by more rolling hills and terraces. The peak elevation within the watershed occurs at the westernmost boundary reaching approximately 2,460 feet. The sub-watersheds drain toward the Salinas River. The northern portion of the watershed contains the point at which the Salinas River leaves San Luis Obispo County and flows into Monterey County. The headwaters are in the Coast Ranges, east of city of Paso Robles. The dominant land use is agriculture with a strong urban component located adjacent to the Salinas River. As urban uses are located next to the Salinas, multiple river crossings occur in this watershed and the 101 freeway parallels the Salinas River in many locations.

3.10.5.9 Nacimiento River Watershed

The Nacimiento River Watershed is located at the northern boundary of San Luis Obispo County with a few sub-watersheds located in Monterey County. For the purposes of this snapshot, only those sub-watersheds within SLO County are included in this data compilation. This watershed also contains 6,578 acres of land from the San Antonio Watershed, however, the area within the County is relatively small and best categorized with its neighboring Nacimiento Watershed for the purposes of this project. The Nacimiento Watershed contains Lake Nacimiento, the largest reservoir in San Luis Obispo County totaling 2.26 square miles. The highest elevation in the watershed occurs in the Santa Lucia Range, within the Los Padres National Forest, reaching approximately 3,560 feet above sea level. Lake Nacimiento supplies water to the Salinas Valley and, as of 2010, supplies supplemental water to some communities in San Luis Obispo County. The dominant land use is agriculture with a majority of land used for rural grazing activities.

3.10.6 Watersheds in WPA 6 – Carrizo Plain

A list of each of the USGS HU-12 watersheds found in the Carrizo Plain WPA 6 is found in **Table 3-16**.

***Table 3-16**: USGS Hydraulic Unit 12 (HU-12) Watershed Designations for WPA 6 – Carrizo Plain*

WPA	San Luis Obispo County Localized Watershed Group Name	USGS HU-12 Name	USGS HU-12 Number
6 - Carrizo Plain	Soda Lake	Carrizo Plain - Soda Lake	180600030203
		Thompson Spring - Carrizo Plain	180600030202
		Mustang Springs - Carrizo Plain	180600030201
	Black Sulphur Spring	Black Sulphur Spring - Carrizo Plain	180600030102
		Padrones Spring - Carrizo Plain	180600030101

3.10.6.1 Black Sulphur Spring Watershed

The Black Sulphur Spring Watershed lies in the eastern portion of San Luis Obispo's North County region and includes the southern portion of the Carrizo National Monument. The total watershed area is approximately 143,160 acres with a majority of the acreage located within San Luis Obispo County (137,489 acres). The remaining acreage is located within Kern County to the East. The watershed is bounded by Temblor Range to the east, Caliente Range and San Juan Hills to the west and drains entirely into Soda Lake. The Black Sulphur Watershed contains two major drainages: the Caliente Range and Elkhorn Plain. The highest elevation in the watershed is about 3,411 feet and the lowest elevation is approximately 1,919 feet. The watershed, like the adjacent Soda Lake watershed is an alkali endorheic (closed) basin with no outflow beyond Soda Lake. While the lake once contained higher levels of water and supported recreation and fishing uses, recently the lake has not had enough water flow to support such uses. The watershed is transected by San Andreas Fault. The groundwater basin underlying the watershed is the Carrizo Plain basin which is recharged from percolation of stream flow and infiltration of precipitation. Users of the basin include a small public water system serving local school, agricultural and residential purposes, and solar farms. The dominant land use is rangeland.

3.10.6.2 Soda Lake Watershed

The Soda Lake Watershed lies in the eastern portion of San Luis Obispo's North County region and includes the northern portion of the Carrizo National Monument. The total watershed area is 141,876 acres with a majority of the acreage located within San Luis Obispo County (136,015 acres). The remaining acreage is located within Kern County to the east. The watershed is bounded by Temblor Range to the east, Caliente Range and San Juan Hills to the west and drains entirely into Soda Lake. The majority of Soda Lake is contained within the watershed, with the other portion contained within the Black Sulphur Springs watershed. The Watershed contains two major drainages: Panorama Hills and West of Soda Lake. The highest elevation in the watershed is approximately 4,100 feet and the

lowest elevation is about 1,920 feet. The watershed, combined with the adjacent Black Sulphur Spring watershed, is an alkali endorheic (closed) basin with no outflow beyond Soda Lake. While the lake once contained higher levels of water and supported recreation and fishing uses, recently the lake has not had enough water flow to support such uses. The watershed is transected by San Andreas Fault. The major groundwater basin underlying the watershed is the Carrizo Plain basin which is recharged from percolation of stream flow and infiltration of precipitation. The dominant land use is agriculture.

3.11 Regional Water Quality

This section of the Plan discusses regional water quality conditions and identifies needs and requirements for water quality protection and improvement. Assembly Bill 1249, an amendment to the California Water Code (Salas, Chapter 717, Statutes of 2014), provides the following guidance for Integrated Regional Water Management Plans:

> *If an area within the boundaries of the plan has nitrate, arsenic, perchlorate, or hexavalent chromium contamination, the plan shall include a description of each of the following:*
>
> *(A) The location and extent of that contamination in the region.*
> *(B) The impacts caused by the contamination to communities within the region.*
> *(C) Existing efforts being undertaken in the region to address the impacts.*
> *(D) Any additional efforts needed to address the impacts.*

3.11.1 SWRCB Water Quality Evaluation

Assembly Bill 2222 (Caballero, Chapter 670, Statutes of 2008) required the State Water Resources Control Board (SWRCB) to submit a report to the State Legislature identifying communities that rely on contaminated groundwater as a primary source of drinking water and outlining potential solutions for treatment or acquisition of alternative water supplies. In collaboration with the California Department of Public Health (CDPH) and Department of Water Resources (DWR), the SWCRB evaluated principal contaminants detected in the groundwater supply of California community water systems (CSWs).

The SWRCB's 2013 Report, titled "Communities That Rely on a Contaminated Groundwater Source for Drinking Water" expands on any CWS that (1) receives, at minimum, a portion of its drinking water from a groundwater source and (2) has had a principal contaminant or chemical detected in its groundwater source above a primary maximum contaminant level (MCL) on two or more occasions between 2002 and 2010. Developed by the SWRCB, MCLs are health-based standards for the maximum allowable concentrations of contaminants in drinking water. For the Report to the Legislature, the SWRCB used data from the CDPH Division of Drinking Water and Environmental Management water quality monitoring database for a compliance cycle of

2002 to 2010. The methodology used to evaluate regional water quality for this IRWM Plan Update was based on the procedures used by the SWRCB in their 2013 Report.

3.11.2 IRWM Water Quality Analysis

The 2018 IRWM Plan Update investigates regional nitrate, arsenic, perchlorate, and hexavalent chromium contamination of active, groundwater-reliant CWSs from 2007 to 2017. Data used for identification of SLO County CWSs was obtained from the Drinking Water Watch's Safe Drinking Water Information System (SDWIS).

The SDWIS database was queried for all active CWSs in SLO County and provided the name, water system number, and water source information for each of the CWSs. Following definitions outlined in the SWCRB Report, if a CWS draws groundwater from a single well as part of its supply, the water system is understood as groundwater-reliant. If a CWS draws solely from groundwater wells, the water system is considered completely, or 100%, groundwater-reliant.

The water quality data used for this evaluation was obtained from the SWRCB's GeoTracker GAMA information system. The nitrate, arsenic, perchlorate, and hexavalent chromium levels from 2007 to 2017 were examined for SLO County Public Water System Wells. The Public Water System Wells dataset includes well identification number, approximate longitude and latitude, chemical concentration, and sampling dates; this information is available to the public and can be downloaded from the GeoTracker GAMA online map. For this analysis, a contaminated water system contains at least one active drinking-water well where a contaminant (nitrate, arsenic, perchlorate, or hexavalent chromium) was detected with a concentration above an MCL one or more times between 2007 and 2017.

Between the four contaminants, a total of 239 active CWS wells within the SLO Region were sampled and evaluated between 2007 and 2017. A summary of the active CWS wells sampled is provided in **Table 3-17**. Sixty-one active CWS wells were detected with contaminant concentrations above an MCL for one of the four contaminants at least one time during the period of review.

Table 3-17: *Summary of Active Community Water System Wells Sampled for Nitrate, Arsenic, Perchlorate and Hexavalent Chromium between 2007 and 2017*

Contaminant	Number of Wells Sampled	Number of Contaminated Wells
Nitrate	233	39
Arsenic	218	19
Perchlorate	221	1
Hexavalent Chromium	193	3
Total	**239**	**61**

The well sampling data was compared with the information on active CWSs to identify groundwater-reliant CWSs with contaminated groundwater sources. A summary of these results is shown in **Table 3-18**. From 2007 to 2017, testing for each contaminant was conducted for over 50 CWSs at one or more of their supply wells.

Table 3-18: *Summary of Contaminated, Groundwater-Reliant Community Water Systems from 2007 to 2017*

Contaminant	Number of Groundwater-Reliant CWS Evaluated	Number of CWS Reliant on Contaminated Groundwater Source	Number of CWS 100% Reliant on a Contaminated Groundwater Source
Nitrate	58	14	9
Arsenic	60	12	9
Perchlorate	60	1	1
Hexavalent Chromium	54	3	2

3.11.3 Nitrate

Nitrate has a current MCL of 10 mg/L (milligrams per liter). Fourteen groundwater-reliant CWSs had wells with one or more nitrate detections above the MCL between 2007 and 2017. Of those CWSs, nine were identified as completely reliant on a contaminated groundwater source. The active CWSs that have been impacted by nitrate contamination are summarized in

Table 3-19. The sampling dates shown in the table note the most recent (as of December 31, 2017) detection of a concentration above the MCL for an active well operated by the CWS. The Los Osos Groundwater Basin has been under a comprehensive Basin Plan since January 2015, after a stipulated judgement was rendered by the Superior Court of California. The key components of this basin plan and the annual monitoring reports are to track and combat the effects of seawater intrusion and elevated nitrate concentrations.

Table 3-19: *Active Community Water Systems Impacted by Nitrate (NO_3^-)*

Community Water System	PWS Number	Population Served	No. of Wells with [NO_3^-] >MCL	Last Sampling Date with [NO3-] >MCL
City of Arroyo Grande	4010001	17,064	1	9/4/2010
City of Morro Bay	4010011	10,327	10	12/5/2017
Golden State Water Company - Cypress Ridge	4010040	2,582	7	12/28/2017
Golden State Water Company - Los Osos	4010017	8,844	2	10/28/2015
Golden State Water Company - Nipomo	4010018	4,904	3	12/27/2017
Grover Beach Water Department	4010004	13,156	3	10/6/2015
Halcyon Water System	4000501	105	1	10/12/2017
Higuera Apartments	4000563	30	1	6/29/2017
Los Osos Basin Plan Area*	n/a	14,159	5	10/12/2017
Nipomo CSD	4010026	12,512	1	1/25/2017
Rancho Colina Mobile Home Park	4000653	250	3	12/1/2017

S & T Mutual Water Company	4000523	575	2	11/13/2017
San Miguel CSD	4010010	2,300	1	2/3/2009
Templeton CSD	4010019	6,800	1	9/5/2017
Woodland Park Mutual Water Company	4000506	500	2	10/6/2017

**Note: The Los Osos Basin Plan uses 5 wells to establish a "Nitrate Metric". See the Basin Plan and Annual Reports for more information.*

3.11.3.1 Impacts and Solutions

If consumed, nitrate poses the biggest risk to infants; adults are rarely exposed to levels that could cause unwanted health effects. According to the CDC Public Health Statement for Nitrate and Nitrite, when infants less than six months old consume water contaminated by nitrates, methemoglobinemia is common. Methemoglobinemia disrupts the ability of the hemoglobin to delivery oxygen to tissues.

Arroyo Grande and Grover Beach both use treatment methods to remove nitrates from water before it is delivered for potable uses.

Nipomo CSD has been investigating alternative effluent disposal methods that could be used to mitigate the nitrate levels of its groundwater supply.

Templeton CSD has experienced nitrate, arsenic, and perchlorate concentrations exceeding the respective MCLs between 2007 and 2017. To combat these contaminants, Templeton developed a plan for a conjunctive use project, which received Prop 84 Implementation Grant funding in 2015. The project involves the upgrade of the Meadowbrook Wastewater Treatment Plant to increase its capacity and allow for tertiary treatment of water. Treated effluent can then be released to infiltration ponds increasing the Salinas River underflows and improving groundwater quality.

3.11.4 Arsenic

Arsenic has a current MCL of 10 µg/L (micrograms per liter). Twelve CWSs were identified as reliant on a groundwater source contaminated by arsenic, and nine of those are completely reliant of groundwater. These CWSs are summarized in **Table 3-20**.

Table 3-20: *Active Community Water Systems Impacted by Arsenic (As)*

Community Water System	PWS Number	Population Served	No. of Wells with [As] >MCL	Last Sampling Date with [As] > MCL
Almira Water Association	4000631	40	1	10/23/2017
Avila Valley Mutual Water Company	4000716	65	1	5/11/2011
Bella Vista Mobile Lodge	4000512	200	2	8/12/2014
City of Paso Robles	4010007	30,522	3	6/7/2016
Country Hills Estates	4000637	60	1	12/21/2017

CSA 23 - Santa Margarita	4010024	1,259	1	2/6/2017
Edna Ranch Mutual Water Company - East	4000202	60	1	9/14/2011
H2O, Inc.	4000741	60	1	2/28/2011
Nipomo CSD	4010026	12,512	1	4/22/2015
Rim Rock Water Company	4000750	55	1	11/17/2017
San Miguel CSD	4010010	2,300	1	8/29/2017
Templeton CSD	4010019	6,800	5	12/12/2017

3.11.4.1 Impacts and Solutions

Arsenic is a naturally occurring substance and is commonly found in groundwater at low concentrations. As reported in the CDC's Public Health Statement on Arsenic, inorganic arsenic is a known toxic to humans and can be fatal if consumed in large doses. If consumed in lower doses, it can cause stomach and intestine irritation. Inorganic arsenic is also a recognized human carcinogen by the EPA.

Due in part to the poor quality of the groundwater, Avila Valley Mutual Water Company relies heavily upon its surface water supplies and only uses groundwater as an emergency supply.

In the past 10 years, arsenic levels above the MCL have been measured in three of the City of Paso Robles's wells; the most recent of these measurements was in 2016. The City has increased the use of microfiltration well heads to remove water contaminants from its groundwater. Paso Robles has also increased its use of water from Nacimiento Reservoir to help improve groundwater quality.

3.11.5 Perchlorate

Perchlorate has a current MCL of 6 µg/L. Templeton Community Services District (CSD) operates one well with a perchlorate concentration measured at 20 µg/L in 2008. Templeton CSD serves a population of 6,800 and is completely reliant on a contaminated groundwater source. In response to water quality issues, Templeton is implementing a conjunctive use program described in **Section 3.11.3.1** above.

It should be noted that the results for two other wells were reported with a limit of detection exceeding the MCL of 6 µg/L. For this analysis, if the reported perchlorate concentration was less than the limit of detection, it was assumed the groundwater source did not exceed the drinking water standard.

According to the CDC Public Health Statement for Perchlorates, perchlorate consumption disrupts the ability of the thyroid to uptake iodine. This can block the thyroid's production of hormones disrupting body functions regulated by those hormones.

3.11.6 Hexavalent Chromium

In a media release on August 1st, 2017, the SWRCB reported adoption of a resolution to remove the MCL for hexavalent chromium (10 µg/L) found in drinking water. This action follows an order by the Superior Court of Sacramento County, which found the hexavalent chromium MCL invalid due to a failure of the SWRCB to consider if the MCL was economically feasible. The SWRCB is working to address these concerns and plans to develop a new MCL by 2019.

This evaluation was based on the hexavalent chromium MCL of 10 µg/L, which was in place when the 2016 IRWM Plan Guidelines were released. Three active CWS wells were identified with one or more hexavalent chromium concentration detections above the MCL. Of the three groundwater-reliant CWSs affected by hexavalent chromium contamination, two were identified as completely reliant on a contaminated groundwater source. The active CWSs impacted by hexavalent chromium are summarized in **Table 3-21**.

Table 3-21: *Active Community Water Systems Impacted by Hexavalent Chromium (Cr^{+6})*

Community Water System	PWS Number	Population Served	No. of Wells with [Cr^{+6}] >MCL	Last Sampling Date with [Cr^{+6}] >MCL
City of San Luis Obispo	4010009	45,802	1	11/13/2014
Hidden Hills Mobilodge	4000632	55	1	9/6/2017
Los Osos CSD	4010016	7,086	1	12/7/2015

3.11.6.1 Impacts and Solutions

Based on the Public Health Statement for Chromium, the primary concern associated with chromium (VI) is its carcinogenic properties. Consumption and inhalation of chromium (VI) has been shown to cause lung cancer along with various other forms of cancer. Consumption of chromium (VI) can also cause irritation and ulcers in the stomach and small intestine. Additionally, male animals exposed to chromium (VI) experience damage to their reproductive systems.

Hexavalent chromium concentrations have forced the City of SLO to stop using its Pacific Beach Well and Fire Station #4 Well. While the City of SLO continues to use groundwater as needed, groundwater contamination has led the City to eliminate groundwater from its long-term water supply calculations.

3.11.7 Salt and Nutrient Management Planning Efforts

Four efforts have taken place to better understand local basins and how to prioritize limited capacities to the highest priority areas. These efforts included:

1. Identification and Prioritization of Basins in the Region Requiring SNMPs
2. The Paso Robles Groundwater Basin SNMP

3. Santa Maria Groundwater Basin Characterization – Phase I for the development of an SNMP
4. Los Osos Basin SNMP – Final draft complete and submitted to the State Water Board for Review in January 2018. Review is pending.

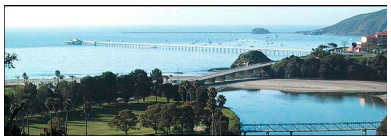
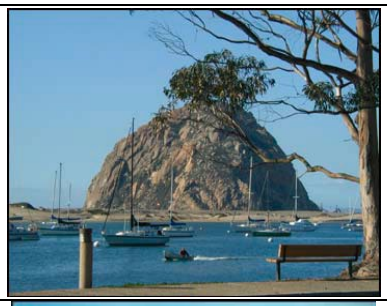
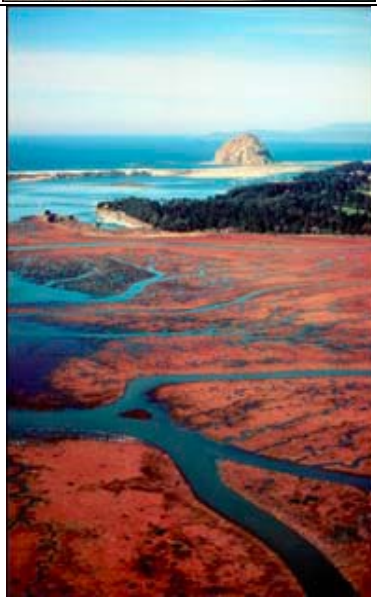
The first three documents were funded by a Proposition 84 2012 Planning Grant. The San Luis Obispo Flood Control and Water Conservation District was the lead agency for developing each of these reports.

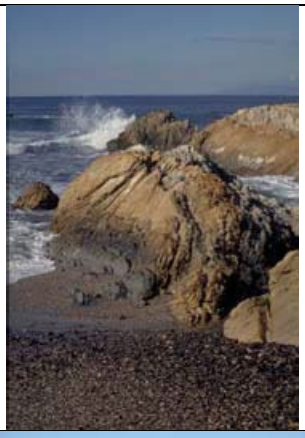
3.12 Environmental Resources

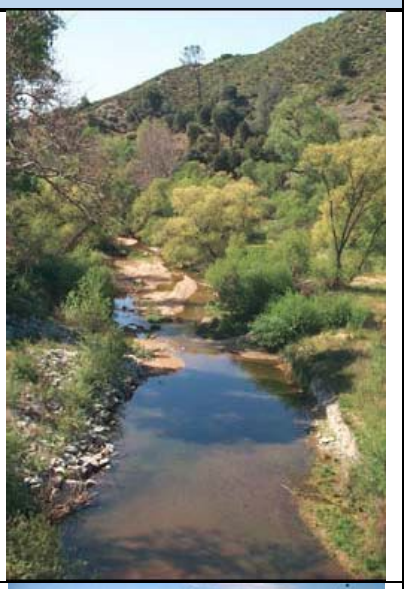
The various environmental resources identified throughout the region are described in **Table 3-22**.

Table 3-22: *Environmental Resources Throughout the IRWM Region*

Environmental Resource	Description	Image
San Luis Obispo Coastal Zone spanning 118 miles of coastline with numerous wide sandy beaches, sheltered bays, and vista pints offering scenic views of the Pacific Ocean.	The coastal zone of San Luis Obispo County is known throughout the state for its beauty and diversity. The north coast is characterized by the rugged headlands to Big Sur. The rocky shoreline along the Hearst Ranch is highly valued for offshore views of marine mammals as well as scenic cliffs and rocky points. The beach, sandspit, and extensive wetlands of Morro Bay form a unique setting for wetland habitat study. The sheltered coves and beaches of Avila Beach and Pismo Beach state parks provide a contrast to the marine terrace and offshore rocks of the north coast shoreline.	
80 miles of beaches and more than 50 public coastal access areas	William Randolph Hearst Memorial State Beach San Simeon State Beach Moonstone Beach Cayucos Beach Cayucos State Beach Morro Strand State Beach Atascadero Beach Montano de Oro State Park Port San Luis Pier and Beach Avila State Beach Pismo State Beach Harmony Headlands State Park Oceano Dunes State Vehicles Recreation Area	

Environmental Resource	Description	Image
Critical Coastal Areas (CCAs)	California's Critical Coastal Area (CCA) Program focuses efforts on coastal zone watershed areas in critical need of protection from polluted runoff. Morro Bay, Chorro Creek, Los Osos Creek, and San Luis Obispo Creek have been designated as CCAs in the region. The state has selected the Salinas River and San Luis Obispo Creek to be priority CCAs for the Central Coast Region.	 **Mouth of San Luis Obispo Creek**
Morro Rock Ecological Preserve, Bird Sanctuary, and Heron Rookery	Morro Bay is one of the most significant migratory stops on the Pacific Flyway. The City of Morro Bay is a designated bird sanctuary. Morro Rock is one of the few known nesting sites for Peregrine Falcons on the coast north of the Channel Islands. The Heron Rookery is a dense stand of tall eucalyptus trees overlooking Morro Bay and is the biggest great blue heron rookery along the Central Coast.	
Morro Bay National Estuary	The most important wetland on the California central coast. The Morro Bay estuary supports several biotic communities including coastal salt marsh, tidal mudflats, and coastal scrub.	 **From the Morro Bay National Estuary Program**
Monterey Bay National Marine Sanctuary	The Monterey Bay National Marine Sanctuary (MBNMS) is a Federally protected marine area off the shore of California's central coast. Stretching from Marin to Cambria, the MBNMS supports one of the world's most diverse marine ecosystems and is home to numerous mammals, seabirds, fishes, invertebrates and plants in a remarkably productive coastal environment.	

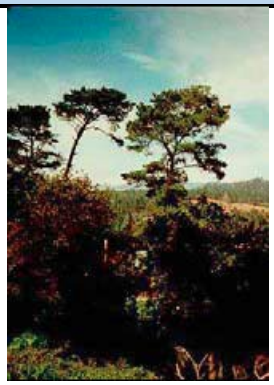
Environmental Resource	Description	Image
Hearst Ranch Conservation Project	With 82,000 acres reaching from the ocean, over the Santa Lucia Mountain Range and to Lake Nacimiento, the Ranch contains extraordinary natural resources. Its 18 miles of coastline includes the spectacular San Simeon Point, beach habitat for elephant seals, the renowned "Windsurfers" beach, surfing beaches and the Piedras Blancas Light Station. The Ranch is bordered in the north by Los Padres National Forest and Fort Hunter Liggett. The Ranch interior encompasses rolling grasslands, oak and pine forests, and numerous riparian areas including the Arroyo San Carpoforo, Arroyo de La Cruz and its 42 square mile watershed, Pico Creek and Little Pico Creek.	 **From the American Land Conservancy**
Montano de Oro State Park	This state park includes a seven-mile long shoreline made up of sandy beaches along the sand spit to the north and rugged cliffs and headlands to the south. The central and southern part of the park features a number of small coves with sandy beaches. The park includes more than 8,000 acres, is largely undeveloped, and features a wide range of wildlife including rabbits, squirrels, skunks, raccoons, badgers, deer, fox, bobcats, coyote, and even an occasional mountain lion. There are also many kinds of birds, and in the spring and early summer a brilliant display of wildflowers.	
Sweet Springs Ecological Preserve	A saltwater marsh which is an unusual combination of a tidal salt marsh and a freshwater spring which is adjacent to and flows into Morro Bay. The Preserve is used as a feeding and resting area by many species of shorebirds and water fowl.	
Estero Bluffs State Park	The Estero Bluffs State Park is a rich, diverse, and particularly scenic area of the Pacific Ocean coast, with sea stacks and intertidal areas, a substantial area of wetlands, low bluffs and coastal terraces punctuated by a number of perennial and intermittent streams and containing a pocket cove and beach at Villa Creek. The property's rich diversity of habitat types includes marine, intertidal, estuarine, riverine, coastal salt marsh, freshwater marsh, coastal foredune, coastal and riparian scrub and grassland, collectively providing habitat for a number of endangered species, including the snowy plover.	

Environmental Resource	Description	Image
Upper Salinas River	The Salinas River has the reputation of being the largest submerged stream in the United States.	
Santa Maria River	The Santa Maria River lies in both Santa Barbara and San Luis Obispo County. Though only high tides inundate the estuary, 35 acres of salt marsh are present.	 **Mouth of Santa Maria River**
Guadalupe-Nipomo Dunes wetland complex	The largest Coastal dune ecosystem in the Western US, the Guadalupe-Nipomo Dunes preserve comprises 18 miles of the largest, most biodiverse, coastal dune-lagoon ecosystem on earth. With 1,400 known species of birds, plants and animals and with the highest sand dune on the west coast, it is a place of rare beauty and significance.	
Oso Flaco Lake Natural Reserve, Nipomo Dunes and the Dune Lakes	Oso Flaco Lake is a sensitive coastal dune habitat and wetland area that provides important wildlife habitat including habitat for the rare and endangered Least Tern. The Dune Lakes are a series of ten freshwater lakes located in the hollows of the Nipomo Dunes. These lakes are important to birds in the Pacific flyway and provide important nesting areas for water fowl and other marsh associated species. The area is in agricultural preserve to protect farmland and wildlife habitat.	

Environmental Resource	Description	Image
Groundwater basins	Paso Robles Groundwater Basin* Morro and Chorro Valley Groundwater Basins* Santa Maria Groundwater Basin* Los Oso Valley Groundwater Basin* Santa Rosa Creek Groundwater Basin* San Simeon Creek Groundwater Basin* San Luis Obispo Creek Groundwater Basin* Cuyama Valley Groundwater Basin*	
Four major drinking water reservoirs	Whale Rock Reservoir*, Salinas Reservoir*, Nacimiento Reservoir*, and Lopez Lake*	
Whale Rock Reservoir	Whale Rock Reservoir is a 40,662-acre foot reservoir created by the construction an earthen dam on Old Creek near the town of Cayucos. The dam was designed and constructed by the State Department of Water Resources in 1961 to provide water to the City of San Luis Obispo, Cal Poly State University and California Men's Colony. The Whale Rock Dam captures water from a 20.6 square mile watershed and water is delivered to the three agencies through 17.6 miles of 30-inch pipeline and two pumping stations.	
Lake Nacimiento	Lake Nacimiento is a water conservation and flood control project and has recreational resource of with inter-regional significance. Bald eagles are often sited here. The Nacimiento Dam was constructed in 1957 by Monterey County Flood Control and Water Conservation District (now known as the Monterey County Water Resources Agency (MCWRA)). The dam and reservoir continue to be operated by MCWRA. The lake has a capacity of 377,900-acre feet and a surface area of 5,727 acres. Water is collected from a watershed that is comprised of grazing lands and rugged wilderness.	
Lopez Lake	The San Luis Obispo County Flood Control and Water Conservation District completed the Lopez Dam in 1968 to provide a reliable water supply for agricultural and municipal needs. Lopez Lake covers 950 surface acres of water and has 22 miles of oak covered shoreline. Bald eagles are sited here.	
Santa Margarita Lake (Salinas Reservoir)	The Salinas Dam was built in 1941 by the War Department to supply water to Camp San Luis Obispo and, secondarily, to meet the water needs of the San Luis Obispo. The Salinas Reservoir (Santa Margarita Lake) captures water from a 112 square mile watershed and can currently store up to 23,843 acre-feet. Bald eagles are often sited here.	

Environmental Resource	Description	Image
Los Padres National Forest	Los Padres National Forest encompasses nearly two million acres in the coastal mountains of central California. Endangered California condors are found in Los Padres National Forest.	
Carrizo Plains National Monument and Ecological Reserve and Soda Lake	The 180,000-acre Carrizo Plain National Monument is California's largest nature preserve with more endangered vertebrates than any other place in California. In the spring, an amazing display of native wildflower blooms can be seen. Soda Lake is an ephemeral alkaline wetland that is all that remains of a prehistoric sea. One of the largest undisturbed alkali wetlands in the state, the 3,000-acre lake provides important habitat for migratory birds, including shorebirds, waterfowl, and a quarter of the state's wintering sandhill crane population.	
Santa Lucia Wilderness	20,412 acres of wilderness located inland from Arroyo Grande and San Luis Obispo include chaparral-covered peaks, stream fed valleys, and the vista of Morro Rock and seven of the nine volcanic morros that mark the region.	
Machesna Mountain Wilderness	Pine crowned peaks, majestic rocky crags and views of the snowcapped Sierras characterize the Machesna Wilderness. The 20,000-acre wilderness became part of the National Wilderness System in 1984. Chaparral oak woodlands and conifer forests blanket its rugged terrain. The Wilderness also contains a 1,500-acre Research Natural Area dedicated to the study of a unique strain of Coulter pine. Prairie falcon, deer, mountain lions, black bear, and tule elk make their home in the undisturbed landscape. Part of the wilderness is designated critical habitat for the California condor.	
Caliente Wildlife Area	Caliente Mountain, the highest peak in the county at more than 5,100 feet, is within the range of the endangered California Condor, the blunt nosed leopard lizard, and the rare San Joaquin kit fox.	 **View of Caliente Mountain proposed wilderness from the Carrizo Plain**

Environmental Resource	Description	Image
Greenbelts and Open Spaces	San Luis Obispo Greenbelt Program Los Osos Greenbelt	
Irish Hills Natural Reserve	The Irish Hills Natural Reserve contains a coastal terrace, Bishop pine and oak forests, and scenic canyons with waterfalls. The coastal terrace both north and south of Diablo Canyon supports a variety of coastal species that differ from other coastal areas. One of the largest conifer forests and some of the largest oaks in the county are located here. Ruda Ranch is located in the Irish Hills and includes a unique plant community.	
Nine Sisters of San Luis Obispo	Nine volcanic morros spanning from San Luis Obispo to Morro Bay including Morro Rock, Black Hill, Cabrillo Peak, Hollister Peak, Cerro Romauldo, Chumash Peak, Bishop Peak, San Luis Mountain, and Islay Hill. The Morros provide a unique habitat for many animal and plant species. Several plant communities exist along the chain, which, due to its orientation, has micro climates ranging from sea-spray saturated rocks, through moss draped oak forests to parched chaparral slopes.	 **Photo courtesy of Gary Felsman and the Santa Lucia Chapter of the Sierra Club**
San Andreas Fault Zone of Eastern San Luis Obispo County	The sag ponds along the fault have special ecological significance due to the extraordinary preservation of the fault trace in the arid climate and the presence of special status plants.	
More than 50 hiking trails	Some examples include the California Coastal Trail (in progress), the East-West Ranch, the Pecho Valley Trail, and Reservoir Canyon Trail.	
Elfin Forest	The Elfin Forest Natural Area on the southeastern shore of Morro Bay is a diverse and complex assemblage of natural plant communities that includes coastal brackish marsh, riparian woodland fringe, pygmy oak woodland, grassland, coastal dune scrub and oak manzanita association. It supports a documented 25 species of mammals, over 110 kinds of birds, and 11 species of reptiles and amphibians.	
Los Osos Oaks State Reserve	85-acre area located near the town of Los Osos that contains a grove of coast live oaks including some mature oaks that are no more than six to eight feet in height. These dwarfed oaks grow in the mineral depleted soil of ancient sand dunes. A wide range of plants and animal diversity can be seen here including three kinds of lichens not found elsewhere.	 **Photo courtesy of Gary Felsman and the Santa Lucia Chapter of the Sierra Club**

Environmental Resource	Description	Image
Cambria Monterey Pine Forest	Cambria's Monterey pine forest, one of only three native stands left in the state, five in the world	 **Photo courtesy of Greenspace the Cambria Land Trust**
Knobcone Pine Forest	The Knobcone pine (Pinus attenuate) is restricted to an area at the Cuesta summit. Coulter pine (Pinus coulteri) is also in this area.	
Upper Salinas Oak Woodlands	Seven distinct native plant communities provide wildlife habitat. These communities include valley oak woodland, blue oak woodland, Central Coast live oak riparian forest, Central Coast cottonwood-sycamore riparian forest, Central Coast riparian scrub, freshwater seeps, and Claypan vernal pools.	
Agricultural preserves	The county's rich agricultural resources are protected through a variety of activities in the Agricultural Resources Program. Nearly 1.3 million acres (over 61%) of the land area of the county is designated for agricultural land use.	
Class I Steelhead Streams	Arroyo Grande Creek Pismo Creek East Corral de Piedra West Corral de Piedra San Carpoforo Creek Santa Rosa Creek	
Black Lake Canyon	One of the few remaining freshwater marshes in this area used by migratory waterfowl. This unique canyon bisects the Nipomo Mesa and was once part of a stream system that flowed directly into the ocean. Over geologic time, however, the Canyon became isolated from its historic basin. Today, the bottom of the Canyon is still home to unique wetland habitats fed by groundwater and rain. The isolation of the canyon habitats has also encouraged the development of a unique set of plant species. Black Lake Canyon is one of the only known habitat areas that supports the endangered marsh sandwort and the Gambel's watercress.	 **Photo courtesy of the Land Conservancy of San Luis Obispo County**

Environmental Resource	Description	Image
Rocky Butte Botanical Area	This high ridge between Rocky Butte and Monterey County has outstanding botanical value and serves as a valuable scenic backdrop.	
Tierra Redonda Mountain Natural Area	Tierra Redonda Mountain, situated in northwestern San Luis Obispo County between Lake Nacimiento and Lake San Antonio was designated as open space to retain areas with fragile plant or animal communities in a natural or undisturbed state. The dominant plant community is blue-oak woodland. Grassland, chaparral, and unique sand dunes also occur here. One of the largest concentrations of Chorizanthe species in the world is found here. Sensitive plant species include one-awned spineflower, Salinas Valley goldfields, San Luis Obispo County lupine, and ribbonwood. Prairie falcons are also known from this area.	
Cuesta Ridge Botanical Area	Scenic ridge northwest of the Cuesta grade that contains a Sargent cypress grove with a rare local endemic plant, Cuesta Pass checkerbloom (Sidalcea hickmannii ssp. Anomala).	
Rinconada Mine Botanical Area	An outstanding representative foothill woodland community with a wide diversity of species including the rare and endangered Monardella palmeri.	
Fisheries	Morro Bay and Port San Luis are major fishing harbors. Sportfishing is very popular in Lake Nacimiento, Santa Margarita Lake, and Lopez Lake.	

3.13 Climate Change

An in-depth description of the anticipated climate change effects in San Luis Obispo County and the methods used to determine these effects are contained in Section P. Some significant climate change effects for the Region include:

- Increased air and water temperatures
- Decreased annual precipitation
- Increased drought frequency
- Increased storm severity
- Rising sea levels
- Increased risk of wildfires
- Increased evapotranspiration

While most of these effects will pertain to the entire County, the resources, assets, and systems impacted by climate change will vary. For that reason, descriptions of the anticipated climate change impacts are separated by subregion.

3.13.1 North Coast Sub Region

Climate change could make it increasingly difficult to meet water demand in the North Coast Subregion. As temperatures increase and droughts become more frequent prominent industries such as hotels, wineries, and agriculture can expect increased, and potentially unmet, water demands. The vital tourism industry in this subregion causes an increased seasonal water demand during summer months for several communities including San Simeon, Cambria, and Los Osos. These seasonal water demands correspond to periods of lower groundwater levels and water supplies leaving them vulnerable to the effects of climate change. Three of the most widespread crops in the subregion – grapes, berries, and avocados – are also sensitive to climate change and could experience decreased yields and increased water demands as temperatures and evapotranspiration rates rise.

Important water supplies in the North Coast Subregion include coastal aquifers, Whale Rock Reservoir, and the SWP. Sea level rise and increased drought conditions will put Pico Creek Valley, San Simeon Valley, Chorro Valley, Morro Valley, and Los Osos Valley Basins at a heightened threat of seawater intrusion. Additionally, droughts in the past have caused water delivered through the SWP to have unsuitable salt levels restricting water supplies for the Chorro Valley Water System.

Growing levels of sedimentation, increased runoff, and rising temperatures will all contribute to increased water contamination risks. The Morro Bay Estuary, Chorro Creek, Los Osos Creek, and Warden Creek Watersheds have histories of bacteria impairment and will be especially vulnerable to increased contamination risks. Not only does this have harmful effects on ecosystems, but it also limits important beneficial uses of these water bodies including recreation and oyster harvesting. Additionally, San Simeon and Whale Rock Reservoir have experienced water contamination due to heavy rain events; the risk of contamination from stormwater will only increase as storm severity worsens.

As sea level rises along the North Coast, coastal erosion will become an increasing concern for areas like San Simeon, which already require coastline armoring. Flooding of low-lying areas in San Simeon, Morro Bay, and Los Osos will also become a growing issue as many of these areas already experience flooding during king tides and storm surges. Lastly, sea water intrusion and flooding can disrupt coastal and low-lying habitats including Morro Bay Estuary that are critical for the ecosystems and economies they support.

Along with increased flooding due to sea level rise, increased storm severity will cause a greater risk of flooding for areas throughout the subregion. Cambria, Cayucos, Los Osos, and San Simeon have insufficient flood control facilities for current storm patterns putting them at great risk of worsening flooding in the future.

Ecosystems throughout the North Coast Subregion will be threatened by a variety of climate change effects. One such effect is increased sedimentation and erosion, which has already been observed in the Morro Bay Estuary. Increased sedimentation has contributed to a significant reduction in eelgrass extent, which is vital for fish habitats and overall estuary water quality and is expected to worsen in the future. Threats to water quality described above could similarly disrupt aquatic habitats and restrict economic and recreational uses of these habitats. Activities like tourism, oyster farming, the Morro Bay Winter Bird Festival, and fishing are vital to the communities of this subregion and are threatened by climate change.

3.13.2 North County Sub Region

The wine industry places a defining role in the North County Subregion. Both wineries and vineyards have significant water demands, which are expected to increase as temperatures and evapotranspiration rates increase. This could have serious implications for water supply sources in the subregion, especially groundwater basins. The Paso Robles Basin is a primary water source for multiple communities in the subregion and has been designated as subject to critical conditions of overdraft by DWR[1]. Therefore, increased drought frequency and decreased annual precipitation compounded with growing domestic, industrial, and agricultural water demands creates will make meeting water demand increasingly challenging in this area.

The other major water supply sources for the North County Subregion are the Nacimiento and Salinas Reservoirs. Not only are these reservoirs at risk of increased droughts and declining precipitation trends, but they are also limited in their storage capabilities during periods of surplus supplies. The Nacimiento Reservoir is overseen by Monterey County and San Luis Obispo water contractors have no storage rights. Storage in the Salinas Reservoir is only permitted when there is a live flow in the Salinas River. These conditions will put the subregion at great risk as water supplies become increasingly unreliable.

In addition to threats to water supply, a myriad of climate change effects is anticipated to cause concerns over water quality for the subregion. Both Nacimiento and Salinas Reservoir are located within areas designated as very high fire hazard zones, and as the risk of wildfires increases, the possibility of wildfire-related contamination also increases. Increased temperatures and drought frequency could increase eutrophication in the subregion's water bodies. This concern is magnified by the observation of increased algae growth, elevated nutrient levels, or low dissolved oxygen conditions for Nacimiento and Salinas Reservoirs and across Middle Salinas-Atascadero and Cholame Creek Watersheds during drought conditions. Lastly, increased storm severity could result in increased storm-related contamination for the area's reservoirs and water bodies.

[1] Per DWR's Bulletin 118, Interim Update 2016, page 12. https://water.ca.gov/LegacyFiles/groundwater/bulletin118/docs/Bulletin_118_Interim_Update_2016.pdf

Increased storm severity is also expected to result in an elevated flooding risk for the North County Subregion. This would be particularly concerning for San Miguel, Templeton, and other communities with insufficient flood control facilities. Growing wildfire threats exacerbate the potential risk of harmful flooding events in this subregion.

The North County Subregion is home to ecosystems rich in biodiversity. However, anticipated climate change effects could disrupt critical habitats and other ecosystem services. Sedimentation has already impacted the health of the Salinas River and is expected to increase. Decreased precipitation and increased drought frequency will contribute to declining instream flows and the fragmentation of the Salinas and Estrella Rivers – critical movement corridors for riparian species. Disruption of aquatic habitats and the species they support could also restrict recreational activities and tourism in the area.

3.13.3 South County Sub Region

Some of the key industries in the South County Subregion rely heavily on water for their operations. Rising temperatures, increased evapotranspiration rates, and decreased precipitation could lead to unmet water demand for prominent industries such as oil production, tourism, and agriculture. Specifically, some of the biggest crops for the subregion – strawberries, avocados, and grapes – are climate-sensitive and could have increased irrigation needs as a result of declining soil moisture or increased soil salinity. This issue is magnified by dependence on drought-sensitive groundwater basins, such as the Cuyama Valley and Santa Maria Valley Basins. Past water curtailment efforts in Nipomo, while successful at decreasing water use, have not resulted in a corresponding increase in groundwater levels indicating the vulnerability of this subregion to increased drought frequency.

Groundwater basins in the South County Subregion are not only at risk of accelerating drought frequency, but those along the coast could also experience an increased risk of saltwater intrusion due to sea level rise. The Avila Valley Sub-basin and Santa Maria Valley Basin are two coastal aquifers that serve as water supply sources for the subregion. Another concern for the area is the lack of storage capacity for surplus water supplies. Lopez Reservoir is the primary storage option, but storage is restricted according to the Low Reservoir Response Plan.

Several climate changes effects will create concerns for water quality in the subregion. Increased wildfire risks could cause contamination concerns for water bodies in the area, especially Lopez Reservoir. Increased temperatures and drought frequency are expected to drive greater eutrophication for critical water bodies throughout the subregion. Some of the water bodies that already struggle with eutrophication issues and will be especially vulnerable include Lopez Reservoir, San Luis Obispo Creek, Pismo Creek, and Santa Maria River. Increased storm severity could also become a growing concern for Lopez Reservoir water quality, which is already impacted by storm runoff.

A NOAA tidal gauge at Port San Luis has been monitoring rising sea levels along the County's coastline. As a result of sea level rise, coastal erosion is anticipated to worsen. This will threaten

coastal communities, especially Avila Beach and Pismo Beach, which have already been forced to take measures to fight coastal erosion. Sea level rise is also anticipated to cause worsening storms and coastal flooding putting low-lying areas at risk. Pismo Beach and Oceano currently experience flooding during kind tides and storm surges indicating their vulnerability to this threat. The South SLO County Wastewater Treatment Plant along with other critical infrastructure and coastal habitats will all be at risk of hazardous flooding.

Intensifying storm severity will also contribute to a growing flood risk for the entire South County Subregion. This illuminates the threat posed to communities like Oceano and Arroyo Grande that rely on aging flood protection infrastructure, such as the Arroyo Grande Creek Channel and creek channels in downtown San Luis Obispo. Additionally, there are several communities with insufficient flood control facilities within the subregion. For example, insufficient drainage facilities in Nipomo and Oceano will leave them especially vulnerable to worsening flooding.

Aquatic habitats and ecosystems in the South County Subregion provide essential ecological and economic benefits to the area. Increased sedimentation and erosion is anticipated putting Critical Habitats for endangered and threatened species, such as the snowy plover, at risk. Tourism is a critical industry for the subregion and is largely tied to the beaches and aquatic systems in the region, such as Avila Beach, Pismo Beach, and Oceano Dunes.

3.14 IRWM Plan Regional Issues and Conflicts

As discussed in **Section 4 – IRWM Goals and Objectives**, stakeholders were asked to provide input on their Sub-Region's three most critical water resources issues (i.e. major water related objectives and conflicts). **Section 4** also describes how these major water related objectives and conflicts relate to the development of the objectives, implementation strategies, and implementation projects intended to provide resolution. These major water related objectives and conflicts are discussed in more detail herein in the form of a case-study for each Sub Region.

3.14.1 North Coast Sub Region

Figure 4-2 indicates water supply as the issue of greatest concern for the North Coast Sub-Region due to the small coastal communities not having sufficient groundwater supplies or sea water intrusion (the third most important issue) limiting groundwater basins' safe yield.

For example, the coastal communities of Cambria and San Simeon are 100 percent dependent on their respective local watersheds to capture rainfall for groundwater basin recharge and to sustain continuous flows in creeks to feed municipal underflow wells near their outlet to the Pacific Ocean. During dry months and extended drought conditions, Cambria and San Simeon lack sufficient water to meet peak water demands, leaving the community without water for outdoor irrigation and adequate fire flow protection. These communities are isolated from

regional water supplies, making local recycled water, storage and desalination projects the most feasible projects from a supplemental water supply perspective. From a practical perspective, high cost-to-customer ratios, regulatory permitting challenges, and heated public debate about the appropriate approach to water resources management has historically prevented or slowed project development.

Nevertheless, these two communities (as with all North Coast Sub-region communities) have made conservation and drought response a way of life and have developed comprehensive water management plans that include the strategic use of recycled water. San Simeon currently produces recycled water that is trucked for use in the coastal communities. San Simeon's efforts to develop a recycled water distribution system and Cambria's effort to develop a drought response project that involves treating brackish groundwater are examples of objectives for these communities to address the issue.

3.14.2 North County Sub Region

Figure 4-3 indicates the most significant issues for the North County Sub-Region, with groundwater management as the clear priority. While the SGMA planning process is on-going and has been managed by a cooperative committee of the various stakeholder agencies (see **Section 12.4.4**). However, regarding SGMA implementation, the questions of who will make decisions, who will use less, what projects to implement, and who will pay are the subjects of current debate. The multiple (namely agricultural, ecosystem, municipal and rural) water users of this finite resource, the multiple legal ways the resource can be used, and the multiple associated regulations and laws related to use of the resource creates multiple sets of conflicting answers, which are as diverse as the perspectives of the groundwater basin users. Consequently, multiple approaches to finding the answers are underway for the Paso Basin, and generally fall into three categories of effort – SGMA response, land-use based, and court-based - each with their own set of objectives to address the issue.

SGMA: In response the Sustainable Groundwater Management Act (2014), the Paso Basin Cooperative Committee (PBCC) was formed to guide the basin's compliance with SGMA. The PBCC includes the County of San Luis Obispo, the City of Paso Robles, the Shandon-San Juan Water District and San Miguel CSD. The Paso Basin GSP is scheduled for a December 2019 adoption. The most up-to-date information is available at the Paso Robles Basin website: http://www.slocounty.ca.gov/Departments/Public-Works/Committees-Programs/Sustainable-Groundwater-Management-Act-(SGMA)/Paso-Robles-Groundwater-Basin.aspx

Land Use-Based Objectives: In response to declining levels, the County approved an urgency ordinance to establish a moratorium on new or expanded irrigated crop production, conversion of dry farm or grazing land to new or expanded irrigated crop production, and new development dependent upon a well in the Paso Robles Groundwater Basin (Basin) unless such uses offset their total projected water use by a ratio of 1:1. The ordinance also requires the installation of meters on new wells associated with the above uses. The ordinance specifies uses that are not subject to the ordinance and contains exemptions including replacement

wells for any of the prohibited uses. The ordinance applies to all properties located within the unincorporated areas of San Luis Obispo County that overlie the Paso Robles Groundwater Basin except those properties that overlie the Atascadero Sub-Basin, and properties served by County Service Area 16 (Shandon) and the San Miguel Community Services District. The ordinance has since been extended multiple times and it is currently set to expire once the Paso Basin GSP is adopted. However, at the June 18th, 2019 Board of Supervisors meeting, the Board directed staff to produce an extension that would primarily extend the ordinance during the startup phase of SGMA implementation in the basin area.

Court-Based Objectives: A quiet title claim lawsuit has been filed by certain stakeholders that asks the court to affirm the rights of overlying property owners to access basin groundwater. The quiet title claim may be the first step towards an adjudication, in which the court decides who has rights to groundwater in the basin and in what quantity since water purveyors currently depend on water from the basin to serve their customers. These stakeholder groups advocate that court-supervised groundwater management is the most fair and beneficial option for landowners who wish to retain their full water rights under California law. While the process is still on-going, the jury "found that the public water suppliers have established a “prescriptive right” such that they can continue to share in the groundwater supply consistent with historical practice, even during times of shortage.” [2] Quantification of this right has not yet been determined.

3.14.3 South County Sub Regions

Figure 4-3 indicates groundwater management as the issue of greatest concern for the South County Sub-Region due to the challenges of managing the adjudicated Santa Maria Groundwater Basin and water shortage problems, though additional issues of concern relate to flood control (second issue of concern).

The outcome of the adjudication has established certain requirements of the management groups formed, however basin users are still faced with the challenge of increasing competition for a limited resource. Opportunities for integrating water resource management strategies within the Santa Maria Groundwater Basin to address needs exist and are reflected in the various implementation strategies and projects identified in the IRWM Plan for the South County Sub-Region, however funding and affordability remains the major challenge for implementation.

[2] http://www.slocounty.ca.gov/Departments/Administrative-Office/News/Jury-Affirms-Groundwater-Rights-of-Public-Water-Su.aspx

3.15 Disadvantaged Communities

The San Luis Obispo Region is home to many Disadvantaged Communities (DACs), as depicted on **Map 3-15**. **Table 3-23** summarizes the places within the region that qualify as Disadvantaged or are suspected Disadvantaged or Economically Distressed.

The District is in process of complete a Needs Assessment per the Prop. 1 Disadvantaged Communities Involvement Program, which is includes a comprehensive analysis of DAC and suspected DAC communities, including the Census "Block Group" level. This report will detail various water-related conditions and include next steps for the various communities. When complete, this report will be added as **Appendix K.**

Five communities participated in the Prop 1 DAC-Involvement Program. See **Section 10.3.2.2** for more information about the DAC-I program in the San Luis Obispo Region.

Table 3-23: *Disadvantaged Communities and Suspected Disadvantaged Communities / Economically Distressed Areas.*

Community		Geography	County	IRWM region	Median Household Income (MHI) & Population	IRWM / RWMG Involvement
1	San Miguel	Block Group 60790100162	San Luis Obispo	San Luis Obispo County	MHI $49,464 Pop. 2,696	The San Miguel CSD is a member of the RWMG.
2	Shandon	Shandon CSA - CSA 16	San Luis Obispo	San Luis Obispo County	Income survey in progress Pop. 1,295	The community is represented by the County of San Luis Obispo in the RWMG.
3	Santa Margarita	Santa Margarita CDP	San Luis Obispo	San Luis Obispo County	MHI $50,083 Pop. 1,346	The community is represented by the County of San Luis Obispo in the RWMG.
4	Morro Bay	City of Morro Bay	San Luis Obispo	San Luis Obispo County	MHI $53,348 Pop. 10,519	The City of Morro Bay is a member of the RWMG.
5	Grover Beach	City of Grover Beach	San Luis Obispo	San Luis Obispo County	MHI $58,895 Pop. 13,156	The City of Grover Beach is a member of the RWMG.

Community		Geography	County	IRWM region	Median Household Income (MHI) & Population	IRWM / RWMG Involvement
6	San Simeon	San Simeon CDP	San Luis Obispo	San Luis Obispo County	MHI $48,875* Pop. 462	San Simeon CSD is a member of the RWMG.
7	San Luis Obispo	City of San Luis Obispo	San Luis Obispo	San Luis Obispo County	MHI $47,777 Pop. 46,716	The City of San Luis Obispo is a member of the RWMG.
8	Oceano	Oceano CSD	San Luis Obispo	San Luis Obispo County	MHI $39,000 Pop. 7530	Oceano CSD is a member of the RWMG.
9	California Valley	Block Group 60790127021	San Luis Obispo	San Luis Obispo County	MHI $48,636 Pop. 843	Indirectly, via County of San Luis Obispo and the SLO Flood Control and Water Conservation District.

**denotes 2014 value.*

3.16 Tribal History

For centuries (see **Table 3-24**), San Luis Obispo County was the heart of Chumash and Salinan Native American country. The Chumash and Salinan Tribes had a rich culture and were excellent craftspeople and artists. Exploration of the land by Europeans began in 1769 at the command of Gaspar de Portola of Spain. With Portola came the Franciscan friars to begin founding the California missions. Following the independence of Mexico and the secularization of the missions, the Central Coast entered the period of the rancheros. Many names of towns and places derive from these Spanish rancheros. San Luis Obispo was claimed for the United States in 1846. In 1850, California was admitted to the United States, and San Luis Obispo became one of the original counties.

A severe drought gripped the state in 1862 to 1864 resulting in the devastation of much of the region's cattle industry. Several wet seasons followed which prompted immigration to the County and the emergence of the dairy industry. By the 1870's, San Luis Obispo County began to transform from a poor, remote, and sometimes violent outpost of rural California to a locale prized for its diverse and spectacular topography, breathtaking scenery, and rich farms and

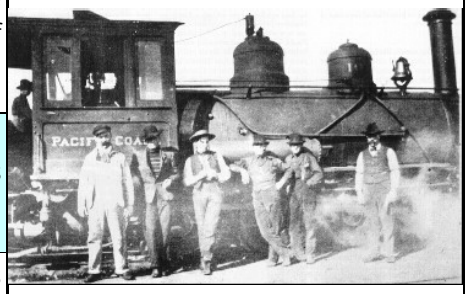
mines. The 1880s and 1890s brought the railroad that connected San Luis Obispo with San Francisco and Los Angeles.

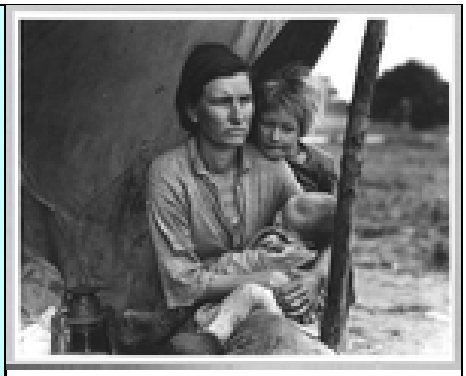
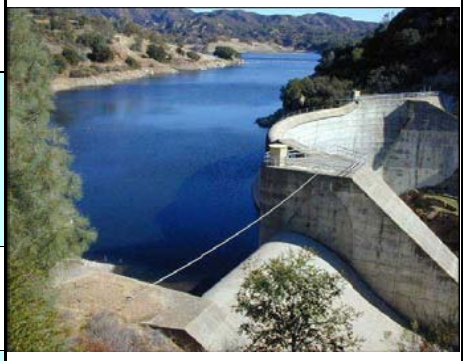
Throughout the 1900's San Luis Obispo County remained largely an agricultural county. The World Wars and the Korean War brought economic growth to San Luis Obispo County as local suppliers supported the war effort. The second half of the century was punctuated with infrastructure projects needed to support post-war population increases.

Presently, over 260,000 residents enjoy San Luis Obispo County's central coast location. With the ocean and mountains, the Spanish and historical flavor, and the mild climate, San Luis Obispo County provides an enviable quality of life for residents and tourists.

Table 3-24: San Luis Obispo County Historical Timeline and Images from the Past

Key Events in History	
10,000 years ago	The area was inhabited by Chumash and Salinan Native Americans.
1542	The Spanish explorer Juan Rodriquez Cabrillo discovered Morro Rock during his exploration of the California Coast.
1587-1602	Portuguese explorers Pedro de Unamuno and Sebastian Rodriquez Cermeno and Basque explorer Sebastian Vizcaino came to the county.
1769	Spanish explorer Gaspar de Portola arrived by land.
1772	Father Junipero Serra established Mission San Luis Obispo de Tolosa.
1797	Father Fermin Francisco de Lasuen founded Mission San Miguel Arcangel at San Miquel.=
1822	Mexico gained possession of all California from Spain beginning the great land grant period that divided the land into huge ranchos.
1837	Mexican land grants were granted from secularized mission lands and the great adobes were built.
1846	General John Fremont took the city of San Luis Obispo from the Mexican government and governed briefly with his Bear Flag government.

1849	During the Gold Rush many people traveled through the county on their way north to the goldfields.	
1850	California was admitted to the United States as the 31st state in the Union. San Luis Obispo became one of the original 27 counties. The population of the county was 336 persons almost all of whom were Spanish speaking and lived on the great ranchos.	
1862-1864	The Great Drought brought mass cattle starvation and ended the cattle industry as it had existed during the Mexican ranchos era.	
1870s	The cinnabar mining rush begins in the Cambria area and dairy farms predominate in Edna Valley and along the coast. The region begins to transform from a poor, remote and sometimes violent outpost of rural California to a locale prized for its diverse and spectacular topography, breathtaking scenery, and rich farms and mines. Dairy and mining commerce generated the need for improved modes of transportation.	
1880s and 1890	The Southern Pacific Railroad was built between San Francisco and Los Angeles. In 1894 San Luis Obispo could be reached by rail.	
1901	California State Polytechnic College was established.	
1914-1918	During World War I, many County farmers turned to the production of navy beans, since these were subsidized by the War Relief Administration. In those days before reliable refrigeration, beans could be shipped to the troops in Europe without spoiling, and the County's economy boomed.	
1919-1947	The Hearst Castle was built.	
1923	Highway 1 was completed connecting coastal areas to San Luis Obispo	
1925	The Motel Inn in San Luis Obispo, the first motel in the world.	

1930s	The County's agricultural diversity shielded it from the worst of the Great Depression of the 1930s. There were difficult times, however, for many of those who came from other areas looking for work. It was near a migrant camp in Nipomo that photographer Dorothea Lange, working for the Farm Security Administration, took her famous photograph entitled "Migrant Mother." The County benefited from such Depression-era federal programs as the Works Progress Administration (WPA) and the Civilian Conservation Corps (CCC). Through the involvement of these agencies, the County received a new Courthouse, flood-control projects, and highway improvements.	
1941-1942	With the onset of World War II, the County's transportation links and open land areas were deemed useful by the U.S. War Department, which located training camps in the area: Camp Roberts and Camp San Luis Obispo, as well as a naval training base at Morro Bay and a Coast Guard station near Cambria. These camps brought nearly 100,000 military personnel.	
1942	Santa Margarita Dam was built by the Army Corps of Engineers to supply water for Camp San Luis Obispo. The water from the lake was never used for that purpose however.	
1955	Pacific Gas and Electric Power Plant was completed in Morro Bay.	
1960	Whale Rock Dam was completed, the first major dam designed and constructed by DWR.	
1968	San Luis Obispo County Flood Control and Water Conservation District completed the Lopez Dam to provide a reliable water supply for agriculture and municipalities south county.	
1985	Pacific Gas and Electric Company's Diablo Canyon Nuclear Power Plant begins operations.	
1994 - 1995	Morro Bay was designated as the first State Estuary and was accepted into the National Estuary Program.	

1997	The 100-mile-long Coastal Branch of the State Water Project was completed to transport State Water Project water to Santa Barbara and San Luis Obispo Counties.	
2004	The Environmental Impact Report was certified for the Nacimiento Project to bring water from Lake Nacimiento to Paso Robles, Templeton, Atascadero, and San Luis Obispo.	

Taken from**:** The Library Associates, A Vast Pastoral Domain: San Luis Obispo County in the 1870s, Santa Barbara Chumash Museum, Mission San Luis Obispo de Tolosa, <http://www.historyinslocounty.com/Links.htm>, San Luis Obispo County Historical Society

3.16.1 Salinan Tribe of Monterey and San Luis Obispo

The Salinan Tribe currently has 371 certified ancestors listed with 400 more seeking federal recognition. They have a Tribal Business Council that meets twice a month and a general meeting every second Sunday of the month. As a legal Tribe Government, they qualify under Senate Bill 18; requiring cities and counties to conduct consultations with California Native American tribes.

3.16.2 Northern Chumash Tribe of San Luis Obispo

The Northern Chumash Tribal Council (NCTC) is organized as a non-profit corporation under the guidelines of the state of California Senate Bill 18. The NCTC provides a foundation for the Chumash people of San Luis Obispo County to sustain the culture and heritage of the Tribe. The NCTC states that they have "over 20,000 years of habitation in San Luis Obispo County."

Today the NCTC is involved in consultation with County and Local Governments to improve cultural resources, to bring awareness in the need for quality of archaeology in siting and constructing new projects, and to be a part of the decision-making process for land use issues in San Luis Obispo County. This offers a more complete project analysis for the protection of "Cultural Places and Sacred Sites". NCTC also works with the development community to assist in the planning process so that we better understand each-others' concerns.

The NCTC is also looking at self-sustainability through working within the community. NCTC has leased land to start organic farming practices and strives to be self-reliant through agriculture and businesses in the community (vs. casino). They are of the belief that property should be preserved in its natural state to tell the story of the Chumash people.

The NCTC provided responses to the 2018 Tribal questionnaire and it is included in **Appendix D – Native American Tribal Outreach.**

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