



# County of Santa Cruz

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## Health Services Agency

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Giang T. Nguyen, Health Services Agency Director

**Meeting Date:** January 24, 2017  
**Date:** December 22, 2016  
**To:** The Board of Supervisors  
**From:** Giang Nguyen, Health Services Agency Director  
**Subject:** 2016 Water Resources Annual Report

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The Health Services Agency (HSA) Environmental Health Division requests that your Board accept and file its attached Water Resources Management Status Report for Calendar Year 2016. The report summarizes seven facets of countywide water resource management that include: 1) Water Supply and Groundwater Management; 2) Water Quality; 3) Watershed Health and Aquatic Habitat; 4) Stormwater and Flood Management; 5) Small Water Systems; 6) Drought Response and Water Conservation; and 7) Integrated Regional Water Management. Following are highlights regarding drought, water supply planning, and sustainable groundwater management.

The Health Services Agency (HSA) Environmental Health Division requests that your Board accept and file its attached Water Resources Management Status Report for Calendar Year 2016. The report summarizes seven facets of countywide water resource management that include: 1) Water Supply and Groundwater Management; 2) Water Quality; 3) Watershed Health and Aquatic Habitat; 4) Stormwater and Flood Management; 5) Small Water Systems; 6) Drought Response and Water Conservation; and 7) Integrated Regional Water Management. Following are highlights regarding drought, water supply planning, and sustainable groundwater management.

2016 was the fifth calendar year of a critical drought in California. However, rainfall in 2016 reduced severity of the drought in Santa Cruz County from 'Extreme' drought, to "Abnormally Dry", as determined in the U.S. Drought Monitor, sponsored by the National Oceanic and Atmospheric Administration and by the U.S. Department of Agriculture. Much of the southern and central part of the State continued to sustain the most severe level of drought. 2016 rainfall in Santa Cruz County occurred at a historically average level and helped to recharge depleted groundwater county-wide. Unfortunately, the rain levels were not enough to result in recovery from the drought, and groundwater levels and summer stream baseflows remained below normal levels. Also for 2016, all large public water systems in the County continued to implement use restrictions, and/or encouragement of voluntary conservation measures to address long-term supply deficiencies and to comply with continued state-wide requirements for reduction of

water use.

Despite the improved rainfall conditions in 2016, Santa Cruz County water agencies continue to address the need to establish increased reliable long-term water supplies. All of these local agencies continue to be actively engaged in pursuing new water projects through technical evaluations of recycled water use, water transfers, and increasing aquifer storage by using stormwater, winter streamflow, and purified wastewater.

The agencies' pursuit of water supplies involving groundwater highlights the importance of compliance with the California Sustainable Groundwater Management Act of 2014 (SGMA). SGMA dictates that aquifers be governed by formation of Groundwater Sustainability Agencies (GSAs). In 2016, the Santa Cruz County Mid-County Groundwater Agency was formed and recognized by the State as the GSA for that basin. HSA continues to work with the Scotts Valley Water District and the San Lorenzo Valley Water District to form a GSA for the Santa Margarita Basin. HSA is leading outreach efforts to inform and engage private pumpers in both basins. Agencies in both the Mid-County Basin and the Santa Margarita Basin successfully petitioned the State to establish meaningful geological boundaries for future management of those basins. The Pajaro Valley Water Management Agency is the GSA for its basin and continues to implement its Basin Management Plan to reduce pumping and bring its groundwater basin into balance.

In calendar year 2016, a wide range of water conservation measures, water supply planning, and groundwater management efforts were conducted to address short-term and long-term water supply needs in the County.

It is therefore **RECOMMENDED** that your Board accept and file the attached 2016 Water Resources Annual Report.

**Submitted by:**

  
Michael Beaton, Director of Administration 1/10/2017

**Recommended:**

Susan A. Mauriello, County Administrative Officer

**Attachments:**

- a 2016 Water Resources Annual Report

## **Santa Cruz County Water Resources Management Status Report for 2016**

Santa Cruz County continues to address major water resource challenges. The four year drought of 2012-15 greatly diminished streamflow and available water supplies, but water agencies and their customers were able to substantially reduce demand in order to accommodate the shortfall. In 2016 normal rainfall occurred, but groundwater basins and summer streamflow continued to be depressed following the drought. Most of the County's groundwater basins have been pumped in excess of sustainable yield and the major water supply agencies do not have sufficient supplies to meet current and future demand. Historic salmon and steelhead populations have been greatly diminished by reductions in streamflow, increased erosion and sedimentation, barriers to migration, and removal of large woody material from streams. Coastal water quality has been degraded by urban runoff and leaky sewer systems. The natural benefits of wetlands, floodplains, riparian corridors, and groundwater recharge areas have been significantly diminished by land development and agricultural use. The County and its partner agencies continue to conduct a range of efforts to address these and other water resource challenges.

Following is a summary of six topic areas of 2016 water resource management:

1. Water Supply and Groundwater Management
2. Water Quality
3. Watershed Health and Aquatic Habitat
4. Stormwater and Flood Management
5. Small Water Systems
6. Drought Response and Water Conservation
7. Integrated Regional Water Management

### **1. Water Supply and Groundwater Management**

- a) The Sustainable Groundwater Management Act of 2014 (SGMA) went into effect on January 1, 2015. The County is actively working with local water agencies to pursue sustainability for the three major groundwater basins in the County as follows:
  - i. Management of the Santa Cruz Mid-County Basin (formerly referred to as Soquel-Aptos) is overseen a Joint Powers Agency consisting of the County of Santa Cruz, City of Santa Cruz, Soquel Creek Water District and Central Water District. This JPA is referred to as the Santa Cruz Mid-County Groundwater Agency (MGA). The MGA governing board includes three private well representatives and two representatives from each partner agency. The basin boundary has been approved by the California Department of Water Resources (DWR) and the MGA has been accepted as the Groundwater Sustainability Agency (GSA) for the Basin. Recent efforts include the development of a groundwater model for the basin, regular drop-in hours to allow the public to talk to Board members and staff in an informal setting, and hiring of a Planner to help with the development of the Groundwater Sustainability Plan. More information is available at [www.midcountygroundwater.org](http://www.midcountygroundwater.org).
  - ii. Management of the Santa Margarita Basin is being pursued as a joint effort with the County, the Scotts Valley Water District, and the San Lorenzo Valley Water District. The basin boundary modification request submitted to the state was approved pending some additional modifications. Once finalized, efforts will begin to have the JPA recognized as the GSA for the basin by the State.

- iii. The Pajaro Valley Water Management Agency is the designated Groundwater Sustainability Agency for the Pajaro Valley Basin within the current Agency boundaries.
- b) The County received a grant from the Department of Water Resources for \$250,000 to assist with outreach and Groundwater Sustainability Plan Development for the Mid-County Groundwater Basin. Funds will be used for further development of a groundwater model for the basin, update of the database on wells and non-municipal water users, outreach and services targeted to private well owners, and maintenance of the website
- c) Soquel Creek Water District has begun the EIR scoping for its "PureWater Soquel" recycled water project. This project would yield 1500 acre-feet per year (af/yr). The timeline to complete the EIR is 2018, with construction beginning 2019.
- d) In May, the Lompico County Water District ratepayers voted to merge with the San Lorenzo Valley Water District. The cost of the merger is \$2.9 million, to be paid off by assessments over ten years. The water district has created a Lompico Oversight Committee to review the process.
- e) Urban Water Management Plans (UWMPs) are required to be prepared by California's urban water suppliers (with over 3000 connections) to support their long-term resource planning, and ensure adequate water supplies are available to meet existing and future water demands. In 2016, UWMP updates were prepared by the City of Santa Cruz Water Department, the Scotts Valley Water District, the City of Watsonville Public Works and Utilities, San Lorenzo Valley Water District, and Soquel Creek Water District
- f) The County applied for a grant from the Wildlife Conservation Board Streamflow Enhancement Program to develop a San Lorenzo Watershed Conjunctive Use and Baseflow Enhancement Plan in partnership with the San Lorenzo Valley Water District.
- g) The City of Santa Cruz Water Department and Soquel Creek Water District are continuing to work towards an initial effort to provide in lieu recharge during the rainy season. The two agencies agreed to a 5 year pilot study/water transfer agreement using the existing 8-inch bi-directional 1,000 gallon per minute (gpm) intertie at Soquel's O'Neill Ranch facility. The timeline to conduct the initial transfer has been extended due to concerns about the possible impacts that introducing surface water into the Soquel Creek Water District distribution system could have on the pipes. This agreement does not include provisions for returning water from Soquel to the City in the event of a drought. However, the City Council's approved water supply augmentation strategy provides direction for the two agencies to begin discussions about longer term water exchanges and transfers.
- h) The County continues to coordinate submission of groundwater level data to the State's 'CASGEM' groundwater monitoring program. County staff also implement a cooperative program to monitor private well levels in the inland Mid-County area.
- i) The HSA Environmental Health Water Resources Section has been working closely with the water distributors and with the Geographical Information System (GIS) Department to update the Water Services layer in the County's GIS. This layer now shows the parcels served by nearly every water system in the county with five or more connections.

- j) The County, City of Santa Cruz, and San Lorenzo Valley Water District completed a project to identify and better understand the occurrence of karst geology, which has the potential to store and transmit significant amounts of water, but which is very susceptible to adverse impacts from overlying land use. This study was transmitted by the Water Advisory Commission to the Board of Supervisors and the Board directed Planning and Environmental Health to begin updating County policies to provide increased water resource protection in karst areas.
- k) In November 2015 the City of Santa Cruz Council adopted recommendations from its Water Supply Advisory Committee to pursue a strategy of water conservation and enhanced groundwater storage, with a back-up option of advanced treated recycled water or desalinated water. Enhanced groundwater storage will involve working with Scotts Valley and Soquel Creek Water Districts to increase groundwater storage through water exchanges, in lieu recharge and aquifer storage and recovery wells. This strategy, if it proves technically feasible, would contribute to recovery of the groundwater basins and provide additional stored water for the City during dry periods, particularly multi-year droughts. City staff and their consultants are actively pursuing technical evaluations of the feasibility of those approaches. This process will take several years.

## **2. Water Quality**

- a) County staff continue to work with the State, City of Santa Cruz, City of Capitola, and the County Sanitation District to implement projects and conduct monitoring to assess public health threats, reduce bacterial contamination, and improve beach water quality.
- b) County staff continued to participate with the City of Santa Cruz, Save the Waves Coalition, Surfrider Foundation, Sierra Club, and Coastal Watershed Council in the Cowell Beach Working Group, which has been meeting monthly to better understand and control the elevated bacteria levels at Cowell Beach, which have resulted in it being named as one of the most polluted beaches in the State. Previous City improvements had eliminated any significant sources of human contamination. In June, the City installed pigeon exclusion fencing under the wharf. Since the completion of the fencing, bacteria counts were far less than in previous years, and the County was able to remove the beach posting six weeks earlier than 2015.
- c) County staff continue to work with the City of Watsonville and the Resource Conservation District (RCD) to monitor harmful algae blooms in Pinto Lake. The RCD completed work on a sediment basin on one of the tributaries to the Lake, while the City is preparing to implement an alum treatment to reduce internal nutrient loadings that drive cyanobacteria blooms. The County maintains warning signs at both Pinto and Kelly Lakes. The Regional Water Quality Control Board accepted the County's Pinto Lake Monitoring Plan and Quality Assurance Program Plan.
- d) County staff continue to participate with the Coastal Watershed Council, Surfrider Foundation and City of Santa Cruz in the San Lorenzo Alliance Water Quality Working Group, which has been seeking to evaluate the sources of elevated bacteria in the lower San Lorenzo River. A recent investigation used multiple lines of evidence to conclude that there was minimal human contribution to the elevated bacteria levels observed in 2014.

- e) County staff maintain ongoing efforts for water quality protection through septic system management, monitoring, and investigation, funded by County Service Area (CSA) 12. Properly functioning onsite sewage systems are a good method of groundwater recharge and contribute to approximately 10% of the San Lorenzo River's summer baseflow.
- f) Public Works Department staff have are implementing projects funded by grant funds to upgrade the sewer systems near Nobel Gulch, Soquel Creek, and Neary Lagoon in order to eliminate potential sewer leaks and sources of contamination to Cowell and Capitola beaches.

### 3. Watershed Health and Aquatic Habitat

- a) County staff continue to implement programs to benefit Steelhead and coho salmon, which are two anadromous salmonid species that have historically occurred in County watersheds but have experienced a severe drop in numbers as a result of habitat and watershed degradation. Coho are designated as endangered and steelhead are designated as threatened under the federal Endangered Species Act.
- b) Environmental Health is partnering with the Count Information Services Department to compile a database and website with interactive mapping capabilities to manage and display the results of fish monitoring efforts that were started by the County in 1981.
- c) The Resource Conservation District received a grant to investigate the possibility of offstream storage and other methods for property owners along Soquel Creek to reduce dry season stream diversions.
- d) County staff continued to work with water agencies to maintain annual sampling of stream habitat and juvenile salmonids in four watersheds: San Lorenzo, Soquel, Aptos and Pajaro. In 2016, steelhead numbers continued to be low throughout the four watersheds after four years of drought.
- e) The City of Santa Cruz and San Lorenzo Valley Water District continued efforts to monitor streamflow and habitat conditions downstream of their diversions in an effort to establish objectives for habitat improvement.
- f) County staff continued to implement the Large Woody Material Management Program to maintain large wood for habitat value in County streams without increasing flood risks or jeopardizing public safety.
- g) Staff from the County Planning Department and the HSA Environmental Health Division continued to meet with other regulatory agencies to coordinate effective approaches to environmental code compliance.
- h) The Resource Conservation District of Santa Cruz County continued to work with landowners and agency partners to complete habitat improvement projects through the Integrated Watershed Restoration Program (IWRP). These projects included wetland restoration, fish barrier removal, rural road upgrades, stream habitat improvement, managed recharge assessment, stormwater management and community education.

- i) As a part of an interim agreement with the fishery agencies, during 2015 and 2016, the City of Santa Cruz released significant more flow for fish than in previous droughts in Laguna Creek, the lower San Lorenzo River, and other streams.
- j) The City of Santa Cruz conducted a number of efforts, including ongoing lagoon monitoring, hosting the second annual State of the San Lorenzo River Symposium, and pursuing illegal stream diversions on critical streams.
- k) County staff are participating with the Coastal Watershed Council, City of Santa Cruz, and other entities in the San Lorenzo River Alliance, which is seeking to improve water quality and reinvigorate community engagement with the lower river and the watershed. The County has also participated in recent efforts to implement "San Lorenzo 2025", which is a targeted lobbying effort to secure substantial funding to restore fish habitat in the San Lorenzo River Watershed.

#### **4. Stormwater and Flood Management Stormwater and Flood**

- a) In order to be eligible for storm water funding through Proposition 1, the State Water Board is requiring the development of Storm Water Resources Plans (SWRP) with the hope of changing the perception of stormwater from a nuisance, to a resource. Environmental Health led the effort to write a SWRP for the Santa Cruz region. County staff worked closely with representatives from the four cities, the RCD, Ecology Action, and UCSC. The SWRP can be found online at: <http://www.santacruzirwmp.org/resources/swrp>.
- b) The County, City of Santa Cruz, and Scotts Valley Water District completed the Proposition 84 stormwater grant funds to implement projects that reduce stormwater runoff and increase groundwater recharge by infiltrating runoff from impervious surfaces. In 2016 the City of Scotts Valley completed a parking lot retrofit at the transit center. Both of the County projects, one at the Heart of Soquel Park and one at Brommer Street Park, were monitored during the rainy season.
- c) Dr. Andrew Fisher from UCSC has been working with the Resource Conservation District on a Managed Aquifer Recharge (MAR) Suitability Study. MAR is a landscape management strategy that can help reduce aquifer overdraft by facilitating stormwater infiltration into the aquifer. The results will help identify potential project locations on both public and private land.
- d) County Public Works Department (DPW) staff continue to maintain operation of the Automated Local Evaluation in Real Time (ALERT) flood warning system
- e) The County, City of Watsonville, and other entities continue to pursue implementation of a project with the Army Corps of Engineers to significantly upgrade the flood conveyance system to provide an adequate level of flood protection for the Pajaro River, Salsipuedes Creek, and Corralitos Creek.
- f) County staff continue to implement the County's stormwater management program and update the program to address evolving State and Federal requirements.

#### **5. Small Water Systems**

- a) County staff continue to effectively assist and direct over 130 water systems to maintain compliance and meet the ongoing needs of the people and communities, which rely upon them regarding water quality, quantity, treatment, distribution, water system organization, and evolving compliance requirements. The Drinking Water program met and exceeded its routine water system permitting and inspection goals established with the State Water Resources Control Board.
- b) The County began to receive meter reading reporting based on the 2015 requirements for metering and reporting of water use by all small water systems. This will provide additional information for assessment of rural water use and provide the County and the water systems with tools to minimize excessive water use.
- c) County staff continues to hold the Small Water Systems Forum to help build technical, managerial, and financial capacity among the small water systems within the community. Four quarterly meetings were held on various subjects, including: water conservation, drought status, current themes in drinking water, hexavalent chromium standards and compliance, recycled/greywater, water quality database inquiry, new treatment technologies, Electronic Annual Reporting, legislative updates, metering/water use data and ordinance changes, loan sources, rate setting, insurance/liability for water systems, and small water system involvement in the Sustainable Groundwater Management Act.
- d) Beginning in 2017, small water systems that use surface water will be directly overseen by state staff. These systems require more extensive treatment and can represent a considerable workload.

## **6. Drought Response and Water Conservation**

- a) 2016 brought more rain than the region had seen in the previous four years and reduced Santa Cruz County to the lowest level of drought designation, “abnormally dry”. All of the large public water systems continued to promote conservation, and many chose to keep water restrictions in place. However, none of the agencies maintained water rationing. Water use increased slightly continued to be low. A plot is provided that shows continued low water use in 2016 (Appendix A).
- b) County staff have participated with all of the countywide water agencies in the Water Conservation Coalition of Santa Cruz County to increase outreach and education to the public. The Coalition participated in numerous tabling events including Earth Day and the County Fair, and maintained the website [www.watersavingtips.org](http://www.watersavingtips.org).
- c) Environmental Health in partnership with Parks, the UC Master Gardeners, the City of Watsonville, the California Conservation Corps, and the California Landscape Contractors Association, implemented a turf replacement project at the Freedom Campus located at 1430 Freedom Blvd. Fifteen thousand square feet of turf was torn out and replaced with drought tolerant plants, mulch, pathways, and large boulders. This project will save over 300,000 gallons of water per year.
- d) Soquel Creek Water District has determined the next phase of the Water Demand Offset (WDO) program. The WDO Program allows development in the Soquel Creek water service area while conserving water, by requiring a 200% offset credit based on the

estimated new water use. Projects can satisfy their offset credit by paying a WDO fee equivalent to \$55,000 per acre-foot. This fee is broken out:

- 50% of offset fee goes towards long-term water conservation projects (e.g. stormwater recharge, smart metering)
- 50% of offset fee goes to funding the enhanced toilet rebate program.

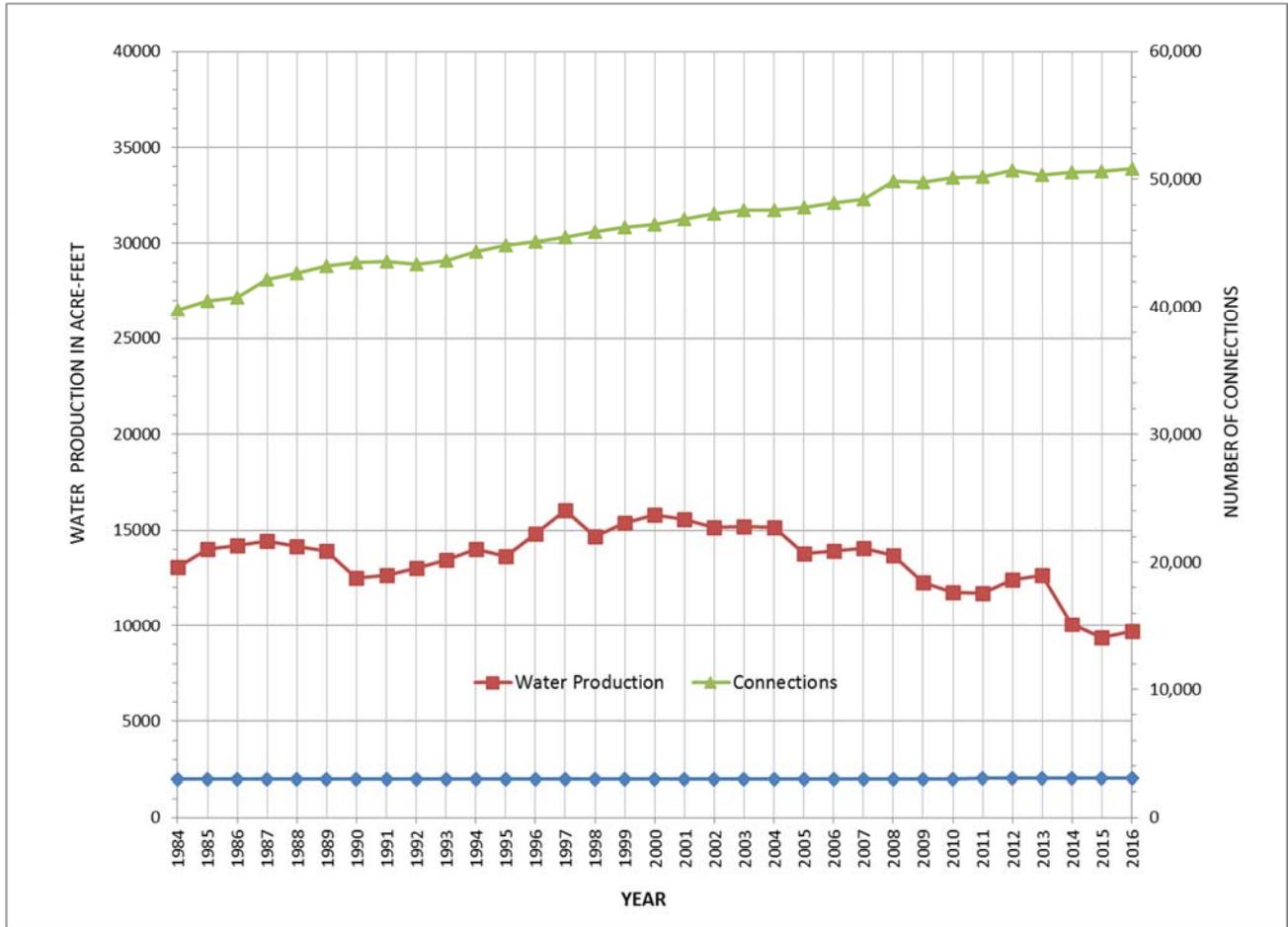
e) The County has been working on a \$99,000 grant from the Department of Conservation for the development of a voluntary Rotational Cover Crop Plan for the Pajaro Valley, in partnership with the Resources Conservation District and the Community Water Dialogue. Highland Economics has been brought in to quantify the costs and benefits of cover cropping.

## **7. Integrated Regional Water Management (IRWM)**

- a) In January 2016, LAFCO in partnership with the County, the Cities, the large public water systems, and the Regional Water Management Foundation hosted a public event at New Brighton Middle School called “Connecting the Drops: Working Together for Water.” The event was designed to inform the public about all of the ways the local agencies partner on managing water for the benefit of everyone. The event was very well attended.
- b) Santa Cruz County partner agencies continue to work together on integrated regional water management, with the Regional Water Management Foundation (RWMF) serving as a hub for the 12 partner agencies. The County and all of the cities and public agencies dealing with water are signatories to the Santa Cruz IRWM Memorandum of Agreement, which was updated in 2016. The agencies contribute \$80,000 toward maintenance of the IRWM efforts.
- c) The Santa Cruz IRWM region received partial drought funding under Proposition 84 to help expand recycled water use in Davenport, help fund treatment for hexavalent chromium in Soquel Creek Water District and replace aging wells for the City of Santa Cruz water supply.
- d) The County also continues to participate in the Pajaro IRWM region, which encompasses the Pajaro River Watershed. The Pajaro Water Management Agency is completing the construction of a recycled water storage tank at the City of Watsonville wastewater treatment plant, which will allow significantly increased use of recycled water for irrigation and reduction of groundwater pumping.

End.

### Appendix A Water Production for Northern Santa Cruz County Large Water Purveyors\* 1984 to 2016



\* Water Suppliers include:

- City of Santa Cruz
- Scotts Valley Water District
- San Lorenzo Valley Water District
- Soquel Creek Water District
- Central Water District

2016 total annual use is estimated based on water use reported through September 2016

Calculated number of connections became more precise beginning in 2013, when the state required water usage reporting. (Connection jump in 2008 was due to addition of Felton system to SLVWD)