

# CHAPTER 1

## ADMINISTRATIVE INFORMATION

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### 1.1 PURPOSE OF THE GROUNDWATER SUSTAINABILITY PLAN

The Fox Canyon Groundwater Management Agency (FCGMA), acting as the Groundwater Sustainability Agency (GSA) for the Las Posas Valley Basin (LPVB), has developed this Groundwater Sustainability Plan (GSP) in compliance with the 2014 Sustainable Groundwater Management Act (SGMA) (California Water Code, Section 10720 et seq.). This GSP has been developed to apply to the entirety of the LPVB, including those portions of the LPVB that lie outside FCGMA's jurisdictional boundary, primarily consisting of fringe areas of the LPVB. The County of Ventura (County) and the Camrosa Water District (CWD) have each elected to act as the GSA for portions of the LPVB not within FCGMA's jurisdiction. The County and CWD will rely on this GSP and coordinate with FCGMA as necessary to ensure that the LPVB is sustainably managed in its entirety, in accordance with SGMA.

SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained over a 50-year planning and implementation horizon without causing undesirable results. Undesirable results are defined in SGMA and are summarized here as any of the following effects caused by groundwater conditions occurring throughout the basin:<sup>1</sup>

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply
- Significant and unreasonable reduction of groundwater storage
- Significant and unreasonable seawater intrusion
- Significant and unreasonable degraded water quality
- Significant and unreasonable land subsidence
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water

As described in Chapter 2, Basin Setting, of this GSP, undesirable results within the LPVB have occurred historically with respect to chronic declines in groundwater level, and significant and unreasonable reduction of groundwater storage. Although direct seawater intrusion has not occurred historically, and is unlikely to occur in the future in the LPVB, groundwater production from the western part of the West Las Posas Management Area (WLPMA) influences groundwater elevations in the Oxnard Subbasin to the west. This influence has the potential to exacerbate

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<sup>1</sup> As defined in SGMA, "basin" means a groundwater basin or subbasin identified and defined in Bulletin 118 or as modified pursuant to California Water Code, Section 10720 et seq. (Basin Boundaries).

seawater intrusion in the Oxnard Subbasin. Portions of the LPVB are experiencing, or under threat of experiencing degraded water quality. Land subsidence has occurred historically in the LPVB and has the potential to occur in the future if groundwater conditions are not managed sustainably. Depletions of interconnected surface water have occurred between the 1970s (the start of Simi Valley discharges) and January 1, 2015, although groundwater elevations in the vicinity of potential Groundwater-Dependent Ecosystems recovered as surface water flows from Simi Valley wastewater treatment plant and dewatering discharges increased along Arroyo Las Posas.

The purpose of this GSP is to define the conditions under which the groundwater resources of the entire LPVB, which support agricultural, municipal and industrial (M&I), and environmental uses, will be managed sustainably in the future. The adoption of this GSP represents the first step in achieving groundwater sustainability within the LPVB by 2040 as required by SGMA. Over the next 20 years, data will continue to be gathered and used to refine the estimated sustainable yield and potential paths for achieving sustainability set forth in the following chapters. As the understanding of the LPVB improves, this GSP will be updated to reflect the new understanding of the LPVB. This GSP outlines a plan for annual reporting and periodic (5-year) evaluations (Chapter 1); characterizes groundwater conditions, trends, and the cumulative impacts of groundwater pumping for each of the SGMA-defined sustainability indicators (Chapter 2); establishes minimum thresholds, measurable objectives and interim milestones by which sustainability can be measured and tracked (Chapter 3, Sustainable Management Criteria); outlines the monitoring network used to support and document progress toward sustainability (Chapter 4, Monitoring Networks); and identifies projects and management actions to be implemented by the GSA and/or stakeholders to minimize undesirable results (Chapter 5, Projects and Management Actions). This GSP documents a viable path, determined by the GSA in collaboration with stakeholders, and informed by the best available information, to achieving the sustainability goal within the LPVB.

## **1.2 AGENCY INFORMATION**

### **1.2.1 Agency Name**

Fox Canyon Groundwater Management Agency (FCGMA or Agency)

### **1.2.2 Agency Address**

#### **Mailing Address:**

Fox Canyon Groundwater Management Agency  
800 South Victoria Avenue  
Ventura, California 93009-1610

**Office Location:**

Ventura County Government Center  
Hall of Administration  
800 South Victoria Avenue  
Ventura, California 93009

**1.2.3 Organization and Management Structure**

FCGMA is governed by five Board of Directors (Board) members who represent (1) the County of Ventura (County), (2) the United Water Conservation District (UWCD), (3) the mutual water companies and water districts within FCGMA (Alta Mutual Water Company, Pleasant Valley County Water District, Berylwood Mutual Water Company, Calleguas Municipal Water District (CMWD), CWD, Zone Mutual Water Company, and Del Norte Mutual Water Company), (4) the five incorporated cities within FCGMA (Ventura, Oxnard, Camarillo, Port Hueneme, and Moorpark), and (5) the farmers. Four of these Board members, representing the County, UWCD, the mutual water companies and water districts, and the incorporated cities, are appointed by their respective organizations or groups. The representative for the farmers is appointed by the other four seated Board members from a list of candidates jointly supplied by the Ventura County Farm Bureau and the Ventura County Agricultural Association. An alternate Board member is selected by each appointing agency or group in the same manner as the regular member to act in place of the regular member in case of absence or inability to act.

All members and alternates serve for a 2-year term of office, or until the member or alternate is no longer an eligible official of the member agency. All Board members and alternates serve on a volunteer basis and no compensation is provided for attendance at FCGMA meetings or events. Information regarding current FCGMA Board representatives can be found on the Agency's website (FCGMA 2019a).

Extractors within FCGMA jurisdiction are subject to the Agency's GSPs, ordinances, and policies created for the sustainable management of groundwater. These actions are administered by the Agency Executive Officer, who is appointed by the FCGMA Board. The Agency Executive Officer and other FCGMA staff are provided by the County of Ventura Public Works Agency pursuant to a contract with the County of Ventura. FCGMA does not construct, operate, or maintain capital facilities but does have the authority to adopt ordinances requiring registration of groundwater wells, requiring reporting of groundwater use, regulating groundwater extractions, and requiring fees. FCGMA contracts with the County of Ventura to provide staff to support FCGMA (FCGMA 2019b).

### 1.2.4 Plan Manager

Executive Officer of FCGMA, Jeff Pratt, PE

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**Email:** Jeff.Pratt@ventura.org

**Mailing Address:**

Fox Canyon Groundwater Management Agency  
800 South Victoria Avenue  
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### 1.2.5 Legal Authority

FCGMA is an independent special district formed by the California Legislature in 1982 to manage and protect the aquifers within its jurisdiction for the common benefit of the public and all agricultural, domestic, and M&I users (FCGMA et al. 2007). FCGMA's jurisdiction was established as the area overlying the FCA and includes portions of the Oxnard Subbasin and the LPVB, the PVB, and the Arroyo Santa Rosa Valley Basin. FCGMA may adopt ordinances for the purpose of regulating, conserving, managing, and controlling the use and extraction of groundwater within its territory (Fox Canyon Groundwater Management Agency Act [FCGMA Act], Section 403).

The FCGMA Act prohibits the Agency from engaging in water supply activities normally and historically undertaken by its member agencies. Nonetheless, FCGMA may exercise the water supply powers and authorities authorized under SGMA provided the Board makes a finding that FCGMA is otherwise unable to sustainably manage the basin. The full text of the FCGMA Act, Assembly Bill 2995, as well as amendments and additional legislation, can be accessed on the Agency's website (FCGMA 2019c). FCGMA is identified in SGMA as an agency created by statute to manage groundwater that is the exclusive GSA within its territory with powers to comply with SGMA (SGMA, Section 10723[c][1][D]). FCGMA notified the California Department of Water Resources (DWR) of its intent to undertake sustainable groundwater management under SGMA on January 26, 2015.

### 1.2.6 Groundwater Sustainability Plan Implementation and Cost Estimate

This GSP will be implemented by FCGMA. The following sections provide a discussion of the standards for and costs associated with GSP implementation including annual reporting,



periodic updates, monitoring protocols, and projects and management actions. Potential funding sources and mechanisms are presented along with a tentative schedule for implementing the GSP's primary components. In addition, annual reporting and 5-year evaluation procedures for the LPVB are described.

### **1.2.6.1 Standards for Plan Implementation**

#### **Annual Reporting**

The GSA shall submit an annual report to DWR by April 1 of each year following the adoption of the GSP. The annual report shall include the following components for the preceding water year (23 CCR, Section 356.2):

- General information, including an executive summary and a location map depicting the basin covered by the report
- A detailed description and graphical representation of
  - Groundwater elevation data from wells identified in the monitoring network
  - Groundwater extraction for the preceding water year
  - Change in groundwater in storage
  - Surface water supply used or available for use
  - Total water use
- A description of progress towards implementing the Plan, including achieving interim milestones, and implementation of projects or management actions since the previous annual report

The description and graphical representation of groundwater elevations will include groundwater elevation contour maps for each principal aquifer in the LPVB illustrating, at a minimum, the seasonal high and seasonal low groundwater conditions. Additionally, hydrographs of groundwater elevations and water year type using historical data to the greatest extent available, including from January 1, 2015, to current reporting year, will be included in the annual report. As described in Section 1.2.6.2, Data Collection, Validation, and Analysis, relevant data collected by entities within the PVB are regularly provided FCGMA and will be used to prepare the annual reports submitted to DWR.

The description and graphical representation of change in groundwater storage will include a graph depicting water year type, groundwater use, the annual change in groundwater in storage, and the cumulative change in groundwater in storage for the LPVB based on historical data to the greatest extent available, including from January 1, 2015, to the current reporting year.

### **Five-Year Evaluation**

FCGMA will evaluate the GSP at least every 5 years. This 5-year evaluation will be provided as a written assessment to DWR. The assessment shall describe whether the Plan implementation, including implementation of projects and management actions, are meeting the sustainability goal in the basin. The evaluation will include the following:

- A description of current groundwater conditions for each applicable sustainability indicator relative to measurable objectives, interim milestones, and minimum thresholds
- A description of the implementation of any projects or management actions, and the effect on groundwater conditions resulting from those projects or management actions
- Revisions, if any, to the basin setting, management areas, or the identification of undesirable results and the setting of minimum thresholds and measurable objectives
- An evaluation of the basin setting in light of significant new information or changes in water use, and an explanation of any significant changes
- A description of the monitoring network within the basin, including whether data gaps exist, or any areas within the basin are represented by data that does not satisfy the requirements of the GSP Regulations (23 CCR, Sections 352.4 and 354.34[c])
- A description of significant new information that has been made available since GSP adoption, amendment, or the last 5-year assessment
- A description of relevant actions taken by the Agency, including a summary of regulations or ordinances related to the GSP
- Information describing any enforcement or legal actions taken by the Agency in furtherance of the sustainability goal for the basin
- A description of completed or proposed GSP amendments
- A summary of coordination that occurred between FCGMA and other agencies, if appropriate, in the LPVB, as well as between FCGMA and other agencies in hydrologically connected basins

#### **1.2.6.2 GSP Implementation Budget**

The primary costs associated with implementing the GSP are anticipated to be connected with the following:

- Data collection, validation, and analysis
- Ongoing data gap analysis and assessments of priorities for filling data gaps
  - Filling of data gaps

- Operations and maintenance
- Annual report preparation and preparation of the 5-year GSP evaluation
- Regional studies for basin optimization, groundwater modeling
- Management, administration, and other costs

### **Data Collection, Validation, and Analysis**

FCGMA has historically obtained data from the Ventura County Watershed Protection District (VCWPD) to monitor streamflow, precipitation, groundwater elevation, and groundwater quality throughout the LPVB. Besides VCWPD, other entities that monitor groundwater level and groundwater quality in the LPVB include UWCD, CMWD, and mutual water companies. Relevant data collected by these entities is regularly provided to the VCWPD, and the data are shared with FCGMA for use in the FCGMA annual groundwater reports. This process will continue, but analysis will now include comparison of collected data against sustainable management criteria established by this GSP.

The majority of water level and water quality data in the LPVB are generated by VCWPD and CMWD. To date, this data sharing has not required expenditures from FCGMA because FCGMA did not control the location or timing of data and sample collection. The existing monitoring schedules and locations are discussed in Chapter 4, Monitoring Networks. It is anticipated that as long as the existing schedules are maintained, VCWPD will continue to host the data for the LPVB and FCGMA will be able to use the data for annual monitoring reports and the 5-year GSP evaluations. However, to the degree that monitoring schedules and locations will change, a cost-sharing agreement will be developed between VCWPD and FCGMA.

### **Data Gap Analysis and Priorities**

During the initial 5-year period after the GSP is adopted, FCGMA will explore options for filling data gaps identified in this GSP. The primary data gaps identified in the historical data are spatial and temporal gaps in groundwater elevation and groundwater quality measurements. In order to assess the priorities for filling these gaps, FCGMA plans to review options and potential costs associated with those options to direct funding toward the solutions that are needed most. One option that will be investigated would include adding pressure transducers to existing agricultural wells in the monitoring network. These transducers would record water levels at regular intervals (e.g., hourly) to determine static, or recovered, water levels. The cost for purchasing and installing transducers in agricultural wells must be assessed and incorporated into the cost of GSP implementation. As instrumentation is added to the monitoring network, the annual cost of operations and maintenance will also be factored into the budget for GSP implementation.

In addition to assessing the need for new instrumentation, the analysis of data gaps and priorities will review the potential cost and need to substitute existing agricultural wells in the monitoring network with dedicated monitoring wells, or install monitoring wells in key areas where there are no appropriate wells to monitor. While monitoring wells are often preferred to agricultural wells, for the time being, the agricultural well data provide a link to historical data. This link is critical in assessing progress toward sustainability. Therefore, the data gap analysis and priorities assessment will review which agricultural wells may need to be substituted and which wells should be retained for ongoing historical comparison.

### **Annual Report Preparation and Preparation of the 5-Year Evaluation**

Details of the information that will be included in the annual reports are presented in Section 1.2.6.1, Standards for Plan Implementation. It is currently anticipated that the annual reports will be produced by FCGMA staff and the costs associated with these reports will be incorporated in the annual operating budget of FCGMA.

Every fifth year of GSP implementation and whenever the GSP is amended, the GSA is required to prepare and submit an Agency Evaluation and Assessment Report to DWR together with the annual report for that year. The tasks associated with preparing this report include updating the water budget, updating the groundwater model, and reassessing the sustainable yield, minimum thresholds, and measurable objectives (see Section 1.2.6.1). Additionally, the evaluation will provide an assessment of the pumping allocations. It is currently anticipated that the 5-year evaluation reports will be produced by FCGMA staff with the assistance of consultants and that the costs associated with these reports will be incorporated into the annual operating budget of FCGMA.

### **Basin Optimization Studies, Groundwater Modeling, and Project Feasibility**

During the initial 5-year period after the GSP is adopted, FCGMA will explore opportunities to optimize basin management. The work required to assess these opportunities includes implementing and supporting regional studies and groundwater modeling efforts that assess how to maximize the sustainable yield of the LPVB and the adjoining Oxnard Subbasin. These studies are anticipated to include more detailed feasibility studies of projects that were proposed and modeled for this GSP and potential projects developed during the next 5 years, as well as an investigation of how the projects will be implemented, the costs associated with project implementation, and potential cost-sharing agreements for these projects. Current anticipated costs for implementing projects in the LPVB that were analyzed as part of this GSP are presented in Table 1-1.

In addition, it is anticipated that basin optimization studies will be undertaken in the initial 5-year period after the GSP is adopted to assess projects that were not included in this GSP. This

assessment is expected to include an investigation of how adjustments to the location of groundwater production will maximize the sustainable yield of the combined aquifer systems of the West Las Posas Management Area (WLPMA), the Oxnard Subbasin, and the PVB. Basin optimization investigations are inherently tied to groundwater modeling, which would be conducted to provide the estimated sustainable yield for all scenarios analyzed.

It should be noted that Chapter 5 of this GSP includes projects that were far enough along in development and/or implementation that meaningful information could be included about their potential to improve sustainable management of the Subbasin. Additional projects may be implemented within the next 20 years to, for example, minimize the need for pumping reductions. This GSP does not preclude future projects and/or existing projects that are too early in the stage of development to be included in Chapter 5 from being investigated or undergoing feasibility analysis in the coming years. Relevant information about new projects and/or updates to existing projects described in Chapter 5 will be provided in annual reports and 5-year evaluations.

Lastly, as part of the project feasibility analyses, FCGMA anticipates evaluating potential revenue streams for implementing the projects required to optimize basin management. This analysis will include a review of the potential for implementing basin replenishment fees and the costs associated with proposing and passing such fees.

### **Cost Estimate**

The estimated total GSP implementation costs are presented in Table 1-2. The starting cost for operations and monitoring is estimated to be \$1.5 million for 2020. Costs were increased annually, using a 2.8% inflation rate, from 2020 to 2040 (Table 1-2). The annual reviews to DWR are anticipated to be included as part of the operations and monitoring costs for FCGMA. The management, administration, and other costs for 2020 are based on the 2019–2020 fiscal year budget, in which these costs are estimated to be \$1,455,000.

The 5-year evaluation costs are anticipated to cover the professional specialty services to evaluate and assess the GSP, and perform the additional work necessary to fill data gaps and analyze projects and management actions for the LPVB, as well as for the PVB and the Oxnard Subbasin. FCGMA is the GSA for these three basins and will be responsible for evaluating the GSP for each basin every 5 years. Initial costs for the 5-year evaluation were estimated to be \$100,000 per basin, with 2.8% inflation between 2020 and 2024. Costs for 2025 through 2029 were estimated to be \$100,000 if the work were performed in 2020, but the costs in the budget account for 2.8% annual inflation between 2020 and 2025. Costs between 2030 and 2033 were calculated from the 2.8% annual inflation on \$50,000. Subsequent years were calculated either based on 2.8% inflation on \$100,000, or 2.8% inflation on \$50,000, depending on whether the year included preparation of a physical report for DWR.

Finally, the estimated implementation costs include a 10% contingency on the total operating and monitoring costs, management administration and other costs, and the 5-year evaluation.

### **1.2.6.3 Funding Sources**

FCGMA funds its basic operations using groundwater extraction charges. Surcharges for extractions in excess of an allocation may also be used in carrying out FCGMA's groundwater management functions. FCGMA collects a groundwater extraction fee of \$6 per acre-foot and imposes a surcharge of up to \$1,961 for excess extractions. Together, these pump fees have generated more than \$1 million in operating revenues each fiscal year (ending in June) between 2013 and 2016. FCGMA anticipates using this existing revenue structure, along with eventual implementation of a replenishment fee, to fund the GSP implementation and direct costs.

Under SGMA, FCGMA gained additional authority to impose regulatory fees and currently collects a sustainability fee of \$11 per acre-foot in addition to its groundwater extraction fee. The sustainability fee is projected to generate additional annual revenue of \$1,375,000. The sustainability fee will increase to \$14 per acre-foot in 2020 and generate an additional \$375,000 in annual revenue. Upon adoption of this GSP, FCGMA will have authority to impose replenishment fees and to fund projects and management actions that can influence groundwater supply. Projects to achieve sustainability are anticipated to require funding beyond that generated by the existing extraction and sustainability fees. FCGMA anticipates working with other agencies and stakeholders to understand how individual projects will impact stakeholders and identify the most appropriate funding sources for these projects.

## **1.3 DESCRIPTION OF PLAN AREA**

### **1.3.1 Description**

The LPVB (DWR Groundwater Basin 4-008) is bounded to the north by South Mountain and Oak Ridge; to the northeast and east by the foothills of Big Mountain; to the south by the Springville Fault (western segment of the Simi–Santa Rosa Fault) and the Las Posas Hills; and to the west by the Oxnard Subbasin of the Santa Clara River Valley Basin (Figure 1-1, Vicinity Map for the Las Posas Valley Basin, and Figure 1-2, Administrative Boundaries for the Las Posas Valley Basin). The LPVB ranges in elevation from approximately 100 feet above mean sea level (msl) in the southwest to more than 1,500 feet msl in the northeast.

Although DWR does not recognize any subbasins within the LPVB, FCGMA has recognized the three groundwater subbasins identified by the U.S. Geological Survey (Hanson et al. 2003). These three subbasins, which are referred to as basins rather than subbasins, are based on the location of geologic structures that were thought to affect flow in the FCA and the Grimes Canyon Aquifer (Las Posas Users Group 2012). The local basins/subbasins are named the West, East, and South

Las Posas Basins (Figure 1-2). Local investigators now divide the LPVB into two management areas, rather than three basins/subbasins (CMWD 2017). The area of the WLPMA is the same area as the West Las Posas Basin. The East Las Posas Management Area (ELPMA) comprises the entire eastern portion of the LPVB, including both the East Las Posas Basin and the South Las Posas Basin (Figure 1-2). FCGMA recognized and established these two management areas in 2011 with the adoption of Ordinance No. 8.6 (FCGMA 2019c). In addition, local investigators have identified the Epworth Gravels Aquifer in the northeastern area of the LPVB as a water-bearing geologic unit that is hydrologically isolated from the other aquifers in the basin, based on differences of more than 100 feet in measured groundwater elevations (see Figure 1-2 and Section 2.2, Hydrogeologic Conceptual Model).

The ELPMA, the WLPMA, and the Epworth Gravels are identified as Management Areas for the LPVB in this GSP (see Section 2.5, Management Areas).

In this document, to distinguish between features on the land surface and in the subsurface, the term Las Posas Valley (LPV) will be used to refer to the geographic area overlying the LPVB.

#### **1.3.1.1 Basin Priority**

The California Statewide Groundwater Elevation Monitoring Program (CASGEM) has categorized the LPVB as a high-priority basin.

#### **1.3.1.2 Basin Boundaries and Expansion Area**

The boundary between the LPVB and the Oxnard Subbasin is a jurisdictional boundary, which generally follows the mapped surface expression of the Wright Road Fault. In the Camarillo Hills area, the Springville Fault Zone is believed to form a groundwater flow barrier at depth between the aquifers in the LPVB and the PVB to the south, based on historical hydraulic head differences of up to 60 feet across the fault zone (DWR 1975). However, shallow alluvial deposits in the vicinity of Arroyo Las Posas and the Somis Gap are in hydraulic communication with the PVB (CMWD 2017).

Multiple boundaries have been used to define or manage the LPVB (Figure 1-2), including the following:

1. The boundary of the LPVB defined by DWR in its 2018 Basin Boundary Modification
2. The jurisdictional boundary of FCGMA
3. The boundary of the LPVB historically used by FCGMA (as indicated in the 2007 Update to the Groundwater Management Plan [FCGMA et al. 2007] and annual reports)
4. The boundaries of the LPVB historically used by VCWPD (as indicated in the 2015 Annual Report of Groundwater Conditions [VCWPD 2016b])

The jurisdictional boundary of FCGMA was established based on a vertical projection of the FCA as defined by the FCGMA Act in 1982. As a result, the DWR Bulletin 118 boundary for the LPVB deviates substantially from the FCGMA boundary in three locations (DWR 2019). In 2019, DWR finalized its latest Basin Boundary Modification process, in which the boundaries of the LPVB remained the same as those defined in the 2016 Basin Boundary Modification (DWR 2019).

First, the DWR Bulletin 118 boundary extends beyond the FCGMA jurisdictional boundary to the east because the FCA thins and disappears east of Moorpark. In this area, the County of Ventura has filed to become the GSA for the Las Posas Valley Outlying Areas (see Appendix A, GSA Formation Documentation, to this GSP; Figure 1-2). The jurisdictional area of the Las Posas Valley Outlying Areas GSA also includes small sections of the LPVB on the northern and southern boundaries, where there was a mismatch between the FCGMA boundary and the boundary currently used by DWR (Figure 1-2).

Second, the FCA is also absent in the Las Posas Hills along the southern boundary between the LPVB and the Arroyo Santa Rosa Valley Basin. This area is within the jurisdiction of CWD. CWD has filed to be the Camrosa Water District GSA–Las Posas Valley for this area (see Appendix A; Figure 1-2).

Third, because outcrops of the Santa Barbara and San Pedro Formations (“aquifer outcrops”) occur along the southern face of South Mountain and Oak Ridge, the FCGMA jurisdictional boundary extends beyond the Bulletin 118 boundary to the northeast (Figure 1-2). These aquifer outcrops are managed as areas that directly recharge the Lower Aquifer System (Las Posas Users Group 2012; FCGMA 1987).

To manage these aquifer outcrops and their watersheds, FCGMA passed Ordinance 4 in July 1987 (and subsequently Ordinances No. 4.1 in June 1995, 4.2 in October 1995, 4.3 in March 2001, 8 in June 2002, and 8.8 in January 2015, each of which superseded the previous code versions). The Ordinance Code established the “Expansion Area” (Figure 1-2), which is defined as follows (FCGMA Ordinance Code, last amended January 9, 2015):

**“Expansion Area”** means that portion of land beyond the outer limits of the Agency Boundary in the West, East, and South Las Posas Basins that lies between the Agency Boundary and the crest of the hill or 1.5 miles beyond the Agency Boundary as defined by Map Number Two, entitled Fox Canyon Outcrop, Las Posas Basin, 1995.

Groundwater extraction and land use within the Expansion Area is regulated in order to protect groundwater resources.



Although not identical, the boundaries of the LPVB used in 2007 by FCGMA and currently by DWR are similar (Figure 1-2), and generally follow the extent of the alluvium that constitutes the floor of the LPV. The main discrepancy between the 2007 and current DWR boundaries for the LPVB is that the 2007 boundary excludes the area of the Camarillo and Las Posas Hills, while both areas fall within the current DWR boundary (Figure 1-2). Another discrepancy is that the DWR boundary includes more area along the northern border of the western LPVB. Table 1-3 provides a summary of the areal extent of GSAs within the LPVB and the percentage of each GSA that is overlapped by the LPVB. The Las Posas Valley Basin Outlying Areas GSA represents the portion of the LPVB within the boundaries of the LPVB historically used by VCWPD, and the Camrosa Las Posas Basin GSA represents the portion of the LPVB within the jurisdiction of CWD. Although both CWD and the VCWPD manage larger areas, they have delineated their GSAs according to DWR basin boundaries, and thus contained by the LPVB.

### **Land Ownership and Jurisdiction**

Land within the LPVB is under a variety of municipal and County jurisdictions. The City of Moorpark is nearly entirely encompassed by the eastern part of the LPVB and makes up 15.5% of the land area. The City of Camarillo lies primarily outside the LPVB; however, the city's northwestern edge is crossed by the LPVB boundary. Land under County jurisdiction outside the incorporated cities composes the majority (79.6%) of the LPVB's land area. There is no state or federal land ownership within the LPVB. Land owned by the City of Moorpark, the Pleasant Valley Recreation and Park District, and the County of Ventura is used for open space or recreational (parks, golf courses) purposes. A summary of land ownership and jurisdiction is provided in Table 1-4.

## **1.3.2 Geography**

### **1.3.2.1 Surface Water and Drainage Features**

The dominant surface water body in LPV is Arroyo Las Posas, which is named Arroyo Simi in the easternmost portion of the LPV, and becomes Calleguas Creek after entering the PVB (Figure 1-3, Active Gauge Locations; VCWPD 2016). Arroyo Las Posas enters the valley in the east and generally extends along the southern border of the valley floor until exiting the valley through the Somis Gap and flowing into Pleasant Valley (Figure 1-3). Various facilities have been installed in some reaches of Arroyo Las Posas, including riprap bank protection and drop structures, to reduce erosion and control streamflow.

The northern portion of LPV is characterized by more rugged terrain than the south, and is drained by several features referred to as canyons, washes, barrancas, and drains. Flow in these drainages is ephemeral (Hanson et al. 2003). These features trend generally north-south and eventually discharge to Arroyo Las Posas. The western portion of the LPV drains south and west to Beardsley Wash and ultimately to the Revolon Slough in the Oxnard Plain region (VCWPD 2016).

In 2011, CMWD retained Larry Walker & Associates Inc. to monitor and characterize surface water flow in Arroyo Simi–Las Posas within the bounds of LPV. When measured in late summer of 2011, the upper, middle, and lower sections of the stream channel could be characterized as losing, gaining, and losing reaches, respectively (CMWD 2012). This approximate pattern held true during the long-term monitoring conducted from July 3 through December 14, 2012 (CMWD 2013). The flow in Arroyo Las Posas was affected by significant diurnal fluctuations, likely due to the presence of giant reed (“Arundo”; *Arundo donax*) along much of the riparian corridor. These patterns of diurnal flow change manifested at different magnitudes at different in-stream locations (CMWD 2012).

### **Characterization of Flow in Arroyo Simi–Las Posas**

Sources of dry-weather flow in Arroyo Las Posas currently include wastewater treatment effluent from the City of Simi Valley, shallow dewatering of groundwater in Simi Valley, and wastewater treatment effluent from the City of Moorpark. The Simi Valley Water Quality Control Plant discharged 8,506 acre-feet (AF) to Arroyo Simi in 2015 (DBS&A 2017), and dewatering operations discharges an estimated 1,618 acre-feet per year (AFY) to Arroyo Simi (DBS&A 2017). The Moorpark Wastewater Treatment Plant discharges effluent to percolation ponds located near the course of the arroyo, and since 1985, discharge volumes have ranged from 1,559 to 2,534 AFY. Annual discharges to the percolation ponds peaked in the late 1990s and early 2000s and generally declined between 2005 and 2015. In addition, the Moorpark plant discharged directly to the arroyo in 2001 (1,647 AF) and 2002 (1,613 AF) (DBS&A 2017).

Records of average daily flow (ADF) from three VCWPD gauges are available for Arroyo Las Posas within LPV. One of these stations (Station 841A) is active, and two (Stations 841 and 801) are inactive. Additionally, an active VCWPD gauge (Station 803) is located approximately 3 miles upstream of where Arroyo Simi enters the LPV (Figure 1-3; Table 1-5). It should be noted that these gauges can be used to characterize flow only in the eastern portion of LPV. In recent years, dry-weather surface flow in Arroyo Las Posas has typically disappeared upstream of the boundary between the ELPMA and the PVB (Bondy, pers. comm. 2016).

Station 841A is located approximately 100 meters (328 feet) upstream of Station 841, and the combined data from these two stations represent one active streamflow record beginning in 1990 (although no data were collected at either gauge in water year 1996).

To characterize ADF, ADF records for each gauge on Arroyo Simi–Las Posas were grouped by month. Each month in the record of each gauge was assigned a minimum, average, and maximum value (see Table 1-6 and Figure 1-4, Monthly Minimum, Average, and Maximum Average Daily Flows in Arroyo Simi–Las Posas).

By visual inspection, the record of monthly minimum ADF (a proxy for baseflow) at Station 803 can be divided into four periods: 1933–1974 (baseflow near zero), 1975–1994 (rising baseflow), 1995–2005 (relatively stable baseflow, which largely ranged from 4 to 8 cubic feet per second, with occasional high outliers), and 2005–present (declining baseflow). For comparison, the ranges of the monthly ADF and the maximum monthly ADF are also shown.

Higher flows than Station 803 are measured at Stations 801 and 841, while flow measured at Station 803 is generally more consistent than at the other two locations. In the 2012 Larry Walker & Associates study, a small gain in flow was recorded between Stations 801 and 841 (located near Stations G3 and G6 in the Larry Walker & Associates study, respectively), which is also reflected in the stream gauge records in the period between 1975 and 1995.

Collectively, the streamflow records reflect the changing status of this portion of the Calleguas Creek watershed. Flow in Arroyo Simi–Las Posas was ephemeral prior to the 1970s. Increasing releases from wastewater treatment plants in Simi Valley and Moorpark, as well as shallow groundwater dewatering in Simi Valley, contributed to rising baseflow in the 1970s, 1980s, and 1990s, and maintained relatively stable baseflows through the mid-2000s. In the past decade, baseflows have declined in the vicinity of Simi Valley (Station 803), and average flows have declined slightly in the LPV (Stations 841 and 841A). These declining flows have been a source of concern for local practitioners, as perennial flow in the Arroyo Simi–Las Posas constitutes an important source of recharge to the shallow aquifers in the ELPMA of the LPV and, to a lesser extent, northern Pleasant Valley (Las Posas Users Group 2012).

### **1.3.2.2 Current, Historical, and Projected Climate**

#### **Current Climate**

The climate of LPV is typical of coastal Southern California, with average daily temperatures ranging generally from 54°F to 84°F in summer and from 40°F to 74°F in winter, as measured at the weather stations in Camarillo and Moorpark operated by the California Irrigation Management Information System (CIMIS) and National Oceanic and Atmospheric Administration (NOAA) (CIMIS 2018; NOAA NCEI 2016). Typically, approximately 85% of precipitation in the Ventura County region falls between November and April (Hanson et al. 2003).

Records of rainfall were collected from VCWPD weather stations located in the LPV watershed (8 active and 10 inactive; Figure 1-3, Figure 1-5 (Las Posas Valley Precipitation), and Table 1-7). Annual precipitation is typically greater in areas with higher relief, such as near South Mountain and Oak Ridge.

Annual precipitation varies somewhat from gauge to gauge (Figure 1-5). Higher-elevation gauges typically record higher annual precipitation. Stations 238 (South Mountain–Shell Oil) and 250 (Moorpark–Happy Camp Canyon) are the highest-elevation gauges in LPV, at 2,240 and 1,410 feet msl, respectively. These two gauges consistently record the highest rainfall in LPV (Table 1-5).

The Agency contracted and received evapotranspiration data from two private weather stations located in LPV during the period 1992 to 2013. The data received from those stations were used by the Agency until 2013 to determine the annual irrigation efficiency allocation. CIMIS station 217, which began recording in July 2014, is located in Moorpark southeast of the LPVB boundary (Figure 1-3). Monthly average evapotranspiration ranges from 2.52 inches in January to 6.76 inches in July, with the average total annual evapotranspiration of 57.58 inches.

There are no governmental monitored and maintained weather stations in LPV that measure pan evaporation rates. Outside the LPV there are two County of Ventura Watershed Protection District weather stations that measure pan evaporation rates: one to the east (Station 227 – Bard Lake) and one to the west (Station 239, El Rio–UWCD Spreading Grounds) of the LPV. At Station 227, the pan evaporation record begins in 1966 and ends in 2010. Averaged by month over the full record, pan evaporation ranges from 3.2 inches in February to 7.9 inches in July, with an average total annual pan evaporation of 65.0 inches. At Station 239, the pan evaporation record begins in 1972 and ends in 2013. Monthly average pan evaporation ranges from 3.7 inches in January to 7.2 inches in July, with the average total annual pan evaporation of 63.0 inches.

### **Historical Climate Trends**

In order to characterize rainfall variability in LPV over the past century, two stations whose combined records cover the entire period were selected: Stations 002 and 190 (Figure 1-3). Station 190 (Somis–Bard, shown on Figure 1-5 in magenta) is located approximately 1 mile north-northwest of Station 002 (Somis–Aggen Ranch, shown on Figure 1-5 in red). However, to ensure that rainfall recorded at these two stations varied in the same manner as at the other stations, correlations between station data were examined.

To quantify variance between stations during wet and dry years, the correlation coefficient (R) was calculated between each pairwise combination temporally overlapping station records. The correlation coefficients between all pairs of station records (excepting pairs that included Station 126) exceeded 0.94. This high degree of correlation provides sufficient confidence to justify the use of the records of Stations 002 and 190 to characterize the precipitation trends in LPV over the 113-year period from 1903 to 2015.

Correlation coefficients between Station 126 and other station records ranged from 0.848 (with Station 002) to 0.563 (with Station 238). This may be due in part to anomalously low values recorded at Station 126 in 1966 and 2008.

The long-term trends record was based on the record from Station 002. For years in which data was not available at Station 002 (1973–present), the annual precipitation value recorded at Station 190 was used to predict a value for the location of Station 002, based on a linear regression of the annual precipitation values in the 17 years of overlap (1956–1972) in the records for Stations 002 and 190 (see formula below).

$$\text{Station 002 (inches)} = 1.0704 * \text{Station 190 (inches)} + 0.0691 \quad (R^2 = 0.9254)$$

This long-term record was used to calculate the mean annual precipitation in LPV near Somis (15.7 inches) and to develop an annual value for the cumulative departure from mean precipitation (Figure 1-6, Long-Term Precipitation Trends in Las Posas Valley), which was used to assess periods of water shortage and surplus. Historical drought periods (defined as a falling limb on the cumulative departure from the mean curve) were identified by visual inspection. Based on the historical record, a drought in LPV can be defined as a period of years in which the valley experiences no more than one consecutive year of above-average precipitation and at least 20 inches of cumulative precipitation deficit (Table 1-8).

The century-long precipitation record demonstrates that drought cycles have frequently impacted LPV. The average drought duration in the past century was 8.5 years, and the duration of periods of average or above-average rainfall was rarely more than 10 years. In this historical context, the approximately 20-year period from 1991 to 2011 constitutes an unusually long wet period (Figure 1-6). Consequently, planning for drought cycles in the coming decades will be an integral component of water resources management.

## **Projected Climate**

The literature review conducted in support of the U.S. Bureau of Reclamation’s Los Angeles Basin Stormwater Conservation Study Task 3.1 Report found that the following changes are anticipated in Southern California due to global climate change (Bureau of Reclamation 2013):

- Increased temperature (1°C to 3°C, or 1.8°F to 5.4°F)
- Increased evaporation rate
- Decrease in annual precipitation (2% to 5%)
- Increase in extreme precipitation events

Future climate conditions were modeled in the LPVB using climate change factors provided by DWR. The impacts to the future water budget are discussed in more detail in Chapter 2.

### **1.3.2.3 Historical, Current, and Projected Land Use**

Historical land uses within the LPV were determined based on review of data from the Southern California Association of Governments (SCAG), which has mapped more than 105 land use categories to a minimum 2-acre resolution for the years 1990, 1993, 2001, and 2005 (SCAG 2005). Current land uses within the LPV were determined based on review of the General Plan land use map for Ventura County, shown on Figure 1-7, Land and Water Use (VCPD 2015; City of Moorpark 2009). Existing land use patterns and trends are expected to continue, and are described based on information contained in General Plan documents.

The majority of LPV consists of unincorporated areas of Ventura County; however, it also encompasses nearly all of the City of Moorpark and crosses the northwestern edge of the City of Camarillo. Land use in LPV is dominated by agriculture (51% of LPV), consisting mostly of citrus, berries, and avocado crops, although row crops and nursery stock are also increasingly grown in the LPVB. Urban and residential land uses in the LPVB consist of the City of Moorpark, as well as several unincorporated communities concentrated in the central and southwestern portion of the LPVB. These include Somis, the Spanish Hills development, and the Las Posas Estates. Recreational land uses in and around these areas include golf courses and equestrian uses, as well as smaller community parks in the City of Moorpark. The northeastern portion of LPV bisects the Happy Valley Canyon Regional Park. Upland areas along the northern and southern margins of the LPV, particularly as elevations increase toward the east, are occupied by open space and/or rural residential land uses. Table 1-9 shows the County General Plan land uses within LPV, tabulated by area in acres and percentage of total area.

Land uses in Moorpark (generalized as “urban” in the Ventura County General Plan land use map) consist predominantly of planned residential communities, retail shopping centers adjacent to main thoroughfares, and office/light-industrial parks (City of Moorpark 2008). Much of the area within the jurisdictional boundaries of Moorpark, particularly to the northwest part of the city, remains undeveloped. It is expected that some conversion of agricultural space to urban or residential uses will continue within the city boundaries and sphere of influence, as there are at least 11 active development agreements within the city (City of Moorpark 2008). In the future, agricultural preservation and open space land use policies are expected to limit the rate and reach of “greenfield” development and direct growth through infill development and zoning policies that allow higher-density and mixed-use development (VCPD 2015; City of Moorpark 2009). Generally, the boundaries of urban development have stayed similar in the past 20 years, though subdivisions in the southeastern portion of Moorpark were developed in the mid to late 1990s, and additional residences were incrementally developed within and adjacent to the City of Moorpark and unincorporated communities.

The primary east–west thoroughfare in LPV consists of State Route (SR) 118 (East Los Angeles Avenue), which connects Moorpark with Oxnard and Simi Valley, and the north–south SR-23, which connects the area to Fillmore and Thousand Oaks. SR-34 connects Somis to Highway 101 in Camarillo from SR-118. The Ventura County General Plan Environmental Impact Report identifies the widening of roads (for example, in Somis) as a potential growth-inducing effect of the General Plan land uses and policies, as well as policies that allow for the creation of substandard-sized parcels for farmworker housing complexes and an increase in allowable building coverage for farmworker housing complexes in Agricultural and Open Space designations (VCPD 2005). Demographics and population growth within LPV are addressed in Section 1.3.2.4, Historical, Current, and Projected Demographics.

#### **1.3.2.4 Historical, Current, and Projected Demographics**

There are several sources of population data for LPV, most of which are derived from decennial census counts, which last occurred in 2010. Sources of population information are as follows:

- **U.S. Census Bureau:** The U.S. Census Bureau conducts a census count every 10 years. Census data is gathered by tracts, blocks, and census-designated places. Census tracts were intersected with the LPVB boundary to determine the population within the basin for 2010. Census tracts that intersected the boundaries of the LPVB were area-weighted to determine the population that falls within the basin.
- **City and County General Plans:** The City of Moorpark and the County of Ventura gather data on development, growth, and land use patterns, and make population estimates in conjunction with census data. The City of Moorpark and County of Ventura General Plans and websites were reviewed for historical and current population data.
- **Southern California Association of Governments:** SCAG is the nation’s largest metropolitan planning organization, representing 6 counties, 191 cities, and more than 18 million residents. SCAG produces demographics data and growth forecasts for the entire Southern California region.

At a countywide level, population growth is skewed toward incorporated cities (such as Moorpark). The population distribution within Ventura County is the result of a 1969 County–City agreement, called the Guidelines for Orderly Development, which directs urban-level development to incorporated cities in Ventura County (VCPD 2015). That agreement limits urban-level development and services in unincorporated areas. The total increase in population in unincorporated areas in Ventura County was only 1.9% from 2000 to 2010, whereas the population in the cities increased at a much higher rate, closer to 10.4%, over the same period.

Table 1-10 shows the past, current, and projected population for Ventura County, the City of Moorpark, and the LPV. The current population of LPV is estimated to have been 38,101 in 2010,

based on census data. The current population of the City of Moorpark is 35,033, as of 2015, with an average household size of 3.29 (City of Moorpark 2016). The population of unincorporated areas within LPV is therefore a small portion of the total population in LPV (roughly 10%), concentrated in Camarillo Heights, Las Posas Estates, and Somis. Residents have a median age of 36.5 years; 25.3% of the population is under 18, and 8.4% of the population is over 65. Approximately 70% of the population is white or non-Hispanic, and 30% of the population is Hispanic or Latino (City of Moorpark 2016).

## **1.4 EXISTING MONITORING AND MANAGEMENT PLANS**

Over the past few decades, multiple agencies have implemented programs to monitor and manage water within the LPVB. Local and state agencies have worked together and with basin stakeholders to develop management strategies and monitoring programs. Tables 1-11 and 1-12 summarize the monitoring and management programs, projects, and strategies that are currently in effect.

### **1.4.1 Monitoring and Management Programs**

Table 1-11 provides a summary of existing monitoring programs. It is subdivided into monitoring programs that are primarily for surface water and those primarily for groundwater.

Table 1-12 provides a summary of management programs, projects, and strategies. It is similarly subdivided into projects and programs that address primarily surface water and those that address primarily groundwater. It also contains a third category, “other,” for projects that address both surface and groundwater or an additional parameter.

Table 1-12 indicates whether each project and program is associated with conjunctive use. As used herein, “conjunctive use” applies to programs, projects, and strategies that meet the 2003 Bulletin 118 definition of the term: “Conjunctive management in its broadest definition is the coordinated and combined use of surface water and groundwater to increase the overall water supply of a region and improve the reliability of that supply” (DWR 2003). For example, the Las Posas Basin Aquifer Storage and Recovery (ASR) Project allows CMWD to store imported surface water in the aquifers of the ELPMA, thereby recharging groundwater and providing a backup source of water in periods during which of imported water is unavailable. When extracted, the water can be used by retailers within the CMWD service area.

Due to the overlapping jurisdictions of the agencies that manage groundwater resources, there are many programs that occur within the LPVB or multiple basins. Therefore, Tables 1-11 and 1-12 both include a column that lists the basins in which the programs are conducted or those that benefit from each program.



### 1.4.2 Operational Flexibility Limitations

Existing water monitoring and management activities are described in Tables 1-11 and 1-12. Some of these have been developed, in part, to increase the operational flexibility within LPVB and within FCGMA's jurisdiction as a whole. As the agency responsible for groundwater management in most or part of the four groundwater basins within its jurisdiction, FCGMA fosters operational flexibility through groundwater monitoring requirements, project oversight, and the collection of fees. Because the basins are all interconnected, either physically or through water sources, the opportunity for operational flexibility exists and has been used by FCGMA and local water agencies.

Despite the coordination of projects and programs within the LPVB, there remain limits to operational flexibility. Diverting flows from the Santa Clara River for recharging of groundwater, and extracting from wells in the vicinity of the project, the Freeman Diversion Project creates artificial gradients that impact the flow of groundwater to and from the West Las Posas Valley Basin. The CMWD ASR program provides a backup water source for CMWD customers but also impacts available storage, gradients, and water levels in the East Las Posas Valley Basin (see Section 1.6, Land Use Elements or Topic Categories of Applicable General Plans, and Table 1-12). The City of Moorpark and unincorporated areas in the WLPMA and ELPMA rely in part on imported water from the State Water Project (SWP) and/or Colorado River imported by CMWD and provided to users through the Ventura County Waterworks District (VCWD) No. 1, VCWD No. 19, Crestview Mutual Water Company, Solano Verde Mutual Water Company, Zone Mutual Water Company, Berylwood Mutual Water Company, Camrosa Water District, and California-American Water Company. In addition, shallow groundwater dewatering discharge and treated wastewater produced by the Simi Valley Water Quality Control Plant and Moorpark Wastewater Treatment Plant contribute to continuous flow and recharge via the Arroyo Simi-Las Posas creek system and percolation ponds. Plans to increase the direct use of these discharges will impact the amount of recharge available in the future.

## 1.5 EXISTING CONJUNCTIVE-USE PROGRAMS

Due to the history of interagency collaboration on groundwater management within FCGMA jurisdiction and the LPVB, some conjunctive-use programs are currently operational. These are identified and described in Table 1-12, as introduced in Section 1.4, Existing Monitoring and Management Plans. Some of the most important of these conjunctive-use programs are described in this section.

**CMWD ASR Project.** The CMWD ASR Project is located in the ELPMA. The project, which became operational in 1994, has a total storage capacity of about 50,000 AF in the FCA (CMWD 2016). Water may be injected and withdrawn from 18 ASR wells and can be delivered to Camarillo, Moorpark, Somis, Oxnard, and limited unincorporated areas through the CMWD

delivery system to a portion of the CMWD service area. Year 2015 plans included a pump station to be completed by 2019 that would allow for delivery to all of the CMWD service area.

**CMWD Imported Water Deliveries.** SWP deliveries are supplied by CMWD to various retail water agencies within the LPVB. All of these retail water agencies use potable water to fill M&I demand (see Table 2-5, Las Posas Valley Basin Water Purveyors, in Chapter 2 of this GSP). The CMWD has also provided water to agricultural users in the LPVB in lieu of groundwater pumping. Note that CMWD is a member agency of the Metropolitan Water District of Southern California (MWD), which supplies water from a number of sources, including the Colorado River.

**UWCD Imported Water.** Up to 5,000 AFY of the Ventura County SWP allocation may be delivered to Lake Piru and later released for percolation or diversion at the Freeman Diversion Project and recharged at percolation ponds that provide water to the LPVB.

**FCGMA Programs.** FCGMA has been charged with groundwater management for decades and now implements several programs that encourage efficient use of groundwater, “new” water sources, and brackish groundwater. Most programs apply to the entire FCGMA jurisdiction, but some management programs apply to specific areas. In addition to programs and ordinances that require reporting and fees for groundwater use, FCGMA implements a groundwater storage credit program that provides for groundwater credits equal to the amount of surface water delivered that would otherwise be unavailable (i.e., water from outside the County) or water that would be wasted to the ocean.

## **1.6 LAND USE ELEMENTS OR TOPIC CATEGORIES OF APPLICABLE GENERAL PLANS**

SGMA requires that the GSP include a description of the consideration given to the applicable county and city general plans and the various adopted water-resources-related plans and programs and an assessment of how the GSP may affect those plans (California Water Code, Section 10727.2[g]). In addition to these elements, the GSP may include processes to review land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity (California Water Code, Section 10727.2[g]). Land use plans contain provisions that may affect water use and sustainability within FCGMA’s jurisdiction. DWR requires that the GSP include a summary of these plans and a description of how these plans may change water demands or affect FCGMA’s ability to achieve sustainability and how the GSP addresses these potential effects, as well as how the GSP may affect the water supply assumptions made in these plans (DWR 2016b, Sections 354.8[f] and 354.8[g]). California Water Code requires that the GSP include processes to review land use plans and coordinate with planning agencies related to groundwater issues (California Water Code, Section 10727.2). Plan types relevant to FCGMA jurisdiction and the individual basins within it include county and city general plans and

associated area-specific and community plans, urban water management plans (UWMPs), and agricultural water management plans.

California state law requires that cities and counties prepare and adopt a “comprehensive long-term general plan for the physical development of the county or city” and that “elements and parts [of the plan] comprise an integrated, internally consistent and compatible statement of policies for the adopting agency” (California Government Code, Sections 65300 and 65300.5).

The Urban Water Management Planning Act of 1983 requires urban water suppliers to report on water sources, deliveries, demand, and efficiency, as well as to perform water shortage contingency planning. Such plans are to be updated every 5 years (in years ending in 0 and 5) and submitted to DWR. The Urban Water Management Planning Act applies both to urban retail suppliers that provide potable municipal water to more than 3,000 end users or 3,000 AFY and to urban wholesale water suppliers that provide more than 3,000 AFY at wholesale (DWR 2016b). The applicable codes have been modified multiple times to include various provisions for water-related reporting. As noted in the City of Camarillo’s 2015 UWMP (City of Camarillo 2016):

The purpose of the UWMP is for water suppliers to evaluate their long-term resource planning and establish management measures to ensure adequate water supplies are available to meet existing and future demands. The UWMP provides a framework to help water suppliers maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions.

The preparation of an agricultural water management plan is required by public or private water suppliers providing water to 10,000 or more irrigated acres (excluding recycled water) (California Water Code, Section 10802). Such plans are required to be updated every 5 years and adopted by the relevant governing boards. Agricultural water management plans must include a description of the service area; information about the source, quantity, and quality of water supplied; drainage of the service area; and the reliability of the source water.

For more than three decades, FCGMA has participated in the management of water within its jurisdiction. Such management includes oversight of many aspects of water production and use as well as coordination with all other entities responsible for water supply and land use issues. Because of these long-term relationships, many of the plans described in this section are consistent with the goal of sustainable groundwater management over the planning and implementation horizon.

The following sections contain a description of the land use and water management plans that are applicable to water planning within LPVB, a discussion of the consideration given to the land use plans, and an assessment of how the GSP may affect those plans.

### **1.6.1 General Plans**

General plans are considered applicable to the GSP if at least a portion of their water demands are served by groundwater pumped from the LPVB.

#### **Ventura County General Plan**

##### ***Plan Description***

The Ventura County General Plan (VCPD 2015) applies to the County as a whole and includes area-specific plans for distinct unincorporated areas. The County General Plan was last amended in October 2015. However, the County Planning Department is now undertaking a comprehensive update of the plan, thereby providing an immediate opportunity for coordination between FCGMA, as the GSA, and the County Planning Department, as required by SGMA.

The comprehensive update of the County General Plan is due to be completed by mid-2020 and will have a planning horizon of 20 years. Based on the timing of the adoption of the General Plan Update and the GSP, the GSA will be subject to the following California Government Code requirements pertaining specifically to the coordination of planning and SGMA-related documents:

- California Government Code, Section 65350.5, requires that the planning agency review and consider GSPs prior to General Plan adoption.
- California Government Code, Section 65352, requires that prior to adoption of a General Plan update, the legislative body must refer the plan to the GSA for review.
- California Government Code, Section 65352.5, requires that the GSA provide the current version of the GSP to planning agencies preparing to update or adopt the General Plan.

FCGMA will comply with the preceding code requirements by requesting the attendance of a County Planning Department representative at key GSA meetings in order to make the County Planning Department aware of water-related issues that may impact the General Plan Update, including the County Planning Department on all stakeholder notifications for GSP development, and coordinating directly with County Planning Department staff on subjects that impact land or water use within FCGMA jurisdiction and that may be proposed as part of the GSP in order to achieve groundwater sustainability.

### ***How the Plan May Affect Sustainable Water Management***

Because General Plans and their associated elements define long-term policy related to community growth, development, and land use, General Plans are critical to the implementation of sustainable water management. The County General Plan is in the process of undergoing a comprehensive update that provides the opportunity for consistency in regard to the relevant areas of the County General Plan and the GSP. Areas where coordination may be necessary or beneficial include the following:

- The compatibility of County land use with the goals and requirements of SGMA and groundwater sustainability. This includes county programs and policies for the protection or redesignation of urban, agriculture, and open space for the purpose of reducing or adjusting groundwater use, recharge, or groundwater quality.
- The consistency of discretionary development as it pertains to the FCGMA basins' water resources.
- The development of thresholds by the County for development within available water supply limits as determined by the GSPs for the FCGMA basins.
- Coordinated water-related monitoring programs within the FCGMA basins.
- The inclusion of land subsidence, drought, and point-source pollution as “hazards,” as identified in the County General Plan.
- The coordination of goals, policies, and programs of the Water Resources section of the General Plan, which pertain to groundwater overdraft, environmental uses of surface water, ground and surface water quality, and demand management and reuse. The programs of the Water Resources section specifically address the coordination of water agencies and County support of FCGMA plans.
- The coordination of capital projects or programs proposed as part of the GSP to achieve sustainability within the FCGMA basins.
- The regulatory authority of the GSA as it relates to that of the County.

### ***How the GSP May Impact the Water Supply Assumptions of the General Plan***

Sections 1.3.1 through 1.3.3 of the General Plan describe the goals, policies, and programs that apply to water resources. The goals outlined in Section 1.3.1 of the General Plan include monitoring water supply and quality, maintaining or restoring water quality and supply, balancing supply and demand, and protecting wetlands. The GSP includes specific provisions for each of these: the monitoring of water resources (Chapter 4), the definition and maintenance of groundwater-dependent ecosystems (wetlands), definition of sustainability as it pertains to water

resources (Chapter 3, Sustainable Management Criteria), and projects and management actions by which these goals will be obtained (Chapter 5, Projects and Management Actions).

The General Plan policies listed in Section 1.3.2 (VCPD 2015) include provisions and requirements for discretionary development. Some of the projects and management actions of the GSP will likely constitute discretionary development and therefore require consistency with the General Plan or demonstration of “overriding considerations.” The General Plan may include the GSP as an additional plan with which consistency of discretionary development will be required. General Plan Section 1.3.3 lists specific programs that County divisions will support in the application of the General Plan. Programs (management actions) implemented by FCGMA as part of the GSP may be added to those supported by the General Plan.

The 1998 Save Open Space and Agricultural Resources (SOAR) ordinance generally requires an approval by the electorate for any General Plan Amendment changes in land use designations for agricultural, rural, or open-space-designated lands. This and similar ordinances are in effect for much of the FCGMA area, including the cities of Camarillo, Oxnard, and Ventura and unincorporated County areas, through at least 2050 (VCPD 2015). Should implementation of the GSP result in the conversion of agricultural, rural, or open space lands to other uses, either to accommodate GSP projects or as a result of management actions that reduce water demand, a vote of the electorate would be required.

## **1.6.2 Urban Water Management Plans**

### **Calleguas Municipal Water District UWMP**

#### ***Description/Summary of Agency and Plan***

CMWD is an independent special district and a wholesale water provider, the service area of which includes significant parts of each of the basins within the FCGMA area (FCGMA et al. 2007; Figure 1-8, Ventura County Water Purveyors). It has been a member agency of MWD since 1960, and provides wholesale water to 19 retail water purveyors, including several of the major cities within the FCGMA boundary. CMWD supplies water for mainly M&I uses, with only about 5% going to agricultural uses (CMWD 2016, p. 13). Most of the water supplied by CMWD is SWP water that is purchased from MWD. Storage facilities available to CMWD include a surface water reservoir in Thousand Oaks and underground storage via the Las Posas ASR project (see Table 1-12).

CMWD does not operate any wastewater treatment facilities but has historically supported the use of recycled water through the ownership and operation of recycled water pipelines and pumping facilities. In addition, CMWD has invested in the Salinity Management Pipeline that conveys salty water away from surface waters in the southern Ventura County region to other beneficial uses or to the Pacific

Ocean (Table 1-12). CMWD also supports water use efficiency programs. Such programs include rebate/incentive programs, school education programs, social media, and public workshops.

The UWMP, adopted June 15, 2016, has a planning horizon of 25 years. The production of the UWMP was coordinated with, and obtained information from, numerous water suppliers and management agencies, including the Camrosa Water District, City of Camarillo, City of Oxnard, City of Port Hueneme, City of Moorpark, VCWD No. 1, VCWD No. 19, FCGMA, MWD, and UWCD. CMWD notified the appropriate agencies and the public of the production of the UWMP, conducted a public hearing, and incorporated public comments prior to adopting the plan.

### ***Coordination with SGMA and Other Agencies***

CMWD is a stakeholder in FCGMA and in the production of the GSP. The UWMP contains a section describing FCGMA and the programs that it implements. The SGMA legislation and GSP requirements are also described, including FCGMA's role as the GSA and its role in preparing the GSP (CMWD 2016, Section 6-2).

In January of 2016, the CMWD Board of Directors adopted a strategic plan, one provision of which is to "Work with FCGMA, United Water Conservation District, agricultural pumpers, purveyors, and other groundwater interests to encourage, support, and facilitate the development and implementation of groundwater sustainability plans within the service area that increase certainty in groundwater management and promote conjunctive use operations" (CMWD 2016, p. 7-13).

### ***How the Plan May Change Water Demands within the Basin***

Due to the extensive collaboration between FCGMA, as the historical management agency and GSA, and CMWD, as a major wholesale water supplier within the FCGMA basins, the CMWD UWMP incorporates and reflects water demand and sustainability issues that must be addressed under SGMA. Implementation of this GSP will require continued coordination between the many agencies and stakeholders within the basin and periodic adjustment of assumptions regarding climate, population, land use, environmental requirements, and other factors impacting water demand. The CMWD UWMP recognizes those factors and provides for adaptation where necessary.

Such adaptation includes support of Senate Bill X7-7 goals for conservation, an extensive demand management program, and participation in capital projects that provide for conjunctive use on a regional scale.

### ***How the Plan May Affect Sustainable Groundwater Management within the Basin***

For the reasons noted previously, the CMWD UWMP largely fosters the goals of sustainable management within the LPVB. Both CMWD and MWD, which provides SWP water to CMWD,

are pursuing remedies to improve the reliability of water supplies within their respective service areas. UWMP strategies to remediate reliability issues of water supplies includes pursuing demand management programs and local water supply projects, such as increased use of recycled and desalinated water. In regard to SWP supply reliability, MWD and CMWD support DWR in projects and strategies to increase reliability from the Sacramento/San Joaquin Delta. These programs include California WaterFix and California EcoRestore (CMWD 2016, p. 7-2). CMWD's goal of relying less on SWP supplies has the potential to add additional strain on the existing water supplies, including groundwater.

In regard to water quality degradation, the CMWD UWMP provides a benefit to the region by introducing imported supplies that are in many cases of better quality than those obtained locally. CMWD constructed, and plans to expand, the Salinity Management Pipeline, which will foster the development of additional water treatment and desalination projects and provide a method to transfer poor-quality water away from surface waters within the southwestern Ventura County area to other beneficial uses or the Pacific Ocean (Table 1-12).

### ***How the GSP May Impact the Assumptions of the UWMP***

The UWMP presents strategies for preparing for SWP reliability challenges, climate variability, and emergency shortages. For planning purposes, the UWMP considers demand to be the total demand within the service area after accounting for local supplies. The GSP anticipates groundwater extraction reductions of as much as 50% below historic average for M&I and agricultural uses without contribution from water supply projects. The UWMP assumes an increase in imported normal year demand of 5% between 2020 and 2040. Therefore, the UWMP may underestimate the demand upon which supply calculations are made. The UWMP assumes future water projects and demand management measures in water demand and reliability calculations. Those assumptions may be modified by those projects and management actions included in the GSP.

## **Ventura County Waterworks District No. 1 UWMP**

### ***Description/Summary of Agency and Plan***

VCWD No. 1 is a retail water supply agency formed in 1921. The service area encompasses the City of Moorpark and unincorporated areas to the north and west. VCWD No. 1 serves potable water from CMWD, groundwater from VCWD wells, and recycled water from the VCWD-owned Moorpark Wastewater Treatment Plan. Approximately three-quarters of the water supplied by VCWD No. 1 is for domestic, commercial, and industrial uses, and about one-quarter is for agriculture. Groundwater extraction is from five wells located in the ELPMA. In 2015, nearly 80% of water supplied by VCWD No. 1 was imported from CMWD, with most of the remainder from groundwater.



The UWMP, adopted June 14, 2016, has a planning horizon of 25 years. The production of the UWMP was coordinated with, and obtained information from, numerous water suppliers and management agencies, including the Ventura County Planning Department, City of Moorpark Planning Department, FCGMA, MWD, and the public. VCWD No. 1 notified the appropriate agencies and the public of the production of the UWMP, conducted a public hearing, and incorporated public comments prior to adopting the plan.

### ***Coordination with SGMA and Other Agencies***

The Ventura County Board of Supervisors is the governing body of VCWD No. 1 and appoints one of its members to serve on the FCGMA Board (FCGMA Act, Section 121-401). Therefore, there is structural coordination between FCGMA and VCWD No. 1. The UWMP contains a section describing FCGMA and the programs that it implements. The SGMA legislation and GSP requirements are also described, including FCGMA's role as the GSA and its role in preparing the GSP (VCWD 2016, Section 6.2.2.1).

### ***How the Plan May Change Water Demands within the Basin***

VCWD No. 1 has complied with Senate Bill X7-7 goals for conservation and cooperates with CMWD in the implementation of a comprehensive demand management program. The program reduces water demand by implementing water conservation pricing, public education, rigorous metering, rebates for water-saving devices, and other measures.

### ***How the Plan May Affect Sustainable Groundwater Management within the Basin***

The plan does not project increased future groundwater demands; however, the plan also anticipates the construction of the VCWD Moorpark Desalter project. This project is expected to provide up to 5,000 AFY of potable water from 10 to 18 extraction wells that are to be constructed to extract brackish water from the Shallow Alluvial Aquifer in the ELPMA. Extraction of additional 5,000 AFY of groundwater from the ELPMA has not been modeled as a future project for the ELPMA (Chapter 5). Extraction of this volume of water will need to be incorporated into the existing groundwater model of the LPVB in order to understand how it will impact the sustainable yield, measurable objectives, and minimum thresholds set forth in this GSP.

### ***How the GSP May Impact the Assumptions of the UWMP***

The sustainable yield, measurable objectives, and minimum thresholds developed as part of this GSP may impact the ability of VCWD to construct and operate the proposed Moorpark Desalter project. The project will have to be evaluated using the numerical groundwater model for the LPVB in order to understand how the project may impact, or be impacted by the sustainable management criteria set forth in this GSP.

## **1.7 WELL PERMITTING POLICIES AND PROCEDURES**

The two agencies requiring well permits within the LPVB are FCGMA and the Ventura County Public Works Agency. The FCGMA well permit requirements will pertain to the entirety of the LPVB under this GSP.

### **1.7.1 FCGMA**

FCGMA has implemented multiple ordinances and policies since 1988 related to well permitting. A complete list of historical policies and ordinances is kept and updated on the FCGMA website (FCGMA 2016). Those currently pertaining to well permits are described here.

Emergency Ordinance E, adopted April 11, 2014, in response to severe drought, declining water levels, and seawater intrusion, prohibits the issuance of permits for new groundwater wells associated with new or increased groundwater use, and limits extraction from existing wells (FCGMA 2014).

Currently, the FCGMA Ordinance Code requires that permits be obtained from FCGMA for new wells prior to construction. For wells installed within the FCGMA area, the applicant must subsequently obtain a permit from the Ventura County Public Works Agency. The FCGMA Ordinance Code requires the installation and maintenance of flow meters, providing proof of flowmeter accuracy, and reporting of all extractions semi-annually (Table 1-12). In 2018, FCGMA adopted an ordinance that will require all wells within the Agency to be equipped with advanced metering infrastructure telemetry by October 1, 2020.

### **1.7.2 Ventura County**

Ordinance No. 4468, Chapter 8, Water, Article 1 – Groundwater Conservation, Sections 4811–4828, relate to groundwater wells in Ventura County. This ordinance regulates the construction, maintenance, operation, modification, and destruction of groundwater wells. Ventura County requires well permits for any construction, modification, replacement, repair, or destruction of wells. Permit requirements include “information as the Agency may deem necessary in order to determine whether underground waters will be protected” (Chapter 8, 4813, C8). Ventura County does not issue a permit for a well within the FCGMA boundary until a well permit is issued by FCGMA. Ventura County well construction or destruction activity standards are required to comply with the DWR Well Standards Bulletin Nos. 74-81, 74-90, and 74-9. New water wells must be equipped with a flow meter and calibrated every 3 years; however, de minimis extractors (those producing less than 2 AFY) are exempt from this requirement. Completion logs are required for all wells and geophysical logs are required where necessary to prevent cross contamination of pumping zones.

Section 4826 pertains to the Aquifer Protection Program, the purpose of which is to require destruction or repair of wells that are causing groundwater pollution. The provision requires annual reporting of water extractions, time of operation, static water levels, and pump test data if available. Based on these data, all wells are classified in regard to location and operational condition.

Due to pervasive drought conditions, as of October 28, 2014, Section 4826.1 prohibited the construction of new wells or modification or repair of existing wells within the unincorporated area of Ventura County except under specific circumstances. With the initiation of SGMA, the ordinance was modified to include only basins designated as high or medium priority by DWR, which includes the LPVB.

## **1.8 NOTIFICATION AND COMMUNICATION**

### **1.8.1 Notification and Communication Summary**

Notification and communication regarding the development of the LPVB GSP takes place in the following four key phases:

1. Initial Notification
2. GSP Development
3. Draft GSP Review and Comment
4. GSP Implementation

The Initial Notification was completed with the FCGMA submittal of the Notice of Intent on February 24, 2017, to DWR to develop a GSP for the LPVB. The GSP Development phase included extensive outreach and engagement with the stakeholders, including beneficial users, as described in more detail in Section 1.8.3, Public Meetings Summary, and Section 1.8.6, Communication.

The Draft GSP Review and Comment phase includes the formal public comment period for the Draft GSP and response to comments, as discussed in Section 1.8.4, Summary of Comments and Responses. The GSP Implementation notification and communication period will begin once FCGMA submits the final GSP to DWR and will include engagement with the public and beneficial users regarding the progress of monitoring and reporting updates on the GSP to DWR, establishment of fees, and the development and implementation of management strategies including projects as needed.

## 1.8.2 Summary of Beneficial Uses and Users

Beneficial uses of groundwater from the basin include agricultural, M&I, urban, and environmental uses. As discussed in Section 1.3.2.3, Historical, Current, and Projected Land Use, land use in the LPV is primarily agriculture and the area includes all of the City of Moorpark and the northwestern edge of the City of Camarillo.

Beneficial users in the LPV have an active stakeholder group called the Las Posas Users Group (LPUG) that was formed before SGMA and continues to meet regularly to discuss and provide feedback to FCGMA regarding localized management. In April 2016, the role of LPUG as an advisory group toward the development of a new extraction allocation system for the LPVB was formalized through an FCGMA Charter. LPUG has participated in public meetings and provided occasional presentations to the FCGMA Board. LPUG developed a proposed extraction allocation system that was presented to the FCGMA Board.

The beneficial users of groundwater and property interests potentially affected by the use of groundwater in LPVB are described in this section.

**Municipal Well Operators, Public and Private Water Purveyors.** There are over 20 public and private water purveyors in the LPV, as shown on Figure 1-8. A detailed description of each purveyor is included in the VCWPD Inventory of Public and Private Water Purveyors (VCWPD 2006). CMWD is one of seven water districts that together appoint a member to the FCGMA Board. Staff from both UWCD and CMWD have provided groundwater monitoring data, have participated in public meetings, and regularly collaborate with FCGMA staff. The City of Moorpark also has direct representation on the FCGMA Board by the representative appointed to serve on behalf of the five incorporated cities within FCGMA jurisdiction. Several of the water districts and mutuals have also participated in FCGMA public meetings and provided comments throughout the development of the GSP.

**Agricultural Users.** Agricultural users have been identified as key stakeholders since the creation of FCGMA in 1982 and have direct representation through one of five members on the FCGMA Board. Agricultural users are represented within the LPV by the Ventura County Agricultural Commissioner, the Ventura County Farm Bureau, individual pumpers, and groups of pumpers that have organized to advocate for their interests during the GSP development process. FCGMA maintains a database of well owners, including agricultural well owners. Email addresses within the database have been added to the list of interested parties that receive electronic newsletters regarding the status and development of the LPVB GSP.

**Domestic Users.** The majority of domestic groundwater users in the LPV are supplied water from a city, special district, or mutual water company. FCGMA maintains a database of well owners,

including domestic well owners. Email addresses within the database have been added to the list of interested parties that receive electronic newsletters regarding the status and development of the LPVB GSP. In addition, well operators are mailed hardcopy newsletters with their semi-annual groundwater extraction statements.

**Local Land Use Planning Agencies.** FCGMA staff has reached out to all local land use planning agencies with jurisdiction over the LPVB, including the County of Ventura, the City of Moorpark, and the City of Camarillo. The County of Ventura holds one of five seats on the FCGMA Board. The FCGMA Board also has a member appointed to represent the five incorporated cities, including the cities of Moorpark and Camarillo. As discussed in Section 1.6, FCGMA has established working relationships with the land use planning agencies. FCGMA staff has participated on the Ventura County General Plan Update Water Element Focus Group and continues to work with Ventura County planning staff to ensure that the GSP and the General Plan Update are consistent.

**Environmental Users.** Environmental uses of groundwater are not well characterized in LPVB. Arroyo Simi–Las Posas was identified as a potential Groundwater-Dependent Ecosystem in the LPVB. Within the LPVB, Arroyo Simi–Las Posas is a complex system of losing and gaining reaches. The interaction between surface water and groundwater in these reaches is primarily influenced by the presence of perennial flow from shallow dewatering wells and wastewater treatment plants outside the boundaries of the LPVB. The potential Groundwater-Dependent Ecosystem developed along the arroyo after these discharges began. Prior to that, there was little to no vegetation lining the banks of the arroyo. Therefore, based on the history of streamflow and vegetation growth along Arroyo Las Posas, it is likely that the primary environmental users of water in the LPVB are using percolating surface water rather than groundwater. FCGMA has taken steps to incorporate the interests of environmental users in the development of the GSP through appointing an environmental representative on the TAG. The TAG held a special meeting focusing on potential groundwater-dependent ecosystems and accepted comments from the public on the potential impacts to surface water bodies. There are several non-governmental organizations with missions associated with environmental water uses on the list of interested parties who receive electronic newsletters regarding the status and development of the LPVB GSP.

**California Native American Tribes.** According to the California Indian Tribal Homelands and Trust Land Map (DWR 2011), available from the DWR website, the entire LPVB is within the Chumash Tribal/Cultural area. There are not currently any federally recognized Indian Tribes, Indian land currently or historically held in trust by the U.S. government, or smaller Reservation or Rancheria areas in the LPVB. FCGMA recognizes that the Chumash culture and associated cultural resources are important in Ventura County. Several active local groups and individuals representing the interests of tribal communities in Ventura County have been added to the list of interested parties, including representatives from the Barbareno/Ventureno Band of Mission

Indians (Chumash) and the Wishtoyo Chumash Foundation. FCGMA has reached out to the DWR Southern Region Office Tribal Liaison, Jennifer Wong, and added her to the list of interested parties. The San Gabriel Band of Mission Indians has also shown an interest in the groundwater sustainability planning process and has been added to the list of interested parties.

**Disadvantaged Communities.** The only Disadvantaged Community shown on the DWR mapping tool (DWR 2017) within the LPVB is within the City of Moorpark and is represented by the City, as discussed earlier in this section.

### 1.8.3 Public Meetings Summary

FCGMA has been discussing the development of a GSP since March 2015. LPUG has also been meeting regularly and discussing GSP development. FCGMA staff regularly participate in LPUG meetings; however, the LPUG meetings are not considered FCGMA meetings and are therefore not included in Table 1-13, which provides a list of FCGMA public meetings in which the participants discussed or took action on the LPVB GSP. Note that the list will be updated as additional meetings occur.

### 1.8.4 Summary of Comments and Responses

The FCGMA Board approved release of a Preliminary Draft GSP in January 2018, with a 90-day comment period. An evening public workshop was held on February 1, 2018, to present the Preliminary Draft GSP, answer questions, and solicit comments. Formal comments were accepted in writing only. The comments were submitted in person at the public workshop and electronically via email to [fcgma-gsp@ventura.org](mailto:fcgma-gsp@ventura.org). A total of 32 comment letters were received by FCGMA on all three GSPs. A summary of the comments was presented to the FCGMA Board at the May 23, 2018, meeting. In consideration of these comments, FCGMA completed an independent peer review of the numerical groundwater models, completed additional analysis for the water quality approach, and extended the timeline for completion of the GSP. Comments on the Preliminary Draft GSP and direction from the FCGMA Board after consideration of public comments have been incorporated into the Draft GSP.

Before completing the Draft GSP, additional information was made available to the public to enhance understanding of the technical information and processes used for the development of the Draft GSP. The following documents were posted on the FCGMA website, discussed in public FCGMA meetings, and sent to the list of interested parties in electronic newsletters:

- Minimum Thresholds and Measurable Objectives Data, March 2019
- Peer Review of the United Water Conservation District and Calleguas Municipal Water District Models for the Oxnard Subbasin, Pleasant Valley Basin, and Las Posas Valley Basin, March 2019

- Approach for GSP Modeling of Future Conditions in the Oxnard Subbasin, Pleasant Valley Basin and Las Posas Valley Basin, January 2019
- Minimum Thresholds and Measurable Objectives in the Las Posas Valley Basin, Oxnard Subbasin, and Pleasant Valley Basin, January 2019
- Assessing the Sustainable Yield of the Oxnard Subbasin, Pleasant Valley Basin, and Las Posas Valley Basin, January 2019

A public workshop was held on March 15, 2019, to discuss the estimated sustainable yield, minimum thresholds, and measurable objectives proposed for the Draft GSP. Comments received at the public workshop were incorporated into the Draft GSP. The Draft GSP was approved by the FCGMA Board and released for a 60-day public comment period on July 29, 2019, during which time FCGMA solicited formal comments on the Draft GSP.

Before completing this Final GSP, the public comments received on the Draft GSP were reviewed and where appropriate incorporated into this Final GSP. Public comments on the Draft GSP are included in Appendix A.

### **1.8.5 Summary of Initial Information on Relationships between State and Federal Regulatory Agencies**

FCGMA has not entered into any formal agreements with the federal government regarding preparation or administration of this GSP or groundwater management pursuant to SGMA, Section 10720.3(c). There are no federally recognized Indian Tribes within the LPVB boundaries.

FCGMA recognizes the need for both formal and informal consultation with state and federal regulatory agencies throughout the implementation of the GSP. FCGMA received a formal request from the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) on October 11, 2016, to be added to the list of interested parties for the development of the GSP. FCGMA has added NMFS to the list of interested parties, as well as the following state and federal regulatory agencies:

- Los Angeles Regional Water Quality Control Board
- U.S. Fish and Wildlife Service
- California Department of Fish and Wildlife
- California Department of Water Resources

### **1.8.6 Communication**

A public outreach and engagement plan (Appendix B) was developed for all of the GSPs that FCGMA is developing. In accordance with Section 354.10.(d) of the GSP Emergency Regulations

(DWR 2016b), the plan discusses FCGMA’s decision-making process; identifies opportunities for public engagement and discusses how public input and responses will be used; describes how FCGMA encourages the active involvement of diverse social, cultural, and economic elements of the population in the LPVB; and describes the method FCGMA shall follow to inform the public about progress implementing the plan, including the status of projects and actions.

FCGMA has provided ongoing and innovative opportunities for stakeholders to engage in the GSP development process. FCGMA has provided regular updates to interested parties through monthly electronic newsletters highlighting monthly progress on the GSP development, upcoming meetings, and opportunities for engagement. Monthly updates and opportunities for public comment were provided at FCGMA Regular Board Meetings, FCGMA Special Board Meetings, and TAG Meetings. Meeting agendas and minutes, as well as video recordings of all FCGMA Board Meetings and Workshops, were made available on the FCGMA website. Additional technical information about the GSP development was made available on the FCGMA website, including the Preliminary Draft GSP, Technical Memoranda, and TAG Meeting materials. The Preliminary Draft GSP was available online for more than 120 days, including an official 90-day public comment period. FCGMA encouraged active participation from stakeholders through four public workshops (November 15, 2016; September 27, 2017; February 1, 2019; and March 15, 2019), a survey for input on sustainability indicators, and a public call for project ideas for incorporation in the GSP.

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**Table 1-1**  
**Estimate of Project Cost and Water Supply for First 5 Years**

Proposed Project	Estimated Annual Costs	Estimated Acre-Feet of Water	Estimated Cost per Acre-Foot
Arroyo Las Posas Arundo Removal (ELPMA)	\$1,000,000	2,000	\$500
Arroyo Las Posas Water Acquisition (ELPMA)	\$2,345,590	4,691	\$500
Purchase of Imported Water from CMWD (WLPMA)	\$2,141,378	1,762	\$1,215
<b>Total</b>	<b>\$5,486,968</b>	<b>8,453</b>	<b>—</b>

**Notes:** CMWD = Calleguas Municipal Water District; ELPMA = East Las Posas Management Area; WLPMA = West Las Posas Management Area.

**Table 1-2**  
**Groundwater Sustainability Plan Estimated Implementation Cost through 2040**

Fiscal Year	Operations and Monitoring Costs	Management, Administration and Other Costs	5-Year GSP Evaluation <sup>a</sup>	10% Contingency	Total <sup>b</sup>
2020	\$1,000,000	\$1,455,000	\$300,000	\$275,500	\$3,030,500
2021	\$1,028,000	\$1,495,740	\$308,400	\$283,214	\$3,115,354
2022	\$1,056,784	\$1,537,621	\$317,035	\$291,144	\$3,202,584
2023	\$1,086,374	\$1,580,674	\$325,912	\$299,296	\$3,292,256
2024	\$1,116,792	\$1,624,933	\$335,038	\$307,676	\$3,384,439
2025	\$1,148,063	\$1,670,431	\$114,806	\$293,330	\$3,226,630
2026	\$1,180,208	\$1,717,203	\$118,021	\$301,543	\$3,316,976
2027	\$1,213,254	\$1,765,285	\$121,325	\$309,986	\$3,409,851
2028	\$1,247,225	\$1,814,713	\$124,723	\$318,666	\$3,505,327
2029	\$1,282,148	\$1,865,525	\$128,215	\$327,589	\$3,603,476
2030	\$1,318,048	\$1,917,759	\$65,902	\$330,171	\$3,631,881
2031	\$1,354,953	\$1,971,457	\$67,748	\$339,416	\$3,733,573
2032	\$1,392,892	\$2,026,658	\$69,645	\$348,919	\$3,838,113
2033	\$1,431,893	\$2,083,404	\$71,595	\$358,689	\$3,945,581
2034	\$1,471,986	\$2,141,739	\$147,199	\$376,092	\$4,137,016
2035	\$1,513,201	\$2,201,708	\$75,660	\$379,057	\$4,169,626
2036	\$1,555,571	\$2,263,356	\$77,779	\$389,671	\$4,286,376
2037	\$1,599,127	\$2,326,730	\$79,956	\$400,581	\$4,406,394
2038	\$1,643,903	\$2,391,878	\$82,195	\$411,798	\$4,529,773
2039	\$1,689,932	\$2,458,851	\$168,993	\$431,778	\$4,749,553
2040	\$1,737,250	\$2,527,699	\$86,862	\$435,181	\$4,786,992
<b>Total<sup>b</sup></b>	<b>\$28,067,603</b>	<b>\$40,838,363</b>	<b>\$3,187,009</b>	<b>\$7,209,297</b>	<b>\$79,302,272</b>

**Notes:** GSP = Groundwater Sustainability Plan.

Costs are in 2020 dollars.

<sup>a</sup> The 5-year update costs include costs for the LPVB as well as the Oxnard Subbasin and PVB, for which FCGMA is the GSA.

<sup>b</sup> Amounts may not sum precisely due to rounding.

**Table 1-3**  
**Groundwater Sustainability Agencies in the Las Posas Valley Basin**

<b>GSA Name</b>	<b>Total Area of GSA (acres)</b>	<b>% of GSA Area within the LPVB</b>	<b>Acres within the LPVB</b>	<b>% of LPVB</b>
Fox Canyon Groundwater Management Area	117,280	34.0%	39,870	89.4%
Las Posas Valley Basin Outlying Areas	4,246	100%	4,246	9.5%
Camrosa Las Posas Basin	469	100%	469	1.1%
<b>Total</b>			<b>44,585</b>	<b>100%</b>

**Notes:** GSA = Groundwater Sustainability Agency; LPVB = Las Posas Valley Basin.

**Table 1-4**  
**Summary of Land Ownership in the Las Posas Valley Basin**

<b>Ownership</b>	<b>Jurisdiction</b>	<b>Description</b>	<b>Acres within the LPVB</b>	<b>% of Total</b>
<i>Private<sup>a</sup></i>				
Private	County of Ventura	Privately owned land under County jurisdiction, largely agriculture and open space	35,508	79.6%
Private	City of Moorpark	Privately owned land under municipal jurisdiction, largely consisting of urban development	6,931	15.5%
Private	City of Camarillo	Privately owned land under municipal jurisdiction, largely consisting of urban development	1,211	2.7%
<i>Subtotal (private land)<sup>a</sup></i>			<i>43,650</i>	<i>97.8%</i>
<i>Public</i>				
Municipal	City of Moorpark	Parks	147	0.3%
Special District	Pleasant Valley Recreation and Park District	Parks	7	0.02%
County	County of Ventura	Park and golf course	818	1.8%
<i>Subtotal (public land)<sup>a</sup></i>			<i>972</i>	<i>2.1%</i>
<b>Total</b>			<b>44,622</b>	<b>100%</b>

**Notes:** LPVB = Las Posas Valley Basin.

<sup>a</sup> This may include small land areas that are publicly owned for utility, civic, and/or public educational uses.

**Table 1-5**  
**Station Name and Record Length for Stream Gauges on Arroyo Simi–Las Posas**

Record Name	Start Date	End Date
Station 801	10/1/1933	9/30/1978
Station 803	10/1/1933	9/30/2014
Station 841	10/1/1990	9/30/2004
Station 841A	10/1/2004	9/30/2013

**Table 1-6**  
**Characterization of Average Daily Flows on Arroyo Simi–Las Posas**

Statistic	Period	Station 801 (cfs)	Station 803 (cfs)	Stations 841 and 841A (cfs)
Monthly minimum (baseflow)	1933–1974	0–0.06	0–1.0	—
	1975–1994	0	0–11.0	7.7–20
	1995–2004	—	4.0–19.0	7.0–29
	2005–2014	—	2.2–15.0	6.4–58
Monthly average	1933–1974	0–134	0–129.9	—
	1975–1994	0–213	0–204.6	9.3–307
	1995–2004	—	4.5–301	9.8–596
	2005–2014	—	3.3–257	10.1–428
Monthly maximum	1933–1974	0–1,853	0–1,680	—
	1975–1994	0–3,350	0–3,543	12.0–3,500
	1995–2004	—	5–1,710	12.0–3,290
	2005–2014	—	3.6–1,740	12.0–4,860

**Note:** cfs = cubic feet per second.

**Table 1-7**  
**Las Posas Valley Precipitation Station Information**

Station Number	Station Name	Record Start	Record End	Active?	Latitude	Longitude	Elevation (ft msl)	Station Type	Mean Annual Rainfall (in.)
002	Somis–Aggen Ranch	1903	1972	No	34.26889	–119.00111	375	Standard Precipitation	14.7
009	Moorpark–Kerr Brothers	1902	1992	No	34.31333	–118.89000	800	Standard Precipitation	16.7
126	Moorpark–Ventura County Water Works Dist. No. 1	1943	1967	No	34.29333	–118.87667	720	Standard Precipitation	12.4
126A	Moorpark–Ventura County Yard	2008	N/A	Yes	34.29551	–118.87797	725	Recording Precipitation Gauge	9.0
141	Moorpark–Soil Conservation Service	1948	1965	No	34.27833	–118.87667	520	Standard Precipitation	12.9
141A	Moorpark–County Fire Station	1965	2008	No	34.28722	–118.88111	525	Standard Precipitation	15.5
189	Somis–Deboni	1955	N/A	Yes	34.28525	–119.07325	520	Recording Precipitation Gauge	15.5
190	Somis–Bard	1955	N/A	Yes	34.28241	–119.00818	460	Recording Precipitation Gauge	15.2
191	Moorpark–Downing Ranch	1955	2008	No	34.32611	–118.89500	1,040	Recording Precipitation Gauge	17.6
206	Somis–Balcom Canyon	1960	1971	No	34.31361	–118.97167	800	Standard Precipitation	15.6
206A	Somis–Fuller	1971	1977	No	34.31750	–118.98139	870	Standard Precipitation	13.7
206B	Somis–Fuller	1977	N/A	Yes	34.31093	–118.97998	733	Recording Precipitation Gauge	17.6



**Table 1-7**  
**Las Posas Valley Precipitation Station Information**

Station Number	Station Name	Record Start	Record End	Active?	Latitude	Longitude	Elevation (ft msl)	Station Type	Mean Annual Rainfall (in.)
238	South Mountain–Shell Oil	1970	N/A	Yes	34.33176	-119.00900	2,240	Recording Precipitation Gauge	20.2
250	Moorpark–Happy Camp Canyon	1976	N/A	Yes	34.34649	-118.85052	1,410	Recording Precipitation Gauge	19.0
262	Moorpark College	1985	1990	No	34.30194	-118.83417	750	Recording Precipitation Gauge	10.9
262A	Moorpark College (Type B)	1999	2008	No	34.30181	-118.83431	750	Non-Standard Recorder	15.0
507	South Mountain East (Type B)	2002	N/A	Yes	34.30154	-119.04504	1,020	Non-Standard Recorder	12.8
508	Moorpark–Home Acres ALERT (Type B)	2004	N/A	Yes	34.27129	-118.92485	400	Non-Standard Recorder	13.0

**Notes:** ft msl = feet above mean sea level; in. = inches. N/A = not applicable, because gauge is active.

**Table 1-8**  
**Drought Periods in Las Posas Valley**

Drought Period	Duration (years)	Cumulative Deficit (inches)
1918–1936	18	–50.5
1944–1951	7	–42.1
1958–1966	8	–26.7
1969–1977	8	–20.1
1986–1991	5	–22.3
2011–2016	5	–33.0

**Table 1-9**  
**Past and Present Land Use in Las Posas Valley, 1990–2015**

Land Use Category	1990		1993		2001		2005		2015	
	Acres	%	Acres	%	Acres	%	Acres	%	Acres	%
<i>Agriculture</i>										
Orchards and Vineyards	17,086	38%	17,618	39%	17,666	40%	17,084	38%	—	—
Cropland and Improved Pasture Land	4,439	10%	3,563	8%	2,658	6%	2,960	7%	—	—
Nurseries	874	2%	979	2%	1,095	2%	1,647	4%	—	—
Horse Ranches	418	1%	459	1%	697	2%	871	2%	—	—
Other Agriculture	103	0%	117	0%	171	0%	161	0%	—	—
Poultry Operations	47	0%	47	0%	47	0%	0	0%	—	—
<b>Total</b>	<b>22,966</b>	<b>51%</b>	<b>22,783</b>	<b>51%</b>	<b>22,335</b>	<b>50%</b>	<b>22,723</b>	<b>51%</b>	<b>22,677</b>	<b>51%</b>
<i>Vacant/Open Space</i>										
Open Space	15,445	35%	14,888	33%	14,753	33%	13,374	30%	—	—
Water	62	0%	62	0%	6	0%	9	0%	—	—
<b>Total</b>	<b>15,507</b>	<b>35%</b>	<b>14,950</b>	<b>34%</b>	<b>14,759</b>	<b>33%</b>	<b>13,383</b>	<b>30%</b>	<b>11,747</b>	<b>26%</b>
<i>Urban/Built-Up</i>										
Residential	4,230	9%	4,417	10%	5,039	11%	5,376	12%	—	—
Mixed Commercial and Industrial	800	2%	1,295	3%	1,031	2%	1,600	4%	—	—
Commercial and Services	406	1%	439	1%	528	1%	572	1%	—	—
Industrial	327	1%	348	1%	374	1%	391	1%	—	—
Transportation, Communication, and Utilities	387	1%	390	1%	557	1%	578	1%	—	—
<b>Total</b>	<b>6,150</b>	<b>14%</b>	<b>6,890</b>	<b>15%</b>	<b>7,528</b>	<b>17%</b>	<b>8,517</b>	<b>19%</b>	<b>10,205</b>	<b>23%</b>

**Sources:** SCAG 2005 (for 1990–2005); VCPD 2015 (for 2015).

**Notes:** Acres and percentages are rounded to the nearest whole number. The land use data for 2015 is based on the Ventura County General Plan land use map, which has a lower geographic resolution and uses fewer land use categories than data provided by SCAG for prior years.

**Table 1-10**  
**Past, Current, and Projected Population for**  
**Ventura County, City of Moorpark, and Las Posas Valley**

Population	1990	2000	2010	2012	2015	2040
Ventura County	—	756,902	825,378	—	853,188	965,210
City of Moorpark	26,054	—	—	34,800	35,033	43,000
LPV	—	—	38,101	—	—	—

**Sources:** SCAG 2016 (for Ventura County 2000, 2010, 2015, 2040; City of Moorpark 2012, 2040); City of Moorpark 2009 (City of Moorpark 1990); City of Moorpark 2016 (for City of Moorpark 2015); U.S. Census 2010 (for LPV 2010).

**Notes:** — = not available or unknown; LPV = Las Posas Valley.

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**Table 1-11**  
**Las Posas Valley Basin Existing Water Resources Monitoring Programs**

Program	Program Agency	Program Description	Parameter	Multi-Basin Program	Source	Link
<i>Surface Water Monitoring Programs</i>						
Ventura County Precipitation Monitoring	VCWPD	Collection of real-time and historic data from a network of precipitation gauges throughout Ventura County. Data are available on the web along with some statistical reports. Gauge data are available in various time increments, depending on gauge type.	Precipitation	LPVB, PVB, ASRVB, Oxnard Subbasin	VCWPD. 2016. Ventura County Watershed Protection District, Hydrology Section Website. Accessed 9/15/2016.	<a href="http://vcwatershed.net/hydrodata/gmap.php?param=rain">http://vcwatershed.net/hydrodata/gmap.php?param=rain</a>
Ventura County Streamflow Monitoring Program	VCWPD in cooperation with USGS	Approximately 64 stream locations are monitored county-wide (approximately seven active and inactive gauges in the Las Posas Management Areas). Available data includes average daily flow, event hydrographs, and peak flows.	Streamflow	LPVB, PVB, ASRVB, Oxnard Subbasin	VCWPD. 2016. Ventura County Watershed Protection District, Hydrology Section Website. Accessed 9/15/2016.	<a href="http://vcwatershed.net/hydrodata/gmap.php?param=rain">http://vcwatershed.net/hydrodata/gmap.php?param=rain</a>
<i>Groundwater Monitoring Programs</i>						
Basin Management Objectives Monitoring	FCGMA	FCGMA has established a set of water quality Basin Management Objectives that pertain to the overall health of the LPVB. Each year, FCGMA publishes a report tracking the progress toward meeting the objectives.	Groundwater Conditions	LPVB, PVB, ASRVB, Oxnard Subbasin	FCGMA, UWCD, and CMWD. 2007. 2007 Update to the Fox Canyon Groundwater Management Agency Groundwater Management Plan. May 15, 2007 (p. iii).	<a href="http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan">http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan</a>
California Statewide Groundwater Elevation Monitoring (CASGEM)	DWR Program implemented by VCWPD	DWR mandated program (SBX7-6) to track seasonal and long-term groundwater elevation trends.	Groundwater Elevation	LPVB, PVB, ASRVB, Oxnard Subbasin	DWR. 2016. "California Statewide Groundwater Elevation Monitoring (CASGEM) Program." Accessed 9/15/2016.	<a href="http://www.water.ca.gov/groundwater/casgem/">http://www.water.ca.gov/groundwater/casgem/</a>
Ground Water Ambient Monitoring & Assessment Program (GAMA)	SWRCB	SWRCB Program implemented in 2000 (modified by AB 599 in 2001) to monitor and assess groundwater basins throughout the state.	Groundwater Quality	LPVB, PVB, ASRVB, Oxnard Subbasin	SWRCB. 2016. GAMA – Groundwater Ambient Monitoring and Assessment Program Website. Accessed 9/22/2016.	<a href="http://www.swrcb.ca.gov/gama/">http://www.swrcb.ca.gov/gama/</a>
Ventura County Groundwater Elevation Monitoring Program	VCWPD	Quarterly measurement of approximately 200 groundwater well elevations throughout Ventura County by District staff (approximately 29 wells monitored within the LPVB).	Groundwater Elevation	LPVB, PVB, ASRVB, Oxnard Subbasin	VCWPD. 2015. 2014 Annual Report of Groundwater Conditions (p. 12).	<a href="http://pwaportal.ventura.org/WPD/docs/Groundwater-Resources/2014%20Annual%20Report-Web.pdf">http://pwaportal.ventura.org/WPD/docs/Groundwater-Resources/2014%20Annual%20Report-Web.pdf</a>
Ventura County Groundwater Quality Monitoring Program	VCWPD	Approximately 150 wells sampled throughout the County (17 in the LPVB) and analyzed for general minerals and other constituents.	Groundwater Quality	LPVB, PVB, ASRVB, Oxnard Subbasin	VCWPD. 2015. 2014 Annual Report of Groundwater Conditions (p. 12).	<a href="http://pwaportal.ventura.org/WPD/docs/Groundwater-Resources/2014%20Annual%20Report-Web.pdf">http://pwaportal.ventura.org/WPD/docs/Groundwater-Resources/2014%20Annual%20Report-Web.pdf</a>
FCGMA Groundwater Extraction Reporting Program (1985)	FCGMA	Since 1985, FCGMA has collected extraction records from well operators on a semi-annual basis. Requirements include periodic verification of flowmeter accuracy.	Groundwater Extraction	LPVB, PVB, ASRVB, Oxnard Subbasin	FCGMA, UWCD, and CMWD. 2007. 2007 Update to the Fox Canyon Groundwater Management Agency Groundwater Management Plan. May 2007 (pg. 17).	<a href="http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan">http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan</a>
Ventura County Stormwater Quality Monitoring Program	VCWPD, Camarillo, Moorpark, Oxnard, Port Hueneme, and others	Program meets the requirements of the Ventura County Stormwater Permits. Includes water quality sampling, watershed assessments, business inspections, and pollution prevention programs.	Surface Water Quality	LPVB, PVB, ASRVB, Oxnard Subbasin	Ventura Countywide Stormwater Quality Management Program. 2016. Ventura Countywide Stormwater Quality Management Program Website. Accessed September 15, 2016.	<a href="http://www.vcstormwater.org/">http://www.vcstormwater.org/</a>
UWCD Groundwater Monitoring Program	UWCD	UWCD monitors water levels and water quality in the LPVB and other groundwater basins.	No	LPVB, Oxnard Subbasin, PVB	UWCD. 2014. Groundwater and Surface Water Conditions Report – 2013. UWCD Open-File Report 2014-02.	<a href="http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf">http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf</a>
Calleguas Municipal Water District Groundwater Monitoring Program	CMWD	CMWD monitors groundwater levels, quality, and surface water quality in the LPVB and reports on the operation of its ASR Project.	Groundwater Levels and Quality; Surface Water Quality	LPVB	CMWD. Las Posas Basin ASR Annual Reports.	<a href="https://www.lpug.org/new-pagep">https://www.lpug.org/new-pagep</a>

**Notes:** AB = Assembly Bill; ASR = Aquifer Storage and Recovery; ASRVB = Arroyo Santa Rosa Valley Basin; CMWD = Calleguas Municipal Water District; DWR = California Department of Water Resources; FCGMA = Fox Canyon Groundwater Management Agency; LPVB = Las Posas Valley Basin; PVB = Pleasant Valley Basin; SWRCB = State Water Resources Control Board; UWCD = United Water Conservation District; USGS = U.S. Geological Survey; VCWPD = Ventura County Watershed Protection District.

**Table 1-12**  
**Las Posas Valley Basin Existing Water Resources Management Projects, Programs, and Strategies**

Program	Program Agency	Program Description	Parameter	Conjunctive Use Program?	Multi-Basin Program	Source	Link
<i>Surface Water Management Programs</i>							
Conejo Creek Diversion (2000)	CWD, PVCWD, City of Thousand Oaks	Non-potable water from the Thousand Oaks Hill Canyon WWTP upstream of the Conejo Creek Diversion is used for agricultural irrigation and landscaping in the southern part of the ELPMA, ASRVB, and PVB.	Surface Water	Yes	LPVB, ASRVB, PVB	CWD. 2018. <i>2015 Urban Water Management Plan</i> . Final Camarillo, California: CWD. November 15, 2018 (p. 3-4).	<a href="https://www.camrosa.com/wp-content/uploads/2018/12/UWMPamended2018FINAL.pdf">https://www.camrosa.com/wp-content/uploads/2018/12/UWMPamended2018FINAL.pdf</a>
Salt TMDL	LARWQCB	Salt TMDL developed for the Calleguas Creek Watershed.	Surface Water Quality	No	LPVB, PVB, ASRVB, Simi Valley	LPUG. 2012. Final Draft V.1 Las Posas Basin-Specific Groundwater Management Plan. August 17, 2012 (p. 12).	<a href="http://www.calleguas.com/images/docs-water-resources-and-quality/drafts-for-discussion/LP_BSGMP_Final_Draft_V1_081712_Text_Tables.pdf">http://www.calleguas.com/images/docs-water-resources-and-quality/drafts-for-discussion/LP_BSGMP_Final_Draft_V1_081712_Text_Tables.pdf</a> <a href="http://www.swrcb.ca.gov/rwqcb4/">http://www.swrcb.ca.gov/rwqcb4/</a>
The Freeman Diversion (1991)	UWCD	Diversion of Santa Clara River flood flows to Saticoy, El Rio, and Noble Basins for groundwater recharge and surface deliveries through the PTP and PVP. The Freeman Diversion allows for surface water supply in place of groundwater pumping, thus reducing the risk of seawater intrusion.	—	Yes	Oxnard Subbasin and PVB Impacts to WLPMA	UWCD. 2014. Groundwater and Surface Water Conditions Report – 2013. UWCD Open-File Report 2014-12 (p. 39).	<a href="http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf">http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf</a>
State Water Project Importation	CMWD, Ventura County, UWCD	SWP water is supplied by the CMWD to retail water suppliers. UWCD occasionally purchases SWP water. In 2017, 10,000 acre-feet was purchased and used to recharge groundwater in the Oxnard Forebay.	Supplemental Water	No	LPVB, PVB, Oxnard Subbasin	UWCD. 2014. Groundwater and Surface Water Conditions Report – 2013. UWCD Open-File Report 2014-12 (p. 36).  FCGMA, UWCD, and CMWD. 2007. 2007 Update to the Fox Canyon Groundwater Management Agency Management Plan. May 2007 (p. 50).  CMWD. 2016. <i>2015 Urban Water Management Plan</i> . Final. Prepared by Black and Veatch. June 2016.	<a href="http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf">http://www.unitedwater.org/images/stories/reports/GW-Conditions-Reports/2013%20GW%20and%20SW%20Conditions%20Report%20(UWCD%202014)%20FINAL.pdf</a>  <a href="http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf">http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf</a>
<i>Groundwater Management Programs</i>							
Importation of Metropolitan Water District of Southern California Water	CMWD	Import and deliver water from wholesaler MWD. Water purchased by water retailers such as the VCWD No. 1 and No. 19 to supplement water supply instead of pumping groundwater.	Supplemental Water	Yes	LPVB, PVB, Oxnard Subbasin	CMWD. 2016. <i>2015 Urban Water Management Plan</i> – Final. pp. 1-1, 4-1, 4-2 (Figure 4-1), 6-1, 6-13.	<a href="http://www.mwdh2o.com/Who%20We%20Are%20%20Fact%20Sheets/Member%20Agency%20Map.pdf">http://www.mwdh2o.com/Who%20We%20Are%20%20Fact%20Sheets/Member%20Agency%20Map.pdf</a> <a href="http://www.mwdh2o.com/WhoWeAre/Member-Agencies/Pages/default.aspx">http://www.mwdh2o.com/WhoWeAre/Member-Agencies/Pages/default.aspx</a> <a href="http://www.mwdh2o.com/WhoWeAre/History/Pages/default.aspx">http://www.mwdh2o.com/WhoWeAre/History/Pages/default.aspx</a> <a href="http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf">http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf</a>
Salinity Management Pipeline	CMWD	A brine disposal pipeline that collects brine generated by desalting facilities in the LPVB, PVB, and Oxnard Subbasin and conveys it to an ocean outfall for disposal. Future construction of the pipeline is expected to serve additional facilities including those in the ASRVB.	Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	CMWD. 2016. <i>2015 Urban Water Management Plan</i> – Final, p. 6-1.	<a href="http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf">http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf</a>
FCGMA Groundwater Extraction Reporting Program	FCGMA	Well operators are required to report their groundwater extractions twice per year using FCGMA-approved forms or entered online at <a href="https://www.fcgmaonline.org">https://www.fcgmaonline.org</a> .	Groundwater	No	LPVB, PVB, ASRVB, Oxnard Subbasin	FCGMA.. 2015. <i>Calendar Year 2014 Annual Report</i> (p. 11).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>
Las Posas Basin Aquifer Storage and Recovery Project (1994)	CMWD	CMWD operates an 18-well ASR project located within the ELPMA that allows CMWD to recharge the basin via injection of imported water and receive storage credits. The program provides a source of local stored water during shutdowns of imported water supplies. Stored water can be delivered to cities and water retailers within CMWD's service area.	Supplemental Water	Yes	LPVB	CMWD. 2016. <i>2015 Urban Water Management Plan</i> – Final, p. 6-1.	<a href="http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf">http://www.calleguas.com/images/docs-documents-reports/cmwdfinal2015uwmp.pdf</a>

**Table 1-12**  
**Las Posas Valley Basin Existing Water Resources Management Projects, Programs, and Strategies**

Program	Program Agency	Program Description	Parameter	Conjunctive Use Program?	Multi-Basin Program	Source	Link
FCGMA M&I Allocation Program	FCGMA	The current M&I allocation program, also known as a Temporary Extraction Allocation, was implemented with the passage of Ordinance E in 2014. It was implemented for M&I users, replacing Historical Allocation and Baseline Allocation.	Groundwater	Yes	LPVB, PVB, ASRVB, Oxnard Subbasin	FCGMA. 2015. <i>Calendar Year 2014 Annual Report</i> (p. 10).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>
FCGMA Groundwater Injection Credit Program	FCGMA	This is a program by which credits are issued to operators that inject “newly available” water, water from outside the County, or recycled water	Groundwater	Yes	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA. 2015. <i>Calendar Year 2014 Annual Report</i> (p. 23).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>
FCGMA Groundwater Storage (including In-Lieu) Credit Program	FCGMA	This is a program by which credits are issued to the deliverer in equal amounts to the amount of delivered “newly available” water, imported water from outside the County, recycled water, or diverted surface water that would otherwise be wasted to the ocean. Delivered water used in lieu of pumping.	Groundwater	Yes	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA. 2015. <i>Calendar Year 2014 Annual Report</i> (p. 23).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>
FCGMA Credit Transfer Program	FCGMA	Agency allows for credit transfers in accordance with the Ordinance Code and/or pertinent resolutions.	Groundwater	Yes	LPVB, PVB, Oxnard Subbasin	FCGMA. 2015. <i>Calendar Year 2014 Annual Report</i> (pg. 24).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>
Groundwater Supply Policy (Formerly Brackish Groundwater Policy)	FCGMA	The FCGMA Board of Directors adopted Resolution No. 2016-05, a policy for evaluating and authorizing proposals for groundwater supply projects. It allows for consideration of development of brackish groundwater for supply projects subject to monitoring requirements and other constraints and restrictions including compliance with SGMA.	Groundwater	Yes	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA. Draft Brackish Groundwater Project Pumping Policy.	<a href="http://www.fcgma.org/images/Erin/Draft%20Brackish%20Groundwater%20Project%20Pumping%20Policy%20revised%2020160720.pdf">http://www.fcgma.org/images/Erin/Draft%20Brackish%20Groundwater%20Project%20Pumping%20Policy%20revised%2020160720.pdf</a>
Extraction Fee Program	FCGMA	Groundwater extractors are assessed fees per acre-foot of extraction. Fees have been used by FCGMA to finance its management activities since its enabling legislation in 1983.	Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	Assembly Bill no. 2995, Article 9.	<a href="http://www.fcgma.org/fcgma.old/publicdocuments/ordinances/ordinanceAB-2995.pdf">http://www.fcgma.org/fcgma.old/publicdocuments/ordinances/ordinanceAB-2995.pdf</a>
Groundwater Extraction Limitation Program	FCGMA	FCGMA has implemented a program of reduced allocations.	Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA, UWCD, and CMWD. 2007. 2007 Update to the Fox Canyon Groundwater Management Agency Management Plan. May 2007 (p. 45).	<a href="http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan">http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan</a>
Extraction Surcharge Program	FCGMA	Surcharges are imposed on well operators for groundwater extractions in excess of annual allocation amounts.	Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA, UWCD and CMWD. 2007. 2007 Update to the Fox Canyon Groundwater Management Agency Management Plan. May 2007 (p. 45).	<a href="http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan">http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan</a>
Camrosa Wastewater Treatment Plant (1997)	CWD	Wastewater collected is treated to tertiary level and distributed for agriculture and landscape use. Treated water is released to Calleguas Creek when there is no irrigation demand.	Recycled Water	Yes	ELPMA, WLPMA, Oxnard Subbasin, PVB	CWD. 2016. Water Reclamation. Accessed September 29, 2016.	<a href="http://www.camrosa.com/about_fac_wrf.html">http://www.camrosa.com/about_fac_wrf.html</a>
Moorpark Wastewater Treatment Plant	VCWD No. 1	Wastewater recycling.	Recycled Water	Yes	ELPMA	County of Ventura Public Works Agency. n.d. “Ventura County Waterworks District No. 1 (Moorpark) – Description.”	<a href="http://pwportal.ventura.org/WSD/Home/docs/DescriptionWWD1.pdf">http://pwportal.ventura.org/WSD/Home/docs/DescriptionWWD1.pdf</a>
Prohibition of export of groundwater	FCGMA	FCGMA Ordinance requires Board of Directors approval for the export of groundwater from within the FCGMA boundary for use outside of the boundary. (Note that Resolution 1997-2 exempted some exporters that pre-dated FCGMA.)	Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA Ordinance Code, Chapter 5, 5.2.2.1.	<a href="http://www.fcgma.org/images/ordinances_legislation/Ord_Code_FINAL_-_amended_01-09-2015.pdf">http://www.fcgma.org/images/ordinances_legislation/Ord_Code_FINAL_-_amended_01-09-2015.pdf</a>

Table 1-12  
Las Posas Valley Basin Existing Water Resources Management Projects, Programs, and Strategies

Program	Program Agency	Program Description	Parameter	Conjunctive Use Program?	Multi-Basin Program	Source	Link
Other Programs							
Agricultural Water Management Plan	VCWD No. 1	The AWMP contains detailed drought management plan and information regarding the quantity and category of water use in accordance with Executive Order B-29-15.	Ground and Surface Water Quality and Quantity	No	Las Posas Valley	VCWD No. 1. 2015. <i>2015 Agricultural Water Management Plan</i> . Prepared by County of Ventura Public Works Agency Water and Sanitation Department.	<a href="http://www.water.ca.gov/wateruseefficiency/sb7/docs/2016/Ventura%20Co%20Waterworks%20Dist%20No.%201%202015%20AWMP.pdf">http://www.water.ca.gov/wateruseefficiency/sb7/docs/2016/Ventura%20Co%20Waterworks%20Dist%20No.%201%202015%20AWMP.pdf</a>
Las Posas Basin Expansion Area Protection (1997)	FCGMA	FCGMA established an ordinance that provides for protection of exposed aquifer recharge areas in the ELPMA and WLPMA. As part of this ordinance, agriculture and development may be restricted.	Groundwater/ Land Use	No	LPVB	FCGMA, UWCD, and CMWD. 2007. <i>2007 Update to the Fox Canyon Groundwater Management Agency Management Plan</i> . May 2007 (p. 48).  Chapter 4 of Ordinance 8 of FCGMA Ordinance Code.	<a href="http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan">http://www.fcgma.org/component/content/article/20-public-documents/plans/95-groundwater-management-plan</a>
Integrated Regional Water Management Program	Watersheds Coalition of Ventura County	Initiated with Proposition 50 in 2006, the program provides competitive grant funds for projects and studies in accordance with a comprehensive Integrated Regional Water Management Plan.	Groundwater, Surface Water	No	LPVB, ASRVB, PVB, Oxnard Subbasin	Ventura County Watersheds Coalition. 2016. Watersheds Coalition of Ventura County. Accessed September 15, 2016.	<a href="http://www.ventura.org/wcvc/IRWMP/2014IRWMP.htm">http://www.ventura.org/wcvc/IRWMP/2014IRWMP.htm</a>
Water Conservation Programs	Ventura County, Cities, and Water Districts	There are numerous conservation programs conducted by cities, Ventura County, and other entities within FCGMA jurisdiction that provide education, incentives, and regulations to encourage water savings from both the M&I and agricultural sectors. The exact configuration of these programs change with climate and local and state requirements.	Surface Water, Groundwater	No	LPVB, ASRVB, PVB, Oxnard Subbasin	—	—
FCGMA Irrigation Allowance Index Program/Annual Efficiency Allocation	FCGMA	Requirement for agricultural well operators to irrigate efficiency as compared to FCGMA calculated water demand for specific crop types with consideration of weather conditions. Operators apply for allocation.	Groundwater, Surface Water	No	LPVB, ASRVB, PVB, Oxnard Subbasin	FCGMA. 2015. <i>Calendar Year 2014 Annual Report</i> (p. 10).	<a href="http://www.fcgma.org/public-documents/reports">http://www.fcgma.org/public-documents/reports</a>

**Notes:** ASR = aquifer storage and recovery; ASRVB = Arroyo Santa Rosa Valley Basin; AWMP = Agricultural Water Management Plan; CMWD = Calleguas Municipal Water District; CWD = Camrosa Water District; ELPMA = East Las Posas Management Area; FCGMA = Fox Canyon Groundwater Management Agency; LARWQCB = Los Angeles Regional Water Quality Control Board; LPUG = Las Posas Users Group; LPVB = Las Posas Valley Basin; M&I = Municipal and Industrial; MWD = Metropolitan Water District of Southern California; PTP = Pumping Trough Pipeline; PVB = Pleasant Valley Basin; PVCWD = Pleasant Valley County Water District; PVP = Pleasant Valley Pipeline; SGMA = Sustainable Groundwater Management Act; SWP = State Water Project; TMDL = total maximum daily load; UWCD = United Water Conservation District; WLPMA = West Las Posas Management Area; WWTP = Wastewater Treatment Plant.



**Table 1-13**  
**FCGMA Public Meetings on Las Posas Valley Basin GSP**

Meeting	Date
FCGMA Special Board Meeting	November 8, 2019
TAG Meeting	October 31, 2019
FCGMA Regular Board Meeting	August 28, 2019
GSP Work Shops	August 21,22, 2019
TAG Meeting	August 1, 2019
FCGMA Regular Board Meeting	July 24, 2019
FCGMA Regular Board Meeting	June 26, 2019
FCGMA Special Board Meeting	May 22, 2019
TAG Meeting	May 5, 2019
FCGMA Regular Board Meeting	April 24, 2019
FCGMA GSP Public Workshop No. 4	March 15, 2019
FCGMA Special Board Meeting	March 15, 2019
FCGMA Regular Board Meeting	February 27, 2019
Special TAG Meeting	February 19, 2019
FCGMA Special Board Meeting	February 8, 2019
Special TAG Meeting	February 6, 2019
FCGMA Regular Board Meeting	January 23, 2019
Special TAG Meeting	January 17, 2019
TAG Meeting	December 6, 2018
FCGMA Regular Board Meeting	December 5, 2018
FCGMA Special Board Meeting	November 20, 2018
TAG Meeting	November 1, 2018
FCGMA Regular Board Meeting	October 24, 2018
FCGMA Special Board Meeting	October 12, 2018
TAG Meeting	October 4, 2018
FCGMA Regular Board Meeting	September 26, 2018
FCGMA Special Board Meeting	September 14,2018
TAG Meeting	September 6, 2018
FCGMA Special Board Meeting	August 29, 2018
FCGMA Regular Board Meeting	July 25, 2018
TAG Meeting	July 5, 2018
FCGMA Special Board Meeting	June 20, 2018
Special TAG Meeting	June 19, 2018
TAG Meeting	June 14, 2018
FCGMA Regular Board Meeting	May 23, 2018
TAG Meeting	May 3, 2018
FCGMA Regular Board Meeting	April 25, 2018
TAG Meeting	April 5, 2018
FCGMA Regular Board Meeting	March 28, 2018
FCGMA Special Board Meeting	March 9, 2018

**Table 1-13**  
**FCGMA Public Meetings on Las Posas Valley Basin GSP**

Meeting	Date
TAG Meeting	March 1, 2018
FCGMA Regular Board Meeting	February 28, 2018
FCGMA Special Board Meeting	February 26, 2018
FCGMA GSP Public Workshop No. 3	February 1, 2018
TAG Meeting	February 1, 2018
Special TAG Meeting	January 30, 2018
FCGMA Regular Board Meeting	January 24, 2018
TAG Meeting	January 4, 2018
FCGMA Special Board Meeting	January 3, 2018
Special TAG Meeting	December 14, 2018
FCGMA Special Board Meeting	November 13, 2017
TAG Meeting	November 2, 2017
TAG Meeting	October 6, 2017
FCGMA Special Board Meeting	October 13, 2017
FCGMA Regular Board Meeting	October 25, 2017
FCGMA Regular Board Meeting	September 27, 2017
FCGMA GSP Public Stakeholder Workshop No. 2	September 20, 2017
FCGMA Operations Committee Meeting	September 14, 2017
TAG Meeting	September 7, 2017
FCGMA Special Board Meeting	August 11, 2017
FCGMA Operations Committee Meeting	August 10, 2017
TAG Meeting	August 3, 2017
Special TAG Meeting – Sustainability Objective Concepts	July 27, 2017
FCGMA Regular Board Meeting	July 26, 2017
FCGMA Fiscal Committee Budget Workshop	July 25, 2017
Water Market Pilot Program Ad Hoc Committee Meeting	July 24, 2017
FCGMA Board Executive Committee Meeting	July 12, 2017
TAG Meeting	July 6, 2017
Special TAG Meeting – Groundwater Dependent Ecosystems	June 29, 2017
FCGMA Regular Board Meeting	June 28, 2017
FCGMA Special Board Meeting LPVB	June 23, 2017
FCGMA Board Executive Committee Meeting	June 15, 2017
TAG Meeting	June 1, 2017
FCGMA Regular Board Meeting	May 24, 2017
TAG Meeting	May 4, 2017
Special TAG Meeting – Groundwater Models	April 27, 2017
FCGMA Regular Board Meeting	April 26, 2017
Las Posas Valley Town Hall Meeting	April 11, 2017
Special TAG Meeting	March 24, 2017
Special TAG Meeting – Groundwater Models	March 24, 2017

**Table 1-13**  
**FCGMA Public Meetings on Las Posas Valley Basin GSP**

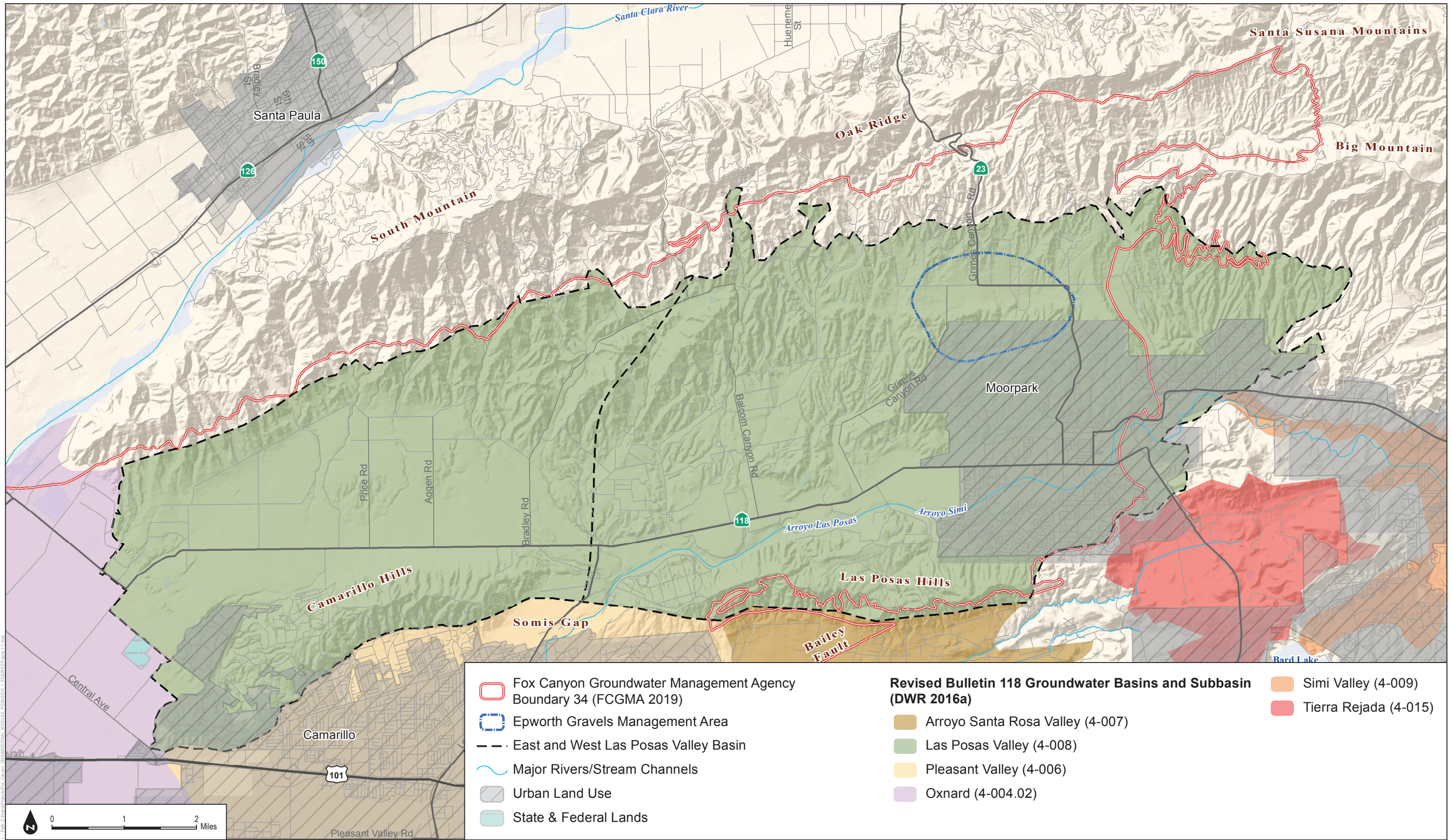
Meeting	Date
FCGMA Regular Board Meeting	March 22, 2017
TAG Meeting	March 3, 2017
FCGMA Regular Board Meeting	February 22, 2017
TAG Meeting	February 2, 2017
FCGMA Regular Board Meeting	January 25, 2017
TAG Meeting	December 16, 2016
FCGMA Regular Board Meeting	December 9, 2016
TAG Meeting	November 18, 2016
FCGMA GSP Public Stakeholder Workshop No. 1	November 15, 2016
FCGMA Regular Board Meeting	October 26, 2016
TAG Meeting	October 7, 2016
FCGMA Executive Committee	October 3, 2016
FCGMA Regular Board Meeting	September 28, 2016
TAG Meeting	August 26, 2016
TAG Meeting	July 29, 2016
FCGMA Regular Board Meeting	July 20, 2016
FCGMA Regular Board Meeting	June 22, 2016
TAG Meeting	May 27, 2016
FCGMA Regular Board Meeting	May 25, 2016
TAG Meeting	April 29, 2016
FCGMA Regular Board Meeting	April 27, 2017
TAG Meeting	March 25, 2016
FCGMA Regular Board Meeting	March 23, 2016
FCGMA Special Board Meeting	March 11, 2016
TAG Meeting	February 26, 2016
TAG Meeting	January 29, 2016
FCGMA Regular Board Meeting	January 27, 2016
TAG Meeting	December 18, 2015
FCGMA Regular Board Meeting	December 11, 2015
TAG Meeting	November 20, 2015
FCGMA Special Board Meeting	November 13, 2015
TAG Meeting	October 30, 2015
FCGMA Regular Board Meeting	October 28, 2015
TAG Meeting	September 25, 2015
FCGMA Regular Board Meeting	September 23, 2015
TAG Meeting	August 28, 2015
FCGMA Special Board Meeting	August 13, 2015
TAG Meeting	July 30, 2015
FCGMA Regular Board Meeting	July 22, 2015
FCGMA Regular Board Meeting	June 24, 2015

**Table 1-13**  
**FCGMA Public Meetings on Las Posas Valley Basin GSP**

Meeting	Date
FCGMA Regular Board Meeting	May 27, 2015
FCGMA Regular Board Meeting	April 22, 2015
FCGMA Regular Board Meeting	March 25, 2015

**Notes:** FCGMA = Fox Canyon Groundwater Management Agency; GSP = Groundwater Sustainability Plan; LPVB = Las Posas Valley Basin; TAG = Technical Advisory Group.





SOURCE: DWR; County of Ventura

Groundwater Sustainability Plan for the Las Posas Valley Basin

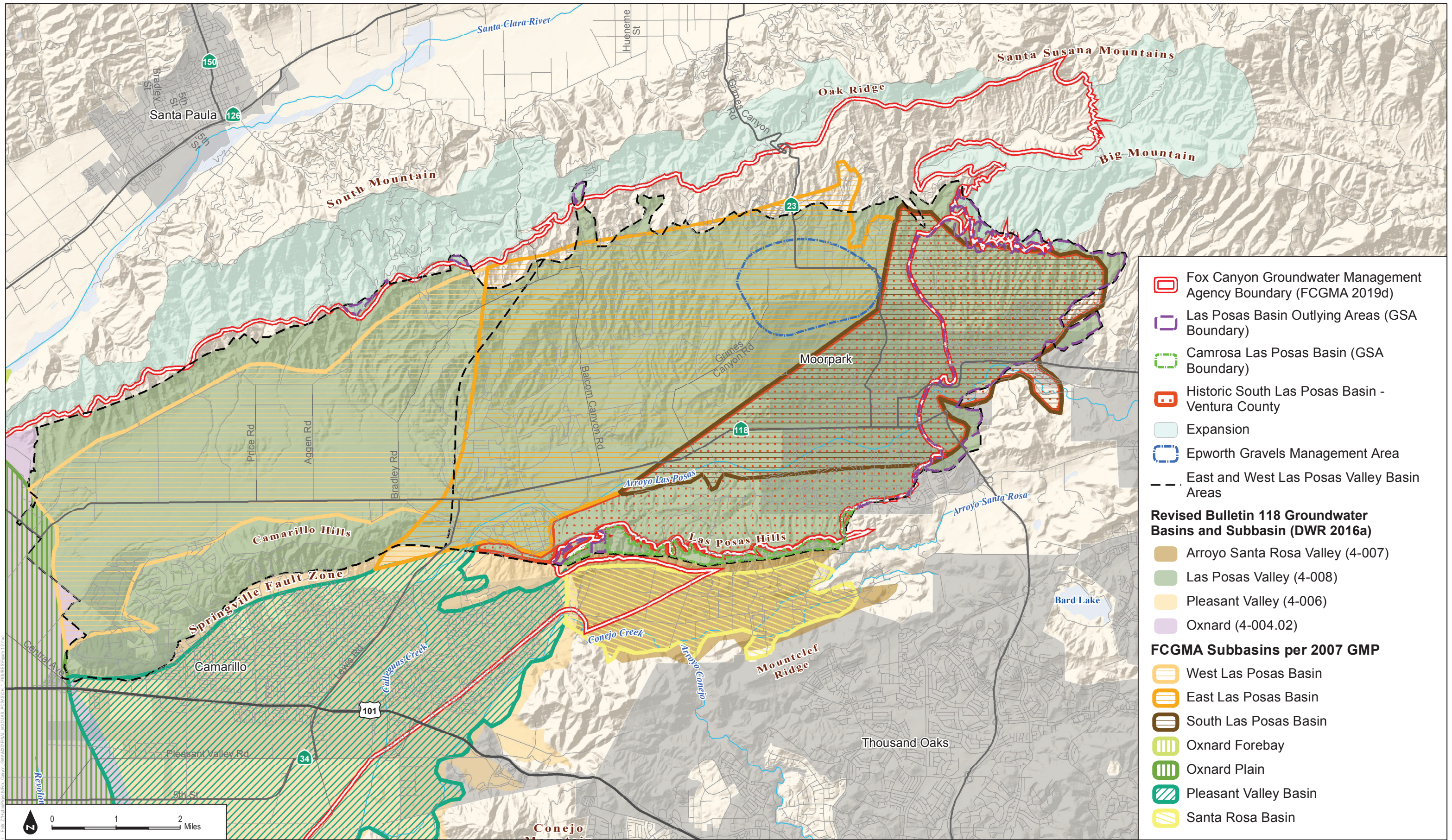
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**FIGURE 1-1**  
Vicinity Map for the Las Posas Valley Basin



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- Fox Canyon Groundwater Management Agency Boundary (FCGMA 2019d)
- Las Posas Basin Outlying Areas (GSA Boundary)
- Camrosa Las Posas Basin (GSA Boundary)
- Historic South Las Posas Basin - Ventura County
- Expansion
- Epworth Gravels Management Area
- East and West Las Posas Valley Basin Areas
- Revised Bulletin 118 Groundwater Basins and Subbasin (DWR 2016a)**
- Arroyo Santa Rosa Valley (4-007)
- Las Posas Valley (4-008)
- Pleasant Valley (4-006)
- Oxnard (4-004.02)
- FCGMA Subbasins per 2007 GMP**
- West Las Posas Basin
- East Las Posas Basin
- South Las Posas Basin
- Oxnard Forebay
- Oxnard Plain
- Pleasant Valley Basin
- Santa Rosa Basin

**FIGURE 1-2**

Administrative Boundaries for the Las Posas Valley Basin

SOURCE: DWR; County of Ventura

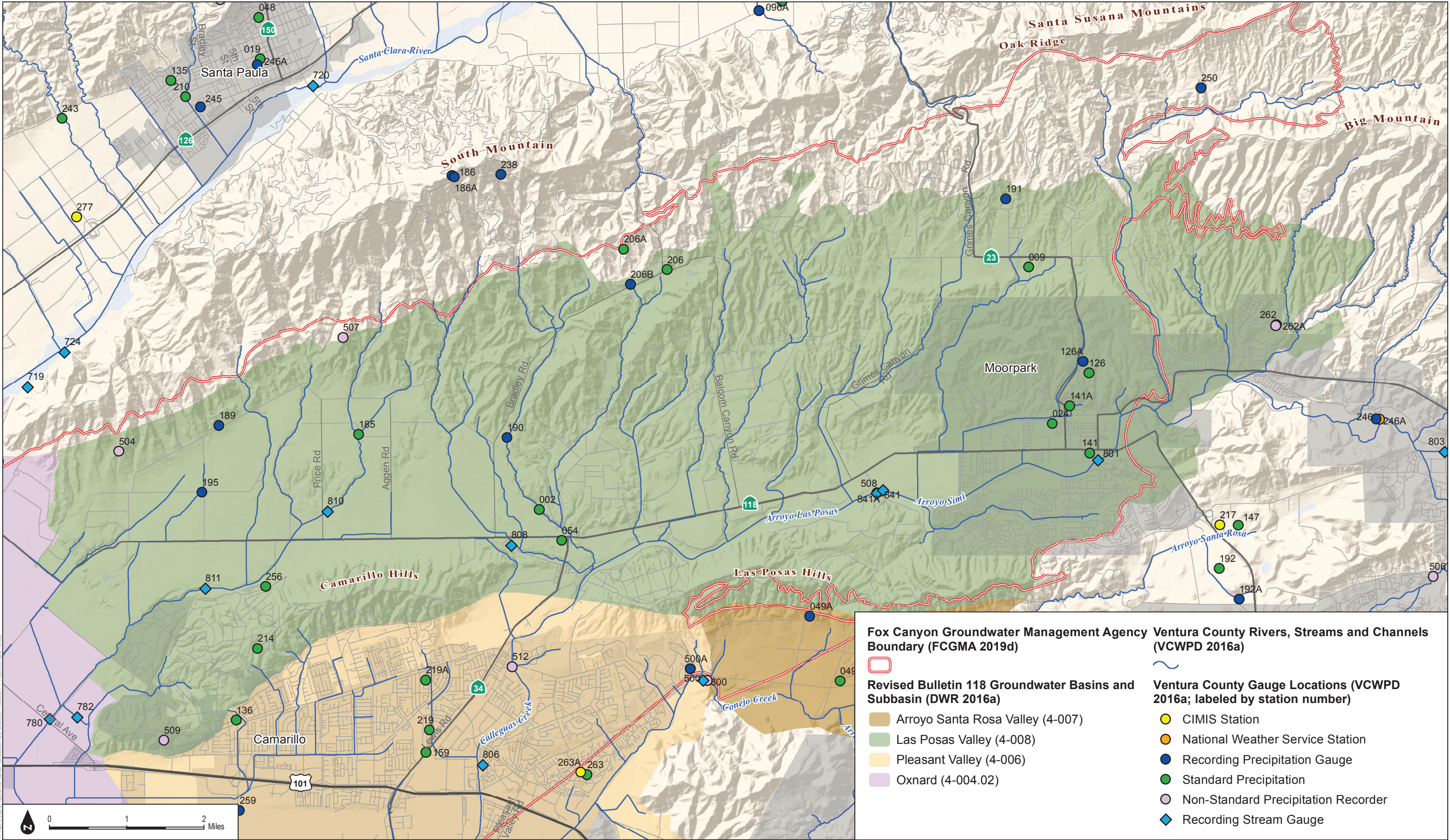
Groundwater Sustainability Plan for the Las Posas Valley Basin





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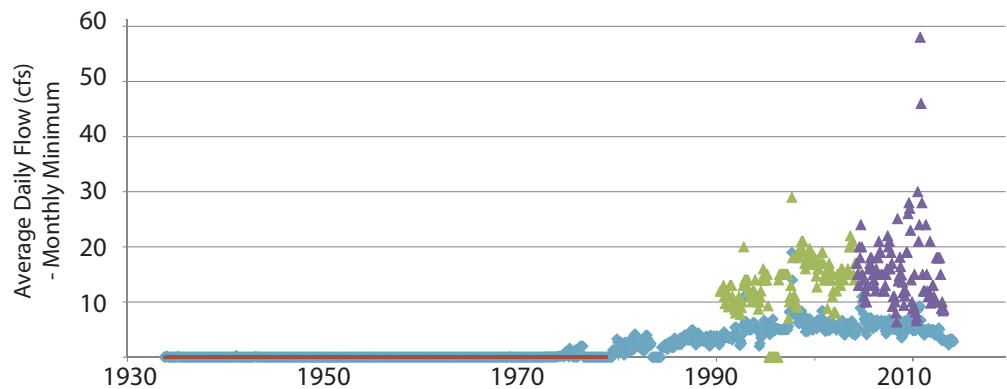
**FIGURE 1-3**  
Active Gauge Locations



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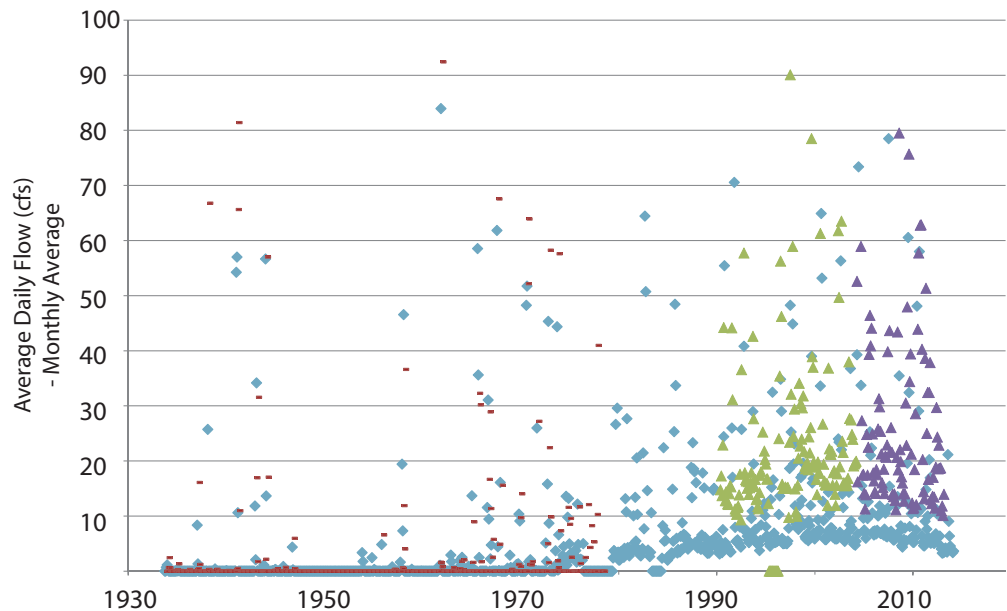
A. Monthly Minimums of Average Daily Flow (cfs) in Arroyo Simi-Las Posas

- ◆ Station 803
- Station 801
- ▲ Station 841
- ▲ Station 841A



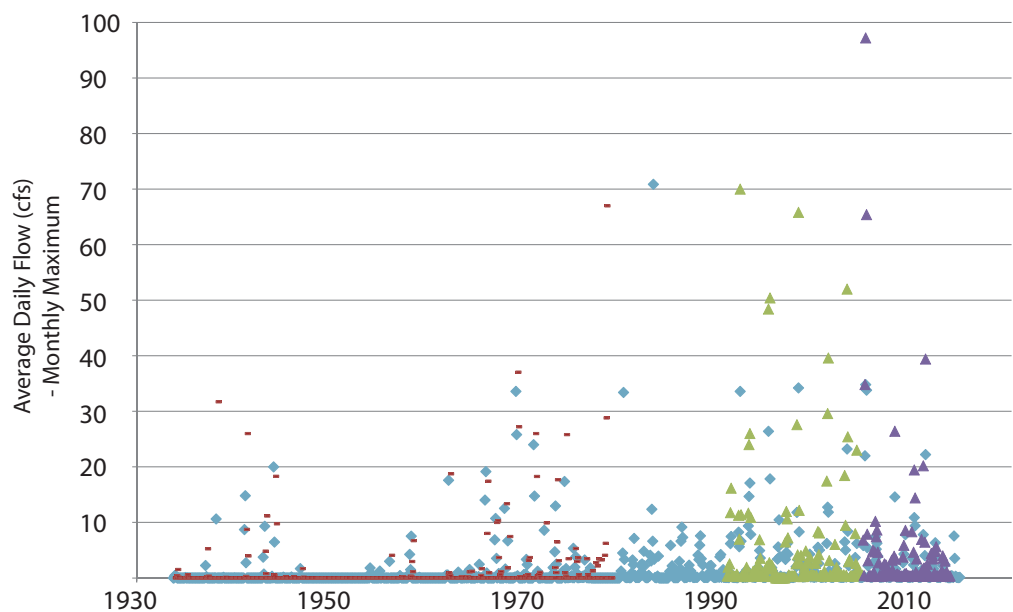
B. Monthly Averages of Average Daily Flow (cfs) in Arroyo Simi-Las Posas

- ◆ Station 803
- Station 801
- ▲ Station 841
- ▲ Station 841A



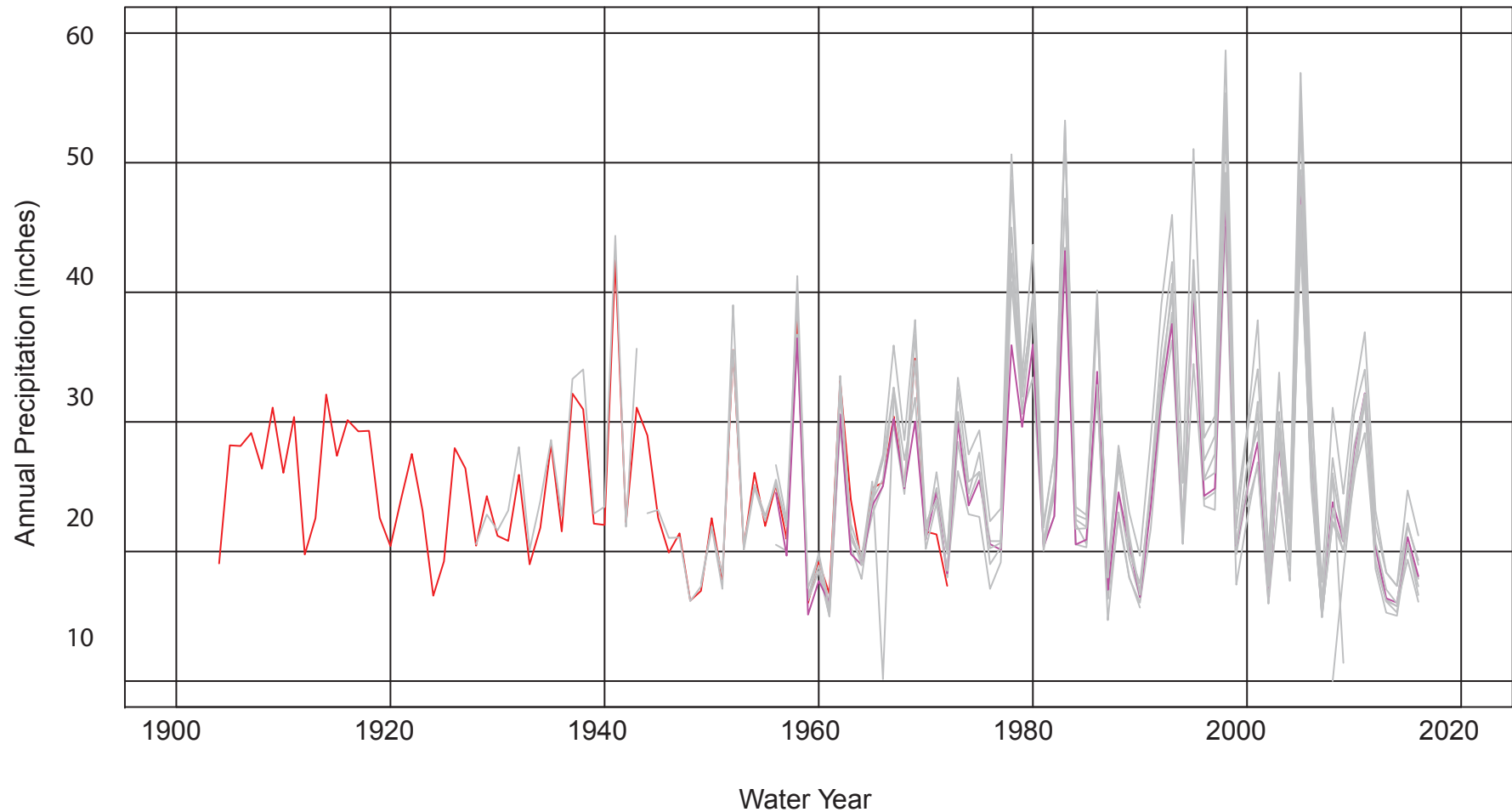
C. Monthly Maximum of Average Daily Flow (cfs) in Arroyo Simi-Las Posas

- ◆ Station 803
- Station 801
- ▲ Station 841
- ▲ Station 841A



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## Las Posas Valley Annual Precipitation



**Note:** Annual precipitation values recorded at rain gauges within Las Posas Valley are shown. The majority of the precipitation records are depicted as gray lines. The two gauges used to create a long-term precipitation record, Stations 002 (Somis - Aggen Ranch) and 190 (Somis - Bard), are displayed in red and magenta, respectively.

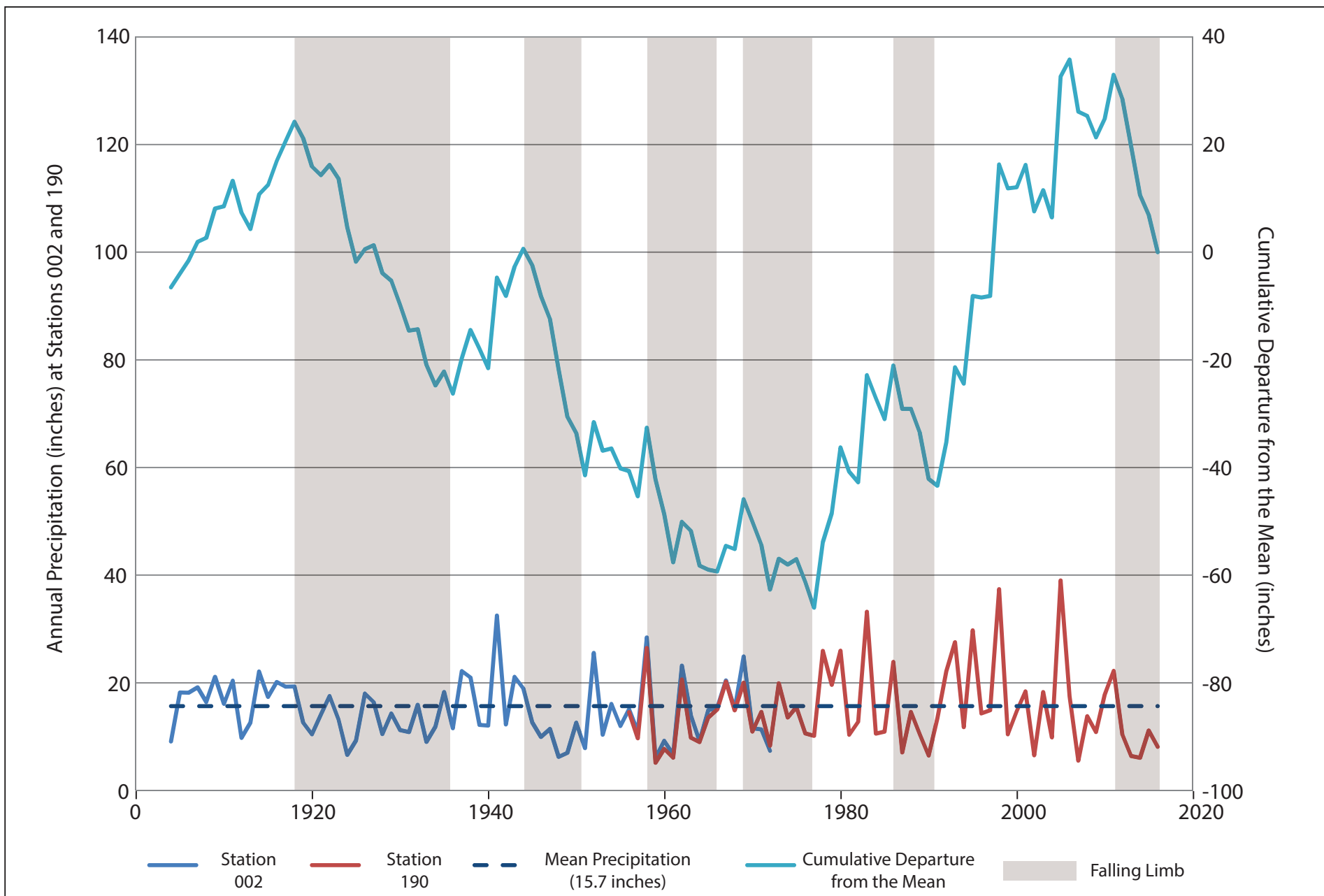
SOURCE: Ventura County Watershed Protection District

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Groundwater Sustainability Plan for the Las Posas Valley Basin

**FIGURE 1-5**  
**Las Posas Valley Annual Precipitation**

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SOURCE: Ventura County Watershed Protection District

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**FIGURE 1-6**  
**Long-Term Precipitation Trends in Las Posas Valley**

Groundwater Sustainability Plan for the Las Posas Valley Basin

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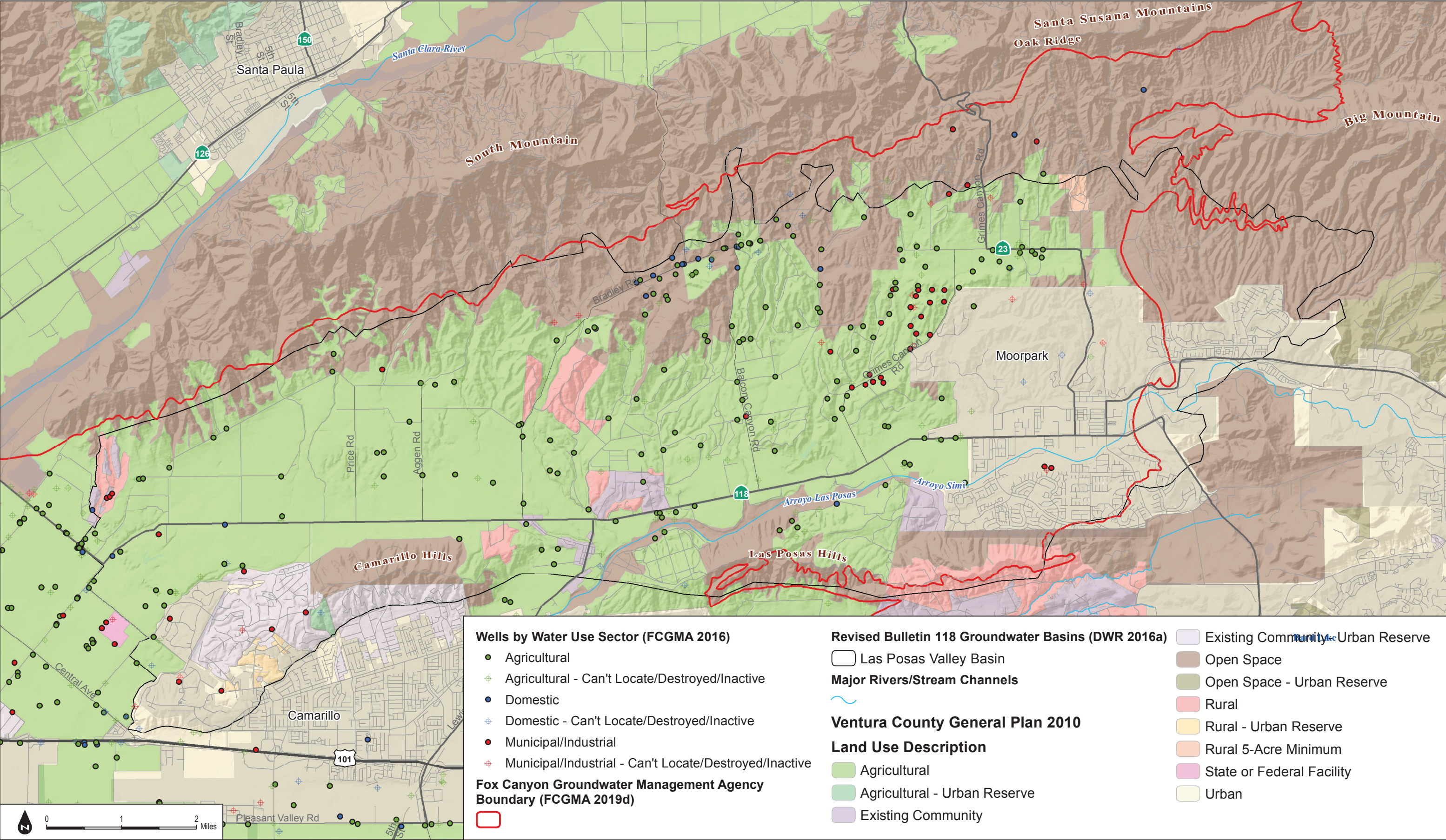


FIGURE 1-7

Land and Water Use



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CALLEGUAS WHOLESALE DISTRICT	
SUPPLIER	WATER COMPANY
Calleguas (CAL-001) ACADNEY MWC	
Calleguas (CAL-002) ARROYO LAS POSAS MWC	
Calleguas (CAL-003) BALCOM BERRY MWC	
Calleguas (CAL-004) BERTY MWC HEARTS MWC	
Calleguas (CAL-005) BRANDES-BADON MWC	
Calleguas (CAL-006) CONEJO TRAILER PARK	
Calleguas (CAL-007) CALIFORNIA WATER SERVICE COMPANY	
Calleguas (CAL-008) CALIFORNIA AMERICAN WATER COMPANY	
Calleguas (CAL-009) CALLEGUAS MWD	
Calleguas (CAL-010) CAMARGO WATER DISTRICT	
Calleguas (CAL-011) CITY OF CAMARILLO	
Calleguas (CAL-012) CITY OF CAMARILLO	
Calleguas (CAL-013) CITY OF OXNARD	
Calleguas (CAL-014) CITY OF THOUSAND OAKS	
Calleguas (CAL-015) CRESTVIEW MWC	
Calleguas (CAL-016) DEL NORTE MWC	
Calleguas (CAL-017) EPOWORTH MWC	
Calleguas (CAL-018) FORTFIELD RENEW CLUB	
Calleguas (CAL-019) FULLER FALLS MWC	
Calleguas (CAL-020) GARDNER RANCH	
Calleguas (CAL-021) LA LOMA RANCH MWC	
Calleguas (CAL-022) LAKE SHEDDOWOOD CSD	
Calleguas (CAL-023) LAS LOMAS WATER SYSTEM	
Calleguas (CAL-024) MESA WATER COMPANY	
Calleguas (CAL-025) OAK PARK WATER SERVICE	
Calleguas (CAL-026) OXNARD UNION HIGH SCHOOL DISTRICT	
Calleguas (CAL-027) PLEASANT VALLEY MWC	
Calleguas (CAL-028) RANCHO CANADA WATER COMPANY	
Calleguas (CAL-029) TOM GREIFER FARM, INC.	
Calleguas (CAL-030) GOLDEN STATE WATER CO. - Simi Valley	
Calleguas (CAL-031) THERMO MWC	
Calleguas (CAL-032) VENTURA COUNTY WATERWORKS DISTRICT NO. 1	
Calleguas (CAL-033) VENTURA COUNTY WATERWORKS DISTRICT NO. 8	
Calleguas (CAL-034) VENTURA COUNTY WATERWORKS DISTRICT NO. 17	
Calleguas (CAL-035) VENTURA COUNTY WATERWORKS DISTRICT NO. 19	
Calleguas (CAL-036) WATERS ROAD USERS GROUP	
Calleguas (CAL-037) ZONE MWC	
Calleguas (CAL-038) BUTLER SANCTUARY MWC	
Calleguas (CAL-039) BALCOM CANYON WATER WELL	
Calleguas (CAL-040) EL CAMERON RANCH	
Calleguas (CAL-041) CORONA RANCH	

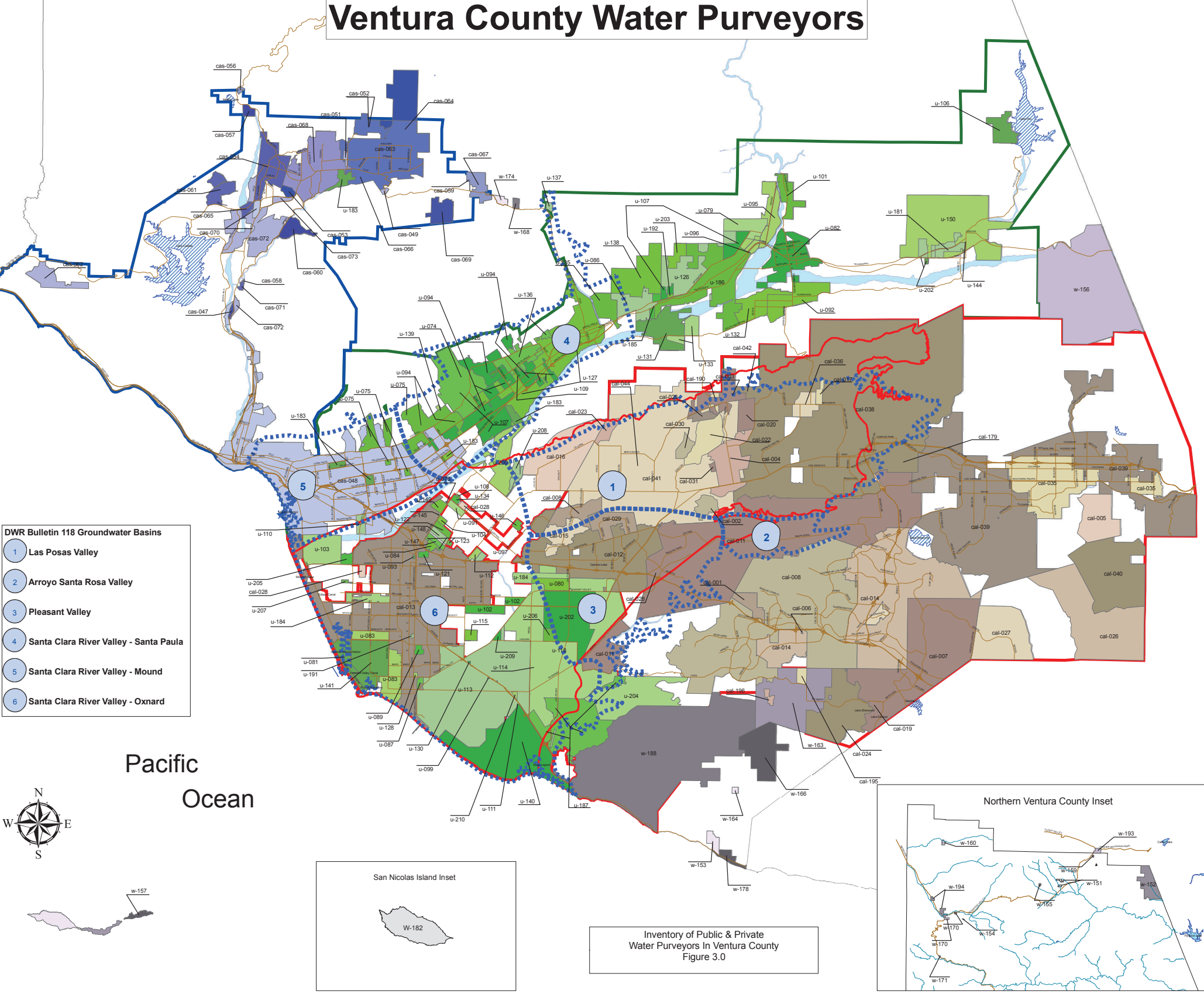
CASITAS WHOLESALE DISTRICT	
SUPPLIER	WATER COMPANY
Casitas (CAS-042) CASITAS MWC	
Casitas (CAS-043) CASITAS MWC	
Casitas (CAS-044) CITY OF SAN BUENAVENTURA	
Casitas (CAS-045) DENNIS PARK WATER SYSTEM	
Casitas (CAS-046) GREYLEY ROAD WATER GROUP	
Casitas (CAS-047) HERMITAGE MWC	
Casitas (CAS-048) JACOBSON INSTITUTE OF THEODORE	
Casitas (CAS-049) MENDOTA OAKS CWD	
Casitas (CAS-050) NORTH FORK SPRINGS MWC	
Casitas (CAS-051) OLIVE	
Casitas (CAS-052) OLD CREEK ROAD MWC	
Casitas (CAS-053) OXNARD WATER ASSOCIATION	
Casitas (CAS-054) RANCHO 84 CDEO MWC	
Casitas (CAS-055) RANCHO MATUA MWC	
Casitas (CAS-056) RINCON WATER AND ROADWORKS	
Casitas (CAS-057) SAN WATER CONSERVATION DISTRICT	
Casitas (CAS-058) SENIOR CANYON MWC	
Casitas (CAS-059) SHERIFFS HONOR FARM	
Casitas (CAS-060) SIEBES ROBERT MWC	
Casitas (CAS-061) SLOAN MWC	
Casitas (CAS-062) GOLDEN STATE WATER CO. - Ok	
Casitas (CAS-063) SULLY MOUNTAIN ROAD WATER ASSOCIATION	
Casitas (CAS-064) TICO MWC	
Casitas (CAS-065) TRES COMRADOS	
Casitas (CAS-066) VENTURA RIVER COUNTRY WATER DISTRICT	
Casitas (CAS-067) VILLANOVA ROAD WATER WELL ASSOCIATION	

UNITED WHOLESALE DISTRICT	
SUPPLIER	WATER COMPANY
United (U-070) ALDO MWC	
United (U-071) ALTA MWC	
United (U-072) BEEDY STREET WELL	
United (U-073) BROWNSTONE MWC	
United (U-074) CAMARILLO AIRPORT UTILITY ENTERPRISE	
United (U-075) CHANNEL ISLANDS BEACH COMMUNITY SERVICES DISTRICT	
United (U-076) CITY OF FILLMORE	
United (U-077) CITY OF PORT HUENEME	
United (U-078) CLOVERDALE MWC	
United (U-079) COMMUNITY MWC	
United (U-080) CYPRESS MWC	
United (U-081) SUNSHINE TRAILER PARK	
United (U-082) DENNIS PARK MWC	
United (U-083) SEACREST COUNCIL	
United (U-084) EVANS RANCH COMPANY	
United (U-085) EVERGREEN TRAILER PARK	
United (U-086) FARMERS IRRIGATION COMPANY	
United (U-087) FILLMORE IRRIGATION COMPANY	
United (U-088) FILLMORE WEST MOBILE HOME PARK	
United (U-089) GARDEN ACRES MWC	
United (U-090) GARDENVIEW MOBILE HOME PARK	
United (U-091) GOODENOUGH MWC	
United (U-092) HAWTHORNE, INC.	
United (U-093) CB SOUTH	
United (U-094) PUNTERIA TOTO FARM	
United (U-095) LAKE PIRU RECREATION AREA	
United (U-096) LOMNER ASSOCIATES	
United (U-097) LUNA VISTA JUNIOR ACADEMY	
United (U-098) MIDDLE ROAD MWC	
United (U-099) MONTANO MWC	
United (U-100) INVALAR MOBILE HOME COURT	
United (U-101) INVALAR ACRES MWC	
United (U-102) OCEAN VIEW MWC	
United (U-103) OCEAN VIEW SCHOOL DISTRICT (LAGUNA VISTA SCHOOL)	
United (U-104) OCEANVIEW LOMA MWC	
United (U-105) PLEASANT VALLEY CWD	
United (U-106) RIO MANOR MWC	
United (U-107) RIO PLAZA WATER COMPANY	
United (U-108) RIO REAL DEL VALLE SCHOOLS	
United (U-109) CITY OF SANTA PAULA	
United (U-110) SAVERS ROAD MWC	
United (U-111) SILVER WHEEL RANCH MOBILE HOME PARK	
United (U-112) SOUTH MOUNTAIN MWC	
United (U-113) SOUTHERN IMPROVEMENT CO	
United (U-114) STORNE MWC	
United (U-115) STOKLAND MWC	
United (U-116) TEAGUE WHELFETT CO. LIMONERA	
United (U-117) THOMAS DEL MWC	
United (U-118) THOMAS AQUINAS COLLEGE	
United (U-119) THOMAS CANYON MWC	
United (U-120) TROCK RANCH MWC	
United (U-121) U.S.N.C.B.C. - Port Hueneme	
United (U-122) UNITED MWC	
United (U-123) VENTURA COUNTY WATERWORKS DISTRICT NO. 16	
United (U-124) G.P. RESOURCES	
United (U-125) VENTURA SCHOOLS	
United (U-126) VINEYARD AVENUE ACRES MWC	
United (U-127) THE MUTUAL WATER COMPANY OF VINEYARD AVENUE ESTATES	
United (U-128) VINEYARD MWC	
United (U-129) WANDERING WATER SERVICE	
United (U-130) PRU MWC	
United (U-131) VENTURA COUNTY PROPERTY ADMINISTRATOR	
United (U-132) VENTURA COUNTY DEPT. of AIRPORTS	
United (U-133) WARDEN MWC	
United (U-134) WARDEN MWC	
United (U-135) WARDEN MWC	
United (U-136) SANTA CLARA HIGH SCHOOL	
United (U-137) CRYSTAL MWC	
United (U-138) LLOYD-BUTLER MWC	
United (U-139) OXNARD MWC	
United (U-140) RANCHO BESSIE WORKERS IMPROVEMENT ASSOCIATION	
United (U-141) TOLAND ROAD WATER SYSTEM	
United (U-142) THORNHILL MWC	
United (U-143) SANTA CLARA RESOURCES	
United (U-144) HOWELL'S BURGERS	
United (U-145) PYSANIE FLOWERS	
United (U-146) SATOYO COUNTRY CLUB	
United (U-147) VUOVICH RANCH	
United (U-148) SCHOLAR MILL TRACT	

SUPPLIERS WITHOUT WHOLESALE DISTRICT	
SUPPLIER	WATER COMPANY
None (N-150) ANTELOPE VALLEY - EAST RIVER WATER AGENCY	
None (N-151) WILSHIRE BLVD. TEMPLE CAMPS & CONFERENCE CENTER	
None (N-152) CAMP SHERIDAN LODGE	
None (N-153) CASTLE LAKE WATER AGENCY	
None (N-154) CHOCOMA CANYON NATIONAL MONUMENT	
None (N-155) CHOCOMA CANYON NATIONAL MONUMENT	
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None (N-191) CHOCOMA CANYON NATIONAL MONUMENT	
None (N-192) CHOCOMA CANYON NATIONAL MONUMENT	
None (N-193) CHOCOMA CANYON NATIONAL MONUMENT	
None (N-194) CHOCOMA CANYON NATIONAL MONUMENT	



Plate 1



Ventura County Watershed Protection District

Legend

- DWR Bull. 118 GW Basins
- Roads
- Casitas MWD
- Water Bodies
- County Boundary
- FoxCynGMA-bdy
- Calleguas MWD
- UWCD

1:87,500

1 inch equals 3 miles

DISCLAIMER: The information contained herein was created by the Ventura County Watershed Protection District solely for its own use. The VCWPD assumes no liability for damages incurred directly or indirectly as a result of errors, omissions or discrepancies.

SOURCE: Ventura County Watershed Protection District; FCGMA, UWCD, and CMWD. 2007. "2007 Update to the Groundwater Management Agency Groundwater Management Plan." May 2007. Plate 1.

FIGURE 1-8  
Ventura County Water Purveyors

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