I. Drought Impacts

The severity of the current drought has strained the Upper Santa Clara River (USCR) IRWM Region in a number of ways. For instance, State Water Project (SWP) reductions in contract supplies has exceeded planning scenario estimates, groundwater wells in the eastern portion of the Castaic Lake Water Agency (CLWA) service area have already gone dry, and chloride concentrations in wastewater discharges are elevated further above the chloride TMDL limits due to the drought's impact on SWP water quality. Further impacts are detailed below. If the current drought continues into the 2014-15 water year and beyond, the Region will not be able to meet projected demands without increased extraction capacity for banked water nor will it be able to meet its TMDL requirements. The proposed projects will help the Region secure its reliable, high quality supply by increasing the extraction capacity in the groundwater banking programs and reducing chloride concentrations in wastewater.

The drought has had the following impacts on the Region:

Risk of not meeting existing drinking water demands

Approximately half of the Santa Clara Valley's urban demand is met with imported water. This includes water purchased from the Buena Vista and Rosedale-Rio Bravo Water Storage Districts in Kern County, SWP Table A allocation, and "carryover" (SWP supplies that were not used in previous years and are currently being stored in the SWP system). The rest of the demands are met with local groundwater and some recycled water. Additionally, the CLWA actively participates in two long-term water banking programs with the Rosedale Rio-Bravo Water Storage District (RRBWSD) and the Semitropic Water Storage District (SWSD), and recently participated in short-term, two-for-one exchange programs with RRBWSD and the West Kern Water District. These groundwater banking programs allow CLWA to firm up the reliability of its SWP supplies by storing surplus SWP and other water in wet years, and recovering those supplies in dry years. Supplies from these banking programs are necessary in order to meet demands in single-dry year (Table 1) and multi-dry year scenarios (Table 2), as documented in the CLWA's 2010 Urban Water Management Plan (UWMP).

Table 1 – Single Dry Year Existing and Planned Supplies (AFY)

	2015	2020	2030	2040	2050
Existing Supplies					
Total Groundwater	40,700	40,650	41,450	41,425	41,050
Recycled Water	325	325	325	325	325
Total Imported	30,567	28,287	26,387	26,387	26,387
Existing Banking Programs					
Rosedale Rio-Bravo	20,000	20,000	20,000	20,000	20,000
Semitropic	15,000	15,000	-	-	-
Semitropic – Newhall Land	4,950	4,950	4,950	4,950	4,950
Total Existing Banking	**39,950**	**39,950**	**24,950**	**24,950**	**24,950**
Total Existing Supplies	***111,542***	***109,212***	***93,112***	***93,087***	***92,712***
Planned Supplies					
Groundwater	3,900	14,950	17,550	19,575	21,450
Recycled Water	975	2,725	7,775	13,775	20,975
Banking Programs	-	-	10,000	20,000	20,000
Total Planned Supplies	***4,875***	***17,675***	***35,325***	***53,350***	***62,425***
Total Existing and Planned Supplies	**116,417**	**126,887**	**128,437**	**146,437**	**155,137**

Table 2 – Multi-Dry Year Existing and Planned Supplies (AFY)					
	2015	**2020**	**2030**	**2040**	**2050**
Existing Supplies					
Total Groundwater	40,125	40,125	41,525	41,525	41,025
Recycled Water	325	325	325	325	325
Total Imported	47,017	46,677	46,777	46,777	46,777
Existing Banking Programs					
Rosedale Rio-Bravo	15,000	15,000	15,000	15,000	15,000
Semitropic	11,500	11,500	0	0	0
Semitropic – Newhall Land	4,950	4,950	4,950	4,950	4,950
Total Existing Banking	**31,450**	**31,450**	**19,950**	**19,950**	**19,950**
Total Existing Supplies	***118,917***	***118,577***	***108,577***	***108,577***	***108,077***
Planned Supplies					
Groundwater	4,625	12,950	14,950	16,950	18,950
Recycled Water	975	2,725	7,775	13,775	20,975
Banking Programs	0	0	7,500	15,000	15,000
Total Planned Supplies	***5,600***	***15,675***	***30,225***	***45,725***	***54,925***
Total Existing and Planned Supplies	**124,517**	**134,252**	**138,802**	**154,302**	**163,002**

However, drought conditions in the State have gotten so dire that the SWP has a record low allocation, far below the allocations for the single- and multiple-dry year scenarios shown in the CLWA 2010 UWMP. Due to this low allocation, CLWA cannot depend on its imported water supply levels in the 2010 UWMP for future dry-year scenarios, and must increase other supplies and increase conservation in order to meet demands. And even those other supplies, such as local groundwater, are showing the severe effects of the current drought. Moreover, the extreme dry conditions mean that many agencies in the State are also calling on their dry-year supplies from various banking programs (including RRBWSD and SWSD), thus creating significant stress on existing extraction capacity. As a result, accessing the required amount of dry-year supplies is not possible without additional extraction capacity from CLWA's banking programs.

Current operating plans show an imbalance in the imported supply and local demand as soon as 2015 (Table 3), making the Region even more reliant on its local groundwater supplies. Table 3 assumes no SWP supply in 2015 and 2016. At the same time, several groundwater wells in the eastern portion of the CLWA service area have gone dry. The impacts of this have already been felt: some residents who rely on their own wells, including those at the Los Angeles Residential Community Ranch, a facility for the developmentally disabled, have been forced to import their water supplies by truck. To date they have trucked in over 1.4 million gallons, an option that is not financially sustainable (LA Times, July 7, 2014). The proposed Projects will provide the additional supply necessary to help meet local water demand as the drought persists.

Table 3 – Planned Operations (2014-2016) (AFY)			
	2014	2015	2016
Demand			
Local Demand	38,330	33,111	27,232
Supply [(1)]			
SWP Table A	4,760	-	-
SWP Carryover	10,852	7,161	3,388
Buena Vista Water Storage District Sale	11,000	11,000	11,000
Rosedale Rio-Bravo Water Storage District Banking	5,416	5,000	5,000
West Kern Exchange	2,000	-	-
Semitropic	3,960	4,950	990
Yuba Accord	342	-	-
Available Imported Supply Total	**38,330**	**28,111**	**23,207**
Supply vs. Demand	**0**	**-5,000**	**-4,025**

Note 1: This table presents the imported water supply and demand operations and does not include the supplies that would be provided by the Projects proposed in this application. The CLWA-1 project would add 7,500 AFY and CLWA-2 would add 5,000 AFY of groundwater banking capacity to these supplies.

At risk of not meeting existing agricultural water demands

Agricultural and other miscellaneous uses make up 18 percent of the total water use in the Santa Clarita Valley. Without the additional extraction capacity provided by the proposed Projects and without imported supplies to meet the municipal and industrial (M&I) water demand, ongoing local conjunctive use of groundwater and imported water resources could be compromised, leading to reduced supplies to both agricultural and M&I customers. As shown in Table 3, shortages in supply could be seen in as early as 2015 unless CLWA increases extraction capacity by implementing the proposed Projects. The other small private water user demands that depend on local groundwater for water supply are already seeing their local groundwater supply wells go dry, and agricultural wells have become even more vulnerable as supplies dwindle.

At risk of not meeting ecosystem water demands

Groundwater recharge and treated wastewater discharge feed the Santa Clara River and support a local riparian ecosystem. With reduced instream flows due to the drought, ecosystem water demands could also be compromised without the additional banking program extraction capacity provided by the proposed projects. The unarmored three-spine stickleback (*Gasterosteus aculeatus williamsoni*), a fully protected species under the California Endangered Species Act, relies on the Santa Clara River and its tributaries for a portion of its limited habitat area. Reduction in groundwater recharge due to drought conditions could potentially dry up pools that the fish require to survive over the summer.

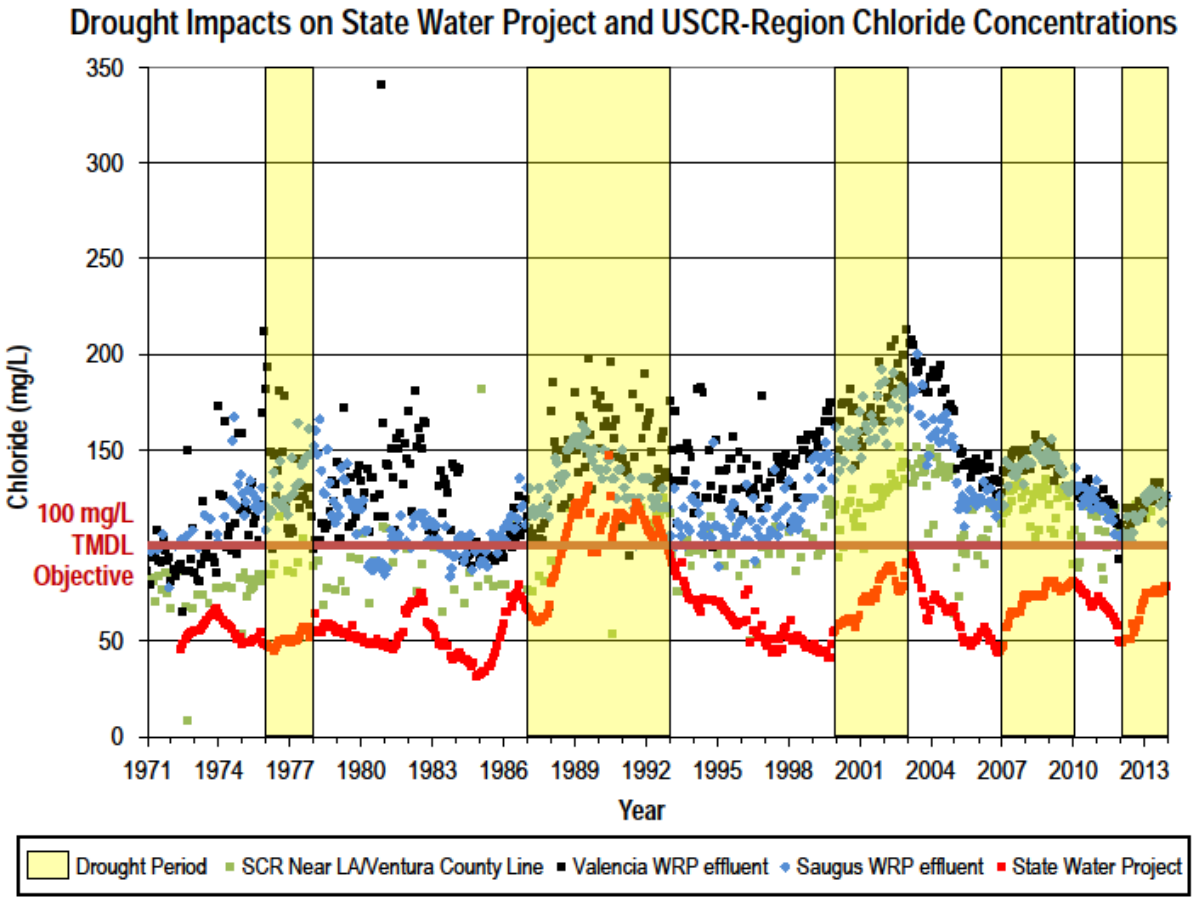
Discharge water TMDL compliance

The Regional Water Quality Control Board has established a Total Maximum Daily Load (TMDL) to address the elevated chloride concentration in the Upper Santa Clara River, and in so doing the TMDL identified drought as a critical condition. The chloride water quality standard was set at a level of 100 milligrams/liter (mg/L) to protect salt-sensitive agricultural crops grown in the lower Santa Clara River watershed. Due to the potential impacts on downstream agricultural interests, the issue of chloride concentration in the Santa Clara River has led to conflict for over fifteen years.

Although extensive source control efforts have been implemented by the Santa Clarita Valley Sanitation District (SCVSD) in the Santa Clarita Valley, chloride concentrations are still above 100 mg/L, and during droughts this condition is exacerbated by SWP water supply conditions. For instance, in 2011 (prior to the current drought),

SWP water served in the Santa Clarita Valley had chloride levels between 50 and 73 mg/L, and in the 12-month period from April 2013-April 2014 (during drought conditions), SWP water chloride (Cl) levels ranged from 75 mg/L to 88 mg/L (See Figure and Table 4, below). Receiving water chloride levels at the Los Angeles-Ventura County line have risen commensurately.

The figure below shows that drought periods dating back to the 1970s are associated with notable increases in chloride concentrations in the SWP, which subsequently impact chloride concentrations in the Region (e.g. Valencia WRP effluent).



The proposed Valencia WRP UV Disinfection Facilities is one of a suite of chloride compliance projects approved in October 2013 by the Board of Directors of the SCVSD, and is one of three projects included in this Proposal. The Project is being designed to reduce chloride concentration in the WRP effluent by up to 7 mg/L, which will help comply with the requirements of the TMDL.

Table 4 – Chloride Concentrations 2012-2014

Water Source	January 2012 3-month Rolling Average Chloride (mg/L)	April 2014 3-month Rolling Average Chloride (mg/L)	Chloride Increase (mg/L)	% Increase
Valencia WRP	105.3	129.3	24.0	23%
SWP	52.7	84.3	31.6	60%

Other Drought Related Adverse Impacts - Recreational Impacts

The recreation impacts to the Santa Clarita Valley (SCV) during this drought have been extraordinary. For the first time in its history, Castaic Lake will be closed to swimming all summer due to drought. In May 2014, the water level at Castaic Lake was 1,463 feet. A month later, water officials at CLWA reported it dropping to below 1,445 feet — the point at which the Agency would have to begin pumping water upward to get it out of the Lake and into one of two of its treatment plants. By July 2014, the Lake had dropped an additional 24 feet below the June reading, to a level of 1,421 feet (The Signal, July 3, 2014). The lower the water level drops, the higher the cost of pumping water from it.

Financial Impacts

Financial impacts are anticipated from both reduced sales from recreational activities and from the need for pumping from Castaic Lake. As is the case now, when the Lake level drops below 1,445 feet, CLWA has to pump water from the Lake to the Earl Schmidt Filtration Plant, on the east side of the Lake, for treatment, which results in power costs that CLWA only incurs if the drought continues. Typically, SWP water is delivered to the filtration plant by gravity. With water levels so low however, there is not enough pressure for deliveries. As a result, the cost of the additional pumping is ultimately passed on to the local purveyors and, eventually, to the residents of the Santa Clarita Valley through increased water rates.

Further adding to the financial impacts, CLWA has to withdraw its banked water to meet demands in the absence of some imported supplies. CLWA is making arrangements to access water stored in its programs with RRBWSD, SWSD and West Kern Water District. However, to do so requires additional costs including construction of new facilities, recovery costs, and increased energy costs. As detailed in Attachment 3, access to supplies in the RRBWSD and SWSD programs require a total capital and O&M cost of about $23.9 million over the projects' lifetimes. Utilization of the Proposition 84 funds for these projects would help reduce these costs by approximately $10.9 million.

II. Water Conservation Measures

Water suppliers within the Santa Clarita Valley (SCV) have been actively planning and implementing conservation programs since long before the drought. The programs are robust and include public outreach and education, technical support and financial incentives. In 2013, CLWA and the purveyors embarked on a significant planning effort to identify a path towards meeting the Region's SBX7-7 requirements. Existing programs have been enhanced during this recent drought period.

Water agencies in the SCV have taken actions to both encourage and enforce water conservation in response to the drought. All Project proponents seeking funding as part of the 2014 IRWMP Drought solicitation have taken drought response actions. Related drought declarations and resolutions are provided in Att2_DG_Impact_2of2.

The SCV Water Committee (formerly known as the SCV Drought Committee) was formed in 2008 to bring multiple agencies together to jointly respond to drought conditions in the Santa Clarita Valley. The specific purpose of the committee is to work collaboratively to manage the conjunctive use of the Valley's water supplies and ensure the progressive implementation of water use efficiency programs in SCV. The Committee meets regularly to monitor water supply conditions and prepare actions that may need to be taken in the event of drought. Its members include CLWA, the City of Santa Clarita, Los Angeles County and the four local water purveyors: Los Angeles County Waterworks District (LACWD) No. 36, Newhall County Water District (NCWD), Santa Clarita Water Division of Castaic Lake Water Agency (SCWD), and Valencia Water Company (VWC), also referred to as the Family of Water Suppliers. The Committee has been meeting monthly, more frequently beginning in January, to address the drought situation.

On February 4, 2014, the SCV Water Committee declared a local water supply alert triggering a set of water conservation measures that are to be taken by residents and businesses in response to California's critical drought conditions. The measures are included in the *Voluntary Water Conservation Action Plan* (Conservation Action Plan), prepared by the committee that calls on residents and businesses in the Santa Clarita Valley to take reasonable actions to reduce water use and eliminate waste. The Conservation Action Plan is aimed at increasing awareness of the critical water supply conditions throughout California and the immediate need for conservation by providing simple and easy steps for residents and businesses to take. The water suppliers will continue to assess water supply conditions in 2014. If water supply conditions worsen in 2015, further actions may be necessary to ensure available water supplies for Valley residents and businesses. During the SCV Water Committee meeting held on July 8, 2014, supply conditions were reassessed and it was determined that conditions have worsened more quickly than anticipated. As a result, the suppliers are currently developing a plan which, among other things, will identify mandatory conservation measures and next steps. This draft plan will include measures consistent with the State Water Resources Control Board Emergency Regulations. Because this is a developing situation, details were not immediately available in time for inclusion in thus grant application.

The following is a summary of the conservation measures adopted by the SCV Water Committee and implemented by all of the purveyors on February 4, 2014:

Outdoor Guidelines:

- Repair all leaks in irrigation systems immediately and maintain systems, including sprinklers, so overspray, runoff and water waste is avoided.
- Use the most water-efficient irrigation, including drip irrigation when appropriate.
- Choose drought-tolerant vegetation to minimize the need for irrigation, and group plants with similar water needs together for more efficient irrigation. See Santaclaritagardens.com for resources.
- Use mulch on exposed dirt to lessen evaporation.
- Water during optimal watering hours of 2-6 a.m. to avoid wind and evaporation. Adjust run times to minimum values. See the Watering Guide on santaclaritagardens.com for samples of irrigation schedules.

- No potable water use on decorative fountains, ponds or other types of water streams by incorporating a recycling system so water is continually recovered and reused.
- Use pool and spa safety covers or evaporation-reducing water treatments, if safe and appropriate for the situation. Pool and spa draining and refilling is prohibited unless required for safety.
- Use a hose equipped with an automatic shutoff nozzle when washing a car.
- Limit water times to three times per week.
- Sidewalks, walkways, driveways, parking lots or any other hard-surfaced areas should not be washed down, except for health and safety purposes.

Indoor Guidelines:

- Repair all leaks in faucets, toilets, and indoor pipes immediately.
- Install high-efficiency toilets (1.28 gallons per flush).
- Install low-flow aerators in bathroom and kitchen sinks.
- Install low-flow showerheads in showers.
- Install water-efficient Energy Star® approved appliances, including clothes washers and dishwashers.
- Run only full loads in clothes washers and dishwashers.
- All commercial establishments where food or beverages are provided should serve water to their customers only when specifically requested by the customer.

Public Outreach

In addition to implementing the Conservation Action Plan, the Agency and local retail purveyors greatly increased the amount of public outreach and drought related messaging. This year the CLWA budgeted $80,000 to facilitate outreach efforts and the call for conservation. The costs are shared among the Family of Water Suppliers.

Outreach efforts include:

- Phone Greetings / On Hold Messaging
- Bill Messages (text only)
- Website Content
    - Drought Tips Flyer
    - Voluntary Water Conservation Action Plan (Indoor/Outdoor Guidelines)
    - Current news
- Links to other credible sources such as ACWA / Save Our Water (SOW) and DWR
- Bill Stuffers (Indoor/Outdoor Tips; 2 sides)
- Lobby Banner – "About the Drought" Banner (3' x 6'; two options)
- Lobby Poster(s) on easels (24" x 36"):
    - CA Drought Conditions Map
    - Drought Tips (20%)
    - Reservoir Conditions:
        - Oroville 2011 vs 2014 (photo comparison)
        - Oroville Then vs Now (collage)
        - SWP Reservoir Map (SWP / Oroville / Castaic)
- Talking Points (Drought)
- Outreach to Restaurant Owners

The SCV Family of Water Suppliers offer their customers a robust menu of conservation incentives and programs, both for indoor and landscape uses. These include:

- Free Weather-Based Irrigation Controllers Residential Landscape Program
- High Efficiency Clothes Washer (HECW) rebates
- Large Landscape and Commercial, Institutional and Industrial (CII) weather based irrigation controller rebates
- Large Landscape and CII landscape modification rebates
- High-efficiency sprinkler rebates
- Free Device Programs, including: hose nozzles, low-flow showerheads and high efficiency sprinkler nozzles
- Water Smart Irrigation and Garden Care Workshops

Outreach and program efforts can be found on each agency's website: http://clwa.org/, http://santaclaritawater.com/, http://www.valenciawater.com, http://www.ncwd.org/, and http://dpw.lacounty.gov/wwd/web/Default.aspx

In addition to enhancing the information and support provided to customers, new programs are also being developed.

Planned Programs

Valencia Water Company customers will soon receive a "personal drought report" that specifies exactly how much water they need to save this year to meet their share of Governor Brown's call to save 20 percent. The drought report, utilizing a computer program analyzing individual water use and other factors, will first be mailed to customers then made available thereafter online through monthly progress reports. The reports will also give customers very specific ways to reduce their water use.

New Turf Replacement Program

Additionally, with the help of funds from the Proposition 84 Implementation Round 2 Grant, CLWA has developed two turf replacement programs in the Santa Clarita Valley. The commercial program addresses the needs of homeowners associations, businesses, schools and non-profits by rebating at $2/square foot of turf removed with a required pre- and post-inspection. Customers may replace turf grass with artificial turf, mulch or plants other than turf. The residential program also rebates at $2/square foot for turf grass removed, but has educational requirements for the customer (including a class and test) in addition to the pre- and post-inspection. Both programs limit the amount of turf grass removed to 2,500 square feet at a time. The two-year program is anticipated to provide 400,000 square feet of turf removed at $2/square foot. This equates to an 825 acre-feet per year (AFY) of savings through 2030.

Conservation Summary

So far, the efforts are showing positive impacts on demand. Despite the drier-than-average conditions in early 2014, total municipal water requirements in the first quarter of 2014 were only slightly higher than the first quarter of 2013. And this year the estimated total water demand is expected to be about the same as last year. This less-than-expected rise in water demand for the first quarter 2014 is likely due to the Governor's emergency drought proclamation and the recently expanded drought and conservation messaging campaign and programs in the Region. In spite of these positive impacts on demand, conservation alone will not ameliorate the impacts of such a severe drought and cannot be expected to fully offset the loss of supplies.