
# CALENDAR YEAR 2014

# ANNUAL REPORT

# FOX CANYON GROUNDWATER MANAGEMENT AGENCY
# ANNUAL REPORT FOR CALENDAR YEAR 2014

| 2014 Board of Directors | Representing | Alternate Directors |
|---|---|---|
| Steve Bennett | County Board of Supervisors | John Zaragoza |
| David Borchard | Agricultural & Farm Interests | David Schwabauer |
| Charlotte Craven (Vice Chair) | Incorporated Cities | Neal Andrews |
| Dr. Michael Kelley | Small Water Districts | Andrew Waters |
| Lynn Maulhardt (Chair) | United Water Conservation District | Robert Eranio |

**Current FCGMA Staffing is provided under contract by the Ventura County Watershed Protection District (VCWPD)**

Jeff Pratt, P.E., Agency Executive Officer
Alberto Boada, Agency Counsel
Tully Clifford, P.E., Director, Watershed Protection District
Gerhardt Hubner, P.G., Deputy Director, Watershed Protection District
Rick Viergutz, C.E.G., Groundwater Manager, Watershed Protection District
Kathleen Riedel, C.E.G., Groundwater Specialist, Watershed Protection District
Jessica Kam, Agency Clerk of the Board
Tammy Butterworth, Agency Deputy Clerk of the Board
Mandi Freitas, Administrative Assistant

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## APPENDIX

# 1.0 EXECUTIVE SUMMARY

This Executive Summary: touches on climatic conditions, conditions of basins, policy changes made, and groundwater extractions; and highlights some of the Fox Canyon Groundwater Management Agency's (FCGMA) accomplishments during 2014.

Calendar year 2014 was the fourth year (2011 through 2014) of below average rainfall, and was coupled with above average evapotranspiration (ETo).

Groundwater levels declined in the western half of the Agency between Fall 2013 and Fall 2014. In the Upper Aquifer System (UAS), water levels in Fall 2014 were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay and Pleasant Valley basins. In the Lower Aquifer System (LAS), water levels in Fall 2014 were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay, Pleasant Valley, and West Las Posas basins. Of the 16 Basin Management Objectives (BMOs) for water levels in the Oxnard Plain and Pleasant Valley basins, none were met. Of the 34 water quality (chloride, nitrate and total dissolved solids) BMOs monitored during 2014, 15 were met and 19 were not met.

The continuance of below average rainfall and declining groundwater levels led to the adoption of Emergency Ordinance E in April 2014. This Ordinance is designed to reduce groundwater extractions by reducing groundwater extraction allocations stepwise, with a 20% reduction from the Agency 10 year (2003 to 2012) average extractions. With the adoption of the Ordinance, the allocation systems for the second half of the year were replaced or modified for Municipal and Industrial (M&I) and Agricultural (AG) Well Operators.

Total reported groundwater extractions for 2014 were the second highest reported since 1990, only surpassed by reported extractions in 2013. As of June 10, 2015, reported extractions for 2014 were 149,715 acre-feet (AF), a 20% increase above the 1991 to 2013 average reported groundwater extractions of 124,963 AF per year (AFY). The extractions by user type and percent of 2014 total extractions are AG 71%, M&I 29%, and Domestic 0.2%.

Many significant actions took place during 2014. Specific accomplishments are listed in summary form below. The body of this Annual Report along with the attached tables and figures provide a more detailed description of such activities.

# 2.0 PURPOSE OF THE REPORT

The Fox Canyon Groundwater Management Agency Act [AB-2995], § 502, requires that "*The agency prepare annually or receive from its member agencies reports on groundwater and supplemental water supplies and conditions in the territory of the agency, including groundwater management and conjunctive use objectives and a plan for implementation of those objectives.*" The purpose of this report is to fulfill that obligation. In addition, this report summarizes the Agency's background and natural setting of lands within the FCGMA, and presents a synopsis of the technical and administrative groundwater resource management activities for 2014. Since the Agency's fiscal year is not concurrent with the calendar year or technical reporting year, this report includes only a brief summary of financial activities. Fiscal data for the first reporting period(s) covering 2014 can be found in the *Agency's Fiscal Year 2013-14 Year-End Final Budget Performance Report* presented to the Board of Directors in September 2014.

# 3.0 AGENCY OVERVIEW

## 3.1 Introduction

The FCGMA is a public agency tasked with managing groundwater resources in the southwestern portion of Ventura County, California (see Figure 1 – *Fox Canyon Groundwater Management Agency Boundary*). The FCGMA is an independent State "Special District," separate from the County of Ventura or any city government, with jurisdiction over all lands lying above the Fox Canyon aquifer (California Water Code, CWC, Appendix 121, § 102). The Agency was created in 1982 by the California Legislature via the Fox Canyon Groundwater Management Agency Act [AB-2995] for the express purposes of regulating, conserving, managing, and controlling the use and extraction of groundwater to help preserve resources, and to counter seawater intrusion beneath the Oxnard Plain. Groundwater resources within the boundary of the FCGMA are used by the cities of Ventura, Oxnard, Port Hueneme, Camarillo, and Moorpark, along with the unincorporated communities of Saticoy, El Rio, Somis, Moorpark Home Acres, Nyeland Acres, and Montalvo. The FCGMA is funded solely by fees paid by those who extract groundwater within the Agency's boundaries. These extraction fees are used by the Agency to administer and manage local underlying groundwater resources within several aquifers.

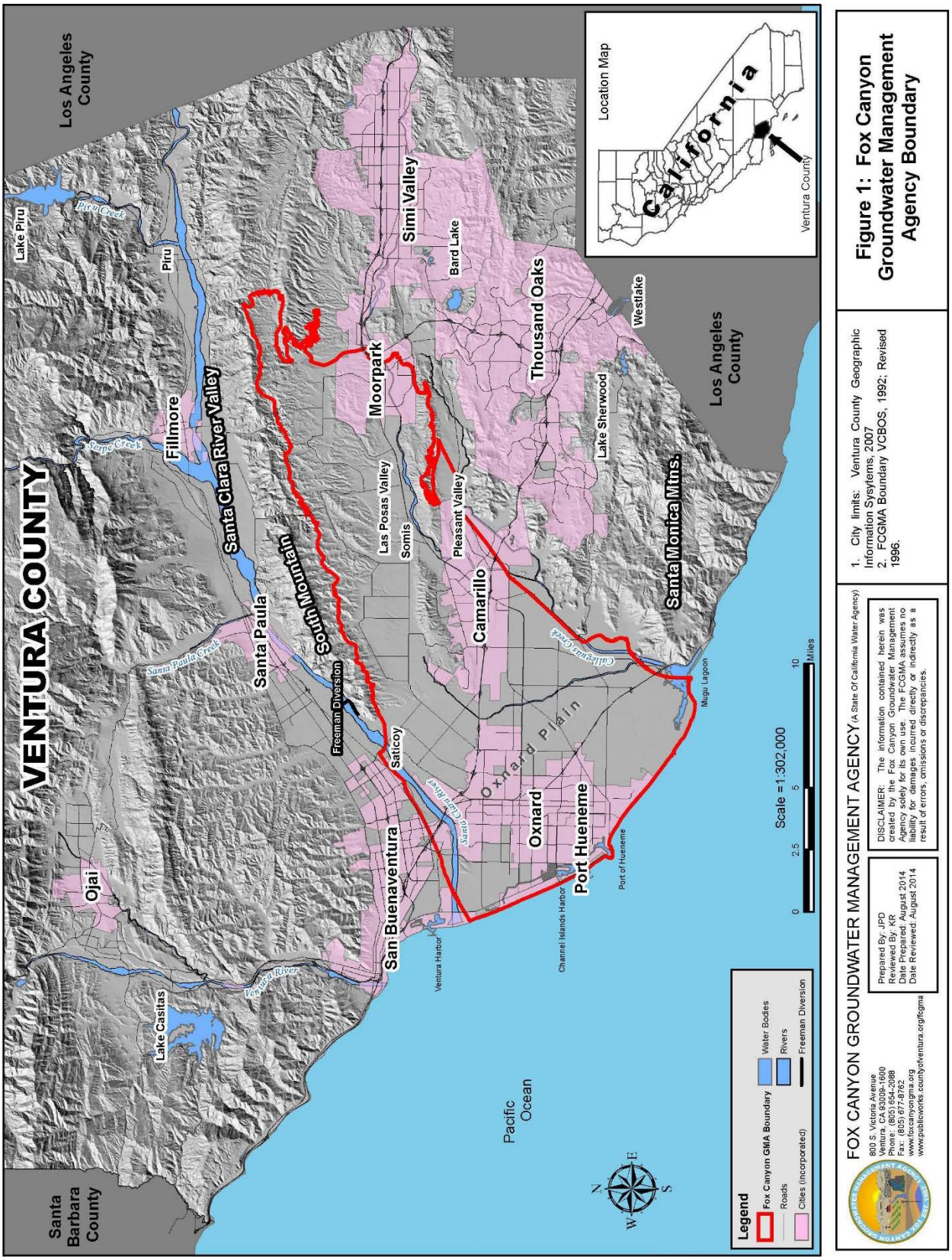
## 3.2 Origin and History of the Fox Canyon Groundwater Management Agency (FCGMA)

The unique geographic and geologic characteristics of Southern California have created a significant and valuable groundwater resource in the near-coastal and inland valley portions of Ventura County. Winter storms associated with the warm Mediterranean climate move inland from the Pacific Ocean and drop precipitation over the region, with greater amounts generally falling in the first quarter of the year (January-February-March) than during the last quarter (October-November-December). The topography and geology of the area allow surface run-off and percolating groundwater to flow south and westward towards the coastal Oxnard Plain where such water can percolate into permeable sandy alluvial aquifers that are bounded by impermeable clays or compacted silts. Groundwater beneath the Oxnard Plain is contained in several named aquifers that are primarily rimmed by upland and recharge areas to the north and east; the relatively impermeable rocks of the Santa Monica Mountains to the south and southeast; and the Pacific Ocean to the west and southwest.

Although the early indigenous people primarily relied on natural springs and available surface water, European settlers beginning in the early to mid-1800s recognized groundwater as a reliable resource. Beginning with shallow hand-dug (mostly windmill-driven) wells, the groundwater supply was developed to create one of the most prolific agricultural regions in California. In 2014, groundwater resources supported agricultural products in Ventura County is estimated to be valued at more than $2.1 billion (*Ventura County's Crop & Livestock Report 2013).* The Ventura County Agricultural Commissioner's Office, *2014 Crop & Livestock Report* should be available in July 2015.

The FCGMA was created by the State of California (legislative branch) in response to local and persistent overuse of groundwater resources resulting in declining water quality (especially in the southern part of the Oxnard Plain) first recognized in the early 1940's (DWR, 1954). Prior to the creation of the FCGMA, the California State Water Resources Control Board (SWRCB), as a condition to a State grant for the Seawater Intrusion Abatement Project, directed the United Water Conservation District (UWCD) and Ventura County as grantees to develop a Groundwater Management Plan for the purpose of controlling extractions, and balancing water supply and demand in both the UAS and LAS. Because of continuing overdraft by groundwater users and resulting seawater intrusion into aquifers beneath the Oxnard Plain, the Fox Canyon Groundwater Management Agency Act (AB-2995, Imbrecht) was passed on September 13, 1982, and became effective January 1, 1983. The Act (enabling legislation) is now contained in the State Water Code Appendix, Chapter 121 et seq. As directed by Article 2, § 202 of that

**Figure 1 - Fox Canyon Groundwater Management Agency Boundary**



enabling legislation, the boundary of the FCGMA was established by Resolution of the Ventura County Board of Supervisors (VCBOS, 1982) on December 21, 1982 and became effective by recordation in the Ventura County Office of the Recorder (VCOR) on January 1, 1983. The boundary has been revised and legally re-recorded in 1996 and again in 2002 to reflect updated knowledge of the aquifer both geographically and to reflect subsequent hydrologic findings (VCOR, 1996; VCOR, 2002).

## 3.3 Mission Statement

The original State legislation created the FCGMA to manage groundwater in both over-drafted and potentially seawater–intruded areas within Ventura County. The prime objectives and purposes of the FCGMA are to preserve groundwater resources for: agricultural, municipal, and industrial uses in the best interests of the public; and the common benefit of all water users (FCGMA, 2007). Protection of water quality and quantity along with maintenance of long-term water supply are included in those goals and objectives. In 2006, the FCGMA formally adopted the following mission statement:

> *"The Fox Canyon Groundwater Management Agency (Agency), established by the State Legislature in 1982, is charged with the preservation and management of groundwater resources within the areas or lands overlying the Fox Canyon aquifer for the common benefit of the public and all agricultural, municipal and industrial users."*

## 3.4 Agency Operations and Personnel

The FCGMA is directed by an elected five (5) member Board of Directors, and staffed by technical and administrative personnel provided by the Ventura County Watershed Protection District (Table 1 – *Summary of FCGMA Personnel for Calendar Year 2014,* as of the end of the year).

As required by its enabling legislation, the Board of Directors for the FCGMA is composed of one member from each of the following four stakeholder groups:

- The Ventura County Board of Supervisors.
- The United Water Conservation District (UWCD) Board of Directors.
- The City Councils of the five incorporated cities that partially or totally overlie the Fox Canyon Aquifer. These cities include Ventura, Oxnard, Camarillo, Port Hueneme, and Moorpark.
- The seven[1] existing mutual water companies and special districts within the FCGMA, as identified in AB-2995. They include the governing boards of the following mutual water companies and special districts not governed by the County of Board of Supervisors, which are engaged in water activities, and whose territory at least in part overlies the territory of the Agency: (1) Alta Mutual Water Company, (2) Pleasant Valley County Water District, (3) Berylwood Mutual Water Company, (4) Calleguas Municipal Water District (CMWD), (5) Camrosa County Water District, (6) Zone Mutual Water Company, and (7) Del Norte Mutual Water Company.

These four stakeholder groups select the fifth Board Member from a list of at least five candidates nominated by the Ventura County Farm Bureau and Ventura County Agricultural Association acting jointly. This fifth member must reside in, and be "actively and primarily engaged in agriculture" within the territory of the Agency. The requirement "actively and primarily engaged in agriculture" means that farm members must derive at least 75% of their income from agriculture.

[1] An eighth mutual water company or special district, Anacapa Mutual Water Company, active at the passage of the enabling legislation (AB-2995), is no longer in existence.

**Table 1 - Summary of FCGMA Personnel for Calendar Year 2014**

| NAMES | AFFILIATION | CONTACT NUMBER |
|---|---|---|
| ***DIRECTORS*** | | |
| Steve Bennett | Ventura County Board of Supervisors | (805) 654-2703 |
| David Borchard | Representing the Farming Interests | (805) 485-3525 |
| Charlotte Craven (Vice Chair) | Representing the Five Cities within the Agency | (805) 482-4730 |
| Dr. Michael Kelley | Representing the Small Water Districts within the Agency | (805) 890-6095 |
| Lynn Maulhardt (Chair) | Representing the United Water Conservation District | (805) 485-5728 |
| ***ALTERNATE DIRECTORS*** | | |
| Neil Andrews | Cities | (805) 654-7827 |
| Robert Eranio | United Water Conservation District | (805) 482-2001 |
| David Schwabauer | Farmers | (805) 432-9375 |
| Andrew Waters | Small Water Districts | (805) 526-9323 |
| John Zaragosa | Representing the Ventura County Board of Supervisors | (805) 654-2613 |
| ***STAFF*** | | |
| Alberto Boada | Agency Legal Counsel | (805) 654-2578 |
| Tammy Butterworth | Agency Deputy Clerk of the Board | (805) 654-2002 |
| Tully Clifford, P.E. | Director, Watershed Protection District | (805) 654-2040 |
| Mandi Freitas | Administrative Assistant | (805) 645-1372 |
| Gerhardt Hubner, P.G. | WPD, Deputy Director, Water & Environmental Resources | (805) 654-5051 |
| Jessica Kam | Clerk of the Board | (805) 654-2014 |
| Jeff Pratt, P.E. | Agency Executive Officer | (805) 654-2073 |
| Kathleen Riedel, C.E.G. | Groundwater Specialist | (805) 654-2954 |
| Rick Viergutz, C.E.G. | WPD, Groundwater Resources Manager | (805) 650-4083 |

**Notes:**

1. Table lists active Board Members, Alternates and Staff at the end of 2014.
2. The notable staff changes for 2014 included: In January, Jessica Kam began serving as Clerk of the Board. Jessica Rivera, Interim Clerk of the Board, left in February. Mandi Freitas joined staff as an Administrative Assistant in May.

Five Alternate Board members are selected according to the same criteria and serve in the absence of the primary Board members. All Board members serve a two-year term, unless reappointed. In 2007, the Board offset the terms of the City Council and the Agricultural representatives from the remaining three representatives by one year to ensure continuity of Agency operations and to prevent a complete turnover of all FCGMA Directors at the same time.

There were no changes in the Members of the Board of Directors during 2014. There was a change in Alternate Director from UWCD; Mr. Robert Eranio replaced Mr. Daniel Naumann.

The Board normally conducts monthly public meetings, with additional public input received through various stakeholder-based committees. During 2014, there were ten (10) FCGMA Board meetings, six (6) Special Board meetings, one (1) Executive Committee meeting, and one (1) Fiscal Committee meeting.

The personnel, technical, financial, and legal needs of the FCGMA are provided under contract with the Ventura County Watershed Protection District and the Office of the County Counsel. The UWCD and Calleguas Municipal Water District (CMWD) provide additional technical resources to the Agency as

needed. UWCD is a public wholesale and retail water agency that also provides groundwater basin management activities in the Santa Clara River Valley, and northern and central Oxnard Plain. CMWD is a public wholesale water agency that also provides groundwater basin management activities in the Las Posas basins. In accordance with the enabling legislation, the FCGMA is not authorized to involve itself in activities normally undertaken by member agencies. Such activities include the construction, operation, and maintenance of capital facilities. Many facilities, such as dams, spreading grounds, pipelines, flood control structures, and surface water diversions are operated by UWCD, CMWD, Camrosa, and other member agencies both inside and outside the FCGMA boundary.

Notable staff changes during 2014 included: Jessica Rivera who served as Interim Clerk of the Board stepped down when Jessica Kam joined the staff as Clerk of the Board; and Mandi Freitas filled the vacant position as Administrative Assistant.

# 4.0 NATURAL SETTING

## 4.1 Location and Geographic Description of the FCGMA

The Agency Boundary encompasses a northeast-southwest oriented, wedge-shaped area of 183 square miles that widens to the west and is bounded to the north by the Santa Clara River and South Mountain. To the east, the Agency boundary is defined by uplifted Tertiary and Quaternary-age consolidated rocks north and east of the City of Moorpark. The southern edge of the Agency is bounded by the Bailey Fault and the uplifted Santa Monica Mountains (Dibblee, 1990). The western and southwestern limits are geographically limited by the Pacific Ocean coastline.

The eastern portion of the FCGMA bifurcates into two separate lobes east of the City of Camarillo. The longer northern lobe, which includes the Las Posas Valley, terminates east of the City of Moorpark near the central portion of the Happy Camp Syncline (Dibblee, 1992b and 1992c). The furthest eastern extent of the Agency terminates in the County's Happy Camp Canyon Regional Park northeast of the City of Moorpark. The shorter southern lobe, which includes the western portion of Pleasant Valley, terminates approximately one-third of the distance into the Santa Rosa Valley (on the west end) (Dibblee, 1990). These two valleys widen to the west and merge near the City of Camarillo to encompass the broader Oxnard Plain where the majority of groundwater extractions occur within the Agency. The Santa Clara River Valley intersects with the northeastern portion of the Oxnard Plain near the unincorporated area of Saticoy. The northern boundary of the Agency turns west-southwest across from South Mountain just north of the Santa Clara River at Saticoy, then parallels the river's course westward all the way to the Pacific Ocean. This latter stage of Santa Clara River flow is determined by the Oak Ridge Fault System, which also constitutes much of the northern Agency boundary line. Southwest of the City of San Buenaventura, the boundary crosses back to the south bank of the river just east of the Pacific Ocean.

## 4.2 Climate: Rainfall and Evapotranspiration

Groundwater extracted from the FCGMA aquifers is primarily used for agriculture; therefore, the volume of groundwater extracted in any given year is strongly influenced by the rainfall and evapotranspiration (ETo). In general, lower than average rainfall and higher than average ETo result in greater than average groundwater extractions.

The amount of rainfall reported for the Agency, for calendar year 2014, is an average of data collected at the five County of Ventura rainfall stations (Sta. 032A, 126A, 190, 175A, and 259)[2]. Based on past

[2] Data used is identified by County of Ventura as preliminary as final data was not available at the time that this report was being prepared. Rainfall data collected at Camarillo Airport rainfall station (VC Sta. 259) was not available for December, so the December value used is an average of four instead of five rainfall stations.

Agency rainfall totals and the 2014 averaged rainfall total of 10.05 inches, the long-term average rainfall for the period of 1985 to 2014 is 14.07 inches. Annual rainfall has been below the long-term average since 2011 (2011, 12.12 inches; 2012, 8.66 inches; 2013, 3.49 inches; and 2014, 10.05 inches).

Of the average annual total for 2014, 10.05 inches, 4.80 inches fell in the first half of the year and 5.25 inches fell in the second half of the year. More specifically, 5.22 inches of the average total fell in November and December 2014.

The Agency's 2014 ETo value is an average of data collected at three California Irrigation Management Information System (CIMIS) stations. During 2014, the Agency switched from using data collected at Sta. 198 - Santa Paula to data collected at the new CIMIS Weather Station - Sta. 217 - Moorpark. The ETo value for January through June is an average of data collected at CIMIS stations: Sta. 156 - Oxnard, Sta. 152 - Camarillo, and Sta. 198 - Santa Paula. The ETo value for July through December is an average of data collected at CIMIS stations: Sta. 156 - Oxnard, Sta. 152 - Camarillo, and Sta. 217 - Moorpark). The 2014 three-station average ETo is 52.21 inches. The average annual ETo value for 2014 was approximately 2% above the 51.34 inch long-term average (1997 through 2014).

# 5.0 GROUNDWATER

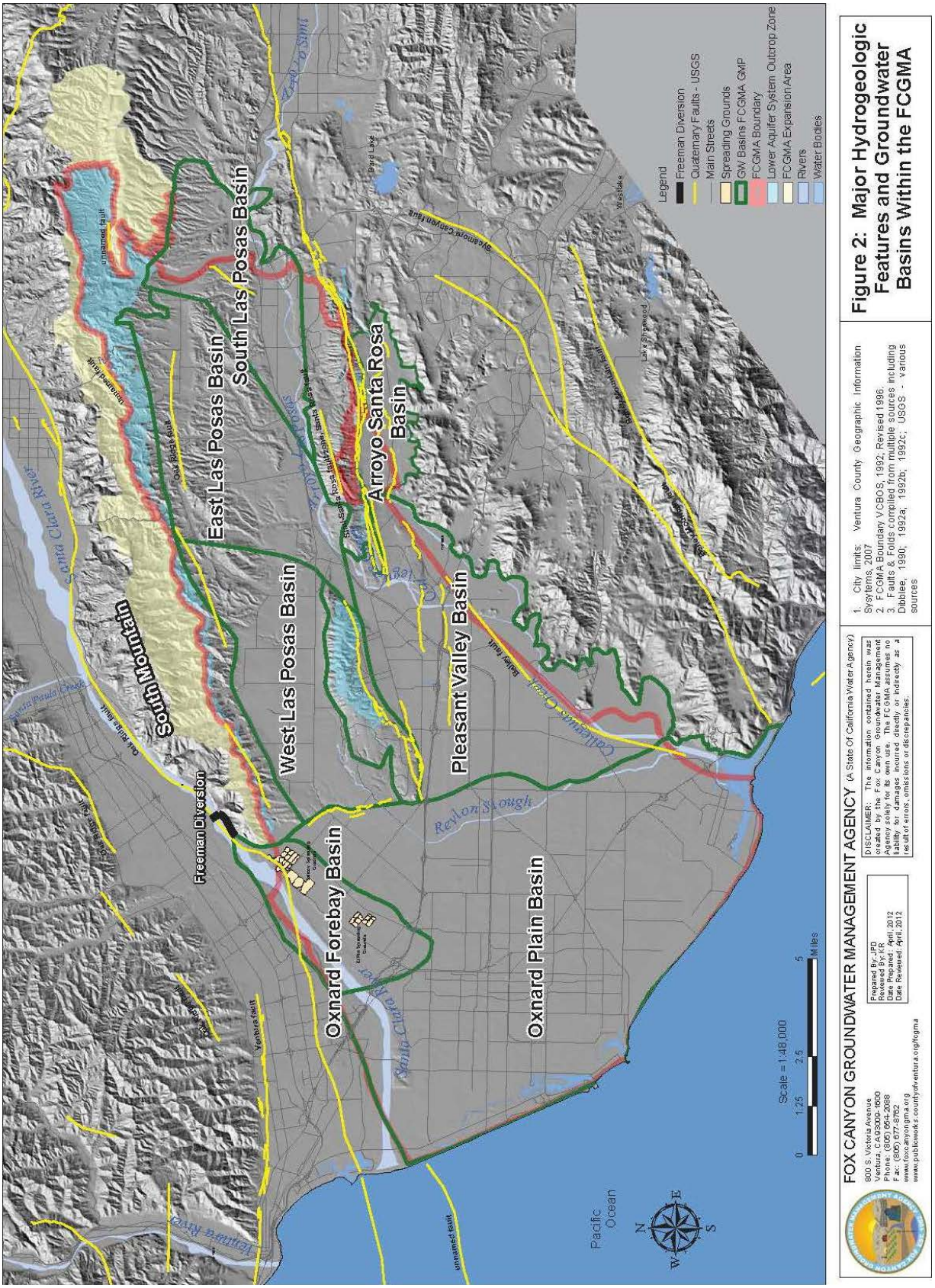
## 5.1 Geology and Hydrogeology of the FCGMA

The FCGMA is located near the western margin of the Transverse Ranges Geologic Province in Southern California. This geologic province is characterized by east-west oriented mountain ranges separated by valleys, faults, and basins. The east-west trending folds and faults are common throughout the province and their surface expression is evident at many locations within the FCGMA boundary (Figure 2 – *Major Hydrologic Features and Groundwater Basins within the FCGMA*). The water-bearing sediments that comprise the valley fill and alluvial plains within the FCGMA consist of significantly deep unconsolidated and semi-consolidated sediments that range from Pliocene to recent (Holocene) time in geologic age. The geologic formations from oldest to youngest include the Plio-Pleistocene-age Santa Barbara Formation (includes the Grimes Canyon aquifer), the Pleistocene-age San Pedro Formation (contains the Fox Canyon aquifer), and semi-consolidated and unconsolidated sediments of Upper-Pleistocene and recent (Holocene) ages (Hueneme, Mugu, Oxnard, and perched aquifers). Local and regional unconformities (i.e. gaps in the geologic sedimentation record caused by uplift and subsequent erosion) occur between each of these formations (DWR, 1976).

The topography in the eastern portion of the FCGMA consists of narrow steep-sided canyons that open into the broader east-west trending Las Posas Valley and Pleasant Valley areas. Moderate relief (typically 300 to 1,500 feet difference) between the bordering mountain highlands and the westward-sloping valley floors is typical of the area. The canyons and valley floors are partially filled by colluvium, unconsolidated fluvial sediments, and coalesced alluvial fans (also called a bajada or compound alluvial fan) comprised of material eroded from the surrounding uplifted Tertiary and Quaternary-aged sedimentary rocks. The alluvial deposits in the eastern portion of the Agency are typically less than 600 feet in thickness, and most such layers thin out in close proximity to surface exposures of bedrock. In the western portion of the FCGMA, the topography primarily consists of the broad, alluvial Oxnard Plain. The Oxnard Plain gently slopes to the southwest and continues beneath the Pacific Ocean. All of the semi-consolidated rocks comprising the various freshwater aquifers outcrop beneath the ocean, and during periods of positive offshore pressure gradients, groundwater discharges have been documented in this offshore area (Izbicki, 1992, 1996a, 1996b). The thickness of the collective usable aquifer zones beneath the Oxnard Plain is typically greater than 1,200 feet.

Two main drainages lie within the boundaries of the FCGMA. The Santa Clara River originates in the San Gabriel Mountains several miles east of Ventura County (in central Los Angeles County) and flows westward through the Santa Clara River Valley, which lies north and northeast of the FCGMA. The Santa

**Figure 2 - Major Hydrogeologic Features and Groundwater Basins within the FCGMA**



Clara River intersects the northwestern boundary of the FCGMA near the unincorporated area of Saticoy. The Santa Clara River supplies recharge to aquifers in the western third of the FCGMA by direct infiltration through the streambed, and infiltration of diverted river water in percolation ponds. A large man-made drop structure, operated by UWCD called the Vern Freeman Diversion, extends across the river and diverts river water via channels to off-stream percolation ponds (also owned and operated by UWCD) in the porous Oxnard Forebay Groundwater Basin. A majority of the river flows occur during runoff periods associated with winter storms, and this muddy, turbid water is difficult to capture and too silt-laden to be of any practical use for direct groundwater recharge. Calleguas Creek lies near the southern and southeastern boundaries of the FCGMA, and carries water during high-runoff periods, as well as nearly continuous discharge from upstream wastewater treatment plants in Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Additional water is contributed to these streams by irrigation return flows and urban runoff. The Conejo Creek Diversion facility exists on a tributary to Calleguas Creek and surface water diverted from this location primarily supplements agricultural groundwater extractions in the Pleasant Valley area south of the City of Camarillo. Some Conejo Creek water also helps to add irrigation supply to the western end of the Santa Rosa Valley portion of eastern Camarillo. Although there are a number of small private reservoirs and County Watershed Protection District (WPD) stormwater retention basins, there are no major surface water lakes or reservoirs within the FCGMA boundary used for water supply needs.

Seven groundwater basins lie wholly or partially within the FCGMA:

1. Arroyo Santa Rosa Basin,
2. East Las Posas Basin,
3. Oxnard Forebay Basin,
4. Oxnard Plain Basin,
5. Pleasant Valley Basin,
6. South Las Posas Basin, and
7. West Las Posas Basin.[3]

Each basin has significant groundwater resources with unique physical and water quality characteristics (Izbicki et al., 2005). Descriptions of the physical, hydrogeologic, and water quality characteristics of each of these groundwater basins are more extensively described in the 2007 FCGMA Groundwater Management Plan.

There are six named aquifers in the FCGMA Boundary. From deepest to shallowest these are: (1) the Grimes Canyon aquifer, (2) the Fox Canyon aquifer, (3) the Hueneme aquifer, (4) the Mugu aquifer, (5) the Oxnard aquifer, and (6) the perched or semi-perched zone (DWR, 1976). These aquifers are grouped into a Lower Aquifer System (LAS), [Grimes Canyon, Fox Canyon, and Hueneme aquifers]; and the Upper Aquifer System (UAS), [Mugu and Oxnard aquifers]. The semi-perched zone is considered by some to be separate from the UAS because it is only locally extensive and of poorer quality than the deeper, more geographically extensive aquifers (Turner, 1975).

Faulting has significantly affected the local Tertiary and Quaternary-aged geologic formations, and the hydrogeology within the FCGMA reflects that. Significant faults that occur within or near the margins of the Agency include the Oak Ridge fault, the Berylwood fault, the Somis fault, the Springville fault, the Simi-Santa Rosa fault zone (includes Santa Rosa fault, Northern Simi fault, Southern Simi fault), the Camarillo fault, the Wright Road fault, the Epworth fault, and the Bailey fault. Although the general

[3] Historic references have segregated the southeastern portion of the Oxnard Plain into a separate basin identified as the Mugu Forebay Basin. This Basin is not shown in Figure 2 because like the Agency's Groundwater Management Plan, this document considers these areas as a single groundwater basin, the Oxnard Plain Basin. Data and discussions included in this annual report treat all rainfall, extraction, and credit information from both the Oxnard Plain Pressure Basin and the Mugu Forebay Basin as one single basin.

groundwater flow direction in FCGMA aquifers is to the southwest, faults and other structural features may form partial or complete barriers to groundwater flow, or cause local variability in flow direction.

A comprehensive hydrologic and geologic study that includes areas within the FCGMA boundary was prepared by Hanson and Koczot (2003). Groundwater models are currently being developed by UWCD and CMWD which will include the basins within the Agency boundary with the exception of the Arroyo Santa Rosa Basin.

## 5.2 Groundwater Resource Management

The FCGMA's enabling legislation (CWC, Appendix 121), established the ability of the FCGMA to perform groundwater management activities including, but not limited to, registration of extraction facilities (wells), control of groundwater extractions, regulation of extraction facility construction, prosecution of legal actions against unreasonable use of water resources, imposition of reasonable operating regulations, and collection of fees. Through this legislation and a series of ordinances the FCGMA has developed a groundwater record management system to record well facility owner/operator information; to collect and record extraction data; to regulate groundwater extraction through the application of an annual allocation system; to assign credits as an incentive for non-use of allocations and/or for direct replenishment actions; to collect civil penalties and surcharges for overuse of groundwater, and to collect groundwater extraction fees to fund the Agency.

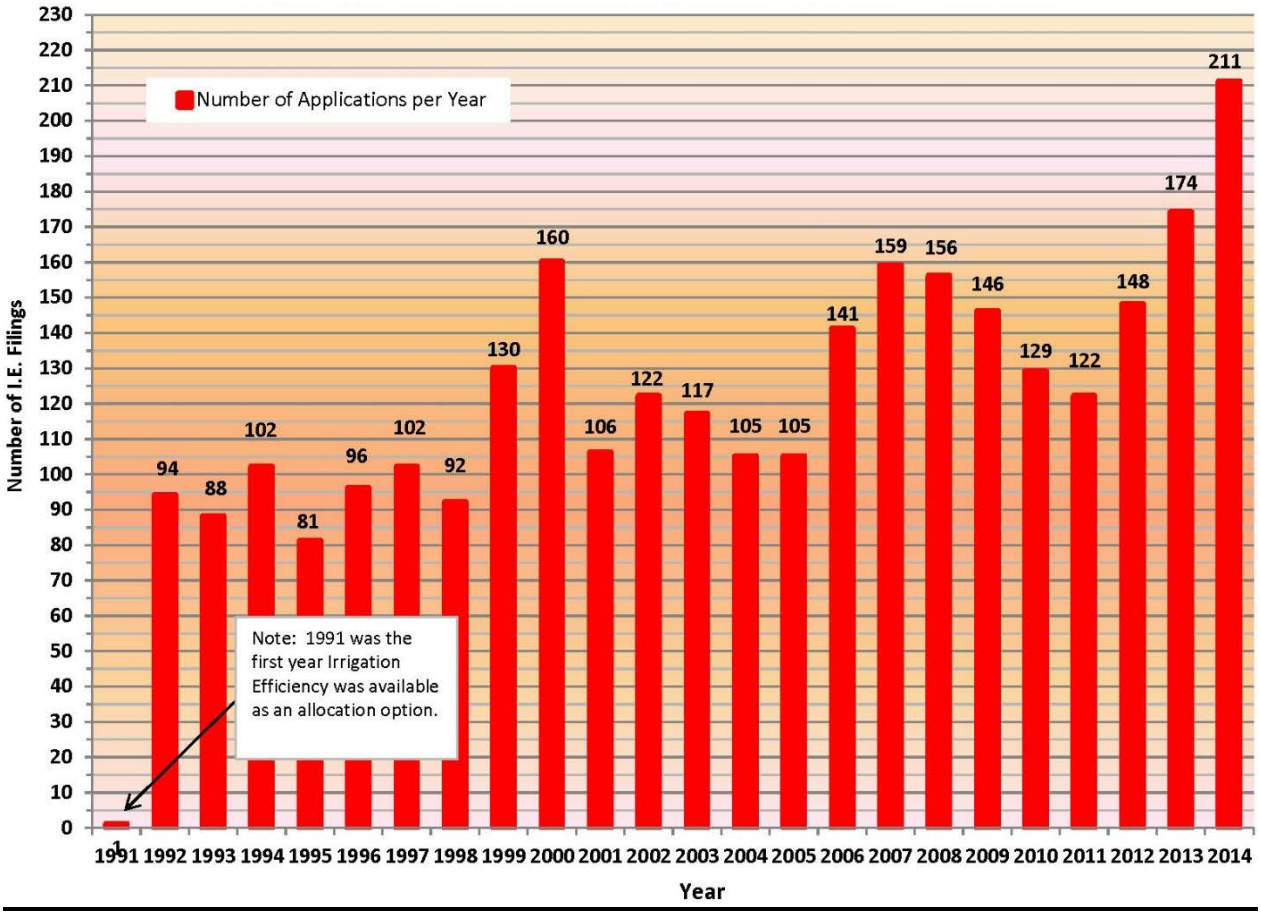
There were four specific groundwater allocation methods used by the FCGMA during 2014 (see the FCGMA Ordinance Code, and Emergency Ordinance E (Appendix A) for additional information). Allocation types include Historical Allocation (HA), Baseline Allocation (BA), Temporary Extraction Allocation (TEA) and Irrigation Allowance Index (IAI) Allocation. The type of allocation available depends upon the use of the groundwater, and the history of land and water use, as well as when the groundwater was extracted. During the first half of the year well owners and/or operators reported extractions using adjusted HA, BA, and IAI. During the second half of the year, following adoption and implementations of Emergency Ordinance E, the allocation system used by the operator user type is as follows: adjusted HA and BA for domestic users; TEA for municipal/industrial; and IAI for agricultural users.

Wells operated by Well Operators are grouped into three type categories: Agricultural (AG), Municipal & Industrial (M&I), and Domestic (DOM). The definition of each type is specified in the Ordinance Code.

- **Agricultural Facility:** *"a facility whose groundwater is used on lands in the production of plant crops or livestock for market, and uses incidental thereto*." During the first half of 2014, well operators of agricultural facilities were entitled to HA, BA, or IAI (Figure 3 – *FCGMA Annual Irrigation Allowance Index Applications*). They may also have used conservation credits[4] to avoid surcharges. During the second half of the year, all Agricultural Well Operators reported extractions using a reduced IAI. Conservation credits were not available for use during the second half of the year. Based on self-reported extraction data, in 2014, agricultural extraction facilities were responsible for approximately 71% of the reported groundwater extracted within the Agency (Table 2).
- **Municipal and Industrial User (M&I):** *"a person or other entity that used or uses water for any purpose other than agricultural irrigation."* An M&I operator is defined as *"an owner or operator that supplied groundwater for M&I use during the historical allocation period (1985-1989 inclusive), and did not supply a significant amount for agricultural irrigation during the historic*

[4] Conservation credits refer to unused Historical Allocation (HA), the difference between the total HA held by a registered extraction facility including any adjustments made by the Agency, minus the actual reported groundwater extraction reported by that facility in a particular year.

**Figure 3 - FCGMA Annual Irrigation Allowance Index Application**




*period."* An M&I Provider is defined as *"an entity or person which provides water for domestic, industrial, commercial, or fire protection purposes within the boundaries of the Agency."* During the first half of the year, M&I Operators may have been entitled to HA and/or BA, and could accumulate extraction credits for any unused HA. M&I users are not eligible for IAI. During the second half of the year: M&I Well Operators reported extractions using TEA; no conservation credits could be used to reduce surcharges; and no conservation credits were earned on unused adjusted HA. Based on self-reported extraction data, in 2014, M&I facilities were responsible for approximately 29% of the reported groundwater extracted within the Agency.

- **Domestic User or Domestic Extraction Facility:** *"a domestic extraction facility supplies a single family dwelling on one acre or less, with no income producing operations."* During 2014, Domestic Well Operators reported extractions using Adjusted HA and BA. Conservation credits could be used during the first half of the year, but not during the second half of the year. Typically, domestic users are responsible for a nominal pumping amount (less than 1%) of the total groundwater extracted within the Agency during any given calendar year. Based on self-reported extraction data, in 2014, domestic facilities were responsible for approximately 0.2% of the reported groundwater extracted within the Agency.

All extraction facility (well) operators are required to report their groundwater extraction on a semi-annual basis using an Agency provided Semi-Annual Extraction Statement (SAES). During 2014, for M&I and

**Table 2 - Summary of Reported Groundwater Extractions and Well Use-Type within the FCGMA for Calendar Year 2014[2]**

| Groundwater Basin | Groundwater Use-Type | Total Reported Groundwater Extractions for 2014 (AF/Year)[2] | Percent of Individual Groundwater Basin Extractions | Portion of 2014 Groundwater Extractions (%) | Total Number of Wells[4] | Active Wells in Basin[5] (by use type) | Active Wells in Basin by Use (%) |
|---|---|---|---|---|---|---|---|
| **Arroyo Santa Rosa** | **Basin Total** | **1,494** | **100%** | **1.0%** | **20** | **10** | **50.0%** |
| | Agricultural | 1,494 | 100.0% | 1.0% | 19 | 10 | 50.0% |
| | Domestic | 0 | 0.0% | 0.0% | 1 | 0 | 0.0% |
| | M & I | 0 | 0.0% | 0.0% | 0 | 0 | 0.0% |
| **East Las Posas** | **Basin Total** | **24,791** | **100%** | **16.6%** | **206** | **132** | **64.1%** |
| | Agricultural | 21,819 | 88.0% | 14.6% | 150 | 94 | 45.6% |
| | Domestic | 13 | 0.1% | 0.0% | 20 | 12 | 5.8% |
| | M & I | 2,958 | 11.9% | 2.0% | 36 | 26 | 12.6% |
| **Oxnard Plain Forebay** | **Basin Total** | **20,133** | **100%** | **13.4%** | **149** | **83** | **55.7%** |
| | Agricultural | 8,133 | 40.4% | 5.4% | 76 | 42 | 28.2% |
| | Domestic | 19 | 0.1% | 0.0% | 9 | 6 | 4.0% |
| | M & I | 11,981 | 59.5% | 8.0% | 64 | 35 | 23.5% |
| **Oxnard Plain[3]** | **Basin Total** | **65,784** | **100%** | **43.9%** | **607** | **320** | **52.7%** |
| | Agricultural | 44,875 | 68.2% | 30.0% | 403 | 219 | 36.1% |
| | Domestic | 237 | 0.4% | 0.2% | 88 | 51 | 8.4% |
| | M & I | 20,672 | 31.4% | 13.8% | 116 | 50 | 8.2% |
| **Pleasant Valley** | **Basin Total** | **21,874** | **100%** | **14.6%** | **168** | **71** | **42.3%** |
| | Agricultural | 16,706 | 76.4% | 11.2% | 124 | 47 | 28.0% |
| | Domestic | 29 | 0.1% | 0.0% | 30 | 16 | 9.5% |
| | M & I | 5,139 | 23.5% | 3.4% | 14 | 8 | 4.8% |
| **South Las Posas** | **Basin Total** | **1,884** | **100%** | **1.3%** | **44** | **17** | **38.6%** |
| | Agricultural | 1,770 | 93.9% | 1.2% | 37 | 14 | 31.8% |
| | Domestic | 1 | 0.1% | 0.0% | 3 | 1 | 2.3% |
| | M & I | 113 | 6.0% | 0.1% | 4 | 2 | 4.5% |
| **West Las Posas** | **Basin Total** | **13,756** | **100%** | **9.2%** | **94** | **57** | **60.6%** |
| | Agricultural | 11,782 | 85.7% | 7.9% | 71 | 42 | 44.7% |
| | Domestic | 39 | 0.3% | 0.0% | 6 | 5 | 5.3% |
| | M & I | 1,935 | 14.1% | 1.3% | 17 | 10 | 10.6% |
| | **2014 Totals** | **149,715** | **100%** | **100%** | **1,288** | **690** | **54%** |

**Notes:**

AF = Acre-feet; 1 acre-foot equals 325,851 gallons

M & I - Municipal and Industrial

1. Table provides data on reported groundwater extractions, however approximately 4% of the well operator accounts were not reported.
2. Groundwater extractions are reported twice a year. Extractions are listed by basin and reported usage of the well.
3. Oxnard Plain Basin includes area formerly identified as Mugu Forebay Groundwater Basin.
4. Total number of wells ever registered with the FCGMA in each basin (included inactive and destroyed wells).
5. Wells reported as being used in each basin during 2014.

Domestic Operators, the two six-month SAES reporting periods covered January 1 through June 30 (-01 Period), and July 1 through December 31 (-02 Period). For Agricultural Operators, the first SAES reporting period covered January 1 through July 31 (-01 Period), and the second period covered August 1 through December 31 (-02 Period). Each SAES lists all wells under a particular operator code, any available allocations, the reported groundwater extraction (acre-feet) for each well, the application of any available credits, and the specific allocation method being used to calculate the permitted groundwater extraction. Based on the groundwater extraction reported, each operator is required by the Ordinance to calculate the extraction charge due, plus any surcharges, interest, or late penalties associated with their user account, and then remit payment to the FCGMA along with the completed SAES form.

## 5.3 Groundwater Extractions [5]

Groundwater extractions are self-reported to the Agency by the well owners or operators. At the time that this report was prepared, four (4) percent of the user accounts had not reported.

For the calendar year 2014, total groundwater extractions reported to the FCGMA were 149,715 acre-feet[6] (AF). The total annual reported groundwater extractions were 20% above the long-term average: 124,963 AF (1991 to 2013). Annual extraction data is presented in Table 3 – *Summary of Reported Extractions within the FCGMA Since 1983*, and in Figure 4 - *2014 Annual Rainfall and Reported Groundwater Extractions in the FCGMA*. Table 4 – *Comparison of Year 2014 Groundwater Extractions to Historic Reported Groundwater Extractions in the FCGMA* and Table 5 – *2014 FCGMA Allocations vs. Extractions by Account Primary Basin and Use Type* provide more detail.

**Table 3 - Summary of Reported Extractions within the FCGMA Since 1983**

| Calendar Year | -01 Period Extractions [in AFY][1,2,3] | -02 Period Extractions [in AFY][1,2,3] | Total Annual Extractions [in AFY][1,2,3] | Historical Allocation Reduction Percent[4] |
|---|---|---|---|---|
| 2014 | 84,886 | 64,829 | 149,715 | 25% |
| 2013 | 64,598 | 88,741 | 153,339 | 25% |
| 2012 | 59,864 | 75,290 | 135,154 | 25% |
| 2011 | 54,331 | 65,835 | 120,166 | 25% |
| 2010 | 54,852 | 71,479 | 126,331 | 25% |
| 2009 | 63,036 | 82,972 | 146,008 | 20% |
| 2008 | 63,695 | 75,360 | 139,055 | 15% |
| 2007 | 59,604 | 77,337 | 136,941 | 15% |
| 2006 | 43,655 | 69,457 | 113,113 | 15% |
| 2005 | 41,692 | 64,906 | 106,597 | 15% |
| 2004 | 59,357 | 70,805 | 130,161 | 15% |
| 2003 | 46,122 | 69,540 | 115,662 | 15% |
| 2002 | 61,642 | 70,515 | 132,158 | 15% |
| 2001 | 43,703 | 58,497 | 102,200 | 15% |
| 2000 | 48,203 | 75,022 | 123,225 | 15% |
| 1999 | 49,659 | 81,130 | 130,788 | 10% |
| 1998 | 37,316 | 68,530 | 105,846 | 10% |
| 1997 | 63,322 | 70,014 | 133,335 | 10% |
| 1996 | 45,907 | 57,636 | 103,543 | 10% |
| 1995 | 42,028 | 61,738 | 103,766 | 10% |
| 1994 | 60,484 | 77,720 | 138,205 | 5% |
| 1993 | 45,574 | 73,274 | 118,849 | 5% |
| 1992 | 44,589 | 70,636 | 115,225 | 5% |
| 1991 | 61,638 | 82,843 | 144,481 | 0% |
| 1990 | 79,074 | 99,262 | 178,336 | 0% |
| 1989 | 78,301 | 100,251 | 178,553 | NA |
| 1988 | 73,102 | 87,909 | 161,010 | NA |
| 1987 | 82,682 | 82,586 | 165,268 | NA |
| 1986 | 57,585 | 84,137 | 141,722 | NA |
| 1985 | 78,339 | 84,281 | 162,620 | NA |
| 1984 | 36,377 | 35,506 | 71,883 | NA |
| 1983 | 285 | 28,984 | 29,269 | NA |
| **Totals =** | **1,785,501** | **2,327,023** | **4,112,524** | |

**Notes:**

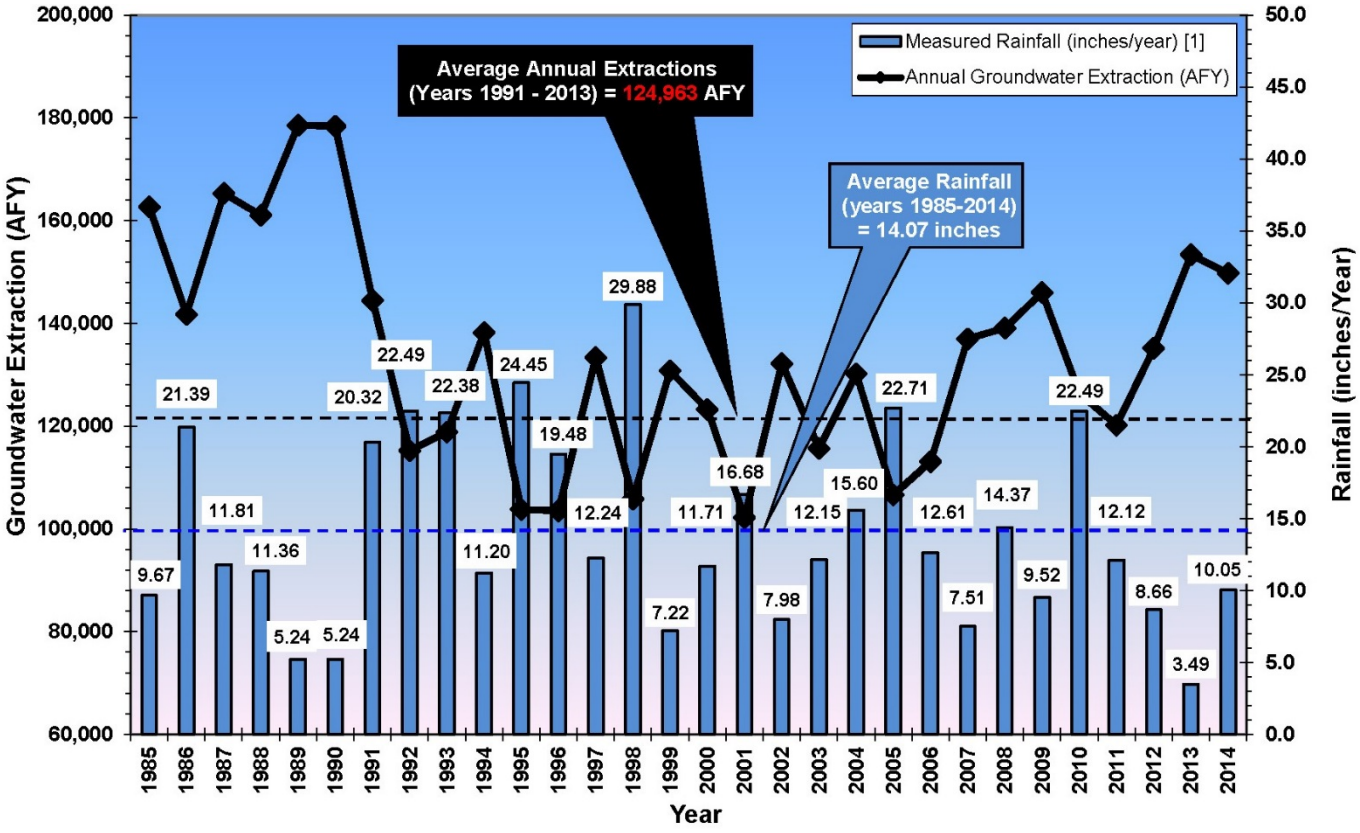
One acre-foot equals 325,851 gallons, AFY = Acre-feet per year

1. Table provides data on reported groundwater extractions. For 2014, extractions from approximately 4% of operator accounts were not reported (as of June 2015).
2. Starting in 2014, reporting periods are: (-01) January 1 - June 30, and (-02) July1 - December 31 for Domestic, and M&I Operators; (-01) January 1 - July 31, and (-02) August 1 - December 31 for Agricultural Operators.
3. Data for 1983 and 1984 provided by UWCD. Data determined to be incomplete due to low extraction values and low number of registered operators compared to proceeding years.
4. Reductions stipulated by FCGMA Ordinance and Resolutions.

[5] Tables 2, 3, 4 and 5 provide data on reported groundwater extractions. In 2014, approximately 4% of the operators did not report their extractions.

[6] One acre-foot (AF) equals 325,851 U.S. gallons at Standard Temperature and Pressure (STP).

**Figure 4 - 2014 Annual Rainfall and Reported Groundwater Extractions in the FCGMA**




[ 1] - Measured rainfall is the average of weather station annual recorded precipitation. Six stations used between 1991 - 2006, and five between 2007-2014. County gauges used for 1985-1990 and 2013-14.

**Table 4 - Comparison of Year 2014 Reported Groundwater Extractions[1] to Historic Reported Groundwater Extractions in the FCGMA**

| | Annual Extraction (AF/Year)[2] | Extraction for -01 Periods (AF/Period)[2] | Extraction for -02 Periods (AF/Period)[2] |
|---|---|---|---|
| **2014 Reported Extractions** | **149,715** | **84,886** | **64,829** |
| **Average Reported Extractions[3] (1991 - 2013)** | 124,963 | 52,820 | 72,142 |
| **Comparison of Current Year (2014) Reported Extractions to Average Reported Extractions (1991 - 2013)[3]** (reported as %) | 120% | 161% | 90% |
| **Rank Comparing Current Year Extraction to Annual Extractions (1991 - 2013)** | 23rd out of 24th highest year | 24 | 4 |

2014 is first year direct comparisons to previous 01 and 02 periods not possible. This is due to reporting period changes[2]

**Notes:**

**AF** = acre-feet; (one acre-foot equals 325,851 gallons)

1. Approximately 4% of the well operators had not reported as of June 2015.
2. Starting in 2014, reporting periods are: (-01) January 1 - June 30; and (-02) July1 - December 31 for Domestic, and Municipal and Industrial Operators; (-01) January 1 - July 31; and (-02) August 1 - December 31 for Agricultural Operators.
3. Average reported Agency-wide groundwater extractions per period and year from 1991 through 2013.

**Table 5 - 2014 FCGMA Allocations vs. Extractions by Account Primary Basin and Use-Type**

| Groundwater Basin | Primary Use Type for Account[1] | Historical Allocation *(for all wells in each basin)*[2] (AF) | Adjusted Historical Allocation[3] (AF) | Baseline Allocations (AF) | 2014-1 Total Available Allocation[4] (AF) | M&I Temporary Extraction Allocation for 2014-02[5] (AF) | 2014 Allocations[6] (AF) | 2014 Reported Extractions by Primary Type per Groundwater Basin (AF)[7] |
|---|---|---|---|---|---|---|---|---|
| Arroyo Santa Rosa (ASR) | AG | 846 | 635 | 0 | 317 | NA | NA | 1,494 |
| | DOM | 0 | 0 | 0 | 0 | NA | 0 | 0 |
| | M&I | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| East Las Posas (ELP) | AG | 13,565 | 10,458 | 330 | 5,394 | NA | NA | 17,440 |
| | DOM | 129 | 102 | 33 | 67 | NA | 135 | 22 |
| | M&I | 3,004 | 2,759 | 55 | 1,407 | 2,350 | 3,757 | 3,494 |
| Oxnard Plain Forebay (FOR) | AG | 8,133 | 6,951 | 2 | 3,477 | NA | NA | 8,497 |
| | DOM | 545 | 195 | 17 | 106 | NA | 212 | 15 |
| | M&I | 19,635 | 21,464 | 201 | 10,832 | 7,268 | 18,101 | 11,916 |
| Oxnard Plain Basin (OXP) | AG | 59,591 | 51,310 | 66 | 25,688 | NA | NA | 46,657 |
| | DOM | 2,151 | 1,572 | 84 | 828 | NA | 1,656 | 69 |
| | M&I | 14,102 | 18,479 | 2,177 | 10,328 | 6,752 | 17,080 | 14,112 |
| Pleasant Valley (PV) | AG | 16,156 | 12,029 | 9 | 6,019 | NA | NA | 20,635 |
| | DOM | 540 | 252 | 19 | 135 | NA | 271 | 37 |
| | M&I | 5,240 | 4,776 | 1,383 | 3,080 | 2,565 | 5,645 | 5,138 |
| South Las Posas (SLP) | AG | 1,563 | 1,172 | 42 | 607 | NA | NA | 1,771 |
| | DOM | 0 | 0 | 0 | 0 | NA | 0 | 0 |
| | M&I | 541 | 392 | 0 | 196 | 30 | 226 | 113 |
| West Las Posas (WLP) | AG | 10,906 | 8,165 | 25 | 4,095 | NA | NA | 14,492 |
| | DOM | 12 | 5 | 16 | 11 | NA | 21 | 23 |
| | M&I | 1,603 | 1,661 | 385 | 1,023 | 1,942 | 2,965 | 3,793 |
| **Totals** | | **158,264** | **142,377** | **4,845** | **73,611** | **20,908** | **50,068** | **149,715** |

**NOTES:** (totals or subtotals may not be exact due to rounding); NA means not applicable

1) Although some wells and accounts serve more than one use type, the main (or primary) use type for the account (Combination Code or "CombCode") is listed.

2) Total includes Historical Allocation (HA) as averaged after the 1985-1989 Base Period along with any adjustments and before any scheduled reductions.

3) Total includes Historical Allocation (HA) as averaged after the 1985-1989 Base Period along with any adjustments and after any scheduled reductions. The current scheduled reduction reduces Historic Allocations by 25%. The Adjusted Historic Allocation (AHA) presented is here is per operator account primary use and primary basin.

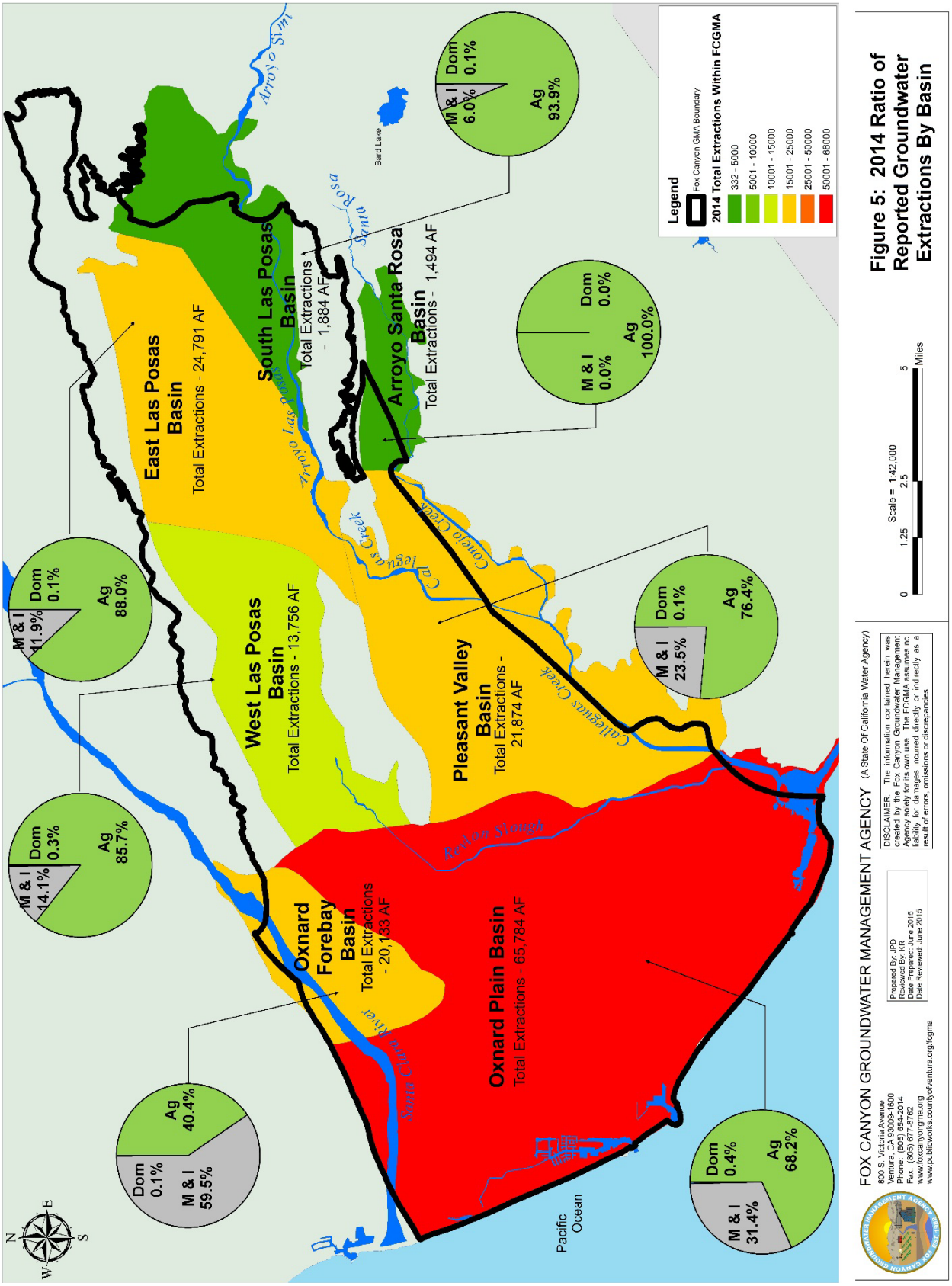
4) The Historical Allocation plus any adjustments minus scheduled reductions, plus any Baseline Allocation, then the total divided by two equals Total Available Allocation for the first half of year 2014.

5) Temporary Extraction Allocations apply to M&I Operators only. It is an average of 2003 to 2012 reported groundwater extractions, unless a variance has been granted.

6) Agricultural Irrigation Allowance Index (I.A.I.) allocations are not included, as the applications were filed and reviewed mid-year instead of at the end for the year. 2014-02 Irrigation Allowance Index (I.A.I.) allocation applications will be filed in August 2015.

7) Total reported groundwater extractions.

**Figure 5 - 2014 Ratio of Reported Groundwater Extractions by Basin**



### 5.3.1 **Groundwater Use in the FCGMA**

Self-reported extraction data in 2014 (see Table 2) indicates there were 468 active wells registered as agricultural, 131 active wells registered as M&I, and 91 active wells listed as domestic. When looking at 2014 reported extractions, approximately 71% of groundwater was used for agriculture, and roughly 29% for municipal uses. Agricultural operators collectively reported 106,579 AF of extractions (down from 106,941 AF in 2013). M&I operators reported 42,797 AF of extractions (down from 44,436 AF in 2013). The reported annual extraction by Domestic Well Operators was approximately 339 AF compared to 262 AF in 2013. It should be noted that Domestic[7] Well Operators are not required to use flowmeters to report groundwater extraction, providing the Ordinance Code criteria is met. Total domestic annual extractions are not considered to be a significant percentage (0.23%) in the annual groundwater total use within the Agency.

The FCGMA extraction data can also be used to reflect the ratio of groundwater use to use-type in each basin (Table 2 and Figure 5). The basins have been divided into three classifications based on primary groundwater use during 2014. These primary classifications are described as follows: agricultural-use; mixed-use; and M&I-use.

### 5.3.2 **Groundwater Use and Extraction by Basin**

The majority of groundwater extractions occur within the Oxnard Plain Basin. The primary use of the extracted groundwater is for agriculture. Additional detail regarding groundwater use by basin is presented in Figure 5 – *2014 Ratio of Reported Groundwater Extractions by Basin*.

5.3.2.1 Arroyo Santa Rosa (ASR): The Arroyo Santa Rosa is an agricultural-use basin as groundwater is primarily used for agricultural demand. All (100%) of the reported groundwater extractions (1,494 AF) were reported as used for agricultural purposes.

5.3.2.2 East Las Posas (ELP): The East Las Posas Basin is an agricultural-use basin, as groundwater is primarily used for agricultural demand. Reported use of the 24,791 AF of groundwater extracted: 88% Agricultural (21,819 acre-feet); 0.1 % Domestic (13 AF); and 11.9 % Municipal and Industrial (2,958 AF).

5.3.2.3 Oxnard Plain Forebay (FOR): The Oxnard Forebay Basin is an M&I use basin as groundwater is primarily used for M&I demand and a lesser amount to agricultural extraction, and only nominal volumes to domestic demands. Reported use of the 20,133 AF of groundwater extracted: 40.4% Agricultural (8,133 AF); 0.1 % Domestic (19 AF); and 59.5 % Municipal and Industrial (11,981 AF).

5.3.2.4 Oxnard Plain Basin (OXP): The Oxnard Plain Basin is a mixed-use basin. Significant groundwater extractions are by both agricultural and M&I operators and relatively little domestic extraction. Reported use of the 65,784 AF of groundwater extracted: 68.2% Agricultural (44,875 AF); 0.4 % Domestic (237 AF); and 31.4 % Municipal and Industrial (20,672 AF).

5.3.2.5 Pleasant Valley Basin (PVB): The Pleasant Valley Basin is a mixed-use basin. Significant groundwater extractions are by both agricultural and M&I operators and relatively little domestic extraction. Reported use of the 21,874 AF of groundwater extracted: 76.4% Agricultural (16,706 AF); 0.1 % Domestic (29 AF); and 23.5 % Municipal and Industrial (5,139 AF).

5.3.2.6 South Las Posas Basin (SLP): The South Las Posas Basin is an agricultural-use basin as groundwater is primarily used for agricultural demand. Reported use of the 1,884 AF of

[7] Wells for domestic use, serving a single-family residence, on a parcel of one acre or less, with no moneymaking operation on the site, are not required to use a flowmeter.

groundwater extracted: 93.9% Agricultural (1,770 AF); 0.1 % Domestic (one AF); and 6.0 % Municipal and Industrial (113 AF).

5.3.2.7 West Las Posas Basin (WLP): The West Las Posas Basin is an agricultural-use basin as groundwater is primarily used for agricultural demand. Reported use of the 13,756 AF of groundwater extracted: 85.7% Agricultural (11,782 AF); 0.3 % Domestic (39 AF); and 14.1 % Municipal and Industrial (1,935 AF).

## 5.4 Health of the Basins

There are many tools available to evaluate groundwater conditions/health of the basins; among these are water level surface maps and Basin Management Objectives (BMOs) Report Cards. The 2013 BMO Report Cards were presented to the Board during the April 23, 2014 FCGMA Board Meeting. The 2014 BMO Report Cards are included as Appendix B.

### 5.4.1 **Groundwater Levels**

During 2014, Agency staff prepared water level surface maps for the Upper Aquifer System (UAS) and Lower Aquifer System (LAS), using Fall 2013 groundwater data collected by the County of Ventura, United Water Conservation District (UWCD), Calleguas Municipal Water District (CMWD), and others. In preparation of the maps, an effort was made to use only data obtained from wells that were extracting groundwater exclusively from either the upper or lower aquifer systems. Initial contouring was generated using ESRI's ArcMap GIS software, with manual adjustments made to better reflect expected edge of basin conditions. The maps prepared are consistent in aerial extent, display of data collection points, contour intervals, and geographic reference information with those prepared in 2013 (Fall 1972 to Fall 2012, even years only). The maps for Fall 2013 and Fall 2014 (the latter prepared during 2015) are presented in Appendix C.

Between Fall 2013 and Fall 2014 groundwater levels declined in the western half of the Agency. In the Upper Aquifer System, water levels in Fall 2014 were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay and Pleasant Valley basins. In the Lower Aquifer System, water levels in Fall 2014 were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay, Pleasant Valley, and West Las Posas basins. Of the sixteen (16) Basin Management Objectives (BMOs) for water levels in the Oxnard Plain and Pleasant Valley basins, none were met.

### 5.4.2 **Groundwater Quality**

Water quality as presented in this section by basin and is relative to the BMO criteria established in the 2007 update of the GMP. Of the 34 water quality (chloride, nitrate and total dissolved solids) BMOs monitored during 2014, 15 were met and 19 were not met. The BMO Report Card for 2014 is included in this report as Appendix B. The BMO Report cards include the BMO monitoring wells plotted locations, and the associated objectives. A summary of the water quality conditions relative to the BMOs is presented below.

5.4.2.1 Arroyo Santa Rosa (ASR): The Arroyo Santa Rosa Basin has BMOs for nitrate (45 mg/L) and chloride (150 mg/L) to protect groundwater quality for potable and irrigation uses. The average nitrate concentrations were below the BMO at Well No. 25C05 by 2 mg/L and exceeded the BMO at Well No. 25D01 by 45 mg/L. The average chloride concentration exceeded the BMO of 150 mg/L at both monitoring locations, Well Nos. 25C05 and 25D01, by 31 mg/L and 9 mg/L respectively. Nitrate concentrations have declined at the location of Well No. 25C05 from above the BMO of 45 mg/L to just below the BMO at 43 mg/L. Based on the available data, nitrate concentrations have exceeded the BMO requirement at the location of Well No. 25D01 during past five years, with concentrations increasing from approximately 55 mg/L to 90 mg/L. Note

that 45 mg/L is the Maximum Contaminant Level for drinking water. Chloride concentrations have been increasing over the past five years, and exceeded the BMO in 2014 at both well locations.

5.4.2.2 East Las Posas (ELP): The East Las Posas Basin has BMOs for chloride and total dissolved solids (TDS) at three locations to protect groundwater quality for potable and irrigation uses. No data was available for one of the three BMO monitoring wells for 2014. Well No. 1E01 was destroyed under permit in 2013. A replacement monitoring well was selected in the interim for Well No. 1E01. Well No. 1E02 is approximately 310 feet south of Well No. 1E01 and perforated at roughly the same interval. Based on average chloride analytical results, the chloride BMO was met at one of the three BMO well locations. The TDS BMO was not met at the well locations in the southern portion of the East Las Posas Basin. Chloride and TDS concentrations over the last five years have generally been gradually increasing.

5.4.2.3 Oxnard Plain Forebay (FOR): The Forebay has BMOs for nitrate and TDS to protect groundwater quality for potable and irrigation uses. Average nitrate concentrations were above their respective BMOs at El Rio No. 5 (by over 55 mg/L) and El Rio No. 15 (by over 2 mg/L) respectively in 2014. Depending on the well, average TDS concentrations were above (El Rio No. 5) or below (El Rio No. 15) for their respective BMOs. At El Rio No. 5, the BMO was exceeded by 138 mg/L. At El Rio No. 15, the average concentration was below the BMO by 113 mg/L. The average TDS concentrations at El Rio No. 5 and El Rio No. 15 increased 310 and 82 mg/L respectively during 2014. During the last five years, the average nitrate and TDS concentrations of samples collected at both locations have increased.

5.4.2.4 Oxnard Plain Basin (OXP): The Upper Aquifer System has water quality BMOs at nine locations for chloride concentrations. These BMOs monitor saline intrusion (chloride is a direct indicator of intrusion). Consistent with past results, chloride BMOs were not met near Port Hueneme (BMO Well No. CM4) and Pt. Mugu (BMO Well Nos. CM1A and CM6. Chloride concentrations have generally been stable at seven of the nine BMO locations. The five-year trend in chloride concentrations at Pt. Mugu nested well location Well No. CM6-330, and decreasing at CM6 with chloride concentration increasing at Well No. CM6-200.

The Lower Aquifer System has BMOs for chloride concentrations, four along the coast and one at an inland location. Consistent with past results, chloride BMOs were not met near Port Hueneme (Well No. CM2) and Pt. Mugu (Well Nos. CM6 and CM1A. Chloride concentrations have generally been stable during the past five years, except at Pt. Mugu (Well Nos. CM6 and CM1A). Over the past five years, chloride concentrations have decreased at Well No. CM6 and increased at Well No. CM1A.

5.4.2.5 Pleasant Valley Basin (PVB): The Pleasant Valley Basin has a BMO for chloride concentrations at two locations. During 2014, the chloride BMO was met at both locations (111 mg/L and 106 mg/L). During the past five years, chloride concentrations at both locations have fluctuated and are currently above the five-year low concentration yet below the five-year high concentration. Over the past 20 years, chloride concentrations at the southern location have remained below the BMO, while concentrations at the northern location have fluctuated above and below the BMO of 150 mg/L.

5.4.2.6 South Las Posas Basin (SLP): The South Las Posas Basin has BMOs for chloride and TDS to protect groundwater quality for potable and irrigation uses. The one BMO well was not available for monitoring in 2014. BMO well, Well No. 6N03, has been abandoned by the owner. A replacement monitoring well was selected in the interim for Well No. 6N03. Well No. 7D02 is

approximately 920 feet south of Well No. 6N03 and perforated at roughly the same interval. Based on average chloride analytical results, the chloride BMO (160 mg/L) was met. The TDS BMO (1,500 mg/L) was also met. The available data for the South Las Posas Basin indicates that chloride concentrations over the last five years have been stable at the BMO location, while TDS average concentrations have slightly decreased in the South Las Posas Basin.

5.4.2.7 West Las Posas Basin (WLP): The West Las Posas Basin has BMOs for chloride and TDS to protect groundwater quality for potable and irrigation uses. No data was available for one of the two BMO monitoring wells for 2014. Well (Well No. 6R01) was down for repairs in 2014 and is expected to be operational in 2015. Based on the available data, the chloride BMO was met at one of the three BMO well locations in the East Las Posas Basin. The chloride and TDS BMOs were met. Chloride concentrations over the last five years have been stable at the BMO locations, while TDS average concentrations have slightly increased.

# 6.0 FCGMA PROGRAMS

## 6.1 Permitting and Registration of Wells

As of year-end 2014, the FCGMA had 1,296 wells identified by State Well Numbers listed within its boundary: 690 wells reported as active; 183 wells listed as inactive; 415 wells destroyed, and eight (8) additional well numbers assigned to permanent monitoring or cathodic protection wells. On an ongoing basis, FCGMA staff registers new wells permitted by the County of Ventura[8] and/or by the City of Oxnard. Regular updates to the status of existing wells are completed according to information self-reported by the well owners or operators.

Agency staff reviewed and processed 31 FCGMA groundwater extraction well applications for new extraction facilities, checking for compliance with the Ordinance Code. Agency staff also processed well registration documents. The FCGMA Ordinance Code requires registration of all groundwater extraction facilities in addition to semi-annual reporting of extraction volumes and payment of extraction fees.

## 6.2 Flowmeter Calibration Program

The FCGMA Ordinance Code requires the use of flowmeters for all extraction facilities except inactive wells and facilities supplying a single-family dwelling on a parcel one acre or less in size providing that property has no income producing operations (domestic wells). The use of accurate flowmeters for reporting groundwater extractions is critical to the FCGMA for a number of reasons. First, it provides a relatively uniform method of reporting for all stakeholders. Second, it increases the efficiency of data management. Third, it allows FCGMA staff to analyze the extraction and use of the groundwater resources to help make meaningful recommendations to the Board regarding its use.

Flowmeters have been required on non-exempt extraction facilities since July 1, 1994 following the adoption of Ordinance No. 3.1 on July 28, 1993. The current Groundwater Metering Program was officially launched via a revision of Chapter 3.0 in Ordinance 8.1 (July 2005), and the initial passage of Resolution No. 2006-01 (adopted in March 2006). The initial groundwater flowmeter calibration program began in earnest in 2007 and continued into 2009. Resolution No. 2008-04 (adopted May 2008) replaced the original Resolution No. 2006-01 to clarify the methods and rules governing the meter calibration program: Resolution No. 2008-04 was again revised at the September 24, 2008 Board meeting. A third

[8] Refers to wells permitted in accordance with the County of Ventura Ordinance No. 4184. All permitting in accordance with this ordinance is performed by the Ventura County Watershed Protection District. The City of Oxnard is the only other entity in Ventura County that issues water well permits.

round of Agency-wide flowmeter calibration testing was initiated in 2014. Staff continued to enforce flowmeter calibration requirements throughout 2014.

Data indicates approximately 690 (approximately 54%) of the 1,296 State Well Numbers listed in the FCGMA database were actively being used in 2014. In the past, well extractions were reported using water flowmeters, electrical power meters, or a consumptive-use method that estimated annual water use volume for domestic or farm use based on number of people in a home, or to help gauge water use by comparing the acres irrigated times average water use for a specific crop. Because of a concerted effort by the FCGMA, the only known wells within the Agency that still use consumptive use methods to report extractions are domestic wells that qualify for an exemption from flowmeter requirements. Per Agency records, 690 wells were active, four were exempt from the flowmeter requirement based on use, 155 flowmeters were due for calibration by the end of 2014; and calibration test data was current for approximately 531 flowmeters. In order to increase the effectiveness of the flowmeter program, the FCGMA took the following actions in 2014, which helped increase the compliance rate for calibrated Agricultural, and M&I, and Domestic well flowmeters:

- Mailed, for the Meter Calibration Program, 225 Initial Notices for testing of flowmeters associated with non-exempt wells, 64 Notices of Violation and 4 Civil Penalty Notices.
- Completed a field program for inspection of flowmeters (Las Posas basins).

## 6.3 FCGMA Groundwater Management Plan

The Groundwater Management Plan (GMP) identifies a series of short-term and long-term groundwater management projects and strategies designed to address the imbalance between water supply and demand. The GMP establishes BMOs (quantitative groundwater quality and quantity targets used to measure and evaluate the “health” of the basins and the potential effectiveness of various groundwater management strategies). The BMO Report Cards for 2014 are included in this report as Appendix B.

During 2014, progress was made towards implementing the following strategies, with the goal of managing the basins and meeting the Basin Management Objectives (BMO):

- South Las Posas Pump/Treat (pump poor quality water and blend/ treat it) – Ventura County Wastewater District No. 1 Moorpark Desalter Project moving forward. An informational update was provided to Board on July 23, 2014.
- Development of Brackish Groundwater in the Pleasant Valley - The City of Camarillo continued studies towards development of the brackish groundwater in the Pleasant Valley Basin. Agency staff reviewed and commented on North Pleasant Valley Desalter Groundwater Analysis and Modeling Final Report, and Draft Environmental Impact Report, submitted by the City of Camarillo.
- Verification of Extraction Reporting (verify accuracy of reporting) – Utilizing the FCGMA Online Software, the Agency sent approximately 868 Semi-Annual Groundwater Extraction Statements, keyed in data received, and followed-up with non-reporters. Ninety-seven non–reporter accounts (missing semi-annual extraction statement filings) were resolved. Notices of Violations were sent to 174 non-reporters.
- Utilized the Irrigation Allowance program and Emergency Ordinance E modified Irrigation Allowance program.
- Continued the 25% Pumping Reduction.

### 6.3.1 **Credits for Non-Use of Groundwater Resources**

There are a number of different credits earned for non-use of groundwater resources. They are listed below.

6.3.1.1 Conservation Credits: In the past, well owners or operators with Historical Allocation would take advantage of this credit system by not using the full Adjusted Historical Allocation (AHA) associated with their wells. The credits granted under this system are called Conservation Credits to designate that they were earned by not pumping the full allocation.

The Conservation Credit program was only in effect the first half of the year for all user types (prior to the implementation of Emergency Ordinance E). During the first half of the year, conservation credits could be used but not earned. Domestic users did earn conservation credits during the second half of the year. Beginning January 1, 2015 all use and accumulation of conservation credits is to be suspended while Emergency Ordinance E is in effect.

For 2014, more Conservation Credits were used than were earned. A net total of -8,551 AF of Conservation Credits were earned by operators within the Agency (see Table 6 - *Summary of Groundwater Conservation Credits Accumulated in the FCGMA since 1991*). Table 6 details the historical growth of accumulated Conservation Credits since the initiation of the FCGMA credit system in 1991, and Figure 6 - *Accumulation of FCGMA Conservation Credits Earned* graphically shows the growth.

**Table 6 - Summary of Groundwater Conservation Credits Accumulated in the FCGMA Since 1991[1]**

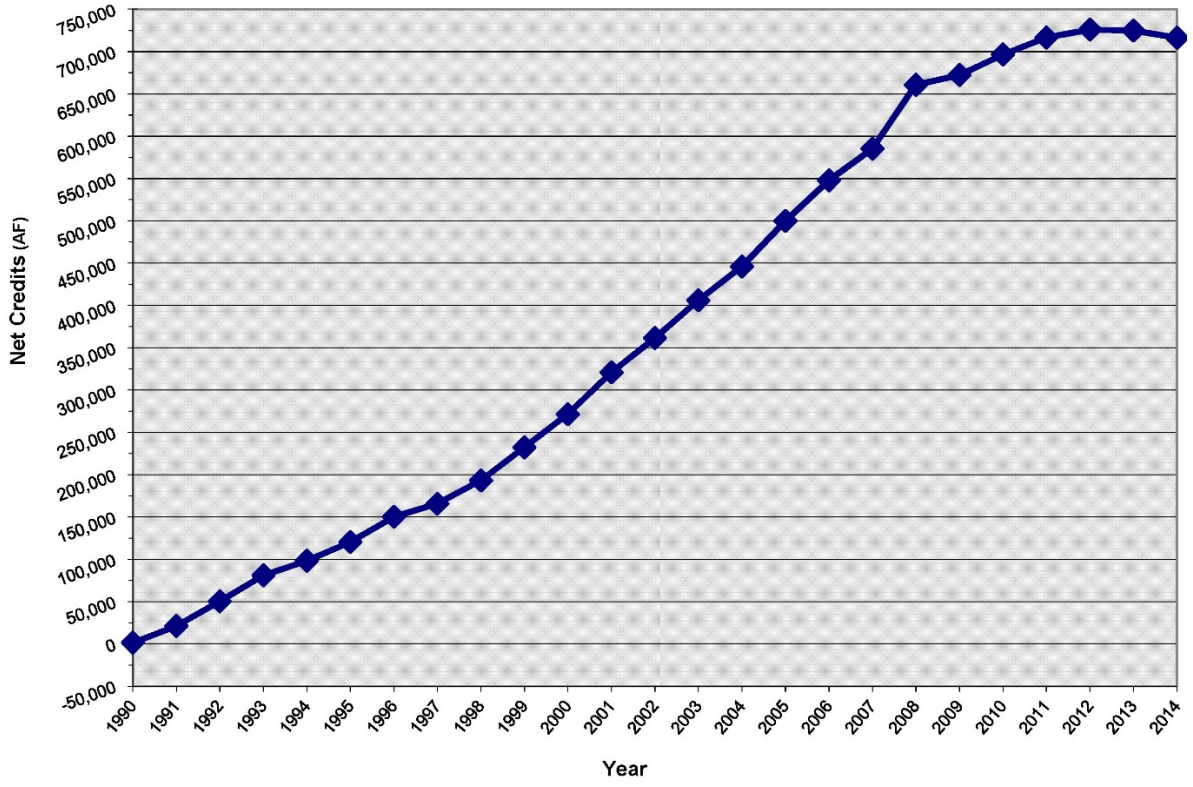
| Year | Net Credits Earned[2] (AF) | Net Credit Balance (+ AF) |
|---|---|---|
| 2014 | -8,551 | 716,398 |
| 2013 | -978 | 724,949 |
| 2012 | 9,194 | 725,927 |
| 2011 | 20,351 | 716,733 |
| 2010 | 24,058 | 696,382 |
| 2009 | 11,612 | 672,324 |
| 2008 | 75,423 | 660,712 |
| 2007 | 37,252 | 585,288 |
| 2006 | 48,166 | 548,037 |
| 2005 | 53,829 | 499,871 |
| 2004 | 39,893 | 446,042 |
| 2003 | 44,763 | 406,149 |
| 2002 | 40,396 | 361,386 |
| 2001 | 49,355 | 320,990 |
| 2000 | 39,132 | 271,635 |
| 1999 | 39,178 | 232,502 |
| 1998 | 27,632 | 193,324 |
| 1997 | 15,464 | 165,693 |
| 1996 | 29,903 | 150,228 |
| 1995 | 22,036 | 120,326 |
| 1994 | 17,283 | 98,290 |
| 1993 | 30,593 | 81,007 |
| 1992 | 29,069 | 50,414 |
| 1991 | 19,866 | 21,345 |
| 1990 | 1,478 | 1,478 |

**Notes:**

AF = acre feet of water; 1 Acre-foot = 325,851 US gallons of water @ STP

1. Credit Program initiated in 1991. Credits are granted for extracting less water than allocation (credits not authorized with irrigation efficiency allocation).
2. Prior to 1998, operators were required to apply for credits. For 1999-2011 (present), credits are automatically granted for groundwater use of less than Adjusted Historical Allocation or for groundwater injected even if an operator did not file. Starting in 2012, credits are only earned when extraction statements are filed. Credits did not exist prior to 1990.

**Figure 6 - Accumulation of FCGMA Conservation Credits Earned** (values in acre-feet) [1]




[1] FCGMA database statistics for year end credit totals in each category.

6.3.1.2 Injection Credits: Operators that recharge aquifers within the FCGMA Boundary through direct injection of "foreign water" as defined in the Agency's Ordinance Code, earn Injection Credits (in acre-feet) (also known as storage credits). During 2014, the FCGMA received and approved two Injection Credit requests. CMWD injected approximately 3,856 AF of water into the East Las Posas Basin. UWCD injected 59 AF into the Oxnard Forebay Basin.

6.3.1.3 In-Lieu Credits: The In-Lieu Credit Program provides for the transfer of credit (Conservation and Injection Credits) from the user of foreign water to the supplier in the amount of one acre-foot for each acre-foot of delivered water for direct use by the user. The water represented by the credits transferred is not available for use during the year being accounted for. During 2014, the FCGMA processed and approved six In-Lieu credit transfers (approximately 1994 AF).

6.3.1.4 Supplemental Municipal and Industrial (M&I) Water Program Credits: The Supplemental M&I Water Program allows for the transfer of credits (Conejo Credits) when Pleasant Valley County Water District (PVCWD) has diverted water from Conejo Creek. The surface water is diverted via the Calleguas Municipal Water District (CMWD) Conejo Creek Diversion constructed to enhance groundwater storage by allowing surface water, normally lost to the Ocean, to be used prior to and instead of extracting groundwater. The Conejo Credits are transferred from PVCWD to CMWD, which in turn transfers the credits to UWCD. The UWCD is then responsible for ensuring that water levels in key wells remain above the designated minimum level before the Conejo Credits are used to supply Supplemental M&I Water. The credits are used in order to offset surcharges for excess groundwater extractions and are called Supplemental M&I Credits. During 2014, there were no Supplemental M&I credit transfer requests.

6.3.1.5 Credit Transfers: Conservation credits were transferred associated with the UWCD Pumping Trough Pipeline (PTP) project in the Oxnard Plain Basin, for delivery of surface water or blended water in lieu of extraction of groundwater only. Agency staff processed 49 credit transfers approximately 3,294 AF.

The accumulation of credits represents a long-term resource management challenge for the Agency and its stakeholders. However, while Emergency Ordinance E is in effect, Conservation Credits cannot be earned or used.

# 7.0 AGENCY ACTIONS FOR CALENDAR YEAR 2014

## 7.1 Significant Agency Actions

### 7.1.1 **Adopted Changes to the Ordinance Code**

On April 11, 2014, with declining groundwater levels within the Agency, the FCGMA Board of Directors adopted Emergency Ordinance E: "*An Emergency Ordinance Limiting Extractions from Groundwater Extractions Facilities, Suspending Use of Credits and Prohibiting Construction of Any Groundwater Extraction Facility and/or the Issuance of Any Permit Therefor*." Emergency Ordinance E is included as Appendix A. This action followed the Governor of California proclaiming a state of emergency on January 17, 2014 because of the continued drought. The Governor called on Californians to reduce their water usage by 20 percent. On March 1, 2014, the Governor signed into law emergency drought legislation.

To implement Emergency Ordinance E, the following actions were completed or were in review during 2014:

- Article 2. Reduction of Groundwater Extractions: Granted Seven (7) Variances to Temporary Extraction Allocation (TEA), Denied Four (4) Variances, and Board Denied One (1) Variance Appeal
- Article 4. Prohibition on New Extraction Facilities: Board Granted Ten (10) Exceptions.
- Irrigation Allowance Index (for Crop Year 2014/15):
    - Pro-Rating of Water Use – Application Revised
    - Fallow Land Irrigation Allowance – Process Developed
    - Public Outreach – Developed Training Videos, and Held Training Sessions and Workshop, and Technical and Growers' Group meetings.
    - Upgrades to FCGMA Online Software – Significant Enhancements Completed

### 7.1.2 **Adopted Resolutions**

The FCGMA Board of Directors adopted three Resolutions during calendar year 2014 (Appendix A):

- Resolution No. 2014-01: "*A Resolution Establishing the Conejo Creek Water Pumping Program Involving Camrosa Water District and Pleasant Valley County Water District Using the Conejo Creek Diversion*";
- Resolution No. 2014-02: "*A Resolution Increasing Extraction Charges to $6.00 Per Acre-Foot*"; and

- Resolution No. 2014-03: "*A Resolution Supporting a Legislative Change in Maximum Allowable Extraction Charge*".

## 7.2 Project Reviews Performed in 2014

At times, Agency staff provides formal comments on proposed projects, within the Agency jurisdiction, to the County of Ventura Planning Department. In 2014, Agency staff provided, approximately four (4) project reviews to the County of Ventura Planning Department. Typically, proposed development projects are reviewed to identify the following groundwater-related issues: changes to the well ownership/operator, property-use changes that may affect or impact FCGMA extraction allocations, changes to land or crops, potential short or long-term impacts to water quality and/or water quantity, alterations or modifications in well status, changes to water distribution systems, and construction of structures that might impair infiltration of water to FCGMA aquifers. Projects may be approved with no further action needed, approved with conditions and/or modifications based in part on potential impacts to the FCGMA groundwater resources.

## 7.3 Other Activities Performed in 2014

The Agency performed and completed the following additional activities during 2014:

- List of Problems and Issues For Developing Measures for Long-Term Sustainable Groundwater Management – Board Adopted Possible Solutions and Priorities List

- Agency staff, working with the County Executive Office, drafted legislation granting the Agency authority to inspect any extraction facility within its boundaries, including the power to seek an inspection warrant; the legislation (SB 988) was adopted in 2014 and went into effect this year.

- 2013 Annual Report, including Fall Water Level Maps (Lower and Upper Aquifer Systems) and 2013 Annual Basin Management Objective Report Card – Completed

- Field Program for Inspection of Flowmeters (Las Posas Basins) – Completed

- New CIMIS Weather Station - Installed and Operational

- Sustainable Groundwater Management Act – Workshop Held

- Applications for Historical Allocation, and/or Credit Transfers - Processed
  - Approved Two (2) Ag to M&I Allocation Transfers
  - Denied One (1) M&I to M&I Allocation Transfer

- Informational Updates:
  - United Water Conservation District Groundwater Model;
  - Ventura County Wastewater District No. 1 Moorpark Desalter Project; and
  - City of Camarillo's North Pleasant Valley Desalter Project

- To improve stakeholder outreach and communication, staff attended stakeholder and Las Posas User Group meetings, and continued mailing of Semi-Annual Newsletters.

# 8.0 FINANCIAL STATUS OF THE AGENCY FOR 2014

The FCGMA's fiscal year begins July 1 and ends on June 30 of the next calendar year. Accordingly, the financial status information contained in this 2014 Annual Report covers the Fiscal Year period beginning July 1, 2013 and ending on June 30, 2014. Fiscal administration and oversight of the Agency's financial transactions is performed by Agency management in consultation with the Fiscal Services Section Central Services Department within the Ventura County Public Works Agency pursuant to an existing and ongoing contractual arrangement between the Agency and the County of Ventura.

Quarterly and year-end budget to actual performance reports are presented to the FCGMA Board of Directors for their information, review, and where necessary, adjustments. The information below highlights key fiscal performance metrics reported by Agency management during the 2013-14 Fiscal Year period.

**Fiscal Year End Report June 30, 2014**

- FCGMA revenues received in 2013-14 totaled $1,616,521. An amount that reflected a $302,649 or 22% increase versus 2012-13 adjusted actual revenues received.
- FCGMA expenditures incurred in 2013-14 totaled $ 957,871. An amount that reflected a $100,401, or 9.5% decrease below 2012-13 adjusted actual expenditures incurred by the Agency.

## 8.1 Financial Audits

Pursuant to § 26909, the audit requirements applicable to FCGMA are in the *Minimum Audit Requirements and Reporting Guidelines* for California Special Districts, as published by the Division of Accounting and Reporting, Office of the State Controller. Essentially, the minimum requirements reflect Generally Accepted Auditing Standards (GAAS), as described in the American Institute of Certified Public Accountants publication, *Audits of State and Local Governmental Units*.

Under GAAS, the FCGMA, which is a special purpose government engaged in the preservation and management groundwater resources for the common benefit within its boundary, is required to prepare its financial statements in an enterprise format. The FCGMA is funded primarily through user extraction charges (set at $4.00 per acre-foot during the first half of the year and set at $6.00 acre-foot during the second half of the year), and is operated on a cash-accounting basis. The only other income to the Agency is from surcharge fees, civil penalties, and accumulated interest earnings on Agency funds on deposit with the County Treasurer's Pooled Investment Fund.

In 2014, a biennial (2013-2014) financial audit schedule was conducted in late 2014, and will be available in mid-2015. Copies of the Agency's annual and biennial audit reports are available upon request.

# 9.0 REFERENCES

California Department of Water Resources (DWR), 1954. *Seawater Intrusion: Oxnard Plain of Ventura County*: Bulletin No. 63-1, 59 pp., Sacramento.

DWR, 1976. *Planned Utilization of Water Resources Ventura County, California*: Bulletin 104-8, Sacramento, CA.

California Water Code (CWC). *Appendix 121, Articles 1-11, Section 102 et seq*., Chaptered 1982.

Dibblee, Thomas W., 1990. *Geologic Map of the Camarillo and Newbury Park Quadrangles, Ventura County, California*. H. E. Ehrenspeck ed. Dibblee Geologic Foundation, Santa Barbara, CA.

Dibblee, Thomas W., 1992a. *Geologic Map of the Saticoy Quadrangle, Ventura County, California*. H. E. Ehrenspeck ed. Dibblee Geologic Foundation, Santa Barbara, CA.

Dibblee, Thomas W., 1992b. *Geologic Map of the Simi Quadrangle, Ventura County, California*. H. E. Ehrenspeck ed. Dibblee Geologic Foundation, Santa Barbara, CA.

Dibblee, Thomas W., 1992c. *Geologic Map of the Moorpark Quadrangle, Ventura County, California*. H. E. Ehrenspeck ed. Dibblee Geologic Foundation, Santa Barbara, CA.

FCGMA, United Water Conservation District (UWCD), and Calleguas Municipal Water District (CMWD), 2007. *2007 Update to the Fox Canyon Groundwater Management Agency Groundwater Management Plan,* County of Ventura Public Works Agency, Ventura, CA.

Hanson, R.T., Martin, P., Koczot, K M., 2003. Simulation of ground-water/surface-water flow in the Santa Clara - Calleguas basin, California: U.S. Geological Survey Water-Resources Investigation Report 02-4136, 214 p.

Izbicki, John A., 1992, *Sources of Chloride in Ground Water of the Oxnard Plain, California*, Prince, K.R. and Johnson A.I., eds., Regional aquifer systems of the United States-Aquifers of the Far East: American Water Resources Association Monograph Series, no.16, p.5-14.

Izbicki, John A. 1996a. *Seawater Intrusion in a Coastal California Aquifer*. U.S. Geological Survey, 1996.

Izbicki, John A. 1996b. *Source, Movement, and Age of Ground Water in a Coastal California Aquifer*. U.S. Geological Survey, 1996.

Izbicki, John A., Allen H. Christensen, Mark W. Newhouse, and George R. Aiken. 2005. *Inorganic, isotopic, and organic composition of high-chloride water from wells in a coastal southern California aquifer*. Applied Geochemistry: Elsevier Ltd.

Turner, J. M., 1975. *Aquifer Delineation in the Oxnard-Calleguas area, Ventura County, in Compilation of Technical Information Records for the Ventura County Cooperative Investigation,* California Department of Water Resources, 28p.

Ventura County Office of Agricultural Commissioner, 2014. *Ventura County's Crop & Livestock Report 2013*: Camarillo, California.

Ventura County Board of Supervisor's (VCBOS), 1982. Item 32, Document # 431, *Minutes of December 21, 1982 Meeting*.

Ventura County Office of County Recorder (VCOR), 1996. *Document 96-106221*.

Ventura County Office of County Recorder (VCOR), 2002. *Document 200201140010960.*

## APPENDIX A

Ordinances and Resolutions adopted by the Fox Canyon Groundwater Management Agency Board of Directors during Calendar Year 2014

- Emergency Ordinance E
- Resolution No. 2014-01
- Resolution No. 2014-02
- Resolution No. 2014-03
- Revised Irrigation Allowance Index Table for Emergency Ordinance E (Adjusted 25%)

## EMERGENCY ORDINANCE – E

## *AN EMERGENCY ORDINANCE LIMITING EXTRACTIONS FROM GROUNDWATER EXTRACTION FACILITIES, SUSPENDING USE OF CREDITS AND PROHIBITING CONSTRUCTION OF ANY GROUNDWATER EXTRACTION FACILITY AND/OR THE ISSUANCE OF ANY PERMIT THEREFOR*

The Board of Directors of the Fox Canyon Groundwater Management Agency, State of California, ordains as follows:

### ARTICLE 1. Findings

The Board of Directors hereby finds that:

A. On January 17, 2014, the Governor of the State of California proclaimed a state of emergency due to current drought conditions and called on Californians to reduce their water usage by 20 percent. On March 1, 2014, the Governor signed into law emergency drought legislation that finds and declares that California is experiencing an unprecedented dry period and shortage of water for its citizens, local governments, agriculture, environment, and other uses.

B. The U.S. Drought Monitor has designated the territory of the Agency to be currently in a condition of exceptional drought.

C. The United Water Conservation District has reported that groundwater storage in the Oxnard Plain Basin Forebay dropped by 32,200 acre feet in the past year and groundwater levels are currently below sea level. Continued dry conditions and regulatory restrictions on diversions from the Vern Freeman Diversion will result in less water available for recharge of the Forebay.

D. On February 25, 2009, the Fox Canyon Groundwater Management Agency Board of Directors in response to a serious water resource problem constituting a very real and immediate threat to groundwater quality and quantity to the West, East, and South Las Posas Basins and any and all basins tributary thereto adopted Emergency Ordinance D, entitled An Emergency Ordinance to Impose a Temporary Moratorium on Construction of New Wells and to Provide an Upper Limitation to Efficiency Extraction Allocation Within the West, East, and South Las Posas Groundwater Basins Pending Development of a Basin-Specific Management Plan.

E. Emergency Ordinance D was replaced by Ordinance 8.6 which presumed the development of a Basin-Specific Management Plan. However, the threats to groundwater quality and quantity in the Las Posas Basins remain and have increased due to persistent drought conditions, and the lack of a Basin-Specific Management Plan.

F. The Agency's 2007 Update to its Groundwater Management Plan established basin yield at 100,000 acre-feet per year; however, average annual total extractions within the Agency for Calendar Years 2003 through 2012 were 124,586 acre-feet.

G. Due to persistent dry conditions, the Department of Water Resources on January 31, 2014, announced a 2014 State Water Project Allocation of zero percent.

H. The cumulative use of conservation credits has reduced the benefit of previous reductions in historical allocations, and could limit any benefit derived through this Emergency Ordinance.

I. The Board may adopt ordinances for the purpose of regulating, conserving, managing, and controlling the use and extraction of groundwater within the territory of the Agency.

J. The measures adopted in this emergency ordinance are necessary in order to improve and protect the quantity and quality of groundwater supplies within the territory of the Agency, to prevent a worsening of existing conditions, to allow time to implement a definite and long-term solution to improve groundwater conditions in the Agency and to bring groundwater extractions into balance with recharge.

K. This emergency ordinance is exempt from the California Environmental Quality Act pursuant to CEQA Guidelines Sections 15307 and 15308 as an action taken "to ensure the maintenance, restoration, or enhancement of natural resources or the environment."

## ARTICLE 2. Reduction of Groundwater Extractions

A. For the duration of this emergency ordinance, all Municipal and Industrial Operators' extraction allocations, regardless of type, shall be replaced with a Temporary Extraction Allocation (TEA) based on an operator's average annual reported extractions, not including any extractions that incurred surcharges, for Calendar Years 2003 through 2012.

B. For the Port Hueneme Water Agency (PHWA), their TEA shall be established according to the Agency's approved July 24, 1996 agreement and allocations contained within.

C. Temporary Extraction Allocations (TEA) shall be reduced in order to eliminate overdraft from the aquifer systems within the boundaries of the Agency for municipal and industrial uses. The reductions shall be as follows:

| | |
|---|---|
| 1. Beginning July 1, 2014 | 10% (TEA x 0.90/2) |
| 2. Beginning January 1, 2015 | 15% (TEA x 0.85/2) |
| 3. Beginning July 1, 2015 | 20% (TEA x 0.80/2) |
| 4. Beginning January 1, 2016 | 20% (TEA x 0.80) |

D. For reported extractions starting on August 1, 2014, all Agricultural Operators' extraction allocations, regardless of type, shall be replaced with an Annual Efficiency Allocation as provided in Section 5.6.1.2. of the Agency Ordinance Code, except that the annual irrigation allowances used to calculate the Irrigation Allowance Index shall be adjusted downward 25% from the allowances set forth in Resolution No. 2011-04 (Exhibit No. 1). For computing the irrigation allowance, the definition of Planted Acre may include designated areas that grew irrigated crops in the twelve months prior to August 1, 2014, but have subsequently been fallowed or are growing a non-irrigated crop.

E. On February 1, 2015, the Board may by Resolution undertake an additional adjustment to the annual irrigation allowances used to calculate the Irrigation Allowance Index, or other pumping restrictions in order to achieve a cumulative 10% reduction in pumping by Agricultural Operators.

F. On August 1, 2015, the Board may by Resolution undertake an additional adjustment to the annual irrigation allowances used to calculate the Irrigation Allowance Index, or other pumping restrictions in order to achieve a cumulative 20% reduction in pumping by Agricultural Operators.

G. Notwithstanding the extraction allocations established pursuant to Chapter 5.0 of the Agency Ordinance Code, all extractions in excess of the allocations established and adjusted by this emergency ordinance shall be subject to extraction surcharges.

H. The Executive Officer may, on written request from a land owner or operator, grant a variance from the requirements of this article based on a showing:

1. That there are special circumstances or exceptional characteristics of the owner or operator which do not apply generally to comparable owners or operators in the same vicinity; or
2. That strict application of the reductions as they apply to the owner or operator will result in practical difficulties or unnecessary hardships inconsistent with the general purpose of this emergency ordinance; or
3. That the granting of such variance will result in no net detriment to the aquifer systems.

## ARTICLE 3. Limitation on Accrual and Use of Credits

Notwithstanding Section 5.7 of the Agency Ordinance Code, conservation credits shall not be obtained and may not be used to avoid paying surcharges for extractions while this emergency ordinance is in effect.

## ARTICLE 4. Prohibition on New Extraction Facilities

The Board prohibits the issuance of any permit for construction of a groundwater extraction facility, other than a replacement, backup or standby facility which does not allow the initiation of any new or increased use of groundwater, within the territory of the Agency. The prohibition set forth shall not apply to any permit for which a completed application is on file with the Agency on or before February 26, 2014, or for any permit in furtherance of a pumping program approved by the Board. For the purpose of this Article 4, a new or increased use is one that did not exist or occur before the effective date of this emergency ordinance. The Board may grant exceptions to the prohibition set forth in this Article 4 on a case-by-case basis. Applications for exceptions shall conform to the requirements of Section 5.2.2.3. of the Agency Ordinance Code and will be approved only if the Board makes the findings set forth in Section 5.2.2.4. of the Agency Ordinance Code.

## ARTICLE 5. Duration

This emergency ordinance shall remain in effect from the date of adoption and reviewed every eighteen months, unless superseded or rescinded by action of the Board or a finding by the Board that the drought or emergency condition no longer exists.

## ARTICLE 6. Effective Date

This ordinance shall become effective immediately upon adoption by the vote of at least four members of the Board; otherwise it shall become effective on the thirty-first day after adoption.

PASSED AND ADOPTED this 11th day of April 2014 by the following vote:

AYES: 5
NOES: 0
ABSENT: 0

By: _____
Lynn Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Emergency Ordinance E.

By: _____
Jessica Kam, Clerk of the Board

Exhibit No. 1 – Current Irrigation Allowance Index and - Proposed Allowance Index Values (Adjusted 25%)

# CURRENT Irrigation Allowance Index Values

**Acre-Feet/Acre**

| *Includes leaching and DU = 0.8* | # of Crops | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| Spring Veg./Fall Celery | 2 | 3.6 | 3.8 | 3.3 | 4.0 | 4.2 | 3.7 | 4.3 | 4.6 | 4.0 |
| Summer Veg./Fall Veg | 2 | 3.4 | 3.6 | 3.2 | 3.8 | 4.0 | 3.6 | 4.1 | 4.3 | 3.9 |
| Spring Veg./Late Summer Veg./+part Late Fall Veg* | **2+plus** | 3.9 | 4.1 | 3.7 | 4.4 | 4.6 | 4.2 | 4.8 | 5.0 | 4.6 |

| | | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| **Crop** | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| **Avocado - 20% Ground Shading** | **1** | 1.9 | 2.0 | 1.7 | 2.1 | 2.3 | 1.9 | 2.3 | 2.5 | 2.1 |
| **Avocado - 50% Ground Shading** | **1** | 2.7 | 3.0 | 2.5 | 3.1 | 3.4 | 2.8 | 3.3 | 3.7 | 3.0 |
| **Avocado - 70% Ground Shading** | **1** | 3.7 | 4.1 | 3.5 | 4.1 | 4.6 | 4.0 | 4.5 | 5.1 | 4.3 |
| **Blueberries 20% Ground Shading** | **1** | 1.8 | 1.9 | 1.8 | 2.1 | 2.3 | 2.0 | 2.3 | 2.5 | 2.2 |
| **Blueberries 50% Ground Shading** | **1** | 2.6 | 2.7 | 2.6 | 3.0 | 3.1 | 2.9 | 3.3 | 3.4 | 3.2 |
| **Blueberries 70% Ground Shading** | **1** | 3.6 | 3.8 | 3.5 | 4.1 | 4.3 | 3.9 | 4.5 | 4.7 | 4.3 |
| **Celery - Single Crop** | **1** | 2.0 | 2.1 | 1.8 | 2.2 | 2.3 | 2.0 | 2.4 | 2.5 | 2.2 |
| **Citrus - 20% Ground Shading** | **1** | 1.9 | 2.1 | 1.8 | 2.1 | 2.4 | 2.0 | 2.3 | 2.6 | 2.2 |
| **Citrus - 50% Ground Shading** | **1** | 2.5 | 2.7 | 2.4 | 2.9 | 3.0 | 2.7 | 3.1 | 3.3 | 2.9 |
| **Citrus - 70% Ground Shading** | **1** | 3.4 | 3.6 | 3.2 | 3.9 | 4.0 | 3.6 | 4.3 | 4.4 | 3.9 |
| **Lima Beans** | **1** | 1.0 | 1.1 | 1.0 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 |
| **Misc. Veg Greenhouse - Fall** | **1** | 1.2 | 1.3 | 1.1 | 1.3 | 1.4 | 1.2 | 1.4 | 1.5 | 1.3 |
| **Misc. Veg Greenhouse - Spr** | **1** | 1.3 | 1.4 | 1.2 | 1.5 | 1.6 | 1.4 | 1.6 | 1.7 | 1.6 |
| **Misc. Veg Greenhouse - Summer** | **1** | 1.6 | 1.6 | 1.6 | 1.8 | 1.8 | 1.8 | 1.9 | 1.9 | 1.9 |
| **Misc. Veg Single Crop - Fall** | **1** | 1.4 | 1.5 | 1.3 | 1.5 | 1.7 | 1.4 | 1.6 | 1.8 | 1.5 |
| **Misc. Veg Single Crop - Spr** | **1** | 1.6 | 1.7 | 1.5 | 1.8 | 1.9 | 1.7 | 1.9 | 2.1 | 1.8 |
| **Misc. Veg Single Crop - Summer** | **1** | 2.0 | 2.0 | 1.9 | 2.2 | 2.3 | 2.2 | 2.5 | 2.5 | 2.4 |
| **Nursery (Non-Greenhouse)** | **1** | 4.3 | 4.5 | 4.1 | 4.9 | 5.1 | 4.6 | 5.3 | 5.6 | 5.1 |
| **Nursery (Greenhouse)** | **1** | 4.5 | 4.6 | 4.3 | 5.1 | 5.2 | 4.9 | 5.6 | 5.7 | 5.4 |
| **Raspberries - Tunnel** | **1** | 4.3 | 4.5 | 4.2 | 4.9 | 5.1 | 4.7 | 5.4 | 5.5 | 5.2 |
| **Sod** | **1** | 4.0 | 4.2 | 3.9 | 4.5 | 4.8 | 4.4 | 5.0 | 5.2 | 4.8 |
| **Strawberries-Main Season** | **1** | 3.1 | 3.3 | 2.9 | 3.4 | 3.6 | 3.2 | 3.7 | 3.9 | 3.4 |
| **Strawberries-Summer** | **1** | 1.8 | 1.9 | 1.8 | 2.0 | 2.1 | 1.9 | 2.1 | 2.2 | 2.0 |
| **Tomatoes - Peppers** | **1** | 2.3 | 2.3 | 2.2 | 2.6 | 2.6 | 2.5 | 2.8 | 2.8 | 2.7 |

# Proposed Irrigation Allowance Index Values (Adjusted 25%)

**Acre-Feet/Acre**

| *Includes leaching and DU = 0.8* | # of Crops | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| Spring Veg./Fall Celery | 2 | 2.7 | 2.8 | 2.5 | 3.0 | 3.2 | 2.8 | 3.3 | 3.4 | 3.0 |
| Summer Veg./Fall Veg | 2 | 2.5 | 2.7 | 2.4 | 2.8 | 3.0 | 2.7 | 3.0 | 3.2 | 2.9 |
| Spring Veg./Late Summer Veg./+part Late Fall Veg* | **2+plus** | 2.9 | 3.1 | 2.8 | 3.3 | 3.5 | 3.1 | 3.6 | 3.8 | 3.4 |

| | | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| **Crop** | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| **Avocado - 20% Ground Shading** | **1** | 1.4 | 1.5 | 1.3 | 1.6 | 1.7 | 1.5 | 1.7 | 1.9 | 1.6 |
| **Avocado - 50% Ground Shading** | **1** | 2.0 | 2.2 | 1.9 | 2.3 | 2.5 | 2.1 | 2.5 | 2.8 | 2.3 |
| **Avocado - 70% Ground Shading** | **1** | 2.7 | 3.1 | 2.6 | 3.1 | 3.5 | 3.0 | 3.4 | 3.8 | 3.2 |
| **Blueberries 20% Ground Shading** | **1** | 1.4 | 1.4 | 1.3 | 1.5 | 1.8 | 1.5 | 1.8 | 1.9 | 1.7 |
| **Blueberries 50% Ground Shading** | **1** | 2.0 | 2.1 | 1.9 | 2.2 | 2.3 | 2.2 | 2.4 | 2.5 | 2.4 |
| **Blueberries 70% Ground Shading** | **1** | 2.7 | 2.9 | 2.6 | 3.1 | 3.3 | 3.0 | 3.4 | 3.6 | 3.2 |
| **Celery - Single Crop** | **1** | 1.5 | 1.6 | 1.4 | 1.7 | 1.8 | 1.5 | 1.8 | 1.9 | 1.6 |
| **Citrus - 20% Ground Shading** | **1** | 1.4 | 1.6 | 1.3 | 1.6 | 1.8 | 1.5 | 1.8 | 1.9 | 1.6 |
| **Citrus - 50% Ground Shading** | **1** | 1.9 | 2.0 | 1.8 | 2.2 | 2.3 | 2.0 | 2.4 | 2.5 | 2.2 |
| **Citrus - 70% Ground Shading** | **1** | 2.6 | 2.7 | 2.4 | 2.9 | 3.0 | 2.7 | 3.2 | 3.3 | 2.9 |
| **Lima Beans** | **1** | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 |
| **Misc. Veg Greenhouse - Fall** | **1** | 0.9 | 0.9 | 0.8 | 1.0 | 1.0 | 0.9 | 1.0 | 1.1 | 1.0 |
| **Misc. Veg Greenhouse - Spr** | **1** | 1.0 | 1.1 | 0.9 | 1.1 | 1.2 | 1.1 | 1.2 | 1.3 | 1.2 |
| **Misc. Veg Greenhouse - Summer** | **1** | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 |
| **Misc. Veg Single Crop - Fall** | **1** | 1.0 | 1.1 | 1.0 | 1.1 | 1.2 | 1.0 | 1.2 | 1.3 | 1.1 |
| **Misc. Veg Single Crop - Spr** | **1** | 1.2 | 1.3 | 1.1 | 1.3 | 1.4 | 1.2 | 1.5 | 1.6 | 1.4 |
| **Misc. Veg Single Crop - Summer** | **1** | 1.5 | 1.5 | 1.5 | 1.7 | 1.7 | 1.6 | 1.8 | 1.9 | 1.8 |
| **Nursery (Non-Greenhouse)** | **1** | 3.2 | 3.4 | 3.1 | 3.6 | 3.8 | 3.5 | 4.0 | 4.2 | 3.8 |
| **Nursery (Greenhouse)** | **1** | 3.4 | 3.5 | 3.3 | 3.8 | 3.9 | 3.7 | 4.2 | 4.3 | 4.0 |
| **Raspberries - Tunnel** | **1** | 3.2 | 3.4 | 3.1 | 3.7 | 3.8 | 3.6 | 4.0 | 4.2 | 3.9 |
| **Sod** | **1** | 3.0 | 3.2 | 2.9 | 3.4 | 3.6 | 3.3 | 3.7 | 3.9 | 3.6 |
| **Strawberries-Main Season** | **1** | 2.3 | 2.5 | 2.2 | 2.6 | 2.7 | 2.4 | 2.8 | 2.9 | 2.6 |
| **Strawberries-Summer** | **1** | 1.4 | 1.4 | 1.3 | 1.5 | 1.6 | 1.4 | 1.6 | 1.7 | 1.5 |
| **Tomatoes - Peppers** | **1** | 1.7 | 1.7 | 1.6 | 1.9 | 1.9 | 1.8 | 2.1 | 2.1 | 2.0 |

# Resolution 2014-01
## of the
## Fox Canyon Groundwater Management Agency

**A RESOLUTION ESTABLISHING THE CONEJO CREEK WATER PUMPING PROGRAM INVOLVING CAMROSA WATER DISTRICT AND PLEASANT VALLEY COUNTY WATER DISTRICT USING THE CONEJO CREEK DIVERSION**

**WHEREAS,** the Fox Canyon Groundwater Management Agency Ordinance Code allows an operator to obtain storage credits for water that has been determined by the Agency Board to be foreign water stored.

**WHEREAS**, Calleguas Municipal Water District ("Calleguas"), Camrosa Water District ("Camrosa"), the City of Thousand Oaks, and Pleasant Valley County Water District ("Pleasant Valley") entered into various agreements to cooperate in the appropriation and beneficial use of the recycled water and recaptured water, including the construction and operation of facilities ("Conejo Creek Project" or "Project") to convey recycled water and recaptured water (collectively, "Project Water") to Camrosa and Pleasant Valley.

**WHEREAS,** among the agreements referenced above was an agreement between Calleguas and Pleasant Valley in 1994 setting forth the terms by which Pleasant Valley may purchase from Calleguas certain Project Water diverted through the Project to Pleasant Valley for utilization within Pleasant Valley's jurisdictional boundaries ("1994 Agreement").

**WHEREAS,** the 1994 Agreement provided that certain credits may accrue to Pleasant Valley under Fox Canyon Groundwater Management Agency ("Agency") ordinances and that Pleasant Valley shall transfer, in accordance with Agency ordinances, an acre-foot of credits as earned to Calleguas for each acre-foot of water delivered to Pleasant Valley from the Conejo Creek Project.

**WHEREAS,** the Agency Board in May 28, 2003, determined, approved and conditioned that water diverted by the Conejo Creek Project is foreign water and that deliveries of surface water from the Conejo Creek Project to Pleasant Valley's storage reservoir qualify for credits.

**WHEREAS,** under the 2003 approved program, credits earned by Pleasant Valley for deliveries of Conejo Creek Project water to meet local irrigation demands in lieu of groundwater pumping were transferred from Pleasant Valley to Calleguas Municipal Water District which may in turn transfer those credits to United Water Conservation District ("United") under the Supplemental M&I Water Program.

**WHEREAS,** Calleguas and United intend to continue to utilize credits through the Supplemental M&I Program, but Calleguas wishes to terminate its future participation in the Conejo Creek Project and cease accruing additional credits after the 1994 Agreement is terminated.

**WHEREAS,** Camrosa and Pleasant Valley propose to enter into an agreement by which Camrosa will sell Conejo Creek Project Water to Pleasant Valley ("Water Sale Agreement").

The substantive provisions of the Water Sale Agreement generally mirror the provisions of the 1994 Agreement.

**WHEREAS,** the proposed Water Sale Agreement provides that, subject to Agency approval, Pleasant Valley shall transfer to Camrosa, pursuant to applicable Agency rules and regulations, credits as earned for each acre-foot of water delivered to Pleasant Valley from Camrosa through the Conejo Creek Project

**WHEREAS,** the Conejo Creek Project is recognized in the Agency's Groundwater Management Plan as one of several strategies for bringing the aquifers of the Agency into balance, and the proposed Water Sale Agreement will help ensure that Project Water will continue to be utilized by Pleasant Valley.

**WHEREAS,** the Agency Ordinance Code authorizes the adjustment of extraction allocations consistent with the goal of reaching safe yield.

**WHEREAS,** an Impact Analysis (Analysis), dated December 12, 2013, concludes: 1) Deliveries of Conejo Creek Project water to Pleasant Valley have significantly reduced groundwater pumping by Pleasant Valley; 2) Conejo Creek Project water has the added benefit of being drought-proof because of its component of recycled water; 3) Pumping is moved away from the pumping depression and the coast to a more-inland area of better stormwater recharge; 4) Without the agreement, Conejo Creek Project water is delivered elsewhere and Pleasant Valley pumping would increase to replace that water source, resulting in a further drop of groundwater elevations; and 5) thus, the Conejo Creek Water Pumping Program is a net advantage to the basin.

**WHEREAS,** to the extent that cumulative extractions by Camrosa never exceed deliveries to Pleasant Valley, the proposed Water Sale Agreement will result in a net benefit to the Pleasant Valley Basins.

**NOW, THEREFORE, IT IS HEREBY ORDERED AND RESOLVED THAT:**

1. The Board approves the Conejo Creek Water Pumping Program involving Camrosa Water District and Pleasant Valley County Water District using the Conejo Creek Diversion.

2. Camrosa's cumulative pumping extractions through this program shall never exceed the cumulative deliveries to Pleasant Valley through this program. *The transfer of credits between Pleasant Valley and Camrosa is approved, as set forth in the Pleasant Valley/Camrosa agreement attached hereto and made a part hereof by reference."*

3. Camrosa will actively meter extraction quantity and monitor:

    a. Water levels: Transducers in the Woodcreek Well and any new well Camrosa constructs in the PV Basin will record water levels on at least a monthly basis.
    b. Water quality: Camrosa will monitor at least annually the water quality of the Woodcreek Well and any new wells that are part of this Resolution.

4. Camrosa shall submit an Annual Report to the Agency by February 1st each year, which shall include:

a. Conejo Creek Project water delivery amounts to Pleasant Valley;
b. Credits retired in accordance with deliveries to Pleasant Valley;
c. Camrosa's cumulative deliveries to Pleasant Valley;
d. Well extractions under this program;
e. Water quality data;
f. Historical and past year water level well data from Camrosa's Pleasant Valley basin well(s); and
g. Drawdown analysis from extractions.

5. For the purpose of determining net impacts to the basin as a result of this agreement the Agency and Camrosa shall meet during the first week of May annually to review the contents of the Annual Report and its conclusion. If there are disagreements with the findings of net detriment, the matter may be referred to the FCGMA Board.

6. Camrosa will incrementally phase in extractions as follows:

    a. Calendar Year 2014: Extractions will be limited to 200 AF.
    b. Calendar Year 2015: Extractions will be limited to 1,000 AF.
    c. Calendar Year 2016: Extractions will be limited to 2,000 AF.
    d. Calendar Year 2017: If monitoring data indicates the basin will support it, extractions will be limited to 3,000 AF.
    e. Calendar Year 2018: If monitoring data indicates the basin will support it, extractions will be limited to 4,500 AF.
    f. All subsequent years: If monitoring data indicates the basin will support it, extractions will be limited to 4,500 AF annually.

7. Camrosa shall extract from Camrosa-owned wells and may supply groundwater so extracted within its service territory in accordance with Agency Resolution No. 2011-01.

8. The extractions referenced in this agreement are in addition to Camrosa's existing 806 AF yearly allocation currently being pumped at Woodcreek Well. The existing 806 AF allocation will be the first utilized for extraction.

9. This resolution will terminate on the same date as the agreement between Camrosa and Pleasant Valley regarding this program or 30 days after mutual agreement between the Agency and Camrosa.

On motion of Director Craven, seconded by Director Bennett, the foregoing resolution was passed and adopted on this 26th day of March 2014.

By: _____
Lynn E. Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2014-01.

By: _____
Jessica Kam, Clerk of the Board

# Resolution No. 2014-02

## of the

## Fox Canyon Groundwater Management Agency

### A RESOLUTION INCREASING EXTRACTION CHARGES TO $6.00 PER ACRE-FOOT

**WHEREAS,** pursuant to the authority of the Fox Canyon Groundwater Management Agency Act Sections 121-102, *et seq.,* the Fox Canyon Groundwater Management Agency (the Agency) has been granted certain powers for the purposes of groundwater management within its boundaries; and

**WHEREAS,** the mission of the Fox Canyon Groundwater Management Agency includes the protection and preservation of the groundwater resources within the boundaries of the Fox Canyon Groundwater Management Agency; and

**WHEREAS,** the Fox Canyon Groundwater Management Agency Act, Sections 1001-1007, as amended, grant the Agency's Board of Directors the authority to levy groundwater extraction charges up to six dollars ($6.00) per acre-foot pumped per year on all water extracted within the Agency's boundaries; and

**WHEREAS,** Section 2.4.1 of Agency Ordinance No. 8.7, adopted by the Board of Directors on May 22, 2013, states that, "...all persons operating groundwater extraction facilities shall pay a groundwater extraction charge for all groundwater extracted after July 1, 1993, in the amount established by Resolution of the Board;" and

**WHEREAS,** the Agency's current groundwater extraction charge was set at $4.00 per acre-foot upon the adoption of Resolution No. 2005-06 by the Board of Directors during the June 22, 2005 meeting; and

**WHEREAS**, the 10-year average amount of groundwater now pumped is approximately 125,000 acre-feet per year; and

**WHEREAS,** the Agency has incurred increased costs required to administer and enforce its groundwater extraction management plans, policies, programs, resolutions and ordinances proactively, efficaciously and successfully; and

**WHEREAS**, the cost of running the Agency cannot be supported at the current $4.00 per acre-foot extraction charge; and

**WHEREAS,** the extraction charge is not a tax for purposes of Article XIII C of the California Constitution, or a fee or charge for purposes of Article XIII D of the California Constitution.

**NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND ORDERED** that effective July 1, 2014, the groundwater extraction charge shall be six ($6.00) per acre-foot for groundwater extracted from facilities within the boundary of the Fox Canyon Groundwater Management Agency.

On motion by Director Craven, and seconded by Director Bennett, the foregoing resolution was passed and adopted on June 25, 2014 by the following vote.

AYES – Chair Maulhardt, Directors Craven, Bennett, and Kelley
NOES – Director Borchard
ABSTAINS – None
ABSENT - None

By: _____
Lynn E. Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2014-02.

By: _____
Jessica Kam, Clerk of the Board

# Resolution No. 2014-03

## of the

## Fox Canyon Groundwater Management Agency

### A RESOLUTION SUPPORTING A LEGISLATIVE CHANGE IN MAXIMUM ALLOWABLE EXTRACTION CHARGE

**WHEREAS,** pursuant to the authority of the Fox Canyon Groundwater Management Agency Act Sections 121-102, *et seq.*, the Fox Canyon Groundwater Management Agency (the Agency) has been granted certain powers for the purposes of groundwater management within its boundaries; and

**WHEREAS,** the mission of the Fox Canyon Groundwater Management Agency includes the protection and preservation of the groundwater resources within the boundaries of the Fox Canyon Groundwater Management Agency; and

**WHEREAS,** the Fox Canyon Groundwater Management Agency Act, Sections 1001-1007, as amended, grant the Agency's Board of Directors the authority to levy groundwater extraction charges up to six dollars ($6.00) per acre-foot pumped per year on all water extracted within the Agency's boundaries; and

**WHEREAS,** Section 2.4.1 of Agency Ordinance No. 8.7, adopted by the Board of Directors on May 22, 2013, states that, "...all persons operating groundwater extraction facilities shall pay a groundwater extraction charge for all groundwater extracted after July 1, 1993, in the amount established by Resolution of the Board;" and

**WHEREAS,** the Agency's current groundwater extraction charge was set at $4.00 per acre-foot upon the adoption of Resolution No. 2005-06 by the Board of Directors during the June 22, 2005 meeting; and

**WHEREAS,** the Agency's 2007 Update to its Groundwater Management Plan established a basin safe yield of 100,000 acre-feet per year; and

**WHEREAS,** the 10-year average amount of groundwater now pumped is approximately 125,000 acre-feet per year; and

**WHEREAS,** the Agency has incurred increased costs required to administer and enforce its groundwater extraction management plans, policies, programs, resolutions and ordinances proactively, efficaciously and successfully; and

**WHEREAS,** the anticipated cost of running the Agency in the future cannot be supported at the current extraction charge; and

**WHEREAS,** the extraction charge is not a tax for purposes of Article XIII C of the California Constitution, or a fee or charge for purposes of Article XIII D of the California Constitution.

**NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND ORDERED** that the Agency Executive Officer take those actions necessary to change West's Annotated California Code - Water Appendix, Chapter 121-1007 to allow an extraction charge range with a maximum of twenty-five dollars ($25.00) per acre-foot per year. Actual extraction charges will be set within the allowable range by Resolution of the Board of Directors.

On motion by Director Craven, and seconded by Director Bennett, the foregoing resolution was passed and adopted on June 25, 2014 by the following vote.

AYES – Chair Maulhardt, Directors Craven, Bennett, and Borchard
NOES – Director Kelley
ABSTAINS – None
ABSENT - None

By: _____
Lynn E. Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2014-03.

By: _____
Jessica Kam, Clerk of the Board

# Irrigation Allowance Index Values (Adjusted 25%)*

**Acre-Feet/Acre**

| *Includes leaching and DU = 0.8* | # of Crops | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| Spring Veg./Fall Celery | 2 | 2.7 | 2.8 | 2.5 | 3.0 | 3.2 | 2.8 | 3.3 | 3.4 | 3.0 |
| Summer Veg./Fall Veg | 2 | 2.5 | 2.7 | 2.4 | 2.8 | 3.0 | 2.7 | 3.0 | 3.2 | 2.9 |
| Spring Veg./Late Summer Veg./+part Late Fall Veg* | **2+plus** | 2.9 | 3.1 | 2.8 | 3.3 | 3.5 | 3.1 | 3.6 | 3.8 | 3.4 |

| | | Oxnard (Z1) | | | Camarillo (Z2) | | | Santa Paula (Z3) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Typical | Dry | Wet | Typical | Dry | Wet | Typical | Dry | Wet |
| **Crop** | | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* | *Total AF/A* |
| **Avocado - 20% Ground Shading** | **1** | 1.4 | 1.5 | 1.3 | 1.6 | 1.7 | 1.5 | 1.7 | 1.9 | 1.6 |
| **Avocado - 50% Ground Shading** | **1** | 2.0 | 2.2 | 1.9 | 2.3 | 2.5 | 2.1 | 2.5 | 2.8 | 2.3 |
| **Avocado - 70% Ground Shading** | **1** | 2.7 | 3.1 | 2.6 | 3.1 | 3.5 | 3.0 | 3.4 | 3.8 | 3.2 |
| **Blueberries 20% Ground Shading** | **1** | 1.4 | 1.4 | 1.3 | 1.5 | 1.8 | 1.5 | 1.8 | 1.9 | 1.7 |
| **Blueberries 50% Ground Shading** | **1** | 2.0 | 2.1 | 1.9 | 2.2 | 2.3 | 2.2 | 2.4 | 2.5 | 2.4 |
| **Blueberries 70% Ground Shading** | **1** | 2.7 | 2.9 | 2.6 | 3.1 | 3.3 | 3.0 | 3.4 | 3.6 | 3.2 |
| **Celery - Single Crop** | **1** | 1.5 | 1.6 | 1.4 | 1.7 | 1.8 | 1.5 | 1.8 | 1.9 | 1.6 |
| **Citrus - 20% Ground Shading** | **1** | 1.4 | 1.6 | 1.3 | 1.6 | 1.8 | 1.5 | 1.8 | 1.9 | 1.6 |
| **Citrus - 50% Ground Shading** | **1** | 1.9 | 2.0 | 1.8 | 2.2 | 2.3 | 2.0 | 2.4 | 2.5 | 2.2 |
| **Citrus - 70% Ground Shading** | **1** | 2.6 | 2.7 | 2.4 | 2.9 | 3.0 | 2.7 | 3.2 | 3.3 | 2.9 |
| **Lima Beans** | **1** | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 |
| **Misc. Veg Greenhouse - Fall** | **1** | 0.9 | 0.9 | 0.8 | 1.0 | 1.0 | 0.9 | 1.0 | 1.1 | 1.0 |
| **Misc. Veg Greenhouse - Spr** | **1** | 1.0 | 1.1 | 0.9 | 1.1 | 1.2 | 1.1 | 1.2 | 1.3 | 1.2 |
| **Misc. Veg Greenhouse - Summer** | **1** | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.3 | 1.4 | 1.4 | 1.4 |
| **Misc. Veg Single Crop - Fall** | **1** | 1.0 | 1.1 | 1.0 | 1.1 | 1.2 | 1.0 | 1.2 | 1.3 | 1.1 |
| **Misc. Veg Single Crop - Spr** | **1** | 1.2 | 1.3 | 1.1 | 1.3 | 1.4 | 1.2 | 1.5 | 1.6 | 1.4 |
| **Misc. Veg Single Crop - Summer** | **1** | 1.5 | 1.5 | 1.5 | 1.7 | 1.7 | 1.6 | 1.8 | 1.9 | 1.8 |
| **Nursery (Non-Greenhouse)** | **1** | 3.2 | 3.4 | 3.1 | 3.6 | 3.8 | 3.5 | 4.0 | 4.2 | 3.8 |
| **Nursery (Greenhouse)** | **1** | 3.4 | 3.5 | 3.3 | 3.8 | 3.9 | 3.7 | 4.2 | 4.3 | 4.0 |
| **Raspberries - Tunnel** | **1** | 3.2 | 3.4 | 3.1 | 3.7 | 3.8 | 3.6 | 4.0 | 4.2 | 3.9 |
| **Sod** | **1** | 3.0 | 3.2 | 2.9 | 3.4 | 3.6 | 3.3 | 3.7 | 3.9 | 3.6 |
| **Strawberries-Main Season** | **1** | 2.3 | 2.5 | 2.2 | 2.6 | 2.7 | 2.4 | 2.8 | 2.9 | 2.6 |
| **Strawberries-Summer** | **1** | 1.4 | 1.4 | 1.3 | 1.5 | 1.6 | 1.4 | 1.6 | 1.7 | 1.5 |
| **Tomatoes - Peppers** | **1** | 1.7 | 1.7 | 1.6 | 1.9 | 1.9 | 1.8 | 2.1 | 2.1 | 2.0 |

*Adopted by FCGMA Board on April 11, 2014

## APPENDIX B

- 2014 Annual Basin Management Objectives Progress Report Board Letter
- 2014 FCGMA Basin Management Objectives Report Cards

# FOX CANYON GROUNDWATER MANAGEMENT AGENCY

A STATE OF CALIFORNIA WATER AGENCY



April 22, 2015

Board of Directors
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009-1600

**SUBJECT: 2014 AGENCY ANNUAL BASIN MANAGEMENT OBJECTIVES (BMO) REPORT CARDS** – *(New Item)*

**RECOMMENDATION:** Receive and file the Agency's staff report regarding the status of groundwater conditions relative to the Agency's Basin Management Objectives.

**EXECUTIVE SUMMARY:**
The 2007 Update to the FCGMA Groundwater Management Plan (GMP) established Basin Management Objectives (BMOs) for the basins within the Agency. BMOs are groundwater levels or water quality measurements (concentrations) at specific locations (as identified in the GMP) that serve as quantitative performance metrics for evaluating the effectiveness of the Agency's groundwater management strategies toward meeting its GMP goals.

The Agency's "Report Cards" for these BMOs have been updated with data collected during calendar year 2014. The Report Cards are used to communicate status of groundwater conditions and progress toward meeting the Agency's goals. This is accomplished by comparing groundwater levels and/or quality to the BMOs. Data collected in 2014 indicate that fifteen BMOs were met and 35 were not met. There was no data available for evaluating three of the BMO wells (located in the Las Posas Basins), as one well was destroyed, one was abandoned, and one is being repaired. The destroyed and abandoned wells were replaced in this interim period for the purpose of this BMO report card with nearby wells which were perforated in approximately the same aquifer zone. For comparison, in 2013, fourteen BMOs were met, and thirty were not met, and no data was available for evaluating eight BMOs.

Among the greatest exceedances of BMOs in calendar year 2014 were:

- Water levels below the BMO by 93 feet (average value) at PTP-1 (inland, Oxnard Plain Basin, Lower Aquifer System), and 90 feet (average value) at PV No.10 (Pleasant Valley Basin);
- Chloride concentrations exceeding the BMO by 16,250 mg/L at CM1A-220 (Pt Mugu–Oxnard Plain, Upper Aquifer System), and 10,700 mg/L at CM2-760 (Port Hueneme, Oxnard Plain Basin, Lower Aquifer System);
- Nitrate concentrations above the BMO by 45 mg/L at Well No. 25D01 (Arroyo Santa Rosa Basin); and
- TDS concentration above the BMO by 1,010 mg/L at Well Nos. 09F01 and 09R01 (East Las Posas Basin).

By comparing historical water level data, groundwater levels in the Upper and Lower Aquifer Systems in the Oxnard Plain Forebay and Oxnard Plain basins, and southern portion of the Pleasant Valley basin, were generally similar in 2014 to those recorded in 1989. Groundwater quality in late 2014 was generally similar to that during the 1999 to 2002 period, with approximately fifty percent of the average chloride concentrations below the BMO chloride concentration. In 2014, average rainfall (10.05 inches) was below the Agency's 1985 to 2014 average annual rainfall (14.01 inches). To date, the 2015 wet season is also experiencing below average rainfall, and as such it is anticipated that groundwater levels and water quality will decline further.

The primary areas of concern remain:

1. Oxnard Plain Basin and Pleasant Valley Basin: Depressed water levels continue to allow conditions under which salts from the ocean and/or other geologic sources can potentially migrate into the aquifers. Areas of greatest concern are the coastal portions of the Oxnard Plain Basin near Port Hueneme (especially the Lower Aquifer System) and Pt. Mugu (both Upper and Lower Aquifer Systems) and the Pleasant Valley Basin where saline intrusion has been previously documented. Salt migration would be expected to increase during an extended drought.

2. Las Posas Basins: Poor quality water continues to migrate northward into the East Las Posas Basin from sources in the South Las Posas Basin, although the current set of BMO locations is not situated so as to illustrate this movement.

3. Arroyo Santa Rosa Basin: High nitrate and chloride concentrations remain a concern in the Arroyo Santa Rosa Basin.

**DISCUSSION OF GROUNDWATER CONDITIONS AND BMO STATUS BY BASIN:**
The status of the BMOs for each basin is summarized below and on the respective report card (Item 4A). Further details are provided in the "Status Summary Table" located on each report card, where the status of each BMO is displayed quantitatively and visually. The geographic location of each BMO well can be found on the map located below the table on each report card. Time-series plots of groundwater levels and constituent concentrations are available upon request. It should be noted that of the 52 BMO status check locations identified in the GMP (representing two status checks at each of the 26 BMO monitoring wells or screened intervals), 2014 data was not available for six of the BMO status check locations (three monitoring wells) (two in the East Las Posas Basin, two in the West Las Posas Basin, and two in the South Las Posas Basin). Data from destroyed Well No. 1E01 in the East Las Posas Basin was supplemented with data from Well No. 1E02, which is located approximately 310 feet south of the location of BMO Well No.1E01. Data from abandoned Well No. 6N03 in the South Las Posas Basin was supplemented with data from Well No. 7D02, which is located approximately 920 feet south of the location of BMO Well No. 6N03.

The Agency BMO program relies on data collected and provided by others. The data collected in 2014, and used for this update report, was provided by United Water Conservation District, Calleguas Municipal Water District, Pleasant Valley County Water District, and Zone Mutual Water Company. Where data was not collected in 2014 (Well No. 6R01), the well operator (Ventura County Waterworks District) is working towards returning the well to service.

Oxnard Plain Forebay Basin (Forebay)

- BMOs: The Forebay has BMOs for nitrate and total dissolved solids (TDS) to protect groundwater quality for potable and irrigation uses. There are no established groundwater level BMOs for the Forebay.

- Status: Average nitrate concentrations were above their respective BMOs at El Rio No. 5 (by over 55 mg/L) and El Rio No. 15 (by over 2 mg/L) respectively in 2014. Depending on the well, average TDS concentrations were above (El Rio No. 5) or below (El Rio No. 15) for their respective BMOs. At El Rio No. 5 the BMO was exceeded by 138 mg/L. At El Rio No.15 the average concentration was below the BMO by 113 mg/L. The average TDS concentrations at El Rio No. 5 and El Rio No. 15 increased 310 and 82 mg/L respectively during 2014.

- Trends: During the last five years, the average nitrate and TDS concentrations of samples collected at both locations have increased.

Oxnard Plain Basin – Upper Aquifer System

- BMOs: The Oxnard Plain Basin – Upper Aquifer System has BMOs for groundwater levels and chloride concentrations along the coast and at one inland location. These BMOs monitor saline intrusion (sufficiently high water levels guard against intrusion, while chloride is a direct indicator of intrusion).

- Status: A comparison of 2013 and 2014 average annual water levels indicates the average annual water levels declined approximately three to thirteen feet. In 2014, water level BMOs were not met. The average water levels at the two northwestern wells (Well Nos. CM3 and A1) were one and fifteen feet below the BMO level. Of the seven wells in the southern portion of the basin, Well No. CM6-330 (Pt. Mugu area) had the lowest average water level, which was 45 feet below the BMO. The Pt. Mugu area is challenging because it lies furthest from the primary groundwater recharge area for the basin (e.g. the Forebay). As long as water levels remain consistently below BMOs, the risk for additional intrusion persists. Consistent with past results, chloride BMOs were not met near Port Hueneme (BMO Well No. CM4) and Pt. Mugu (BMO Well Nos. CM1A and CM6).

- Trends: In 2014, water levels were at their lowest levels during the five-year period. Water levels at the end of 2014 were roughly equivalent to those in 1989, and 1992 to 1993. Chloride concentrations have generally been stable at seven of the nine BMO locations. The five-year trend in chloride concentrations at Pt. Mugu nested well location Well No. CM6-330, and decreasing at CM6 with chloride concentration increasing at Well No. CM6-200.

Oxnard Plain Basin – Lower Aquifer System

- BMOs: The Oxnard Plain Basin – Lower Aquifer System has BMOs for groundwater levels and chloride concentrations along the coast and at one inland location. These BMOs monitor saline intrusion (sufficiently high water levels guard against intrusion, while chloride is a direct indicator of intrusion).

- Status: A comparison of 2013 and 2014 average annual water levels indicates that the average annual water levels declined approximately 16 to 36 feet. In 2014, water level BMOs were not met. Average water levels at the five locations were significantly below their respective BMOs (34 feet below near the northwest corner of the basin and 133 feet below near the shared basin boundary with the Pleasant Valley Basin). As long as water levels remain consistently below BMOs, the risk for additional intrusion persists. Consistent with past results, chloride BMOs were not met near Port Hueneme (Well No. CM2) and Pt. Mugu (Well Nos. CM6 and CM1A).

- Trends: In 2014, water levels were at their lowest levels during the five-year period. Water levels at the end of 2014 were roughly equivalent to those in 1992 to 1993. Chloride concentrations have generally been stable during the past five years, except at Pt. Mugu (Well Nos. CM6 and CM1A).

Over the past five years, chloride concentrations have decreased at Well No. CM6 and increased at Well No. CM1A.

Pleasant Valley Basin

- BMOs: The Pleasant Valley Basin has BMOs for groundwater levels and chloride concentrations. These BMOs monitor saline intrusion (sufficiently high water levels guard against intrusion, while chloride is a direct indicator of intrusion).

- Status: In 2014, water levels BMOs were not met at either BMO location. Average water levels remain significantly below the respective BMOs (101 to 130 feet below). The chloride BMO was met at both locations (111 mg/L and 106 mg/L).

- Trends: During the past five years, water levels at both locations have fluctuated but are roughly equivalent the average water level in 1993. Chloride concentrations at both locations have fluctuated and are currently above the five-year low concentration yet below the five-year high concentration. Over the past 20 years chloride concentrations at the southern location have remained below the BMO, while concentrations at the northern location have fluctuated above and below the BMO of 150 mg/L.

Arroyo Santa Rosa Basin

- BMOs: The Arroyo Santa Rosa Basin has BMOs for nitrate and chloride to protect groundwater quality for potable and irrigation uses.

- Status: The average nitrate concentrations were below the BMO at Well No. I 25C05 by 2 mg/L and exceeded the BMO at Well No. 25D01 by 45 mg/L. The average chloride concentration exceeded the BMO of 150 mg/L at both monitoring locations, Well Nos. 25C05 and 25D01, by 31 mg/L and 9 mg/L respectively.

- Trends: Nitrate concentrations have declined at the location of Well No. 25C05 from above the BMO of 45 mg/L to just below the BMO at 43 mg/L. Based on the available data, nitrate concentrations have exceeded the BMO requirement at the location of Well No. 25D01 during past 5-years, with concentrations increasing from approximately 55 mg/L to 90 mg/L. Note that 45 mg/L is the Maximum Contaminant Level for drinking water. Chloride concentrations have been increasing over the past 5 years, and exceeded the BMO in 2014 at both well locations.

Las Posas Basins

- BMOs: The Las Posas Basins have BMOs for chloride and TDS to protect groundwater quality for potable and irrigation uses.

- Status: No data was available for three of the six BMO monitoring wells for 2014. One of the wells (Well No. 1E01) was destroyed under permit in 2013. One (Well No. 6N03) has been abandoned by the owner. One well (Well No. 6R01) was down for repairs in 2014 and is expected to be operational in 2015. Replacement monitoring wells were selected in the interim for Well Nos. 1E01 and 6N03. Well No. 1E02 is approximately 310 feet south of Well No. 1E01 and perforated at roughly the same interval. Well No. 7D02 is approximately 920 feet south of Well No. 6N03 and perforated at roughly the same interval. Based on average chloride analytical results, the chloride BMO was met at one of the three BMO well locations in the East Las Posas Basin. The TDS BMO was not met at the well locations in the southern portion of the East Las Posas Basin. Chloride and TDS BMOs were met in the West Las Posas Basin (Well No. 08F01) and South Las Posas Basin (Well No. 07D02).

- Trends: In the East Las Posas Basin, chloride and TDS concentrations over the last five years have generally been gradually increasing. The available data for the West Las Posas and South Las Posas Basins indicate that chloride concentrations over the last five years have been stable at the BMO locations. TDS average concentrations have slightly increased in the West Las Posas Basin and slightly decreased in the South Las Posas Basin.

This letter has been reviewed by Agency Counsel. If you have any questions, please call Kathleen Riedel at (805) 654-2954, or me at (805) 654-2073.

Sincerely,

Jeff Pratt, P.E.
FCGMA Executive Officer

Attachment: Basin Management Objectives Report Cards (Item 4A)

# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
## OXNARD PLAIN FOREBAY
## 2014

**Goal:** Protect water quality at public drinking water wells (nitrate and TDS) and irrigation suitability (TDS). (Note TDS = total dissolved solids)

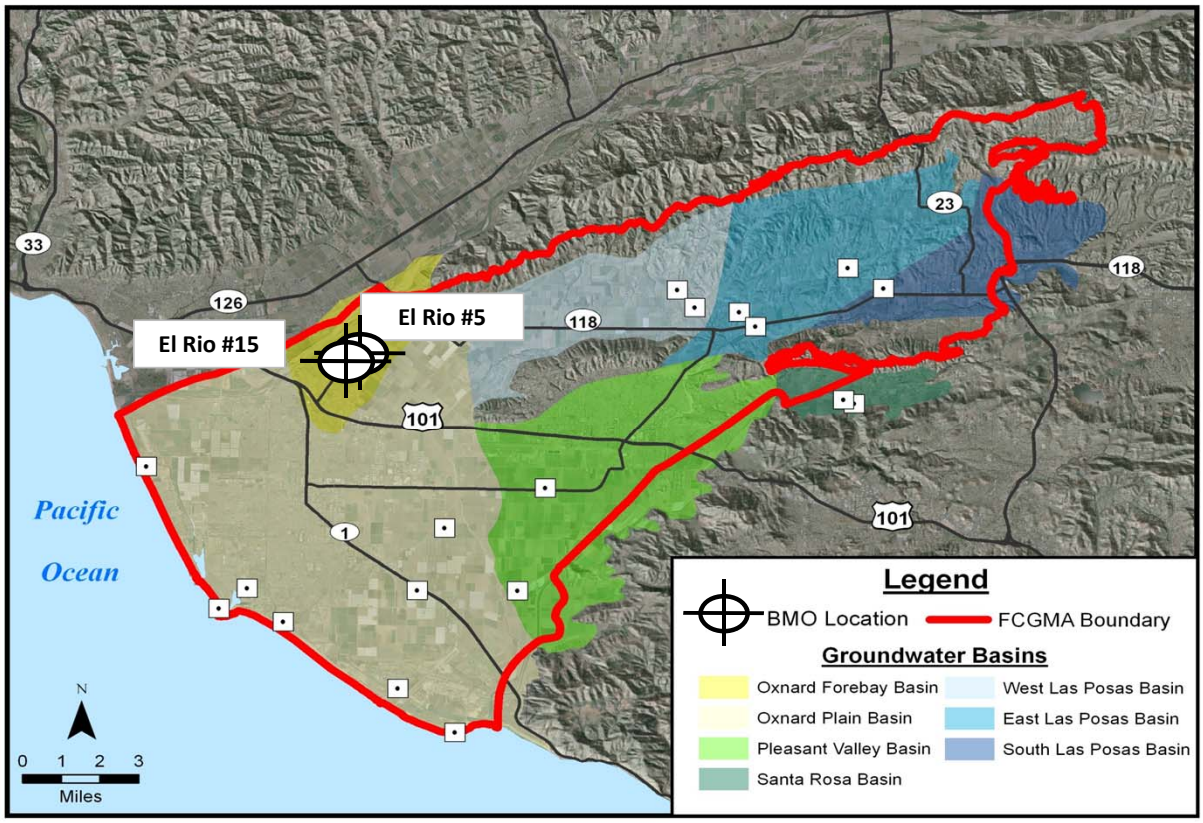
**BMOs:** Nitrate Concentration: 22.5 mg/L-$NO_3$ (50% of State of California MCL)

TDS Concentration: 1,200 mg/L (LARWQCB Basin Plan Objective)

**Status Summary:** In 2014, average nitrate concentrations were above the BMO at well El Rio #5 and at well El Rio #15. Average TDS concentrations were above the BMO at well El Rio #5 yet below the BMO at well El Rio #15. Declining water levels during 2014 have contributed to increasing nitrate and TDS concentrations, compared to those in 2013.

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Nitrate (mg/L) | | TDS (mg/L) | | 5-yr Trend | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Nitrate | TDS |
| 02N22W23B02S (El Rio #5) | 135-277 | 22.5 | 78 | 1,200 | 1,338 | ↑ | ↑ |
| 02N22W23C05S (El Rio #15) | 140-310 | 22.5 | 25 | 1,200 | 1,087 | ↑ | ↑ |



# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
## OXNARD PLAIN - UPPER AQUIFER SYSTEM
## 2014

**Goal:** Prevent saline intrusion in the Oxnard and Mugu Aquifers. Primary source is seawater inflow via aquifer outcrops in submarine canyons near Port Hueneme and Pt. Mugu.

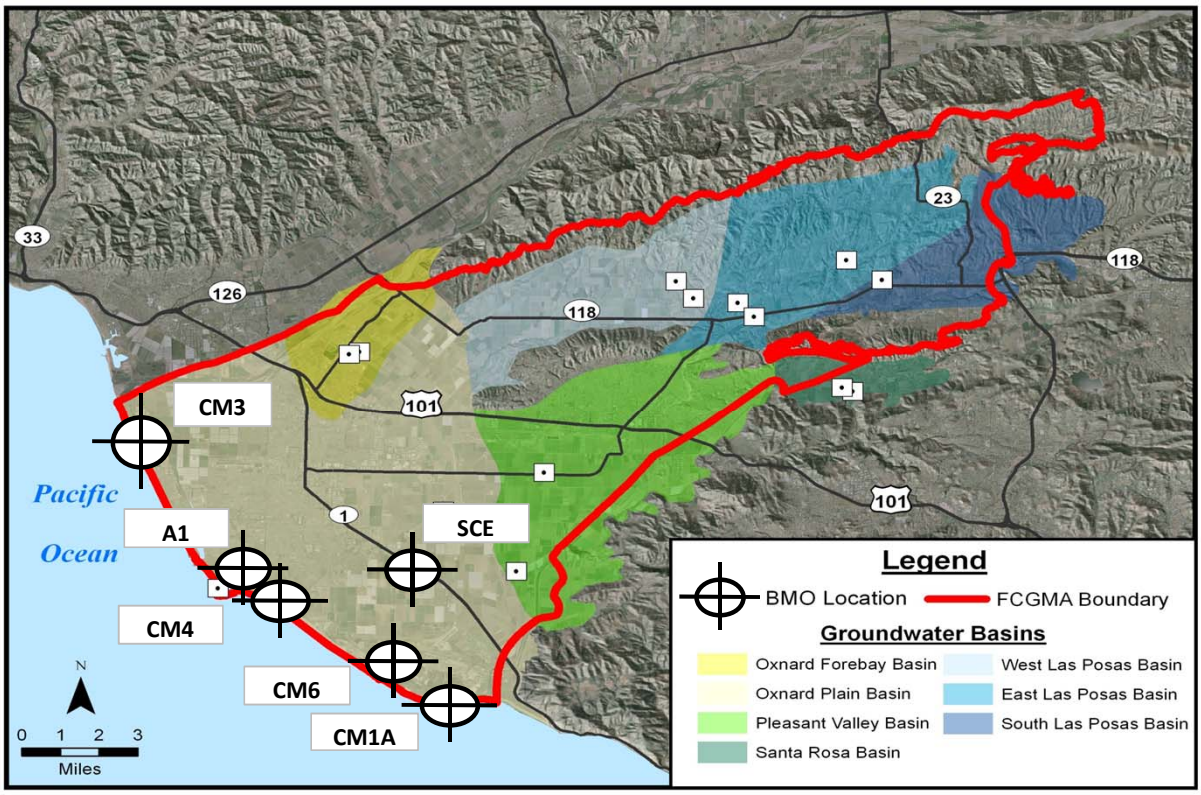
**BMOs:** Water Levels: Average groundwater elevations suffient to maintain slight seaward groundwater gradient. Elevation varies with location.

Chloride Concentration: 150 mg/L Chloride (LARWQCB Basin Plan Objective).

**Status Summary:** Water level BMOs were not met in 2014. A comparison of water levels indicates that water levels have declined at all nine monitoring locations over the past three years. Chloride BMOs were met at approximately 40% of the monitoring locations. Consistent with past results, chloride BMOs were not met near Port Hueneme (CM4) and Pt. Mugu (CM6 and CM1A).

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Water Level (ft msl) | | Chloride (mg/L) | | 5-yr Trend | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Water Level | Chloride |
| 01N23W01C05S (**CM3**-145) | 120-145 | 3 | 2 | 150 | 45 | ↓ | → |
| 01N22W20J08S (**A1**-195) | 155-195 | 4 | -6 | 150 | 139 | ↓ | → |
| 01N22W20J07S (**A1**-320) | 280-320 | 8 | -7 | 150 | 40 | ↓ | → |
| 01N22W28G05S (**CM4**-200) | 180-200 | 5 | -6 | 150 | 168 | ↓ | → |
| 01N22W28G04S (**CM4**-275) | 255-275 | 8 | -7 | 150 | 6,770 | ↓ | → |
| 01N21W19L12S (**SCE**-220) | 200-220 | 5 | -17 | 150 | 66 | ↓ | → |
| 01S22W01H04S (**CM6**-200) | 180-200 | 5 | -16 | 150 | 2,188 | ↓ | ↓ |
| 01S22W01H03S (**CM6**-330) | 310-330 | 8 | -37 | 150 | 2,655 | ↓ | ↑ |
| 01S21W08L04S (**CM1A**-220) | 200-220 | 5 | -10 | 150 | 16,400 | ↓ | → |



# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
# OXNARD PLAIN - LOWER AQUIFER SYSTEM
# 2014

**Goal:** Prevent saline intrusion in the LAS. Sources are seawater inflow via aquifer outcrops in submarine canyons near Port Hueneme and Pt. Mugu and marine sediments.

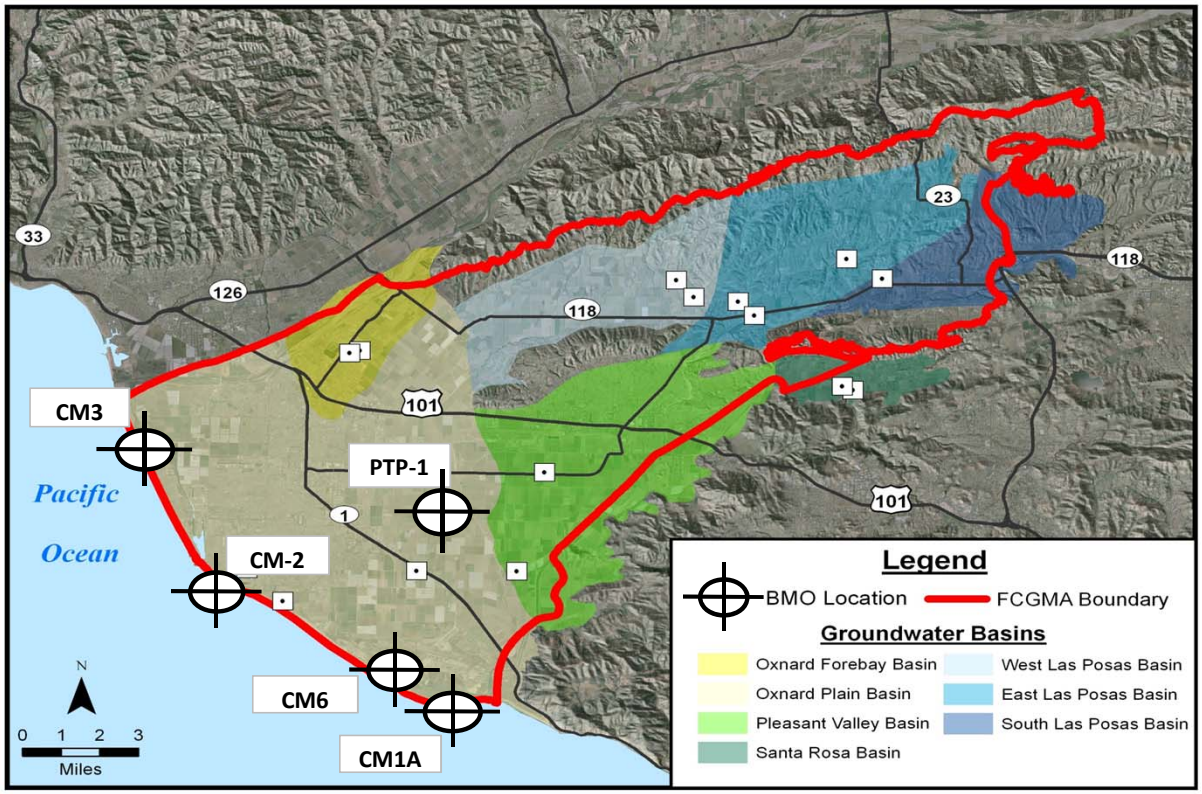
**BMOs:** Water Levels: Average groundwater elevations suffient to maintain slight seaward groundwater gradient. Elevation varies with location.

Chloride Concentration: 150 mg/L Chloride (LARWQCB Basin Plan Objective).

**Status Summary:** In 2014, water level BMOs were not met. Average water level at inland PTP-#1 location was below its respective BMO by 133 feet. As long as water levels remain depressed, the potential for saline intrusion remains. Consistent with the past, chloride BMOs were not met near Port Hueneme (CM2) and Pt. Mugu (CM1A) (areas of documented seawater intrusion).

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Water Level (ft msl) | | Chloride (mg/L) | | 5-yr Trend | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Water Level | Chloride |
| 01N23W01C04S (**CM3**-695) | 630-695 | 17 | -17 | 150 | 36 | ↓ | → |
| 01N22W29D02S (**CM2**-760) | 720-760 | 19 | -26 | 150 | 10,850 | ↓ | → |
| 01S22W01H01S (**CM6**-550) | 490-550 | 13 | -65 | 150 | 227 | ↓ | ↓ |
| 01S21W08L03S (**CM1A**-565) | 525-565 | 14 | -80 | 150 | 6,013 | ↓ | ↑ |
| 01N21W07J02S (**PTP #1**) | 590-1280 | 20 | -113 | 150 | 41 | ↓ | → |



# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
## PLEASANT VALLEY BASIN
## 2014

**Goal:** Prevent inland migration of saline groundwater from coastal areas, underlying sources, and fine-grained interbeds.

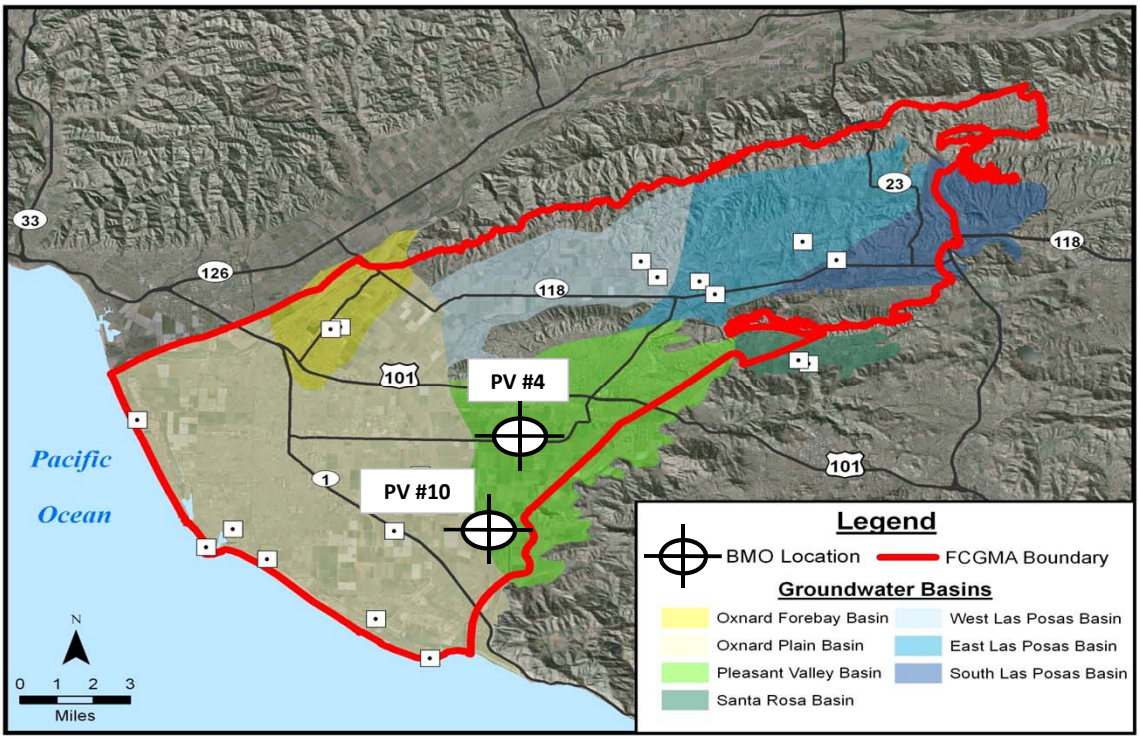
**BMOs:** Water Levels: Average groundwater elevations suffient to prevent landward migration from coastal areas and minimize vertical gradients.

Chloride Concentration: 150 mg/L Chloride (LARWQCB Basin Plan Objective).

**Status Summary:** In 2014, water level BMOs were not met at either location. Water levels have fluctuated annually yet the overall waterlevels have declined during the last 3 of the last 5 years, remaining significantly below the BMOs. The chloride BMO is met at both monitoring locations. Over the past 5-years, the chloride concentrations at both monitoring locations have fluctuated, yet are within the range of fluctuation.

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Water Level (ft msl) | | Chloride (mg/L) | | 5-yr Trend | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Water Level | Chloride |
| 01N21W03K01S (**PV #4**) | 403-1433 | 20 | -81 | 150 | 111 | ⇩ | ⇨ |
| 01N21W21H02S (**PV #10**) | 503-863 | 20 | -110 | 150 | 106 | ⇩ | ⇨ |



# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
## ARROYO SANTA ROSA BASIN
## 2014

**Goal:** Meet LARWQCB Basin Plan Objectives for nitrate and chloride.

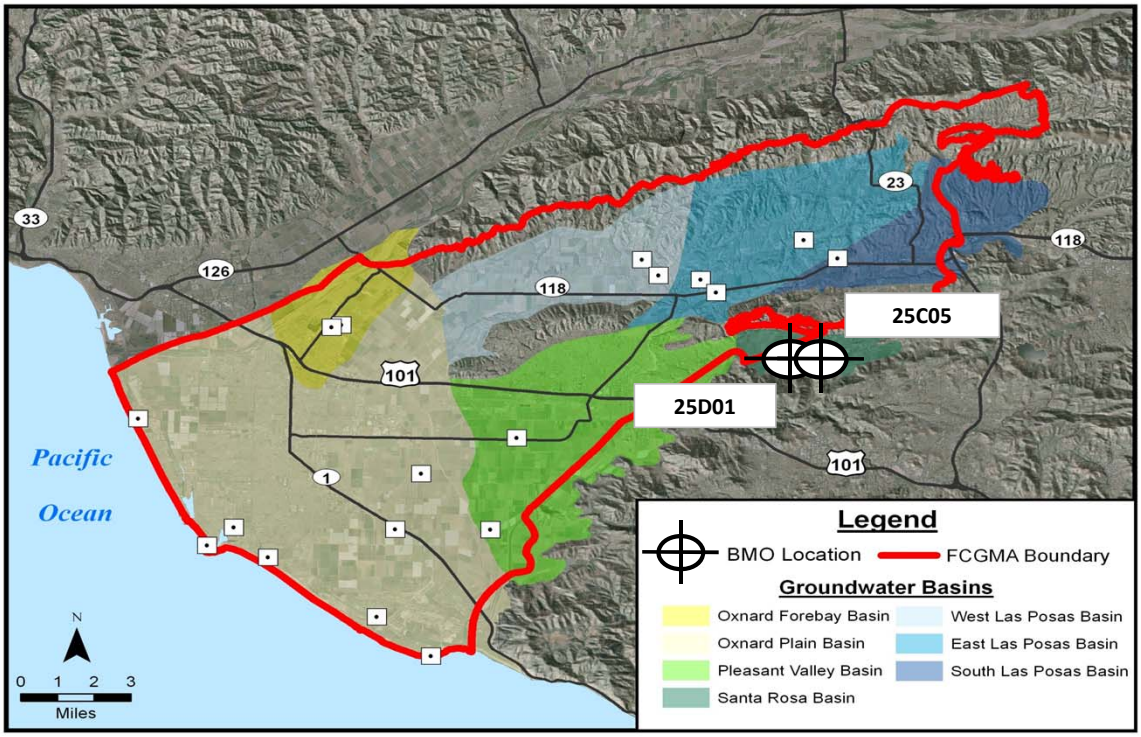
**BMOs:** Nitrate Concentration: 45 mg/L-$NO_3$ (LARWQCB Basin Plan Objective & State of CA MCL)

Chloride Concentration: 150 mg/L (LARWQCB Basin Plan Objective)

**Status Summary:** Based on the availble data, only one of the four BMOs was met in 2014. For the water quality sample collected from 25C05, the Nitrate concentration was just below its BMO (43 vs. 45 mg/L) and the chloride concentration was above the BMO (181 vs. 150 mg/L). For the water quality sample collected from 25D01, both the nitrate and chloride concentrations exceeded their BMOs 90 vs. 45 mg/L and 159 vs. 150 mg/L, repectively. Over the past 5 years: nitrate concentrations declined in well 25C01 and increased in well 25D01; and chloride concentrations have increased.

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Nitrate (mg/L) | | Chloride (mg/L) | | 5-yr Trend * | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Nitrate | Chloride |
| 02N20W25C05S | 160-260 | 45 | 43 | 150 | 181 | ↓ | ↑ |
| 02N20W25D01S | Unknown | 45 | 90 | 150 | 159 | ↑ | ↑ |



# FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
## LAS POSAS BASINS
## 2014

**Goal:** Maintain chloride and TDS concentrations suitable for irrigation of salt-sensitive crops, particulary avocados and berries. BMOs for SLP are equal to the concentrations observed in surface water in Arroyo Las Posas.

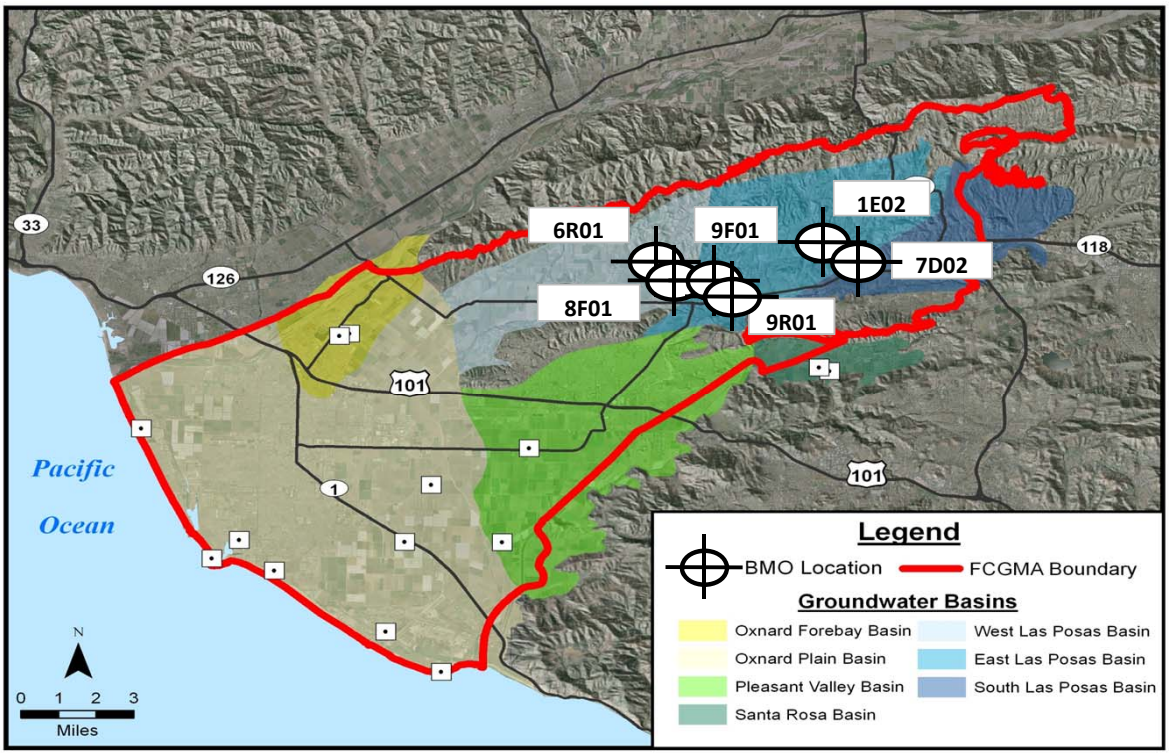
**BMOs:** Chloride Concentration: WLP & ELP: 100 mg/L; SLP: 160 mg/L.

TDS Concentration: ELP: 500 mg/L; WLP: 600 mg/L; and SLP: 1,500 mg/L.

**Status Summary:** BMO monitoring locations 1E01 and 6N03 have been replaced with 1E02 and 7D02 respectively. No data is available for BMO monitoring location 6R01 for 2014 (well being repaired). In the ELP Basin the chloride BMO is being met at only one monitoring location, and the TDS BMO is not being met. In the WLP Basin, both BMOs are being met at the one monitoing station. In the SLP Basin, the chloride BMO is being met, while the TDS BMO is not being met. The general five-year trend in the Las Posas basins is rising chloride and TDS concentrations.

**Status Summary Table**

| State Well Number (name) | Depth (ft) | Chloride (mg/L) | | TDS (mg/L) | | 5-yr Trend | |
|---|---|---|---|---|---|---|---|
| | | BMO | 2014 Ave | BMO | 2014 Ave | Chloride | TDS |
| 02N20W09F01S (ELP) | 906-1,290 | 100 | 175 | 500 | 1,510 | ↑ | ↑ |
| 02N20W09R01S (ELP) | 456-724 | 100 | 191 | 500 | 1,510 | ↑ | ↑ |
| 02N20W01E02S (ELP) Replacement | 680-1,000 | 100 | 98 | 500 | 757 | ↑ | → |
| 02N20W06R01S (WLP) | 1,090-1,512 | 100 | *No Data* | 600 | *No Data* | *Insufficient Data* | |
| 02N20W08F01S (WLP) | 752-1,406 | 100 | 11 | 600 | 384 | → | ↑ |
| 02N19W07D02S (SLP) Replacement | 98-170 | 160 | 150 | 1500 | 1,240 | → | ↓ |



## APPENDIX C

- Fall 2013 and 2014 Upper Aquifer System Potentiometric Surface Maps
- Fall 2013 and 2014 Lower Aquifer System Potentiometric Surface Maps
- Groundwater Levels Status Update Board Letter (without attachments)

# Fall 2013 Upper Aquifer System Potentiometric Surface Map

Appendix C - 1 of 6

**Legend**

- 2013 Fall UAS Water Level Elevation
- 2013 Fall UAS Wells With Water Level Elevation (feet)
- Groundwater Basin Boundaries - VCWPD Version
- BMO Wells UAS
- FCGMA Boundary

DISCLAIMER: The information contained herein was created by the Ventura County Watershed Protection District for use by the Fox Canyon Groundwater Management Agency. This potentiometric surface map is an interpretation of the data that was available at the time that the map was prepared. No warranty is made as to the accuracy of the data shown and Ventura County Watershed Protection District and Fox Canyon Groundwater Management Agency expressly disclaim liability for any errors or omissions in the contents of these maps.
Note - For nested wells contours reflect lowest water level elevation.

San Buenaventura
Oxnard
Port Hueneme
Camarillo
Thousand Oaks
CAMARILLO HILLS
Pacific Ocean
CM3-145
A1-195
CM4-200
CM4-275
SCE-220
CM6-200
CM6-330
CM1A-220

**Legend**

**2013 Fall UAS Water Level Elevation**
**(feet above/below MSL)**

- 200 to 300+
- 140 to 200
- 120 to 140
- 100 to 120
- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20
- -20 to 0
- -40 to -20
- -60 to -40
- -80 to -60
- -100 to -80
- <-100

N W E S

0 1 2 4 Miles

# Fall 2014 Upper Aquifer System Potentiometric Surface Map

Appendix C - 2 of 6

**Legend**

- 2014 Fall UAS Water Level Elevation
- 2014 Fall UAS Wells With Water Level Elevation (feet)
- Groundwater Basin Boundaries - VCWPD Version
- BMO Wells UAS
- FCGMA Boundary

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Note - For nested wells contours reflect lowest water level elevation.

San Buenaventura
Oxnard
Port Hueneme
Camarillo
Thousand Oaks
CAMARILLO HILLS
Pacific Ocean

CM3-145
A1-195
CM4-200
CM4-275
SCE-220
CM6-200
CM6-330
CM1A-220

Miles
0 1 2 4

N W E S

**Legend**

**2014 Fall UAS Water Level Elevation**
**(feet above/below MSL)**

- 200 to 300+
- 140 to 200
- 120 to 140
- 100 to 120
- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20
- -20 to 0
- -40 to -20
- -60 to -40
- -80 to -60
- -100 to -80

# Fall 2013 Lower Aquifer System Potentiometric Surface Map

Appendix C - 3 of 6

San Buenaventura
Oxnard
Port Hueneme
Camarillo
Moorpark
Pacific Ocean
SOUTH MOUNTAIN
CAMARILLO HILLS

01E01
06N03
09F01
08F01
09R01
PV #4
PTP #1
PV #10
CM3-695
CM2-760
CM6-550
CM1A-565

N
W
E
S

1:114,000

0 2.5 5 10 Miles

**Legend**

**2013 Fall LAS Water Level Elevation (feet above/below MSL)**

- 200 to 300+
- 140 to 200
- 120 to 140
- 100 to 120
- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20
- -20 to 0
- -40 to -20
- -60 to -40
- -80 to -60
- -100 to -80
- <-100

**Legend**

- 2013 Fall LAS Water Level Elevation
- 2013 Fall LAS Wells With Water Level Elevation (feet)
- Groundwater Basin Boundaries - VCWPD
- Fault Inferred
- BMO Wells LAS
- FCGMA Boundary

# Fall 2014 Lower Aquifer System Potentiometric Surface Map

Santa Paula
San Buenaventura
Oxnard
Port Hueneme
Moorpark
Simi Valley
Camarillo
Thousand Oaks
SOUTH MOUNTAIN
CAMARILLO HILLS
Pacific Ocean

CM3-695
CM2-760
CM6-550
CM1A-565
PV #4
PTP #1
PV #10

Appendix C - 4 of 6

N
W E
S

1:114,000

0 2.5 5 10 Miles

## Legend

**2014 Fall LAS Water Level Elevation (feet above/below MSL)**

- 200 to 300+
- 140 to 200
- 120 to 140
- 100 to 120
- 80 to 100
- 60 to 80
- 40 to 60
- 20 to 40
- 0 to 20
- -20 to 0
- -40 to -20
- -60 to -40
- -80 to -60
- -100 to -80
- <-100

## Legend

- 2014 Fall LAS Wells With Water Level Elevation (feet)
- 2014 Fall LAS Water Level Elevation
- Groundwater Basin Boundaries - VCWPD
- Fault Inferred
- BMO Wells LAS
- FCGMA Boundary

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Note - For nested wells contours reflect lowest water level elevation and there are multiple aquifers in the Lower Aquifer System.

# FOX CANYON GROUNDWATER MANAGEMENT AGENCY

A STATE OF CALIFORNIA WATER AGENCY



March 25, 2015

Board of Directors
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009-1600

**SUBJECT: GROUNDWATER LEVELS STATUS UPDATE** – *(New Item)*

**RECOMMENDATIONS: (1)** Hear a presentation from Agency staff regarding the Fall 2014 Upper Aquifer System and Lower Aquifer System potentiometric surface maps; **(2)** Provide feedback; and **(3)** Receive and file the report.

**BACKGROUND:**
The potentiometric surface maps presented in this staff report are a continuation of the process of generating fall Upper Aquifer System (UAS) and Lower Aquifer System (LAS) potentiometric surface maps. The series of maps include potentiometric surface maps for both aquifer systems illustrating water levels back to 1972. The series includes maps for even years from 1972 to 2012, and annually beginning in 2013. The purpose of this report is for your Board to receive and file the latest maps so that they can be included in the Agency annual report, as well as to provide your Board with the latest information on Agency-wide water levels.

The potentiometric surface maps are a compilation groundwater data collected by the County of Ventura, United Water Conservation District (UWCD), Calleguas Municipal Water District (CMWD), and others. In preparing the maps, an effort was made to use only data obtained from wells that were extracting groundwater exclusively from either the upper or lower aquifer systems. Initial contouring was generated using ESRI's ArcMap GIS software, with manual adjustments made to better reflect expected edge of basin conditions. The maps prepared are consistent in aerial extent, display of data collection points, contour intervals, and geographic reference information with the other maps in the series. The potentiometric surface maps reflect an interpretation of groundwater and hydrogeologic conditions based upon the data available at the time the maps were generated.

**DISCUSSION:**
The process established in 2013 for developing potentiometric surface maps was followed in the development of the Fall 2014 UAS and LAS potentiometric surface maps. The potentiometric surface maps for the UAS and LAS, illustrating water levels, are attached (Item 8A and 8B). Draft potentiometric surface maps were sent to the original members of the technical committee on February 19, 2015. Comments were: received from UWCD staff and CMWD staff; discussed among the committee members; and incorporated as appropriate.

**Water Level Comparisons**

**Oxnard Plain Forebay Basin, Oxnard Plain Basin, and Pleasant Valley Basin:** A comparison of the Fall 2012, Fall 2013, and Fall 2014 potentiometric surface maps suggest that water levels have declined in the Oxnard Plain Forebay Basin, Oxnard Plain Basin, and Pleasant Valley Basin. The most dramatic changes are in two areas. One of the areas is in the vicinity of the eastern portion of the shared boundary between the Oxnard Plain Basin and the Pleasant Valley Basin. Water levels in that area declined over thirty (30) feet between Fall 2012 and 2013, and an additional twenty (20) to fifty (50) feet between Fall 2013 and 2014. The second area is west of the central portion of the eastern boundary of the Oxnard Plain Forebay Basin. Water levels in that area declined approximately 20 to 30 feet between Fall 2012 and 2013, and an additional twenty (20) to forty (40) feet between Fall 2013 and 2014. Water levels in the northern portion of the Pleasant Valley Basin declined approximately 40 between Fall 2012 and 2013, and an additional fifteen (15) feet between Fall 2013 and 2014.

**East and West Las Posas Basins:** Water levels rose and fell in different portions of the East and West Las Posas basins. An example of this is near the southeast corner of the West Las Posas Basin. In that area water levels fell between Fall 2012 and Fall 2013 but between Fall 2013 and Fall 2014 generally rose to approximately the Fall 2012 water levels. In the East Las Posas Basin, water levels generally declined between Fall 2012 and Fall 2013, but rose to approximately the Fall 2012 water levels between Fall 2013 and Fall 2014. It should be noted that a net amount of approximately 3,400 acre-feet of water was injected into the aquifers within the area of the Calleguas Municipal Water District's Aquifer Storage and Recovery (ASR) well field in the East Las Posas Basin during the period April through July 2014.

**South Las Posas Basin and the Arroyo Santa Rosa Basin:** There is insufficient data available to evaluate water level trends in the South Las Posas Basin and the Arroyo Santa Rosa Basin.

**CONCLUSIONS:**
Agency staff feel the Fall potentiometric maps provide a useful tool for looking at the bigger picture of groundwater conditions and trends at a regional or Agency–wide basis. Water levels overall declined in the western half of the Agency between Fall 2013 and Fall 2014.

This letter has been reviewed by Agency Counsel. If you have any questions, please call Kathleen Riedel at (805) 654-2954 or me at (805) 654-2073.

Sincerely,

Jeff Pratt, P.E.
FCGMA Executive Officer

Attachments: (1) Fall Upper Aquifer System Water Level (Potentiometric) Surface Maps – 2012 thru 2014 (Item 8A)
(2) Fall Lower Aquifer System Water Level (Potentiometric) Surface Maps – 2012 thru 2014 (Item 8B)