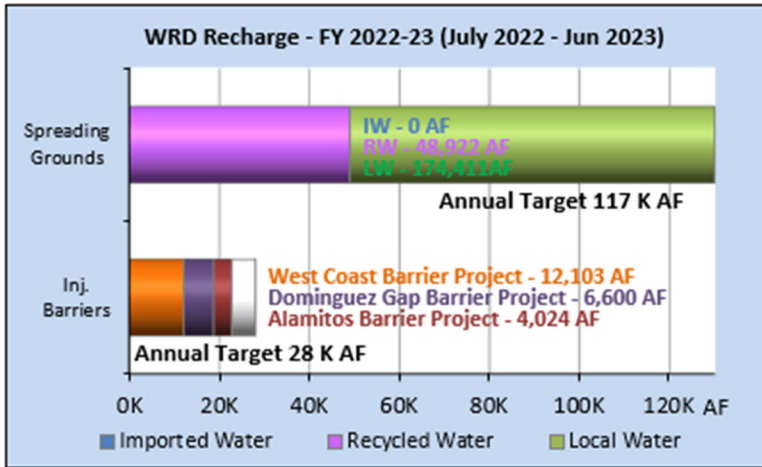
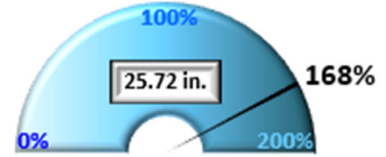


GROUNDWATER BASIN UPDATE FOR AUGUST 2023

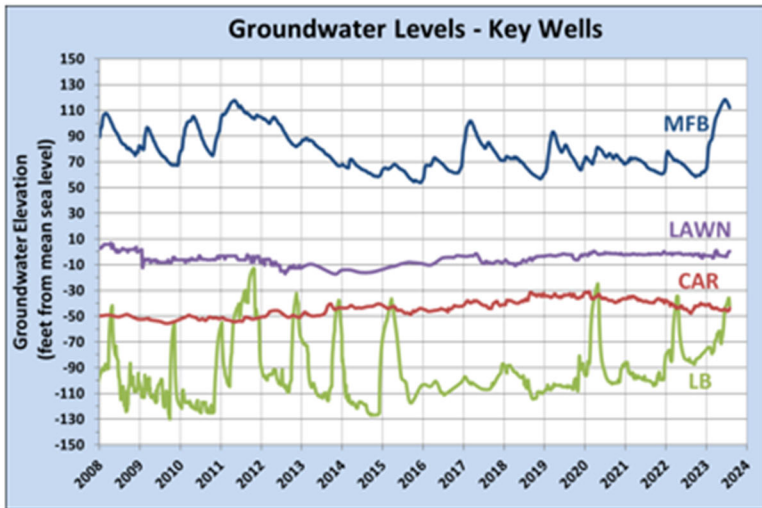
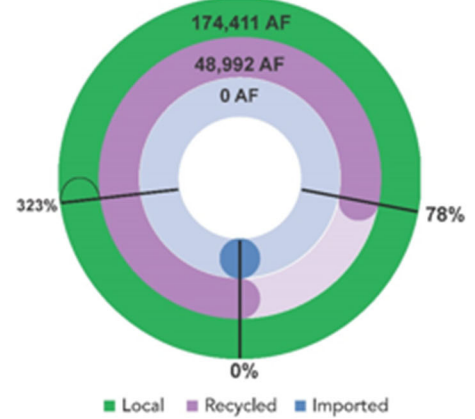
GROUNDWATER BASINS AT A GLANCE*



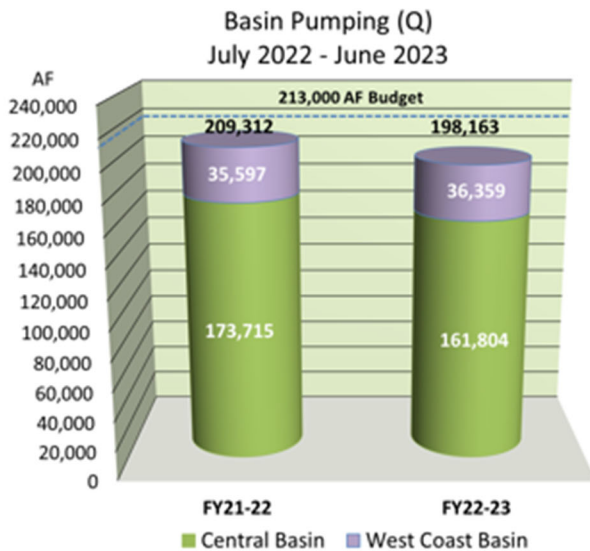
Precipitation % of Normal to Date
Oct 1, 2022 - Aug 8, 2023



Spreading Grounds Recharge
Jul 2022 - Jun 2023

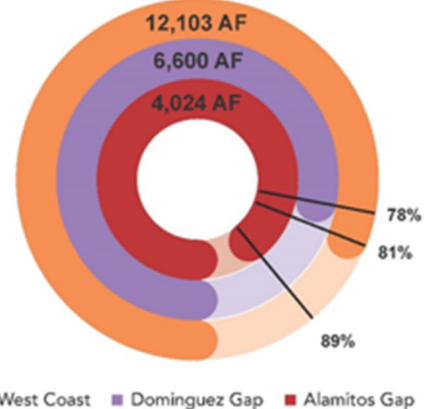


GW Basin Operating Range
July 6, 2023



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

Seawater Barrier Recharge
Jul 2022 - Jun 2023



* - Preliminary numbers, subject to change.

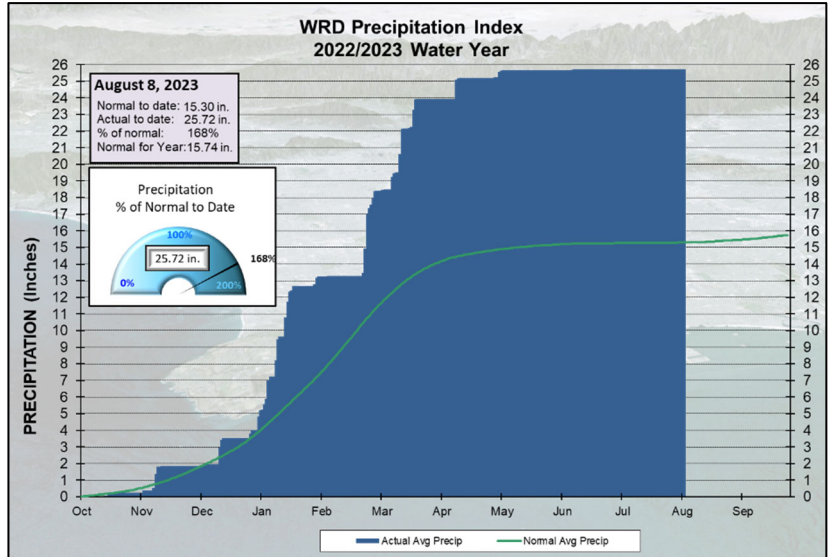
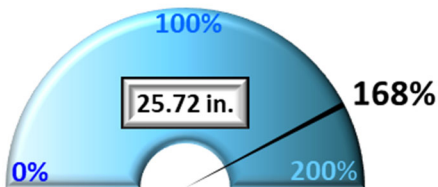
SUMMARY

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

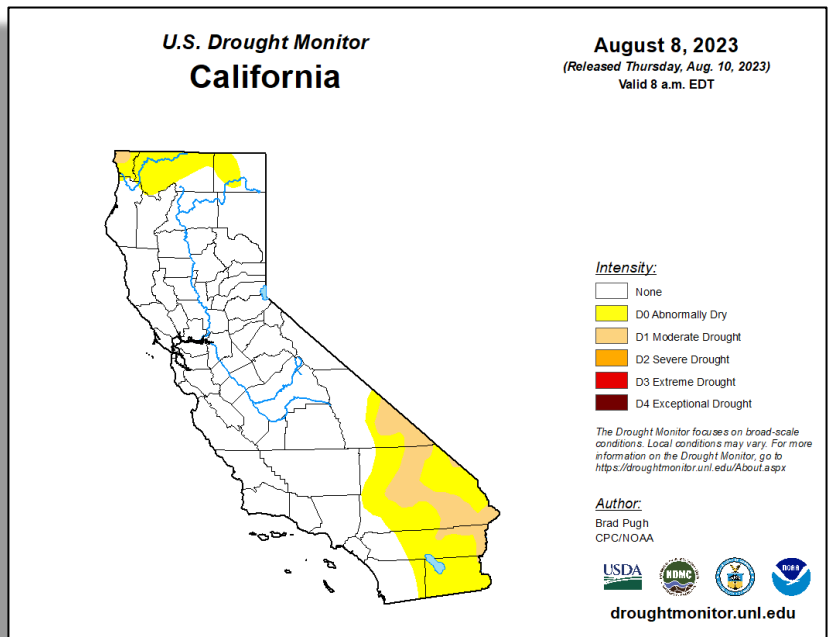
Precipitation (October 1, 2022 – August 8, 2023)

The WRD precipitation index reports that for the 2022-23 Water Year, there has been above average rainfall (25.72 inches) through August 8, 2023. The normal rainfall for this time period is 15.30 inches, so the District is 168% of normal.

Precipitation % of Normal to Date
Oct 1, 2022 - Aug 8, 2023

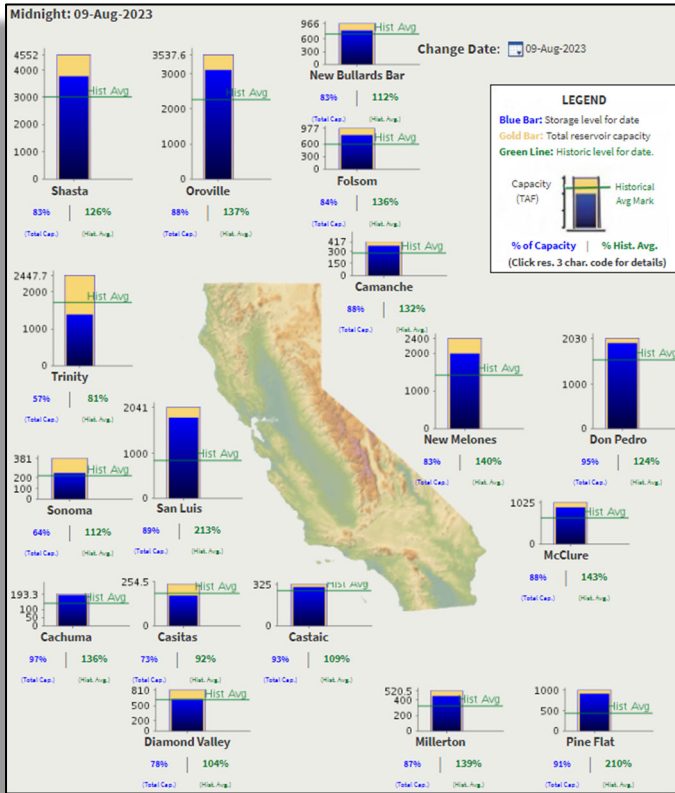


As of August 8, 2023, the U.S. Drought Monitor is reporting 25% of the State is abnormally dry (-3%), 7% under moderate (+2), 0% under severe (same), 0% under extreme (same), and 0% exceptional (same) drought conditions. According to the U.S. Drought Monitor, Los Angeles County is currently not in a drought.



Reservoirs (as of August 9, 2023)

For the 21 reservoirs reported monthly to the committee, water levels have increased in 4 of 21 reservoirs. The largest increase occurred at Lake Mead (0.32 million acre feet, MAF). The smallest increase occurred at Don Pedro Reservoir (<0.01 MAF). The largest decrease (-0.45 MAF) occurred at Lake Powell. The smallest decrease (<-0.01 MAF) occurred at Castaic and Casitas Lakes.



MWD Reservoirs (SWP) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Trinity Lake (CLE)	2.45	1.39	57%	-0.04
Lake Shasta (SHA)	4.55	3.77	83%	-0.39
Lake Oroville (ORO)	3.54	3.11	88%	-0.37
New Bullards Bar (BUL)	0.97	0.80	83%	-0.13
Folsom Lake (FOL)	0.98	0.82	84%	-0.10
Camanche Lake (CMN)	0.42	0.37	88%	-0.03
New Melones L. (NML)	2.40	2.00	83%	-0.08
Don Pedro Res (DNP)	2.03	1.93	95%	0.01
Lake McClure (EXC)	1.02	0.90	88%	-0.06
Lake Sonoma (WRS)	0.38	0.24	64%	-0.01
San Luis Res (SNL)	2.04	1.81	89%	-0.14
Millerton Lake (MIL)	0.52	0.45	87%	-0.06
Pine Flat Res. (PNF)	1.00	0.91	91%	-0.02
Cachuma Lake (CCH)	0.19	0.19	97%	-0.01
Castaic Lake (CAS)	0.33	0.30	93%	0.00
Casitas Lake (CSI)	0.25	0.17	73%	0.00
Perris Lake (PRR)	0.13	0.09	70%	-0.01
L. Silverwood (SLW)	0.08	0.07	93%	0.00

MWD Reservoirs (CRA) Storage in Million Acre Feet

Reservoir	Capacity	Storage	% Full	Change
Lake Powell	24.32	9.22	38%	-0.45
Lake Mead	26.12	8.56	33%	0.32
Diamond Valley L (DVL)	0.81	0.63	78%	0.02

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

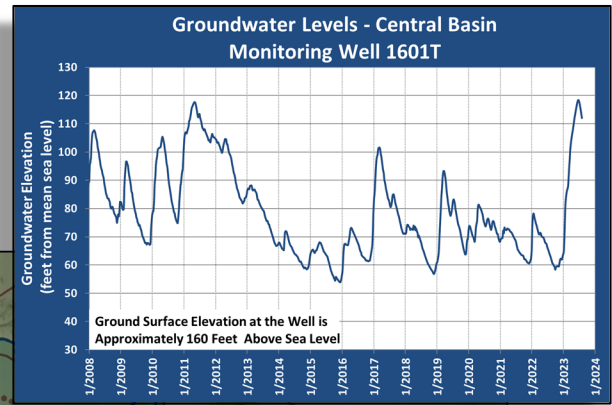
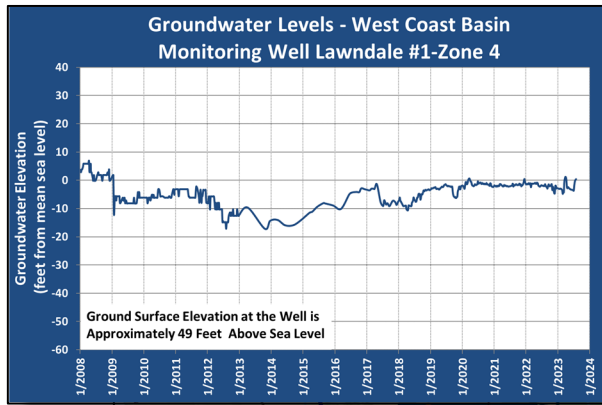
These 21 reservoirs are at 51% capacity (37.74 MAF) which is down 1.54 MAF (-2.1%) from the prior month (-1.43 MAF State Water Project [SWP] and -0.11 MAF Colorado River Aqueduct [CRA]).



Did you know?
There is over a thousand times more water in the ground than is in all the world's rivers and lakes.

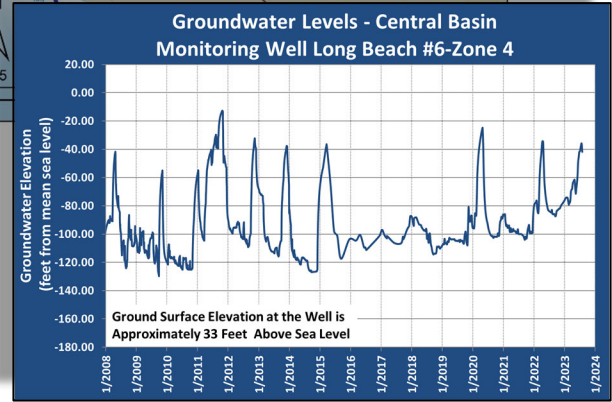
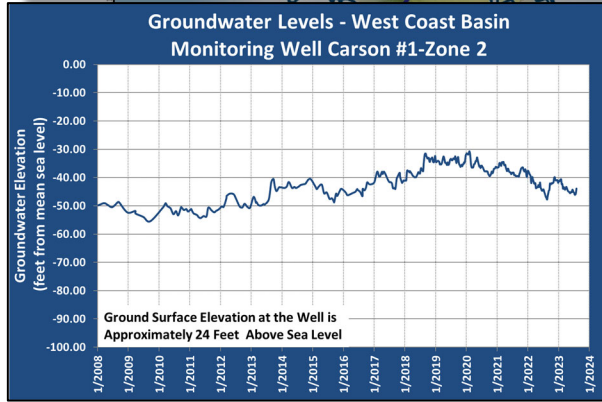
Groundwater Levels (through July 6, 2023)

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 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.



Groundwater Level Changes in Key Wells

Well Name	Since Last Report	Since Same Time the Previous Year
Central Basin Key Well 1601T	Decreased 5.2 feet	Increased 49.1 feet
Central Basin Key Well Long Beach #6 4	Decreased 0.5 foot	Increased 41.0 feet
West Coast Basin Key Well Lawndale #1 4	Increased 4.1 feet	Increased 2.4 feet
West Coast Basin Key Well Carson #1 2	Increased 1.5 feet	Increased 3.0 feet

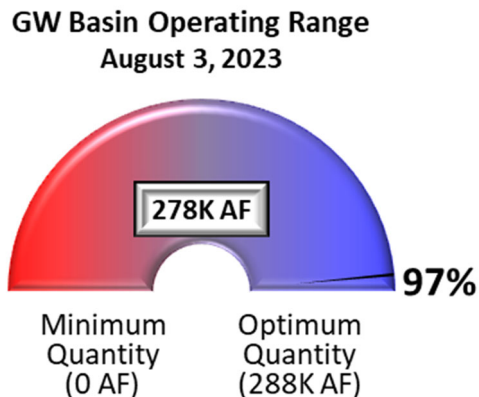
Bold indicates a change in direction (decreasing or increasing) since the last report.

Optimum and Minimum Groundwater Quantity (August 3, 2023)

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 August 3, 2023, has been estimated at 621,972 acre feet (subject to change), which is 278,028 acre feet above the Minimum Quantity and 9,972 acre feet below Optimum Quantity. The Basin is at 97% of Optimum Quantity which is 6% lower than what was reported last month (~20,000 AF lower).



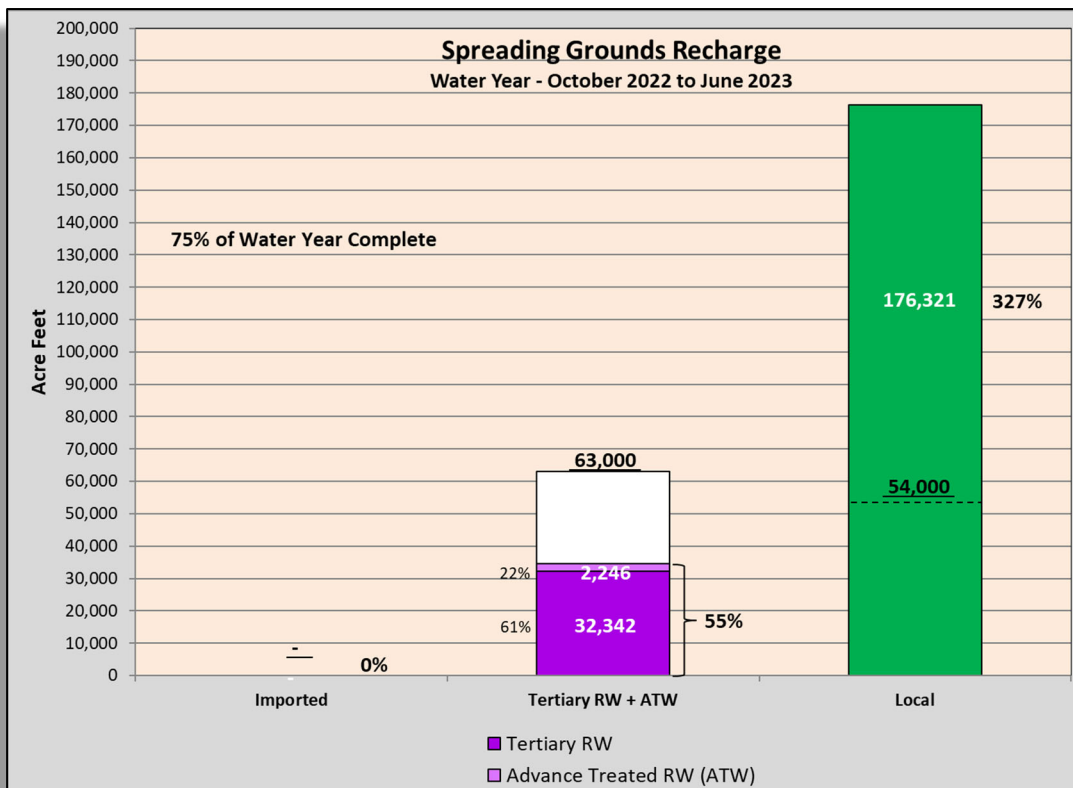
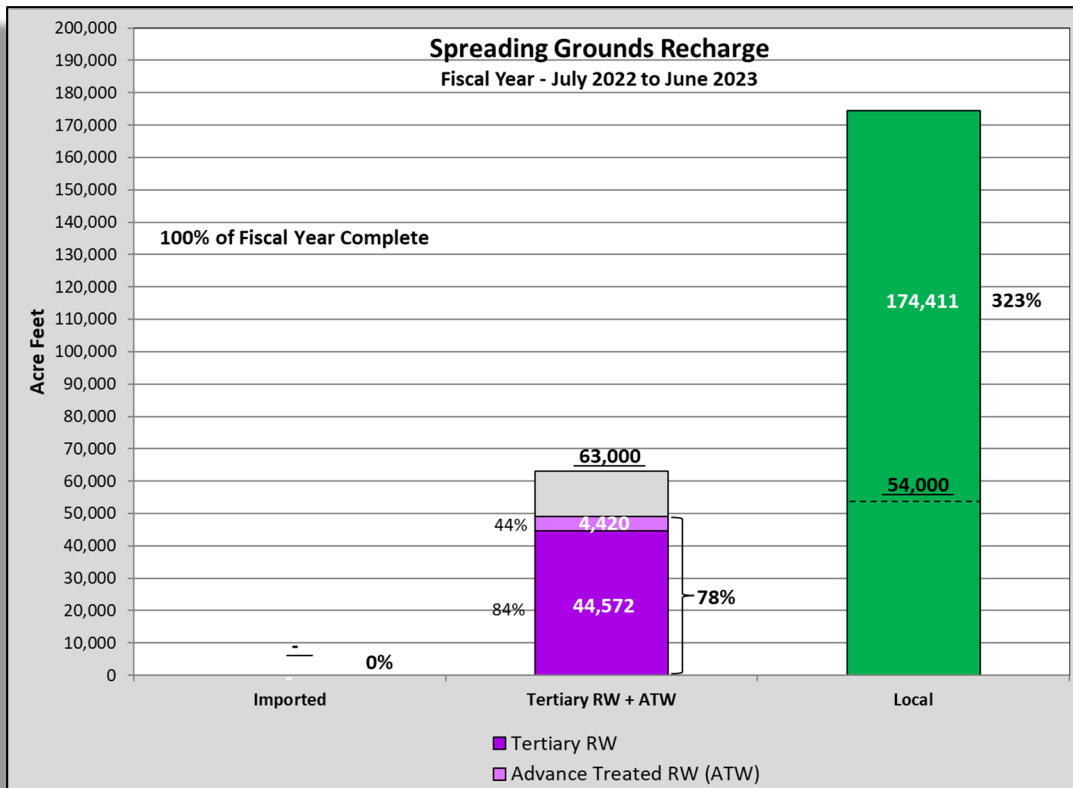
FACT:

Each drop of rain that soaks into the soils moves downward to the water table, which is the water level in the groundwater reservoir.



Montebello Forebay Spreading Grounds (July 2022 – June 2023)

The following Charts shows the preliminary spreading grounds replenishment water for the current Fiscal Year (2022-23; 12 months) and Water Year (2022-23; 9 months):



No imported water purchases were planned for Fiscal Year 2022-23.

Local water (stormwater plus dry weather urban runoff) is captured by the Los Angeles County Department of Public Works (LACPW) 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 2022-23 Fiscal Year, 174,411 acre feet of local water capture has been reported by the LACPW.

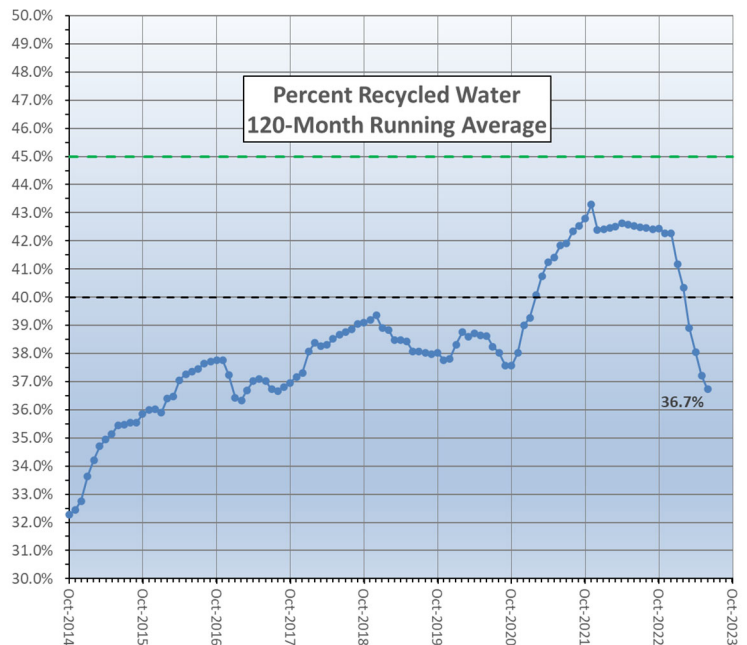
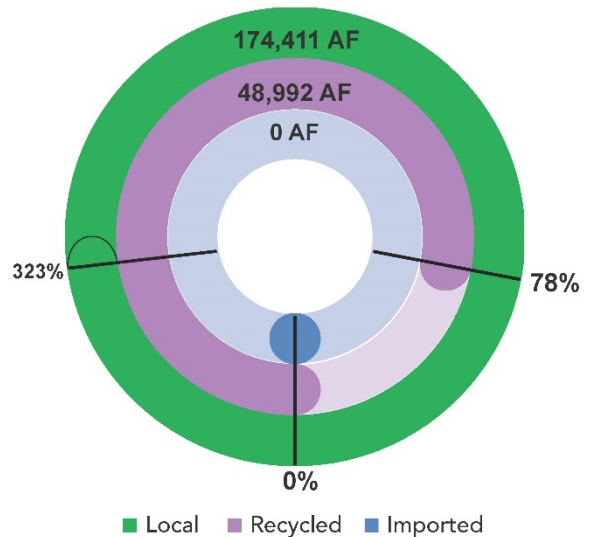
Preliminary numbers for the 2022-23 Fiscal Year show that approximately 48,992 acre feet of recycled water has been recharged with 4,420 acre feet consisting of advanced treat water from the ARC AWTF and 44,572 acre feet of tertiary recycled water. Presuming the advanced treated water as “Null Water”, the 120-month running average of the recycled water contribution in the Montebello Forebay is 36.7% and the regulatory maximum is 45%, with additional monitoring being required once 40% is reached.

Tertiary Recycle Water Permit Update

The permit is continuing to progress with LACSD and WRD staff working to update pertinent sections of the new Title 22 Engineering Report. Due to the persistent drought conditions over the past few decades and associated emergency drought proclamation by Governor Newsom, LACSD and WRD submitted a request to modify the recycled water contribution percentage to 50% and the advanced treated water classification to diluent in a letter to the LARWQCB and CA-DDW dated July 8, 2022. LACSD and WRD staff are targeting the end of 2023 to have the new Title 22 Engineering Report submitted, including the requests the increase the recycled water contribution percentage to 50% and reclassify the advanced treated water as diluent.

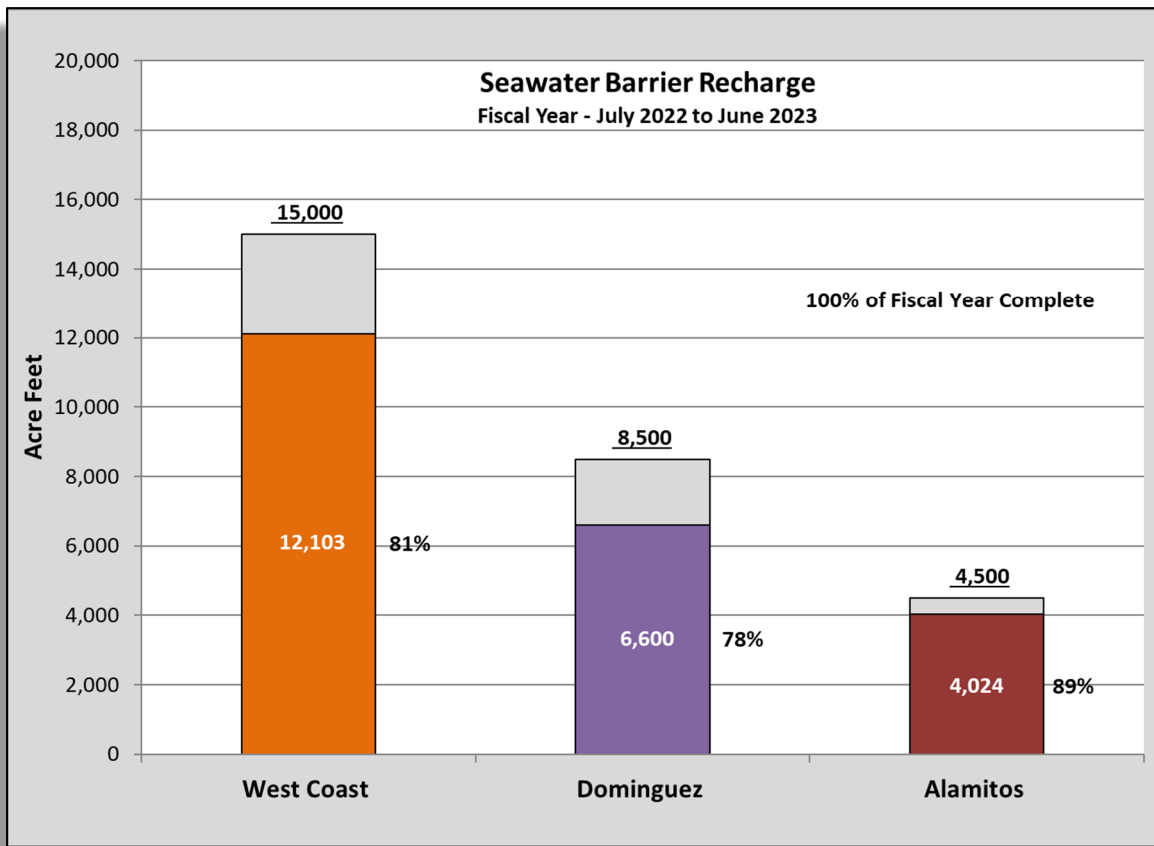
Spreading Grounds Recharge

Jul 2022 - Jun 2023

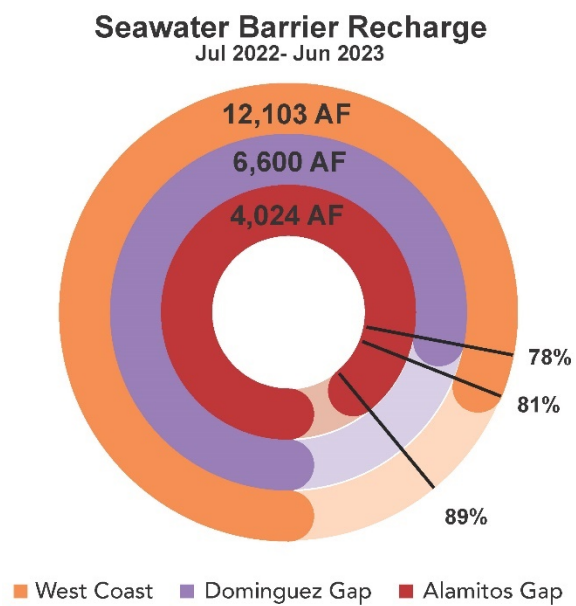


Seawater Barrier Well Injection and Replenishment (July 2022 – June 2023)

The following Chart shows the barrier water injection:

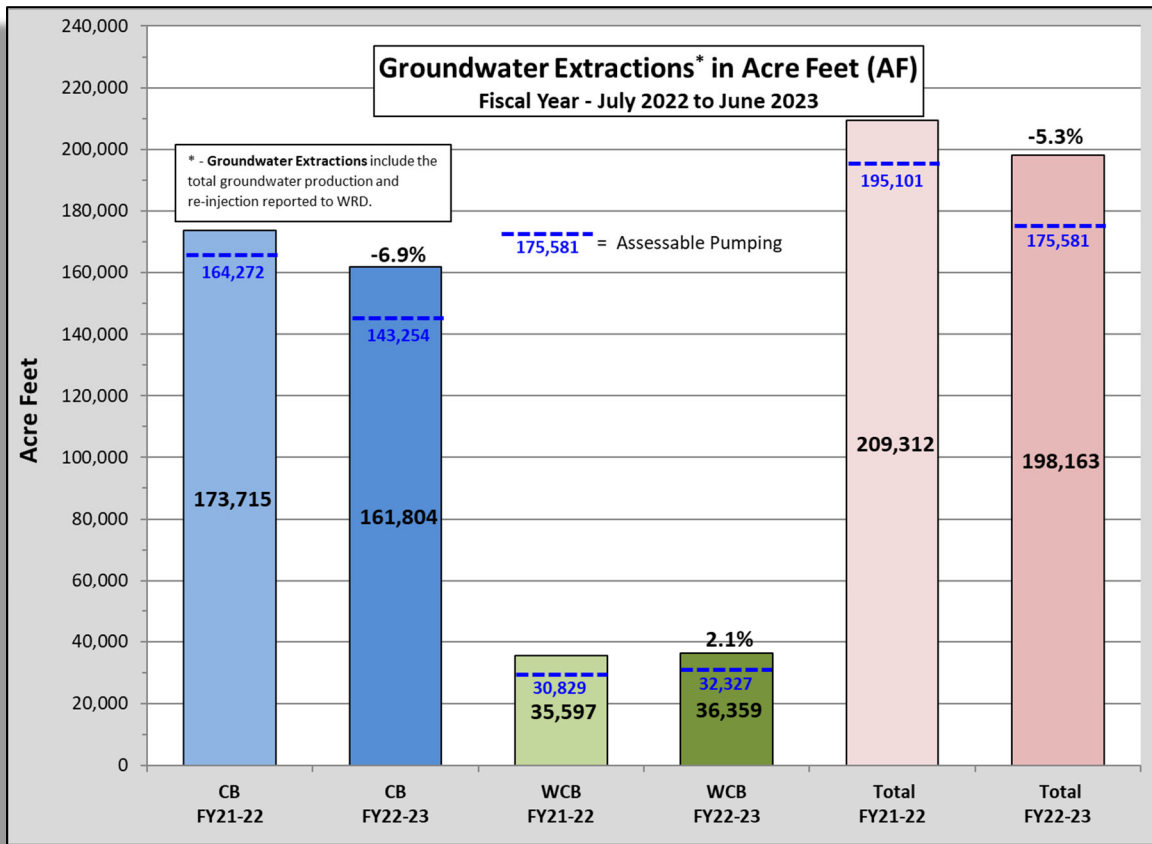


Preliminary numbers for the 2022-23 Fiscal Year show that the West Coast Barrier has used 12,103 acre feet of the total 15,000 acre feet planned for injection, 81% of total for the Fiscal Year. The Dominguez Gap Barrier used 6,600 acre feet of the total 8,500 acre feet planned for injection, 78% of the total for the Fiscal Year. The Alamitos Barrier, on the WRD side, used 4,024 acre feet of the total 4,500 acre feet planned for injection, 89% of the total for the Fiscal Year.



Total Pumping (Fiscal Year 2022-23, July 2022 – June 2023)

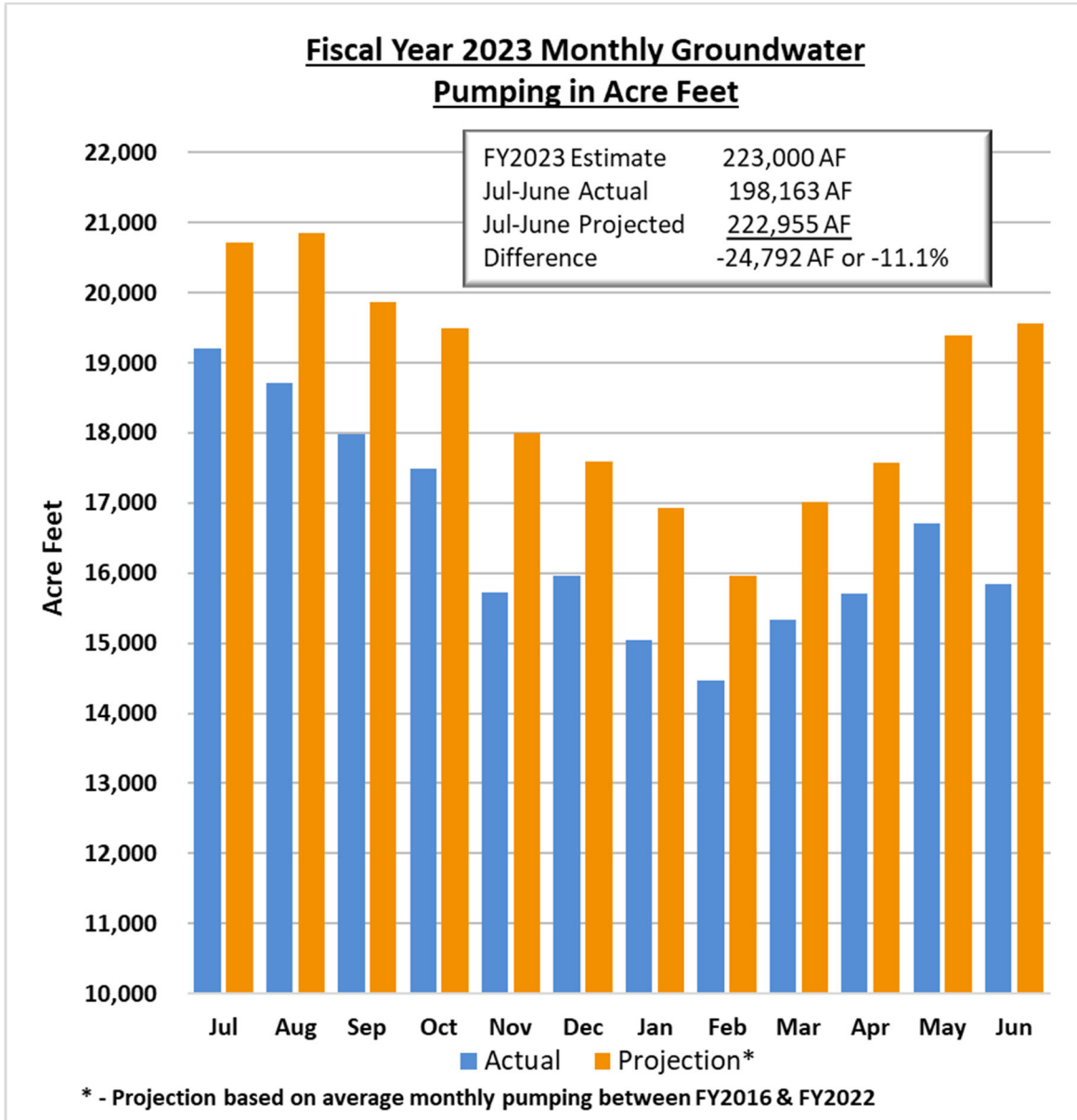
Preliminary numbers for groundwater production in the District for the Fiscal Year 2022-23 (July-June) indicate total pumping in the Central Basin was down 11,911 acre feet from the same time of the previous fiscal year (-6.9%) and the West Coast Basin total pumping was 762 acre feet higher than the previous fiscal year (2.1%). The total pumping is 198,163 acre feet compared to 209,312 acre feet during the same time the previous year for a decrease of 11,149 acre feet, or -5.3%. The current pumping data do not include nine (9) Central Basin pumpers and one (1) West Coast Basin Pumpers who have not yet reported for an estimated 208 additional acre feet.



Interesting...

Groundwater does not normally occur in underground streams, lakes, or veins. Groundwater is found in soils and sands able to retain the water — much like a sponge holds water.

Preliminary numbers indicate 198,163 acre feet have been pumped this fiscal year and is 11.1% below the projected fiscal year to date goal of 222,955 acre feet (or -24,792 acre feet). Monthly actual production versus the 7-year average monthly production projections (FY 2016 through 2022) are included in the chart below.



"Healthy water is well water."
- Toni Szutkowski



For the Fiscal Year 2022-23 (July 2022 - June 2023), 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)	Jul 2021- June 2022	Jul 2022- June 2023	Difference	% Change
Long Beach, City - CB	26,412.82	27,666.78	1253.96	4.53
Cal. Water Service Co. (East LA)	10,275.36	10,713.45	438.09	4.09
Boeing, Compton Site	0.00	50.09	50.09	100.00
American Text. M.	25.17	57.44	32.27	56.18
Boeing Co.	34.49	53.15	18.66	35.11
Bottom 5 Producing by Volume (AF)	Jul 2021- June 2022	Jul 2022- June 2023	Difference	% Change
Los Angeles, City - CB	4,561.71	3,298.35	-1263.36	-38.30
Downey, City	14,455.78	13,228.39	-1227.39	-9.28
Santa Fe Springs, City	2,376.88	1,166.54	-1210.34	-103.75
Vernon, City	6,512.94	5,475.42	-1037.52	-18.95
La Habra Heights County WD	2,910.42	2,193.59	-716.83	-32.68

Production Trends – West Coast Basin				
Top 5 Producing by Volume (AF)	Jul 2021- June 2022	Jul 2022- June 2023	Difference	% Change
Cal. Water Service Co. Dominguez - WB	2,255.98	3,975.66	1719.68	43.26
Golden State Water Co. - WB	4,609.92	6,274.55	1664.63	26.53
Tesoro Refining	9,521.96	10,607.01	1085.05	10.23
Cal. Water Service Co./Hawthorne Lease	79.80	347.69	267.89	77.05
Manhattan Beach, City	270.59	489.56	218.97	44.73
Bottom 5 Producing by Volume (AF)	Jul 2021- June 2022	Jul 2022- June 2023	Difference	% Change
Phillips 66 Co. - Alpha 7093	6,379.11	4,965.49	-1413.62	-28.47
Torrance, City	1,825.30	961.16	-864.14	-89.91
Cal. Water Service Co. Alpha 7050	1,258.26	889.54	-368.72	-41.45
Inglewood, City	2,012.60	1,851.26	-161.34	-8.72
L.A. County Depart. of Parks & Rec - WB	368.63	207.78	-160.85	-77.41

Water Replenishment District (WRD) publishes the Groundwater Basin Update (GWBU) monthly. All information contained herein is preliminary and is meant to be a snapshot the status of the basins at the time of publication and should not constitute an official WRD report. All the information presented in the GWBU utilizes the best available data at the time of publication. Data provided herein is a compilation of WRD data and publicly available information from several of our partners including, by not limited to, the Los Angeles County Department of Public Works - Stormwater Engineering Division, Metropolitan Water District of Southern California, California Department of Water Resources, US Bureau of Reclamation, University of Nebraska - Lincoln, and the US Department of Agriculture - Natural Resources Conservation Service. The GWBU is prepared by Senior Hydrogeologist, Everett Ferguson, who can be contacted directly with questions at eferguson@wrd.org.