

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 22, 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 10.6" of rain since July 1, 2015 at the Corporation Yard gauge. Lopez Lake is currently at 29% capacity (14,215 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 is in advance of the Lake reaching 15,000 AF of storage, which is the automatic reduction trigger.

In February the City's water use was 33% below February 2013. The reduction requirement imposed by the State Water Resources Control Board for Arroyo Grande is 28%.

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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 2015/16 for Arroyo Grande is 2,942 AF, which includes 883 AF of carry-over water. Based on the projected water demand of 2,300 AF, we expect to be able to meet the demand in water year 2015/16 with minimal groundwater pumping.

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, March 17, 2016. The Agenda and staff report were posted on the City's website on Friday, March 18, 2016.

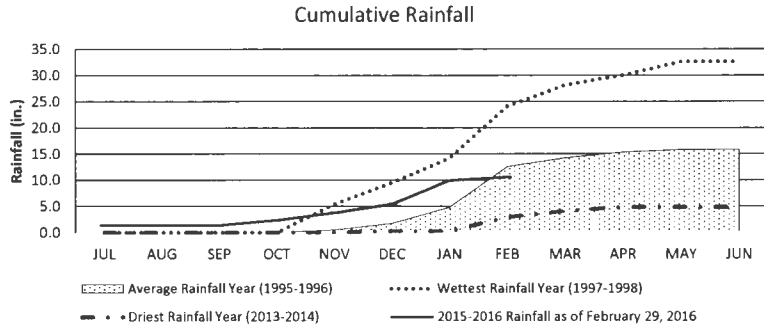
Attachments:

1. February 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-January 2016

Rainfall

Cumulative Rainfall from July 1, 2015 to February 29, 2016: 10.6 inches



Note: Precipitation data from AG Corp Yard Station No. 177.1 from July 1966 - February 29, 2016.

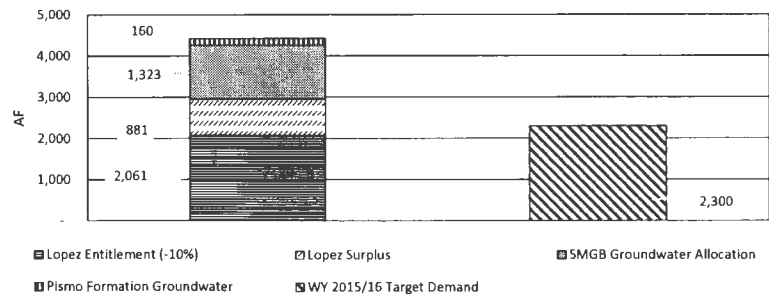
Water Demand

Total City Demand (AF)

February 2013	179.7
February 2016	119.8
% Difference from 2013	-33%
WY 2013/14 YTD	2,934.3
WY 2015/16 YTD	1,919.5
% Difference from WY 2013/14	-35%

Predicted Supply and Demand

WY 2015/16 Predicted Supply and Demand



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

Water Supply

Lopez Lake

	Feb-16	WY 15/16 Year to Date	Remaining Allocated Supply
Lake Elevation (full at 522.37 ft)	466.89		
Storage (full at 49,200 AF)	14,375.4		
Storage - Percent Full	29%		
Status	Enacted		
Current Entitlement Reduction	10%		
Deliveries (AF)	111.77	1,843.27	1,098.88

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 2016 was 14,215 AF; however, the storage amount and storage percentage above were adjusted to account for the -160.4 AF of stored State Water Project water in the lake.

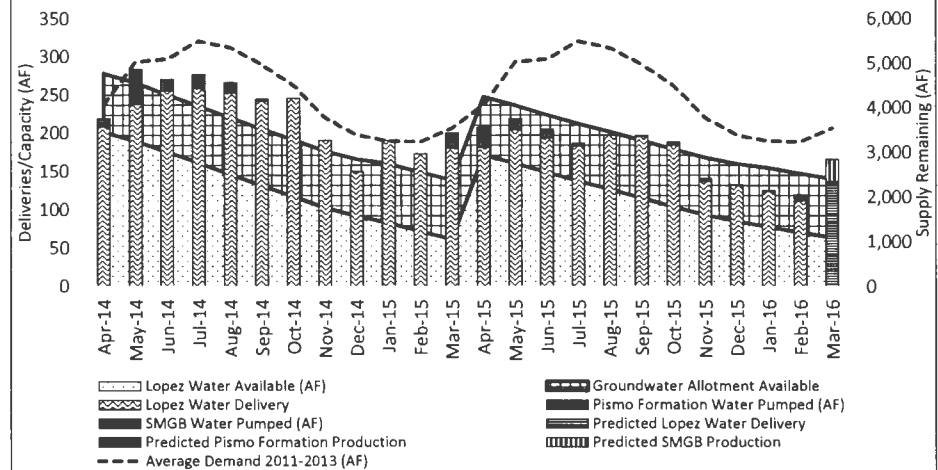
Groundwater

	Feb-16	Calendar Year to Date	Remaining Entitlement
SMGB Production (AF)	8.0	9.3	1,313.7
Pismo Formation Production (AF)	0.0	0.0	NA

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

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

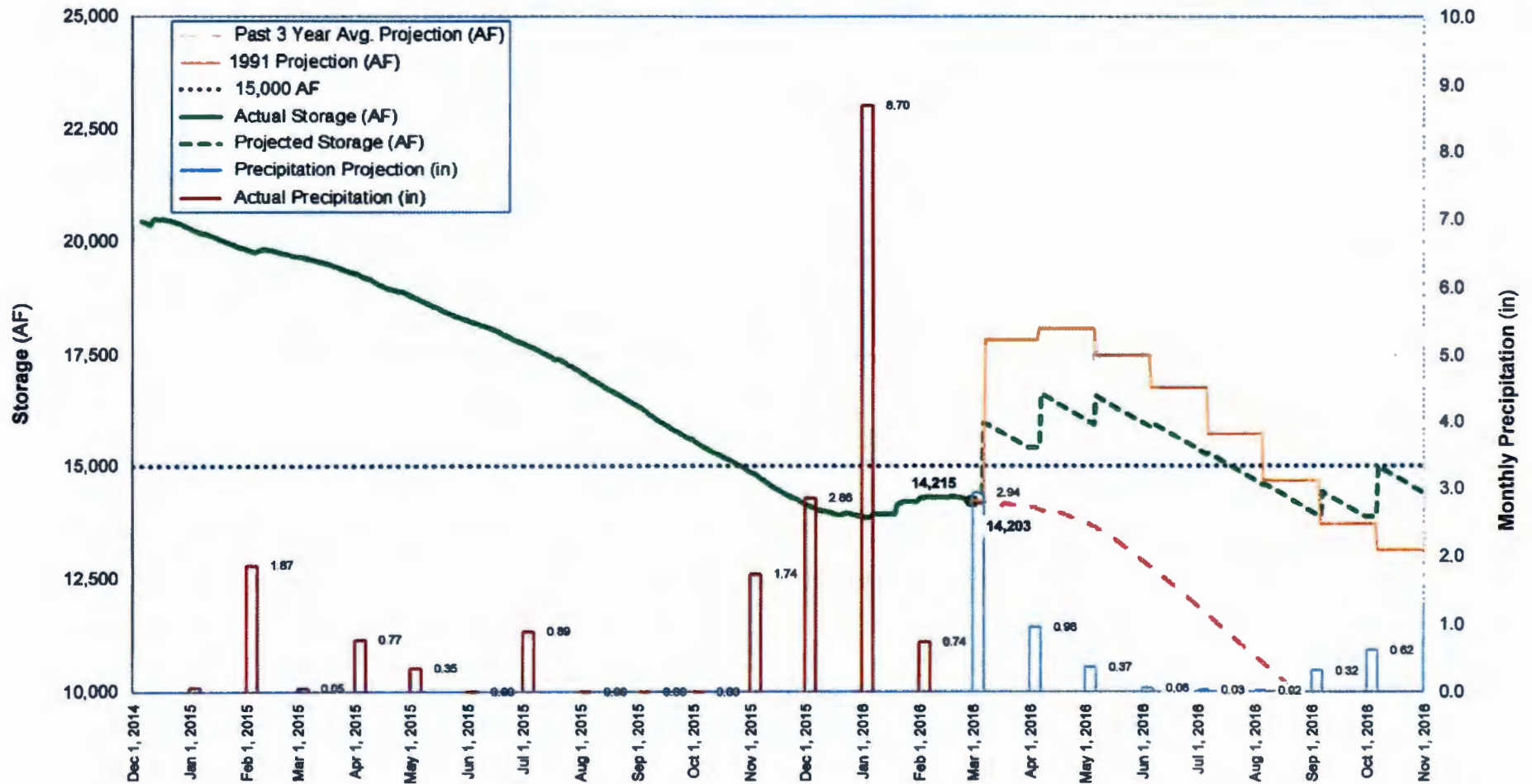
Water Supply, Demand and Delivery Chart



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: 2/29/2016

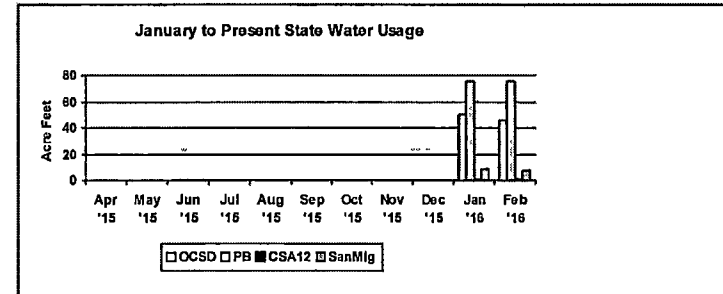
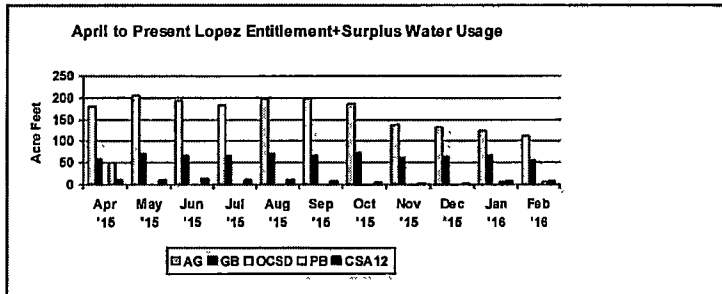


Notes:

- For "Dry Months" (May - October), projected increases and/or decreases in storage estimated to mimic 2013 conditions.
- For "Wet Months" (November - April), 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. Increases in storage delayed until March due to drought conditions delaying reservoir increase.
- Monthly rainfall projections assumed to occur during the first week of each month.
- Rainfall projection provided by www.LongRangeWeather.com, and updated 10/31/2015. Evaporation included in storage projection.
- 1991 Projection uses actual monthly storage changes, shown on 1st of month. 1991 had 26.33" of rain, 13.98" in March. 1989 and 1990 had 9.90" & 9.99" of rain respectively.
- Past 3 Year Avg. Projection uses historic daily capacity changes averaged from 2012, 2013, 2014

San Luis Obispo County Flood Control and Water District Zone 3 - Lopez Project - Monthly Operations Report February, 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					
				Usage	%	Usage	%	Usage	%	Usage	%		Usage	% of Annual Request	SWP Deliveries	Change in Storage	Usage		% of Annual Request	SWP Deliveries	
Arroyo Grand	2061	881.20	2942.20	111.77	5.4%	0.00	0.0%	1843.27	89.4%	0.00	0.0%	1843.27	62.6%	750	45.70	6.1%		96.39	12.9%		111.77
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%								45.7
Grover Beach	720	393.60	1113.60	51.16	7.1%	5.50	1.4%	720.00	100.0%	5.50	1.4%	725.50	65.1%								56.66
Pismo Beach	802.8	504.90	1307.70	4.64	0.6%	0.00	0.0%	59.57	7.4%	0.00	0.0%	59.57	4.6%	1240	75.00	6.0%		150.00	12.1%		79.64
CSA 12	220.5	289.10	509.60	8.48	3.8%	0.00	0.0%	98.82	44.8%	0.00	0.0%	98.82	19.4%	57	1.04	1.8%		1.66	2.9%		9.52
San Miguelito														110	7.39	6.7%		15.35	14.0%		7.39
Total	4077	2527.80	6604.80	176.05	4.3%	5.50	0.2%	2721.66	66.8%	5.50	0.2%	2727.16	41.3%	2157	129.13	6.0%		263.40	12.2%	103.00	310.68
														Last Month Stored State Water			This Month Stored State Water			-160.40	



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		
Lake Elevation (full at 522.37 feet)	466.89		Difference (feet)	-55.48
Storage (full at 49200 acre feet)	14215		% Full	28.9%
Rainfall	1.59	13.95		
Downstream Release (4200 acre feet/year)	164.49	3662.25		
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 1.45 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 1.45 AF was subtracted from Arroyo Grande's usage this month.

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