

MEMORANDUM

TO: CITY COUNCIL

FROM: GEOFF ENGLISH, DIRECTOR OF PUBLIC WORKS

BY: SHANE TAYLOR, UTILITIES MANAGER

SUBJECT: MONTHLY WATER SUPPLY AND DEMAND UPDATE

DATE: APRIL 26, 2016

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 \$500.

BACKGROUND:

The severe 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.

ANALYSIS OF ISSUES:

The severe drought continues. We have received 13.3" of rain since July 1, 2015 at the Corporation Yard gauge. Lopez Lake is currently at 29.6% capacity (14,618 AF of storage). The Low Reservoir Level Response Plan (LRRP) has been enacted.

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.

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

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MONTHLY WATER SUPPLY AND DEMAND UPDATE
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Based on current use and weather patterns, Lopez Lake, as predicted, reached the 15,000 AF storage level around November 1, 2015. 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 in front of City Hall on Thursday, April 21, 2016. The Agenda and staff report were posted on the City's website on Friday, April 22, 2016.

Attachments:

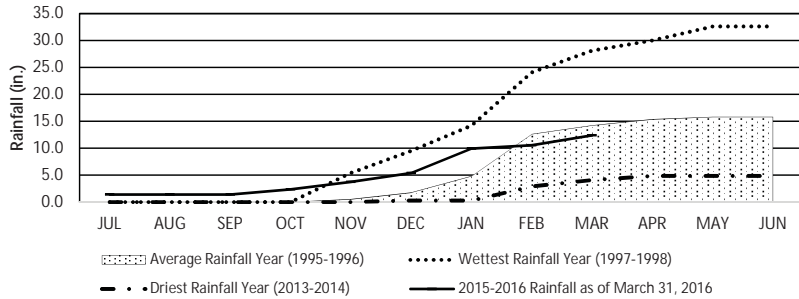
1. March 2016 Water Supply and Demand Charts
2. Lopez Reservoir Storage Projections
3. Zone 3 - Lopez Project - Monthly Operations Report

City of Arroyo Grande Water Supply and Demand Update-March 2016

Rainfall

Cumulative Rainfall from July 1, 2015 to March 31, 2016: 12.4 inches

Cumulative Rainfall



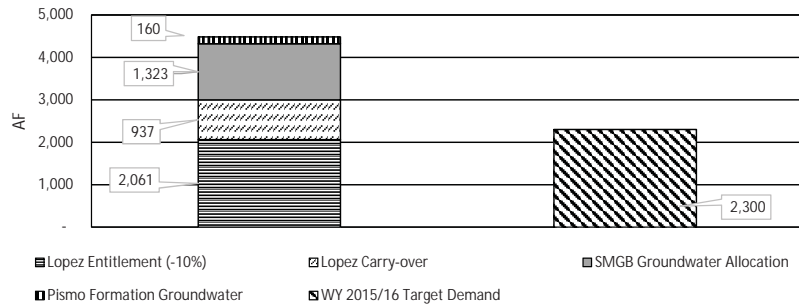
Note: Precipitation data from AG Corp Yard Station No. 177.1 from July 1966 - March 31, 2016.

Water Demand

	<u>Total City Demand (AF)</u>
March 2013	230.1
March 2016	131.7
% Difference from 2013	-43%
WY 2013/14 YTD	3,131.5
WY 2015/16 YTD	2,051.2
% Difference from WY 2013/14	-34%

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

	<u>Mar-16</u>	<u>WY 15/16 Year to Date</u>	<u>Remaining Allocated Supply</u>
Lake Elevation (full at 522.37 ft)	467.99		
Storage (full at 49,200 AF)	14,699.4		
Storage - Percent Full	30%		
Status	Enacted		
Current Entitlement Reduction	10%		
Deliveries (AF)	126.52	1,969.79	1,028.21

Note: The Water Year (WY) for Lopez Lake is from April to March. The actual amount of storage in Lopez at the end of March 2016 was 14,630 AF; however, the storage amount and storage percentage above were adjusted to account for the -69.98 AF of stored State Water Project water in the lake.

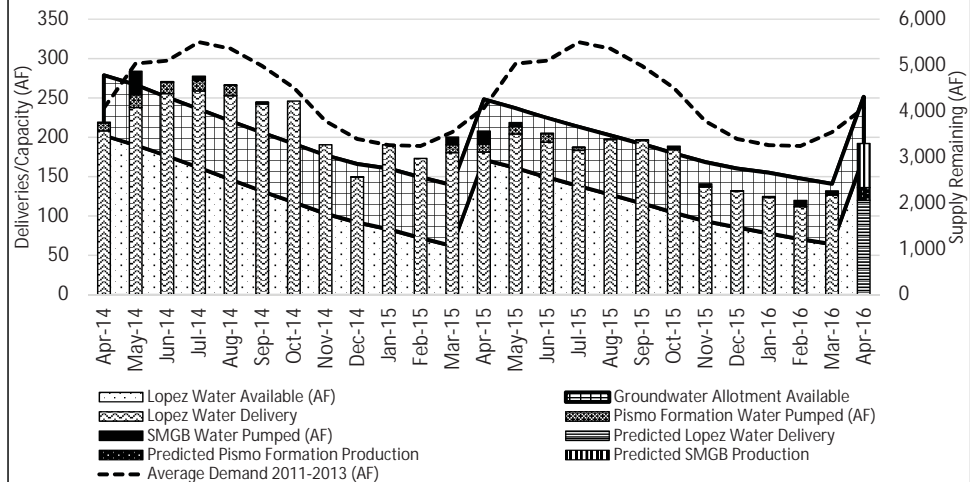
Groundwater

	<u>Mar-16</u>	<u>Calendar Year to Date</u>	<u>Remaining Entitlement</u>
SMGB Production (AF)	5.2	14.5	1,308.5
Pismo Formation Production (AF)	0.0	0.0	NA

City SMGB average well levels for March 2016 were the same as levels in March 2015.

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

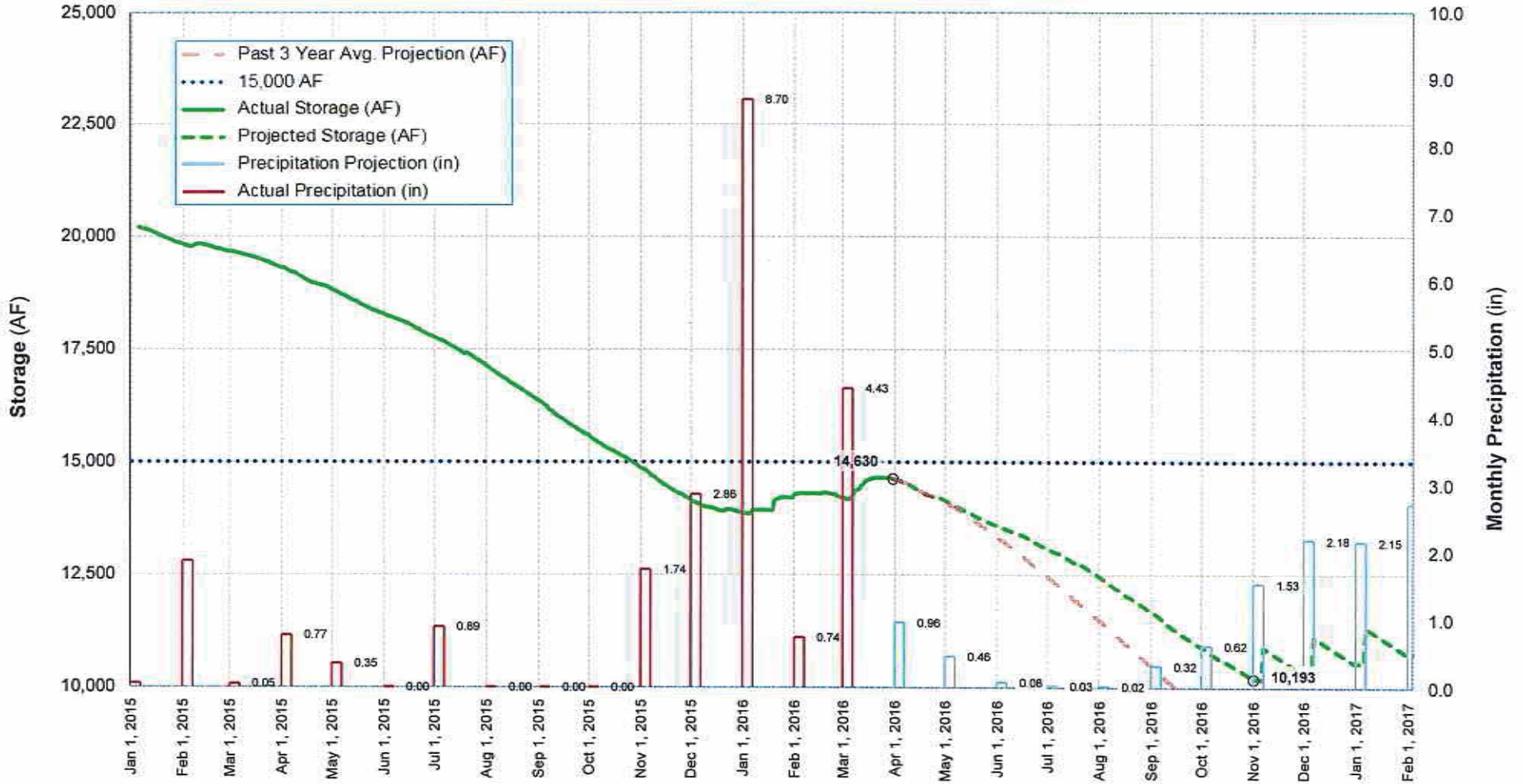
Water Supply, Demand and Delivery Chart



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: 3/31/2016

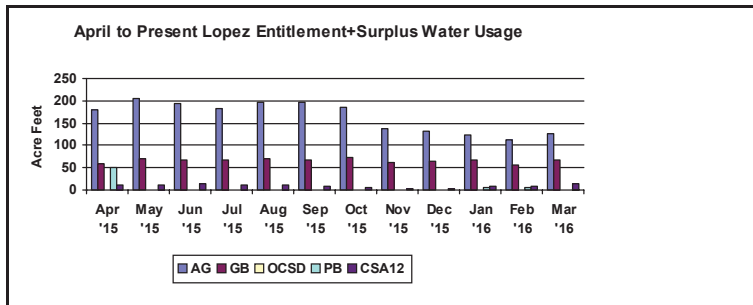


Notes:

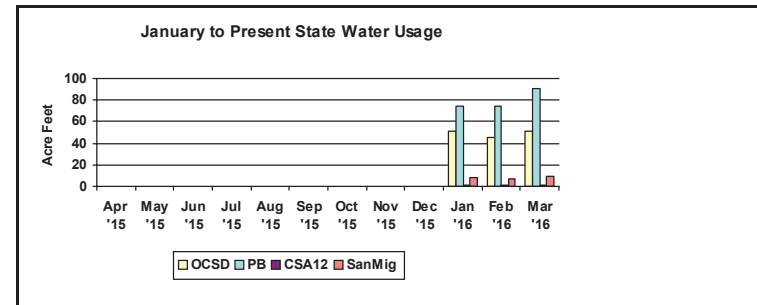
- For "Dry Months" (April - October), projected increases and/or decreases in storage estimated to mimic conditions from 2015.
- For "Wet Months" (November - March), projected storage declines assume annual downstream release of 4,200 AFY and deliveries of 4,530 AFY.
- For "Wet Months", projected storage 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.
- Monthly rainfall projections assumed to occur during the first week of each month.
- Rainfall projection provided by www.LongRangeWeather.com, and updated 3/31/2016. Evaporation included in storage projection.
- Past 3 Year Avg. Projection uses historic daily capacity changes averaged from 2013, 2014, 2015

San Luis Obispo County Flood Control and Water District
 Zone 3 - Lopez Project - Monthly Operations Report
 March, 2016

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		Surplus		Entitlement		Surplus			Usage	% of Annual Request	SWP Deliveries	Change in Storage	Usage	% of Annual Request		SWP Deliveries				
				Usage	%	Usage	%	Usage	%	Usage	%													
Arroyo Grand	2061	881.20	2942.20	126.52	6.1%	0.00	0.0%	1969.79	95.6%	0.00	0.0%	1969.79	66.9%	750	51.52	6.9%	147.91	19.7%	334.00	126.52				
Oceano CSD	272.7	459.00	731.70	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%							147.91	19.7%	51.52		
Grover Beach	720	393.60	1113.60	0.00	0.0%	67.14	17.1%	720.00	100.0%	72.64	18.5%	792.64	71.2%							67.14				
Pismo Beach	802.8	504.90	1307.70	0.00	0.0%	0.00	0.0%	59.57	7.4%	0.00	0.0%	59.57	4.6%							90.96	7.3%	240.96	19.4%	90.96
CSA 12	220.5	289.10	509.60	13.45	6.1%	0.00	0.0%	112.27	50.9%	0.00	0.0%	112.27	22.0%							2.69	4.7%	24.85	22.6%	14.48
San Miguelito														110	9.50	8.6%	24.85	22.6%	9.5					
Total	4077	2527.80	6604.80	139.97	3.4%	67.14	2.7%	2861.63	70.2%	72.64	2.9%	2934.27	44.4%	2157	153.01	7.1%	416.41	19.3%	334.00	360.12				
											Last Month Stored State Water			-50.97	This Month Stored State Water			-69.98						



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



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

Lopez Dam Operations	This Month	Year to Date	Difference (feet)	% Full
Lake Elevation (full at 522.37 feet)	467.99		-54.38	
Storage (full at 49200 acre feet)	14630			29.7%
Rainfall	4.49	18.44		
Downstream Release (4200 acre feet/year)	176.77	3839.02		
Spillage (acre feet)	0	0.00		

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.

1) Oceano supplied State Water to Canyon Crest via Arroyo Grande's Edna turn out. A total of 1.53 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 1.53 AF was subtracted from Arroyo Grande's usage this month.

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