MEMORANDUM

TO: CITY COUNCIL
FROM: GEOFF ENGLISH, DIRECTOR OF PUBLIC WORKS
BY: SHANE TAYLOR, UTILITIES MANAGER
SUBJECT: MONTHLY WATER SUPPLY AND DEMAND UPDATE
DATE: FEBRUARY 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 January the City’s water use was 27% below January 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 moderate; however, recent rainfall has provided 22.7” of rain since July 1, 2016 at the Corporation Yard gauge. Lopez Lake, as of
February 17, 2017 is at 46% capacity (23,000 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" whichever comes first.

Lopez Lake rose 20.4' from January 18, 2017 to February 17, 2017. 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. January 2017 Water Supply and Demand Charts
2. Lopez Reservoir Storage Projections
City of Arroyo Grande Water Supply and Demand Update-January 2017

Rainfall
Cumulative Rainfall from July 1, 2016 to January 31, 2017: 18.3 Inches

Cumulative Rainfall

<table>
<thead>
<tr>
<th>Rainfall (in)</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Average Rainfall Year (1995-1996)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Wettest Rainfall Year (1997-1998)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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</tr>
<tr>
<td>driest Rainfall Year (2013-2014)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2016-2017 Rainfall as of January 31, 2017</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

Note: Precipitation data from Ag Corps yard station No. 177.1 from July 1995 to January 31, 2017.

Water Demand
Total City Demand (AF)
<table>
<thead>
<tr>
<th>Month</th>
<th>Jan-13</th>
<th>Jan-16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>173</td>
<td>126.9</td>
</tr>
<tr>
<td>% Difference from 2013</td>
<td>-27%</td>
<td></td>
</tr>
<tr>
<td>WY 2013/14 YTD</td>
<td>2,339.2</td>
<td></td>
</tr>
<tr>
<td>WY 2015/16 YTD</td>
<td>1,657.5</td>
<td></td>
</tr>
<tr>
<td>% Difference from WY 2013/14</td>
<td>-29%</td>
<td></td>
</tr>
</tbody>
</table>

Water Supply

Lopez Lake

<table>
<thead>
<tr>
<th>Jan-17</th>
<th>WY 15/16 Year to Date</th>
<th>Remaining Allocated Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>474.19</td>
<td>1,425.16</td>
<td>1,343.44</td>
</tr>
</tbody>
</table>

Note: The Water Year (WY) for Lopez Lake is from April to March. The actual amount of storage in Lopez at the end of January 2017 was 17,109 AF; however, the amount used and storage percentage above were adjusted to account for the 150 AF of stored State Water Project water in the lake.

Groundwater

SMGGB Production (AF)
<table>
<thead>
<tr>
<th>Jan-17</th>
<th>Calendar Year to Date</th>
<th>Remaining Entitlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8</td>
<td>2.8</td>
<td>1,320.2</td>
</tr>
<tr>
<td>Pismo Formation Production (AF)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

City SMGGB average well levels for January 2017 were two feet higher than January 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 with some adjustments, and future production should be based on the historical average.

Updated: 2/10/2017
Lopez Reservoir Storage Projections
(precipitation scenario source: www.LongRangeWeather.com)

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 3,600 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 8/2011.
- Storage projection for "Wet Months" assume that unsaturated conditions exist.
- Past 3 Year Avg. Projection uses historic daily capacity changes averaged from 2014, 2015, 2016
- Actual precipitation is the total of the previous month.
## Lopez Water Deliveries

<table>
<thead>
<tr>
<th>Contractor</th>
<th>Entitlement This Month</th>
<th>April to Present</th>
<th>State Water Deliveries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Usage %</td>
<td>Surplus</td>
<td>Usage %</td>
</tr>
<tr>
<td>Arroyo Grande</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>Ocean CSD</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>Grover Beach</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>Pismo Beach</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>CSA 12</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>San Miguelito</td>
<td>38.3%</td>
<td>287.70</td>
<td>48.9%</td>
</tr>
<tr>
<td>Total</td>
<td>7758.00</td>
<td>5752.00</td>
<td>56.2%</td>
</tr>
</tbody>
</table>

**April to Present Lopez Entitlement+Surplus Water Usage**

*Note: Deliveries are in acre feet. One acre foot = 325,850 gallons or 43,560 cubic feet. Safe yield is 8,720 acre feet.*

**January to Present State Water Usage**

*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

- **Lake Elevation (Full at 522.37 feet):** 522.19
- **Storage:** 171.09
- **Rainfall:** 13.15

### Comments:

- Reservoir is currently operated under the Low Reservoir Response Plan, therefore entitlements shown represent a 10% reduction.
- Surplus water shown is actual "Carry Over" water as designated in the LRRP and updated per BC8 May 15, 2019 Declaration of Surplus.
- 1) Ocean supplied State Water to Canyon Crest via Arroyo Grande's Edna turn out. A total of 1.32 AF delivered to Canyon Crest was added to Ocean's State Water usage this month and 1.32 AF was subtracted from Arroyo Grande's usage this month.

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**Data entered by:** D. Spiegel  
**Report printed by:** Admin  
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