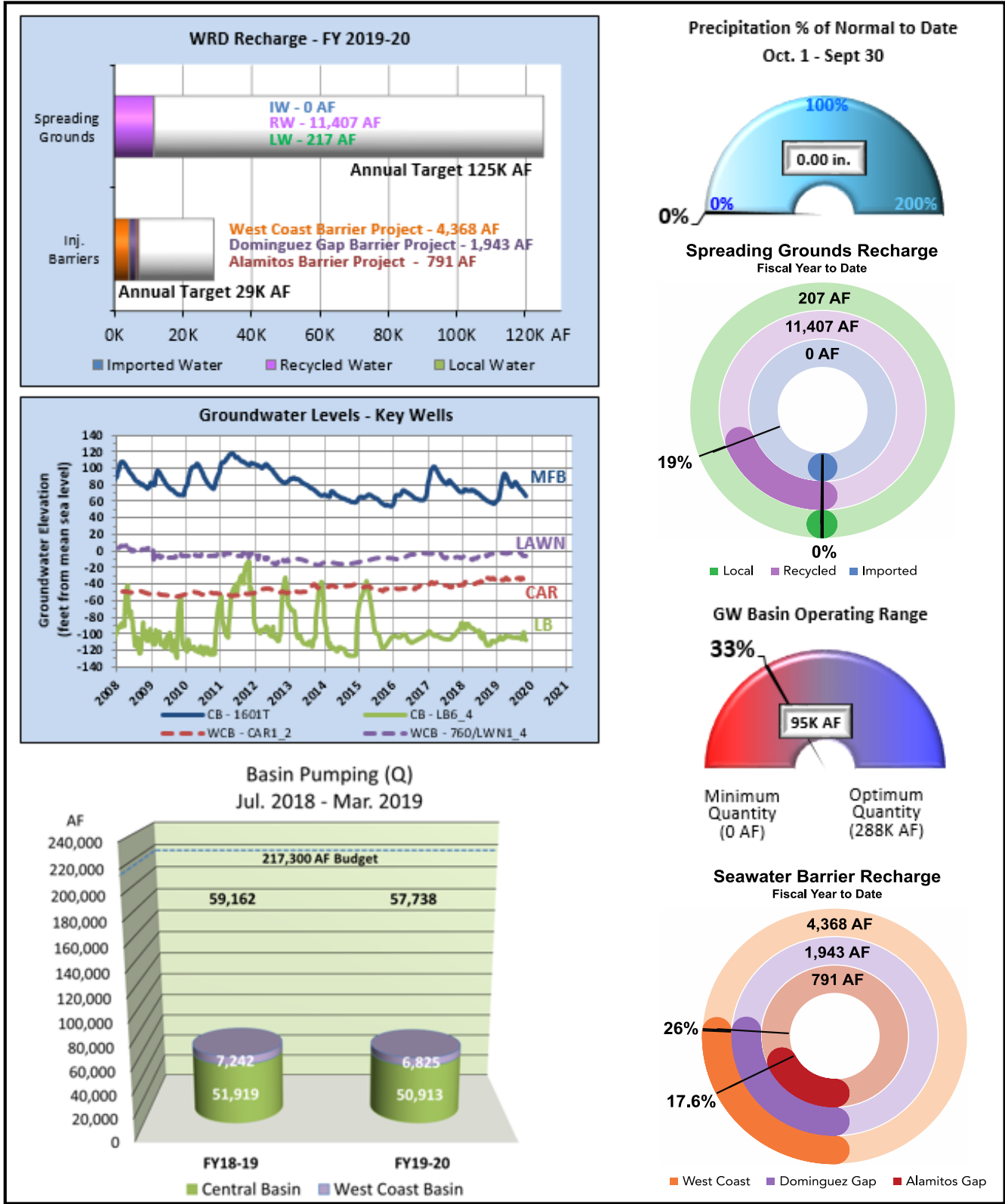


GROUNDWATER BASIN UPDATE FOR NOVEMBER 2019

GROUNDWATER BASINS AT A GLANCE*



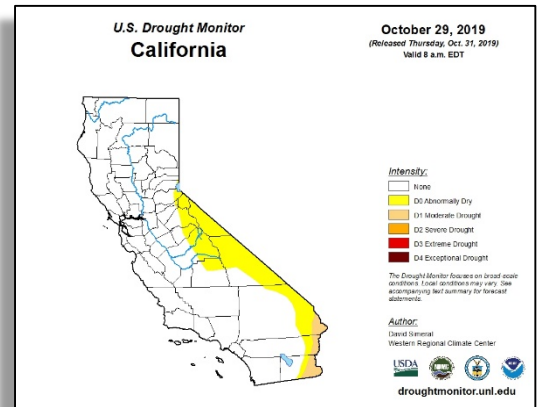
* - Preliminary numbers, subject to change.

SUMMARY

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

Precipitation (Oct 1st – Oct. 31th)

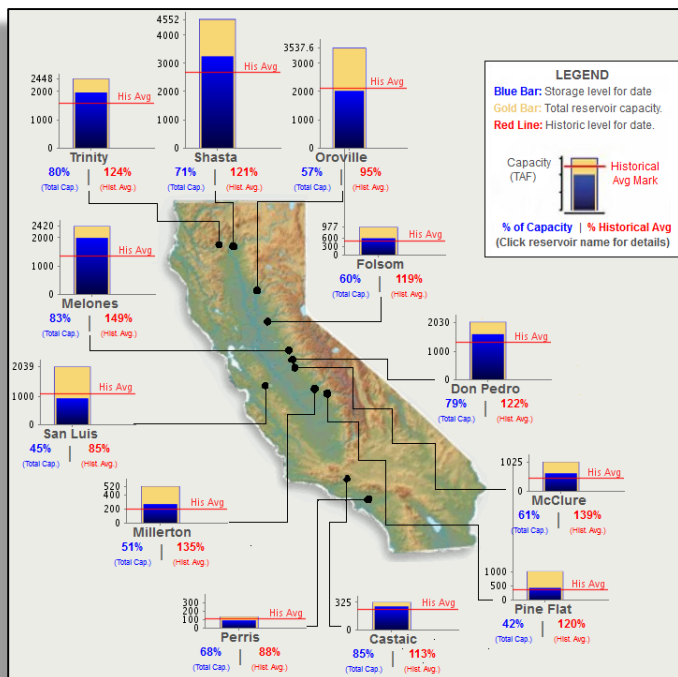
The WRD precipitation index reports that for the 2019-20 Water Year, there has been 0.00 inches of rainfall. The normal rainfall for this time period is 0.51 inches, so the District is 0% of normal. As of October 29, 2019, the U.S. Drought Monitor is reporting 17% of the State is abnormally dry, 2% is under moderate drought conditions.



Reservoirs (as of November 3, 2019)

For all 16 reservoirs reported monthly to the committee, water levels have increased in 1 reservoir compared to levels recorded in the previous month. Water levels rose in Lake Silverwood (<0.00 million acre feet). The largest decrease (-0.32 million acre feet) occurred at San Luis Reservoir. The smallest decrease (<0.00 million acre feet) occurred at DVL.

These 16 reservoirs are at 53% capacity (38.11 million acre feet) which is down from the prior month (-1.16 million acre feet State Water Project [SWP] and -0.28 million acre feet Colorado River Aqueduct [CRA]). The largest contributing factor to the change in reservoir storage is decreases at San Luis Reservoir (SWP) and Lake Powell (CRA).



MWD Reservoirs (SWP) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Trinity Lake	2.45	1.96	80%	-0.06
Lake Shasta	4.55	3.25	71%	-0.14
Lake Oroville	3.54	2.03	57%	-0.13
Folsom Lake	0.98	0.59	60%	-0.10
New Melones	2.40	1.99	83%	-0.04
Don Pedro	2.03	1.60	79%	-0.09
Lake McClure	1.02	0.62	61%	-0.06
San Luis	2.04	0.93	45%	-0.32
Millerton Lake	0.52	0.27	51%	-0.07
Pine Flat	1.00	0.42	42%	-0.12
Castaic Lake	0.33	0.28	85%	-0.02
Lake Perris	0.13	0.09	68%	-0.01
Silverwood	0.08	0.07	93%	0.00

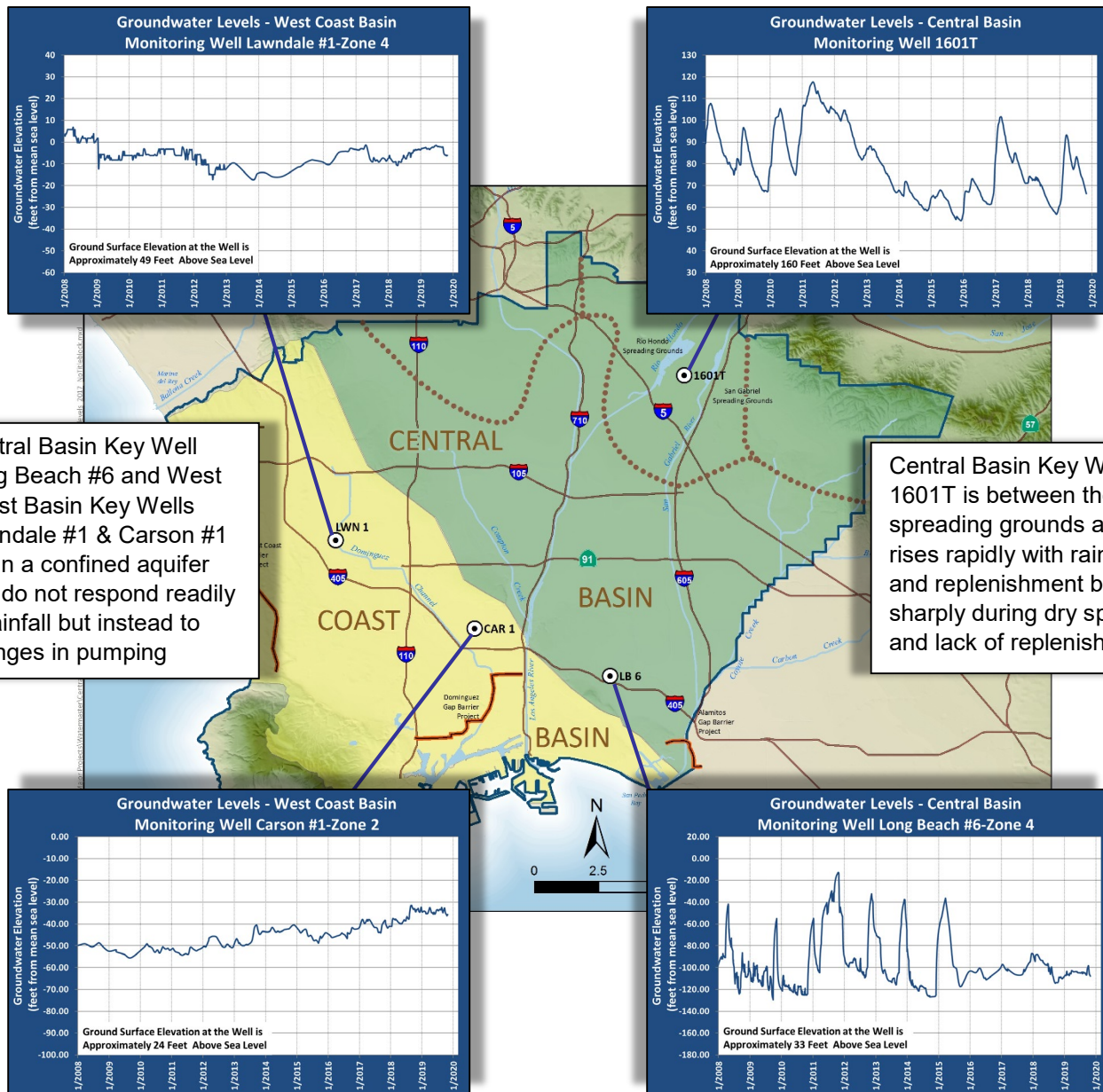
MWD Reservoirs (CRA) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Powell	24.32	13.02	54%	-0.21
Mead	26.12	10.24	39%	-0.06
DVL	0.81	0.75	93%	0.00

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

Groundwater Levels (through November 2, 2019)

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



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

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.

Groundwater Level Changes in Key Wells

Well Name	Since Last Report	Since Same Time the Previous Year
Central Basin Key Well 1601T	Decreased 5.8 feet	Increased 8.1 feet
Central Basin Key Well Long Beach #6 4	Decreased 6.4 feet	Increased 1.0 foot
West Coast Basin Key Well Lawndale #1 4	Decreased 0.6 foot	Decreased 2.4 feet
West Coast Basin Key Well Carson #1 2	Decreased 2.9 feet	Decreased 2.3 feet

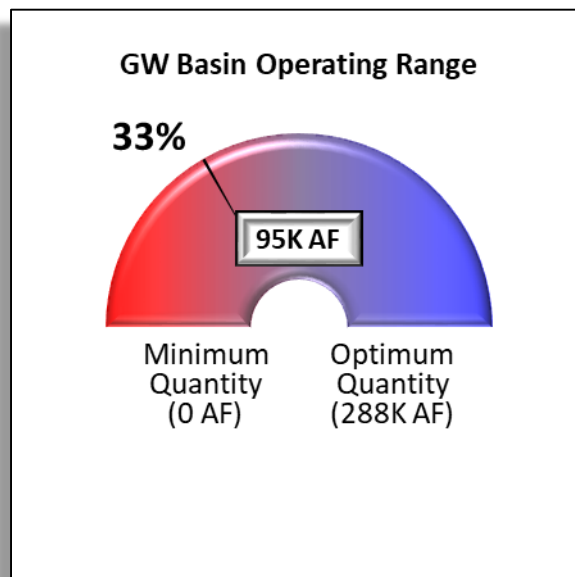
Bold indicates a change in direction (decreasing or increasing) since the last report.

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.

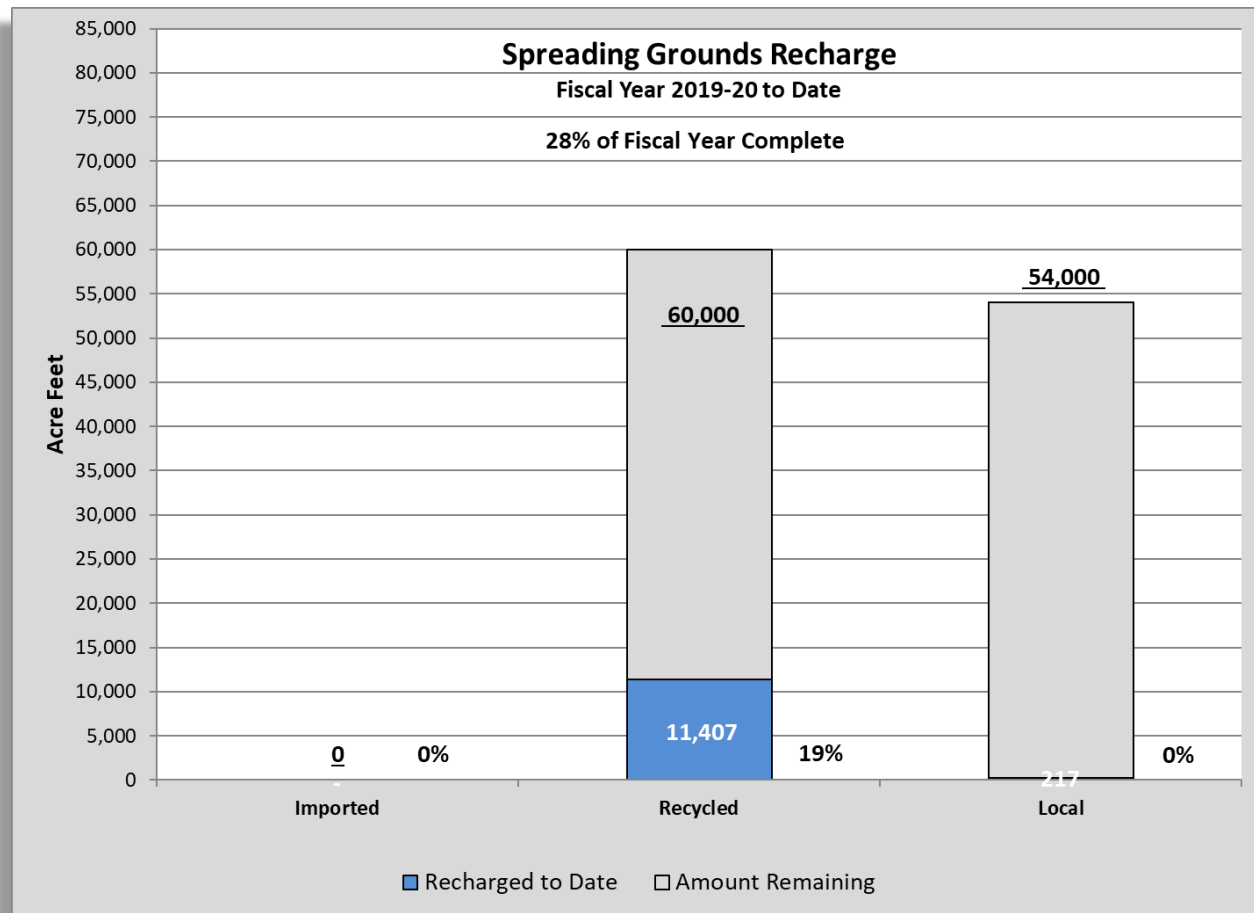
After an extensive review of over 70 years of water level fluctuations and discussions with the Board and pumping community, Water Year 1999/2000 was recognized as a representative year for the Optimum Quantity, which equated to an accumulated overdraft of approximately 612,000 acre-feet. The Minimum 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 as of November 2, 2019, has been estimated at 804,764 acre-feet (subject to change), which is 95,236 acre-feet above the Minimum Groundwater Quantity and 192,764 acre-feet below the Optimum Quantity.



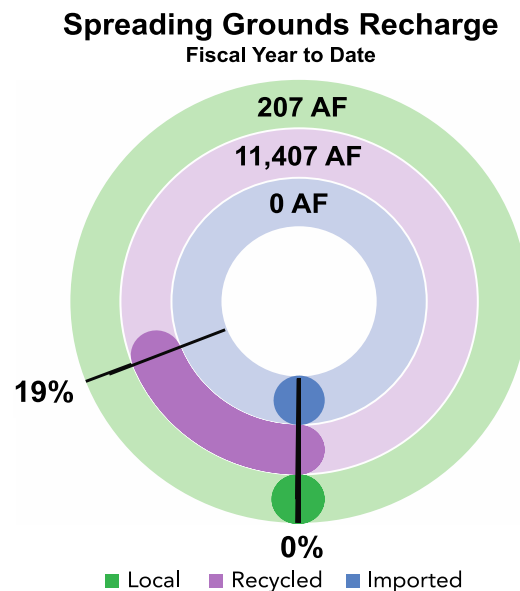
Montebello Forebay Spreading Grounds (July 2019 - September 2019)

The following Chart shows the preliminary spreading grounds replenishment water:

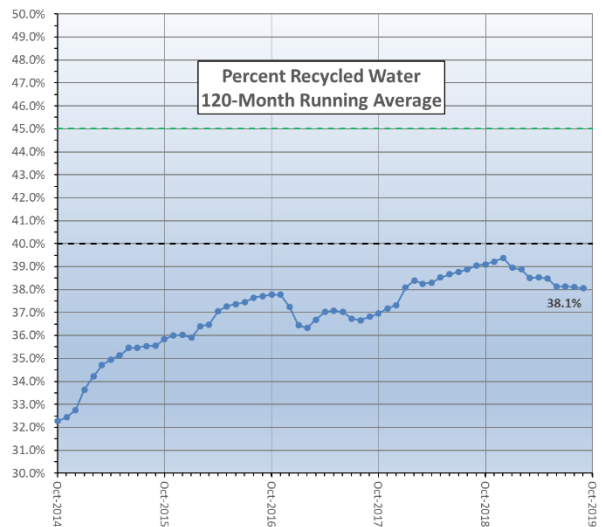


For the Fiscal Year 2019-20, no imported water purchases are anticipated at this time.

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 three months of the 2019-20 Fiscal Year, approximately 217 acre-feet of local water capture has been reported by the LACDPW.



Preliminary numbers for the first three months of the 2019-20 Fiscal Year show that approximately 8,280 acre-feet of recycled water has been recharged. The 120-month running average of recycled water contribution in the Montebello Forebay is 38.1% and the regulatory maximum is 45%, with additional studies and monitoring being required once 40% is reached.



Tertiary Recycle Water Permit Update

The following is a brief update of the ongoing collaboration between the District and CSDLA regarding the use of tertiary treated recycled water at the Montebello Forebay Spreading Grounds. As previously discussed, the agencies were notified by the RWQCB that a Workplan needs to be submitted by November 18th in preparation of the new Title 22 Engineering Report in conformance with the 2014 Groundwater Replenishment Using Recycled Water Regulations (GRRRs). Upon receipt of comments on the Workplan from the State of California, the District and CSDLA will proceed with the preparation and submittal of the new Title 22 Engineering Report in 2020.

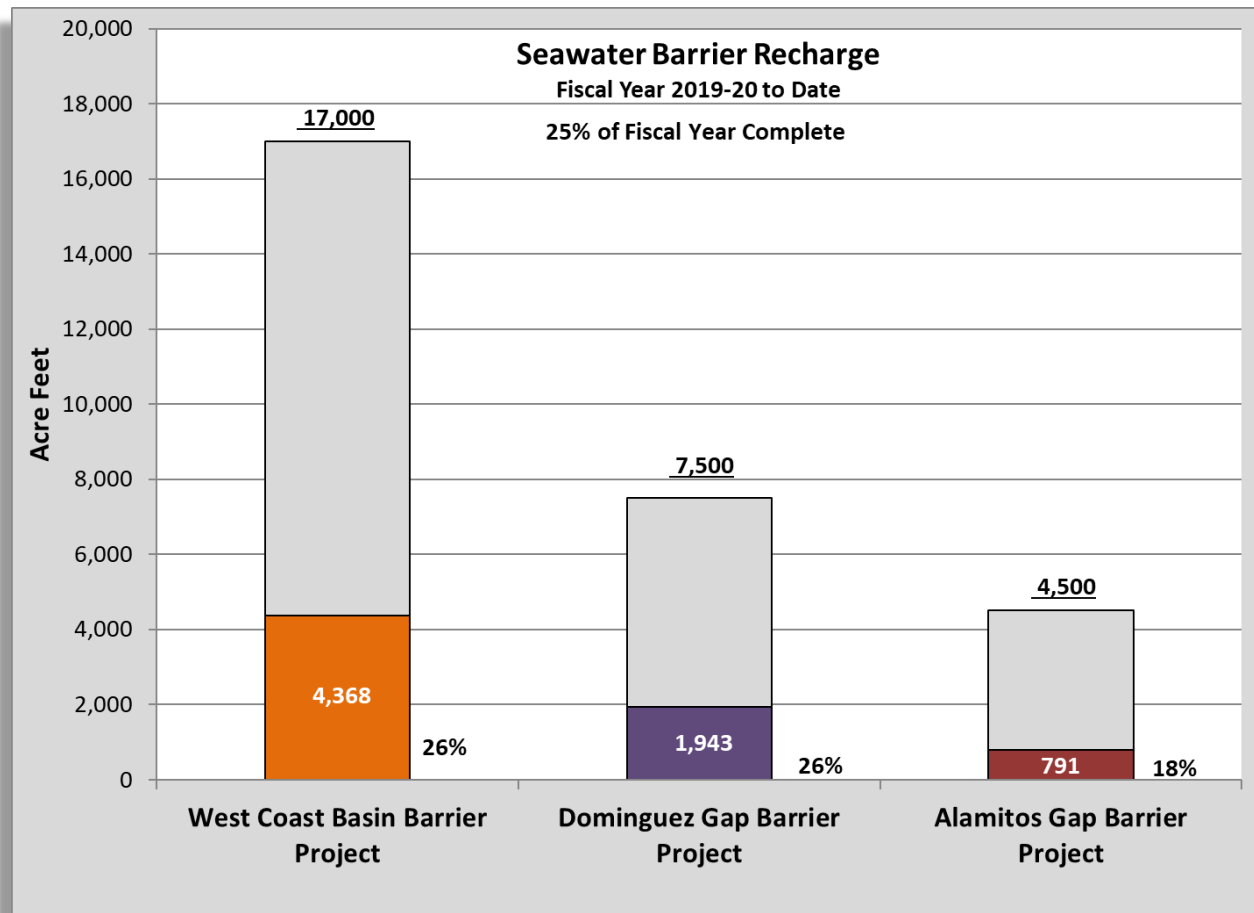
The Workplan will include:

- Recycled water contribution calculations reaching the Groundwater Replenishment Recharge Project (GRRP; i.e. Montebello Forebay Spreading Grounds)
- Discuss Pomona WRP discharges and quantify recharge at the GRRP
- Propose increasing RWC from 45% to 50%
- Compliance monitoring well location(s)
- Prepare a new figure that depicts cross-sections of wells and corresponding aquifers in the vicinity of the cross-sections presented in the previous Title 22 Engineering Report
- Request for a reduction in monitoring
- Crossover channel maps and related information
- Overview of methodology on chloride as intrinsic tracer
- Provide the approach for using spreading grounds headworks monitoring for surface flow diluent water
- Proposal of using the infiltration of precipitation as diluent water
- Selection of analytical methods based on wastewater and drinking water methods

Both entities are working diligently in order to meet the State's deadline.

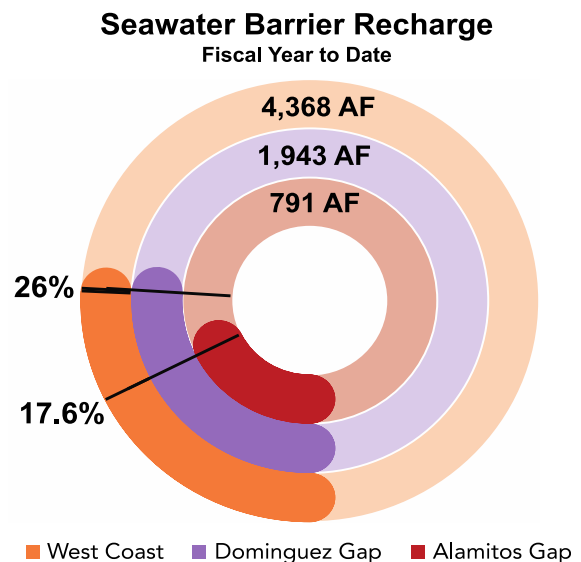
Seawater Barrier Well Injection and Replenishment (July 2019 - September 2019)

The following Chart shows the barrier water injection:



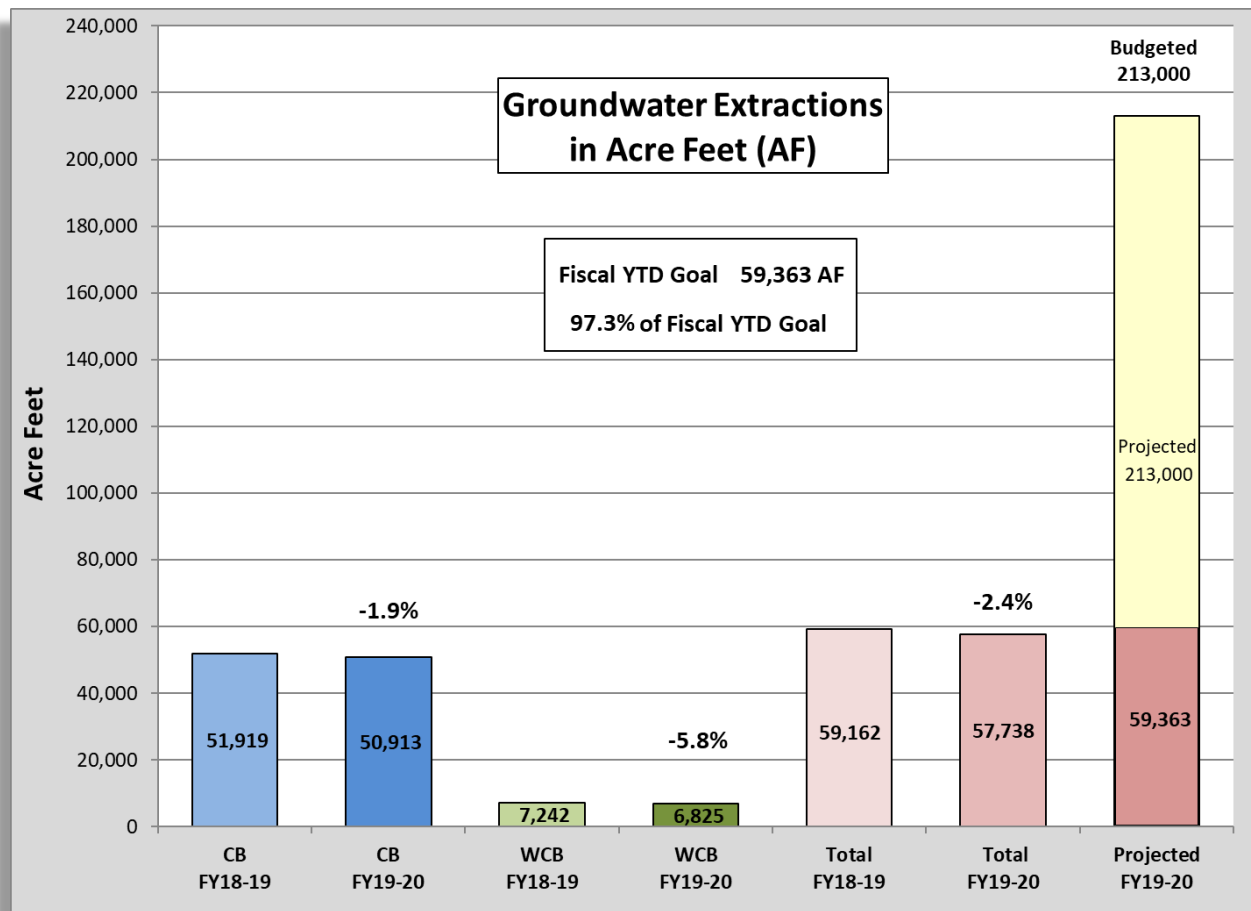
Preliminary numbers for the first three months of the 2019-20 Fiscal Year show that the West Coast Barrier has used 4,368 acre-feet of the total 17,000 acre-feet planned for injection, 26% of total for the Fiscal Year.

The Dominguez Gap Barrier used 1,943 acre-feet of the total 7,500 acre-feet planned for injection, 26% of the total for the Fiscal Year. The Alamitos Barrier, on the WRD side, used 791 acre-feet of the total 4,500 acre-feet planned for injection, 18% of the total for the Fiscal Year.



Pumping (Fiscal Year July 2019 – September 2019)

Preliminary numbers for groundwater production in the District for the Fiscal Year 2019-20 (July 2019 – September 2019) indicate pumping in the Central Basin was down 1,006 acre-feet from the same time of the previous fiscal year (-1.9%) and the West Coast Basin pumping was 417 acre-feet lower than the previous fiscal year (-5.8%). The total pumping is 50,913 acre-feet compared to 51,919 acre-feet during the same time the previous year for a decrease of 1,424 acre-feet, or -2.4%. The current pumping data do not include four Central Basin pumpers totaling an estimated 4 additional acre-feet.



For the Fiscal Year to date (July 2019 – September 2019), staff has tracked the production trends of the top five (5) producing pumpers and the bottom five (5) producing pumpers in each basin. These pumpers are identified in the following tables and are based on the change in volume (in acre-feet) compared to the same time period for the previous Fiscal Year.

Production Trends - Central Basin				
Top 5 Producing by Volume (AF)	July 2018 - September 2018	July 2019 - September 2019	Difference	% Change
Long Beach, City of	6,781.36	8,406.92	1,625.56	23.97%
Whittier, City of	877.57	1,512.50	634.93	72.35%
Liberty Utilities Corporation	2,067.87	2,385.80	317.93	15.37%
Paramount, City of	1,297.44	1,527.29	229.85	17.72%
California Water Service Company (East LA)	2,242.77	2,321.02	78.25	3.49%
Bottom 5 Producing by Volume (AF)	July 2018 - August 2018	July 2019 - August 2019	Difference	% Change
Golden State Water Company	6,360.33	5,490.64	-869.69	-13.67%
Lakewood, City of Water Department	2,739.85	2,267.21	-472.64	-17.25%
Vernon, City of	1,719.98	1,319.19	-400.79	-23.30%
Huntington Park, City of	1,077.44	757.65	-319.79	-29.68%
Downey, City of	4,481.00	4,228.70	-252.30	-5.63%

Production Trends – West Coast Basin				
Top 5 Producing by Volume (AF)	July 2018 - September 2018	July 2019 - September 2019	Difference	% Change
Inglewood, City of	314.56	932.99	618.43	196.60%
ConocoPhillips Company	954.12	1,368.80	414.68	43.46%
Tesoro Refining & Marketing Co., LLC	780.47	1,086.27	305.80	39.18%
Torrance, City of	837.82	1,070.35	232.53	27.75%
Torrance Refining & Marketing Company	208.10	246.21	38.11	18.31%
Bottom 5 Producing by Volume (AF)	July 2018 - August 2018	July 2019 - August 2019	Difference	% Change
Golden State Water Company	1,763.59	381.18	-1,382.41	-78.39%
Lomita, City of	165.87	0.47	-165.40	-99.72%
Los Angeles County Department of Parks & Recreation	153.85	52.16	-101.69	-66.10%
California Water Service Company (Dominguez)	1,096.38	1,018.90	-77.48	-7.07%
West Basin Brewer Desalter	103.94	30.00	-73.94	-71.14%