

## Attachment

## 2

## Santa Barbara County Region

### *IRWM Implementation Grant Proposal*

### *Drought Impacts*

## Drought Impacts

### I. Drought Impacts in 2014

The 2012 – 2014 drought has inflicted severe impacts in the Santa Barbara County IRWM Region (Region). This year's rainfall registered about 40 percent of normal which follows on the heels of two very dry years. The US Department of Agriculture Drought Monitor, published on July 8, 2014, describes the intensity of the drought in the County as "Exceptional", the most severe category established. In addition, the USDA designated Santa Barbara County as a primary natural disaster area due to drought conditions. Following on the heels of the Governor's declaration of a drought emergency, the Santa Barbara County Board of Supervisors officially declared a local drought emergency.

The impacts to the Region are multifold. Cracked and dry river beds surround greatly reduced river flow. Reservoirs are crowned by wide bathtub rings. Acres of farmland have been fallowed, and ranchers forced to sell or move 75% of their herds. Trees are parched with thirst and made more vulnerable to insect pests, beetles, and other foes. The County's four reservoirs are all low, with Gibraltar Reservoir considered unusable. Conservation is extolled, even mandated, in cities. The Region's State Water Project (SWP) water allocation has been reduced to 5 percent. Groundwater levels are dipping and pumping costs rising as agencies increasingly rely on groundwater as the primary source of water. The wildfire threat is well above average. No doubt, there is big trouble ahead in 2015 with another year of drought.

The Region's water supplies include groundwater, local surface water, imported State Water Project (SWP) water, and recycled water. As a result of the drought, there has basically been no inflow to any of the County's surface water reservoirs over the past three years. On an average annual basis, Lake Cachuma provides approximately one-quarter of the water used in the Region and 80 percent of Santa Barbara County's south coast's water supply. Lake Cachuma is at about 36 percent of its capacity, with no rain expected soon. Cachuma water deliveries will be decreased by 55 percent in October, with water levels likely to continue declining. Without any water imported, the reservoir is expected to have 21,000 AF in October, less than a full year's supply.

With Cachuma Lake levels this low, the Cachuma Operation and Maintenance Board (COMB) is moving forward with the Lake Cachuma Drought Pumping Facility Project (this grant application seeks funding for this project). The project is needed because once the lake falls below a certain point, the system will no longer be able to gravity feed water to the south coast water districts. The project includes a floating platform with pumps and piping to move water from lower levels in the lake to the intake tower. The pumps will maintain an elevation inside the appendage attached to the intake tower to keep water levels high enough to convey water to the gravity fed system. Each south coast COMB member agency will share the cost of about \$6 million to install the drought pumping system. COMB's south coast participating member agencies include Goleta Water District (GWD), City of Santa Barbara, Montecito Water District (MWD), and Carpinteria Valley Water District (CVWD).

The Central Coast Water Authority (CCWA), which manages the Region's SWP flows, has tried to blunt the impact of the drought by using carry-over water and by purchasing close to 8,000 acre-feet of water with purchases of at least 1,200 more acre-feet ahead. The cost of water purchases is at least double the price of water in a normal year. County water purveyors and agencies are hoping that their conservation efforts will help stretch water supplies through the drought. Communities have issued stage 1, 2 and 3 drought alerts

with water use cut backs as much as 40%. The Santa Barbara County Water Agency has initiated the Long Term Supplemental Water Supply Alternatives Report that will analyze the County's existing water supplies and identify potential water sources and strategies for the future. The Report will be completed in 2015.

The drought has impacted agriculture countywide. A recent report from the UC Extension program showed that the County has lost nearly 95 percent of its forage production due to the dry conditions. Livestock producers in the County have been significantly impacted by having to provide supplemental hay and drinking water to livestock at a substantial cost, according to the Santa Barbara County Agricultural Commissioner's Office. About 75 percent or more of the county's cattle has been sold or moved to areas that have adequate forage. Ranchers anticipate that it will be years before forage conditions return to their former quality. Avocado growers have stumped their trees, cutting them back and slashing their leafy growth to save water. Farmers who have had to cut back trees will not see income for three to four years. In Montecito, agricultural water users have seen supply cut by 60 percent putting farmers and growers in jeopardy and reducing employment. The impact of the drought on overall agriculture has been blunted by recent improvements in drip irrigation, laser leveling of fields, precise crop need (using CIMIS data) irrigation, and use of tailwater recovery system in furrow-irrigated fields.

**The following describes how the drought has impacted DWR identified factors:**

**At risk of not meeting existing drinking water demands** - On the south coast, MWD has been most concerned about meeting drinking water demands. As the drought worsened in early 2014, there were worries that MWD would run out of water by July. In response to that imminent threat, MWD adopted a rationing ordinance that resulted in a 40 percent reduction in water usage and was able to procure water on the open market. These actions have averted the problem for now but the agency is still in danger of running out of water. The City of Santa Barbara projects supply shortages for its customers in water year 2015.

**At risk of not meeting existing agricultural water demands** - Agriculture is a key business in the Region and contributes \$2.8 billion a year to the local economy. Santa Barbara County's livestock producers have not been able to meet demands. The County has lost nearly 95 percent of its forage growth due to dry conditions. Without this sustenance, ranchers have sold or moved upwards of 75 percent of local cattle. "Almost everybody had to sell most, if not all of their herd," said Santa Barbara County Cattlemen's Association President Andy Mills. Agricultural water users in the south coast city of Montecito have been allotted only 60% of their normal supply allocation. Some avocado growers in the County have stumped their trees, cutting them back and slashing their leafy growth to save water.

**At risk of not meeting ecosystem water demands** - Ecosystem water demands are not being met throughout the Region with examples seen in the Santa Ynez Valley and south coast. The Cachuma Conservation Release Board (CCRB) manages the endangered southern steelhead in the Lower Santa Ynez River. CCRB reports that the river and its tributaries have suffered a significant drop in volume and drop in the number of already endangered southern steelhead. The Santa Ynez River tributaries - Hilton, Quiota, Salsipuedes, and El Jaro creeks - are experiencing elevated water temperature and lowered concentrations of dissolved oxygen which can be lethal to steelhead caused reduced flows. On the south coast, Carpinteria Creek and Mission Creek are drying up, with fewer fish present. The red legged frog, a threatened species, is stressed under these drought conditions.

**Drinking water MCL violations** - All cities and sub-regions in the Region are monitoring water quality to assure that drinking water MCLs are not exceeded.

**Groundwater basin overdraft** - As water agencies and cities in the Region increase their reliance on groundwater, the threat of groundwater overdraft increases. In the south coast area, the Carpinteria Valley Water Basin has initiated a groundwater basin study to monitor how the lack of rain and groundwater replenishment may be impacting the threat of seawater intrusion. Other cities and agencies are carefully monitoring groundwater basins per groundwater management plans. The Foothill Basin (City of Santa Barbara) water levels are relatively low. However, the City and USGS have developed a detailed numerical

groundwater model to estimate perennial and drought yield from the basin that is used to monitor water levels. The drought will likely compound overdraft in basins such as Cuyama and San Antonio. These basins are monitored by the County of Santa Barbara with remedial actions in the planning stage.

**Discharge water TMDL violations** – No discharge water TMDL violations have occurred to date.

**Other drought related adverse impacts** – See page 2-3 of this attachment and Table 2-1 below.

**II. Drought Impacts in 2015**

The coming winter will be pivotal. Water managers across the Region are scrambling to estimate how long supplies will last and divine when it will rain again. Certainly without rain inflow, 2015 drought impacts will increase significantly. The Region can expect limited to no State Water Project (SWP) water coupled with shortages from Lake Cachuma supplies. In an effort to stretch remaining supplies from Lake Cachuma, the Cachuma Project member units have agreed to a 55% reduction in annual entitlement for the 2015 water year – the lowest in the history of the Cachuma Project. Conservation messaging will kick into high gear with additional conservation measures implemented. Recycled water supply capacity will be increased while ocean desalination projects are under consideration.

Table 2-1 identifies specific drought impacts for 2014 and 2015 by sub-region and, in the case of the south coast sub-region, by agency, projects in this application primarily impact the south coast region.

**Table 2-1: 2014 and 2015 Drought Impacts by Subregion**

Sub-Region	Agency or City	2014 Drought Impacts	Anticipated 2015 Drought Impacts
South Coast	Montecito Water District	<ul style="list-style-type: none"> <li>• Even with mandatory water conservation efforts (usage has been reduced nearly 40 %), the district is still at risk of running out of water.</li> <li>• MWD allocated \$2.8 million for emergency water measures, including water purchases</li> <li>• COMB plans to install a drought pumping system this fall. As a COMB member agency, MWD will pay about \$694,629 for its portion of the project for the first six months.</li> </ul>	<ul style="list-style-type: none"> <li>• MWD will be in danger of running out of water.</li> <li>• Additional supplemental water purchases will be made and additional mandatory conservation efforts made.</li> <li>• MWD is considering building an ocean desalination facility.</li> <li>• New expenditures could include increasing storage in Cachuma and Jameson lakes by raising both dams levels.</li> <li>• Last year’s 55% water rate hike over five years will probably not be enough to reduce water demand.</li> </ul>
	City of Santa Barbara	<ul style="list-style-type: none"> <li>• Experiencing the fifth-driest year on record with Gibraltar Reservoir having its three driest years on record.</li> <li>• City residents have reduced water use by 15% since 1990, despite a population increase of over 3,100 people. Because water is already carefully used, the City will be challenged to reduce demand through conservation alone.</li> <li>• Depending more on its groundwater to make up for drought-related shortages</li> </ul>	<ul style="list-style-type: none"> <li>• Have enough water to get through 2014 but are facing shortfalls for 2015.</li> <li>• Plans to use a substantial portion of available reserves for drought-related actions and postpone some capital projects due to the increased drought costs.</li> <li>• City staff is researching the</li> </ul>

Sub-Region	Agency or City	2014 Drought Impacts	Anticipated 2015 Drought Impacts
		<ul style="list-style-type: none"> <li>• Has supplemented water sources with purchases from Vandenberg Air Force Base and rice farmers in northern California</li> <li>• Moving forward with plans to get existing ocean desalination plant that was placed on “standby” back in the 1990s up and running again. The project is estimated to cost about \$28.5 million dollars with an additional \$5 million a year to run the facility.</li> <li>• Recreation impacts (e.g. water costs for the city's golf course) are projected to rise more than \$81,000, from approximately \$177,450 to more than \$258,500.</li> <li>• COMB plans to install a drought pumping system this fall. As a COMB member agency, the City will pay about \$2,167,242 for its portion of the project during the first six months.</li> </ul>	<p>legality of higher "penalty rates" under Proposition 218, as the City Council is considering raising rates again if water use does not drop.</p> <ul style="list-style-type: none"> <li>• By Spring 2015, the City Council will need to decide whether to initiate design and construction for rehabilitation of the ocean desalination plant to provide potable supply during the drought emergency. The project is estimated to cost about \$28.5 million with an additional \$5 million a year to operate.</li> <li>• A stage 3 drought declaration could be triggered. Stage 3 will include more aggressive water use restrictions and higher drought water rates or penalties.</li> <li>• Remaining surface water will be extremely limited so the City will increasingly rely on groundwater and purchased water.</li> </ul>
	Carpinteria Valley Water District	<ul style="list-style-type: none"> <li>• With other water supply sources nearly shut-off, the District may soon need to rely solely on groundwater for supply.</li> <li>• Water customers will likely face significant rate increases later this year as CVWD considers a new rate structure in response to increased costs due to the drought.</li> <li>• COMB plans to install a drought pumping system this fall. As a COMB member agency, CVWD will pay about \$694,250 for its portion of first six months of the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Rate increases tied to a new rate structure in response to increased costs due to the drought.</li> <li>• Increased use of groundwater</li> </ul>
	Goleta Water District	<ul style="list-style-type: none"> <li>• With the SWP allocation reduced to 5%, GWD arranged to take early delivery on carryover supplies as SWP.</li> <li>• Have the lowest per capita water use on the south coast, meaning it will be difficult to</li> </ul>	<ul style="list-style-type: none"> <li>• Will consider stage two emergency</li> <li>• Will continue to increase groundwater pumping to 5,000 AFY in WY 2014-15 and</li> </ul>

Sub-Region	Agency or City	2014 Drought Impacts	Anticipated 2015 Drought Impacts
		<p>further reduce demand using conservation measures.</p> <ul style="list-style-type: none"> <li>Working to improve groundwater pumping capacity to 5,000 AF as current pumping capacity is limited to 3,275 AFY. The SAFE Water Supply Ordinance and the Wright Judgment limit groundwater pumping to safe levels.</li> <li>COMB plans to install a drought pumping system this fall. As a COMB member agency, Goleta will pay about \$2.4 million for its portion of the first 6 months of the project.</li> </ul>	<p>then 5,500 AFY in WY 2015-16 from the current 3,275 AFY</p> <ul style="list-style-type: none"> <li>Will supplement Cachuma entitlement with stored Cachuma carryover water</li> <li>Will participate in CCWA acquisition program to identify and secure additional imported supplies.</li> <li>Will explore opportunities for additional recycled water use (irrigation, construction, and dust control)</li> </ul>
<b>Santa Ynez River</b>	Solvang	<ul style="list-style-type: none"> <li>Adopted a stage 1 drought declaration asking for a voluntary 20% reduction and mandating actions (with some stage 2 components)</li> <li>Local farmers have greatly increased water efficiency over the last decade, meaning it will be difficult to further reduce water demand through conservation measures</li> </ul>	More severe conservation actions will be considered along with water purchases.
	Santa Ynez River Water Conservation District, ID 1	<ul style="list-style-type: none"> <li>Declared a stage one water supply shortage emergency (with some stage 2 components) and urged customers to cut water use by 20 percent.</li> <li>Imported water supply has been greatly reduced due to 5% SWP allocation and the District has lost 50% of surface water supplies from the Santa Ynez River. Their only other source of water is groundwater; however, 50% of groundwater supply cannot be used and is subject to remediation (costs could be as high as \$25 million) due to new Chromium 6 limits. The District has had to shut down three out of four wells in the Uplands Sub-basin, the backbone of the District's groundwater system, which is negatively impacting the basin pressure zone.</li> </ul>	<ul style="list-style-type: none"> <li>Will consider adopting a stage 2 water supply shortage emergency which will be a first in its 55-year history</li> <li>Will consider a moratorium on new customers</li> <li>Has agreed to reduce Cachuma supply by 55%</li> </ul>
<b>Santa Maria Valley</b>		The Santa Maria Valley currently has adequate groundwater supplies and is therefore not experiencing significant drought related impacts.	The City of Santa Maria will periodically evaluate conditions.

## Water Conservation Measures

The following describes water conservation measures and restrictions, both mandatory and voluntary, which have been implemented as a result of the 2014 Drought. Supporting documentation is included in Appendix 2-1.

**Table 2-2: Water Conservation Measures in 2014 and 2015**

Sub-Region	Agency or City	2014 Conservation Measures	Anticipated 2015 Conservation Measures
<b>South Coast</b>	Montecito Water District	<ul style="list-style-type: none"> <li>On February 11, 2014, MWD adopted Ordinance 92 which declared a Water Shortage Emergency and provided mandatory water use restrictions and penalties associated with non-compliance.</li> <li>On February 21, 2014, the District adopted Ordinance 93 which allocated/rationed the available water supply to the District's customers and levied monetary penalties for use in excess of the customer monthly allocation.</li> <li>Prohibitions on specific uses such as fountains, swimming pools, washing sidewalks and vehicles, providing restaurant water, etc. Leak repair requirement.</li> <li>Following the adoption of a mandatory rationing ordinance requiring a 30% reduction, customers have reduced water usage by nearly 40 percent.</li> </ul>	<ul style="list-style-type: none"> <li>Additional mandatory conservation efforts required</li> <li>Increased conservation messaging and outreach</li> <li>Drought pricing</li> <li>Increased enforcement</li> <li>Prohibition on new connections</li> <li>Continued participation in CCWA supplemental water purchase program</li> </ul>
	City of Santa Barbara	<ul style="list-style-type: none"> <li>Declared stage one drought on February 11, 2014 asking customers to reduce water use by 20% through extraordinary conservation</li> <li>Declared a stage two drought on May 20, 2014 requiring mandatory restrictions</li> <li>Adopted drought water rates to both encourage extraordinary water conservation and offset some of the increased costs associated with more expensive drought water supplies. The rates became effective July 1, 2014. Residential customers using 400 cubic feet of water per month, considered a low amount, will see an increase of 3 percent in their bills. But customers using 3,200 cubic feet would pay 67 percent more.</li> <li>Customer leak repair required</li> <li>Conservation rebates ongoing</li> <li>Irrigation allowed only during evening, night, and early morning hours</li> </ul>	<ul style="list-style-type: none"> <li>Plan to use a substantial portion of available reserves for drought-related actions</li> <li>City staff is researching the legality of higher "penalty rates" under Proposition 218, as the City Council is considering the possibility of raising rates again if water use does not drop.</li> <li>A stage 3 drought declaration could be triggered which is the highest level of drought response. Stage 3 will include more aggressive water use restrictions and increased drought water rates or penalties.</li> <li>Considering installing smart water meters (advanced metering infrastructure)</li> </ul>

Drought Impacts

Sub-Region	Agency or City	2014 Conservation Measures	Anticipated 2015 Conservation Measures
			<p>devices) in homes</p> <ul style="list-style-type: none"> <li>• Continue participation in CCWA supplemental water purchase program</li> </ul>
	Carpinteria Valley Water District	<ul style="list-style-type: none"> <li>• Stage 1 Drought Emergency declared in Resolution #972 on February 12, 2014.</li> <li>• Water customers will likely face significant rate increases later this year as the water district considers a new rate structure in response to increased costs due to the drought.</li> </ul>	<ul style="list-style-type: none"> <li>• Rate increases tied to a new rate structure (will consider tiered rate structure) in response to increased costs due to the drought.</li> <li>• Increased use of groundwater</li> </ul>
	Goleta Water District	<ul style="list-style-type: none"> <li>• Declared a stage one water supply shortage asking customers to cut water use by 20 percent.</li> <li>• Adopted 2014 Drought Preparedness and Water Shortage Contingency Plan</li> <li>• Began aggressively implementing Phase 1 of the Drought Outreach Program (leak detection, irrigation water schedules, water audits, etc.)</li> <li>• Will consider water shortage emergency under Water Code Section 350 in September 2014.</li> </ul>	<ul style="list-style-type: none"> <li>• Will actively monitor water demand and potentially adopt a stage III (35% reduction) declaration in May 2015.</li> <li>• Supplemental water purchases will be considered</li> <li>• District will move forward with a water-meter replacement program to replace old and failing meters. Replacing aging water meters allows agency to reduce losses and more accurately measure water usage.</li> </ul>
<b>Santa Ynez River</b>	Solvang	<ul style="list-style-type: none"> <li>• Declared stage 1 drought conditions in January 2014</li> <li>• Adopted a stage 2 drought declaration on Feb. 10, 2014 due to extreme drought conditions including banning daytime irrigation</li> </ul>	<p>More severe conservation actions will be considered along with water purchases.</p>
	Santa Ynez River Water Conservation District, ID 1	<ul style="list-style-type: none"> <li>• Declared a stage one water supply shortage emergency (Resolution 719) and urged customers to cut water use by 20 percent (with several stage 2 components)</li> </ul>	<ul style="list-style-type: none"> <li>• Will consider adopting a stage 2 water supply shortage emergency which will be a first in its 55-year history</li> <li>• Will consider a moratorium on new customers</li> <li>• Penalties will be considered</li> </ul>
	Lompoc	<ul style="list-style-type: none"> <li>• Conservation ordinances are in place and outreach through utility bills are requesting customer conservation</li> </ul>	
	Vandenberg Village	<ul style="list-style-type: none"> <li>• Reduction of water consumption by 20% (voluntary) motion approved February 4, 2014</li> <li>• Water conservation program expanded in May 2014</li> </ul>	<ul style="list-style-type: none"> <li>• Will consider drought declaration and further expansion of water conservation actions</li> </ul>

Sub-Region	Agency or City	2014 Conservation Measures	Anticipated 2015 Conservation Measures
<b>Santa Maria Valley</b>	City of Santa Maria	<ul style="list-style-type: none"> <li>• Has encouraged conservation through a tiered rate structure</li> <li>• Local farmers have greatly increased water efficiency over the last decade</li> </ul>	Additional conservation measures will be considered
<b>County of Santa Barbara</b>		<ul style="list-style-type: none"> <li>• Declared a local drought emergency in January 21, 2014</li> <li>• A drought task force was activated to monitor supply levels and plan conservation measures in January 2014.</li> <li>• The County has continued its investment in the countywide Regional Water Efficiency Program (RWEF) in which water purveyors work cooperatively to implement conservation in the areas of residential, commercial, agricultural, and landscape programs. The Cachuma Resource Conservation District, in partnership with the County, has expanded its Mobile Irrigation Lab that helps growers and other land managers (such as schools and parks) to identify opportunities for water use efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• Will be considered further conservation actions and additional support for RWEF participants</li> <li>• The County and Cachuma Resource Conservation District will seek additional funding to expand programs.</li> </ul>