

## MEMORANDUM

**TO: CITY COUNCIL**

**FROM: GEOFF ENGLISH, DIRECTOR OF PUBLIC WORKS**

**BY: SHANE TAYLOR, UTILITIES MANAGER**

**SUBJECT: MONTHLY WATER SUPPLY AND DEMAND UPDATE**

**DATE: MARCH 28, 2017**

### **RECOMMENDATION:**

It is recommended the City Council receive and review the monthly Water Supply and Demand Report.

### **IMPACT ON FINANCIAL AND PERSONNEL RESOURCES:**

The cost to provide the report is limited to staff time, which equates to approximately \$350.

### **BACKGROUND:**

The drought continues to impact the City's water supply and demand. As a result, the City Council declared a Stage 1 Water Shortage Emergency on May 26, 2015. This monthly update on the current supply and demand statistics will provide the Council with the data required to make decisions related to Emergency Water Shortage Restrictions and Regulations.

At the Zone 3 Advisory Board meeting on May 21, 2015, the Board recommended that the deliveries from the Water Treatment Plant be reduced by 10% starting April 1, 2015. This was in advance of the Lake reaching 15,000 AF of storage, which is the automatic reduction trigger. We are voluntarily reducing deliveries by 20% to keep lake supply above the 10,000 AF level, which mandates an automatic 20% reduction retroactive back to April 1, 2016.

In February the City's water use was 43% below February 2013. The reduction requirement imposed by the State Water Resources Control Board for Arroyo Grande is 28%.

### **ANALYSIS OF ISSUES:**

The drought has lessened to a level of abnormally dry; however, recent rainfall has provided 24.7" of rain since July 1, 2016 at the Corporation Yard gauge. Lopez Lake,

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MONTHLY WATER SUPPLY AND DEMAND UPDATE  
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as of March 15, 2017 is at 58% capacity (29,000 AF of storage). The Low Reservoir Level Response Plan (LRRP) is still enacted.

The Governor's Emergency Regulation will remain in effect for an additional 270 days starting February 8, 2017 or until the State Water Board finds that, "due to changed conditions it is no longer necessary for the regulation to remain in effect" which ever comes first.

Lopez Lake rose 11.5' from February 13, 2017 to March 15, 2017. A total of 29,000 AF is in storage. The Lopez supply for water year 2016/17, which began April 1, 2016, for Arroyo Grande is 2,998 AF, which includes 936 AF of carry-over water. Based on the projected water demand of 2,300 AF, we will meet the demand in water year 2016/17.

**ADVANTAGES:**

No advantages noted at this time.

**DISADVANTAGES:**

No disadvantages noted at this time.

**ALTERNATIVES:**

Not applicable at this time.

**ENVIRONMENTAL REVIEW:**

No environmental review is required for this item.

**PUBLIC NOTIFICATION AND COMMENTS:**

The Agenda was posted at City Hall and on the City's website in accordance with Government Code Section 54954.2.

**Attachments:**

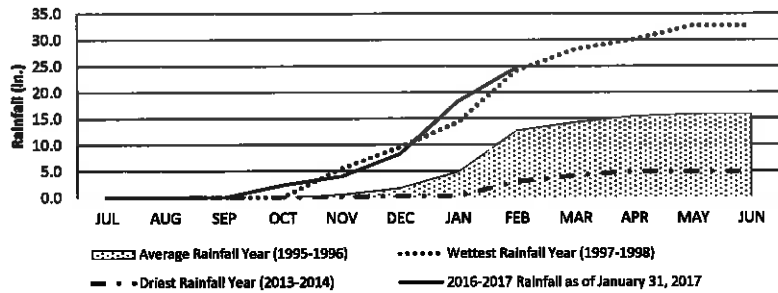
1. February 2017 Water Supply and Demand Charts
2. Lopez Reservoir Storage Projections
3. Zone 3 - Lopez Project - Monthly Operations Report

City of Arroyo Grande Water Supply and Demand Update-February 2017

Rainfall

Cumulative Rainfall from July 1, 2016 to February 28, 2017: 24.7 inches

Cumulative Rainfall



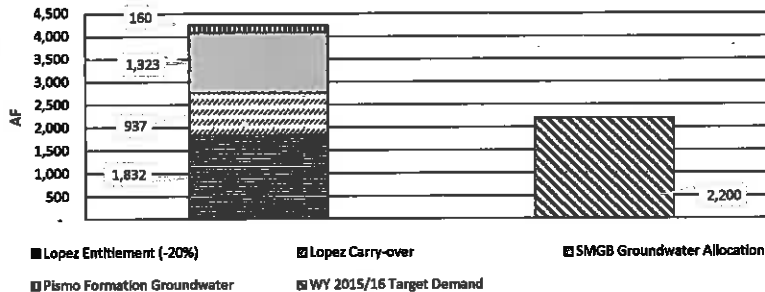
Note: Precipitation data from AG Corp Yard Station No. 177.1 from July 1966 - February 28, 2017.

Water Demand

	Total City Demand (AF)
February 2013	180
February 2017	103.2
% Difference from 2013	-43%
WY 2013/14 YTD	2,934.3
WY 2016/17 YTD	1,760.7
% Difference from WY 2013/14	-40%

Predicted Supply and Demand

WY 2016/17 Predicted Supply and Demand



Note: The Water Year (WY) for water demand is from April to March.

Water Supply

Lopez Lake

	Feb-17	WY 15/16 Year to Date	Remaining Allocated Supply
Lake Elevation (full at 522.37 ft)	494.94		
Storage (full at 49,200 AF)	27,863		
Storage - Percent Full	57%		
Status	Enacted		
Current Entitlement Reduction	10%		
Deliveries (AF)	103.22	1,528.38	1,240.22

Note: The Water Year (WY) for Lopez Lake is from April to March. The actual amount of storage in Lopez at the end of February 2017 was 27,953 AF; however, the storage amount and storage percentage above were adjusted to account for the 89.67 AF of stored State Water Project water in the lake.

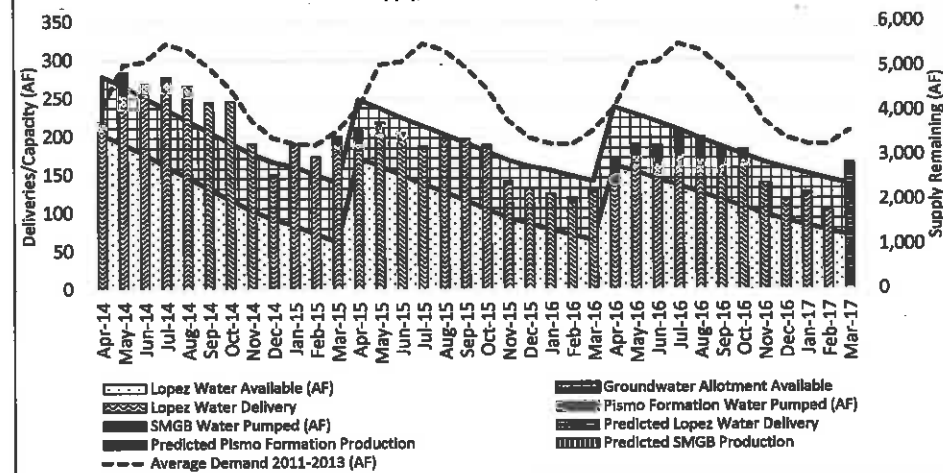
Groundwater

	Feb-17	Calendar Year to Date	Remaining Entitlement
SMGB Production (AF)	0.0	2.8	1,320.2
Pismo Formation Production (AF)	0.0	0.0	NA

City SMGB average well levels for February 2017 were four feet higher than February 2016.

Note: Groundwater entitlement and production data is based on the calendar year.

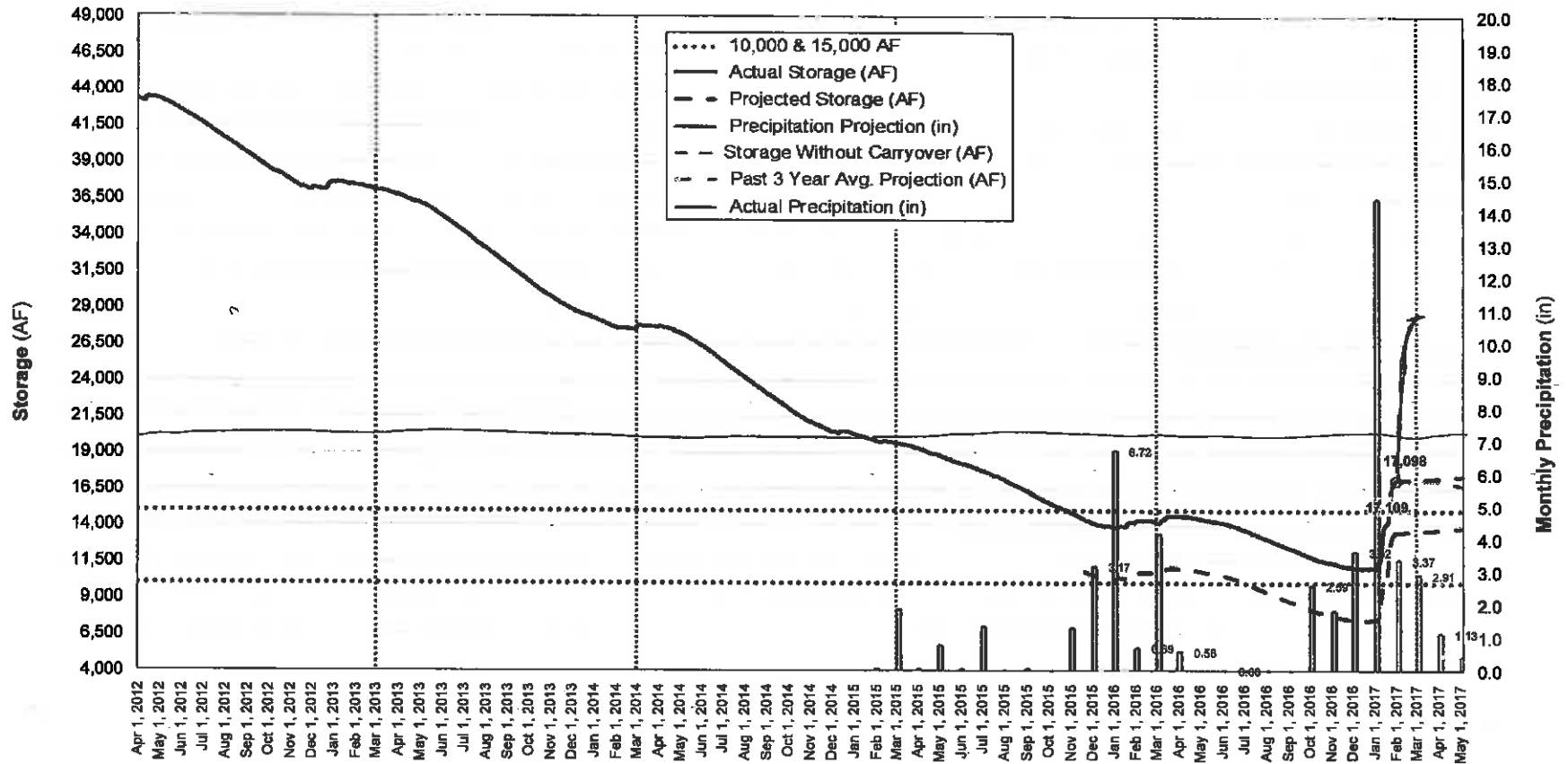
Water Supply, Demand and Delivery Chart



Note: These production forecasts contain preliminary estimates of water production and draft predictions of future production based on historical averages.

**Lopez Reservoir Storage Projections**  
(precipitation scenario source: www.LongRangeWeather.com)

Revised: 1/31/2017

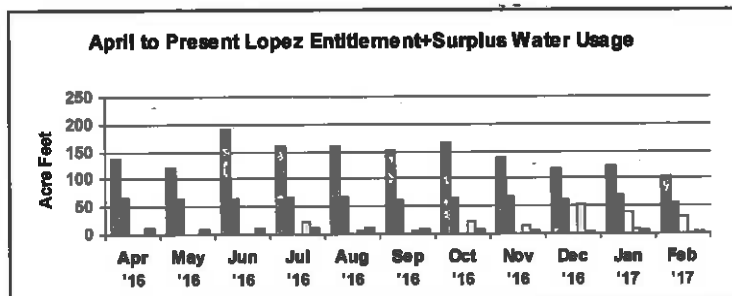


**Notes:**

- For "Dry Months" (April - October), projected increases and/or decreases in storage estimated to mimic conditions from 2015.
- For "Wet Months" (November - March), projected storage declines assume LRRP annual downstream release of 3,800 AFY and deliveries of 4,077 AFY.
- For "Wet Months", projected storage increases based on historic trends from actual storm data for the period of 12/1993 through 6/2011.
- Storage projection for "Wet Months" assume that unsaturated conditions exist.
- Rainfall projection provided by www.LongRangeWeather.com, and updated 2/1/2017. Evaporation included in storage projection.
- Past 3 Year Avg. Projection uses historic daily capacity changes averaged from 2014, 2015, 2016
- Actual precipitation is the total of the previous month.

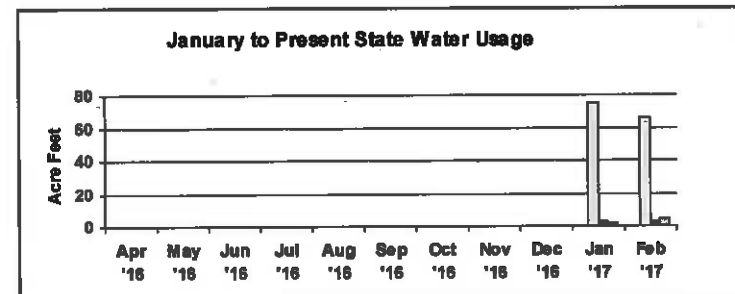
San Luis Obispo County Flood Control and Water District  
 Zone 3 - Lopez Project - Monthly Operations Report  
 February, 2017

Contractor	Lopez Water Deliveries											State Water Deliveries							Total Water Deliveries This Month				
	Entl.	Surplus	Total	This Month				April to Present				Annual Request	This Month			January to Present							
				Entitlement Usage	%	Surplus Usage	%	Entitlement Usage	%	Surplus Usage	%		Usage	%	SWP Deliveries	Change in Storage	Usage	% of Annual Request		SWP Deliveries			
Arroyo Grande	2061	936.60	2997.60	103.22	5.0%	0.00	0.0%	1569.93	76.2%	0.00	0.0%	1569.93	52.4%									103.22	
Oceano CSD	272.7	713.10	985.80	30.93	11.3%	0.00	0.0%	69.07	25.3%	0.00	0.0%	69.07	7.0%	0	0.00	0.0%							30.93
Grover Beach	720	307.90	1027.90	57.16	7.9%	0.00	0.0%	711.37	98.8%	0.00	0.0%	711.37	69.2%										57.16
Pismo Beach	802.8	1227.60	2030.40	0.00	0.0%	0.00	0.0%	129.37	16.1%	0.00	0.0%	129.37	6.4%	1240	66.11	5.3%							66.11
CSA 12	220.5	390.20	610.70	3.18	1.4%	0.00	0.0%	85.55	38.8%	0.00	0.0%	85.55	14.0%	69.96	3.03	4.3%							6.21
San Miguelito														110	5.01	4.6%							5.01
<b>Total</b>	<b>4077</b>	<b>3575.40</b>	<b>7652.40</b>	<b>194.49</b>	<b>4.8%</b>	<b>0.00</b>	<b>0.0%</b>	<b>2565.29</b>	<b>62.9%</b>	<b>0.00</b>	<b>0.0%</b>	<b>2565.29</b>	<b>33.5%</b>	<b>1419.96</b>	<b>74.15</b>	<b>5.2%</b>	<b>112</b>	<b>37.85</b>	<b>154.33</b>	<b>10.9%</b>	<b>244.00</b>	<b>268.64</b>	
														Last Month Stored State Water		51.82		This Month Stored State Water		89.67			



Note: Deliveries are in acre feet. One acre foot = 325, 850 gallons or 43, 560 cubic feet. Safe yield is 8,730 acre feet.

Lopez Dam Operations	This Month	Year to Date		
Lake Elevation (full at 522.37 feet)	494.94		Difference (feet)	-27.43
Storage (full at 49200 acre feet)	27953		% Full	56.8%
Rainfall	9.87	33.49		
Downstream Release (4200 acre feet/year)	171.24	2806.67		
Spillage (acre feet)	0	0.00		



\*Year to Date\* is January to present for State water, April to present for Lopez deliveries, and July to present for rainfall.

Comments: Reservoir is currently operated under the Low Reservoir Response Plan, therefore Entitlements shown represent a 10% reduction.

Surplus water shown is actually "Carry Over" water as designated in the LRRP and updated per BOS May 10, 2016 Declaration of Surplus.

1) Oceano supplied State Water to Canyon Crest via Arroyo Grande's Edna turn out. A total of 1.14 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 1.14 AF was subtracted from Arroyo Grande's usage this month.

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