MEETING OF THE WATER RESOURCES COMMITTEE
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BLVD., LAKEWOOD, CA. 90712
9:30 AM, TUESDAY, DECEMBER 18, 2018

AGENDA

Each item on the agenda, no matter how described, shall be deemed to include any appropriate motion, whether to adopt a minute motion, resolution, payment of any bill, approval of any matter or action, or any other action. Items listed as "For information" or "For discussion" may also be the subject of an "action" taken by the Board or a Committee at the same meeting.

1. DETERMINATION OF A QUORUM

2. PUBLIC COMMENT
   Pursuant to Government Code Section 54954.3

3. REGIONAL BRACKISH WATER RECLAMATION PROGRAM FEASIBILITY STUDY UPDATE
   Staff Recommendation: This item is for information only.

4. OPERATIONS UPDATE
   Staff Recommendation: The Water Resources Committee receive and file the report.

5. GROUNDWATER BASIN UPDATE
   Staff Recommendation: The Water Resources Committee receive and file the report.

6. DIRECTORS REPORTS, INQUIRIES, AND FOLLOW-UP OF DIRECTIONS TO STAFF

7. ADJOURNMENT
   The Water Resources Committee will adjourn to the next regular meeting.

Agenda posted on 12/15/2018. In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the meeting, please contact Brandon Mims, Board Deputy Secretary at (562) 921-5521 for assistance to enable the District to make reasonable accommodations. All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712. Agendas and minutes are available at the District’s website, www.wrd.org. EXHAUSTION OF ADMINISTRATIVE REMEDIES – If you challenge a District action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Deputy Secretary at, or prior to, the public hearing. Any written correspondence delivered to the District office before the District’s final action on a matter will become a part of the administrative record.
MEMORANDUM
ITEM NO. 3

DATE: DECEMBER 18, 2018

TO: WATER RESOURCES COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: REGIONAL BRACKISH WATER RECLAMATION PROGRAM FEASIBILITY STUDY UPDATE

SUMMARY
Staff will provide a verbal update for this item.

FISCAL IMPACT
None

STAFF RECOMMENDATION
This item is for information only.
MEMORANDUM
ITEM NO. 4

DATE: DECEMBER 18, 2018

TO: WATER RESOURCES COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: OPERATIONS UPDATE

SUMMARY

The intent of the Operations Update staff report/agenda item is to inform and update members of the Water Resources Committee on a regular and reoccurring basis about operational matters, technical issues, engineering plans, and various multi-agency strategies in regards to all of the District’s current and planned operational facilities.

Terminal Island Water Reclamation Plant (TIWRP) / Dominguez Gap Barrier Project (DGBP) Update

Highlights from the TIWRP / DGBP include the following:

• LASAN was unable to deliver recycled water due to issues the AOP Unit. LASAN is continuing to work with the manufacturer on resolving this and resumed production in November following a short-term fix.
• LASAN will be doing further optimization that will bring TIWRP to a long term solution. There will be short periods (a couple of days here and there) over the next few months where their consultant will do follow-up testing and would need to stop delivery at these times.

Torrance Desalter Update

Highlights from the Torrance Desalter include the following:

• Production averaged 56 million gallons for the month of October, with a plant on-line factor of 93%. Two shutdowns were experienced – one for chemical
cleaning of the reverse osmosis (RO) membranes and the second associated with a communication failure in the plant’s product water sump.

- After increasing RO train production last month to 2.2 million gallons per day, train performance has continued to remain fairly stable. Chemical cleanings are still on the targeted trajectory of quarterly (for full chemical cleaning) and monthly for the high pH caustic cleanings.
- The City of Torrance is currently scheduling the removal and repair work for the high pressure pump on RO Train #1.
- WRD staff continues to collect information on all assets at the Torrance Desalter to build the database for implementation a Computerized Maintenance Management System (CMMS).

Leo J. Vander Lans Facility (LVL) Update

Highlights from the LVL facility include the following:

- Execution of the Emergency Resolution on 11/07/18 has enabled staff to begin work to address leaking chemical lines at the Facility. Work is scheduled to begin on 11/15/18.
- Staff from the Long Beach Water Department (LBWD) and WRD continue to meet on a weekly basis to review and address other action items for correction in preparation for a plant restart.
  - Engineering review (via the District’s on-call engineering support pool) of the fiberglass (i.e., FRP) platform surrounding the RO cleaning tanks has been completed and the final report will be sent to WRD.
  - Through the on-call engineering support pool, contracts were awarded to address two issues at the Facility: the chemical conveyance system and upsizing of the bulk storage for calcium chloride.
- Computerized Maintenance Management System (CMMS) continues to be utilized with oversight and support from WRD staff. To date, 388 electronic work orders (for maintenance-related issues) have been entered and/or processed through the system (vs. 311 reported last month).
  - Staff kicked off a project (10/26/18) to conduct a comprehensive condition assessment (CA) of all assets at the Facility, based on training and guidelines provided by the District’s asset management advisor. This information will be used to assist Operations in developing an asset replacement strategy.
  - During the month of October 2018, 538.1 acre-feet (AF) of imported water from the LB07A connection was used to satisfy the barrier demand (vs. 627 AF the previous month).
    - Current barrier injection is approximately 5.32 mgd of imported water.

FISCAL IMPACT

None
STAFF RECOMMENDATION

The Water Resources Committee receive and file the report.
DATE: DECEMBER 18, 2018

TO: WATER RESOURCES COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: GROUNDWATER BASIN UPDATE

SUMMARY
Staff report is attached.

FISCAL IMPACT
None

STAFF RECOMMENDATION
The Water Resources Committee receive and file the report.
DATE: DECEMBER 18, 2018
TO: WATER RESOURCES COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: GROUNDWATER BASIN UPDATE

GROUNDWATER BASINS AT A GLANCE *

Precipitation % of Normal to Date
Oct. 1 - Dec. 10

GW Basin Operating Range

Minimum Quantity (0 AF)
Optimum Quantity (288K AF)

Basin Pumping (Q)
July - Oct.

AF
240,000
220,000
200,000
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0

FY17-18
FY18-19
Central Basin
West Coast Basin

Groundwater Levels - Key Wells

WRD Recharge - WY 2018-19

Spreading Grounds
Injection Barriers

* - Preliminary numbers, subject to change.
SUMMARY

Staff monitors groundwater conditions in its service area throughout the year. A summary of the latest information is presented below.

Precipitation (Oct 1 – Dec 10)
The WRD precipitation index reports that for the 2018-19 Water Year, there has been 4.37 inches of rainfall. The normal rainfall for this time period is 2.31 inches, so the District is 189% of normal. As of November 27, 2018, the U.S. Drought Monitor is reporting 100% of the State is abnormally dry, 84% is under drought conditions, 18% of the State is under severe drought conditions including most of Los Angeles County, and 4% of the State is under extreme drought (in portions of Santa Barbara, Ventura, Los Angeles, and Imperial Counties).

Snowpack (Snow Water Content [SWE] as of December 4, 2018)
In 1929, the State established the California Cooperative Snow Surveys Program with the California Department of Water Resources as the coordinator. Today, over 50 state, national, and private agencies collaborate in collecting snow data from over 300 snow courses with more than 60 of the course being the original courses established in the early 1900’s. The average snow course is 1,000 feet long and consist of about 10 sample points. Anywhere from two to six courses are measured per day depending on weather and access method.

The snow survey is completed using a snow sampling tube equipped with a cutter on the end that is driven through the snow measuring the depth and obtaining a snow core. The snow core is then weighed and the snow water content (or snow water equivalent) calculated. The surveys are completed throughout the winter by returning to the same sample points throughout the season to observe the changing conditions. From February through May the data is used by the State to forecast snow melt runoff. Many snow courses are only measured on or around April 1st, and since it is presumed that the snow accumulates up to April 1st and melts thereafter, April 1st is the benchmark for historic data comparisons.

Snow Water Equivalent (SWE):
Northern Sierra Nevada – 4.1 inches, 77% of normal to date and 14% of April 1st average
Central Sierra Nevada – 6.4 inches, 111% of normal to date and 21% of April 1st average
Southern Sierra Nevada – 5.8 inches, 139% of normal to date and 22% of April 1st average
Statewide – 5.5 inches, 106% of normal to date and 19% of April 1st average
Reservoirs (as of December 3, 2018)

For all 16 reservoirs reported monthly to the committee, water levels have lowered in 12 reservoirs compared to levels recorded in the previous month. The largest decrease (-0.36 million acre feet) occurred at Lake Powell. The smallest decrease (<0.01 million acre feet) occurred at Trinity Lake, Lake McCure, Castaic Lake, and Diamond Valley Lake. Water levels rose at Lake Shasta (0.03 million acre feet), the New Melones Reservoir (0.02 million acre feet), Millerton Lake (0.01 million acre feet), Pine Flat Reservoir (0.03), Lake Perris (0.01 million acre feet), Lake Silverwood (0.01 million acre feet), and Lake Mead (0.01 million acre feet).

These 16 reservoirs are at 44% capacity (32.02 million acre feet) which is down 1% from the prior month (-0.04 million acre feet State Water Project [SWP] and -0.36 million acre feet Colorado River Aqueduct [CRA]). The largest contributing factor to the change in reservoir storage is Lake Oroville (SWP) due to new operational guidelines and Lake Powel (CRA) due to lower river flows as a result of the ongoing drought in the Pacific Southwest.

Storage in Million Acre Feet

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Capacity</th>
<th>Storage</th>
<th>% Full</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trinity Lake</td>
<td>2.45</td>
<td>1.45</td>
<td>59%</td>
<td>0.00</td>
</tr>
<tr>
<td>Lake Shasta</td>
<td>4.55</td>
<td>2.18</td>
<td>48%</td>
<td>0.03</td>
</tr>
<tr>
<td>Lake Oroville</td>
<td>3.54</td>
<td>1.02</td>
<td>29%</td>
<td>-0.10</td>
</tr>
<tr>
<td>Folsom Lake</td>
<td>0.98</td>
<td>0.33</td>
<td>34%</td>
<td>-0.04</td>
</tr>
<tr>
<td>New Melones</td>
<td>2.40</td>
<td>1.77</td>
<td>74%</td>
<td>0.02</td>
</tr>
<tr>
<td>Don Pedro</td>
<td>2.03</td>
<td>1.41</td>
<td>70%</td>
<td>0.02</td>
</tr>
<tr>
<td>Lake McClure</td>
<td>1.02</td>
<td>0.56</td>
<td>55%</td>
<td>0.00</td>
</tr>
<tr>
<td>San Luis</td>
<td>2.04</td>
<td>1.20</td>
<td>59%</td>
<td>-0.02</td>
</tr>
<tr>
<td>Millerton Lake</td>
<td>0.52</td>
<td>0.30</td>
<td>57%</td>
<td>0.01</td>
</tr>
<tr>
<td>Pine Flat</td>
<td>1.00</td>
<td>0.28</td>
<td>28%</td>
<td>0.03</td>
</tr>
<tr>
<td>Castaic Lake</td>
<td>0.33</td>
<td>0.26</td>
<td>80%</td>
<td>0.00</td>
</tr>
<tr>
<td>Lake Perris</td>
<td>0.13</td>
<td>0.11</td>
<td>87%</td>
<td>0.01</td>
</tr>
<tr>
<td>Silverwood</td>
<td>0.08</td>
<td>0.07</td>
<td>88%</td>
<td>0.01</td>
</tr>
</tbody>
</table>

MWD Reservoirs (CRA)

Storage in Million Acre Feet

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Capacity</th>
<th>Storage</th>
<th>% Full</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powell</td>
<td>24.30</td>
<td>10.48</td>
<td>43%</td>
<td>-0.36</td>
</tr>
<tr>
<td>Mead</td>
<td>26.12</td>
<td>9.88</td>
<td>38%</td>
<td>0.01</td>
</tr>
<tr>
<td>DVL</td>
<td>0.81</td>
<td>0.70</td>
<td>87%</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Black Text - Decrease or no change in storage since the last report.
Green Text - Increase in storage since the last report.

Lake Oroville 2018
Lake Powell 2018
Groundwater Levels (through December 8, 2018)

Groundwater levels in key monitoring wells are shown in the hydrographs below.

**Central Basin Key Well 1601T**
- Since last report: Decreased 0.3 foot
- Since same time the previous year: Decreased 13.6 feet

**Central Basin Key Well Long Beach #6_4**
- Since last report: Decreased 1.1 feet
- Since same time the previous year: Decreased 16.1 feet

**West Coast Basin Key Well Lawndale #1_4**
- Since last report: Unchanged
- Since same time the previous year: Increased 5.3 feet

**West Coast Basin Key Well Carson #1_2**
- Since last report: Decreased 1.1 feet
- Since same time the previous year: Increased 7.1 feet

Central Basin Key Well Long Beach #6 and West Coast Basin Key Wells Lawndale #1 & Carson #1 are in a confined aquifer and do not respond readily to rainfall but instead to changes in pumping patterns and barrier recharge.

Central Basin Key Well 1601T is between the two spreading grounds and rises rapidly with rainfall and replenishment but falls sharply during dry spells and lack of replenishment.
Optimum and Minimum Groundwater Quantity

In response to a 2002 State audit of the District’s activities, the Board of Directors adopted an Optimum and Minimum Quantity for groundwater in the District to define an appropriate operating range that would sustain adjudicated pumping rights, leave room for future storage projects, and identify a lower limit. The amounts are based on the accumulated overdraft concept, which the District tracks year by year based on changes in groundwater storage.

After an extensive review of over 70 years of water level fluctuations and discussions with the Board and pumping community, Water Year 1999/2000 was recognized as a representative year for the Optimum Quantity, which equated to an accumulated overdraft of approximately 612,000 acre-feet. The Minimum Quantity was defined as an accumulated overdraft of 900,000 acre-feet, which allowed an operating range from 0 acre-feet (minimum) to 288,000 acre-feet (optimum). The Board also adopted a policy to make-up the groundwater deficit should the accumulated overdraft fall too far below the Optimum Quantity.

The Accumulated Overdraft at the end of October 2018 has been estimated at 832,500 acre-feet (subject to change), or 67,500 acre-feet above the Minimum Quantity.

Montebello Forebay Spreading Grounds (October 2018)
The following Chart shows the preliminary spreading grounds replenishment water:
The District budgeted for 8,000 acre-feet of imported water for replenishment in Fiscal Year 2018-19 which is currently pending ordering and delivery.

Preliminary numbers for the 2018-19 Water Year show that 3,451 acre-feet of recycled water has been recharged, which is below the year to date target amount of 4,648 acre-feet. The 120-month running average of recycled water contribution in the Montebello Forebay is 39.2% and the regulatory maximum is 45%, with additional studies and monitoring being required once 40% is reached.

Local water (stormwater plus dry weather urban runoff) is captured by the Los Angeles County Department of Public Works (LACDPW) at the spreading grounds for recharge. Local water amounts are determined as the sum of the total waters conserved at the spreading grounds less the imported and recycled water deliveries. For the first month of the 2018-19 Water Year, 622 acre-feet of local water capture has been reported by the LACDPW which is below the year to date target amount of 1,680 acre-feet.

During the California-Nevada Drought Early Warning System (CA-NV DEWS), November 2018, Drought & Climate Outlook Webinar it was suggested that conditions are favorable for the development of an El Niño this year. Equatorial sea surface temperatures are above average across most of the Pacific Ocean but a warm northern Pacific creates some uncertainty as to what will form since this scenario has not been observed in the recent past. However, it is being predicated that there is an 80% chance of an El Niño developing and continue through the Northern Hemisphere in winter 2018-19 and as the season progresses into spring the chance of an El Niño decreases to 55-60%.
Seawater Barrier Well Injection and Replenishment (October 2018)

The following Chart shows the barrier water injection:

Preliminary numbers for the 2018-19 Water Year show that the West Coast Barrier used 330 acre-feet of imported water and 931 acre-feet of recycled water, or 74% recycled water. The Dominguez Gap Barrier used 597 acre-feet of imported water and 0 acre-feet of recycled water, or 0% recycled water. The Alamitos Barrier, on the WRD side, used an estimated 337 acre-feet of imported water and 0 acre-feet of recycled water, or 0% recycled water.

Pumping (October 2018* and Fiscal Year to Date)

Preliminary numbers for groundwater production in the District for the 2018-19 Water Year indicate that 17,866 acre-feet were pumped compared to 19,374 acre-feet the year previous, or a decrease of 1,508 acre-feet (-7.8%). In the Central Basin, pumping was 1,144 acre-feet lower than the previous water year (-6.9%) and the West Coast Basin pumping was down 364 acre-feet from the previous water year (-13.3%). The Chart below shows Water Year 2018-19 pumping versus Water Year 2017-18.

Preliminary numbers for groundwater production in the District for the Fiscal Year 2018-19 (July 2018 – June 2019) indicate pumping in the Central Basin was up 118 acre-feet from the same time of the previous fiscal year (0.2%) and the West Coast Basin pumping was 2,127 acre-feet lower than the previous fiscal year (-18.1%). The total pumping is 77,179 acre-feet compared to 79,188 acre-feet during the same time the previous year for a decrease of
2,009 acre-feet, or -2.5%. The current pumping data do not include six Central Basin pumpers and one West Coast Basin pumpers totaling an estimated 28 additional acre-feet.

FISCAL IMPACT

None.

STAFF RECOMMENDATION

The Water Resources Committee receive and file the report.