

MEMORANDUM

TO: CITY COUNCIL

FROM: GEOFF ENGLISH, DIRECTOR OF PUBLIC WORKS

BY: SHANE TAYLOR, UTILITIES MANAGER

SUBJECT: MONTHLY WATER SUPPLY AND DEMAND UPDATE

DATE: JANUARY 24, 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.

ANALYSIS OF ISSUES:

The drought continues, however, recent rainfall has provided 14.3" of rain since July 1, 2016 at the Corporation Yard gauge. Lopez Lake is currently at 26% capacity (13,104 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. 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.

**CITY COUNCIL
MONTHLY WATER SUPPLY AND DEMAND UPDATE
JANUARY 24, 2017
PAGE 2**

In December the City's water use was 48% below December 2013. The reduction requirement imposed by the State Water Resources Control Board for Arroyo Grande is 28%.

Lopez Lake rose 5.9' from January 4, 2017 to January 11, 2017. A total of 13,104 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.

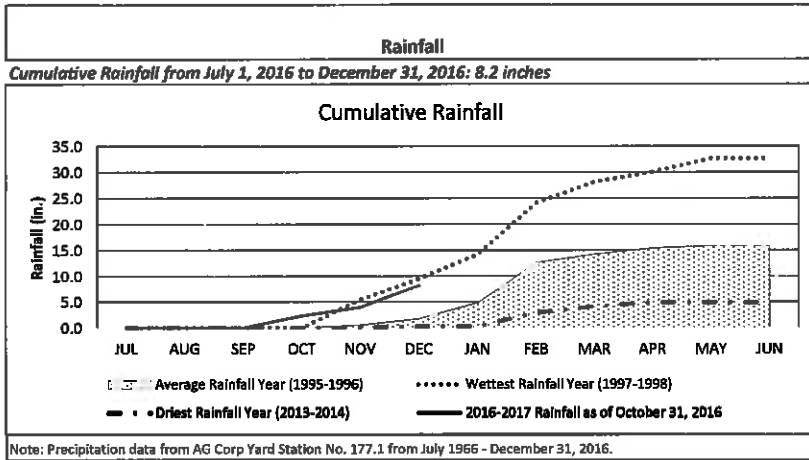
PUBLIC NOTIFICATION AND COMMENTS:

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

Attachments:

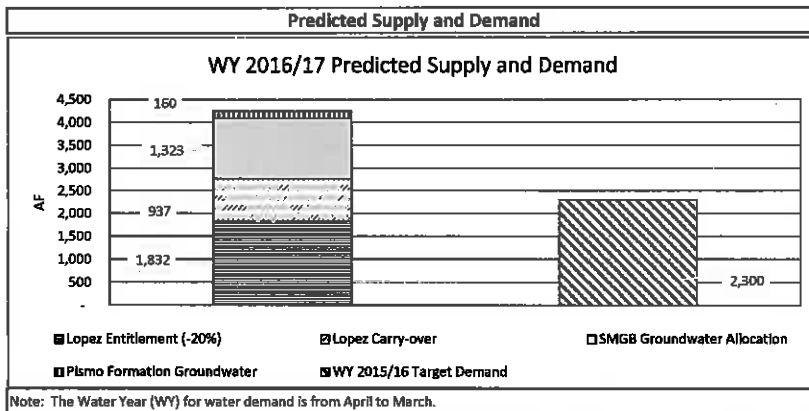
1. December 2016 Water Supply and Demand Charts
2. Lopez Reservoir Storage Projections
3. Zone 3 - Lopez Project - Monthly Operations Report

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



Water Demand

| | <i>Total City Demand (AF)</i> |
|------------------------------|-------------------------------|
| December 2013 | 226.5 |
| December 2016 | 116.6 |
| % Difference from 2013 | -49% |
| WY 2013/14 YTD | 2,148.7 |
| WY 2015/16 YTD | 1,530.5 |
| % Difference from WY 2013/14 | -29% |



Water Supply

Lopez Lake

| | <i>Dec-16</i> | <i>WY 15/16 Year to Date</i> | <i>Remaining Allocated Supply</i> |
|------------------------------------|---------------|------------------------------|-----------------------------------|
| Lake Elevation (full at 522.37 ft) | 457.89 | | |
| Storage (full at 49,200 AF) | 10,561 | | |
| Storage - Percent Full | 21% | | |
| Status | Enacted | | |
| Current Entitlement Reduction | 20% | | |
| Deliveries (AF) | 116.60 | 1,301.03 | 1,467.57 |

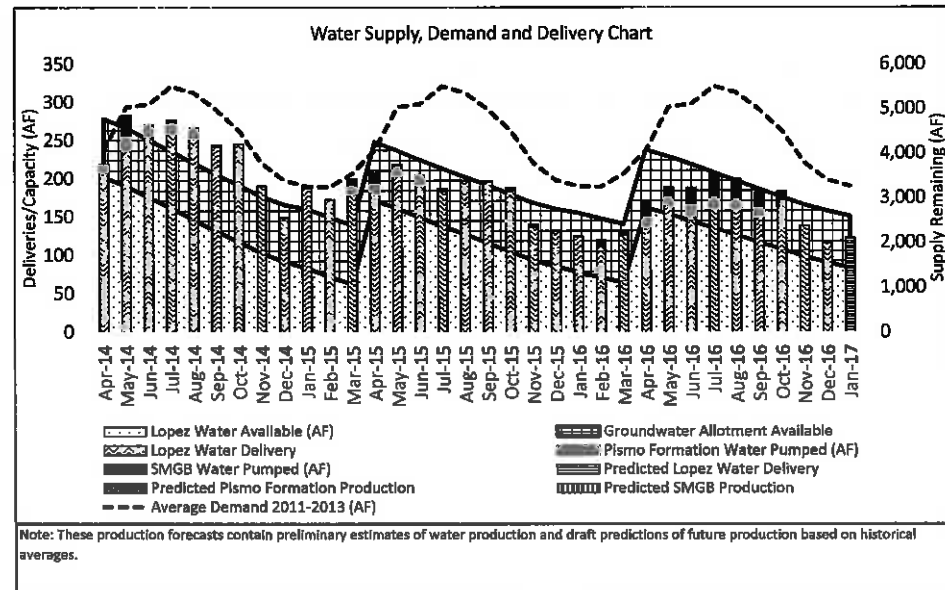
Note: The Water Year (WY) for Lopez Lake is from April to March. The actual amount of storage in Lopez at the end of December 2016 was 11,047 AF; however, the storage amount and storage percentage above were adjusted to account for the 485.93 AF of stored State Water Project water in the lake.

Groundwater

| | <i>Dec-16</i> | <i>Calendar Year to Date</i> | <i>Remaining Entitlement</i> |
|---------------------------------|---------------|------------------------------|------------------------------|
| SMGB Production (AF) | 0.0 | 165.0 | 1,158.0 |
| Pismo Formation Production (AF) | 0.0 | 79.0 | NA |

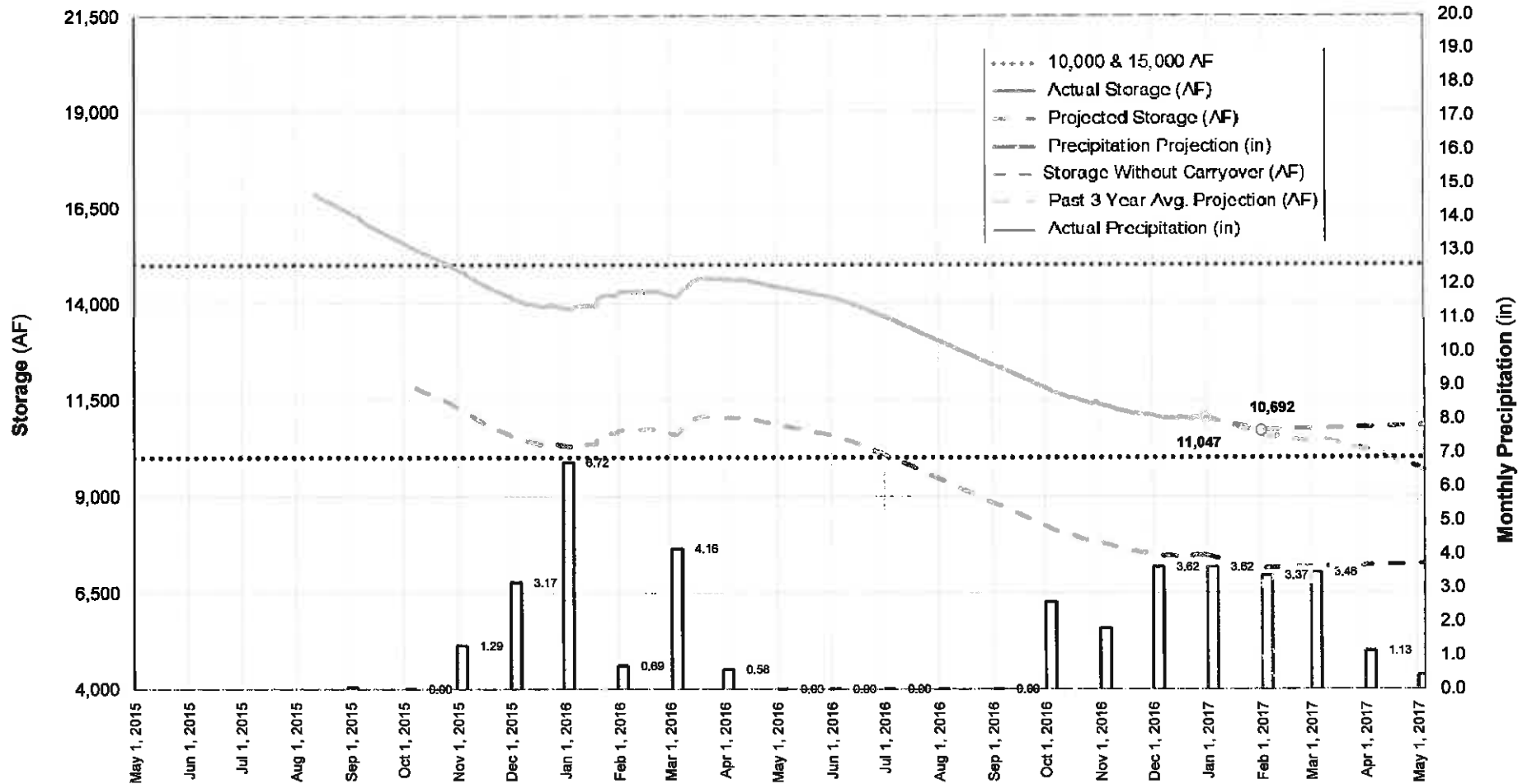
City SMGB average well levels for December 2016 were the same as December 2015.

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



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

Revised: 12/31/2016



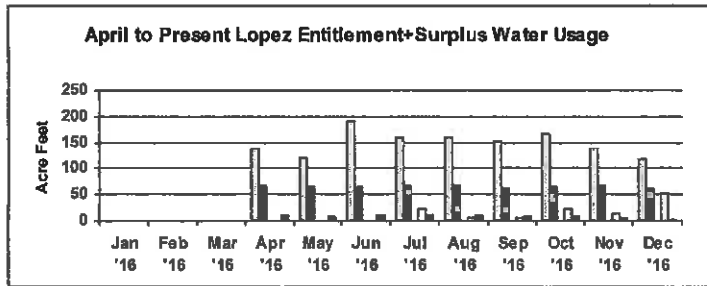
Notes:

- 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 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 10/31/2016. Evaporation included in storage projection.
- Past 3 Year Avg. Projection uses historic daily capacity changes averaged from 2013, 2014, 2015
- Actual precipitation is as of the 1st of the month

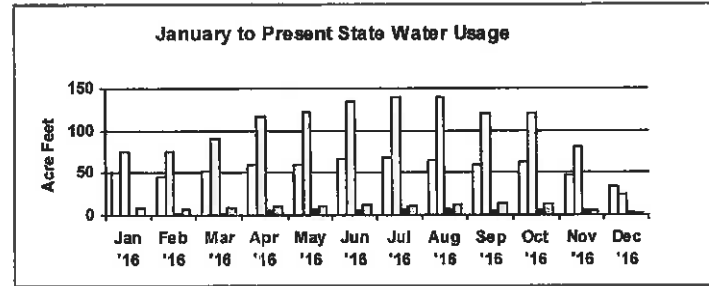
ATTACHMENT 3

San Luis Obispo County Flood Control and Water District
 Zone 3 - Lopez Project - Monthly Operations Report
 December, 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 Grande | 2061 | 936.60 | 2997.60 | 116.63 | 5.7% | 0.00 | 0.0% | 1342.58 | 65.1% | 0.00 | 0.0% | 1342.58 | 44.8% | 750 | 33.39 | 4.5% | 667.58 | 89.0% | 33.39 | |
| Oceano CSD | 272.7 | 713.10 | 985.80 | 0.00 | 0.0% | 0.00 | 0.0% | 0.00 | 0.0% | 0.00 | 0.0% | 0.00 | 0.0% | 1240 | 25.12 | 2.0% | 1240.00 | 100.0% | 60.81 | |
| Grover Beach | 720 | 307.90 | 1027.90 | 69.81 | 8.4% | 0.00 | 0.0% | 583.75 | 81.1% | 0.00 | 0.0% | 583.75 | 56.8% | 57 | 3.33 | 5.8% | 54.17 | 95.0% | 78.12 | |
| Pismo Beach | 802.8 | 1227.60 | 2030.40 | 53.00 | 6.6% | 0.00 | 0.0% | 121.55 | 15.1% | 0.00 | 0.0% | 121.55 | 6.0% | 110 | 2.55 | 2.3% | 116.75 | 106.1% | 7.32 | |
| CSA 12 | 220.5 | 390.20 | 610.70 | 3.99 | 1.8% | 0.00 | 0.0% | 78.03 | 35.4% | 0.00 | 0.0% | 78.03 | 12.8% | 2157 | 64.39 | 3.0% | 2078.50 | 96.4% | 2.55 | |
| San Miguelito | | | | | | | | | | | | | | | | | | | | |
| Total | 4077 | 3575.40 | 7652.40 | 234.43 | 5.8% | 0.00 | 0.0% | 2125.91 | 52.1% | 0.00 | 0.0% | 2125.91 | 27.8% | 404.32 | | | 2078.50 | 96.4% | 2552.00 | 298.82 |
| | | | | | | | | | | | | Last Month Stored State Water | 404.32 | | This Month Stored State Water | 485.93 | | | | |



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) | 457.89 | | Difference (feet) | -64.48 |
| Storage (full at 49200 acre feet) | 11047 | | % Full | 22.5% |
| Rainfall | 3.78 | 10.47 | | |
| Downstream Release (4200 acre feet/year) | 147.92 | 2499.17 | | |
| 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 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 1.22 AF delivered to Canyon Crest was added to Oceano's State Water usage this month and 1.22 AF was subtracted from Arroyo Grande's usage this month.

THIS PAGE INTENTIONALLY LEFT BLANK