

CITY OF SAN LUIS OBISPO

2015 Water Resources Status Report

This Report Covers the Time Period of October 1, 2014 through September 30, 2015



Salinas Reservoir Dam, February 2015.
Photo credit: County of San Luis Obispo.

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The Water Resources Status Report updates the City Council and community on existing water resources. This report focuses on seven main areas:

- I. Drought
- II. Water Supply
- III. Projected Water Supply
- IV. Water Demand
- V. Water Resource Availability
- VI. Water Supply Accounting
- VII. Water Demand Management

The 2015 Water Resources Status Report includes water production and water consumption data for October 1, 2014 through September 30, 2015 and was prepared in accordance with the City's General Plan, Water and Wastewater Management Element (WWME), Policy A5.3.1.

Historically, data provided in the Water Resources Status Report reflected on the preceding calendar year. Starting with this report, the Report corresponds to the Water Year (October 1 through September 30), the 12-month period for which precipitation totals are measured. This change enables the City to better report on water supply availability issues.

I. DROUGHT

The statewide drought has continued and is now well into the fourth year. Governor Brown declared a drought emergency on January 17, 2014 and, as part of the response, directed the State Water Resources Control Board (State Water Board) to draft water conservation regulations to respond to the emergency. The State Water Board adopted regulations prohibiting water waste in July 2014, and issued directives to reduce water use statewide. In response to the continuing drought conditions, the State Water Board extended the 2014 emergency regulations and added new measures on March 17, 2015. On April 1, 2015, the Governor issued Executive Order B-29-15 mandating increased enforcement against water waste and declared a statewide water use reduction goal of 25 percent. This action was followed by the State Water Board adopting regulations that require specific water purveyors to reduce water use in a range of 8 to 36 percent compared to their 2013 water usage. The amount of the mandated reduction is dependent on the water purveyor's per capita use in 2013. The City's required reduction is 12 percent. The following is a summary of the City's progress of reaching this goal.

The community has done an outstanding job in reducing water consumption in response to the new regulations and the city is on target to meet the State’s requirement.

2015	Reduction from 2013
June	20%
July	26%
August	25%
September	19%
October	19%

LOCAL RESPONSE STRATEGY

The impacts of the 1987-1991 drought enculturated a strong water conservation ethic in San Luis Obispo along with an urgency to develop new water supply sources. The current statewide drought brought about unprecedented regulatory action from the State of California which resulted in a mandatory average 12 percent reduction in water use from June 2015 to February 2016, when compared with 2013 water use numbers. To achieve this mandate, the City Council adopted a drought response strategy in June 2015. This strategy includes:

1. Adoption of a resolution declaring a drought emergency;
2. Adoption of a resolution to defer new landscape installation or the use of modified landscape plans during the drought emergency;
3. Introduction of an ordinance amending Chapter 13.07 of the City’s Municipal Code to include two-day-a-week and time-of-day restrictions for outdoor watering;
4. Approval of an incentive program for high efficiency toilets and washing machines; and
5. Adoption of a resolution establishing a permit fee for the use of the Corporation Yard groundwater well.

This strategy relies on active enforcement of water waste prohibitions, with a core focus on providing information and resources to the public



Nacimiento Reservoir Dam, February 2015.
Photo credit: County of San Luis Obispo.

II. WATER SUPPLY

Per WWME Policy A2.2.1, the city uses multiple water sources to meet its water supply needs. The city has four primary water supply sources including Whale Rock Reservoir, Salinas Reservoir, Nacimiento Reservoir, and recycled water (for landscape irrigation and construction water), with groundwater serving as a fifth supplemental source. The supply per source for Water Year 2015 (October 1, 2014 to September 30, 2015) is summarized as follows:

2015 City Water Supply by Source (Acre Feet)

Salinas	Whale Rock*	Nacimiento	Groundwater	Recycled	Total Water Demand
1,122	1,718	1,891	89	168	4,988
23%	34%	38%	2%	3%	100%

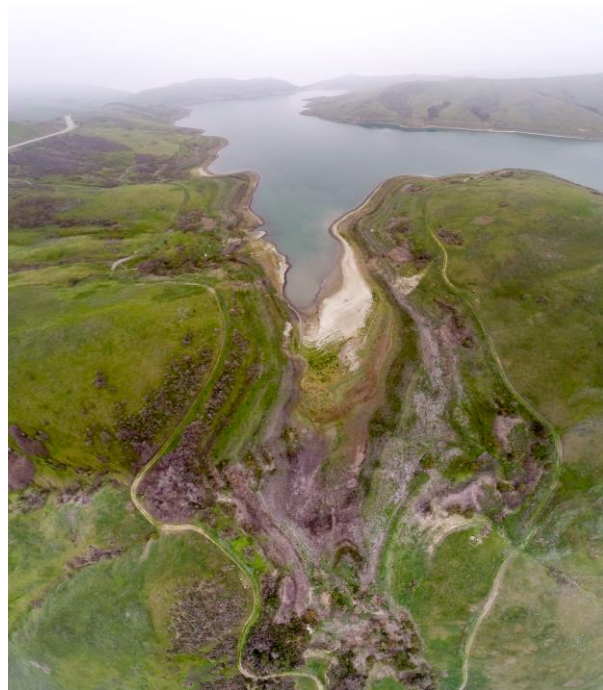
Notes:

All Values are rounded.

*Water delivered to Cal Poly State University is excluded from the City's water demand.

SALINAS & WHALE ROCK RESERVOIRS

Salinas and Whale Rock Reservoirs have served as the city's primary water supplies for over 50 years. The City pays the County of San Luis Obispo Flood Control and Water Conservation District (County) to provide oversight, operations, and maintenance of the Salinas Dam and related water delivery facilities. The City of San Luis Obispo provides the oversight, operations, and maintenance of the Whale Rock Reservoir for the benefit of the Whale Rock Commission, a joint powers agency made up of Cal Poly State University, California Men's Colony, and the City. The city draws water from these two reservoirs to maximize the long-term water supply available from these two sources. In addition, the city has in a coordinated manner adopted policies in the WWME to account for reductions in storage capacity at each lake resulting from siltation.



Whale Rock Reservoir, February 2015.
Photo credit: County of San Luis Obispo.

NACIMIENTO WATER PROJECT

Water deliveries from the Nacimiento Reservoir began on January 5, 2011. The City has a contractual right to 3,380 acre feet per year. The county operates and maintains the project that delivers water from Nacimiento Reservoir to participating agencies (currently the cities of Paso Robles and San Luis Obispo, Atascadero Mutual Water Company, Templeton Community

Services District, and County Service Area 10A [Cayucos]). The Nacimiento Project Commission, which is made up of representatives from each of the four agencies' governing boards and a County Representative (who is a member of the County Board of Supervisors which also sits as the Board of Directors for the Flood Control District), provides oversight to project operations, maintenance, and the project budget. The Nacimiento pipeline was shut down on June 2, 2014 for emergency repairs and was offline for the remainder of 2014, with flow being reinstated in April of 2015.

RECYCLED WATER

Recycled water use for 2014 totaled 185 acre feet, up five percent from 177 acre feet in 2013. For the 2015 Water Year, the City delivered 168 acre feet of recycled water.

GROUNDWATER

The City stopped supplying groundwater to its drinking water system in April 2015. Due to new regulatory requirements, using the groundwater would require additional costly treatment at the wells before the water could be used. Groundwater wells remain in operable stand-by condition should use of groundwater be required in the future.

Per WWME Policy A 3.2.3, the City does not consider groundwater a source of supply due to limitations on its use. City wells are summarized below:



Well	Type	Use	Location
Pacific Beach #1	Potable	Domestic	Los Osos Valley Road near Pacific Beach School
Corp Yard Well	Non-potable	Construction Water	City Corporation Yard Prado Road
Laguna Lake Golf Course	Non-potable	Irrigation	Laguna Lake Golf Course on LOVR
SLO City Farm	Non-potable	Irrigation	SLO Community Farm off Highway 101 & LOVR

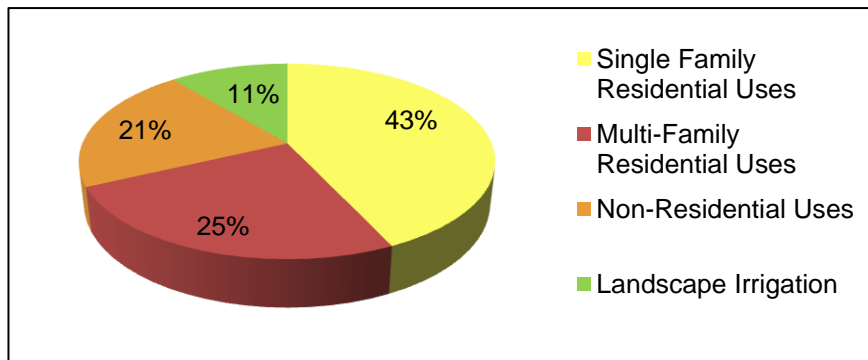
Note: The City discontinued domestic groundwater use in 2015.

III. PROJECTED WATER SUPPLY

The City uses a computer model to estimate its future reservoir storage in Salinas and Whale Rock Reservoirs. This is accomplished by applying historical drought, weather patterns, water use projections, reservoir data, and available water supplies from Nacimiento Reservoir, and recycled water. The model assumes implementation of Stage I conservation measures when supplies are projected to last three years. Stage II and III conservation measures are implemented when water supplies are estimated to last two years and one year, respectively. In December 2014 the model predicted water supplies would last six years. In early 2015, the model was updated to include the new worst case drought information (climatic data for 2012, 2013, and 2014). The model indicates the City has approximately a three year supply of water as of September 2015.

IV. WATER DEMAND

During Water Year 2015, 68 percent of water use in the City was for single and multi-family residential uses. Historical water use is summarized below, as well as corresponding population, per capita use rate, and precipitation. The 2015 per capita water use was 97.3 gallons per capita per day (gpcd). Based on WWME policies, the City uses the ten-year gpcd average to project water required to serve build-out population. The ten-year average water use is 114.4 gpcd.



Population, Water Use & Rainfall

Year	Population	Total Water Use (acre feet)	Per Capita (gpcd)	Rainfall ^{1,2,3} (inches)
2006	44,559	5,999	120.2	17.2
2007	44,433	6,493	130.5	12.7
2008	44,579	6,359	127.3	18.1
2009	44,829	6,134	122.2	18.9
2010	44,948	5,489	109.0	36.0
2011	45,418	5,285	103.9	18.9
2012	45,308	5,541	109.2	21.5
2013	45,541	5,892	115.5	3.8
2014	45,473	5,524	108.5	14.2
2015	45,802	4,990	97.3	11.8
Ten-year per capita average:			114.4	

Notes:

1. Rainfall amounts for 2005–2012 calendar year source: Cal Poly CIMIS Weather Station.
2. Rainfall amount for calendar year 2013-2015: SLO Reservoir.
3. Rainfall for 2015 covers October 2014 through September 2015

V. WATER RESOURCE AVAILABILITY

The following table summarizes the Water Resource Availability to serve the community water demand based on WWME Section 3. Water availability for 2015 is 10,005 acre feet.

2015 Water Resource Availability

Water Resource	Acre Feet	Description
Salinas & Whale Rock Reservoirs	6,940	Safe Annual Yield ¹
Nacimiento Reservoir	3,380	Dependable Yield ²
Recycled Water	185	2014 Annual Usage ³
Siltation from 2010 to 2060	(500)	WWME Policy A 4.2.2 ⁴
	10,005	2015 Annual Availability

NOTES:

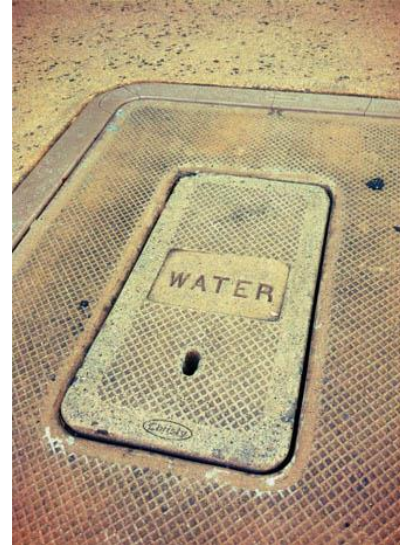
1. Safe Annual Yield determined from computer model, which accounts for siltation loss through 2010 (per WWME Policy A 4.2.1).
2. Dependable Yield is the contractual amount of water the City has rights to from Nacimiento Reservoir.
3. The quantity of recycled water included is the actual prior year's recycled water usage (calendar year 2014) per WWME Policy A 7.2.2.
4. Reservoir siltation is a natural occurrence that reduces storage capacity over long periods, resulting in the reduction of safe annual yield.

VI. WATER SUPPLY ACCOUNTING

Per WWME Section 5, the City will account for water supplies necessary to meet three specific community needs:

1. Primary water supply
2. Reliability reserve
3. Secondary water supply

The primary water supply is defined as the amount of water needed to serve the build-out population of the City as identified in the Land Use Element of the General Plan. Table 3 in the Land Use Element identifies an urban reserve capacity of 57,200 people. The quantity of water needed for the primary water supply is calculated using the ten-year average of actual per capita water use, shown in Table 2, and the population of 57,200 (2014 LUCE). Per WWME Policy A 5.2.2:



Primary Water Supply:

$$\begin{aligned} &= \text{Ten Year Average per Capita Water Use} \times \text{City Build-out Population} \\ &= 114.4 \text{ gal/cap-day} \times 57,200 \times 365 \text{ day/year} \times \text{Acre-Ft}/325,853 \text{ gal} \\ &= 7,330 \text{ Acre-Ft/year} \end{aligned}$$

The reliability reserve provides a buffer for future unforeseen or unpredictable long-term impacts to the City's available water supply. The quantity of water for the reliability reserve is established using 20 percent of the ten-year average of per capita water use and the existing City population (45,802, 2015 population). The reliability reserve concept is included in the City's Charter (Section 909) which identifies that the water may not be used to serve future development, and is defined per WWME Policy A 5.2.3:

Reliability Reserve:

$$\begin{aligned} &= \text{Ten Year Average per Capita Water Use} \times 2014 \text{ City Population} \times 20\% \\ &= 114.4 \text{ gal/cap-day} \times 45,802 \text{ cap} \times 365 \text{ day/year} \times \text{Acre-Ft}/325,853 \text{ gal} \times 20\% \\ &= 1,174 \text{ Acre-Ft/year} \end{aligned}$$

The secondary water supply is the amount of water remaining from the City’s available water resources above those needed to meet the primary water supply and reliability reserve. The secondary supply is identified to meet peak water demand periods or short-term loss of City water supply sources, per WWME Policy A 5.2.4:

<p>Secondary Water Supply:</p> <p>= Current Annual Availability – Primary Water Supply – Reliability Reserve</p> <p>= 10,005 Acre-Ft/year^A – 7,484 acre-Ft/year – 1,190 Acre-Ft/year</p> <p>= 1,501 Acre-Ft/year</p> <p>^A 2015 Annual Availability</p>

Water supply accounting is summarized as follows:

2015 Water Supply Accounting (acre feet)

Total	Primary Water Supply	Reliability Reserve	Secondary Water Supply
10,005	7,330	1,174	1,501

VII. WATER DEMAND MANAGEMENT

The City’s water conservation program is an integral part of its overall water management strategy. In the late 1980’s, the City implemented effective water efficiency programs and policies that allowed for continued community growth and economic development during water-constrained periods. Through strong conservation efforts, the community has reduced its annual average per capita water use from over 180 gallons in 1987 to 97 for the 2015 Water Year.

REGIONAL COOPERATION

Beyond the involvement in the Nacimiento Water Project, the City is a participating member of the Water Resources Advisory Council and Regional Water Management Group, which promotes collaborative, integrated management of water resources within San Luis Obispo County and provides policy recommendations to the County Board of Supervisors. In addition, the City participates in the Paso Robles Groundwater Basin Advisory Committee and the regional water conservation group *Partners in Water Conservation*.